

Indiana Energy Status: A View from 30,000 Feet

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The View from 30,000 Feet



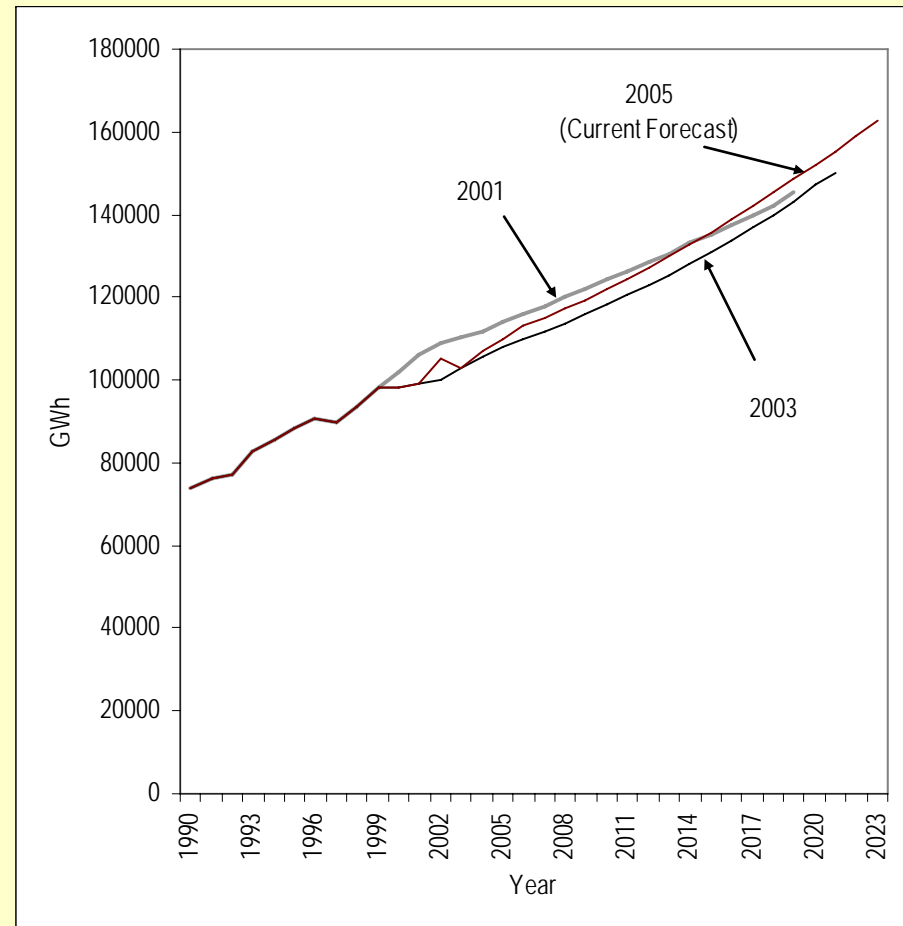
Source: U. S. Geological Survey

Topics

- Current SUFG Forecast (2005)
 - Indiana electricity requirements
 - Indiana peak demand projections
 - Indiana resource requirements
 - Alternative scenarios
 - Indiana real price projections
- Growth in Electricity Use
- Reserves
- Potential Resources
- Natural Gas

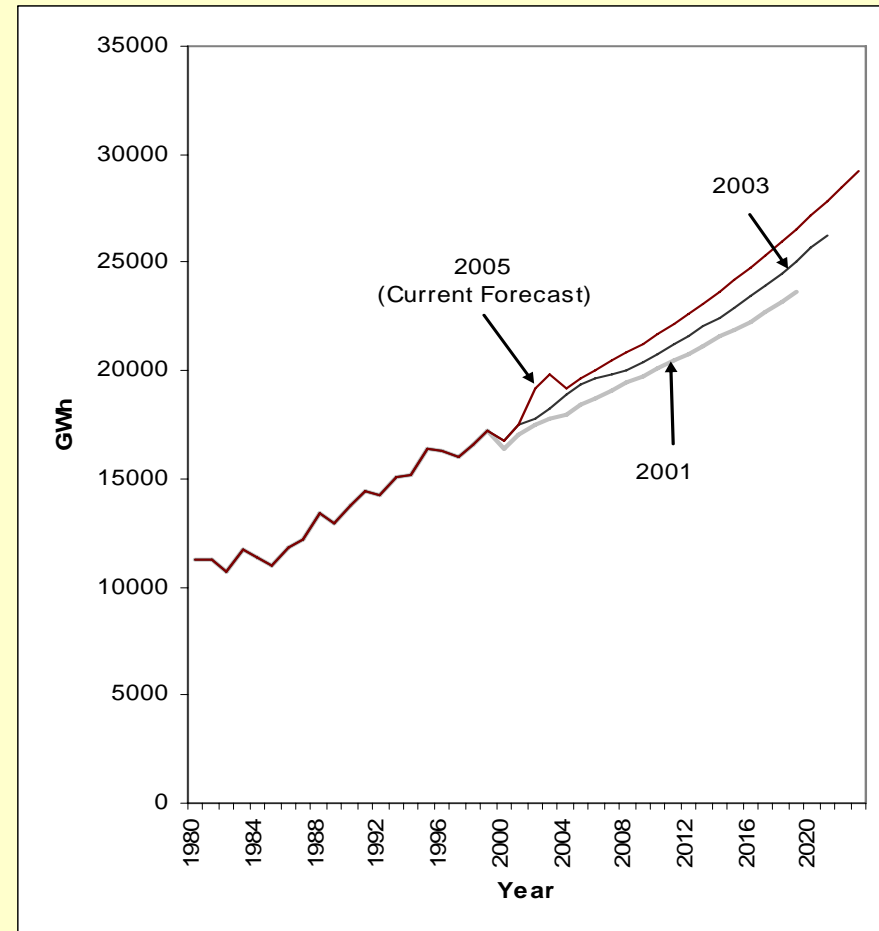
Indiana Electricity Requirements

- Retail sales by investor owned and not for profit utilities
- Includes estimated transmission and distribution losses
- Growth rates
 - 2005 forecast: 2.22%
 - 2003 forecast: 2.16%



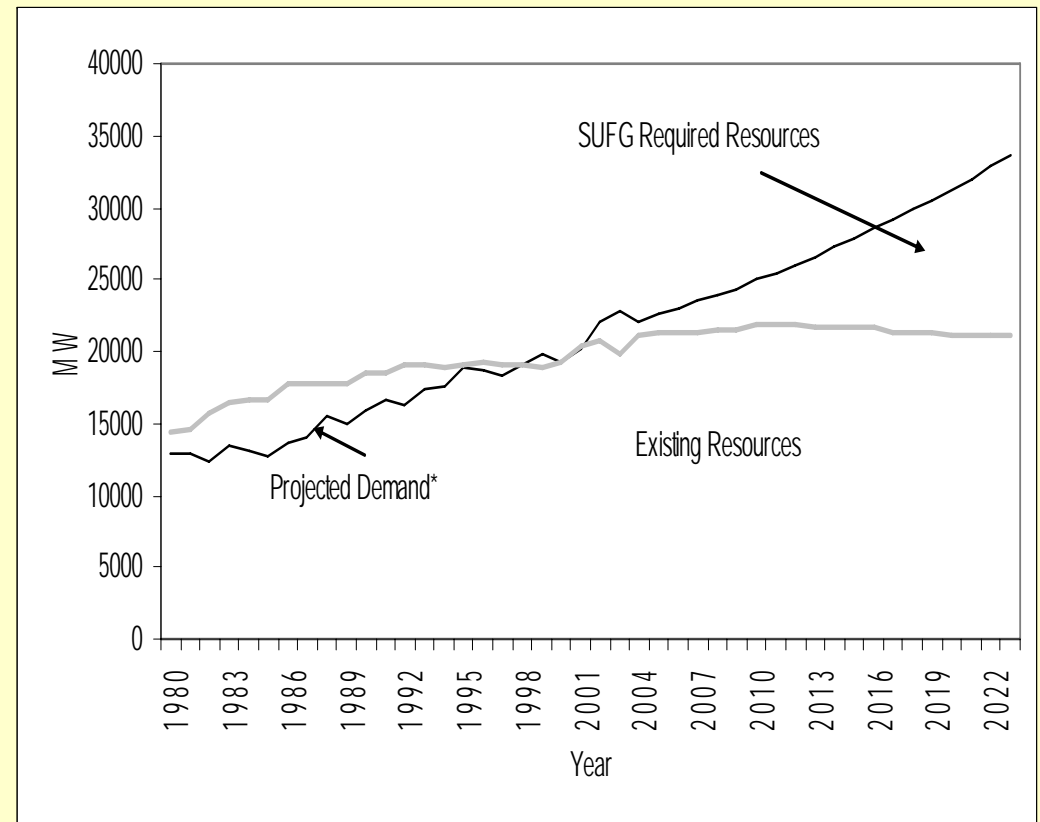
Indiana Peak Demand Projections

- Peak demand is net of DSM and interruptible loads
- Growth rates
 - 2005 forecast: 2.24%
 - 2003 forecast: 2.07%



Indiana Resource Requirements

- Resources may be provided by conservation measures, contractual purchases, purchases of existing assets, or new construction
- This forecast identifies a relatively balanced need for the three types of resources (peaking, cycling and baseload) in the short term



* Projected Demand includes 15% Reserve margin

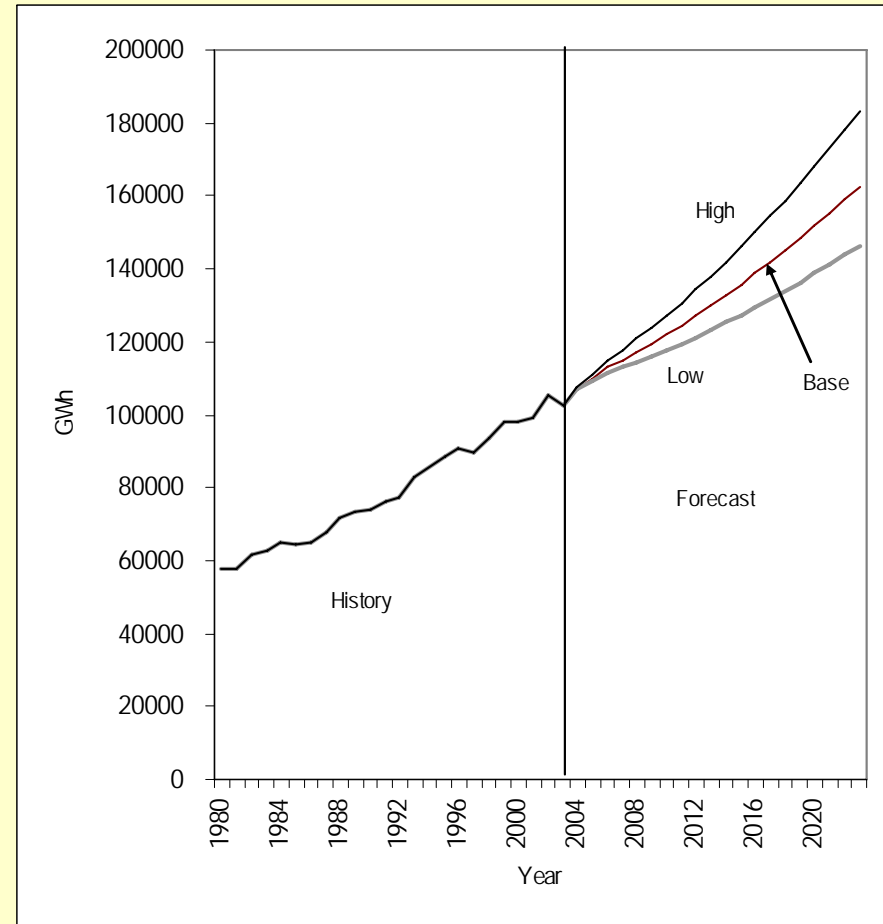
Indiana Resource Requirements

	Uncontrolled Peak Demand	Interruptible	Net Peak Demand	Existing/ Approved Capacity	Incremental Change in Capacity	Projected Additional Resource Requirements				Total Resources	Reserve Margin
						Peaking	Cycling	Baseload	Total		
2003				19839							
2004	19917	750	19167	21058	1219	240	410	320	970	22028	15
2005	20361	761	19599	21355	296	410	470	450	1330	22685	16
2006	20833	781	20052	21345	-10	490	670	600	1760	23105	15
2007	21278	792	20486	21278	-67	620	860	750	2230	23508	15
2008	21624	804	20820	21493	215	760	930	670	2360	23853	15
2009	22018	817	21201	21493	0	890	1050	880	2820	24313	15
2010	22541	829	21712	21934	441	860	1170	940	2970	24904	15
2011	23006	839	22167	21869	-65	930	1190	1420	3540	25409	15
2012	23474	853	22620	21804	-65	1060	1250	1810	4120	25924	15
2013	23984	863	23121	21704	-100	1300	1340	2140	4780	26484	15
2014	24543	876	23666	21704	0	1460	1430	2490	5380	27084	15
2015	25096	890	24206	21601	-103	1730	1520	2840	6090	27691	15
2016	25694	903	24790	21601	0	1910	1610	3220	6740	28341	15
2017	26276	913	25362	21260	-341	2150	1960	3600	7710	28970	15
2018	26882	928	25954	21260	0	2330	2030	4030	8390	29650	15
2019	27512	938	26574	21260	0	2430	2110	4520	9060	30320	15
2020	28163	952	27211	21097	-163	2730	2180	5030	9940	31037	15
2021	28819	963	27855	21097	0	2860	2250	5540	10650	31747	15
2022	29503	977	28526	21044	-53	3090	2340	6030	11460	32504	15
2023	30185	989	29196	21044	0	3240	2420	6560	12220	33264	15

- 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.

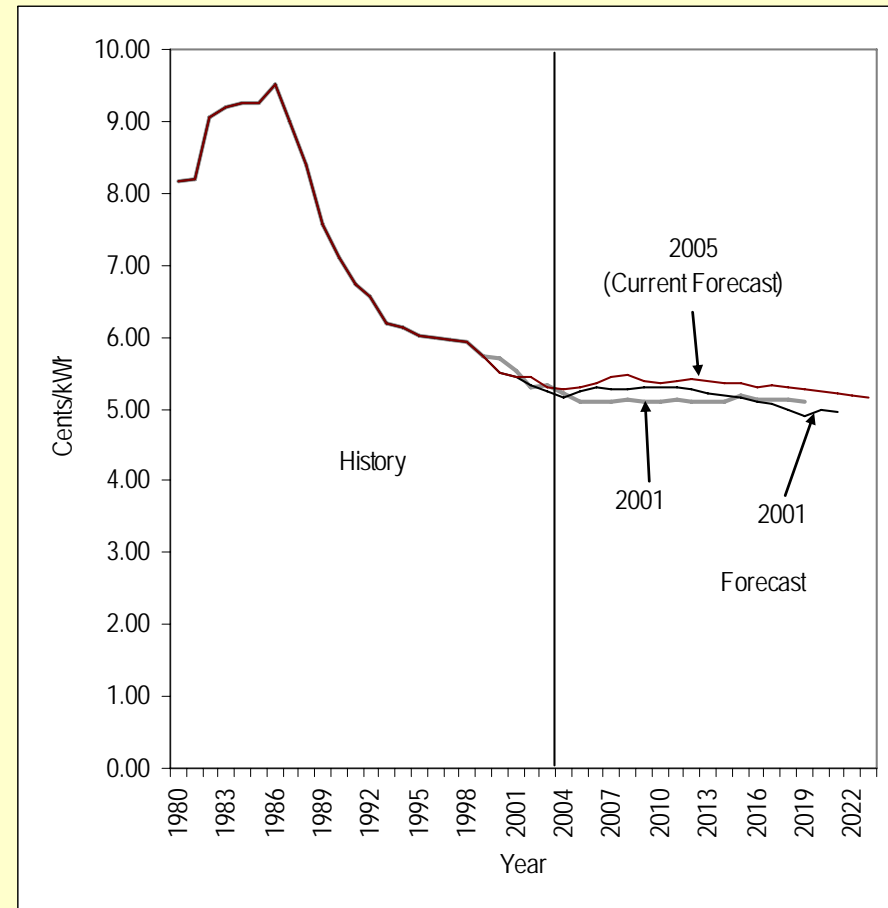
Alternative Scenarios

- Any forecast contains uncertainty
- CEMR provides alternative low and high growth econometric forecasts
- Low and high growth scenarios are intended to give a plausible bound to uncertainty



Indiana Real Price Projections (2003 \$)

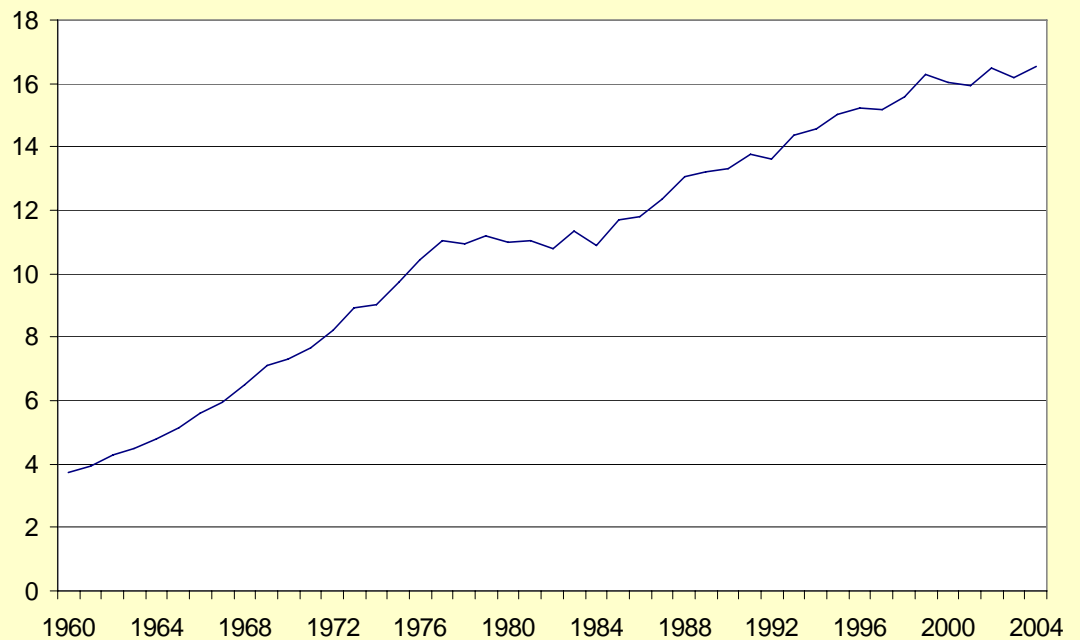
- Effect of inflation removed
- 2005 forecast did not include cost of CAIR and mercury
 - CAIR (5 to 8.5 percent price increase over 2005 base case)
 - Mercury (6 to 15 percent price increase over 2005 base case)
- Does include the cost of new resources



Growth in Electricity Use

- Historically, electricity use has grown much faster than population
- Per capita sales growth
 - 1960 to 2004: 3.4%
 - 1984 to 2004: 2.1%
- Growth occurs in all 3 customer sectors

Total Electricity Sales (MWh/year per capita)



Sources: U. S. Census Bureau and
Energy Information Administration

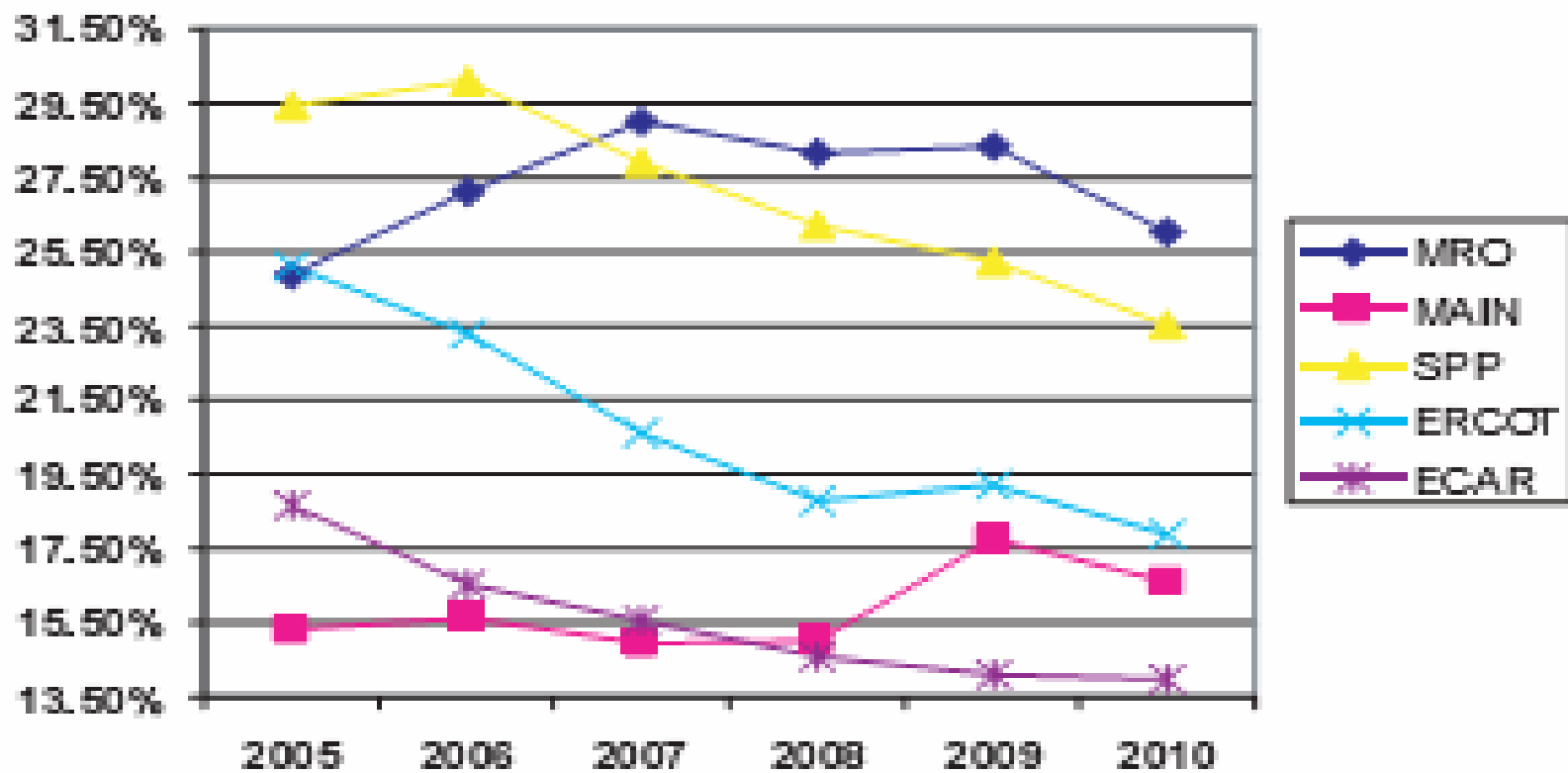
Economic Development

- Recent announcements
 - Toyota adds production at Lafayette SIA plant
 - New Honda plant near Greensburg
 - Several new ethanol production facilities
- Suppliers will increase production and the suppliers' suppliers will increase production
 - e.g., an increase in automobiles may result in an increase in steel which may result in an increase in air separation

Economic Development, cont.

- The employees of these facilities will need places to live
 - Increase in consumption of residential electricity
- A number of these jobs are relatively high paying
 - Larger houses with more gadgets that consume energy
- The employees of these facilities will need places to shop, be entertained, and have their children educated
 - Increase in consumption of commercial electricity

Declining Reserve Margins



Source: Megawatt Daily, January 3, 2006

Impact of Reserves

- High reserves mean high electricity rates
 - See Indiana, circa 1985
- Low reserves mean greater risk
 - Subject to the whims of a volatile wholesale market
 - day ahead prices roughly tripled during the early August heat wave
 - Greater reliance on natural gas-fired generators
 - natural gas prices also went up during the heat wave
 - Reliability

Potential Resources

- Merchant facilities
 - Approximately 3,000 MW of natural gas-fired capacity, some of which is committed to Indiana utilities, some may be committed out-of-state
 - One new merchant plant petition to IURC since 2001 (Orion wind farm, 2006)
- Out-of-state
 - Declining regional reserve margins indicate that there is not a substantial amount of excess capacity in nearby states
 - Michigan PSC released a report last year indicating the state would need additional baseload capacity

Potential Resources, cont.

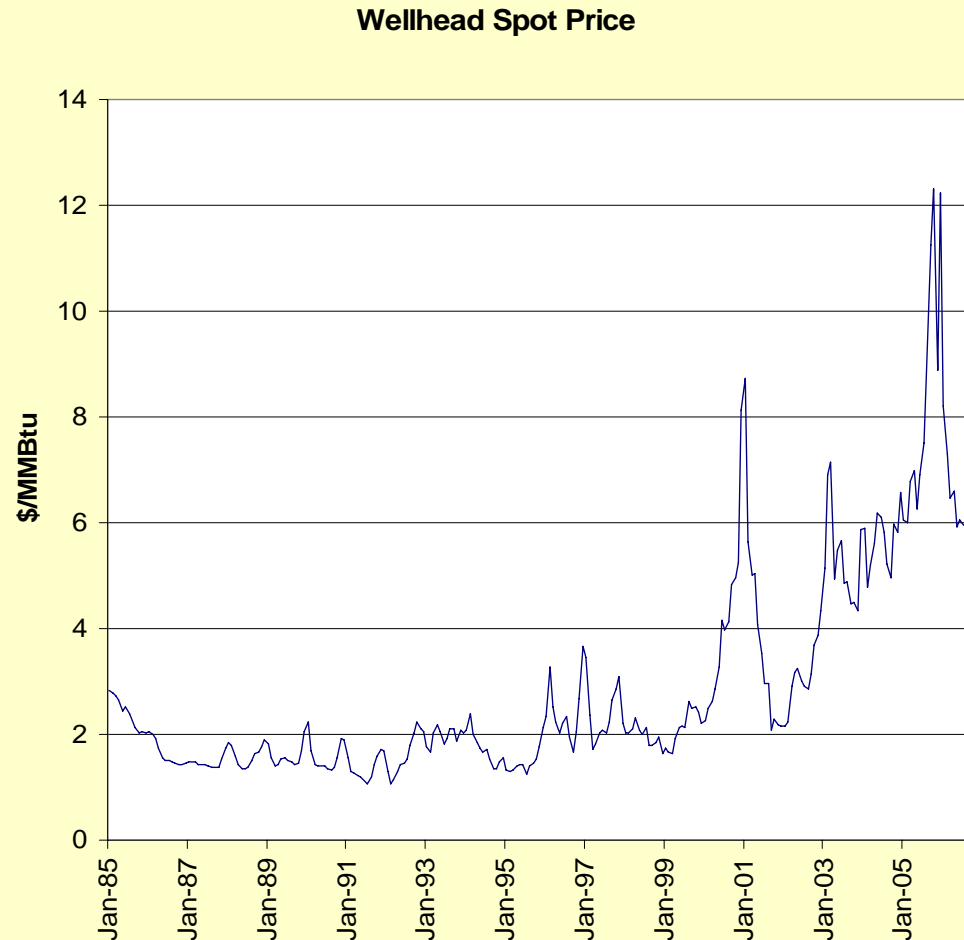
- New construction
 - Substantial time needed for environmental/regulatory permitting, engineering, and construction work
- Energy efficiency, conservation, DSM
 - Utility efforts over the past few years have focused on load shifting programs rather than efficiency gains (interruptible loads, direct load control, voluntary conservation calls)

Fuel Sources for New Resources

- Coal
 - Environmental permitting, construction time
- Natural gas
 - Fuel cost
- Nuclear
 - Permitting, public opposition, construction time
- Wind
 - Limited resource, intermittent supply
- Solar
 - Limited resource, cost, intermittent supply
- Biogas
 - Limited resource

Natural Gas Prices

- Natural gas prices have increased dramatically and become more volatile over the past decade



Source: Energy Information Administration

Natural Gas

- Indiana has little direct control of natural gas prices
- In 2004, according to EIA (billion cubic feet)
 - Indiana production 3
 - Indiana imports 2,402
 - Indiana exports 1,889
- Options for reducing exposure to high prices are limited
 - futures prices are high
 - increase production (syngas, biogas)
 - reduce consumption (efficiency)