


Climate Policy and the Industrial Energy Consumer

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President

Industrial Energy Consumers of America
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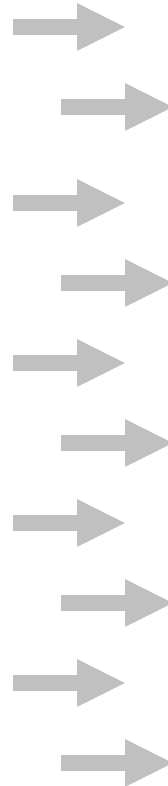
IECA's objective is to work with
Congress to implement policies that
reduce greenhouse gas emissions
without loss of manufacturing
competitiveness

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

Industrial Products are Essential to Economic Growth

- ❑ The aerospace/defense industry uses steel, aluminum, plastics and chemicals.
- ❑ The air transport industry uses steel, aluminum, plastics and chemicals.
- ❑ The auto and truck industries use steel, aluminum, plastics, chemicals.
- ❑ The beverage industry uses aluminum, steel, paper, glass and plastic.
- ❑ The biotechnology industry uses chemicals.
- ❑ The commercial and home building construction industry uses brick, steel, aluminum, wood, cement and glass.
- ❑ The oil and gas industry uses steel, chemicals, cement.
- ❑ The chemical industry uses chemicals, steel, cement and glass.
- ❑ The computer industry uses plastics, chemicals, and glass.
- ❑ The electrical equipment industry uses steel.



Industrial Products are Essential to Economic Growth

- ❑ The electric and gas utility sector uses steel and cement.
- ❑ The food industry uses fertilizer, chemicals, plastics and paper.
- ❑ The home furnishing industry uses wood, glass, chemicals.
- ❑ The heavy construction industry uses steel and rubber.
- ❑ The home appliance industry uses steel, aluminum, glass and wood.
- ❑ The household products industry uses chemicals, plastic; paper, glass.
- ❑ The machinery industry uses steel, chemicals and plastics.
- ❑ The maritime industry uses steel.
- ❑ The packaging industry uses plastics, paper, aluminum and steel.
- ❑ The paper / forest products industry uses steel and chemicals.
- ❑ The refining industry uses steel, chemicals and cement.
- ❑ The pharmaceutical industry uses chemicals, glass and steel.
- ❑ Railroads use steel.
- ❑ The toiletries/cosmetics industry uses chemicals, plastics, paper, and glass.

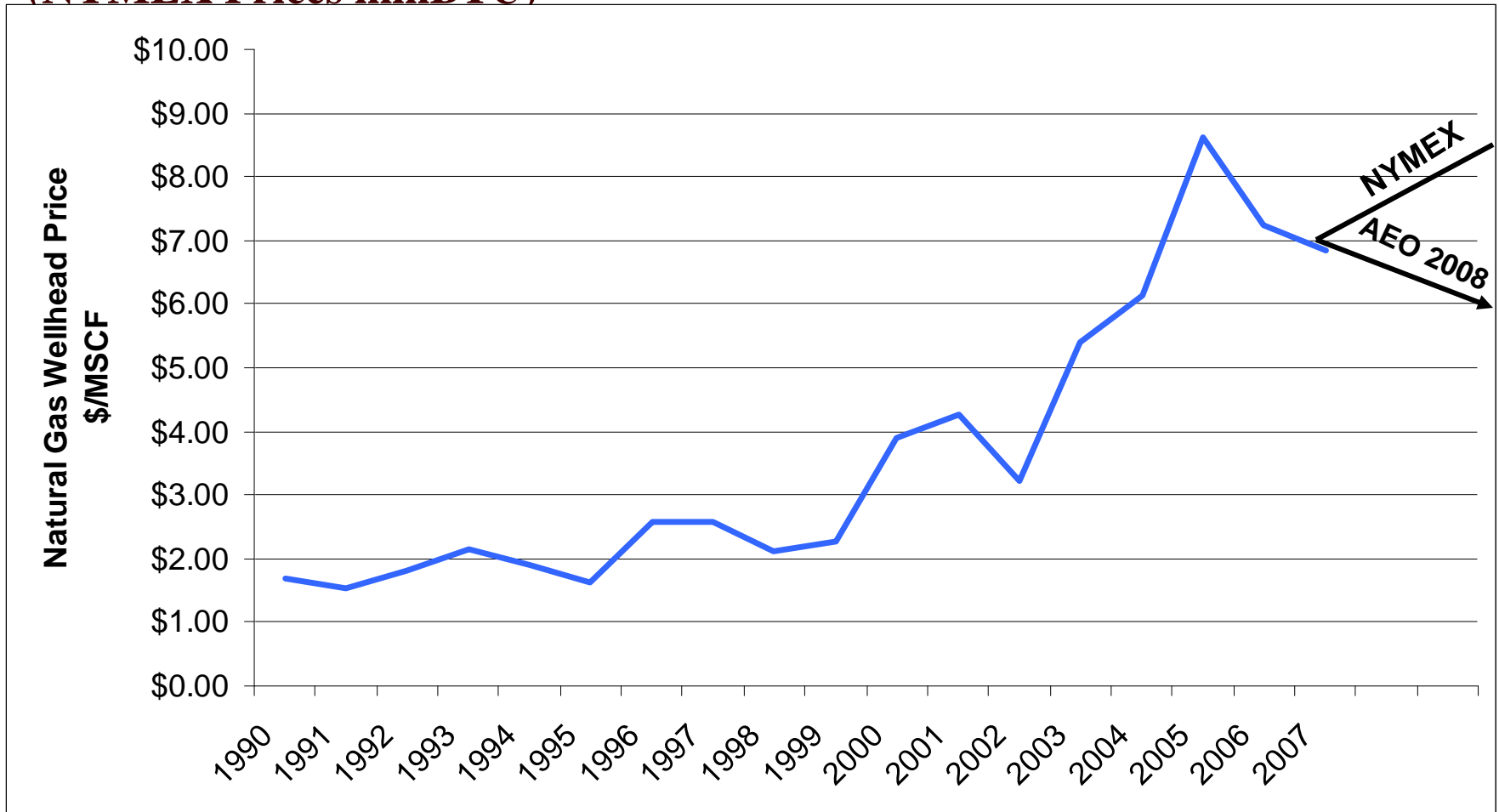
Why Did These Industries Locate In The United States?

- 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 Prices – NYMEX vs. AEO 2008

(NYMEX Prices mmBTU)

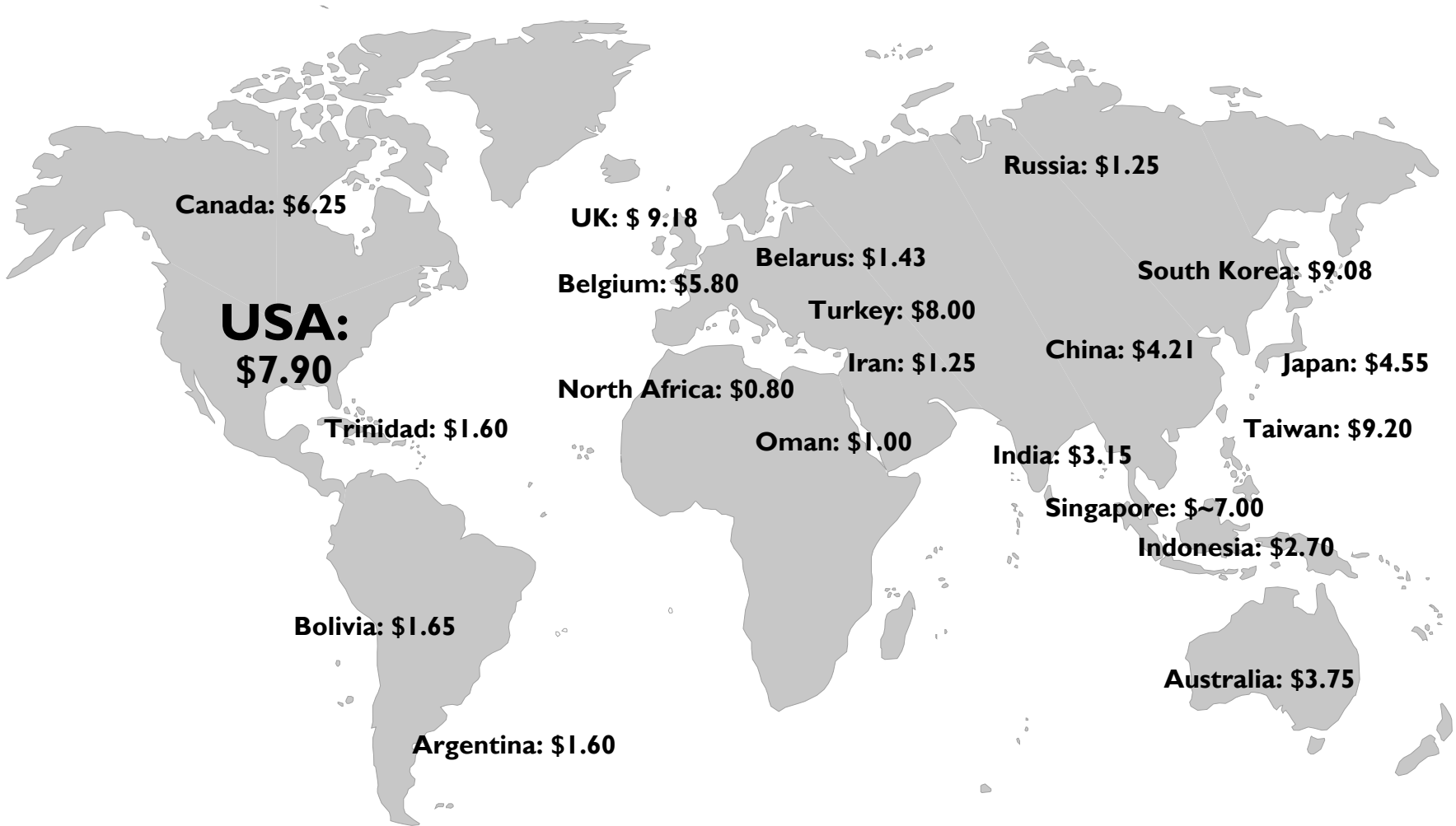


*Nymex Prices as of 4/4/08

Natural Gas Prices Around the World

2006 Average

(\$US per million BTUs)




Relationship of High Natural Gas Prices to Lost Manufacturing Jobs

	2000	2001	2002	2003	2004	2005	2006	2007	%
Employment (MM)	17.2	16.4	15.2	14.5	14.3	14.2	14.1	13.9	-19.2%
Natural Gas Consumption (TCF)	8.1	7.3	7.5	7.2	7.2	6.7	6.6	6.8	-16%
Natural Gas Wholesale Price (\$ per MCF)	4.50	5.20	4.00	5.90	6.50	8.60	7.90	6.85	+52%

US manufacturing is already under siege by imports

- Review of sixteen of the energy intensive product categories under the “Industrial Supplies and Materials” category of the U.S. Census Bureau
- From 2000 to 2007 total accumulated imports in constant dollars were \$898 billion.
- Imports from 2000 to 2003 were about unchanged while imports from 2003 to 2007 rose a staggering 78.3%. Specifically, imports rose from \$87.3 billion in 2003 to \$155.7 billion in 2007.
- Consistent with these imports numbers, the U.S. manufacturing sector lost 3.3 million jobs or 19.2% since 2000.



One problem with cap & trade...It
treats the industrial sector like the
other sectors.

We are very different!



The Industrial Sector is Unique

- ❑ Our products are part of the solution: double pain glass windows; insulation; lighter vehicles...
- ❑ Already has a price signal- its called global competition. The only sector that requires globally competitive energy
- ❑ Compete globally and in an environment of unfair competition // Other countries subsidize energy and manufacturing
- ❑ Unlike other sectors...we re-locate plants to be competitive



The Industrial Sector is Unique

- Energy is a significant cost of production and has resulted in continuous energy efficiency improvements.
(Key Point: Competition works: achieved without regulation)
- Mostly natural gas dependent as a fuel and feedstock
- Some processes (aluminum, steel, some chemicals) are very electricity intensive



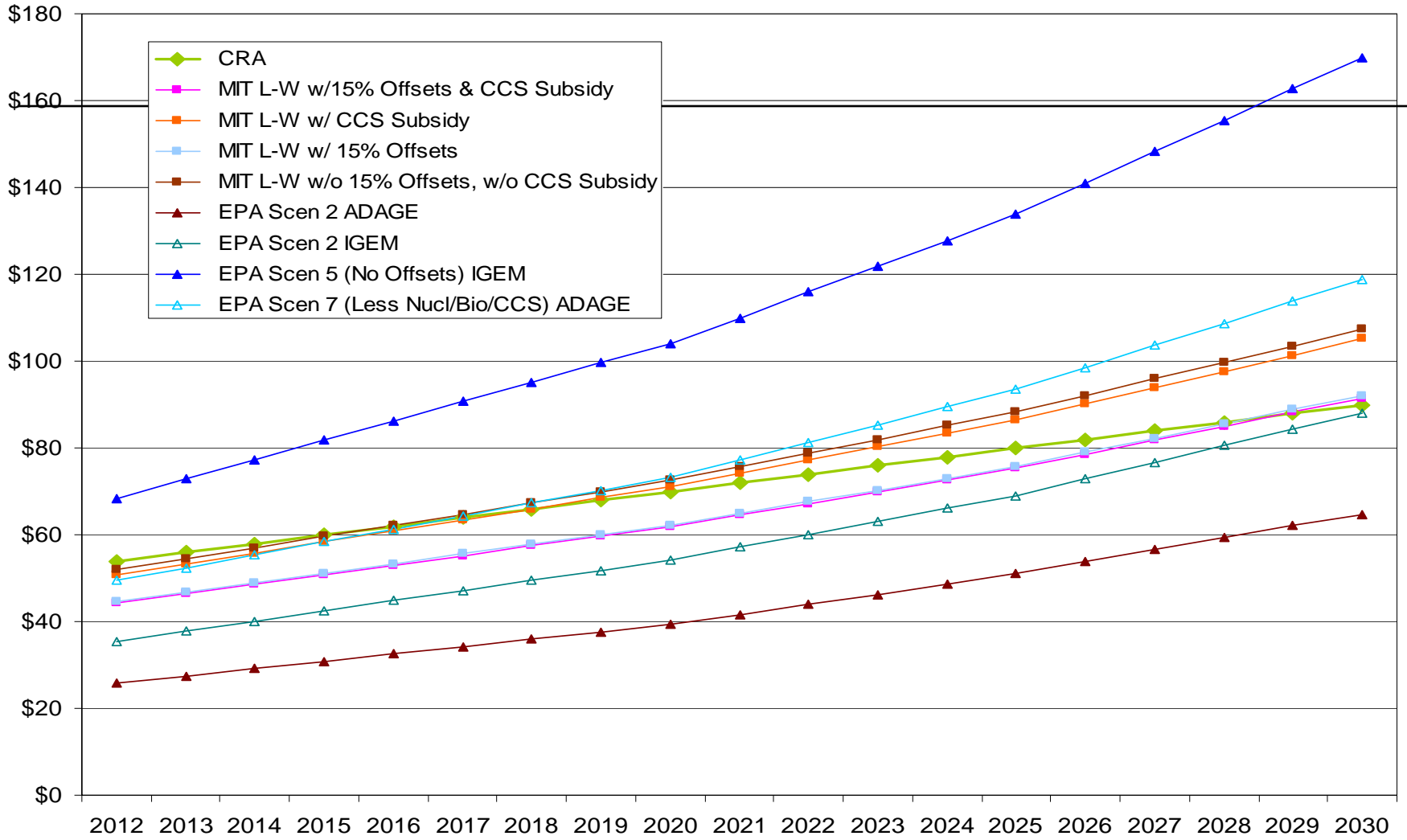
The Industrial Sector is Unique

- Absolute GHG reductions are an exception...not a norm. Serving world markets means increased product production and increased energy use...thus the need for lower carbon energy supply
- Their products compete with one another for markets (i.e. plastic, steel, paper, aluminum)
- Significant energy efficient co-generators of electricity and steam

A Truth:

- Absolute cost increases if applied globally is Ok with the manufacturing sector.
- “US only” cost increases is a significant and paramount problem!

Allowance Prices in 2007\$ through 2030



A Truth:

All cost projections are significantly understated!

Why?

- ❑ EIA/EPA models cannot model the profit/loss breakeven point of a manufacturers plants.
- ❑ EIA under forecasts the price of natural gas;
- ❑ EIA under forecasts demand of natural gas by the power sector.

Natural Gas Prices

AEO 2008 vs. NYMEX Actual (mmBTU)

	2008	2009	2010	2011	2012	2013	2014	2015
AEO 2008	7.23	7.35	6.90	6.56	6.37	6.16	5.99	5.87
NYMEX 4/4/08	9.65	9.30	8.80	8.60	8.63	8.75	8.87	9.00
% Difference	+33	+27	+28	+31	+35	+42	+48	+53

Impact of S. 2191 on Natural Gas Prices

(\$/MCF)

	2008	2009	2010	2011	2012	2013
ACCF NAM Baseline	7.95	7.40	7.13	6.81	6.43	6.02
High Cost	8.44	8.00	7.81	7.47	8.55	8.15
Low Cost	8.39	7.78	7.36	6.90	8.51	7.98
NYMEX 4/4/08	9.65	9.30	8.80	8.60	8.63	8.75

Calculate Your Cost Increase.

CO2 Allowance Prices

CO2 Allowance Price	\$40	\$50	\$75	\$100
Gasoline/gallon	.35	.44	.67	.89
Natural Gas/MCF	2.19	2.74	4.10	5.47
<u>Short Ton</u> Bituminous Coal	89.44	111.80	167.70	223.60
Sub-bituminous Coal	67.40	84.25	126.38	168.50
Anthracite Coal	69.88	87.35	131.03	174.70

Source: EIA

\$50 Per Ton Carbon Price Impact on Natural Gas

4/4/08 NYMEX Price = \$9.32 per mm Btu

Plus \$50/ ton carbon allowance= \$2.74 per mmBtu*

Total cost= \$12.06 per mmBtu; a 30% increase

*EIA



One issue can decimate the industrial sector all by itself

Electric power generation fuel switching from coal to natural gas. It raises the price of both natural gas and electricity.


Nothing in S.2191 prevents fuel switching.

Natural Gas Consumption by End Use

(Million Cubic Feet)

	2000	2001	2002	2003	2004	2005	2006	2007	Difference
<i>Total Consumption</i>	21.5	22.2	23.0	22.3	22.4	22.2	21.9	23.6	+9.8%
<i>Residential</i>	5.0	4.8	4.9	5.1	4.9	4.8	4.4	4.9	-2%
<i>Commercial</i>	3.2	3.0	3.1	3.2	3.1	3.1	2.9	3.1	-3%
<i>Industrial</i>	8.1	7.3	7.5	7.2	7.2	6.7	6.6	6.8	-16%
<i>Electric Power</i>	5.2	5.3	5.7	5.1	5.5	5.9	6.2	7.0	+35%

Source: EIA



Electric utilities have alternatives such
as coal, nuclear and renewable energy
– consumers do not.

Either increase natural gas supply or
reduce consumption by the power
sector!

EU Cap & Trade

March 26, 2007

Senate Committee on Energy & Natural Resources

Hearing on European Union's Emissions Trading Scheme

- Answer by Garth Edwards: Shell Oil, Trading Manager – Environmental Products, London, England
- **“The bulk of emission reductions in the EU are made actually by coal to gas (natural gas) fuel switching in power stations. And any price will start to change the dispatch of power plants...and start change away from coal into gas (natural gas).”**

Planned Nameplate Capacity Additions from New Generation (MW)

Energy Source	2006	2007	2008
Coal	602	1589	1056
Petroleum	269	78	168
Natural Gas	10657	16892	15050
Other gases	0	391	1160
Nuclear	0	0	0
Hydro	8	3	4
Other Renewable	3027	2454	695
Total	14573	21407	18133

Source: EIA

Existing Electricity Generation Capacity 2005 (MW)

Energy Source	Nameplate Capacity
Coal	335,892
Petroleum	64,845
Natural Gas	436,991
Other Gases	2,293
Nuclear	105,585
Hydro	77,354
Other Renewable	23,553
Pumped Storage	19,569
Other	928
Total	1,067,010

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 volume 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).”



Key Points

- **IECA supports cost effective action to reduce ghg emissions.**
- **Industrial sector ghg emissions are already below 1990 levels.**
- **Our products are a vital solution to reducing ghg emissions and essential to economic growth. A GHG cap can be counterproductive to production of these products.**
- **Most US, EU and Japanese manufacturers do not support cap and trade versus alternative policies.**



Key Points

- ❑ **EIA and EPA modeling under-estimates the cost of climate legislation and the loss of manufacturing jobs.**
- ❑ **Climate legislation must NOT result in electric utility fuel switching from coal to natural gas.**
- ❑ **Unilateral US action that increases costs will drive manufacturing jobs offshore along with its emissions.**
- ❑ **The AEP/IBEW proposal does not provide a level playing field for imported energy intensive products.**

Key Points

The ACCF / National Association of Manufacturer's study on S.2191 says:

- 2014 prices will rise significantly; +36% natural gas; +22% electricity;**
- 1.3 million job losses;**
- 1.2 % loss in GDP and this is using the overly optimistic EIA projections of supply and cost of future energy supply.**



Thank You