

Natural Gas / Electricity and the Industrial Sector

“The Dismantling of US Manufacturing”

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President

Industrial Energy Consumers of America

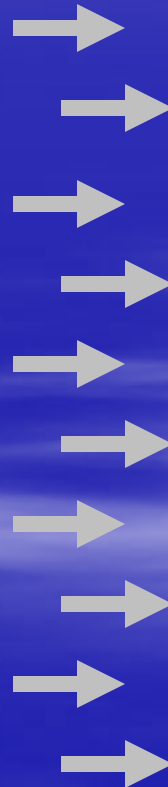
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Who Are Energy Price Sensitive Industries?

Building Block Industries

- Chemicals
- Plastics
- Fertilizer
- Glass / ceramics
- Brick
- Steel
- Aluminum
- Pulp and Paper
- Cement
- Food Processing

Convert
to



Commercial & Consumer Products

- Food Production
- Detergents
- Automobiles
- Computers
- Construction
- Medical Supplies
- Paint
- Pharmaceuticals
- Cosmetics
- Telecommunication

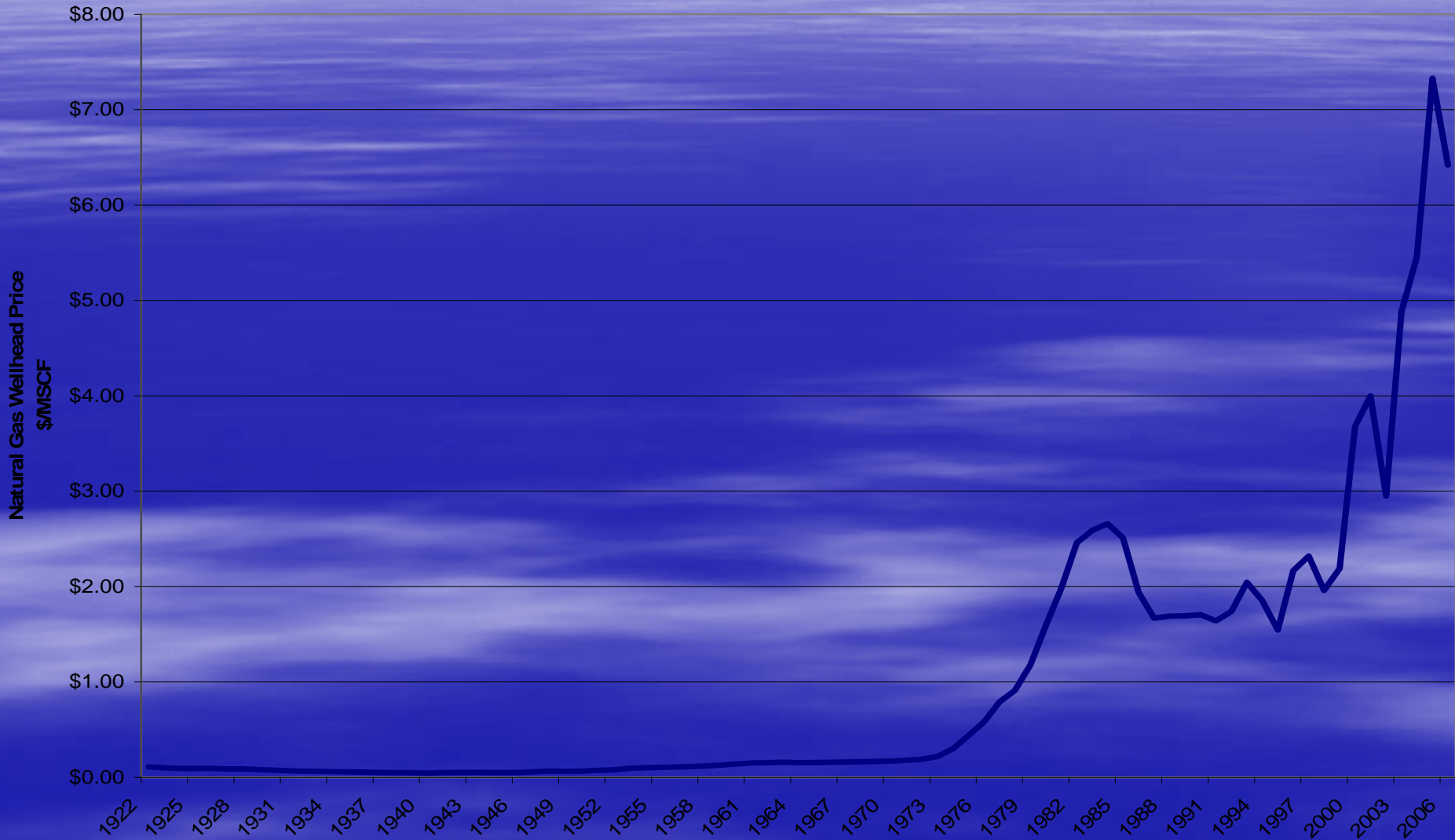
Why Did These Industries Locate In The United States?

- Access to the customers, quality of workforce, stability of government, reliable and globally competitive energy
- Resulted in long-term investment in the U.S.

*Only one has changed significantly
...natural gas and electricity costs.*

Natural Gas Price History

(average annual wholesale prices / year)

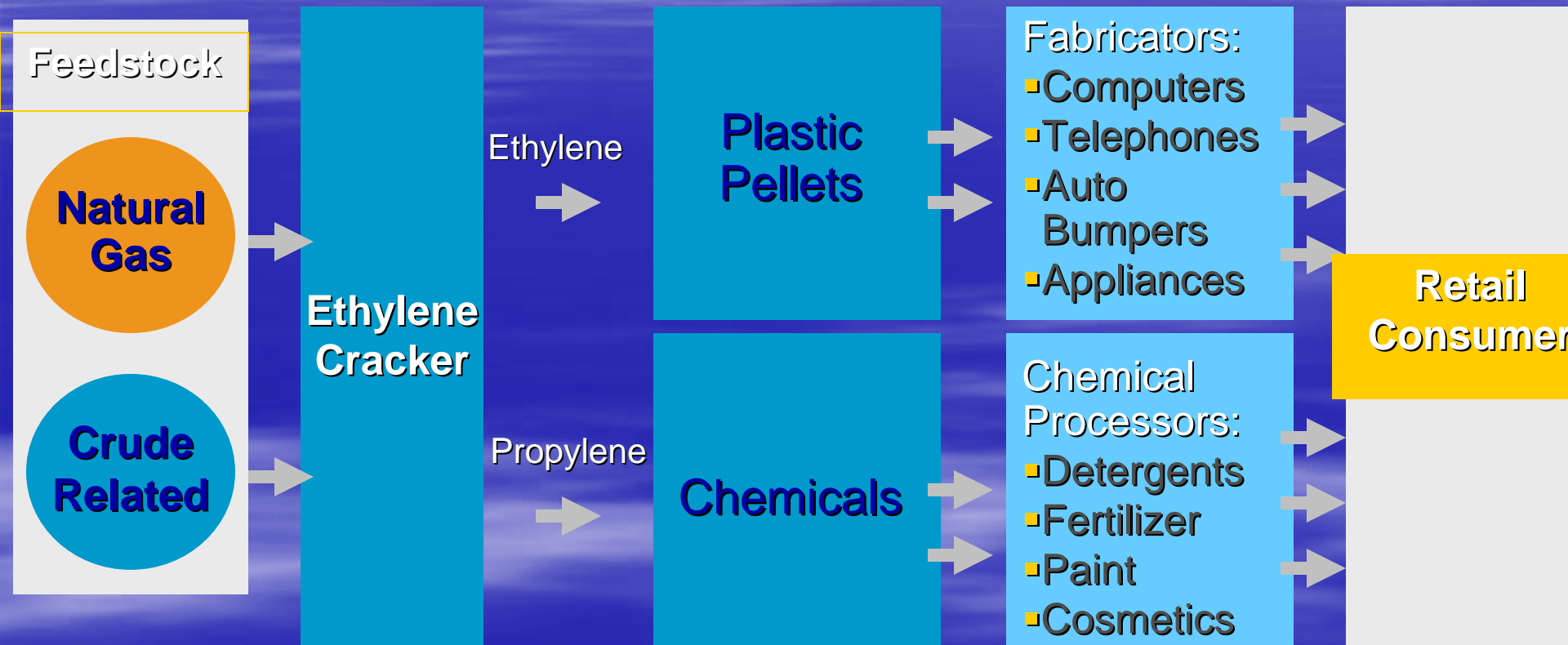


Impact of High Natural Gas and Electricity Prices

- Major reason for loss of 3.1 million high paying manufacturing jobs (18%) since year 2000
- Continued dismantling of manufacturing
- Increased trade deficit via imports of manufactured goods / Balance of payments

When Plants Move Over Seas, They Often Take Their Customers With Them

Example

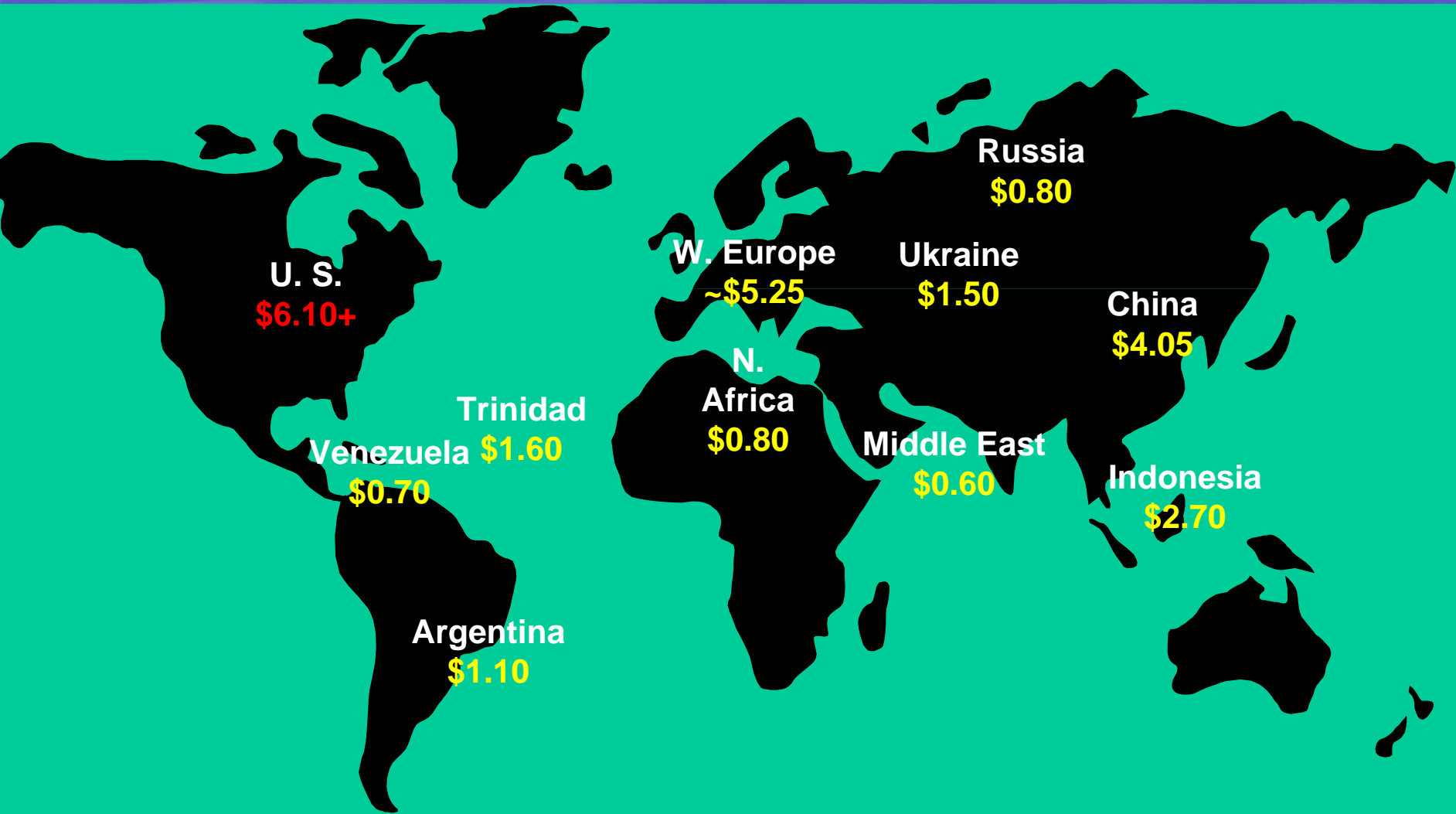


Moving the Ethylene Cracker offshore increases the potential for all downstream industries to move also.

World Natural Gas Costs

\$U.S./MMBtu (wholesale prices)

Where will manufacturing go?



Natural Gas Crisis - What Are The Issues?

- The US price of natural gas has, on average been the highest in the world since 2000.
- Consumers paid \$76 Billion more in 2006 versus 2000 for natural gas...and \$65 billion more for electricity.
- Manufacturing is the most price sensitive sector. Higher prices mean loss of competitiveness – plant shutdowns.

Natural Gas Crisis - What Are The Issues?

- Natural gas demand by the power sector is driving up the price for all consumers.
- Natural gas demand by power sector is up 19 % since 2000. EIA forecasts continued higher demand, even without climate mandates.
- Electric utilities have alternatives such as coal, nuclear and renewable energy – consumers do not

Natural Gas Crisis - What Are The Issues?

- Climate policy must not result in electric utility fuel switching from coal to natural gas. All consumers will suffer.
- Climate policy must not subsidize imports of energy intensive products.
- The real solution to reducing GHG emissions is not caps...but increasing the supply of low carbon intensive energy.

Climate Cap & Trade Policy

- Caps do not remove the government, market or technology barriers to increased supply of low carbon intensive energy.
- Does not recognize that energy markets are not “free markets” ...but constrained by government barriers.
- Does not recognize that other countries will not play fair. Will subsidize their energy and manufacturing industries.

3.1 Million Manufacturing Jobs

Lost
(Millions)

2000	2001	2002	2003	2004	2005	2006	Difference
17.2	16.4	15.2	14.5	14.3	14.2	14.1	-18%

Source: U.S. Dept. of Labor

Natural Gas Supply is Fragile

- There is no reserve production capacity!
- Inventory levels ok for now. Worry about hot summer / cold winters / hurricanes
- Supply is down 4 % since year 2000 despite record well completions
- Canadian imports – down by 4.9% since 2001
- New Gulf of Mexico leases – no supply impact for next five years
- Alaska Pipeline – no progress - 2017 at earliest
- LNG producing countries creating a new cartel

Natural Gas Production

(Volumes in Trillion Cubic Feet)

	2000	2001	2002	2003	2004	2005	2006	Difference
<i>Dry Production</i>	19.2	19.6	18.9	19.1	18.6	18.1	18.5	- 4%

Source: EIA

Natural Gas Prices

(Dollars per Thousand Cubic Feet)

	2000	2001	2002	2003	2004	2005	2006	Difference
<i>Residential</i>	7.8	9.6	7.9	9.6	10.8	12.8	13.8	+77%
<i>Commercial</i>	6.6	8.4	6.6	8.4	9.4	11.6	12.0	+82%
<i>Industrial</i>	4.5	5.2	4.0	5.9	6.5	8.6	7.9	+76%
<i>Electric Power</i>	4.4	4.6	3.7	5.6	6.1	8.5	7.1	+61%

Source: EIA

Natural Gas Consumption by End Use

(Million Cubic Feet)

	2000	2001	2002	2003	2004	2005	2006	Difference
<i>Total Consumption</i>	21.5	22.2	23.0	22.3	22.4	22.2	21.9	+1.9%
<i>Residential</i>	5.0	4.8	4.9	5.1	4.9	4.8	4.4	-12%
<i>Commercial</i>	3.2	3.0	3.1	3.2	3.1	3.1	2.9	-9%
<i>Industrial</i>	8.1	7.3	7.5	7.2	7.2	6.7	6.6	-19%
<i>Electric Power</i>	5.2	5.3	5.7	5.1	5.5	5.9	6.2	+19%

Source: EIA

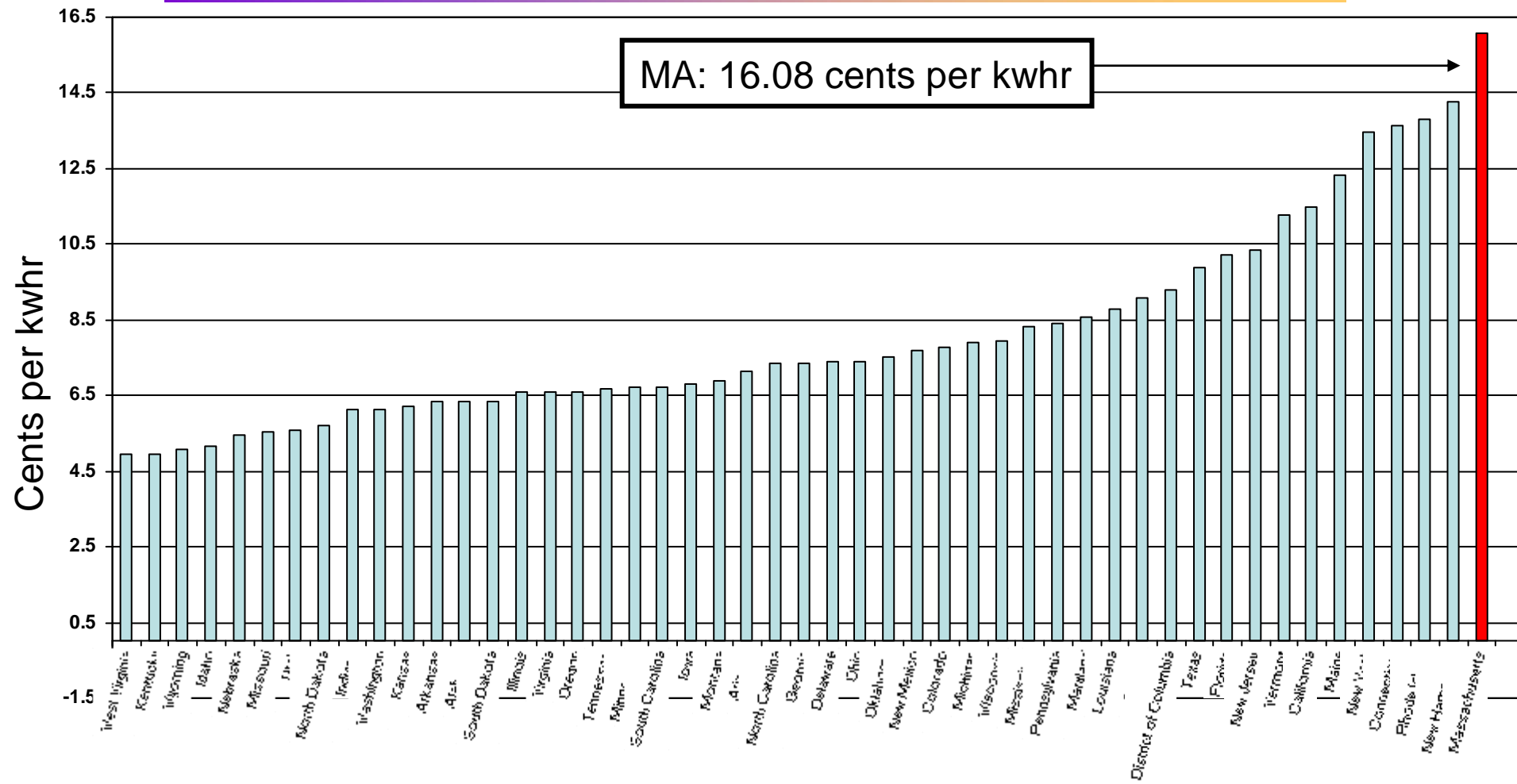
Electricity Retail Prices

(cents per kwh, including taxes)

	2000	2001	2002	2003	2004	2005	2006	%
<i>Residential</i>	8.24	8.58	8.44	8.72	8.95	9.45	10.40	+26%
<i>Commercial</i>	7.43	7.92	7.89	8.03	8.17	8.67	9.36	+26%
<i>Industrial</i>	4.64	5.05	4.88	5.11	5.25	5.73	6.09	+31%

Source: EIA

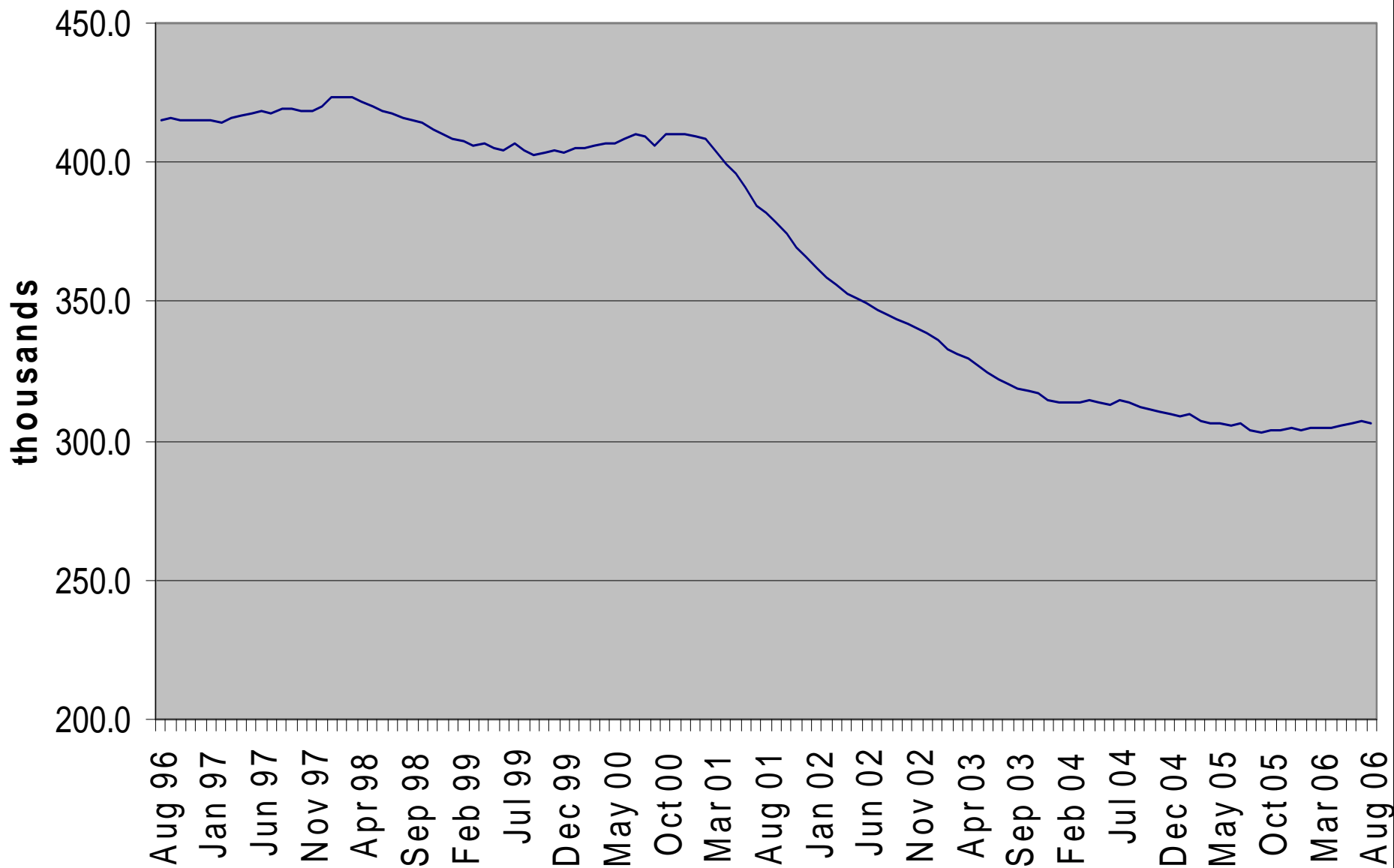
2006 Average Retail Price of Electricity by State



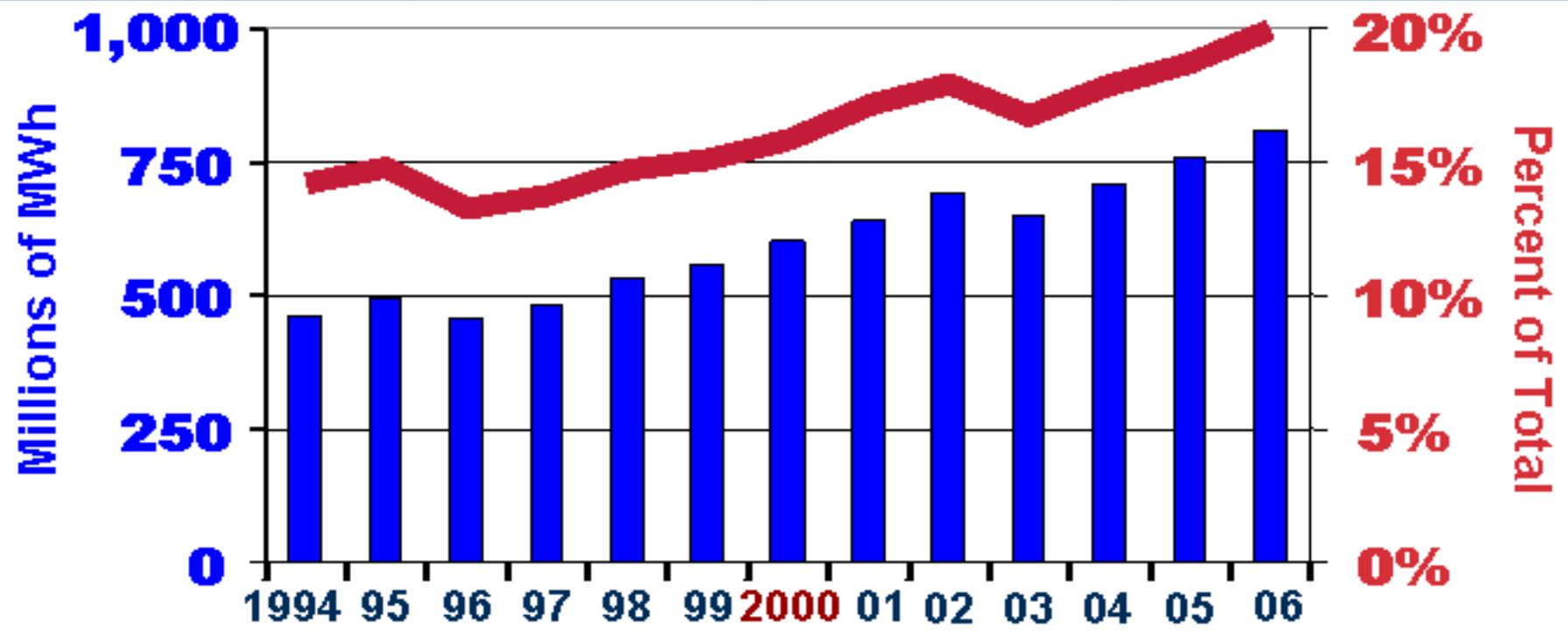
U.S. Energy Information Administration 2006 – Continental U.S.

<http://www.eia.doe.gov/cneaf/electricity/epa/epat7p4.html>

MA Manufacturing Employment



Natural Gas Grows as Generation Fuel in Size and Share



Source: Energy Information Administration

As Natural Gas Prices Go Up...So Does the Cost of Electricity (\$/MWH)

Nuclear	Coal	Natural Gas	Non-Hydro Renewable
\$13.54	\$20.80	\$49.51	\$68.00

Source: EIA

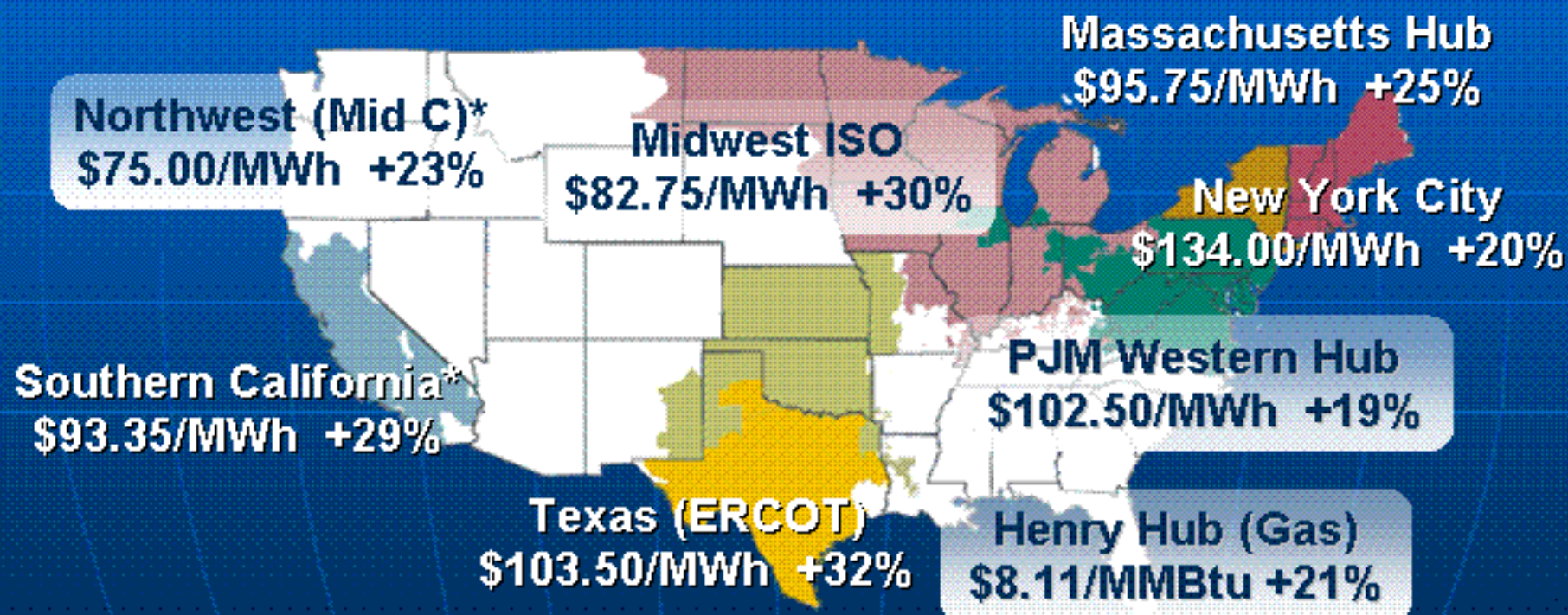
Natural Gas Fired Power Generation Impacts on All Consumers

A single 500 MW rankine cycle power plant (10,000 Btu/kwh) will use the equivalent natural gas used to fuel 842,308 homes each year.

Electric Power Research Institute

“Even though natural gas is used to produce only 20 percent of the electricity, it accounts for 55% of the electric industry’s entire fuel expense (\$50B out of \$91B).”

Summer 2007 Forward Prices Now Higher Than 2006 Actual Prices



* Western prices are for 3rd quarter.

Sources: Platts for forward electricity prices for July and August 2007, NYMEX and ICE for gas. All prices effective 5/11.

Industrial Energy Consumers of America

- IECA is a 501 (C) (6) nonprofit organization created to promote the interests of manufacturing companies for which the availability, use and cost of energy, power or feedstock play a significant role in their ability to compete in domestic and world markets. IECA does not have a PAC.

www.ieca-us.org

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