Outlook for Liquid Fuels and Natural Gas to 2030

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Low Sulfur Light Oil prices, 1980-2030

2007 dollars per barrel

History

Projections

High Price

Reference

Low Price
Energy Intensity of Use on a Population and Real Gross Domestic Product Basis, 1990-2030

Index, 1990=1.0

History

Projections

Per capita

Per dollar
U.S. Energy Consumption by Fuel

quadrillion Btu


History

Projections

Coal
Natural Gas
Liquid Fuels
Liquid Biofuels
Renewables (excl liquid biofuels)
Nuclear

Source: Annual Energy Outlook 2009 Revised Reference Case
Southeastern U.S. Energy Consumption by Fuel

Source: Annual Energy Outlook 2009 Revised Reference Case
New light-duty vehicle sales shift from light trucks back to cars

Source: Annual Energy Outlook 2009 Revised Reference Case
Mild and full hybrid systems dominate new light-duty vehicle sales by 2030

Source: Annual Energy Outlook 2009 Revised Reference Case
Liquid Fuels Consumption and Supply
1970-2030

Consumption
Domestic supply
Net Imports

History

Projections

million barrels per day

Source: Annual Energy Outlook 2009 Revised Reference Case
Liquid Fuels Supply by Source, 1970-2030
(million barrels per day)

Lower 48 Onshore
Lower 48 Offshore
Alaska

Source: Annual Energy Outlook 2009 Revised Reference Case
Lower 48 Onshore Crude Oil Production (million barrels per day)

Source: Annual Energy Outlook 2009 Revised Reference Case
Biofuels Increase Amid Stagnant Petroleum Supply (million barrels per day)

Source: Annual Energy Outlook 2009 Revised Reference Case
Biofuels use falls short of the 36 billion gallon RFS target in 2022 and 2030.

Source: Annual Energy Outlook 2009 Revised Reference Case

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Biofuels in the Southeast (billion credits)
Henry Hub Spot Natural Gas Prices, 1990-2030 (2007 dollars per million Btu)

Source: Annual Energy Outlook 2009 Revised Reference Case
Natural Gas Supply
1990-2030 (trillion cubic feet)

- History
- Projection

- Unconventional
- Non-associated conventional
- Net imports
- Associated-dissolved
- Non-associated offshore
- Alaska

Source: Annual Energy Outlook 2009 Revised Reference Case

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U.S. Natural Gas Consumption by Sector, 1990-2030 (trillion cubic feet)

History

- Industrial*
- Electric Generators
- Residential
- Commercial
- Transportation**

Projections

* Includes lease and plant fuel
** Includes pipeline fuel

Source: Annual Energy Outlook 2009 Revised Reference Case

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Southeastern U.S. Natural Gas Consumption by Sector, 1990-2030 (trillion cubic feet)

- Industrial*
- Electric Generators
- Residential
- Commercial
- Transportation**

* Excludes lease and plant fuel
** Excludes pipeline fuel

History

- Electric Generators
- Industrial*
- Residential
- Commercial
- Transportation**

Projections

Source: Annual Energy Outlook 2009 Revised Reference Case
U.S. Dry Natural Gas Production, 1990 - 2030 (trillion cubic feet)

Source: Annual Energy Outlook 2009 Revised Reference Case
U.S. Unconventional Natural Gas Production, 1990-2030

Source: Annual Energy Outlook 2009 Revised Reference Case
Natural Gas Production, Consumption, and Imports, 1960-2030 (trillion cubic feet)

Source: Annual Energy Outlook 2009 Revised Reference Case
Technically Recoverable U.S. Natural Gas Resources, as of January 1, 2007 (trillion cubic feet)

- **Proved reserves**: 211 trillion cubic feet
- **Inferred nonassociated reserves**: 171 + 49 = 220 trillion cubic feet
- **Undiscovered nonassociated**: 114 + 260 = 373 trillion cubic feet
- **Unconventional**: 310 + 68 + 267 = 645 trillion cubic feet
- **Other unproved**: 129 + 169 + 298 = 596 trillion cubic feet

**Total**: 1,747 trillion cubic feet

Source: Annual Energy Outlook 2009
Potential Gas Committee Resource Estimates (trillion cubic feet)
Lieberman-Warner Bill S.2191
Natural Gas Consumption Impacts
(trillion cubic feet)
Conclusions

• Long-term economic growth averages about 2.4 percent per year between 2007 and 2030
• World crude oil prices recover from a near-term decline and reach $130 per barrel (in 2007 dollars) by 2030
• The growing use of biofuels is displacing gasoline relative to diesel
• A robust domestic natural gas resource base allows for a steady expansion of production given projected growth in demand and prices
• Recently-enacted policies and concerns over greenhouse gas (GHG) emissions, combined with high energy prices, moderate projected growth in energy consumption and emissions