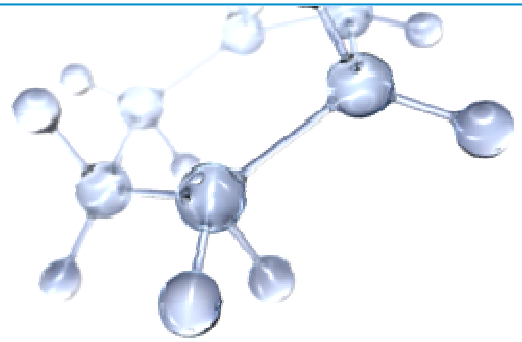
ExxonMobil

Taking on the world's toughest energy challenges.™

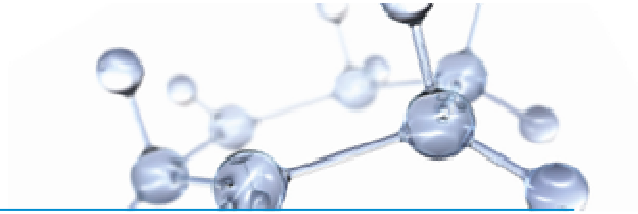


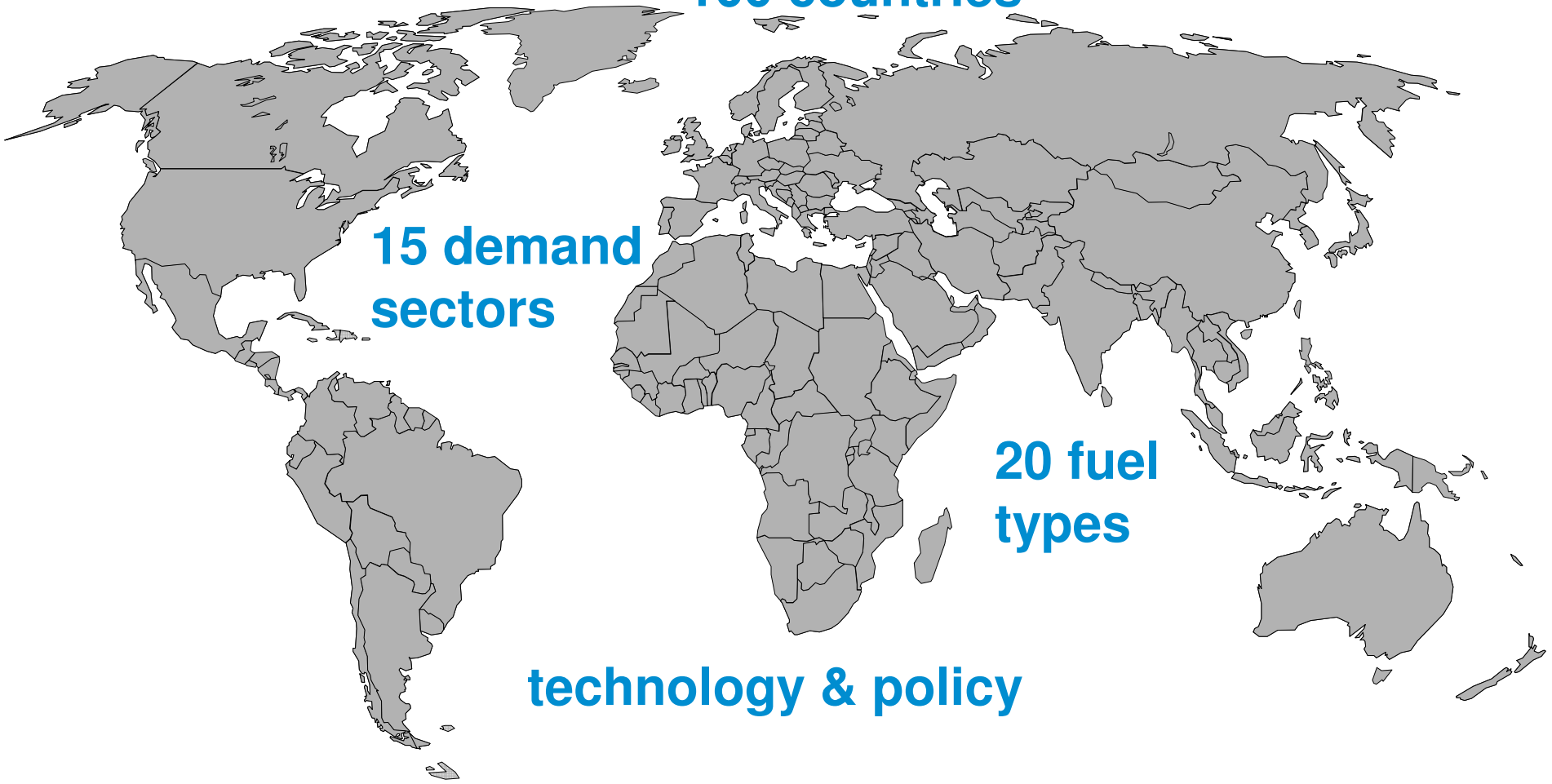
The Outlook for Energy

a view to 2030

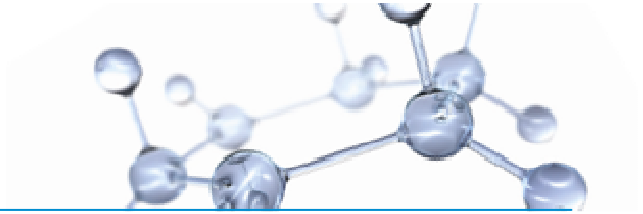
Steven L. Blume
Baton Rouge Refinery Manager
Tulane Engineering Forum
April 15, 2011

Energy Outlook Basis

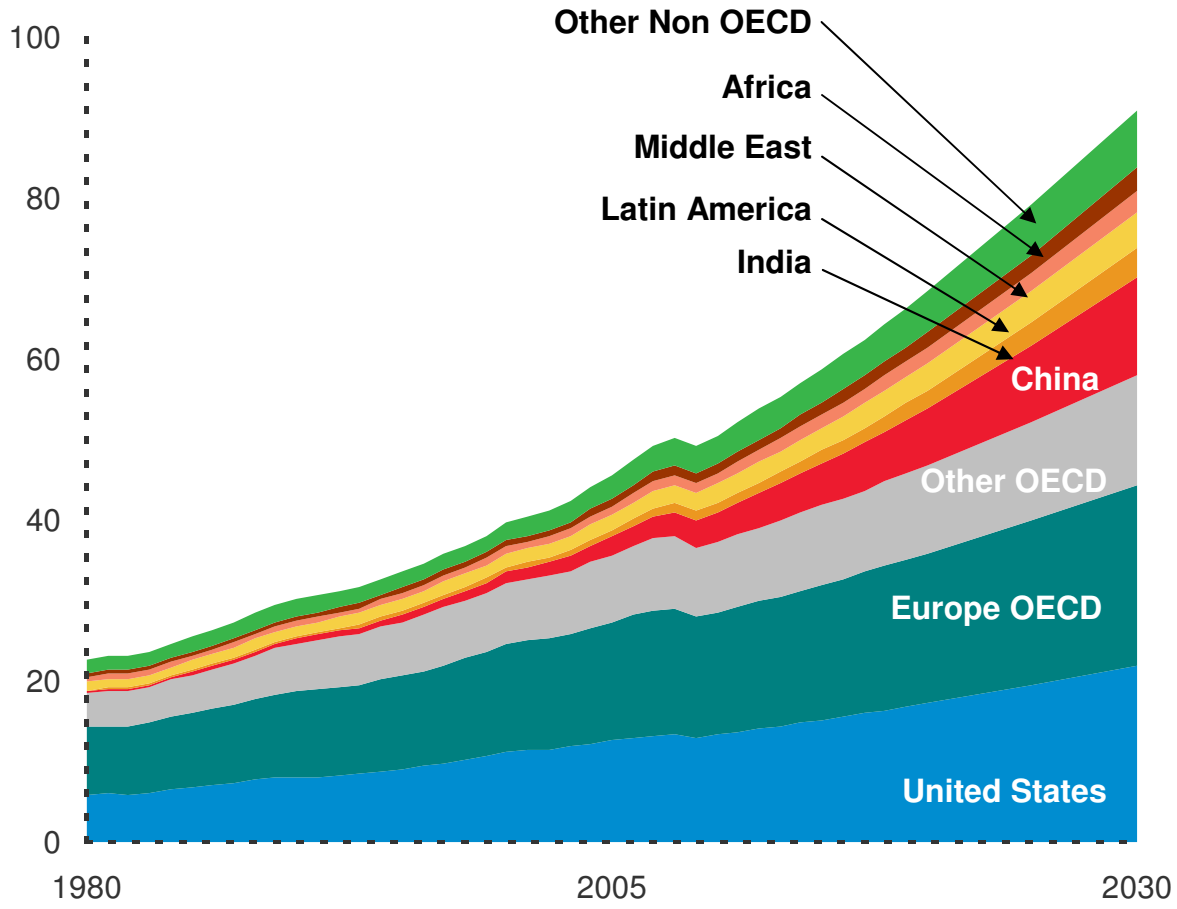




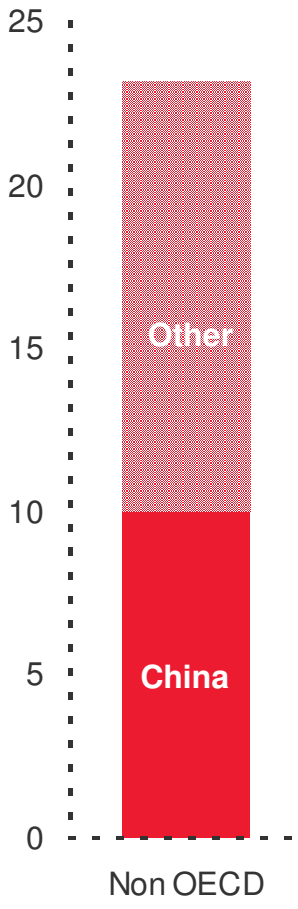
Economic Growth Continues



GDP
Trillion 2005$



GDP Growth 2005 to 2030
Trillion 2005$



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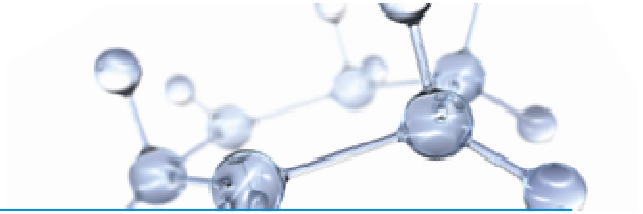
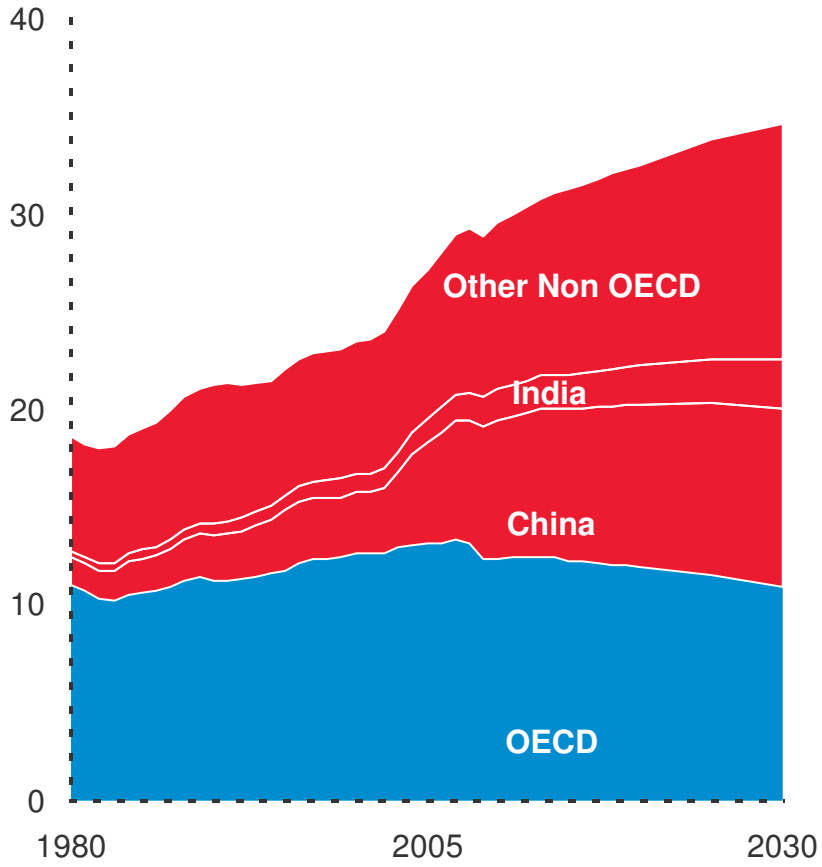
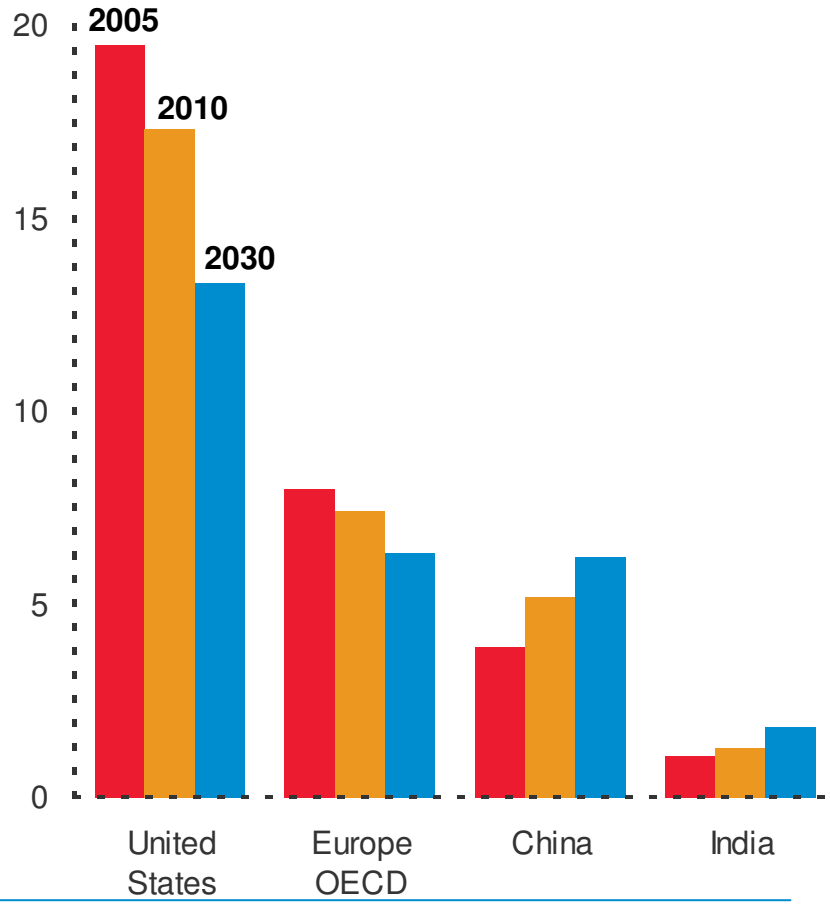
CO_2 Emissions Moderate



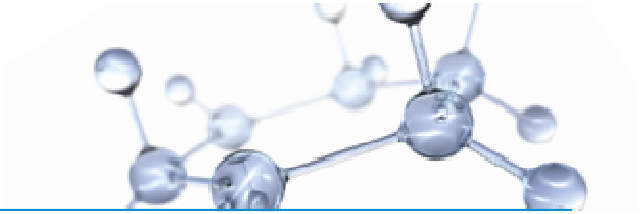
By Region
Billion Tons

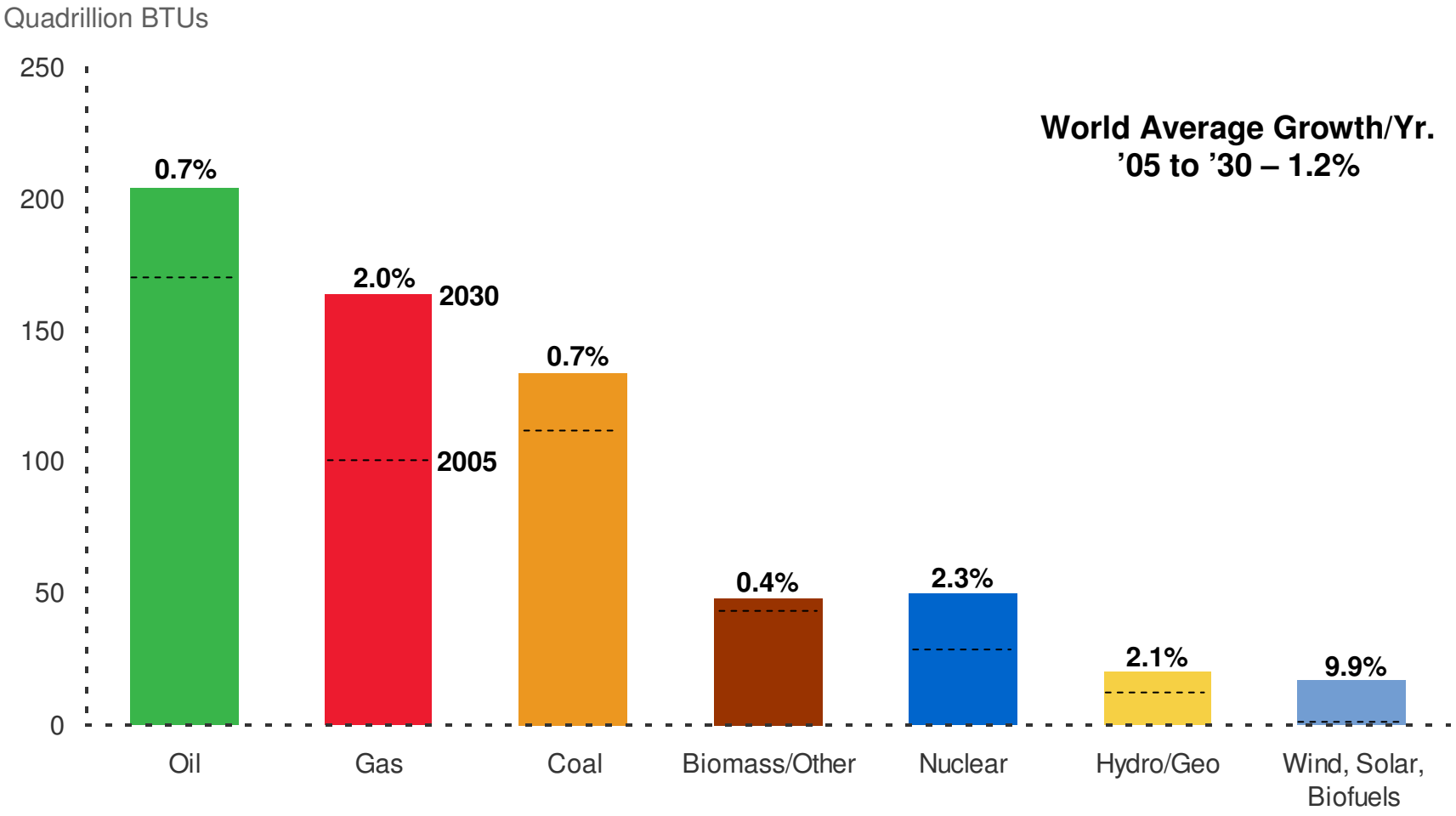


Emissions per Capita
Tons per Person

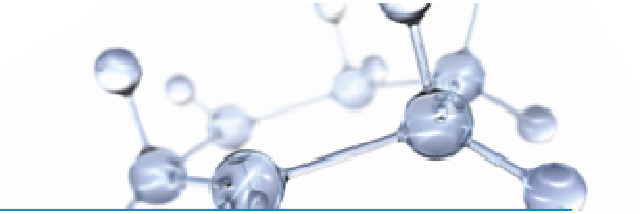


Global Energy Supply & Demand

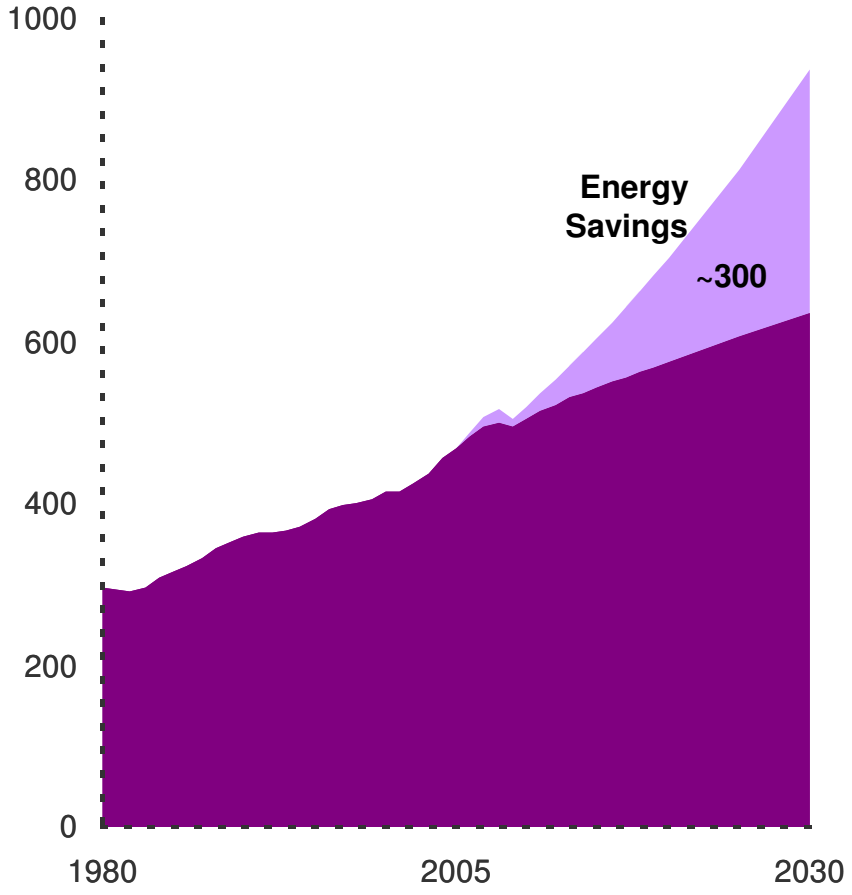




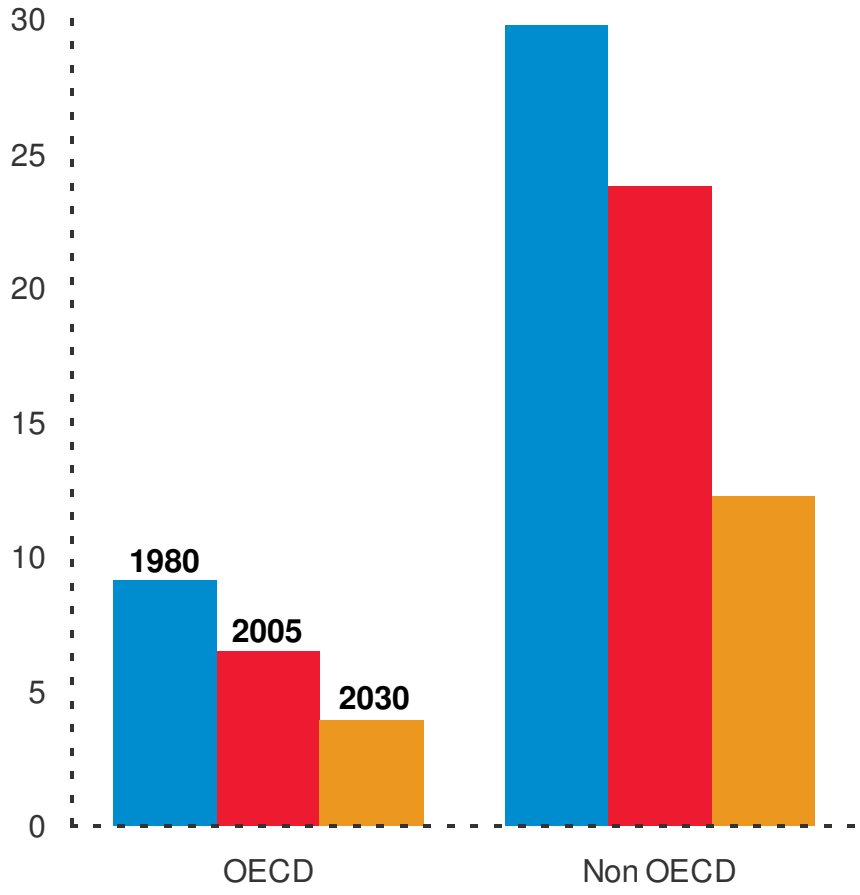
Efficiency Key to Meeting Demand



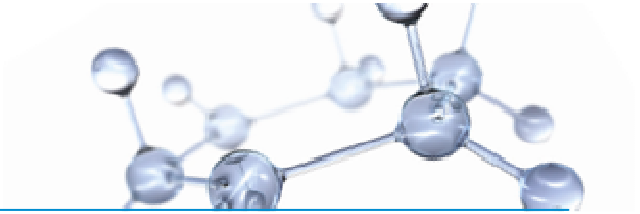
Demand
Quadrillion BTUs



Energy Intensity
MBTU/2005$k GDP



New Technologies



Expanding Supplies -- algae biofuels

Investing up to $600 million to develop oils from photosynthetic, CO_2-consuming algae

Reducing Emissions -- Green House Gases

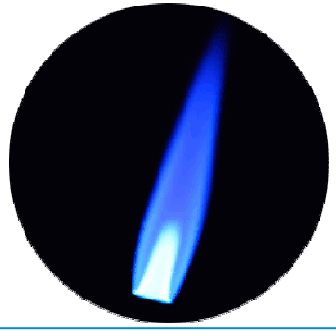
Stronger, thinner industrial and consumer products use less energy and fewer raw materials

Improving Today's Vehicle – from hood to trunk

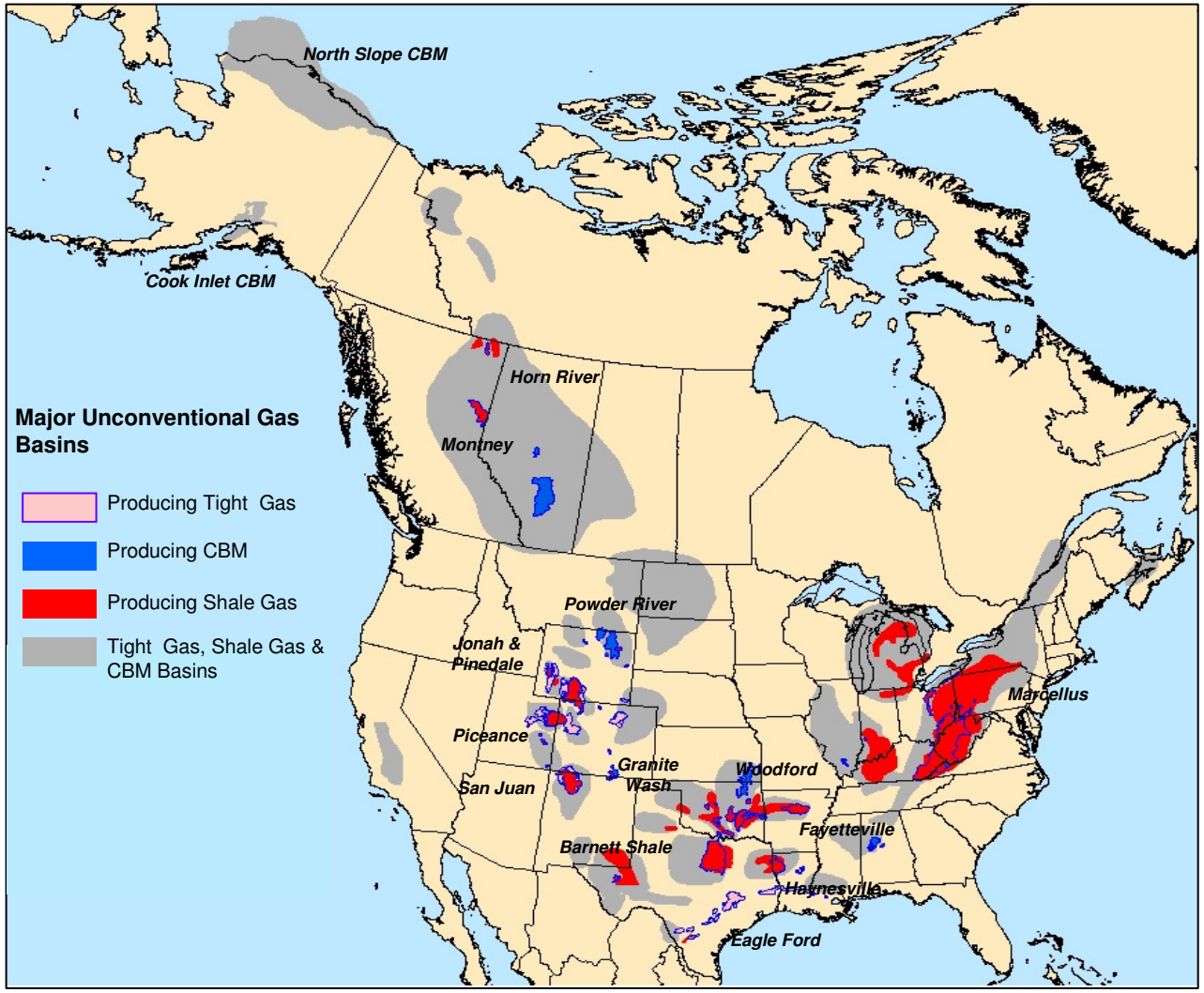
New technologies in plastic and rubber are making cars up to 35 percent more fuel efficient

Expanding Supplies – natural gas

Global leader in production of natural gas; electricity from natural gas emits up to 60 percent less CO_2 than coal

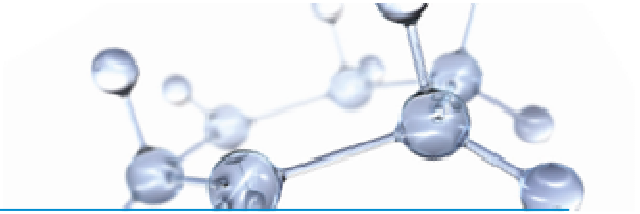


Remaining U.S. Gas Resource

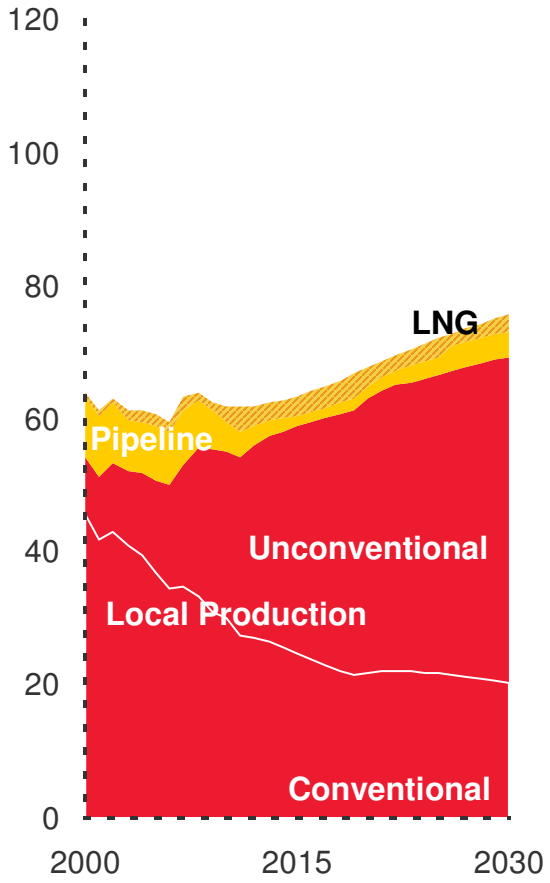


- **Resources for ~100 years coverage at current demand**
- **Unconventional gas has extended coverage 60+ years**
- **Further unconventional gains expected**

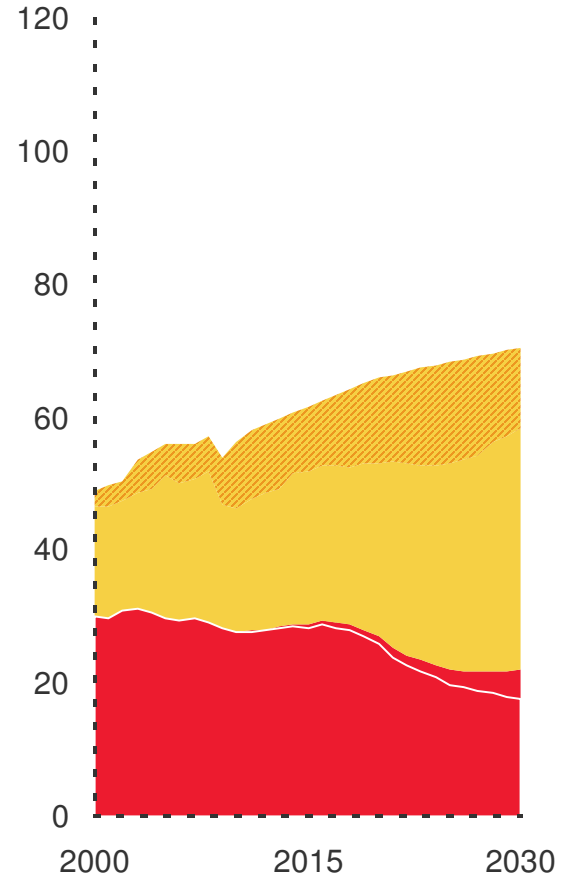
Gas Supply Grows and Diversifies



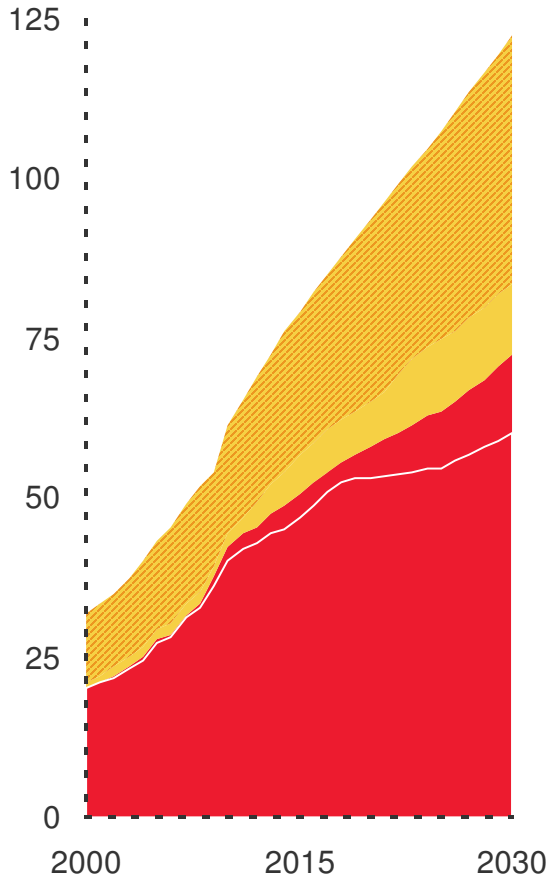
United States
BCFD



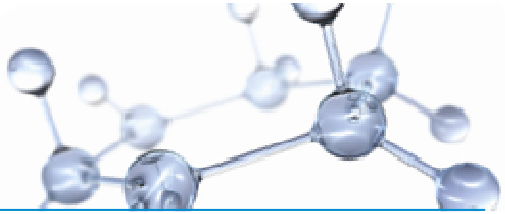
Europe
BCFD



Asia Pacific
BCFD



Natural Gas Adapts to Growing Needs



1800-1850
Gas for lighting

- gas from coal
- street lights
- first gas company
- first gas well

1850-1900
Gas for heating & cooking

- lamps in the home
- heating
- cooking
- metering
- more gas lights than oil lamps
- vehicles
- pipeline transport
- compressors

1900-1950
Gas for industry & power

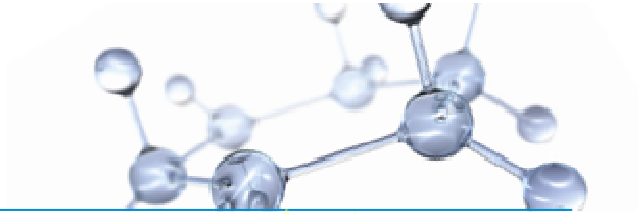
- industrial use
- national pipeline network
- thermostats for heating
- turbine for electricity
- World's Fair features gas
- underground storage
- 1st LNG cargo to Europe

1950-2000
Gas as a global, flexible fuel

- meets 20% of energy needs globally
- NYMEX futures
- Russia exports to Europe
- LNG to Asia
- first gas fuel cell in the home
- UK-Europe Interconnector
- renewed US interest in LNG
- Expanded use to meet growing power needs & reduce emissions
- advances in shale gas enhance supply outlook

2000-2030
Gas to reduce emissions

In thirty minutes today…



Residential electricity demand is equal to 1,100 Hoover Dams.

The world used enough jet fuel to make 240 transatlantic flights.

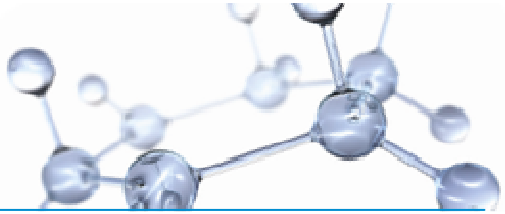
The world produced enough steel to build 10 Eiffel Towers.

1.3 million personal vehicles filled their gas tanks.

The world used enough electricity to power London for 8 days.

World gas consumption could fill 70,000 hot-air balloons.

Addressing the Energy Challenge



Energy Challenge

Providing energy the world needs while minimizing the impact on the environment

Energy Strategy

Develop more supply sources

- Oil and Gas
- Wind
- Nuclear

Use more efficient technologies

- Transportation
- Industry
- Residential

Make the most of our investments

- Expand Natural Gas
- Accelerate Nuclear

Support research

- Energy Efficiency
- Other (i.e., Solar)

Development Challenges and Solutions

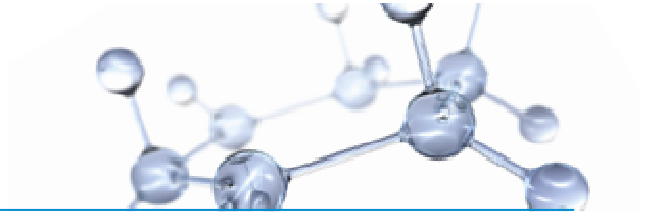
World development continues, while lives improve and economies grow

Increase Efficiency

Mitigate Emissions

Expand Supplies

Thank you



Questions?

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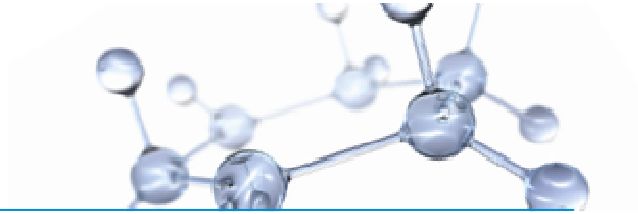
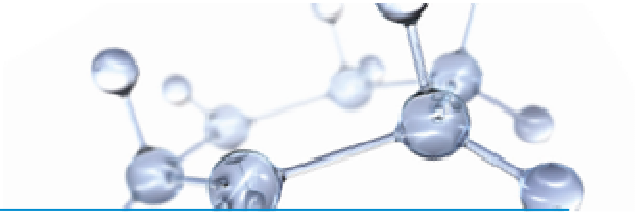


BACKUP SLIDES

Next Generation Algae-Based Biofuels

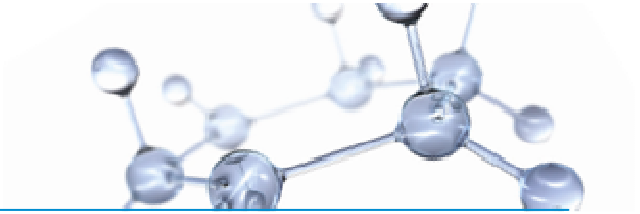


- ExxonMobil alliance with Synthetic Genomics Inc
  - focus on development of advanced biofuels from photosynthetic algae
  - complements ExxonMobil's ongoing efforts to advance breakthrough technologies to meet the world's energy challenges

Sunlight | **Carbon Dioxide** | **Water** | **Algae** | **More Algae Containing Hydrocarbons** | **Oxygen**

- benefits of using algae for biofuels production:
  - can be grown using land and water unsuitable for food production
  - potentially yield greater volumes of biofuels per acre than other biofuel sources
  - could be used to manufacture biofuels similar to today's transportation fuels
  - growing algae consume CO_2; algae-based biofuels could provide GHG mitigation benefits versus conventional fuels

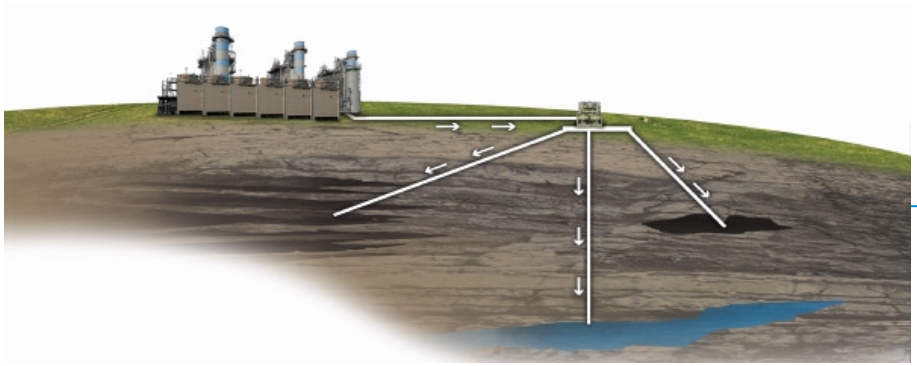
Reducing emissions

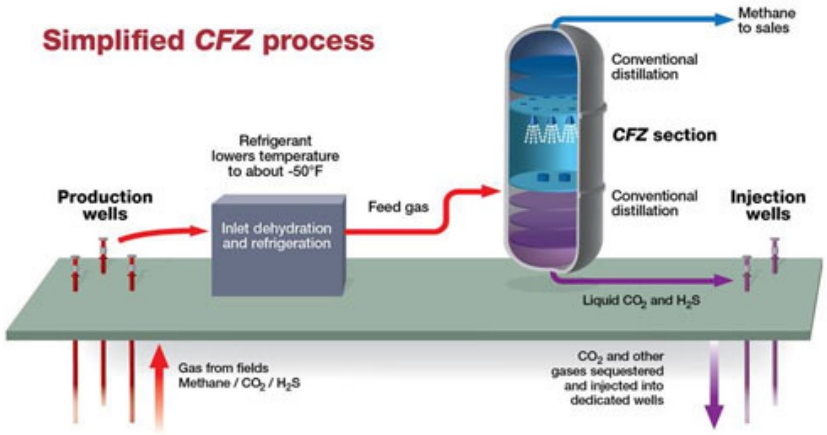


- **Natural gas**
  - ExxonMobil is a global leader in production of natural gas, electricity from natural gas emits up to 60 percent less CO_2 than coal

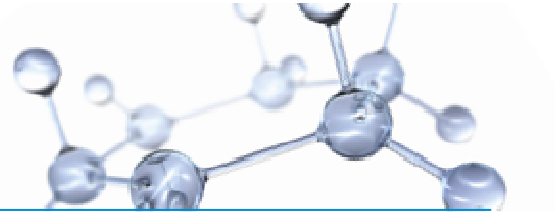
- **Controlled Freeze Zone™**
  - This technology, which reduces the cost and complexity of separating CO_2 from produced natural gas, could help carbon capture and storage systems reduce GHG

- **Carbon capture and storage**
  - As a leader in CCS, ExxonMobil has captured up to 4 million metric tons of CO_2 per year in Wyoming, and partnered to store 10 million metric tons in the North Sea.





What we pay for a gallon of regular gasoline



Crude Oil = 68%

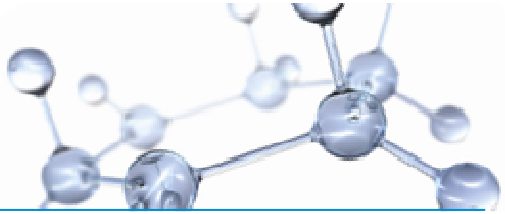
Taxes = 14%

Refining = 10%

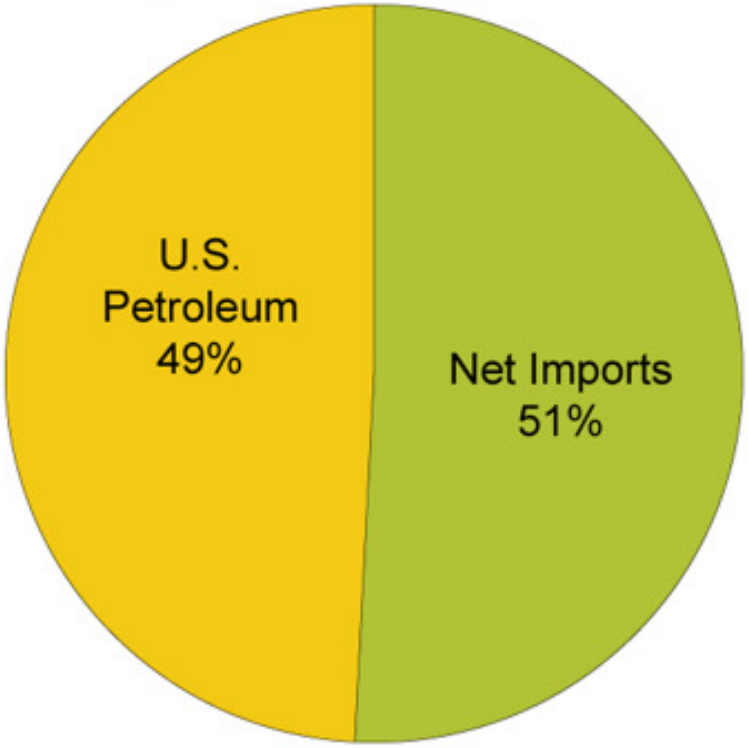
Distribution and Marketing = 8%

Source: US Energy Information Administration

We produce only half of what we use

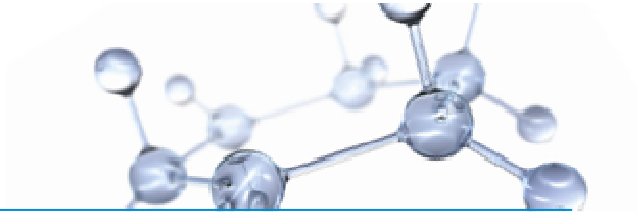


Net Imports and Domestic Petroleum as Shares of U.S. Demand, 2009



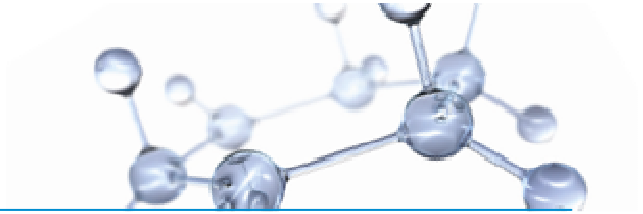
Source: U.S. Energy Information Administration, *Petroleum Supply Annual 2009* (July 2010).

Regulatory Issues



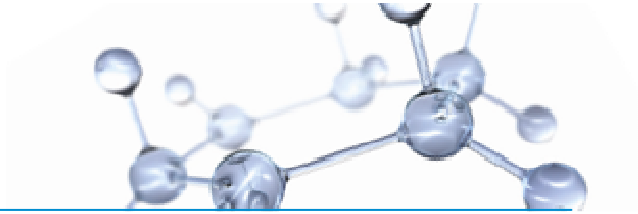
- Energy Policy
  - Domestic energy production (moratorium)
  - Energy Security
- Environmental Policy
  - National Ambient Air Quality Standards (NAAQS)
  - National Emission Standards for Hazardous Air Pollutants (Boiler Standards)
  - Energy Efficiency/Conservation
- Regulatory Overreach
  - Revised Ozone standards
  - Greenhouse Gas (GHG) emission standards
- Taxation
  - Energy taxation
  - Business taxes

An example - The moratorium



- What can't get passed in Congress, the administration will enforce through its regulatory arm
  - Federal drilling moratorium – misguided and reckless
  - Moratorium finally lifted on Oct 12th (2010)
- Impact of the shutdown
  - 33 deepwater drilling rigs costing $1 billion each; 4 have left
  - Each employs 800-1,400 people
  - For every job on the rig, the offshore industry supports 6 additional jobs
  - ONLY 3 deep water wells permitted to date
- Moratorium no longer "the" issue; rules and permitting are the issues.

Current Events



- Disruptions in Mideast
  - Mideast and North Africa produce 1/3 of global liquid fuels
  - Libya – largest proven oil reserves in Africa
    - Little to US, but MAJOR supplier to Europe
  - Reduced supplies globally
  - Higher energy costs
- Japan
  - Japan is the world's largest importer of LNG and coal and the second largest net importer of oil.
    - Temporary disruptions in demand
  - Severe blow to nuclear power industry = increased reliance on fossil fuels
    - Currently 27%; goal of 50% by 2030
    - Increased demand for natural gas/LNG