

Indiana Energy Status: A View From 30,000 Feet

presented to

Indiana Chamber of Commerce

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presented by

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State Utility Forecasting Group

Data Sources

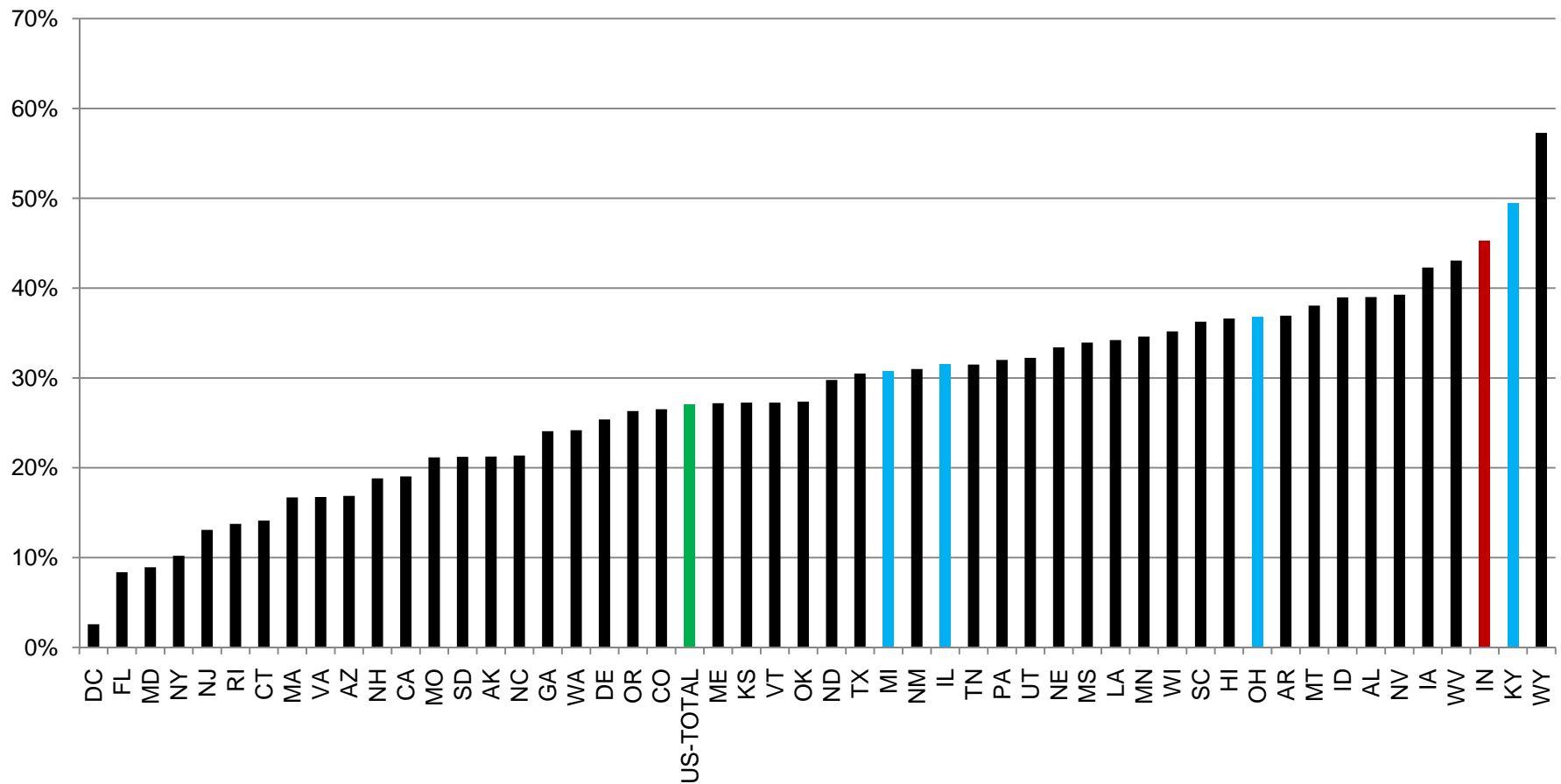
- Bureau of Economic Analysis (Commerce)
 - gross domestic product
- Bureau of Labor Statistics (Labor)
 - Employment
- Energy Information Administration (Energy)
 - electricity prices, electricity sales, fuel prices

Indiana

An Industrial State with Relatively Low Cost Electricity

Sector	U.S. lowest price rank	U.S. highest sales rank
Residential	12	15
Commercial	17	19
Industrial	14	4
Total	11	11

2008 Industrial Demand as Percentage of Total



Impacts of the Economy

- The industrial sector tends to be the most sensitive to economic ups and downs
- Unfortunately, state-specific data for 2009 is generally not available yet

Changes in Indiana Electricity Sales from 2007 to 2008

- Residential sector -1.9%
- Commercial sector -0.8%
- Industrial sector -3.2%
- Total -2.2%

Was it the Economy?

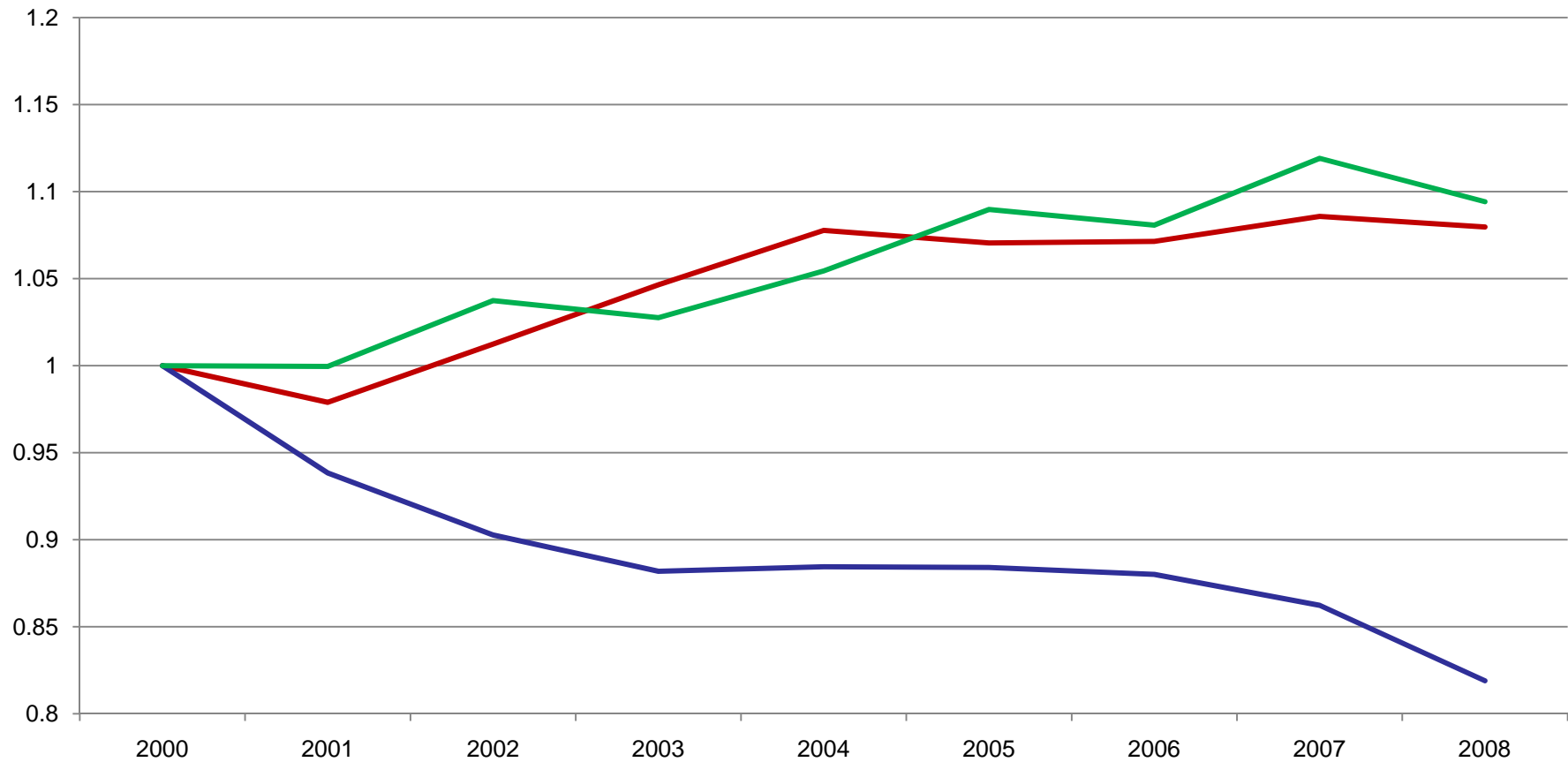
- Indiana Gross Domestic Product dropped by 0.6% from 2007 to 2008
- But the summer of 2008 was considerably cooler than 2007, which affected electricity demand
 - Cooling degree days in Indianapolis dropped by 30% from 2007

Manufacturing Employment

- Indiana manufacturing employment dropped by 5 percent from 2007 to 2008
- Also dropped an additional 15.6 percent from September 2008 to September 2009
- But manufacturing employment has been dropping for several years

Indiana Total Electricity Sales vs. Selected Drivers

Real GDP Mfg employment Electricity sales



2009 – Effects were More Pronounced

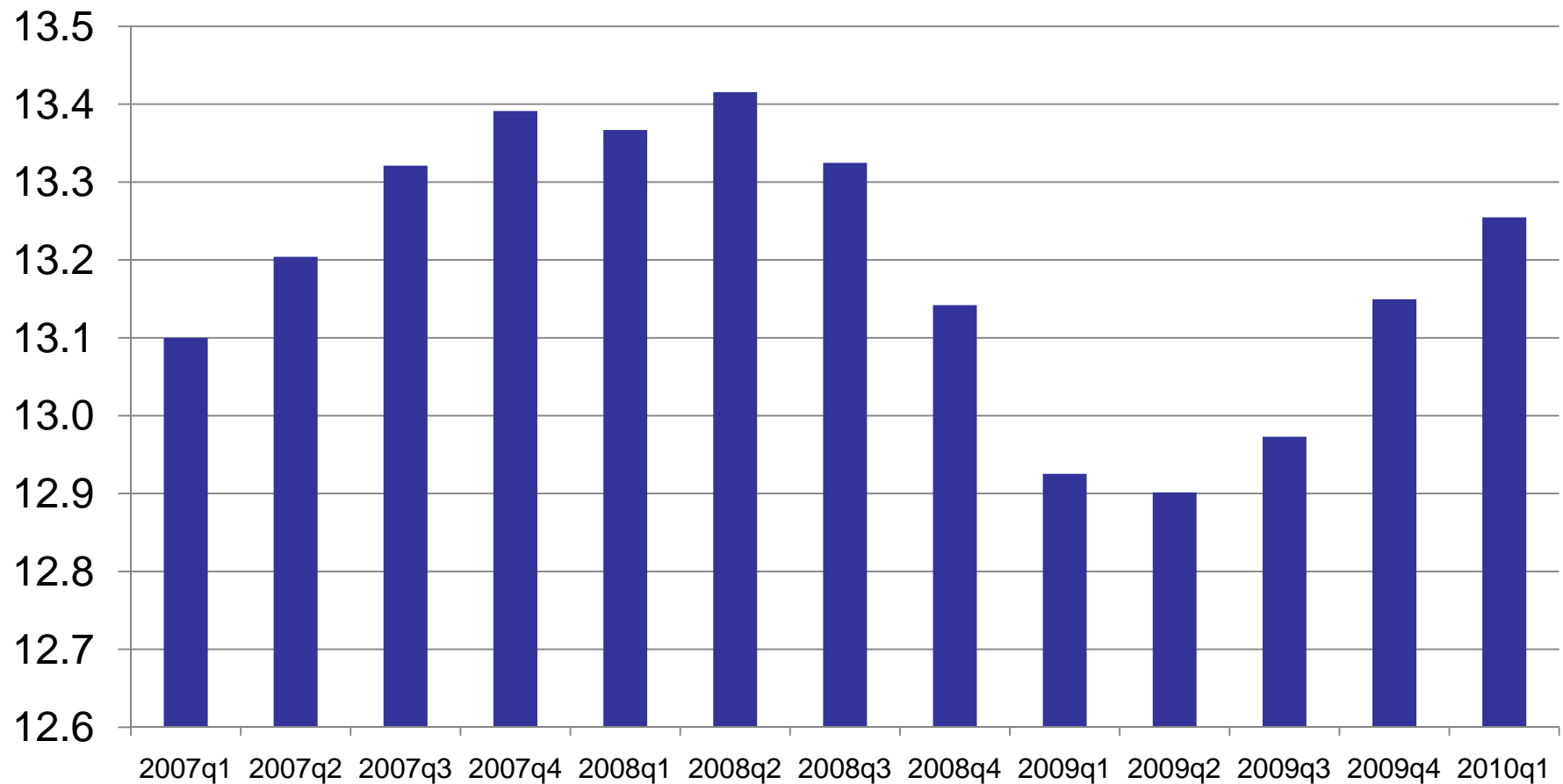
- Economic impact largely confined to last quarter of 2008
- Economic impact was felt across all 4 quarters of 2009
- The summer of 2009 was even milder
 - cooling degree days were down another 11% from 2008

Anecdotaly

- Sales for 2009 were below 2008
- Sales for 2010 have been generally higher than they were in 2010
 - likely due to a combination of weather and economic factors

Nationally

U.S. Gross Domestic Product (trillions of 2005 dollars)

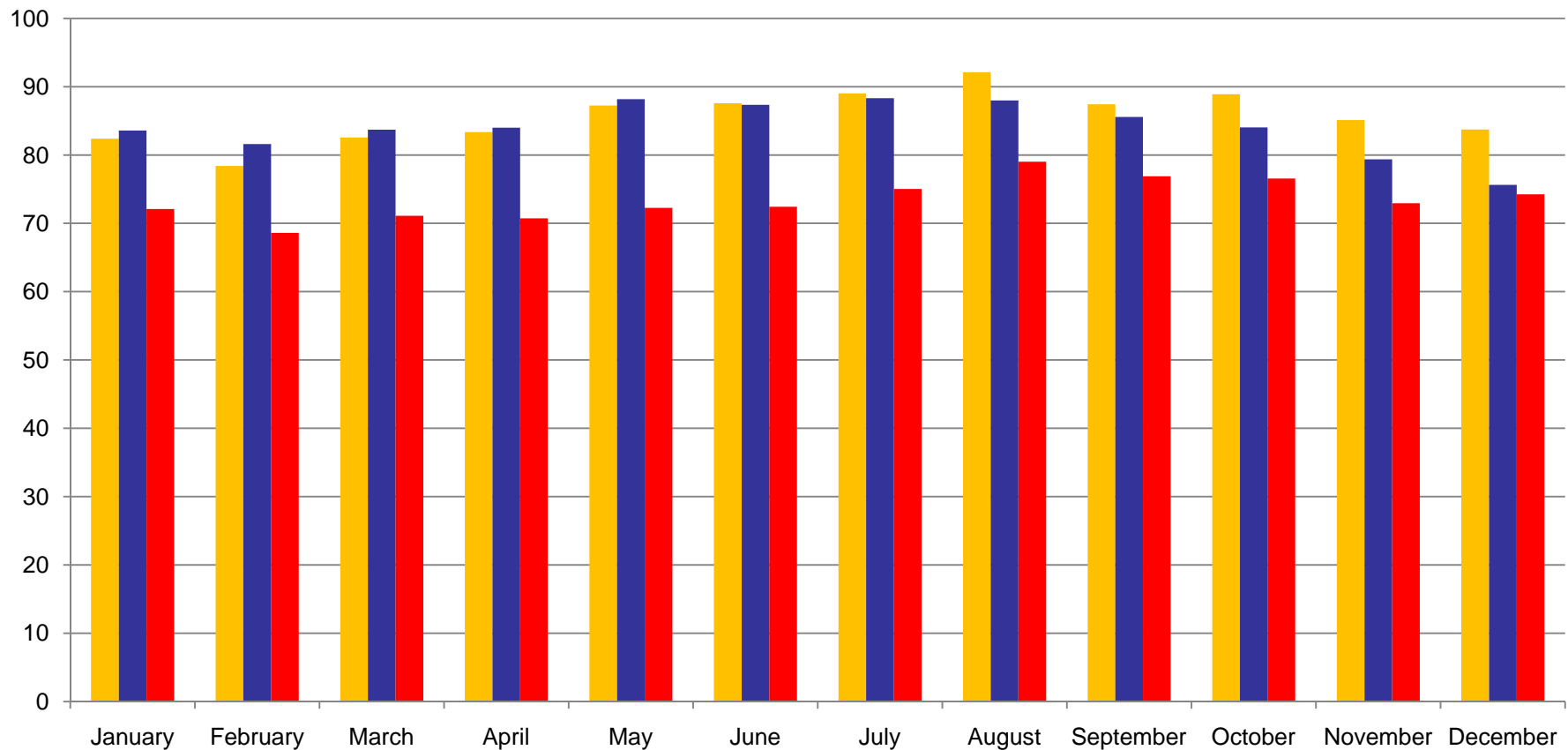


Annual Change in U.S. Electricity Sales

- | | | | |
|---------------|--------|--------------|-------|
| • Industrial | | • Commercial | |
| – 2007-08 | -1.8% | – 2007-08 | 0% |
| – 2008-09 | -12.6% | – 2008-09 | -1.0% |
| • Residential | | • Total | |
| – 2007-08 | -0.9% | – 2007-08 | -0.8% |
| – 2008-09 | -1.2% | – 2008-09 | -4.2% |

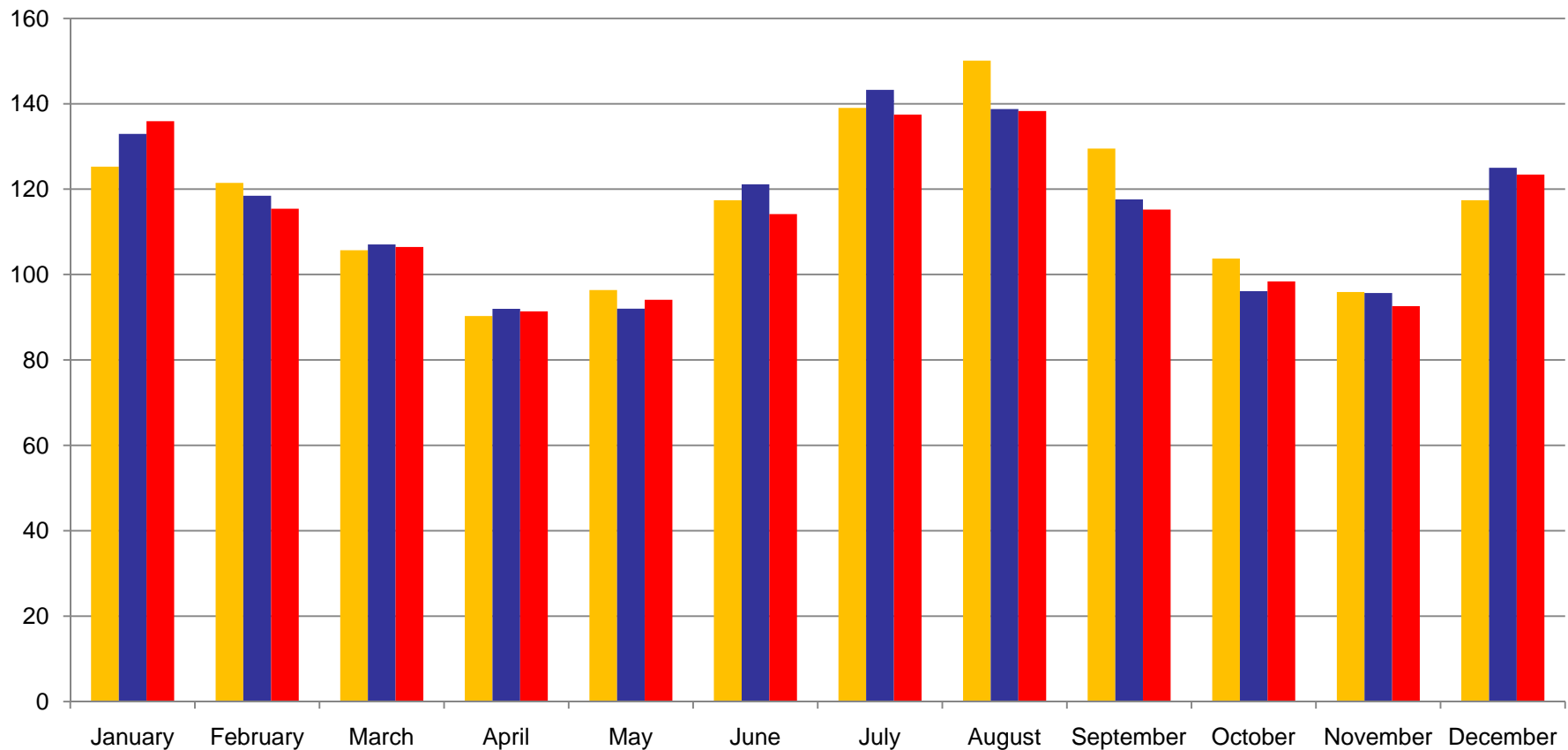
U.S. Retail Industrial Electricity Sales (TWh)

■ 2007 ■ 2008 ■ 2009



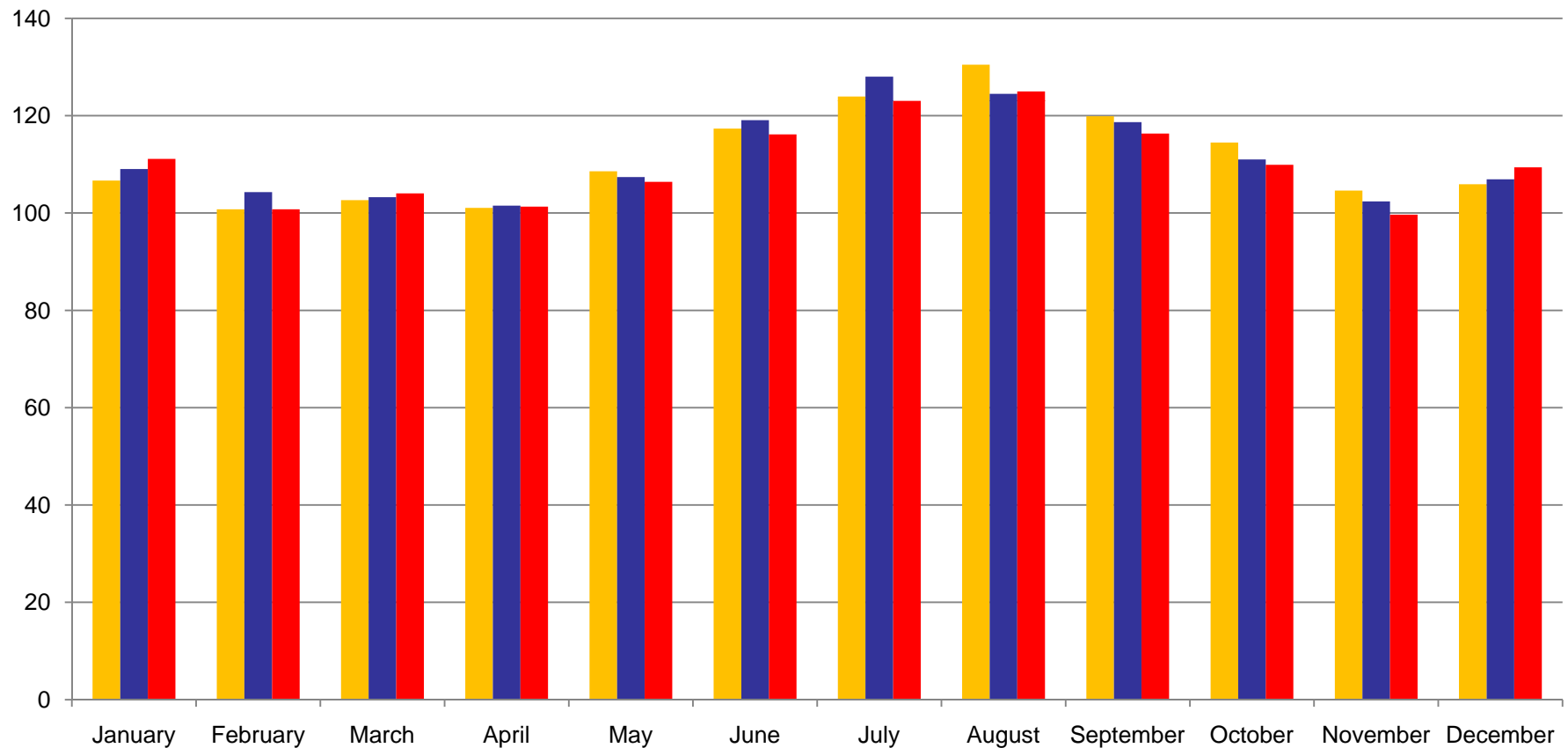
U.S. Retail Residential Electricity Sales (TWh)

2007 2008 2009



U.S. Retail Commercial Electricity Sales (TWh)

■ 2007 ■ 2008 ■ 2009



EIA May Short-Term Outlook

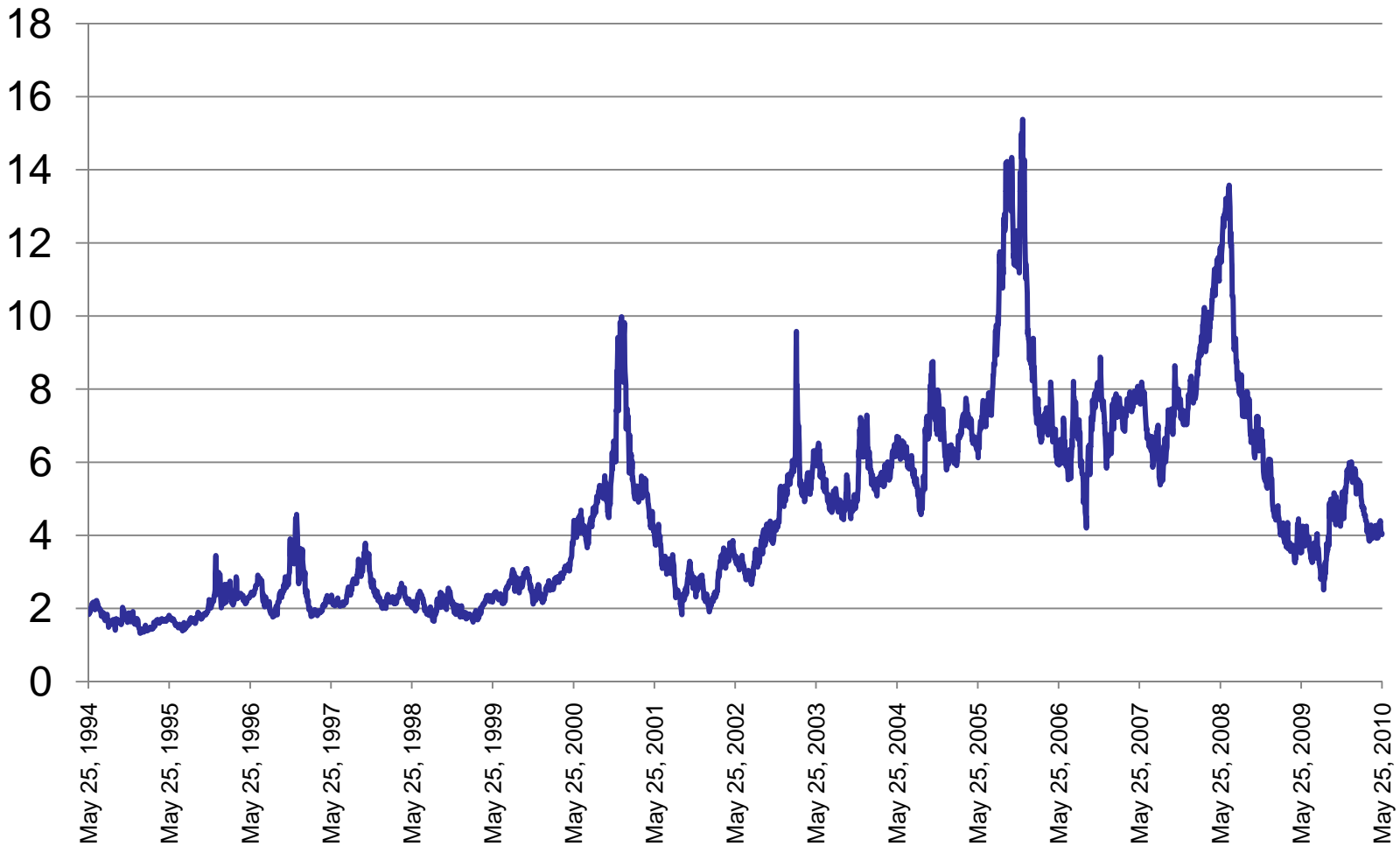
- U.S. industrial electricity sales increased by an estimated 2.7% in the 1st quarter of 2010 relative to the 1st quarter of 2009
 - first year-to-year increase since 2008

EIA May Short-Term Outlook

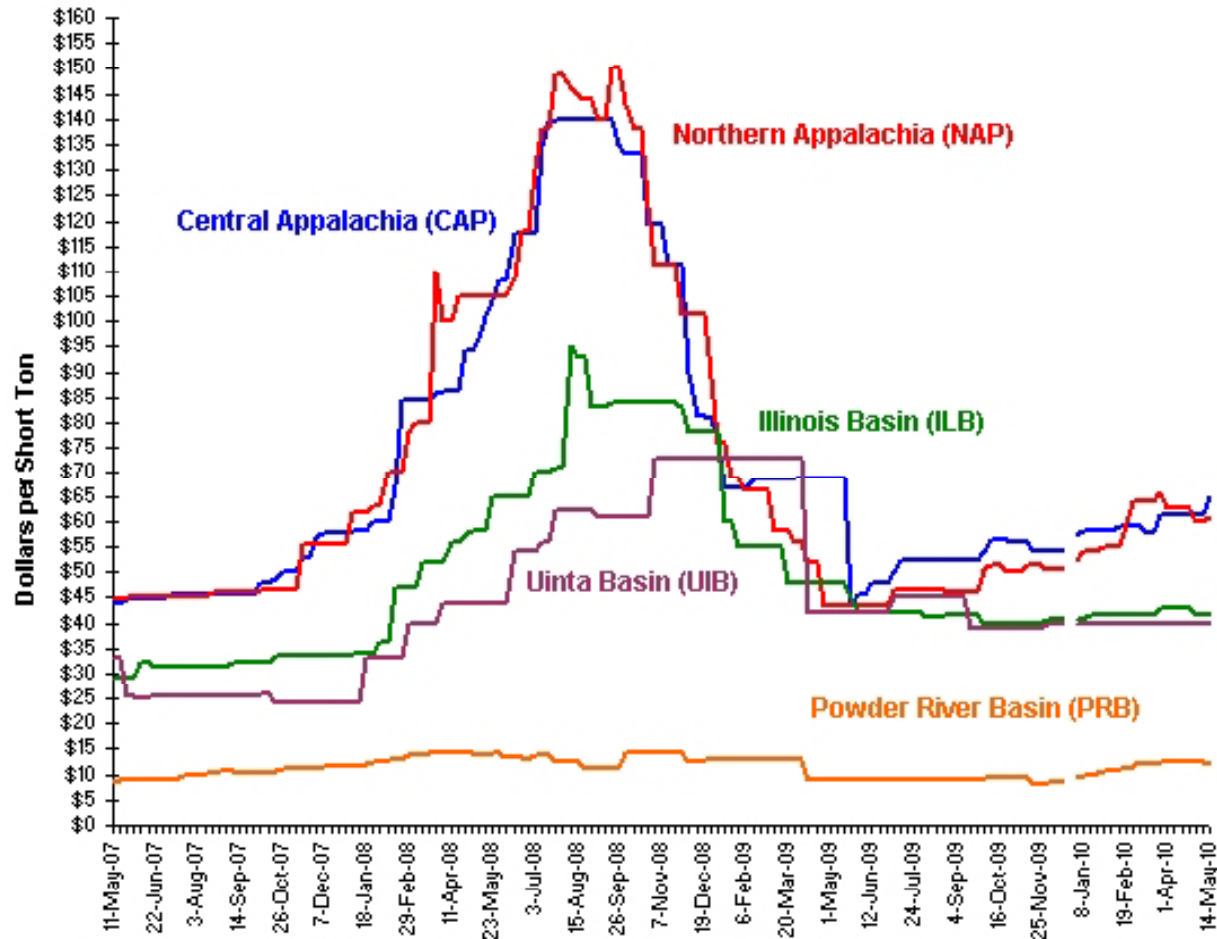
- EIA projects U.S. total electricity consumption to increase by 2.7% in 2010 and again by 1.3% in 2011
 - note: sales and consumption are not interchangeable, but they do tend to follow each other closely

Fossil Fuels

Natural Gas Futures (\$/mmBtu)



Coal Spot Price (from EIA)



Key to Coal Commodities by Region

<u>Central Appalachia:</u>	Big Sandy/Kanawha 12,500 Btu, 1.2 lb SO ₂ /mmBtu	<u>Powder River Basin:</u>	8,800 Btu, 0.8 lb SO ₂ /mmBtu
<u>Northern Appalachia:</u>	Pittsburgh Seam 13,000 Btu, <3.0 lb SO ₂ /mmBtu	<u>Uinta Basin in Colo.:</u>	11,700 Btu, 0.8 lb SO ₂ /mmBtu
<u>Illinois Basin:</u>	11,800 Btu, 5.0 lb SO ₂ /mmBtu		

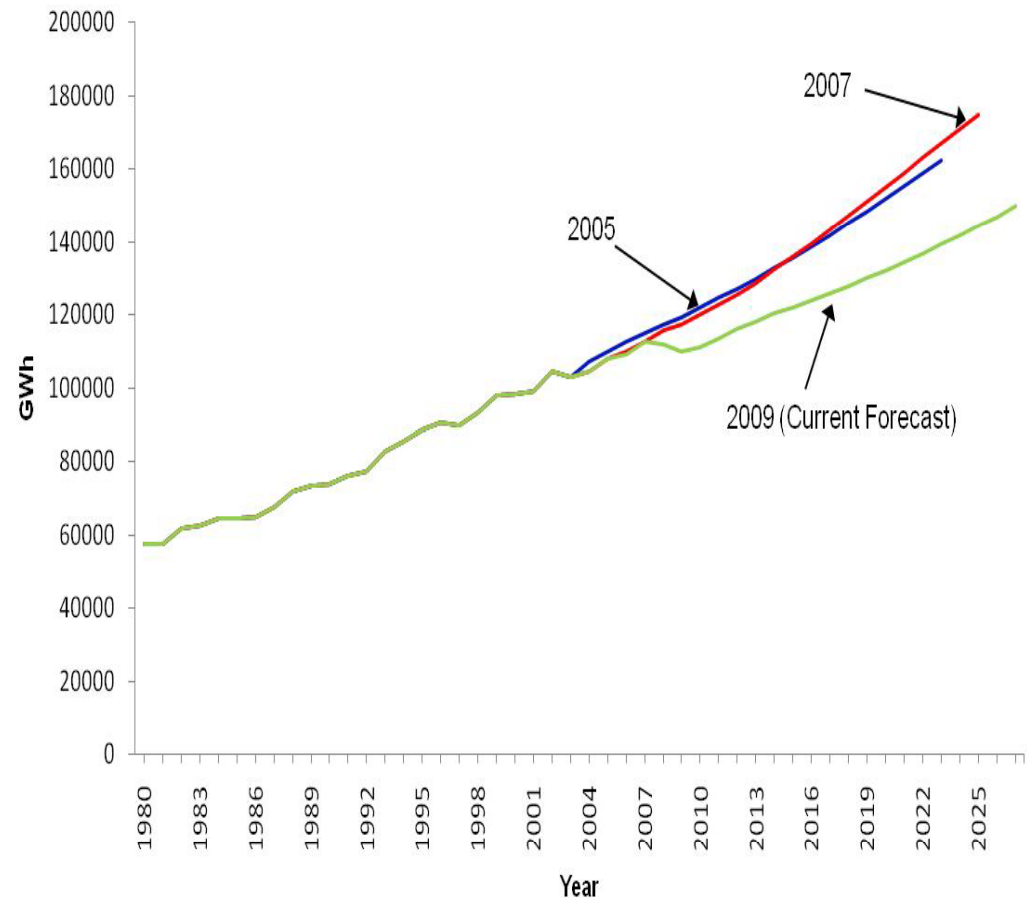
Environmental Uncertainty

- SO₂
- NO_x
- CO₂
- Mercury
- Particulates
- Coal ash
- Water

SUFG 2009 Forecast

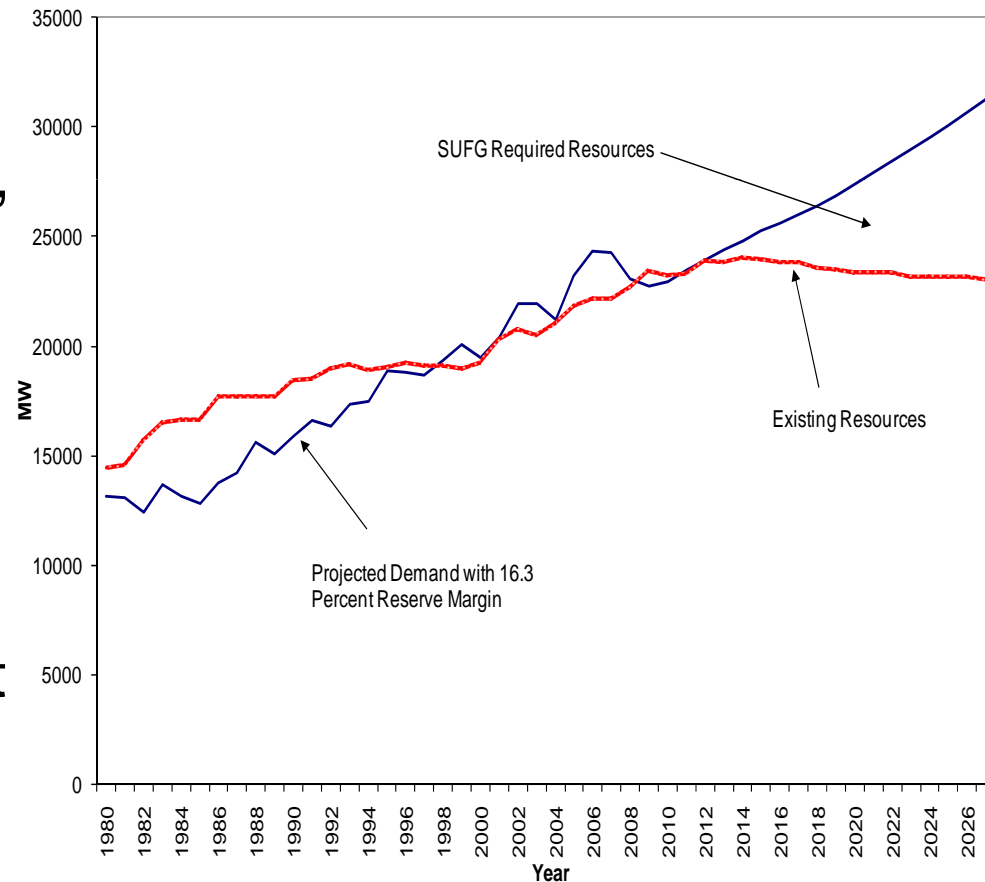
Indiana Electricity Requirements

- Retail sales by investor owned and not-for-profit utilities
- Includes estimated transmission and distribution losses
- Growth rates
 - 2009 forecast: 1.55%
 - 2007 forecast: 2.46%
 - 2005 forecast: 2.22%



Indiana Resource Requirements

- Resources may be provided by conservation measures, contractual purchases, purchases of existing assets, or new construction
- Existing resources are adjusted into the future for retirements, contract expirations, and IURC approved new resources



Indiana Resource Requirements

	Uncontrolled Peak Demand ¹	Interruptible	Net Peak Demand ²	Existing/Approved Capacity ³	Incremental Change in Capacity ⁴	Projected Additional Resource Requirements ⁵				Total Resources ⁶	Reserve Margin
						Peaking	Cycling	Baseload	Total		
2007				22,129							
2008	20,687	855	19,832	22,656	527	110	200	220	530	23,186	17
2009	20,394	864	19,530	23,417	762	0	0	10	10	23,427	20
2010	20,611	870	19,741	23,208	-209	10	0	0	10	23,218	18
2011	21,036	880	20,156	23,275	66	170	20	90	280	23,555	17
2012	21,481	884	20,597	23,874	599	280	40	130	450	24,324	18
2013	21,860	894	20,966	23,774	-100	350	120	260	730	24,504	17
2014	22,252	911	21,341	24,036	262	420	150	380	950	24,986	17
2015	22,623	928	21,695	23,918	-118	480	300	540	1,320	25,238	16
2016	22,962	944	22,018	23,796	-122	610	400	780	1,790	25,586	16
2017	23,298	957	22,341	23,796	0	730	460	990	2,180	25,976	16
2018	23,650	971	22,679	23,509	-287	810	750	1,300	2,860	26,369	16
2019	24,046	971	23,075	23,475	-34	980	830	1,550	3,360	26,835	16
2020	24,521	971	23,550	23,320	-155	1,300	920	1,830	4,050	27,370	16
2021	24,963	971	23,992	23,316	-4	1,410	990	2,180	4,580	27,896	16
2022	25,421	971	24,450	23,326	10	1,560	1,050	2,510	5,120	28,446	16
2023	25,875	971	24,904	23,166	-160	1,690	1,260	2,830	5,780	28,946	16
2024	26,360	971	25,389	23,166	0	1,920	1,360	3,090	6,370	29,536	16
2025	26,839	971	25,868	23,158	-8	2,040	1,420	3,450	6,910	30,068	16
2026	27,325	971	26,354	23,141	-18	2,090	1,460	3,960	7,510	30,651	16
2027	27,844	971	26,873	22,991	-150	2,340	1,530	4,360	8,230	31,221	16

1 Uncontrolled peak demand is the peak demand without any interruptible loads being called upon.

2 Net peak demand is the peak demand after interruptible loads are taken into account.

3 Existing/approved capacity includes installed capacity plus approved new capacity plus firm purchases minus firm sales.

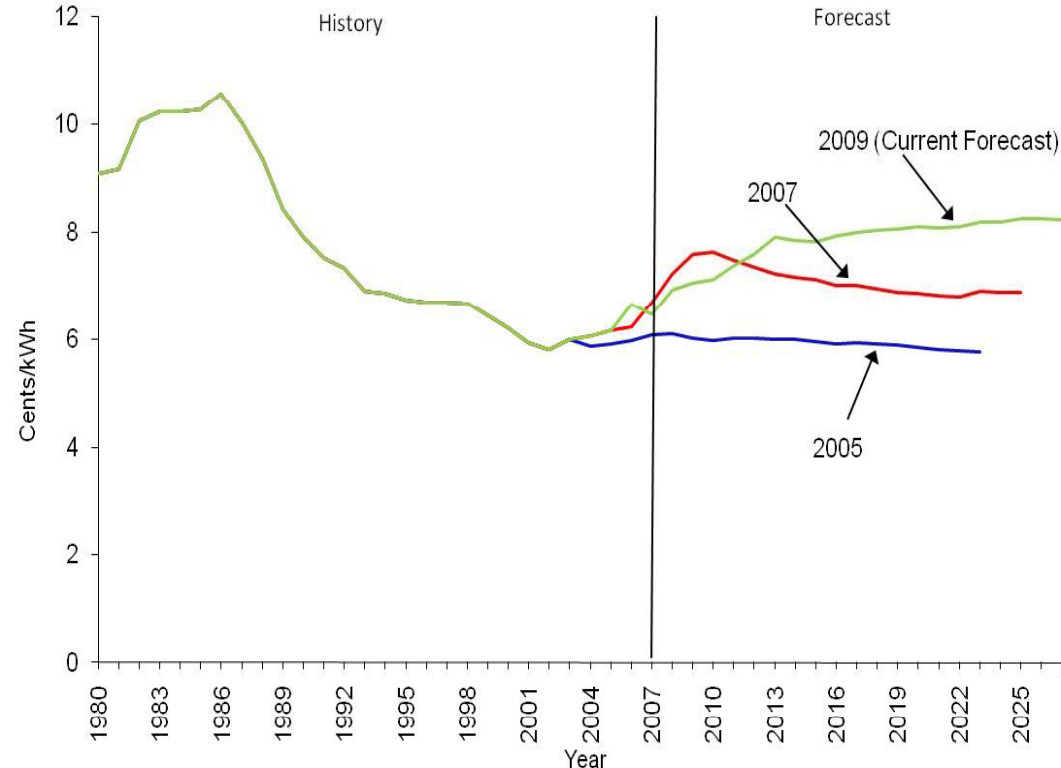
4 Incremental change in capacity is the change in existing/approved capacity from the previous year. The change is due to new, approved capacity becoming operational, retirements of existing capacity, and changes in firm purchases and sales.

5 Projected additional resource requirements is the cumulative amount of additional resources needed to meet future requirements

6 Total resource requirements are the total statewide resources required including existing/approved capacity and projected additional resource requirements.

Indiana Real Price Projections (2007 \$)

- Effect of inflation removed
- Includes the cost of meeting CAIR
- Includes the cost of new resources
- Does not include CO2 restrictions or RPS



Further Information

- State Utility Forecasting Group
 - <http://www.purdue.edu/dp/energy/SUFG/>
- Energy Information Administration
 - <http://www.eia.doe.gov/>
- Bureau of Economic Analysis
 - <http://www.bea.gov/>
- Bureau of Labor Statistics
 - <http://www.bls.gov/>