Oil and Natural Gas Outlook to 2035

US-Russia Energy Working Group
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U.S. Energy Information Administration
Independent Statistics and Analysis
Outline

• Energy overview (all fuels)
• Oil and other liquid fuels
• Natural gas
Non-OECD countries account for 86% of the increase in global energy use

energy consumption
quadrillion Btu

Source: EIA, International Energy Outlook 2010
Use of liquid fuels and natural gas use grows from 2007 to 2035, but both fuels lose market share

world primary energy consumption
quadrillion Btu

Source: EIA, *International Energy Outlook 2010*
Oil and Other Liquid Fuels
Our outlook reflects uncertainty in oil prices by considering a wide set of price cases.

light, sweet crude oil price
2008 dollars per barrel

Source: EIA, *International Energy Outlook 2010*
OPEC producers maintain an approximate 40% share of total liquids production in the Reference case.
Brazil, Russia, Kazakhstan, and U.S. lead increases in non-OPEC conventional supplies

conventional liquids production
million barrels per day

Source: EIA, *International Energy Outlook 2010*
Natural Gas
Non-OECD Asia accounts for 35% of increased natural gas use.

natural gas consumption
trillion cubic feet

Source: EIA, *International Energy Outlook 2010*
The Middle East accounts for almost one-third the increase in global natural gas production.

Source: EIA, *International Energy Outlook 2010*
EIA expects increased shale gas production to have the largest market effects in North America and China

gas production in 2030
billion cubic meters

Source: EIA
By 2030, we expect shale gas to represent 7% of total global gas production.
Over the past 5 years, EIA has significantly lowered its projection of LNG imports into the U.S.

![Chart showing U.S. net LNG imports from 2000 to 2035. The chart compares historical data with projections from AEO2005 and AEO2010.](chart.png)

Source: EIA, Annual Energy Outlooks
Significantly reduced expectations for future U.S. LNG imports relative to conventional wisdom a few years ago

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

- 2000
- 2030

138 billion cubic meters per year

Source: National Petroleum Council, 2007
Shale gas production significantly affects projected U.S. gas imports, and could have similar effects in other gas importing countries.

Total U.S. natural gas imports (billion cubic meters):

- **History**
- **Projections**
  - No new U.S. shale scenario
  - Reference scenario
  - High U.S. shale scenario

Source: preliminary EIA projections
For more information


Short-Term Energy Outlook www.eia.gov/emeu/steo/pub/contents.html

Annual Energy Outlook www.eia.gov/oiaf/aeo/index.html


National Energy Information Center (202) 586-8800
Live expert from 9:00 AM – 5:00 p.m. EST Monday – Friday (excluding Federal holidays)
email: InfoCtr@eia.doe.gov
EXTRA SLIDES:
U.S. SHALE GAS AND IMPLICATIONS FOR WORLD NATURAL GAS MARKETS
Since 1997, more than 12,000 gas wells completed in the Barnett shale
The result has been an accelerating increase in production from the Barnett field.
Success in the Barnett prompted companies to look at other shale formations in the U.S.

[Map of U.S. shale gas plays]
At this stage, the Haynesville and the Marcellus formations appear to be the most attractive.
Over the last decade, U.S. shale gas production has increased 8-fold

Source: EIA, Lippman Consulting (2009 estimated)

shale gas production
billion cubic meters

Source: EIA, Lippman Consulting (2009 estimated)
Shale gas has been the primary source of recent growth in U.S. technically recoverable natural gas resources

Technically recoverable gas resources (trillion cubic meters)

Unproved shale gas & coal-bed methane
Unproved conventional (including tight gas and Alaska*)
Proved reserves (all types & locations)

* Alaska resource estimates prior to AEO2009 reflect North Slope resources not included in previously published documentation.