Discussion Outline

• Setting the context

• Demand/supply outlook for 3 regions
  – United States
  – OECD Europe
  – China

• Evolution of the global gas market
  – Expected trade flows
  – Pricing and contract issues
  – Key uncertainties
Natural gas is expected to provide about 23% of the world’s energy needs.

<table>
<thead>
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<th>Year</th>
<th>History</th>
<th>Projections</th>
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<td>2030</td>
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World energy consumption (quadrillion Btu)

- **Liquids (including biofuels)**
- **Coal**
- **Natural gas**
- **Renewables (excluding biofuels)**
- **Nuclear**

Share of World Total

Source: EIA, *International Energy Outlook 2009*
The largest gas markets are not located in the same regions as most of the world’s gas reserves.
Locations of U.S. shale gas plays

Source: Energy Information Administration based on data from various published studies
Updated: May 28, 2009
United States gas consumption

U.S. natural gas consumption
trillion cubic feet

Electric power
Industrial
Other*
Commercial
Residential

* - natural gas used for transport, pipelines, and lease and plant fuel

Source: EIA, Annual Energy Outlook 2010

Natural Gas: U.S. Markets is a Global Context, April 7, 2010
United States natural gas imports

trillion cubic feet

History

Projections

Consumption

Net imports

13%

Domestic supply

Source: EIA, Annual Energy Outlook 2010
OECD Europe natural gas consumption

OECD Europe natural gas consumption
trillion cubic feet

Electric power

Industrial

Commercial

Residential

Source: EIA, *International Energy Outlook 2009*
OECD Europe natural gas imports

History

Net imports

Consumption

Projections

Domestic supply

Net imports 45%

Consumption 57%

China natural gas consumption

China natural gas consumption trillion cubic feet

China natural gas imports

![Graph showing China natural gas imports from 1990 to 2030.](source: EIA International Energy Outlook 2009)
Outlook for global LNG trade

LNG trade expectations as of 2005-2006:
National Petroleum Council’s “Hard Truth’s” study

2000

2030

4.8 trillion cubic feet per year

Source: National Petroleum Council, 2007
Increasing gas liquefaction capacity

liquefaction capacity
trillion cubic feet

Source: EIA Estimates

Natural Gas: U.S. Markets is a Global Context, April 7, 2010

Source: EIA Estimates
Over the past 5 years, EIA has significantly lowered its projection of LNG imports into the U.S.
Oil prices could remain well above U.S. gas prices if shale gas production continues to grow.

Ratio of oil prices to natural gas prices on a thermal equivalent basis:

- **History**
- **Projections**

- **Source:** EIA, *Annual Energy Outlook 2010*