

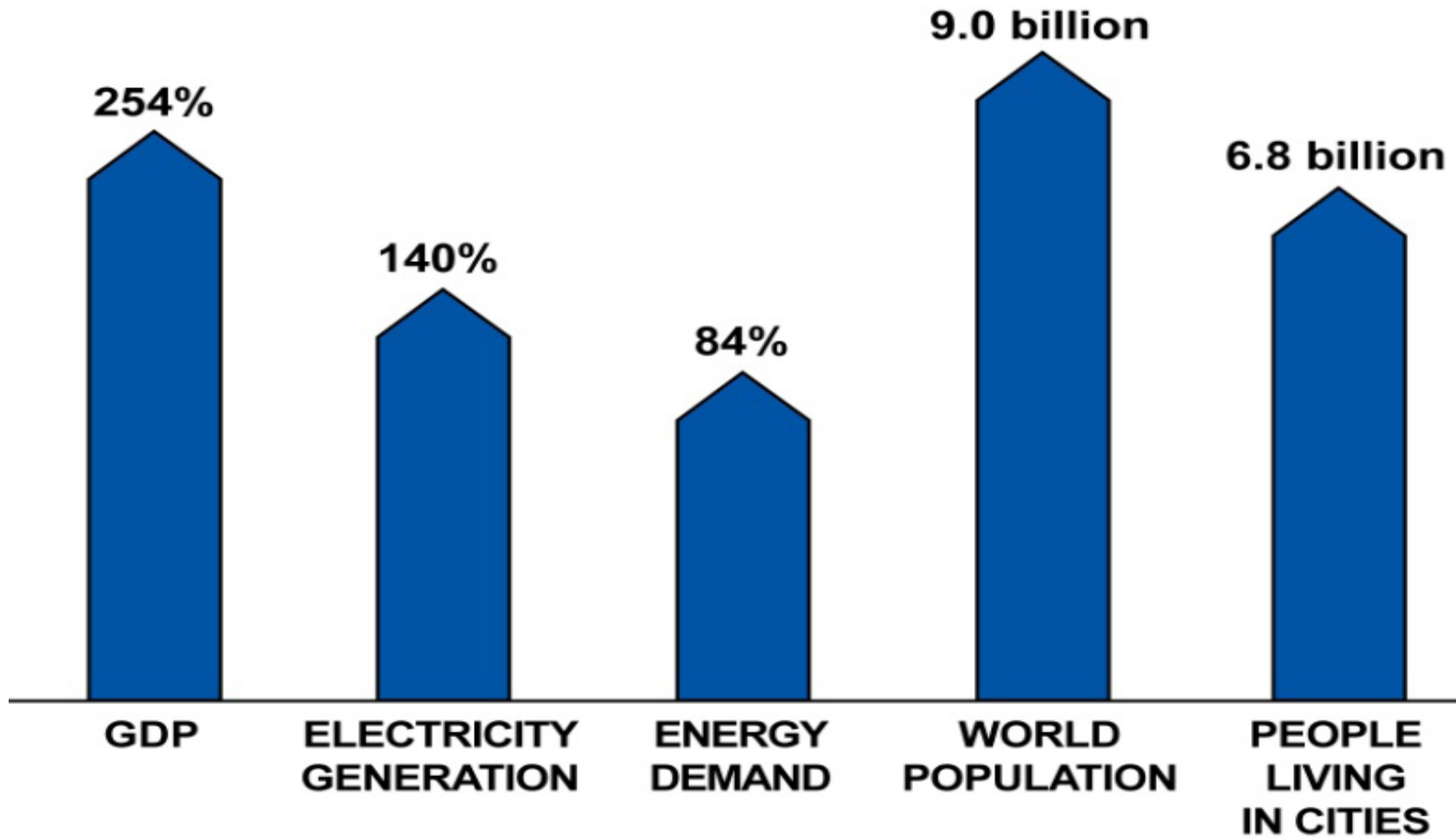


Institute for 21st Century Energy

U.S. Chamber of Commerce

Karen A. Harbert
President and CEO
Institute for 21st Century Energy
U.S. Chamber of Commerce

Monumental Changes by 2050





The New Energy Reality

Energy Security is central to our national and economic security

- Demand to increase 53% by 2035
 - 90% in non-OECD countries
- Electricity demand to increase 76%
- 1.6 billion people without electricity
- \$38 trillion of new investment by 2035 to meet rising demand

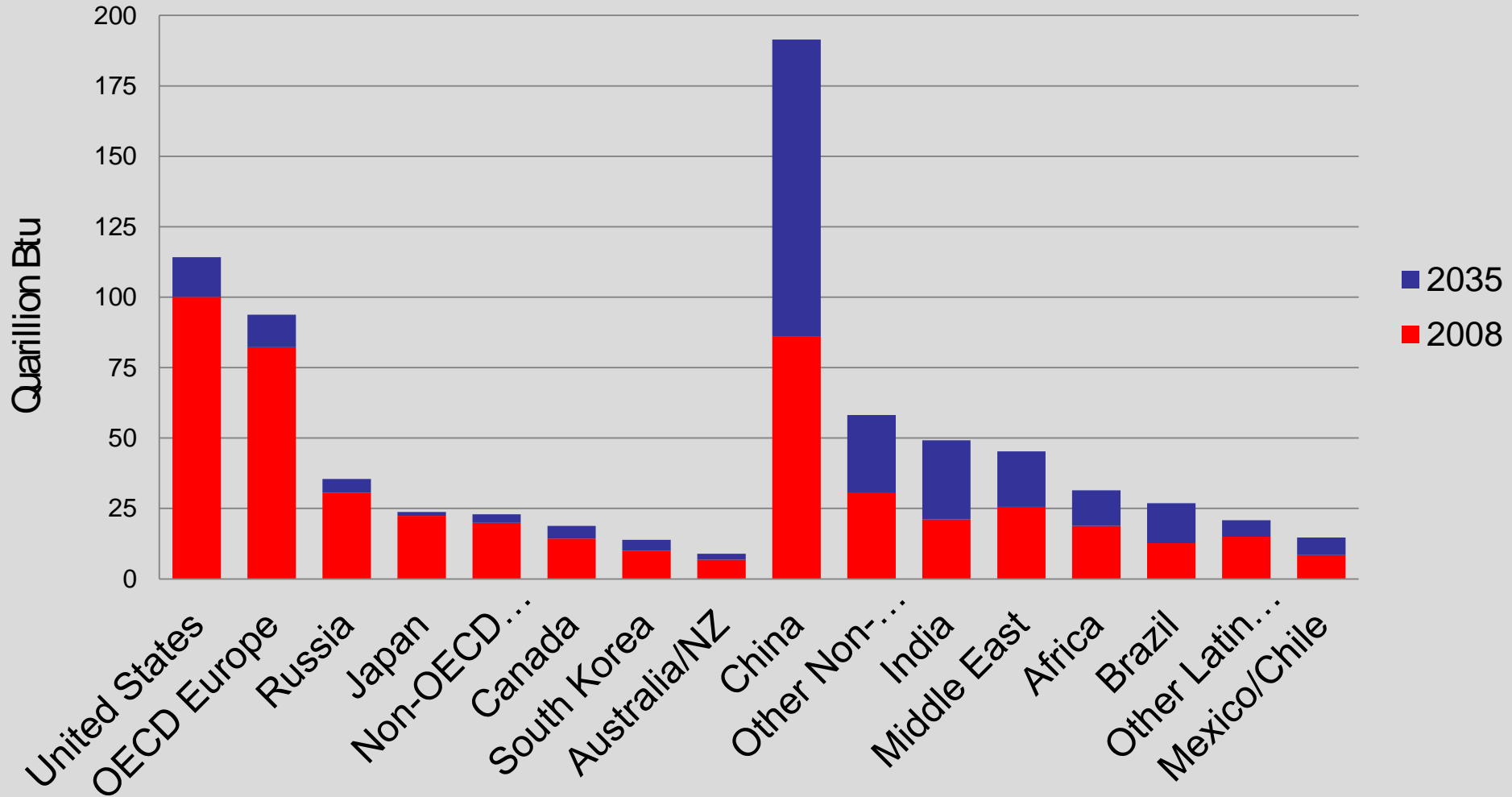


An Inconvenient Energy Truth

U.S. Chamber of Commerce

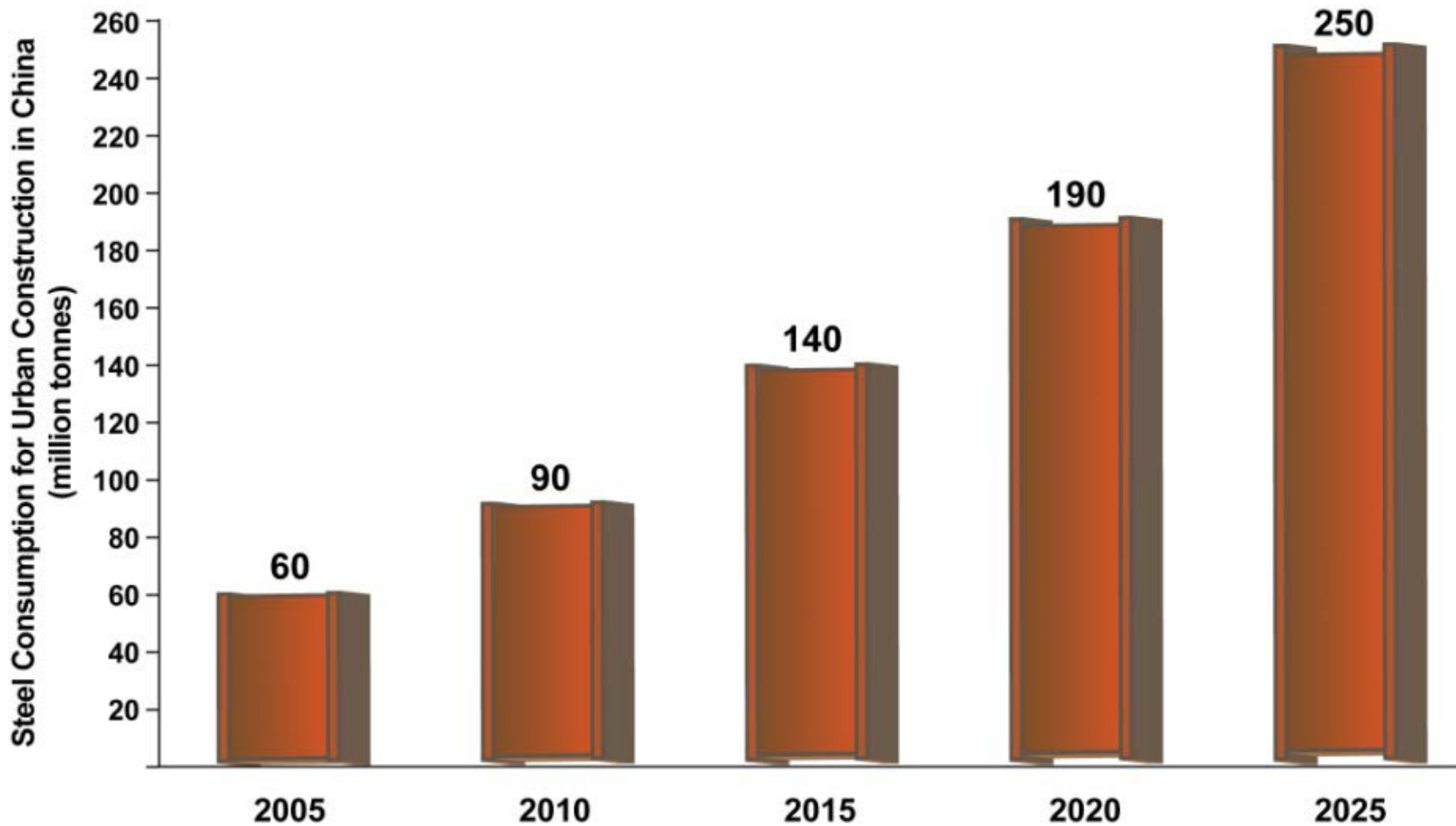


Global Energy Demand by Region: 2008 & 2035



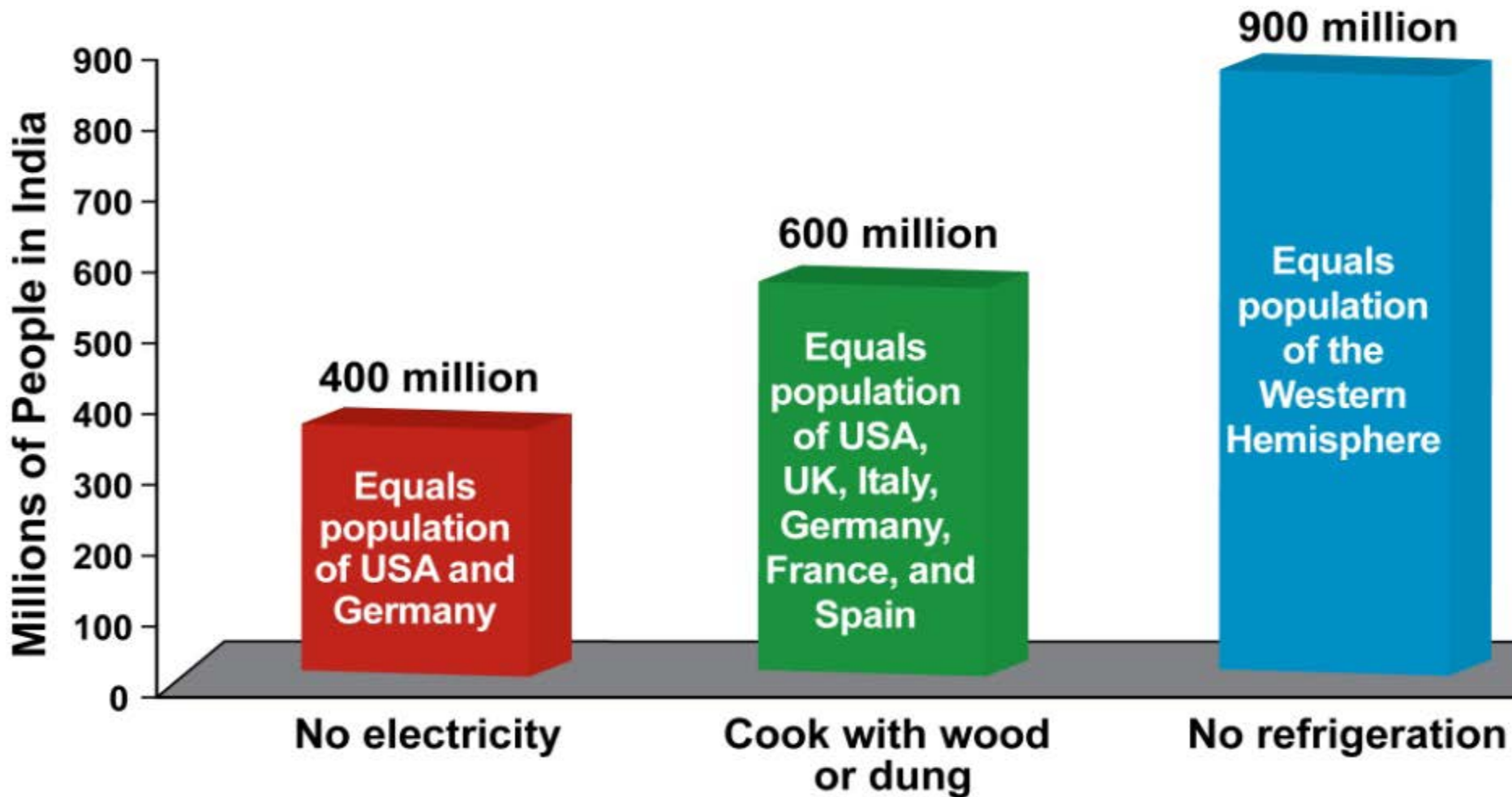


China: Fueling Urbanization



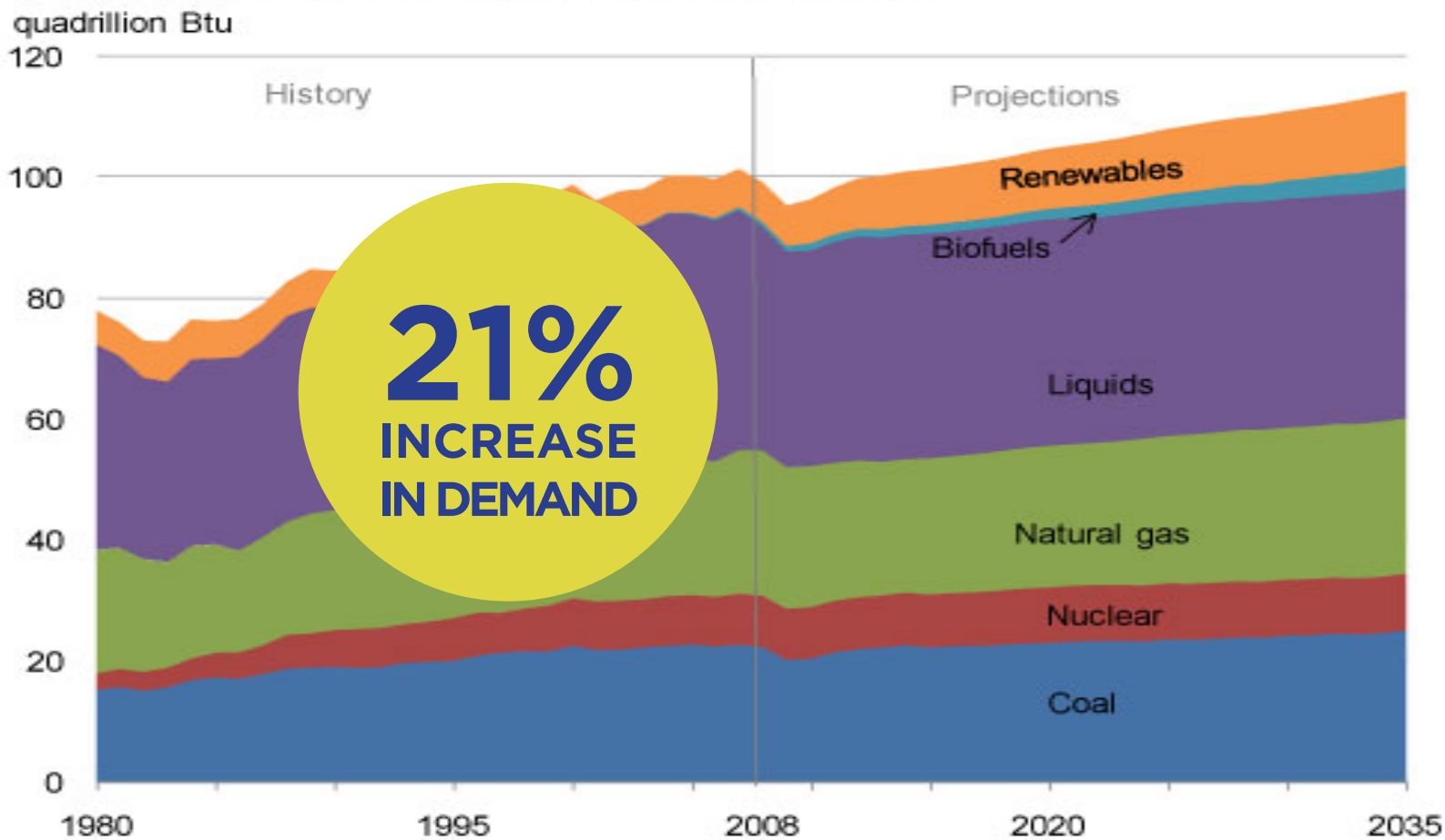


India's Have Nots



US Demand for Energy

Figure 41. Primary energy use by fuel, 1980-2035





A New Paradigm: ENERGY ABUNDANCE

● Technically Recoverable Resources

- 120 years of Nat Gas
- 206 Years of Oil
- 464 years of Coal

● In-place Resources

- 586 years of Nat Gas
- 536 years of oil
- 9,844 years of coal

Institute for Energy Resources Analysis of U.S. Government Data

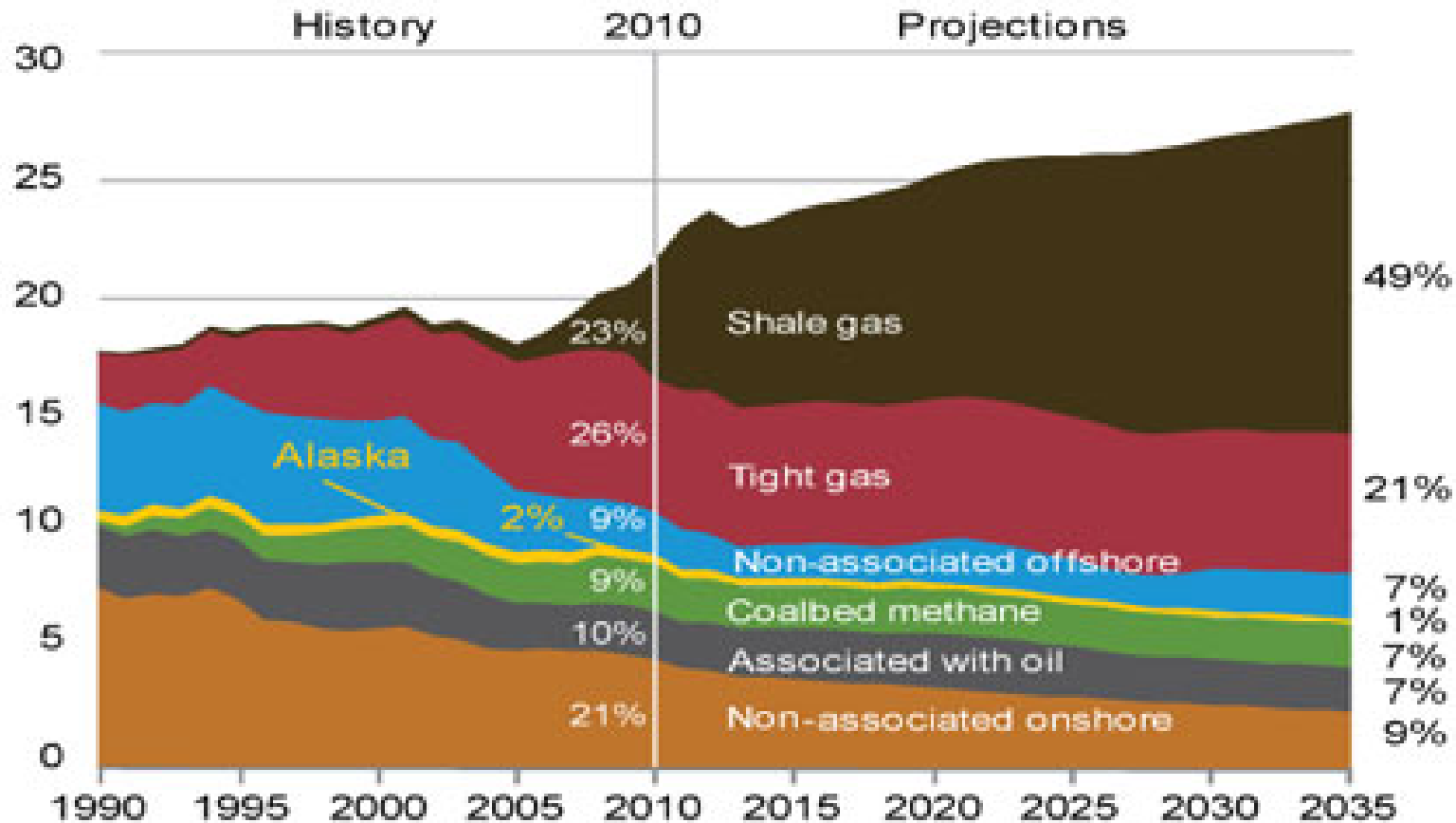
North American shale plays (as of May 2011)



Source: U.S. Energy Information Administration based on data from various published studies. Canada and Mexico plays from ARI. Updated: May 9, 2011

U.S. Natural Gas Production, 1990-2035

trillion cubic feet

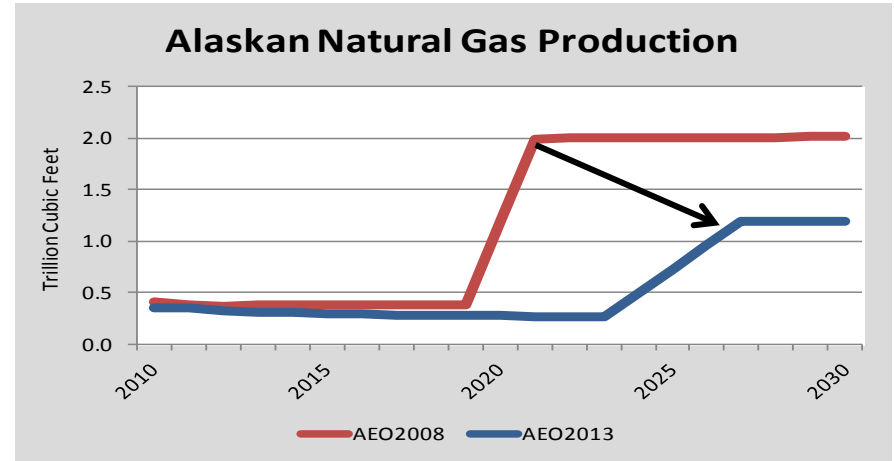
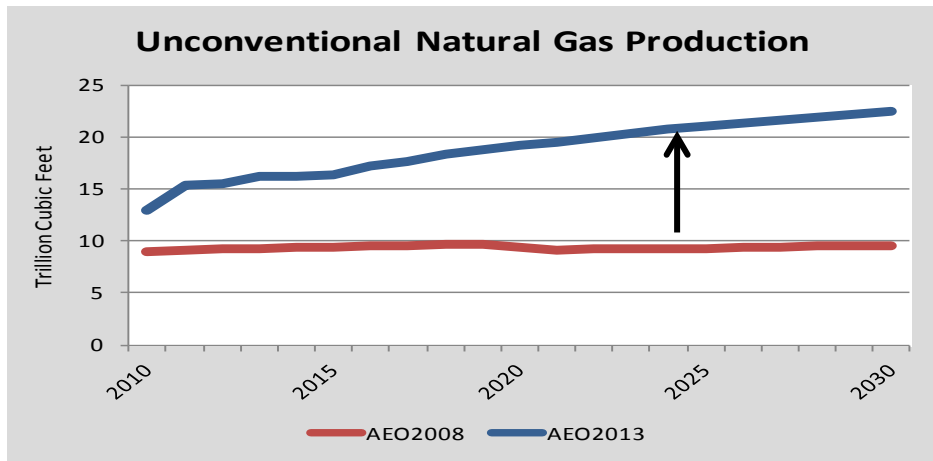
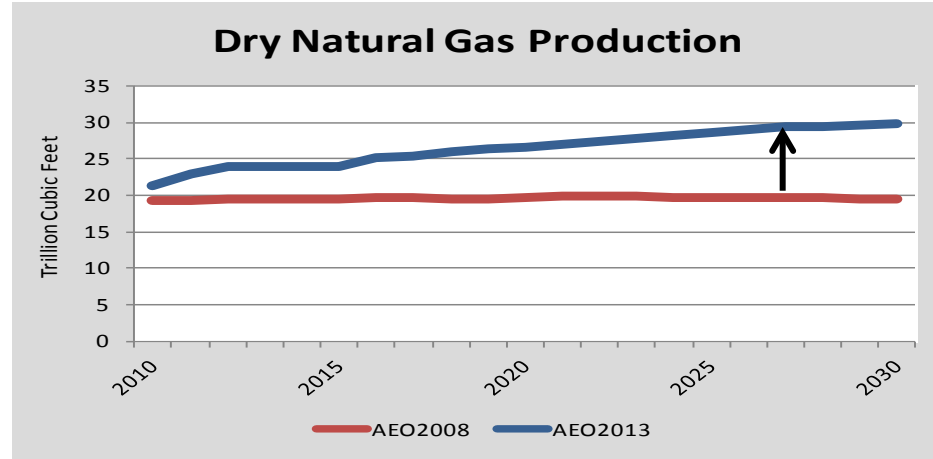


Source: U.S. Energy Information Administration, AEO2012 Early Release Overview, January 23, 2012.



"SHALE GALE": U.S. NATURAL GAS SUPPLY OUTLOOK

What a difference 4 years makes





Shale Fueling Our Economy

	2012	2015	2020	2035
Jobs Supported (millions)	1.75	2.5	3	3.5
New Government Revenue (billions)	\$62	\$91	\$111	\$124
Economic Growth (billions)	\$237	\$350	\$417	\$475
New Labor Income (billions)	\$125	\$181	\$215	\$250



Fueling Our Economy

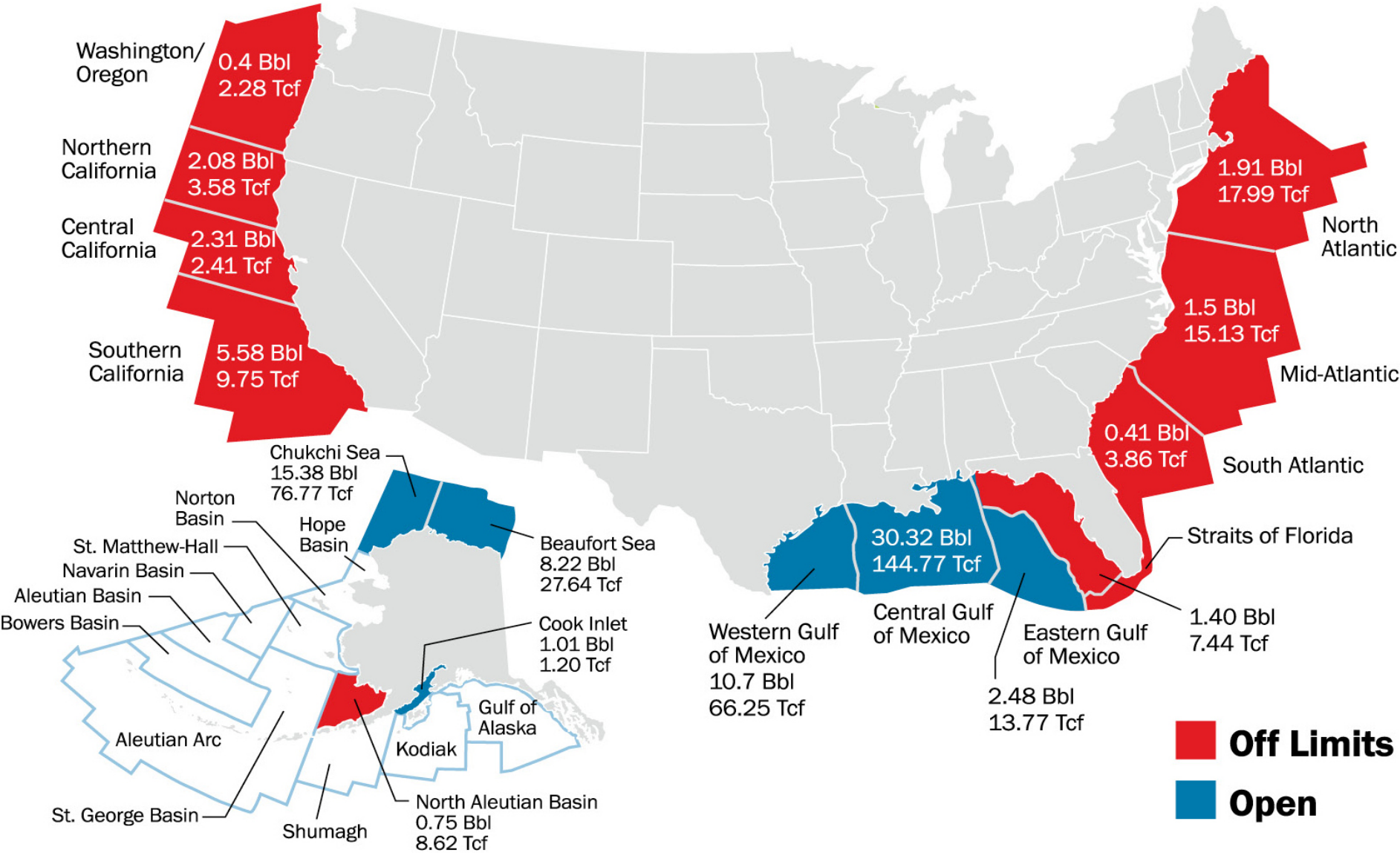
- **Shale plays are on pace to create**
 - +200,000 jobs in CH by 2020
 - +115,000 jobs in PA by 2020 (150,000 existing)
 - +100,000 jobs in TX, LA, and MS
- **Oil & Gas sector created 9% of all American jobs in 2011**
- **Shale is driver behind 68% increase in domestic oil production by 2020.**
- **Net oil imports expected to decrease 60% in 2020.. reducing America's import bill by \$200B by 2020.**
- **Manufacturing Renaissance**
- **Return of the Chemical, Fertilizer, Steel Industries**
- **Change the Geopolitical Balance in US favor**



Fueling Our Economy

- By 2035, U.S. unconventional oil and natural gas could generate more than:
 - 3.5 million new jobs;
 - **\$2.5 trillion** in additional revenue;
 - \$5.1 trillion in investment
 - and 10 million barrels worth of added daily oil and natural gas production

Offshore Undiscovered Technically Recoverable Federal Oil and Natural Gas Resources

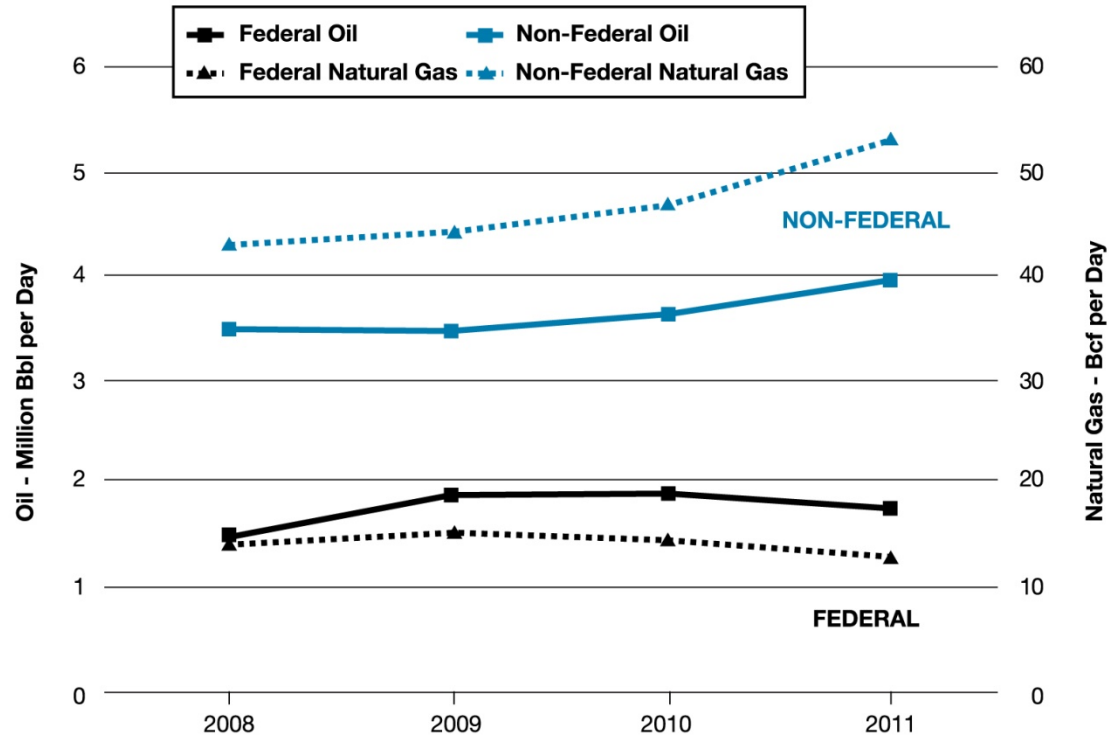


Source: MMS and Department of the Interior



Where the Action IS and ISN'T

U.S. Oil and Natural Gas Production on Federal vs. Non-federal Lands and Waters

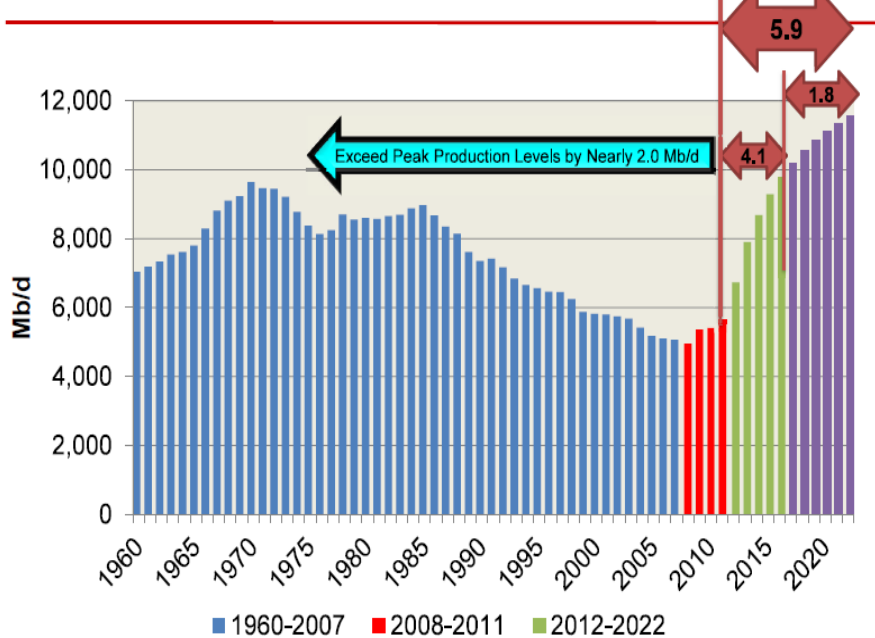


Source: EIA, Office of Natural Resource Revenue



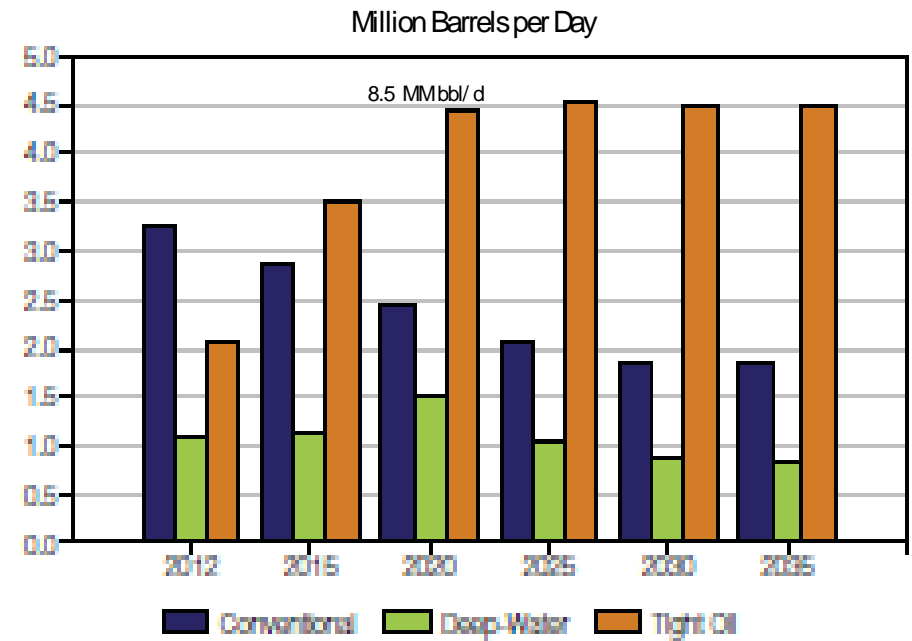
Other U.S. Crude Oil Supply Scenarios

U.S. Oil Production Hits 11.5 million b/d



Source: *BENTEK Crude Awakening Part 6*

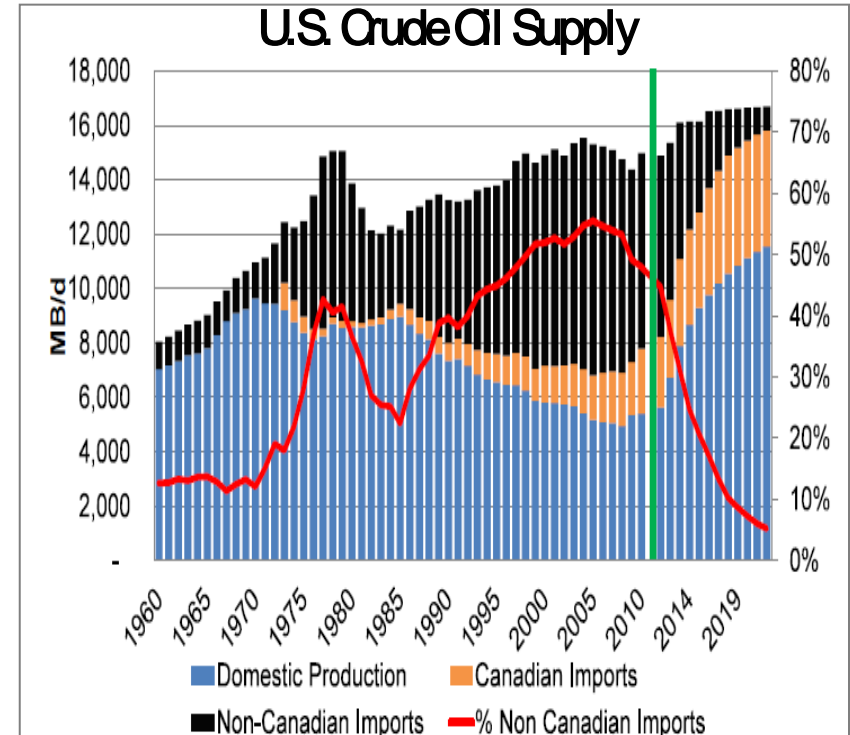
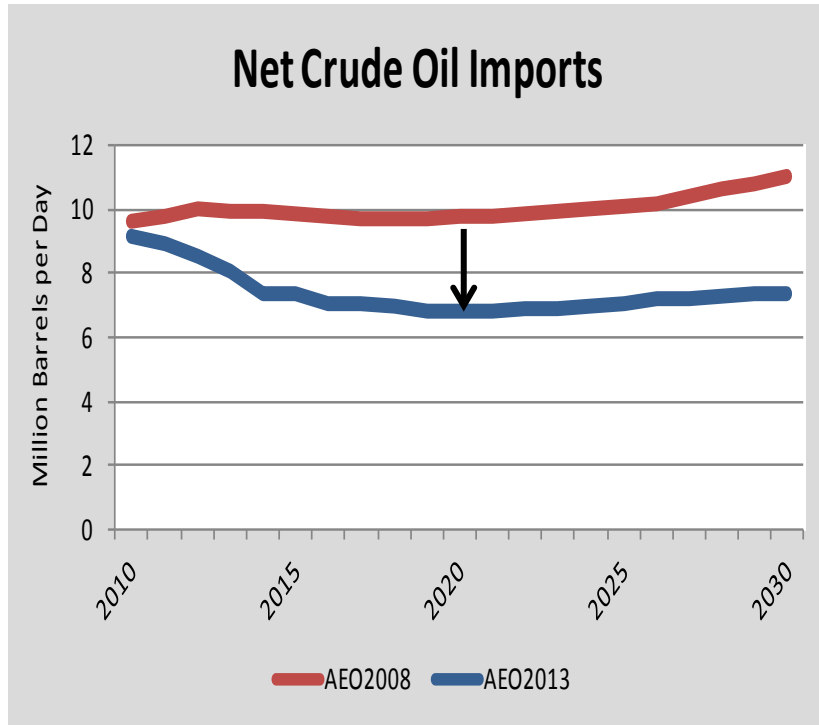
U.S. Oil Production Outlook: 2012 to 2035



Source: *IHS, America's New Energy Future*



OUTLOOK FOR U.S. CRUDE OIL IMPORTS

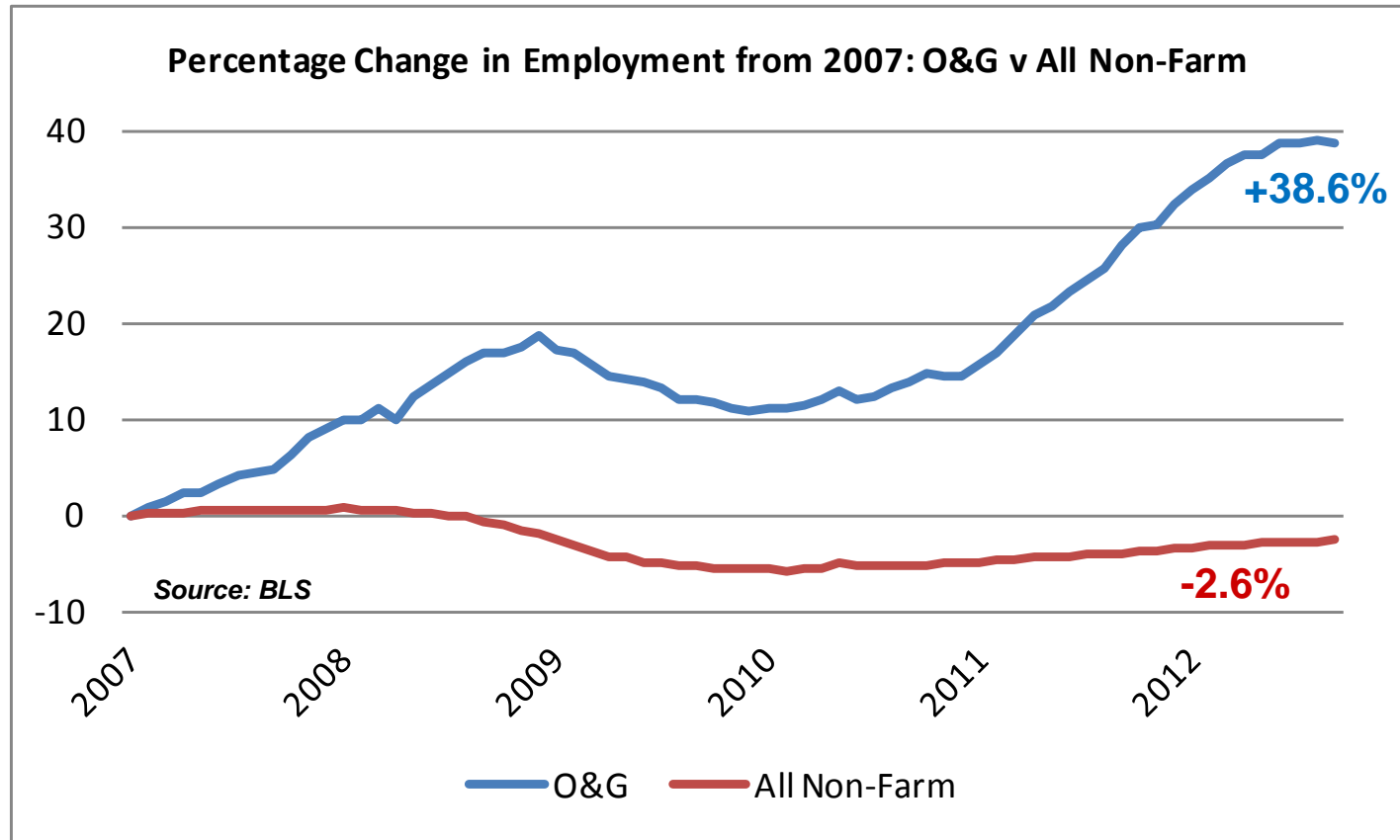


Crude oil imports decline because of:

(1) flat demand for oil; and (2) greater domestic output.



Oil & Gas is THE Job Driver





Keystone XL Pipeline proposal

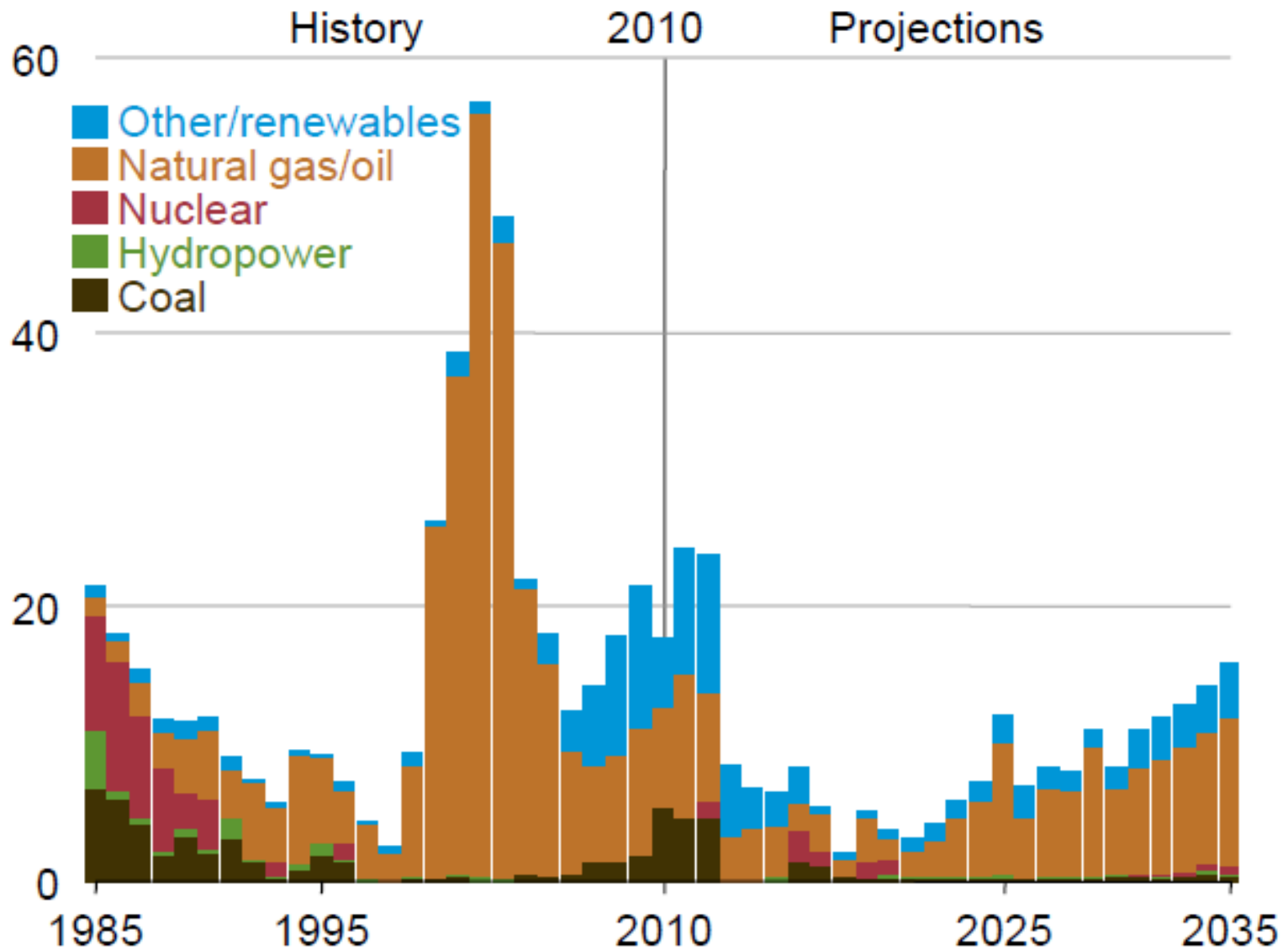




Canadian Oil Sands Benefits

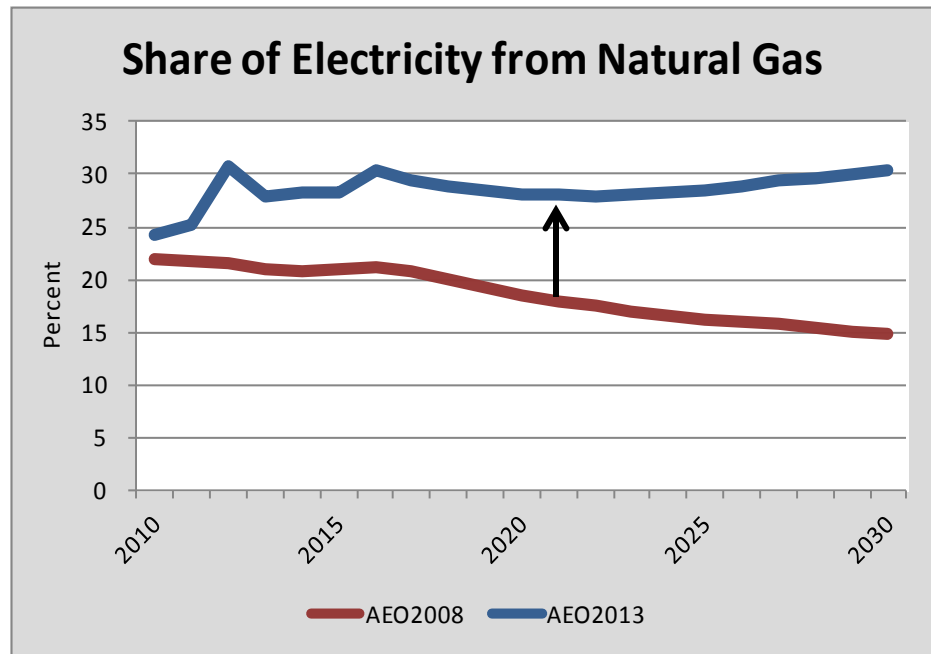
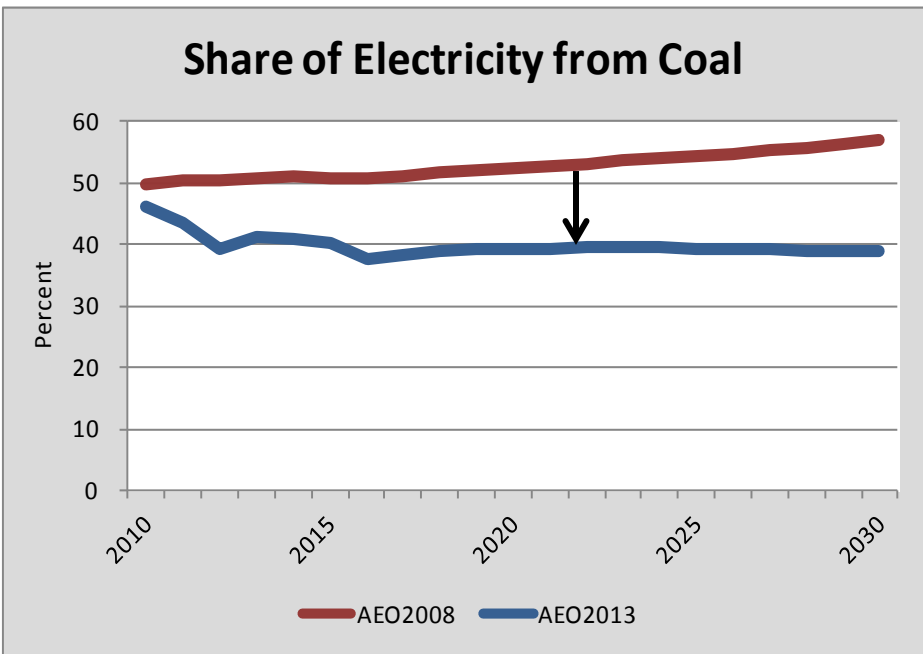
- Currently supports 80,000 U.S. jobs
- Could increase to 94,000 - 600,000 U.S. jobs by 2035
- Keystone XL pipeline could create 20,000 US manufacturing jobs immediately and 250,000 by 2035
- The projected impact to U.S. GDP would be between \$200 billion - \$800 billion;

Electricity Generating Capacity Additions 1985-2035 (gigawatts)





Natural Gas-Fired Power Stations Will Gain Share

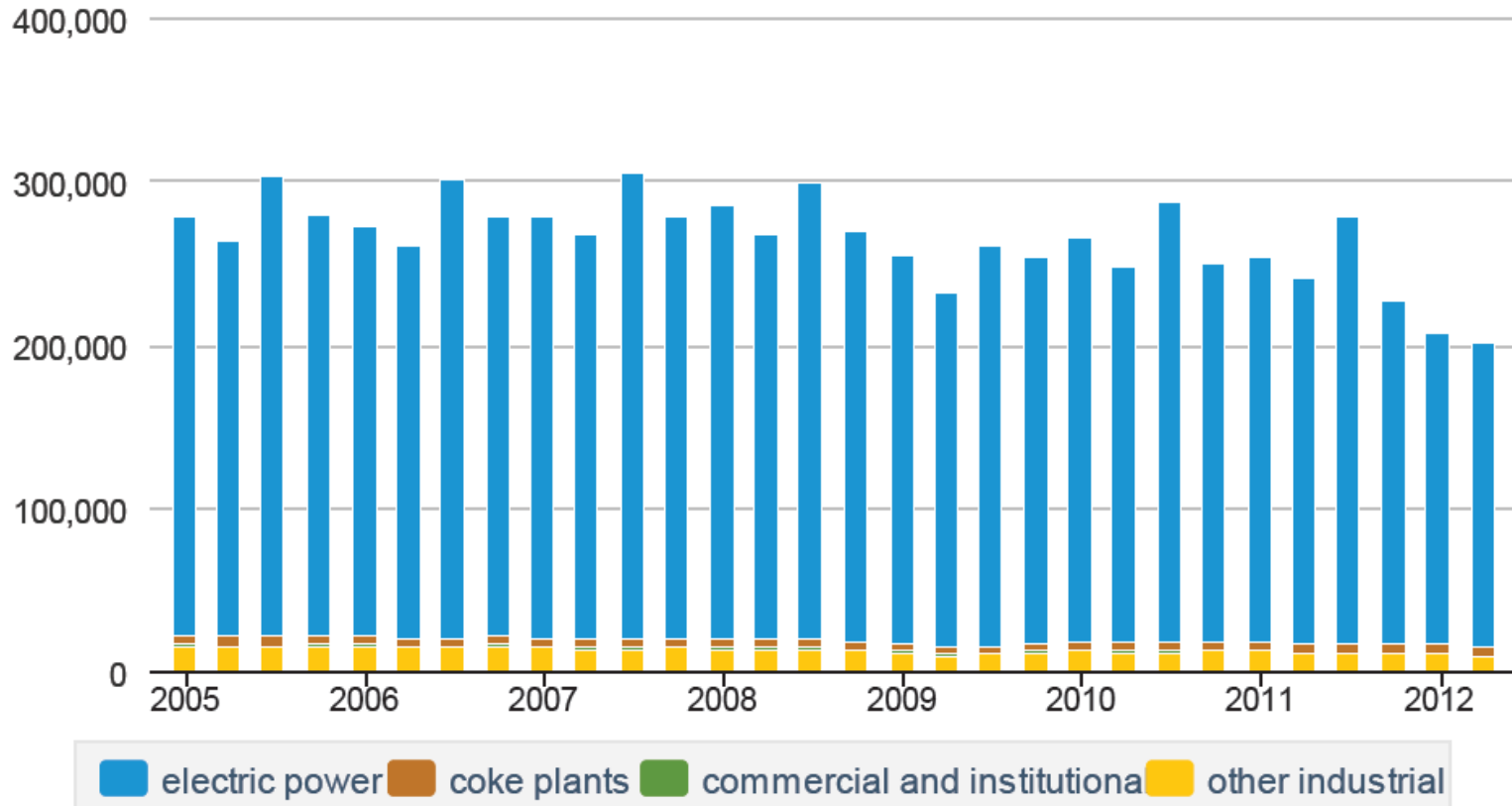


Growing interdependency of natural gas & electricity supplies creating market challenges that could affect reliability.



Domestic Coal Consumption Down

thousand short tons

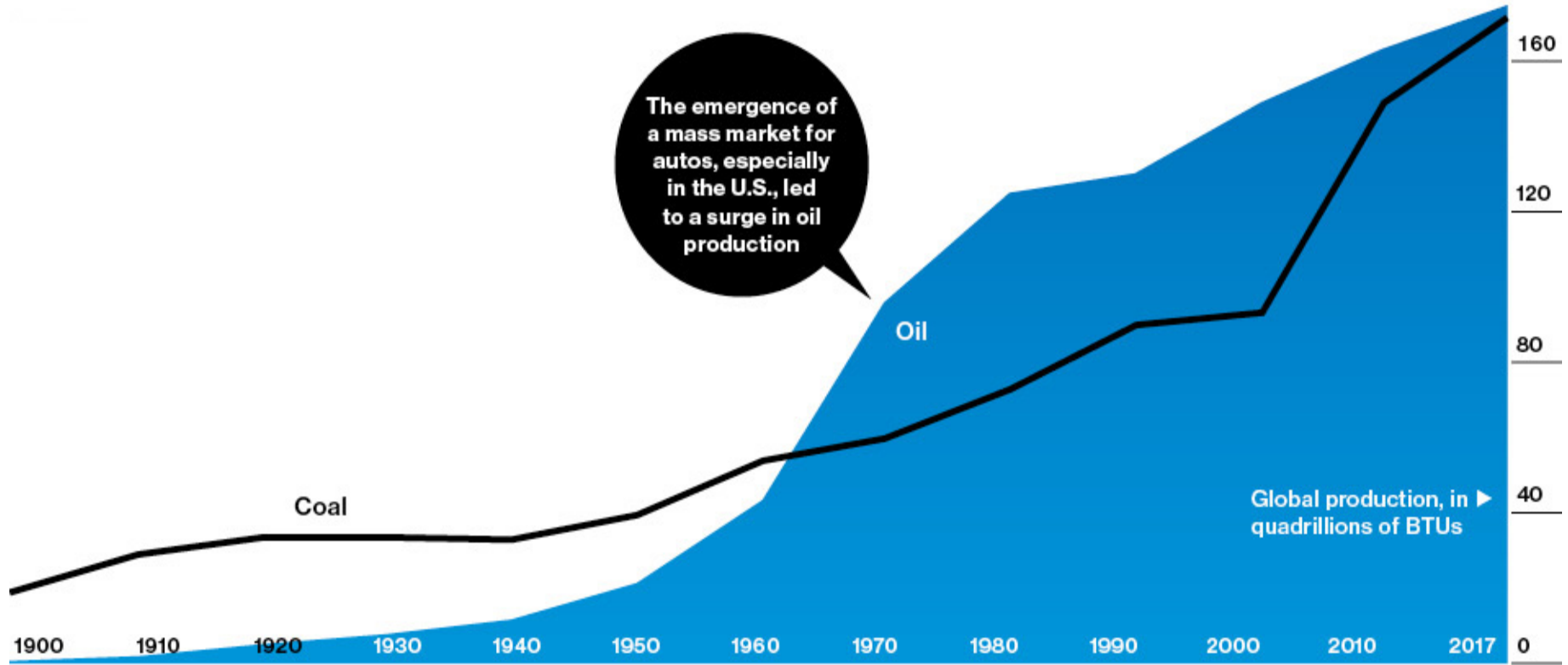


Source: EIA Quarterly Coal Report 10-4-12

U.S. Consumption Down 27% in five years



Global Coal Demand Way Up

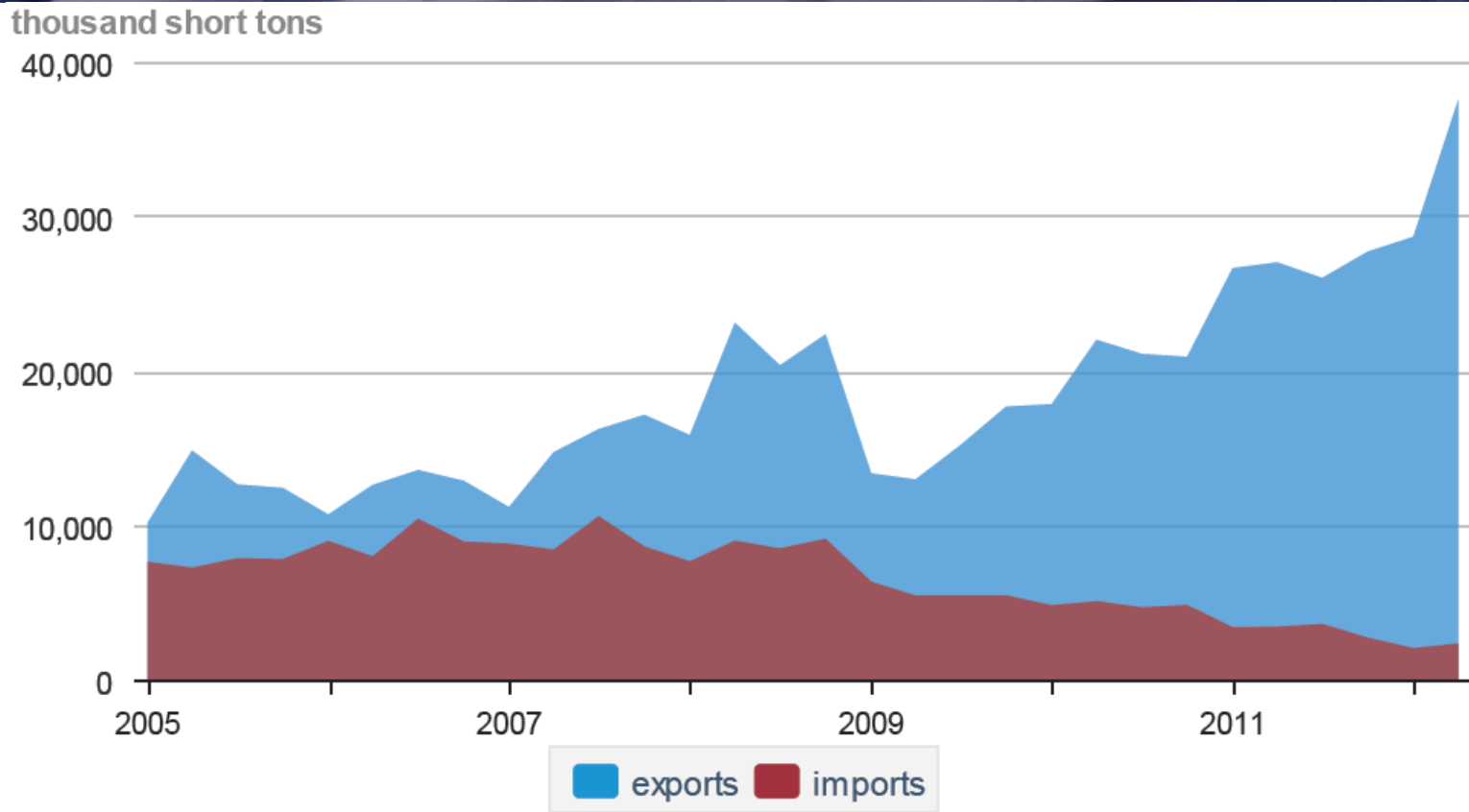


GRAPHIC BY BLOOMBERG BUSINESSWEEK. DATA: INTERNATIONAL ENERGY AGENCY, VACLAV SMIL
Source: EIA Quarterly Coal Report 10-4-12

Global production to meet oil by 2017



Coal Exports Up...WAY UP

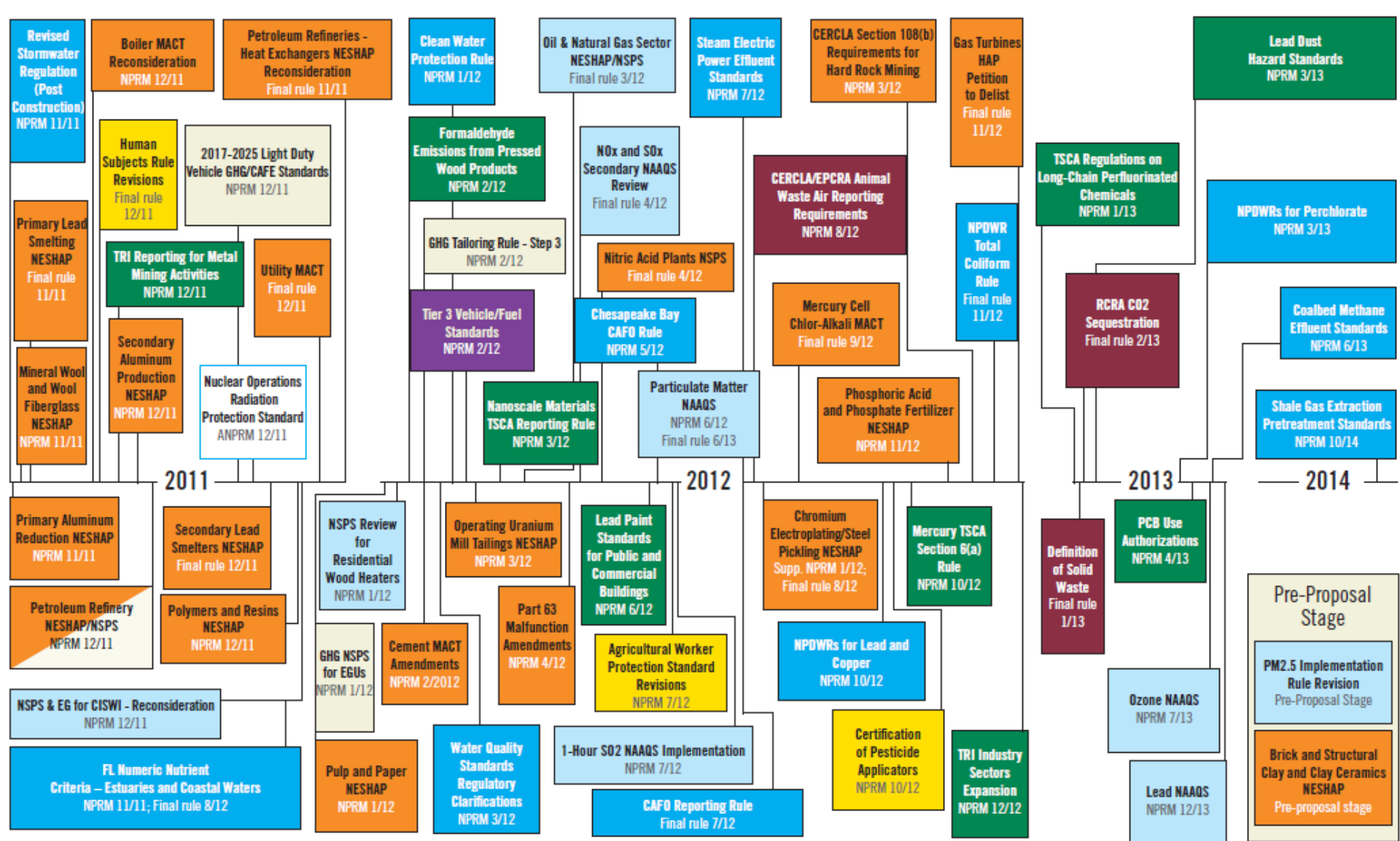


Source: EIA Quarterly Coal Report 10-4-12

Exports have increased 190% in three years

2012 will beat all-time high in 1981

EPA's Rulemakings on the Runway

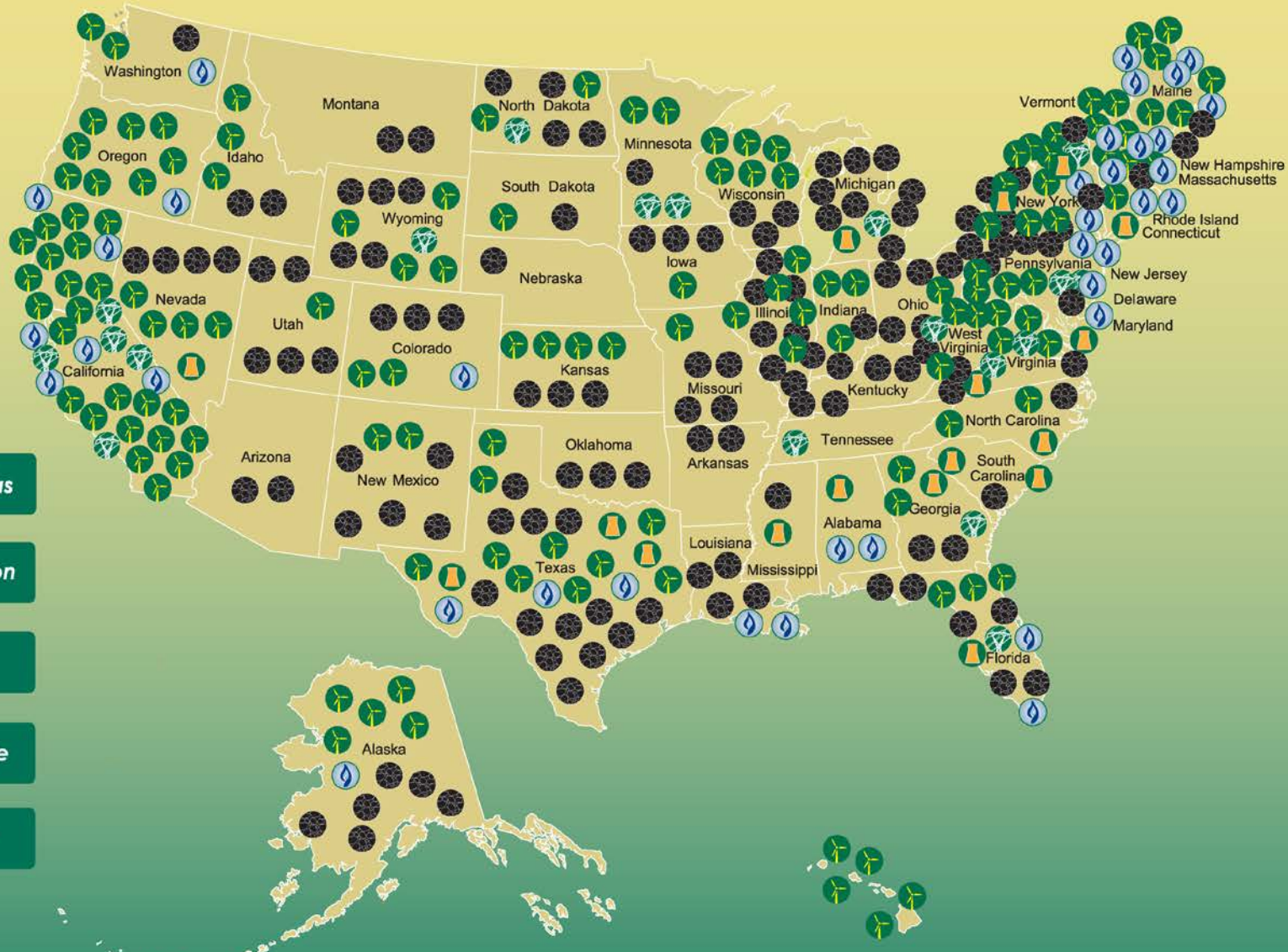







■ Air Quality Regulations
 ■ Fuel Regulations
 ■ GHG Regulations
 ■ Air Toxics Regulations
 ■ Pesticides
 ■ Toxic Substances
 ■ Waste
 ■ Water
 ■ Other



Project ~~No Project~~


www.projectnoproject.com

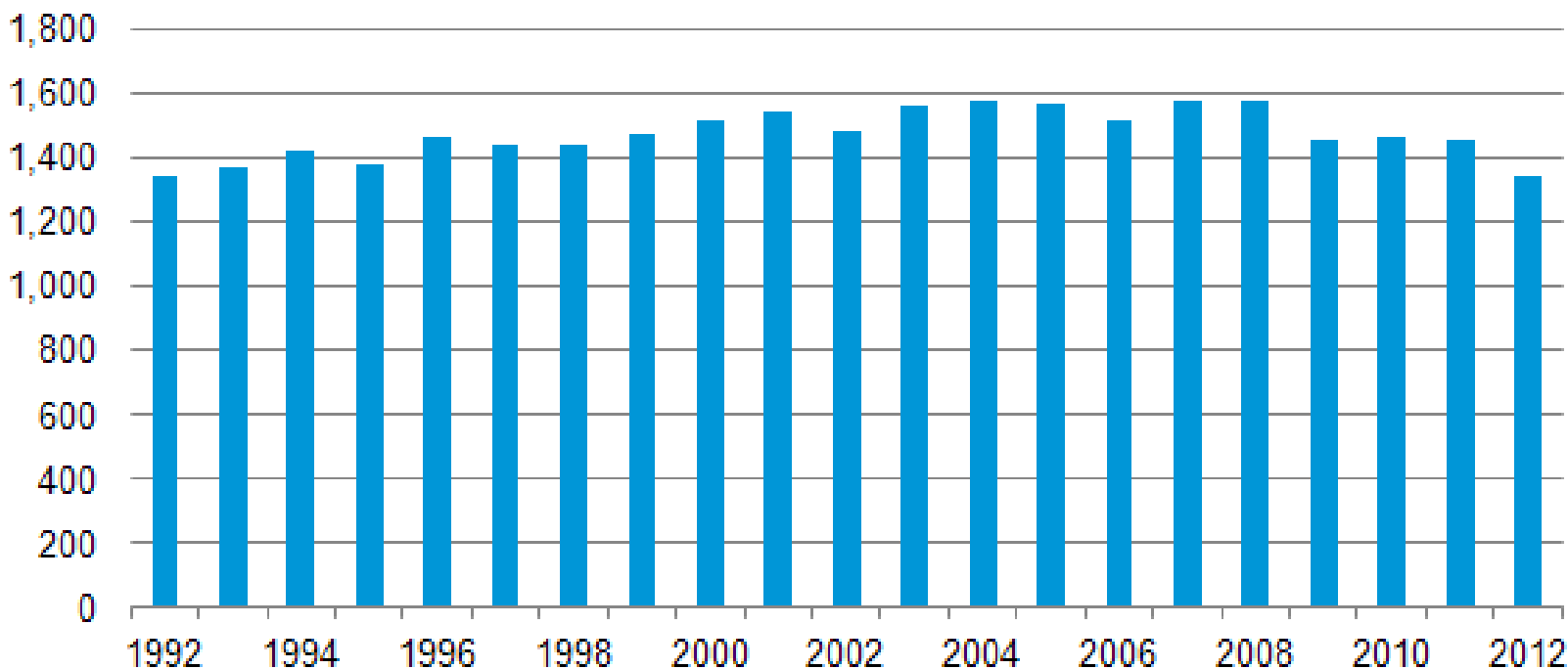


-  **Natural Gas**
-  **Transmission**
-  **Coal**
-  **Renewable**
-  **Nuclear**



BACK TO THE FUTURE

U.S. first quarter total carbon dioxide emissions from energy demand, 1992 to 2012 
million metric tons





U.S. Strategy—More Realism

“NO SILVER BULLET APPROACH”

- Maximize Efficiency
- Increase domestic oil and gas
- Recognize role for nuclear and clean coal
- New alternative transportation fuels
- Sustainable policy on renewables
- Modernize our infrastructure
- Exert authority to get beyond NOPE syndrome
- Invest in our technology solutions and our intellectual foundation for innovation
- *Achievable Climate Approach*



U. S. C h a m b e r o f C o m m e r c e



Time to Capitalize on Opportunity

ON THE TABLE: America's national security,
investment climate and competitiveness

ENERGYXXI.ORG

