Annual Energy Outlook 2008:
EISA2007 and Other Major Impacts

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Overview

1. AEO2008 Scenarios
3. “Other Changes” to EIA’s Early Release Reference Case
4. Impacts of Changes to EIA’s Early Release Reference Case
5. Major Results from AEO2008 Reference Case
AEO2008 Scenarios

- Reference
- Early Release Reference
- Low Economic Growth
- High Economic Growth
- Low Price
- **High Price**
  - Residential: 2008 Technology
  - Residential: High Technology
  - Residential: Best Available Technology
  - Commercial: 2008 Technology
  - Commercial: High Technology
  - Commercial: Best Available Technology
  - Industrial: 2008 Technology
  - Industrial: High Technology
  - Transportation: High Technology
  - Electricity: Low Nuclear Cost
  - Electricity: High Nuclear Cost
  - Electricity: Low Fossil Cost
  - Electricity: High Fossil Cost
- Renewable Fuels: High Renewable Cost
- Renewable Fuels: Low Renewable Cost
- Oil and Gas: Rapid Technology
- Oil and Gas: Slow Technology
- Oil and Gas: High LNG Supply
- Oil and Gas: Low LNG Supply
- Oil and Gas: ANWR
- Coal: Low Coal Cost
- Coal: High Coal Cost
- Integrated 2008 Technology
- Integrated High Technology
- **Integrated Alternative Weather Case**
- **High Commodity Cost**
- **Low Commodity Cost**
- **Restricted Non-Natural Gas Electricity Generation**
- **Restricted Natural Gas Supply**
- **Combined High Demand/Low Natural Gas Supply Case**

• Corporate Average Fuel Efficiency
  ✓ based on vehicle footprint
  ✓ 35 miles per gallon in 2020
  ✓ manufacturer credit and transfer program
  ✓ Alternative Motor Fuels Act credit extension

• Renewable Fuels Standard
  ✓ 36 billion gallons of biofuels per year by 2022
  ✓ corn ethanol limited to 15 billion gallons
  ✓ 13.5 billion gallons of cellulosic ethanol by 2022
  ✓ 1 billion gallon of biodiesel by 2012

• Other Efficiency Standards
  ✓ lighting efficiency standards
  ✓ appliance standards: boilers, dehumidifiers, dishwashers, clothes washers
  ✓ commercial standards for walk-in coolers and freezers
  ✓ increases weatherization assistance program through 2012
  ✓ 30% reduction in Federal buildings by 2015
  ✓ industrial motor efficiency standards

Average New Light Duty Vehicle Efficiency
miles per gallon

Residential Lighting Energy Consumption
billion kilowatthours

Supply of Biofuels
million barrels per day

Includes ethanol, biodiesel, and liquids from biomass

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Additional NEMS Updates—“Other Changes”

• Macroeconomic forecast
  ✓ gross domestic product growth rate reduced from 2.6% to 2.4%

• Industrial output
  ✓ historical revision for most industry categories

• Other data updates
  ✓ revised short term based on January Short-Term Energy Outlook
  ✓ added recent weather data
  ✓ revised National Highway Transportation Safety Administration new light duty vehicle (LDV) sales data
Additional NEMS Updates — “Other Changes”

Gross Domestic Product
billion 2000 chain-weighted dollars

Early Release
Reference

Industrial Energy Intensity
thousand Btu per 2000 dollar of shipments

Early Release
Reference

Conventional Light Duty Vehicle Sales, 2006
thousand vehicles

Early Release
Reference

Cars
Light Trucks

30.1
31.1
22.2
23.2 = miles per gallon

World Oil Price
2006 dollars per barrel

Early Release
Reference

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Range of Effects of the Energy Bill on Total Energy Consumption, 2030

Change in Total Energy Consumption in Quadrillion Btu

-6 -5 -4 -3 -2 -1 0 1

- All EISA Requirements
- Corporate Average Fuel Economy
- Renewable Fuels Standards
- Other Standards
- Macro Forecast
- Industrial Output Revisions
- Data Updates

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Total Primary Consumption

EISA Effect
Early Release
EISA Effect Range
Other Effects
AEO2008 Reference Case

quadrillion Btu

2005 2010 2015 2020 2025 2030

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Net Petroleum Imports

[Graph showing net petroleum imports from 2005 to 2030 with labels for Early Release, RFS Effect Range, and Other Effects.]

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Total Electricity Consumption

- Early Release
- AEO2008 Reference Case
- Standards Effect
- Other Effects

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Annual Energy Outlook 2008 Price Forecasts

- World Oil Price
  - nominal dollars per barrel

- Natural Gas Wellhead Price
  - nominal dollars per thousand cubic feet

- Coal Minemouth Price
  - nominal dollars per ton

- Average Electricity Price
  - nominal cents per kilowatthour

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Energy Production, Consumption, and Net Imports

quadrillion Btu


AEO2008

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AEO2007

AEO2008 Early Release

History

Projections

30%

27% 29% 32%
Summary

• The AEO2008 Reference Case is one of many scenarios contained in the AEO.

• Depending on the basis from which it is measured, the impact of Energy Independence and Security Act of 2007 (EISA2007) varies.
  — EISA reduced total primary energy consumption by about 4 quadrillion Btu (~3 percent)
  — EISA reduced net petroleum imports by more than 1.5 million barrels per day (~12 percent).

• The “other changes” made to the Early Release reference case also reduced U.S. energy consumption.

• In the AEO2008 Reference Case, energy Prices (in nominal dollars) are expected to moderate before beginning to increase again more rapidly towards the end of the projection period.

• In the AEO2008, Energy import dependency is projected to decrease from about 30 percent today to about 25 percent in 2022 before rising again, reaching 27 percent by 2030. Energy import dependence is less than in previous recent AEOs.

• Enhancing and maintaining U.S. natural gas supplies depends on unconventional domestic production, natural gas from Alaska, and LNG imports.

• Without the imposition of policies to restrict the use of coal in electric power generation, U.S. natural gas use is projected to decline over the last decade of the projection.

• Carbon dioxide emissions from energy grow at an average annual rate of 0.6 percent, which is about half the rate projected in the AEO2007.
Periodic Reports

Early Release Reference Case, December 2007

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