

Indiana Energy Status

presented to

Indiana Chamber of Commerce
Conference on Energy Management

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presented by

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State Utility Forecasting Group

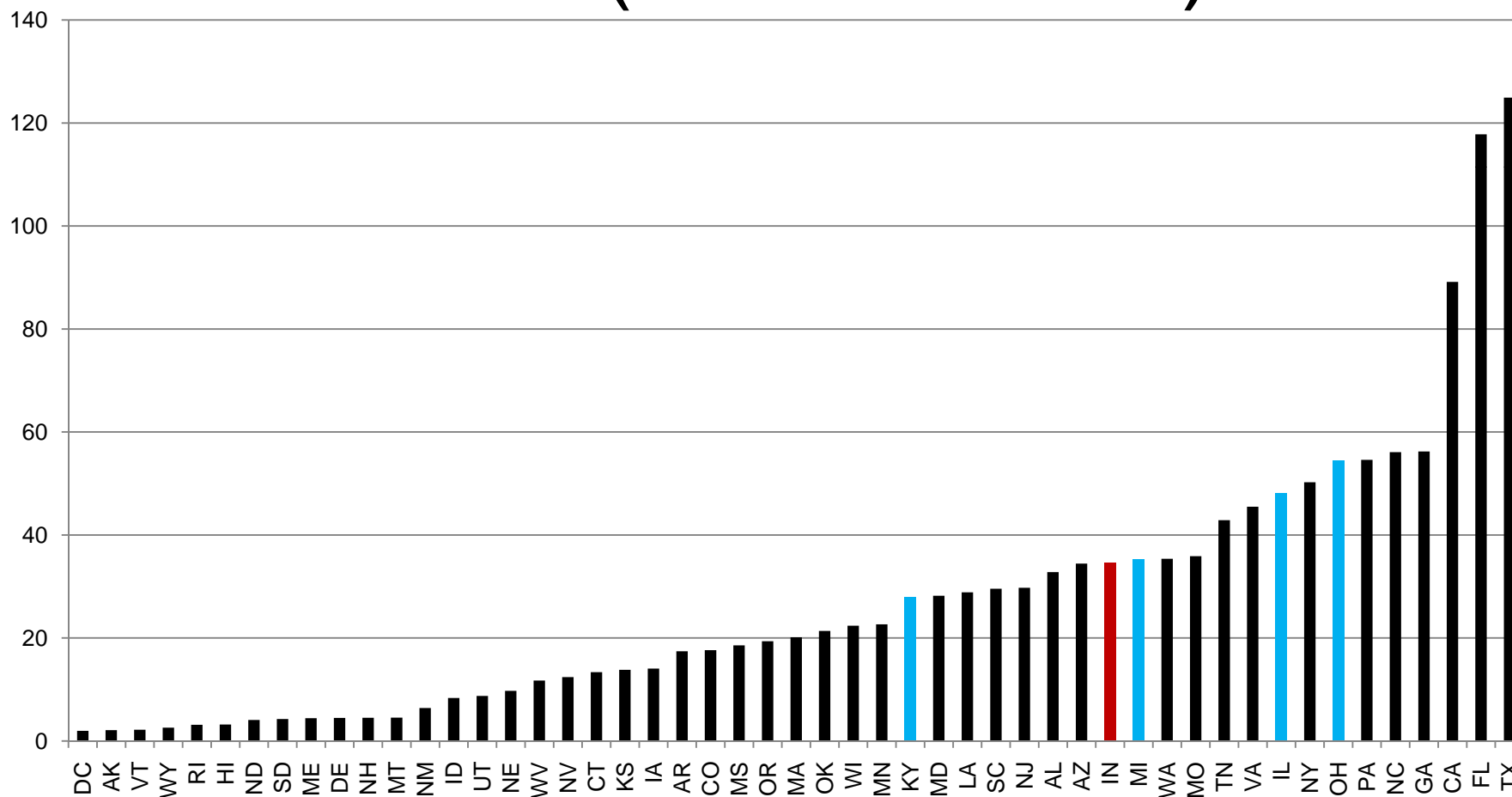
“It’s the economy, stupid”

- Attributed to James Carville during the 1992 presidential election campaign
- Applicable to Indiana’s current energy situation

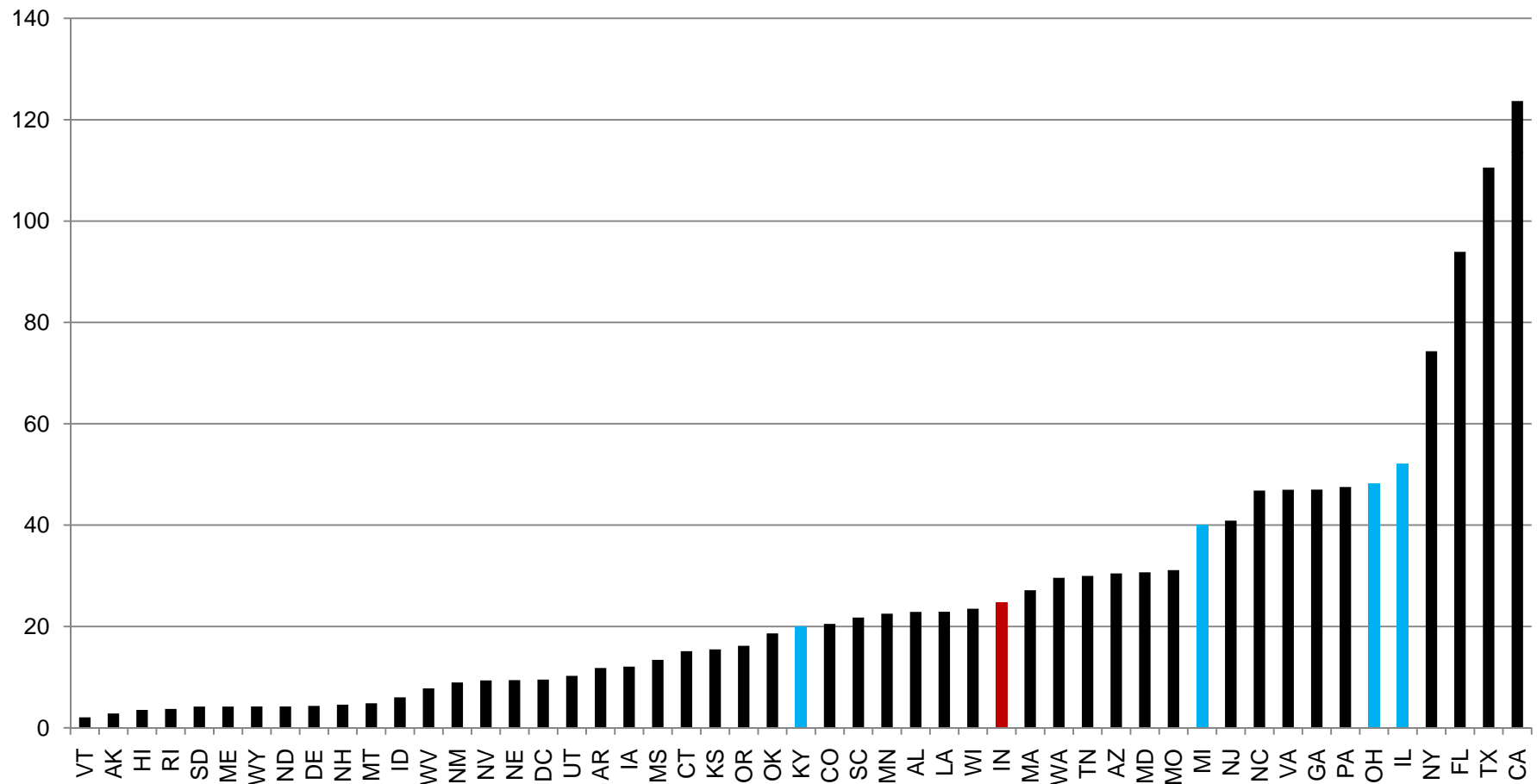
Indiana - an Industrial State

- In 2007, Indiana accounted for 2.9% of the nation's retail electricity sales
 - 11th most in the U.S.
- But Indiana accounted for 4.9% of the nation's industrial sector retail electricity sales
 - 4th most in the U.S.

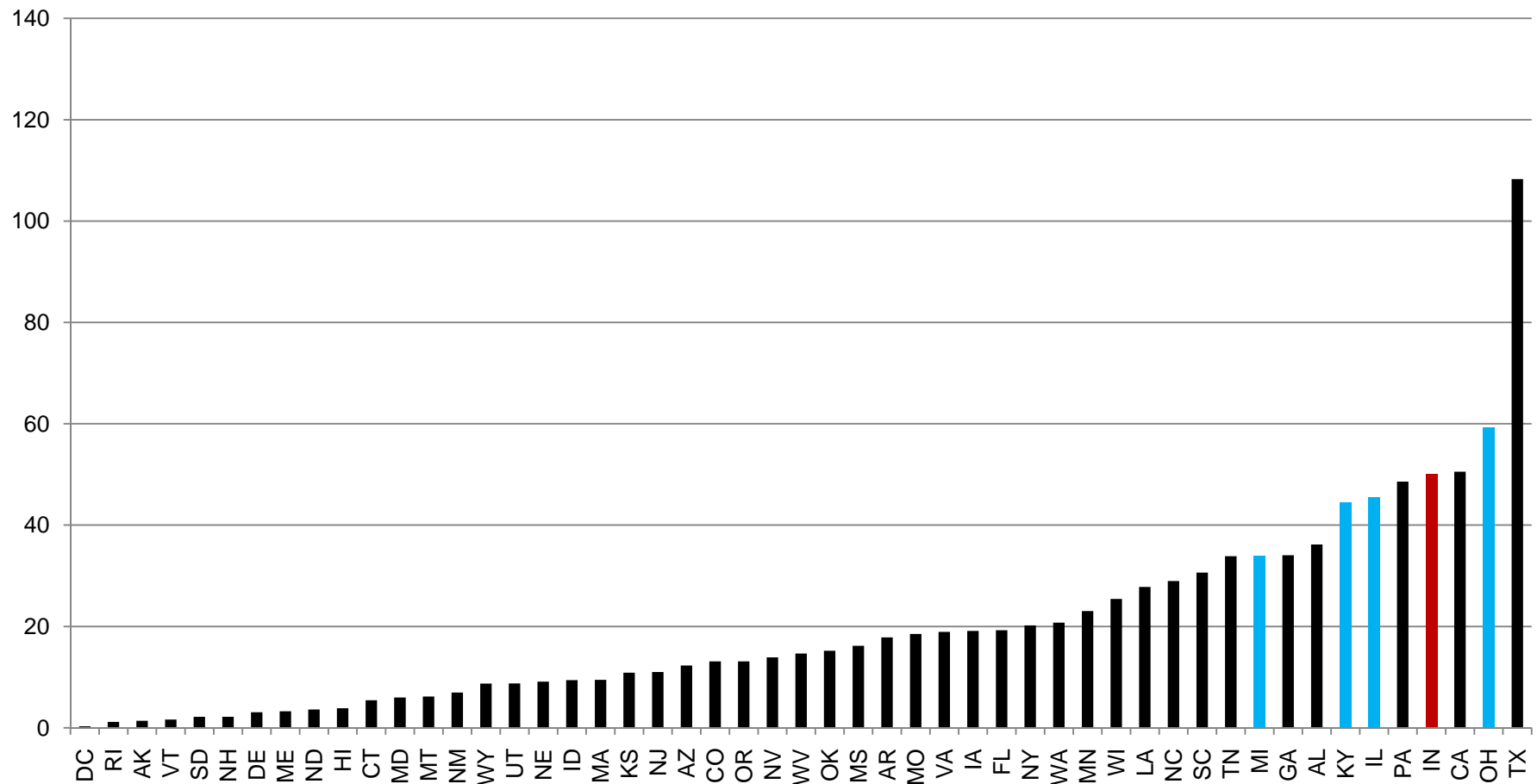
2007 Residential Electricity Sales (million MWh)



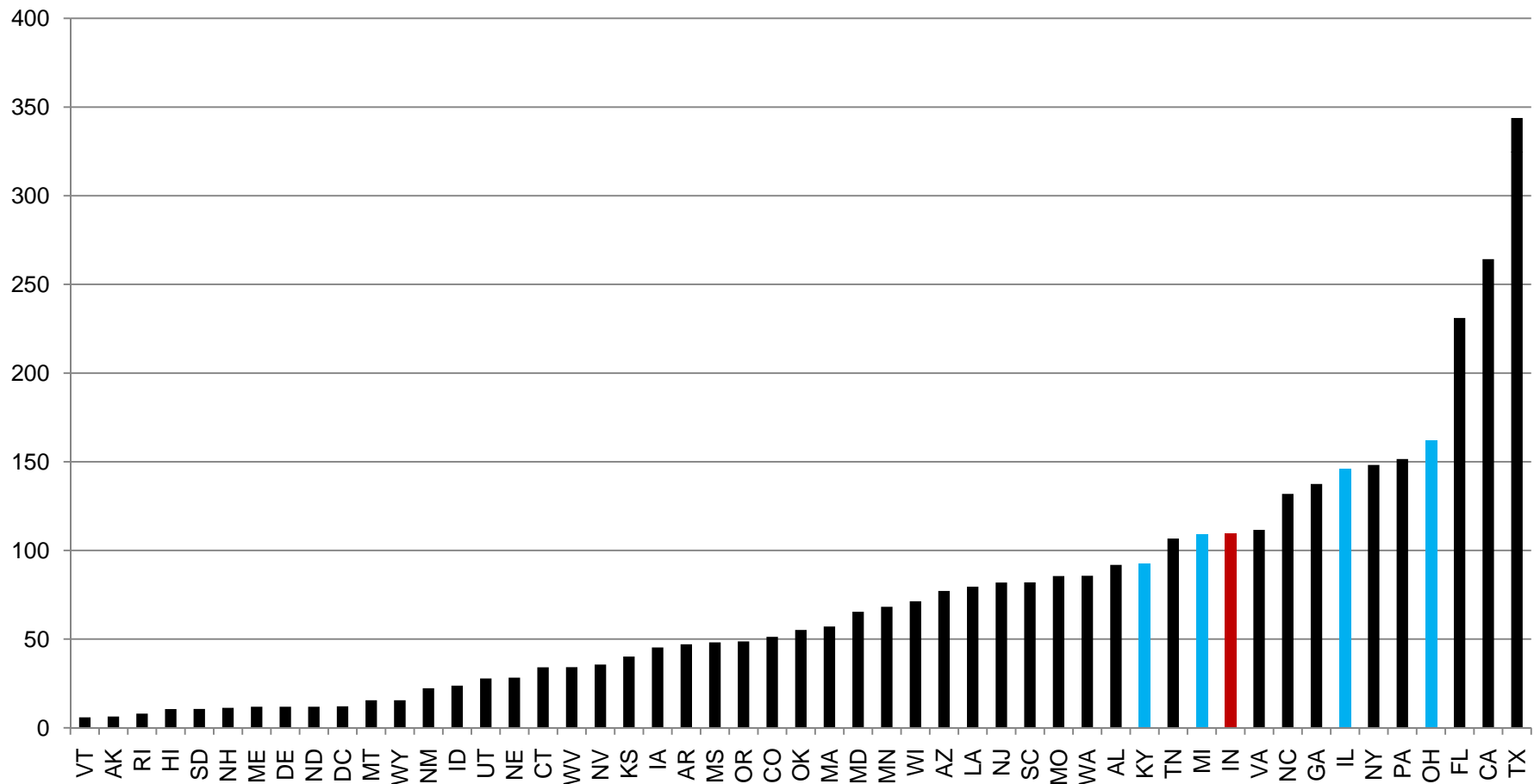
2007 Commercial Electricity Sales (million MWh)



2007 Industrial Electricity Sales (million MWh)



2007 Total Electricity Sales (million MWh)



Changes in Electricity Sales from 2007 to 2008

- Investor-owned utilities -3.0%
- Not-for-profit utilities +1.8%
- All utilities -2.0%

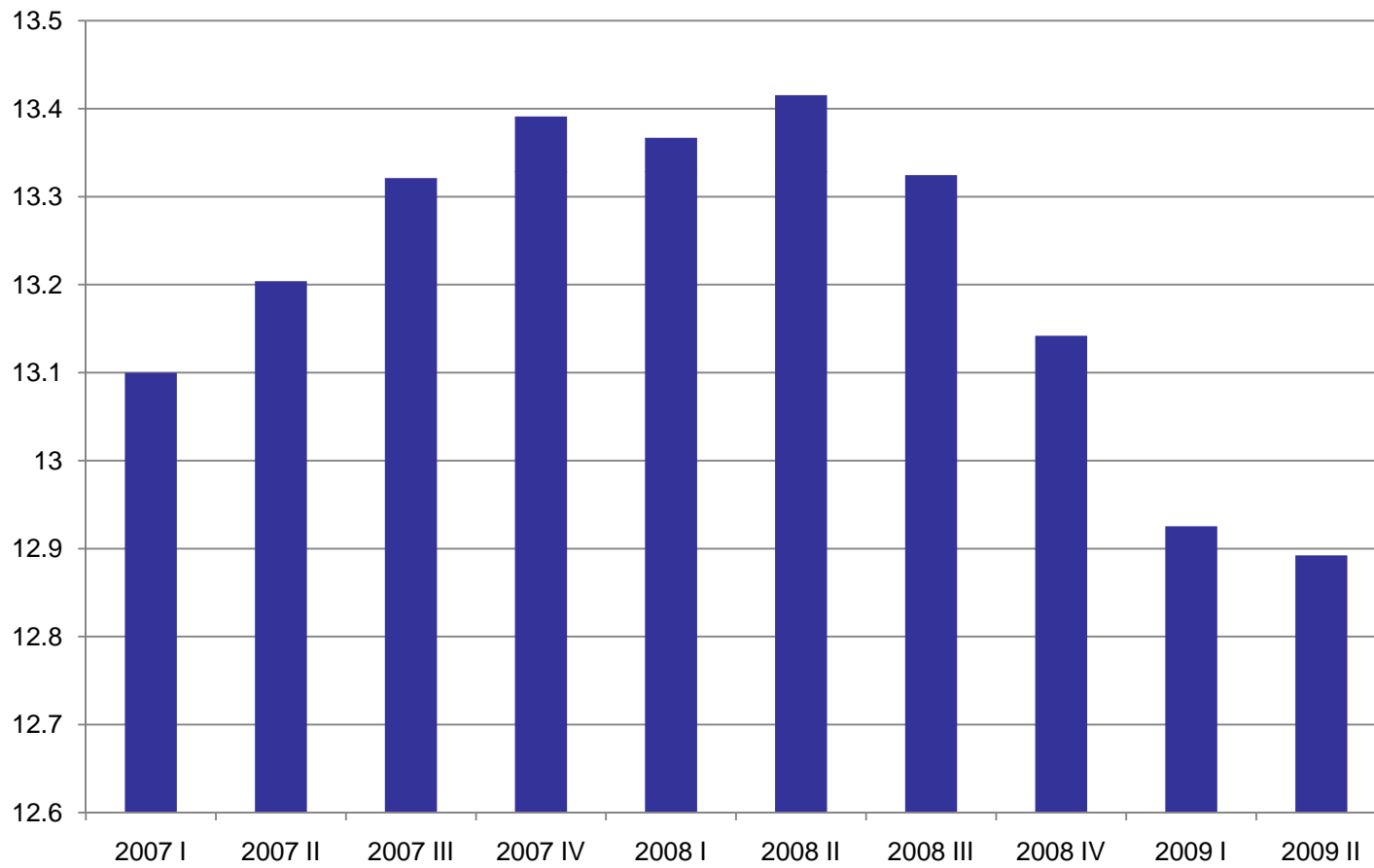
Was it the Economy?

- Indiana Gross Domestic Product dropped by 0.6% from 2007 to 2008
- But 2008 was an exceptionally cool summer, which reduces electricity demand
 - Cooling degree days in Indianapolis dropped by 30% from 2007

For the Investor-Owned Utilities:

- Residential electricity sales dropped by 2.4% from 2007 to 2008
 - More sensitive to weather than other sectors
- Commercial and industrial sales dropped by 3.3% from 2007 to 2008
 - More sensitive to economic factors than the residential sector

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



This Year – Effects are More Pronounced

- Economic impact largely confined to last quarter of 2008
- Economic impact will be felt across all 4 quarters of 2009
- The mild summer of 2008 has been repeated

Indiana's Reliance on Coal

- Relatively low electric rates
- Relatively high emissions of CO₂, NO_x, and SO₂
- Indiana's generation fleet is aging

Fuel Sources for Electric Power in 2007

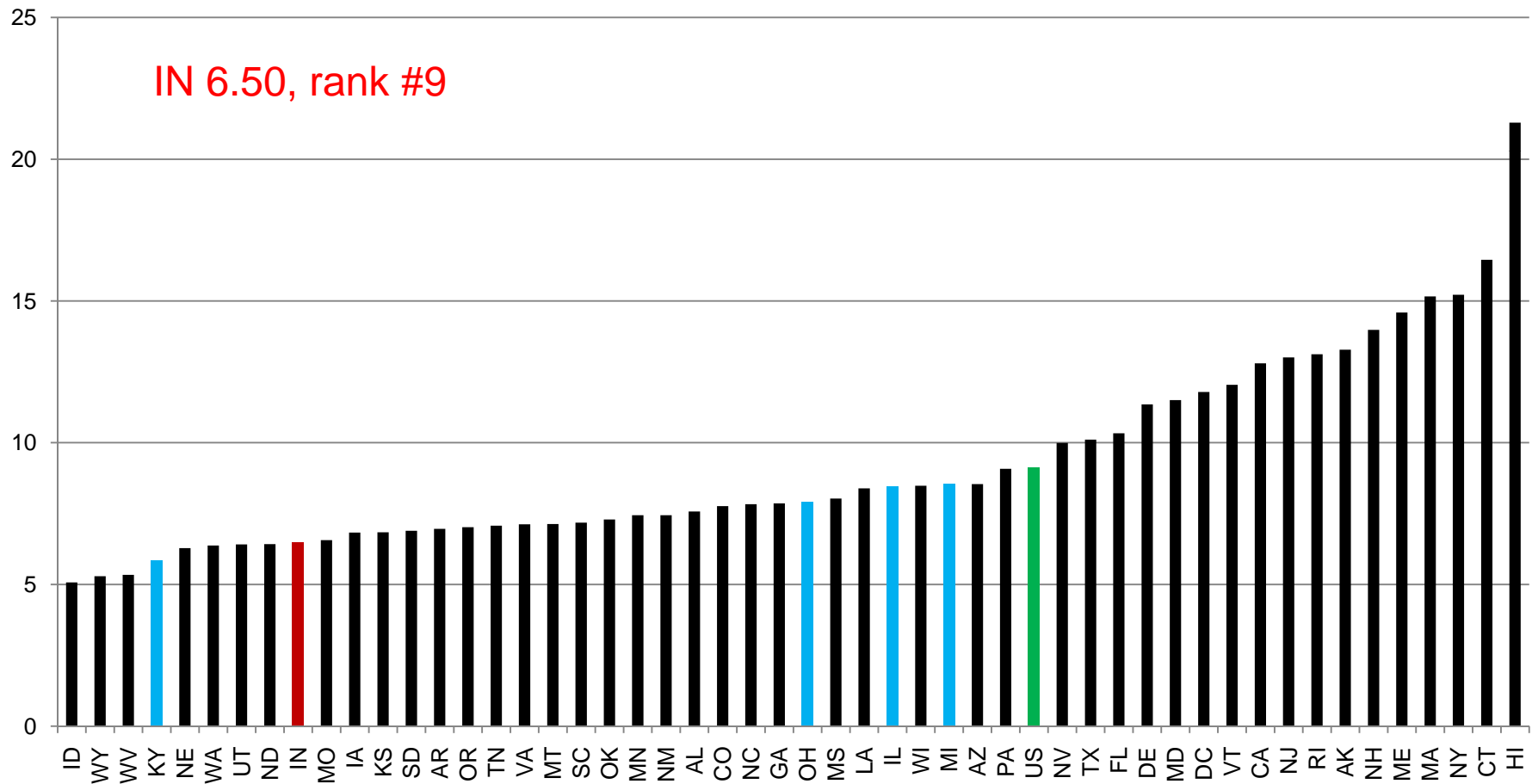
	United States	Indiana
Coal	49 %	94 %
Nuclear	19 %	0 %
Natural Gas	22 %	3 %
Petroleum	1.6 %	0.1 %
Renewables	8.5 %	0.5 %

- Indiana numbers do not include out-of-state generators that serve Indiana customers
 - Cook (nuclear) in Michigan
 - Madison (natural gas) in Ohio
 - Trimble County (coal) in Kentucky

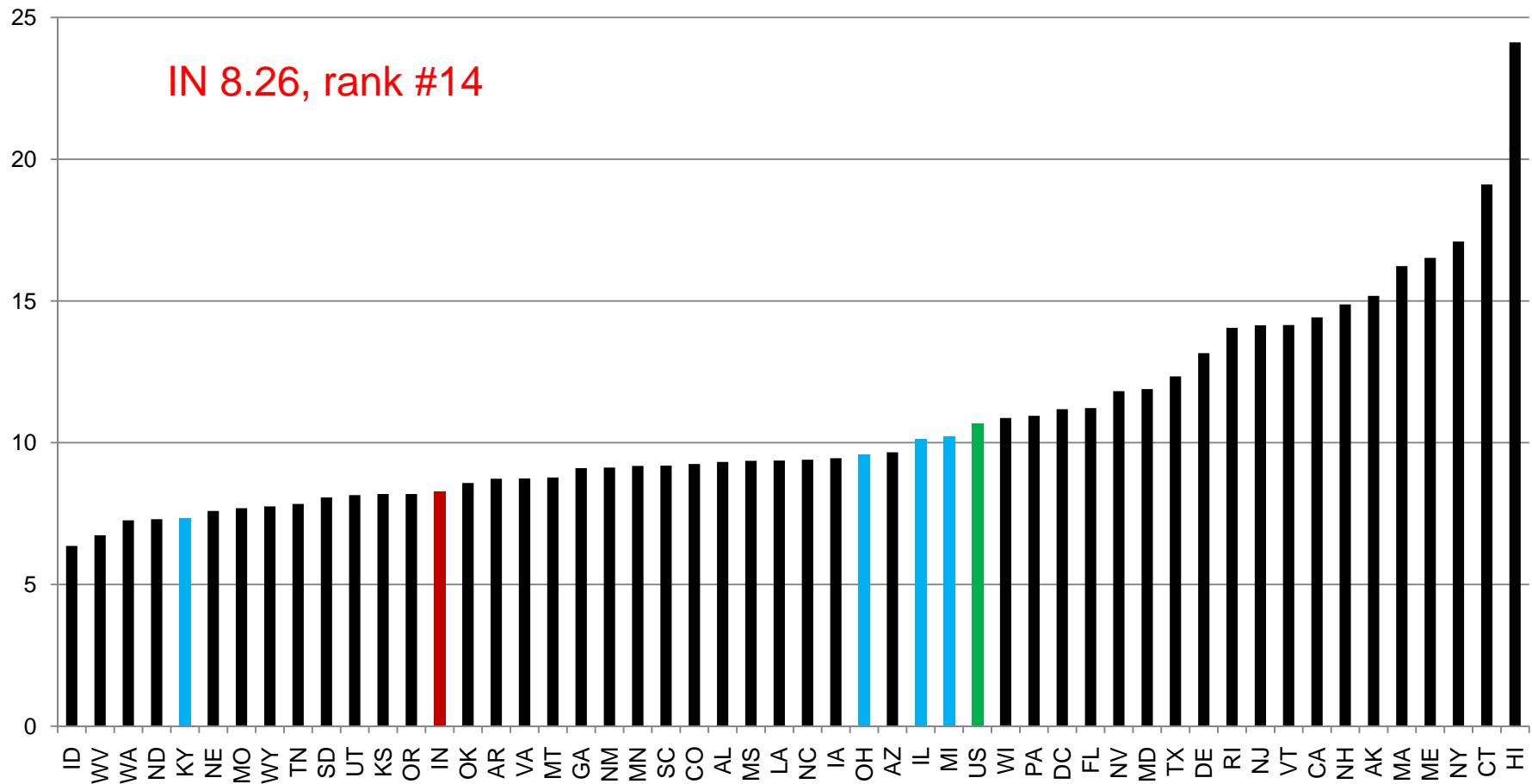
In 2007....

- Indiana produced 3.1 % of the electricity generated in the U.S.
- Indiana produced 6.1 % of the electricity generated from coal in the U.S.
- Indiana produced 0.4 % of the electricity generated from natural gas in the U.S.

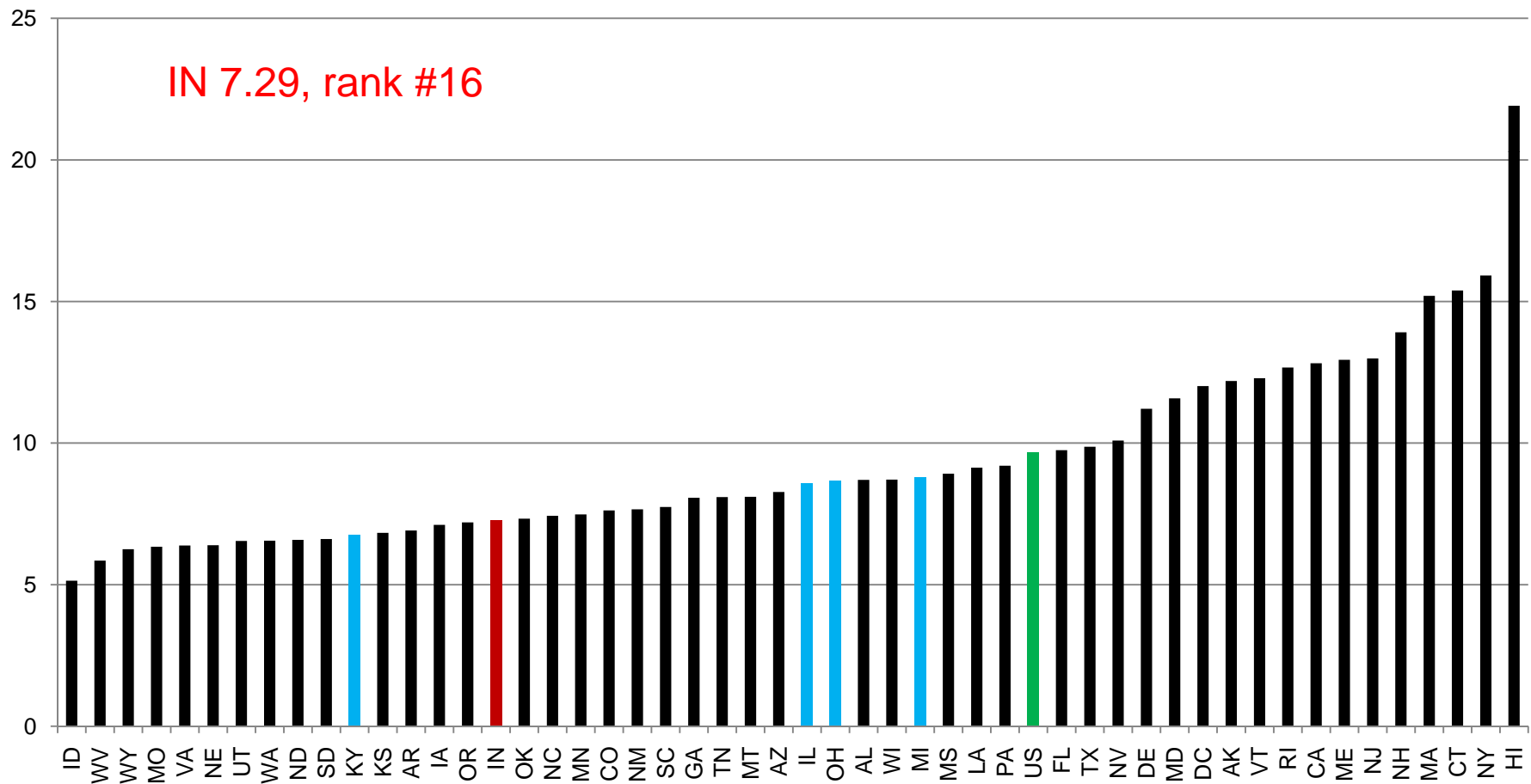
2007 All Sector Electricity Retail Price (cents/kWh)



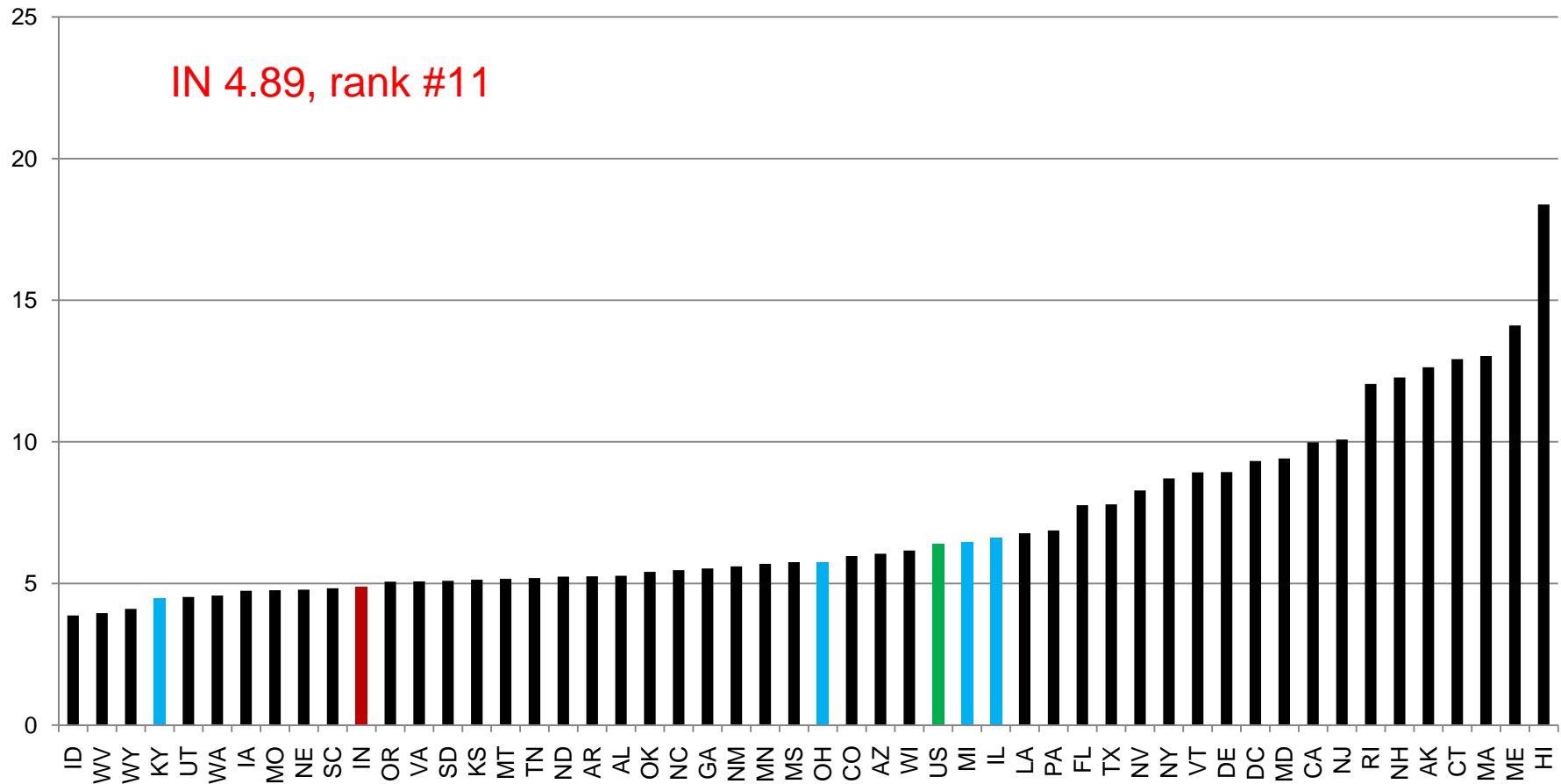
2007 Residential Electricity Retail Price (cents/kWh)



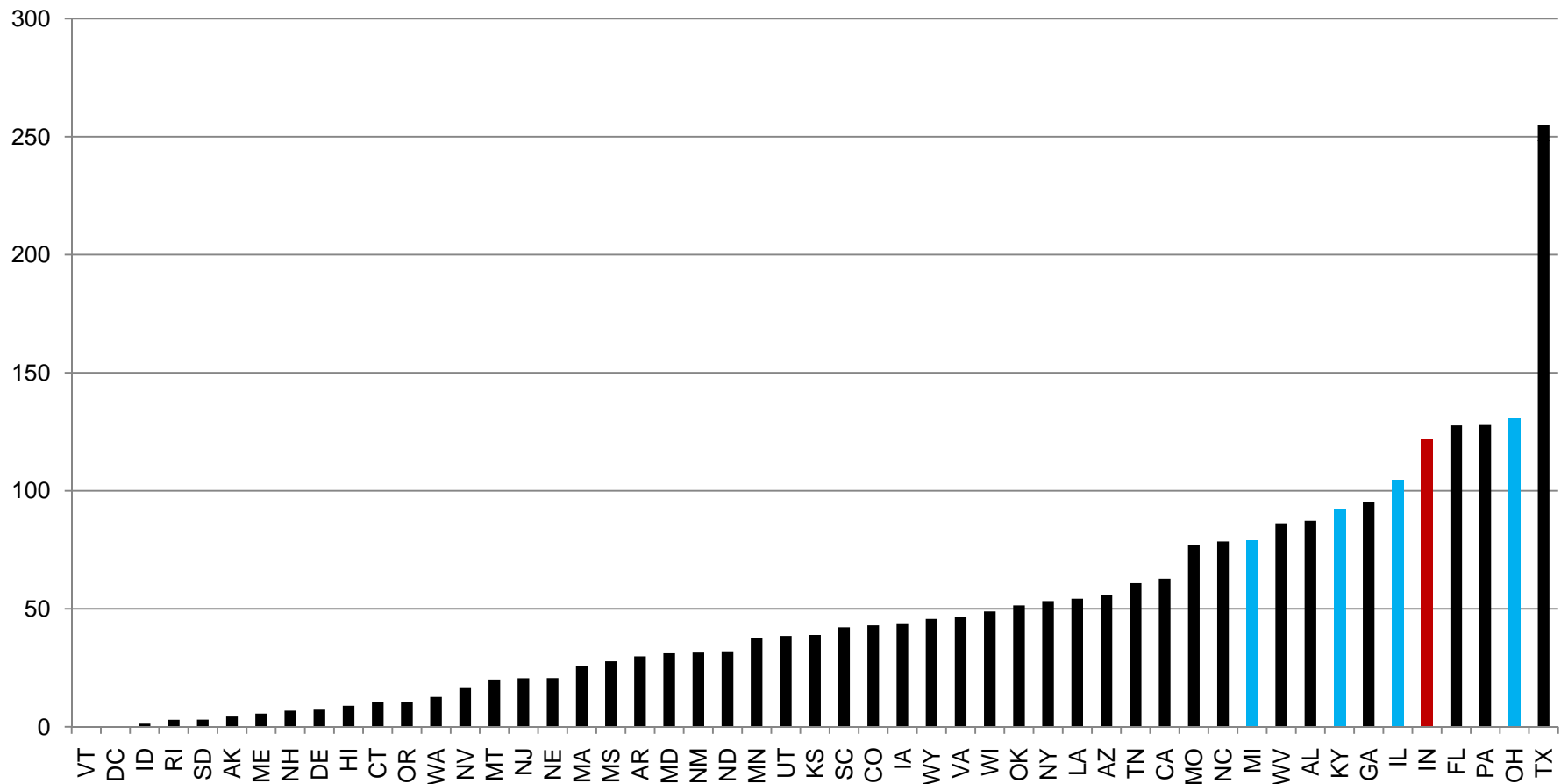
2007 Commercial Electricity Retail Price (cents/kWh)



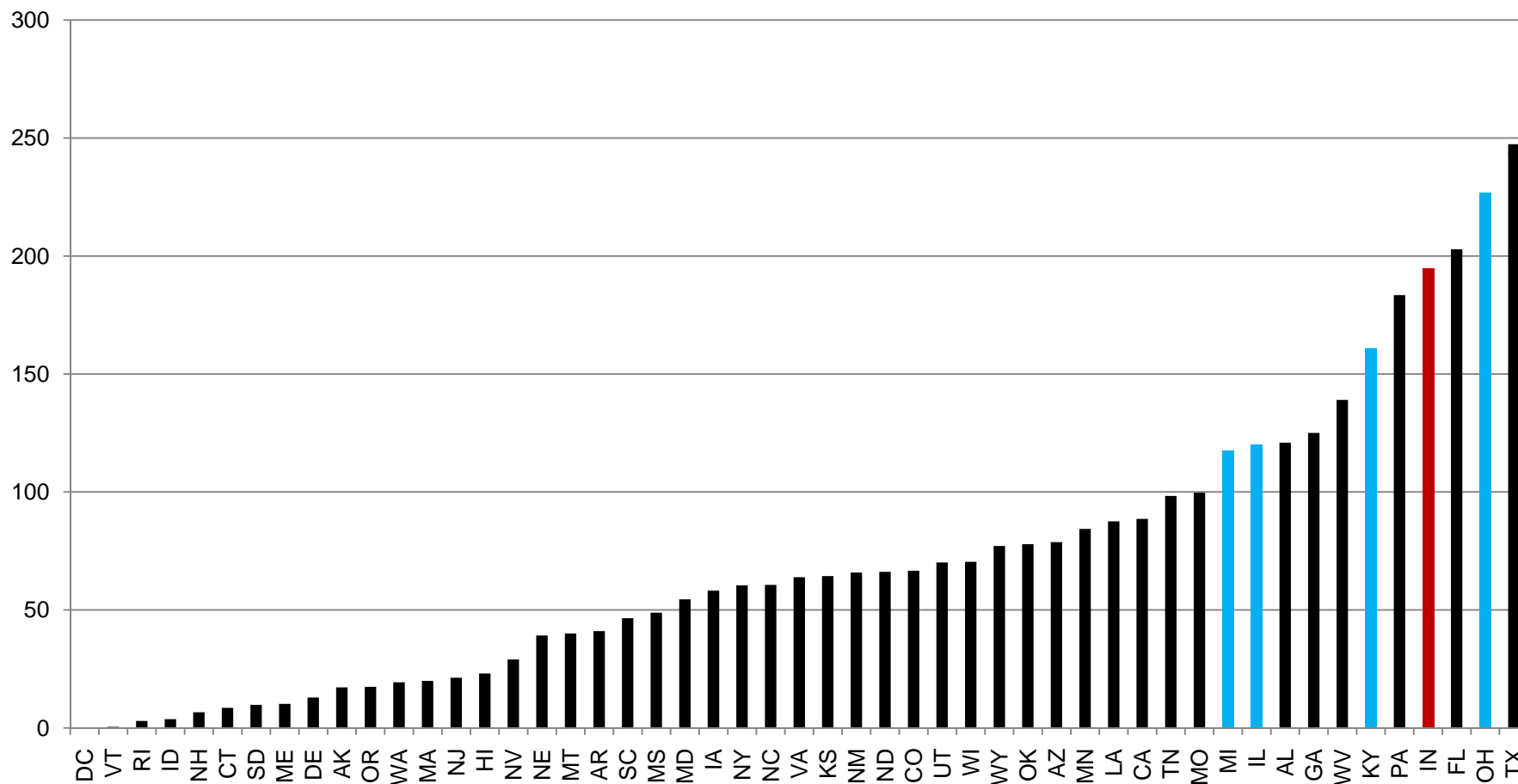
2007 Industrial Electricity Retail Price (cents/kWh)



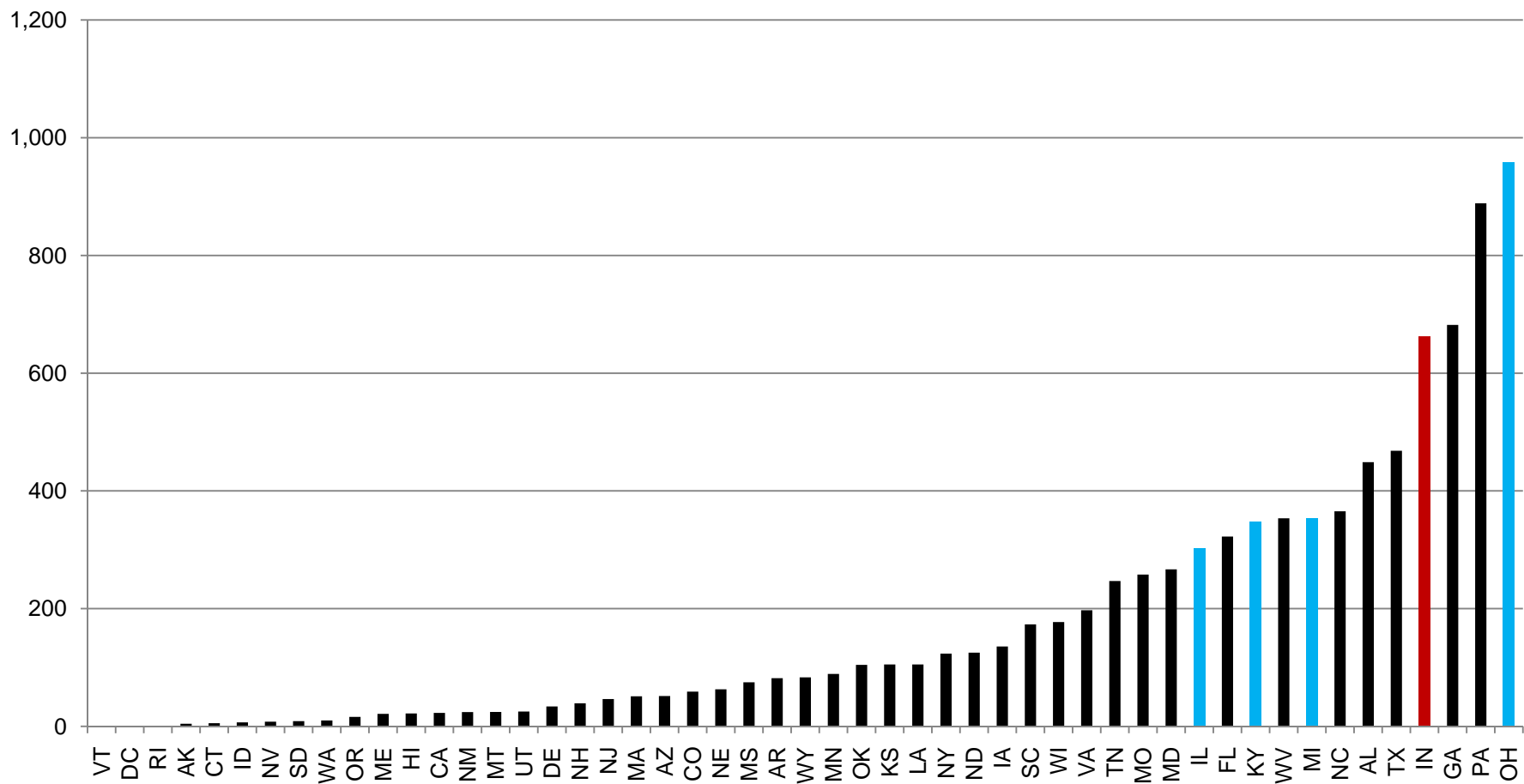
2007 CO₂ Emissions (million metric tons)



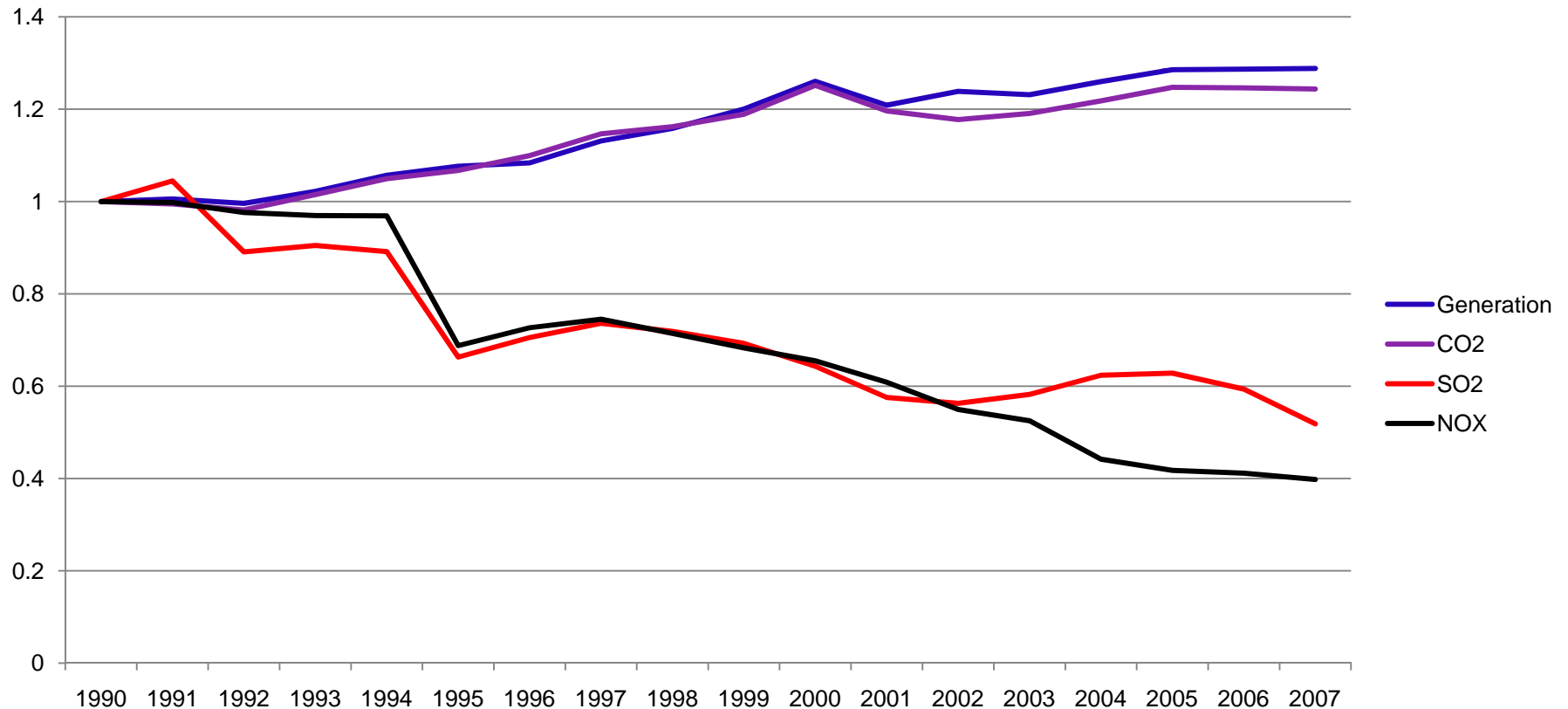
2007 NO_x emissions (thousand metric tons)



2007 SO₂ emissions (thousand metric tons)



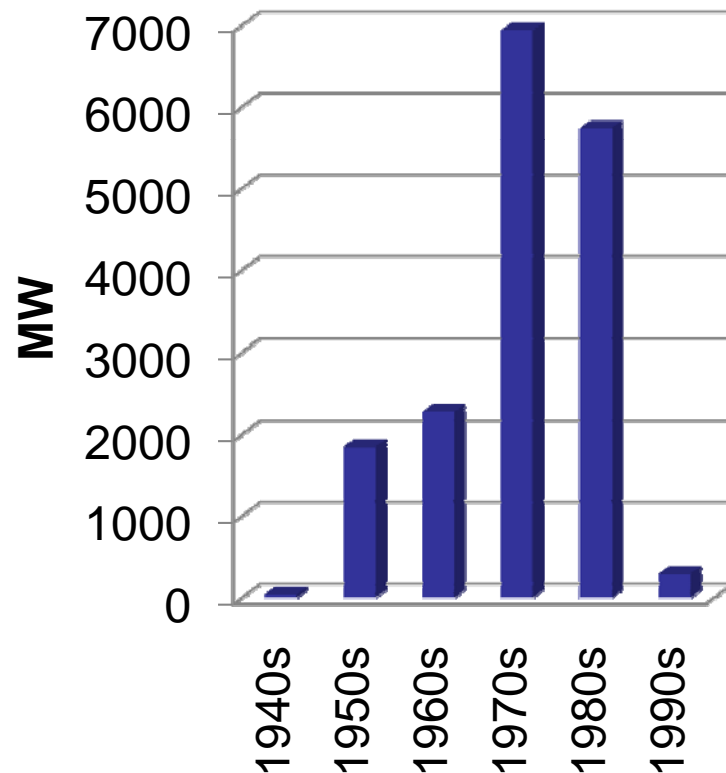
Emissions Trends for Indiana Electricity Industry (normalized to 1990 values)



Since 1990:

- Electricity generated in Indiana has increased by 29%
- Carbon dioxide emissions have increased by 24%
- Sulfur dioxide emissions have decreased by 48%
- Nitrogen oxides emissions have decreased by 60%

Coal-fired Generating Capacity by Decade Installed



	# of units	MW
1940s	1	45
1950s	20	1847
1960s	12	2275
1970s	17	6938
1980s	9	5736
1990s	2	289

Coal Developments

- Duke Energy integrated coal gasification unit at Edwardsport
- IMPA share of Prairie State (IL), Trimble County (KY), and Thoroughbred (KY)
- Proposed syngas facility

Natural Gas Developments

- Hoosier Energy – Wabash Valley Power purchase of Holland combined cycle facility (IL)
- NIPSCO purchase of Sugar Creek combined cycle facility (IN)

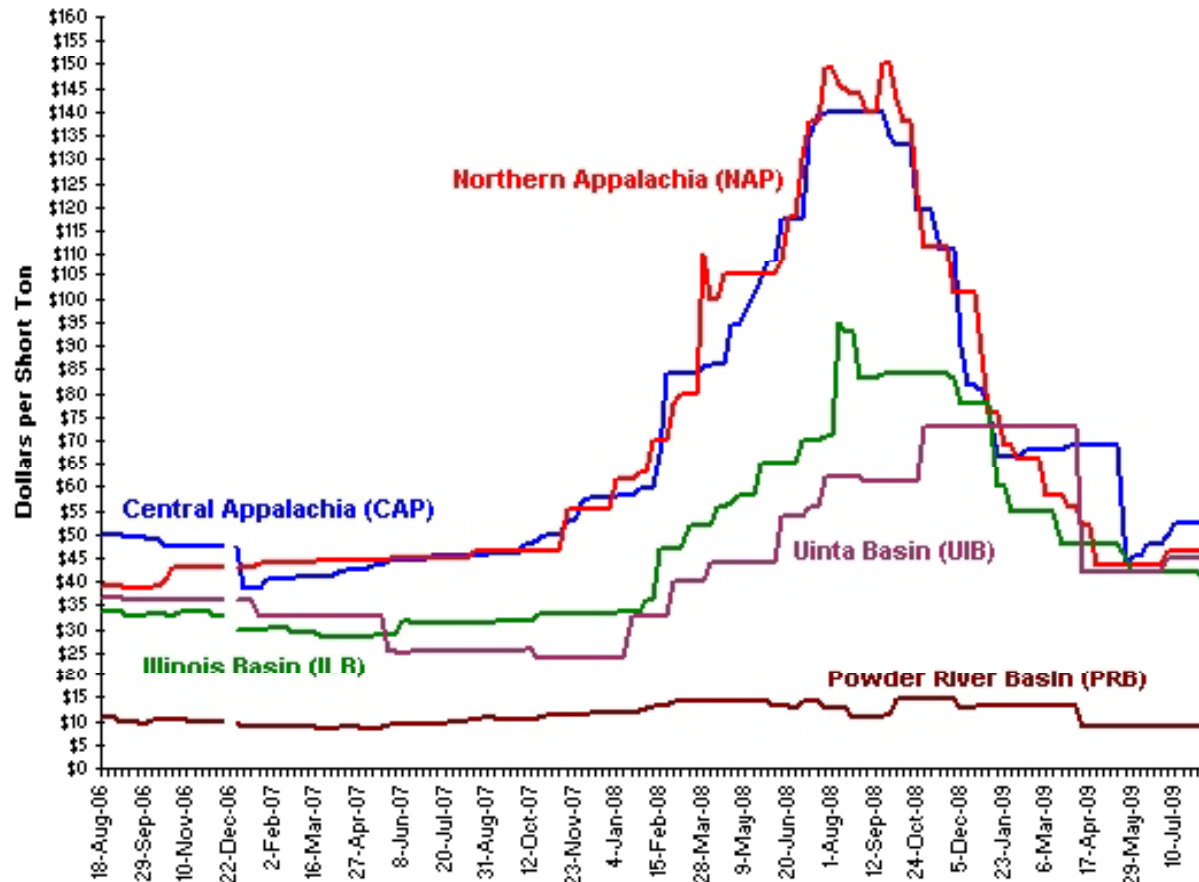
Wind Developments

- 530 MW of operational wind
 - Benton County Wind Farm
 - Fowler Ridge Wind Farm (phase 1)
- 506 MW of wind capacity under construction
 - Fowler Ridge Wind Farm (phase 2)
 - Meadow Lake Wind Farm (phase 1)
 - Hoosier Wind Project

Wind Purchases by Indiana Utilities

- 263 MW in operation
- 206 MW approved
- 251 MW pending

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		

Natural Gas Futures (\$/mmBtu)

