

# Renewable Electricity in the Annual Energy Outlook 2013



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*Renewable Energy Markets 2013*

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*by*

*Chris Namovicz, Senior Renewable Energy Analyst*

# Key Renewable Electricity Results From the AEO2013

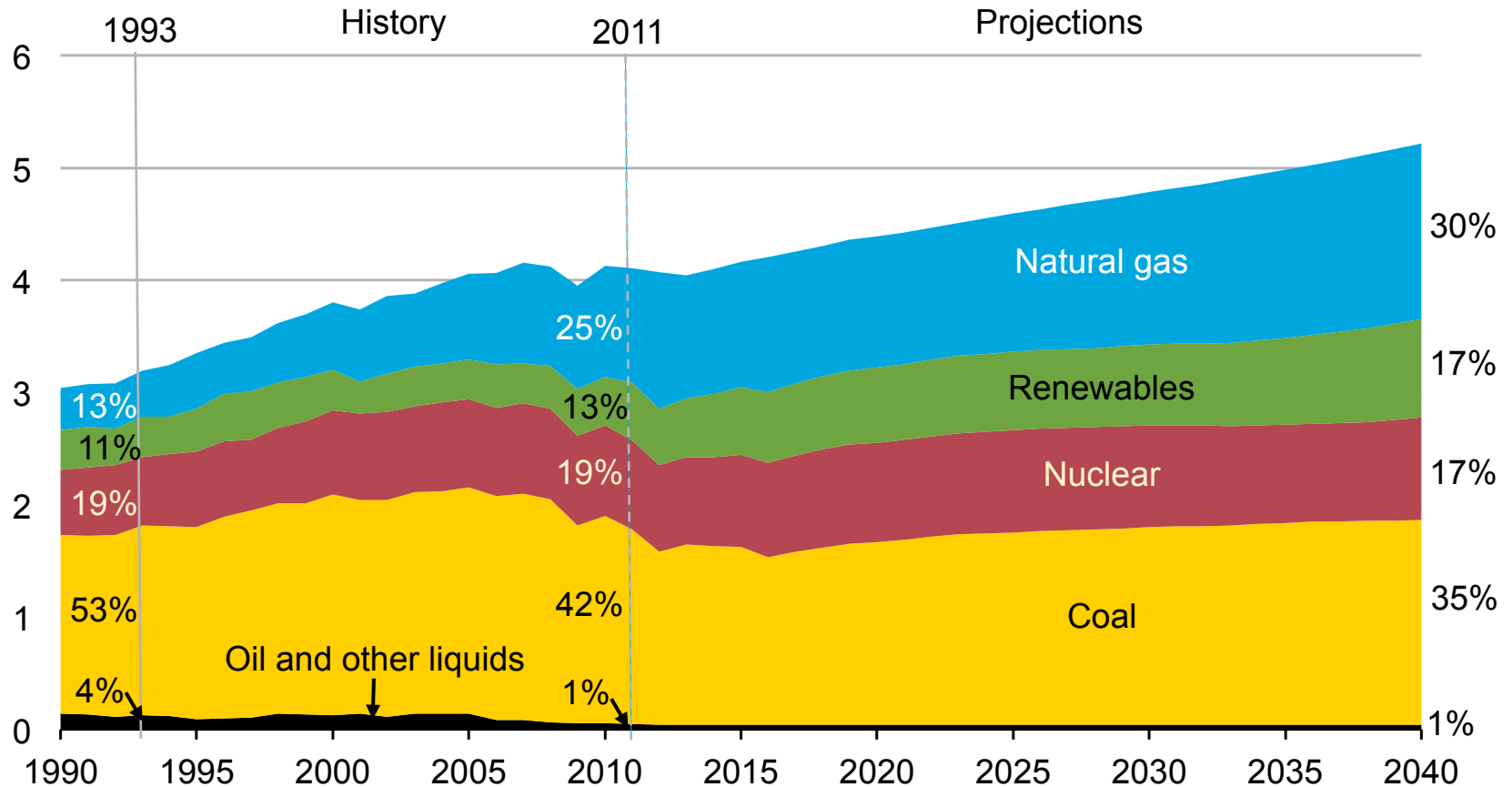
- With current laws, non-hydro renewable generation more than doubles through 2040. However, renewable generation still accounts for only 17 percent of total generation in 2040, relative to 13 percent in 2011.
- National, state, and local level policies have played – and continue to play – a major role in supporting the growth of renewable electricity generation. However, renewables are increasingly cost-competitive, particularly in the later years (late 2020's and beyond) of the AEO2013 projection period.
- Results for renewable generation are sensitive to renewable technology capital cost assumptions, natural gas prices, and potential environmental policies such as a carbon tax or extended tax credits.

# What is included (and excluded) in developing EIA's "Reference case" projections?

- Generally assumes current laws and regulations
  - excludes potential future laws and regulations (e.g., proposed greenhouse gas legislation is not included)
  - Sunset provisions as specified in law (e.g., renewable production tax credits expire at the end of 2013)
  - Reference case was frozen before the January PTC extension; results shown are generally from our post-extension analysis
- Some grey regulatory areas
  - adds a premium to the cost of financing CO<sub>2</sub>-intensive technologies to reflect current market behavior regarding possible future policies to mitigate greenhouse gas emissions
  - assumes implementation of existing regulations that enable the building of new energy infrastructure and resource extraction
- Includes technologies that are commercial or reasonably expected to become commercial over next decade or so
  - includes projected technology cost and efficiency improvements, as well as cost reductions linked to cumulative deployment levels
  - does not assume revolutionary or breakthrough technologies

# Over time the electricity mix gradually shifts to lower-carbon options, led by growth in natural gas and renewable generation

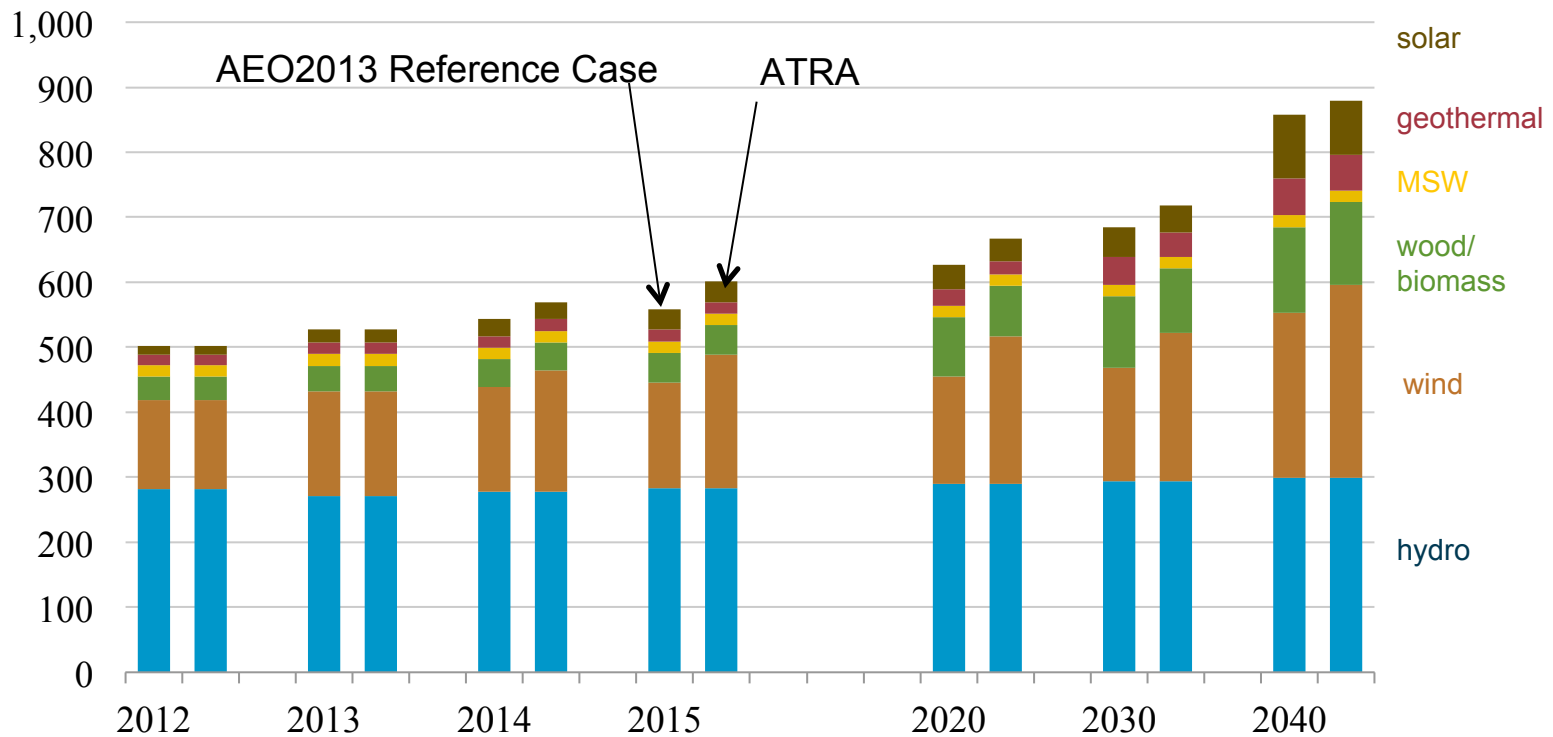
*U.S. electricity net generation  
trillion kilowatthours*



Source: EIA, Annual Energy Outlook 2013, ATRA Case

# The PTC Extension Passed on January 1, 2013 could have significant near-term impact

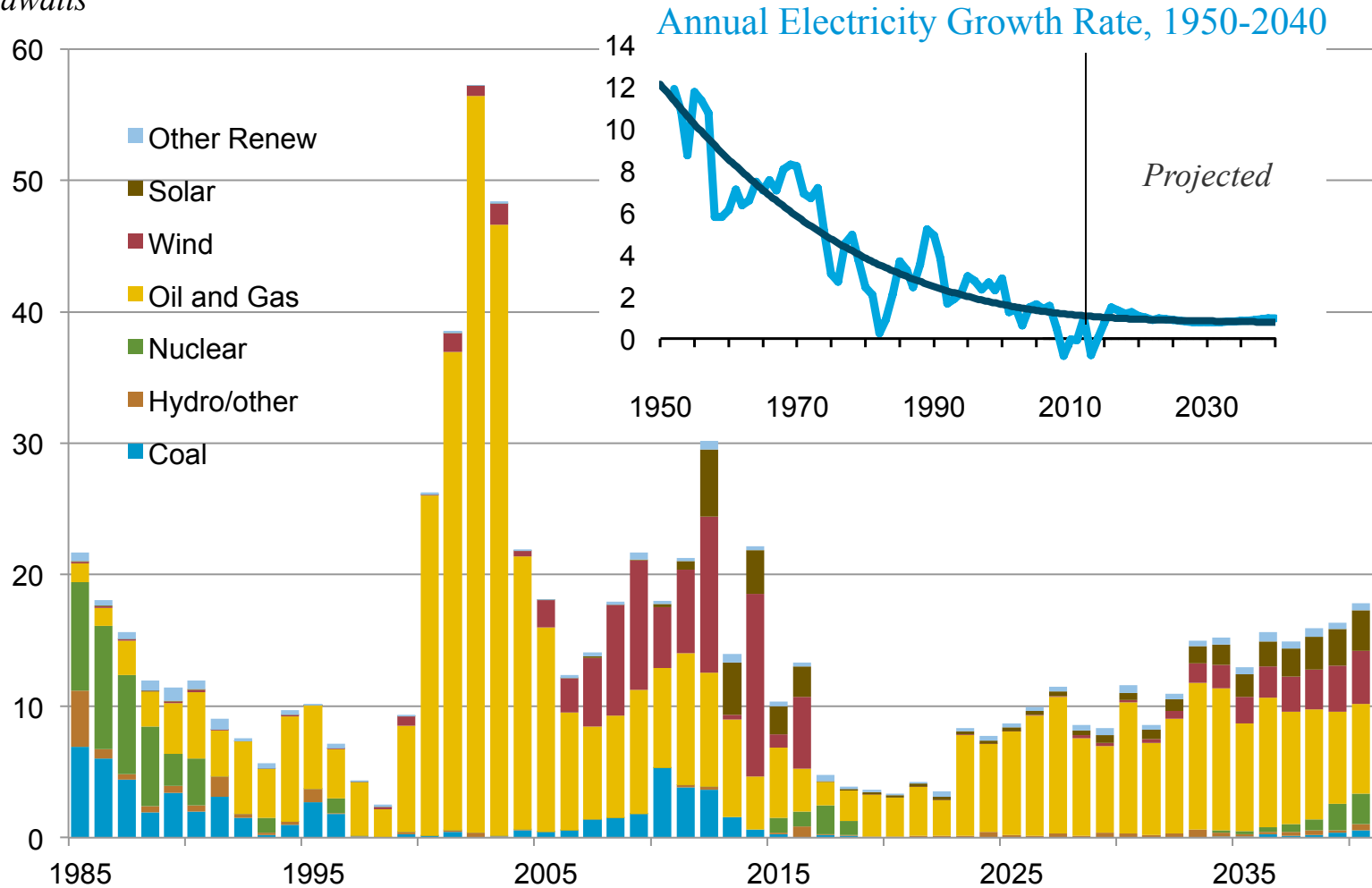
*Renewable Generation  
Billion kilowatthours per year*



Source: EIA Annual Energy Outlook 2013

# Additions to electricity generation capacity, 1985-2040

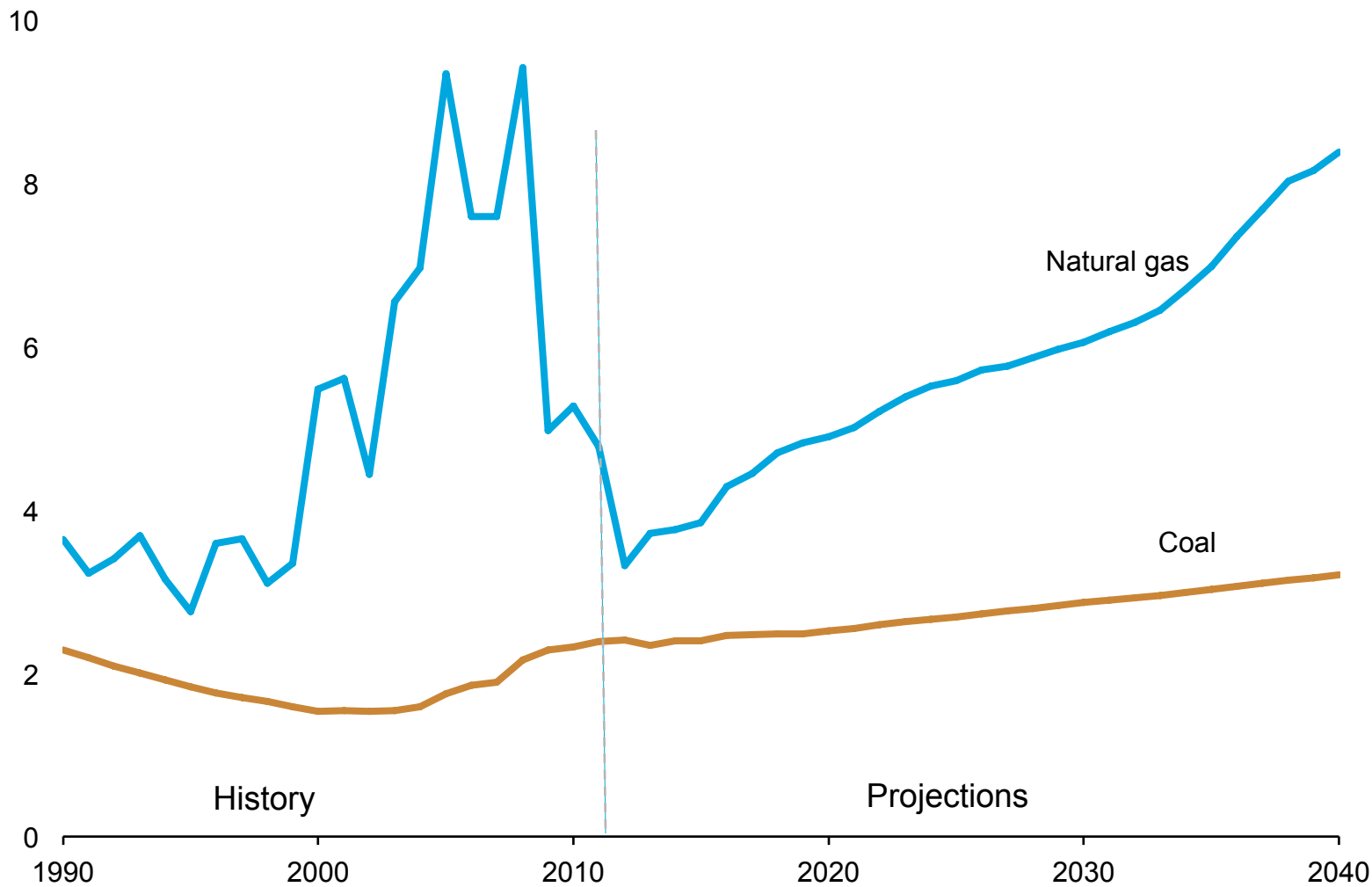
*U.S. electricity generation capacity additions  
gigawatts*



Source: EIA, Annual Energy Outlook 2013, ATRA Case

# Natural gas prices gradually recover, but remain well below 2000's levels for the next 10 years

Prices to the Electric Power Sector, 2011 dollars per million Btu

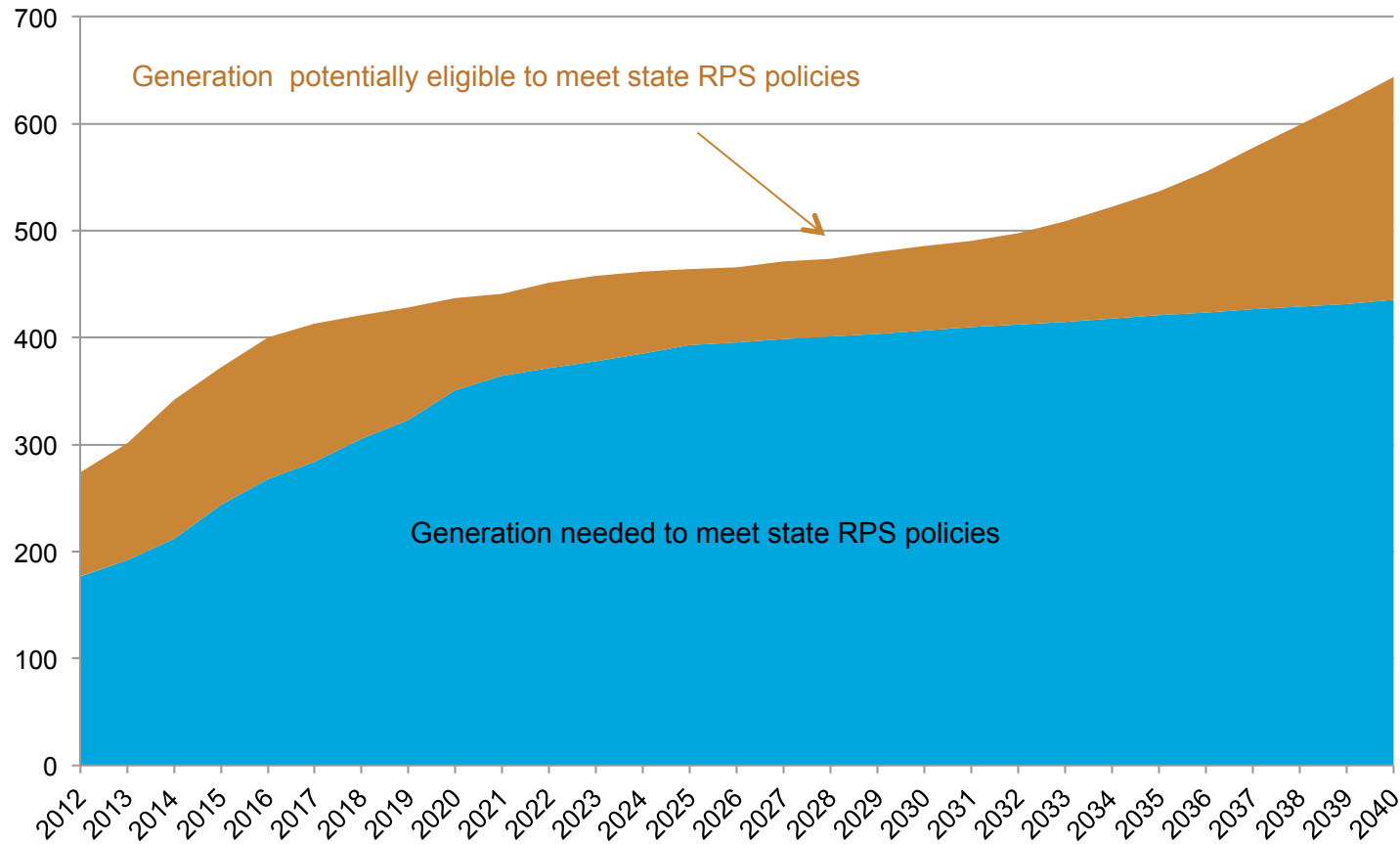


Source: EIA, Annual Energy Outlook 2013

# Renewable Generation is Added Beyond that Required to Meet State RPS Policies

*RPS Qualified Generation*

*Billion Kilowatthours per year*



Source: EIA Annual Energy Outlook 2013, ATRA Case



# For more information

*U.S. Energy Information Administration home page* | [www.eia.gov](http://www.eia.gov)

*Short-Term Energy Outlook* | [www.eia.gov/steo](http://www.eia.gov/steo)

*Annual Energy Outlook* | [www.eia.gov/aeo](http://www.eia.gov/aeo)

*International Energy Outlook* | [www.eia.gov/ieo](http://www.eia.gov/ieo)

*Monthly Energy Review* | [www.eia.gov/mer](http://www.eia.gov/mer)

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