

The Outlook for Electricity Supply and Demand to 2035: Key Drivers



Center for Public Utilities Current Issues Conference

Session on Balancing Reliability, Affordability, and Environmental Protection

College of Business

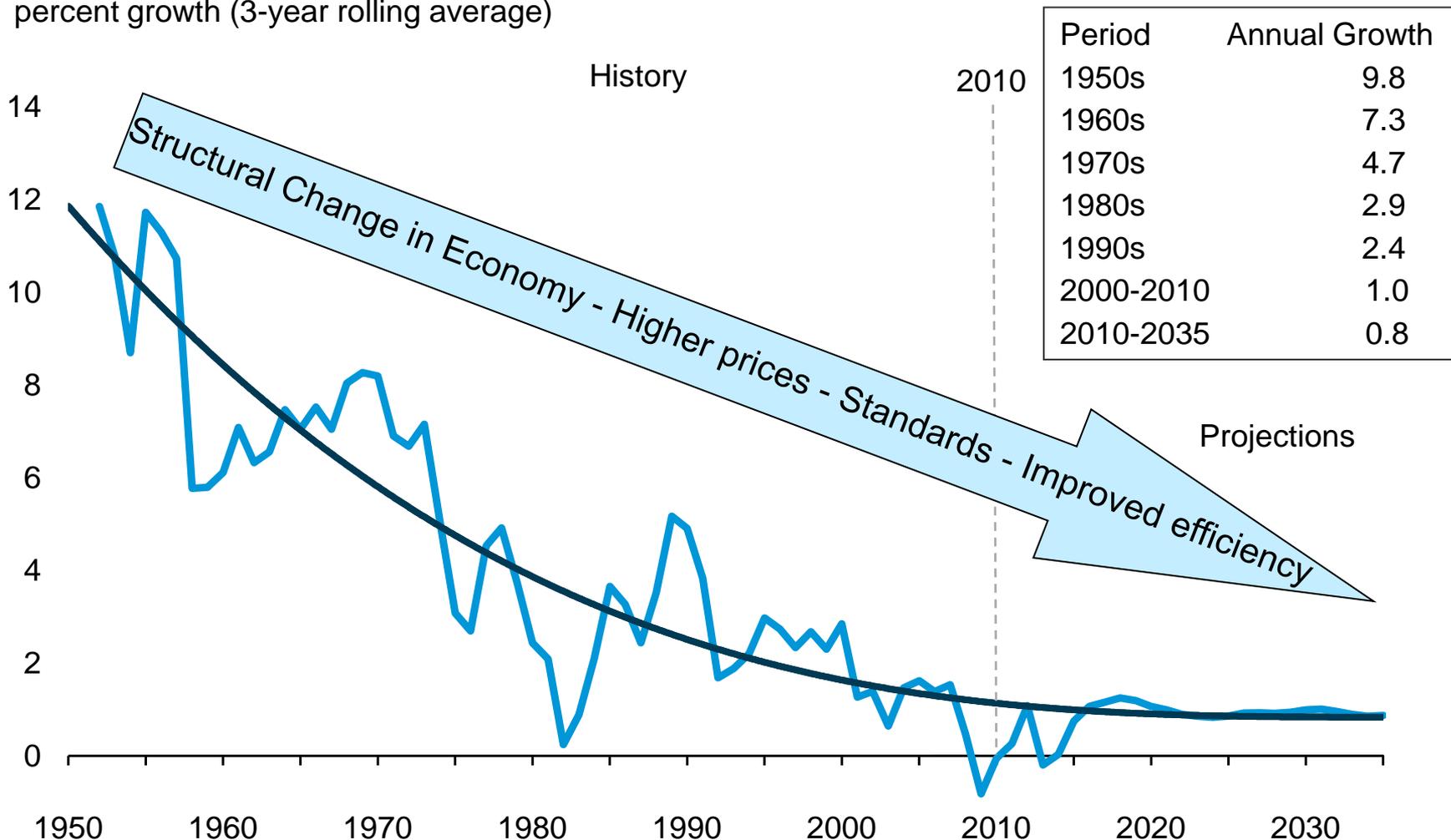
New Mexico State University

March 12, 2012 | Santa Fe, New Mexico

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While electricity consumption grows by 23% over the AEO2012 Reference case projection, the annual rate of growth slows

percent growth (3-year rolling average)

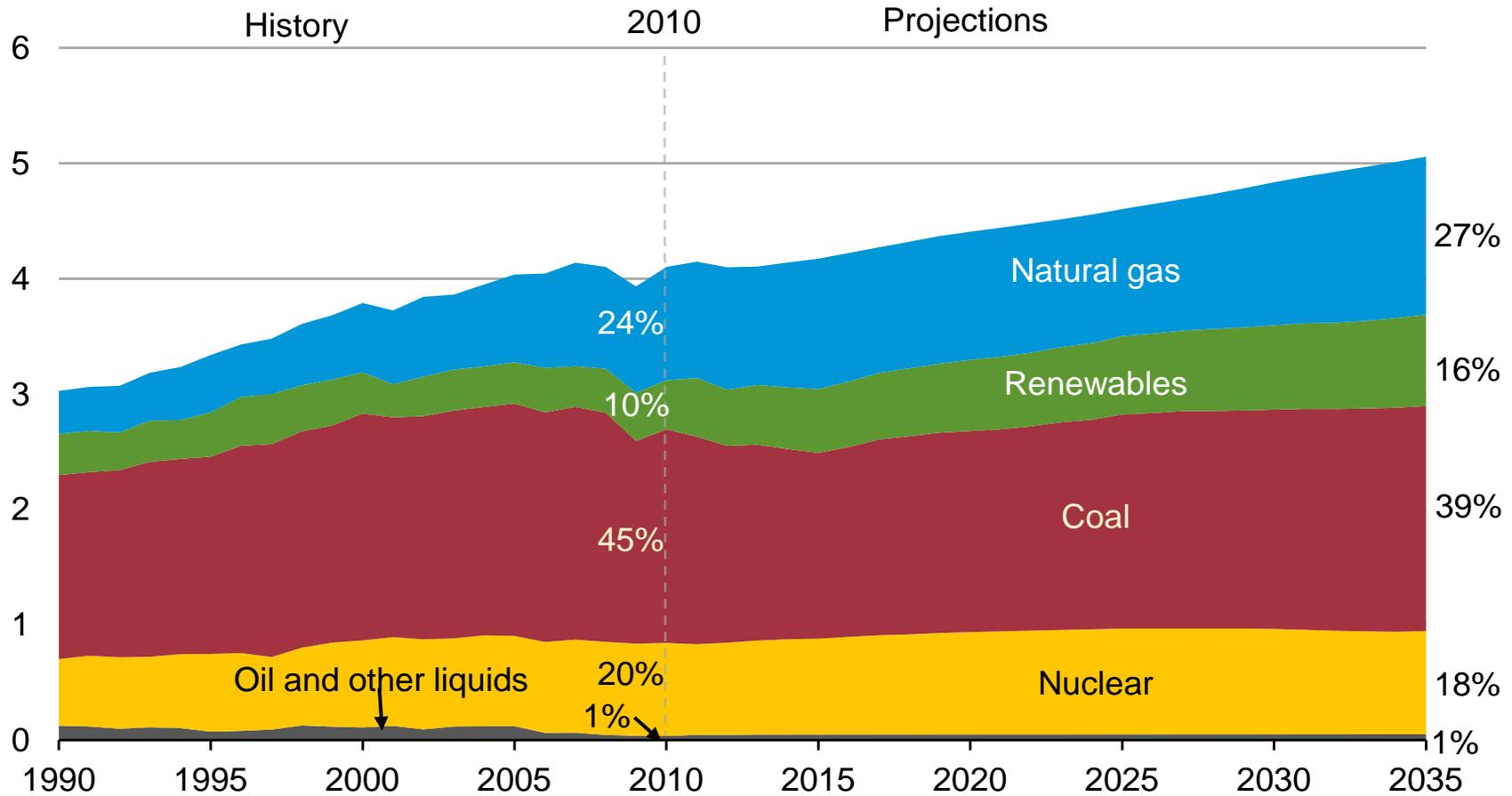


Source: EIA, Annual Energy Outlook 2012 Early Release

Electricity mix gradually shifts to lower-carbon options in the Reference case , led by growth in renewables and natural gas

electricity net generation

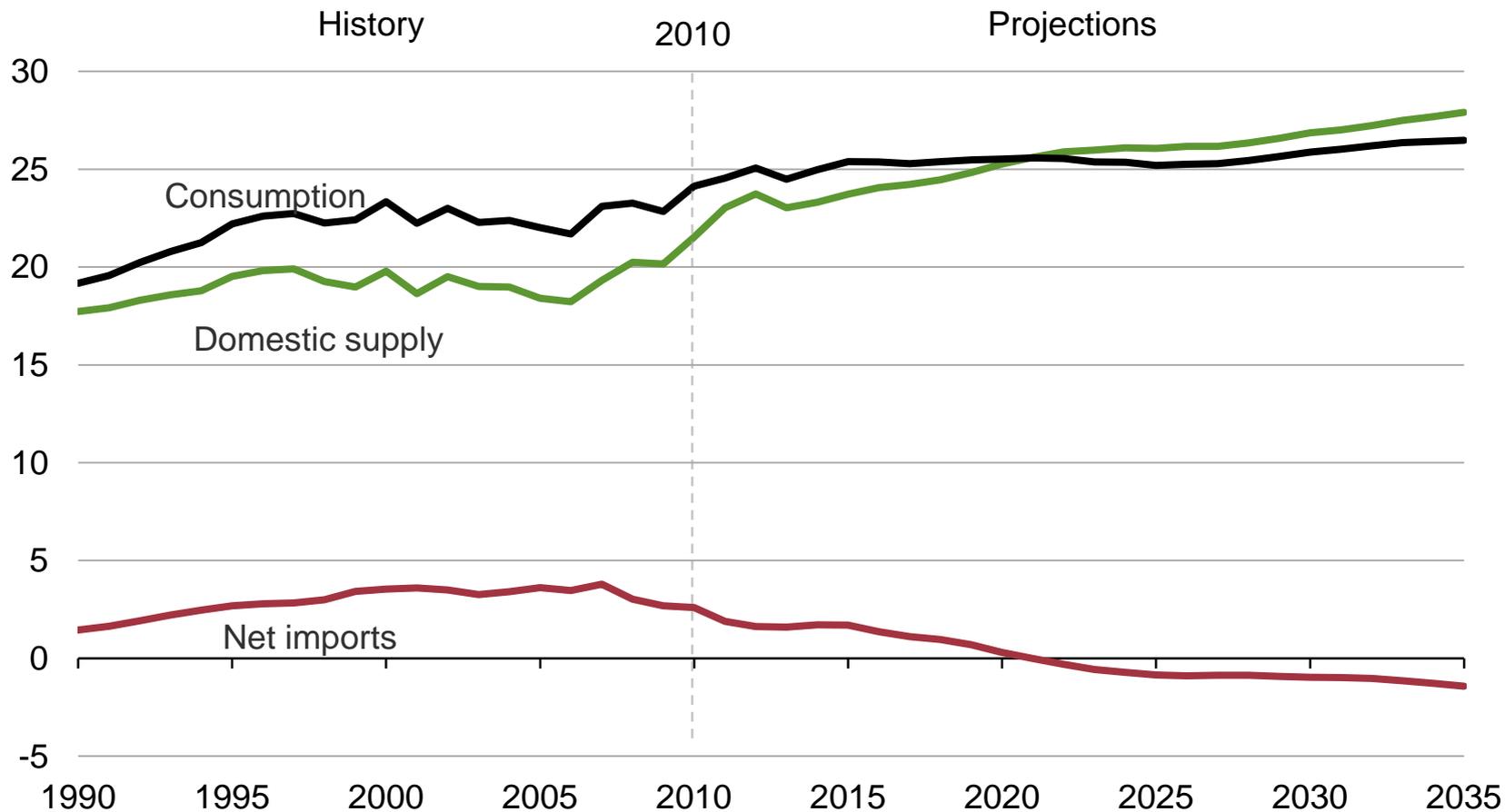
trillion kilowatthours per year



Source: EIA, Annual Energy Outlook 2012 Early Release

Domestic natural gas production is projected to grow faster than consumption

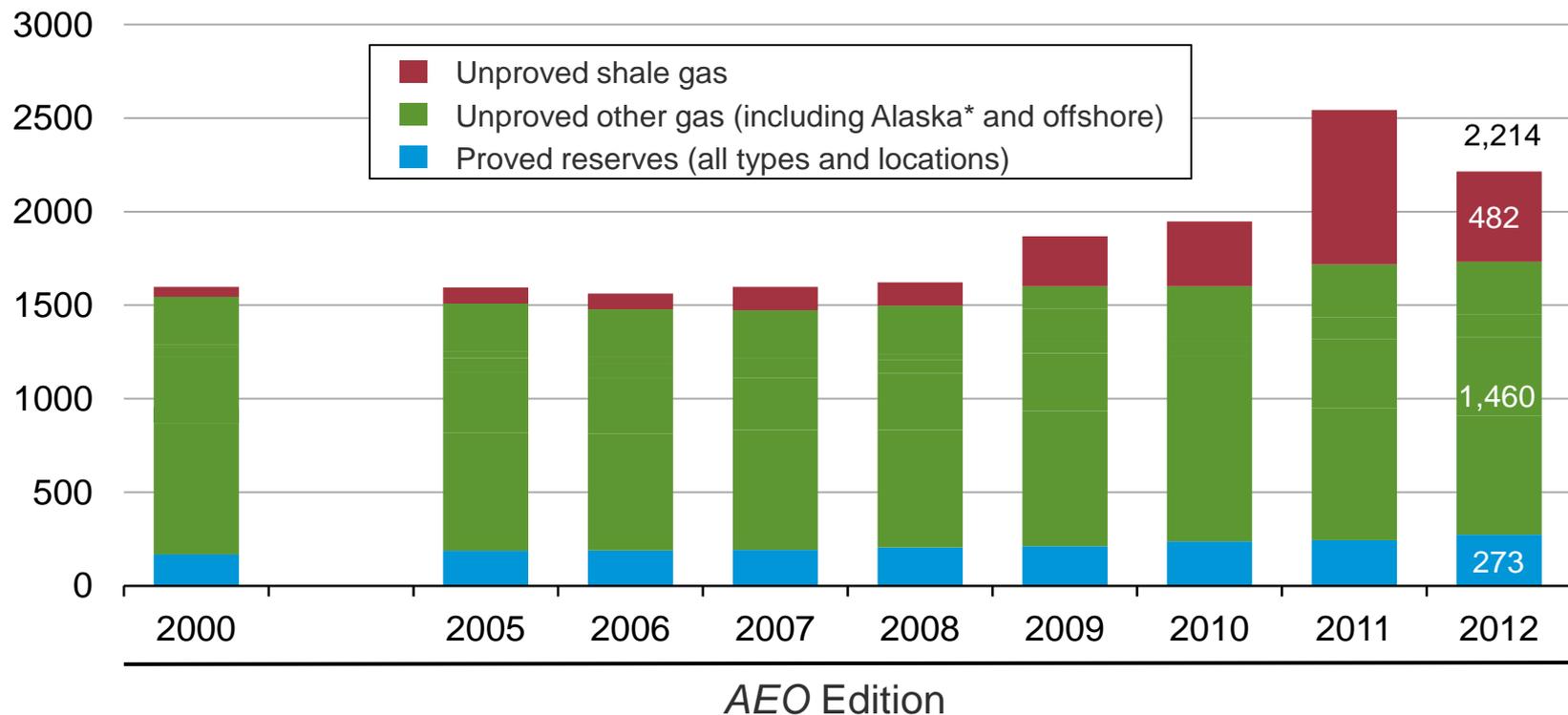
U.S. dry gas
trillion cubic feet per year



Source: EIA, Annual Energy Outlook 2012 Early Release

Technically recoverable natural gas resources for AEO 2012 reflect updated assessments

U.S. dry gas resources
trillion cubic feet

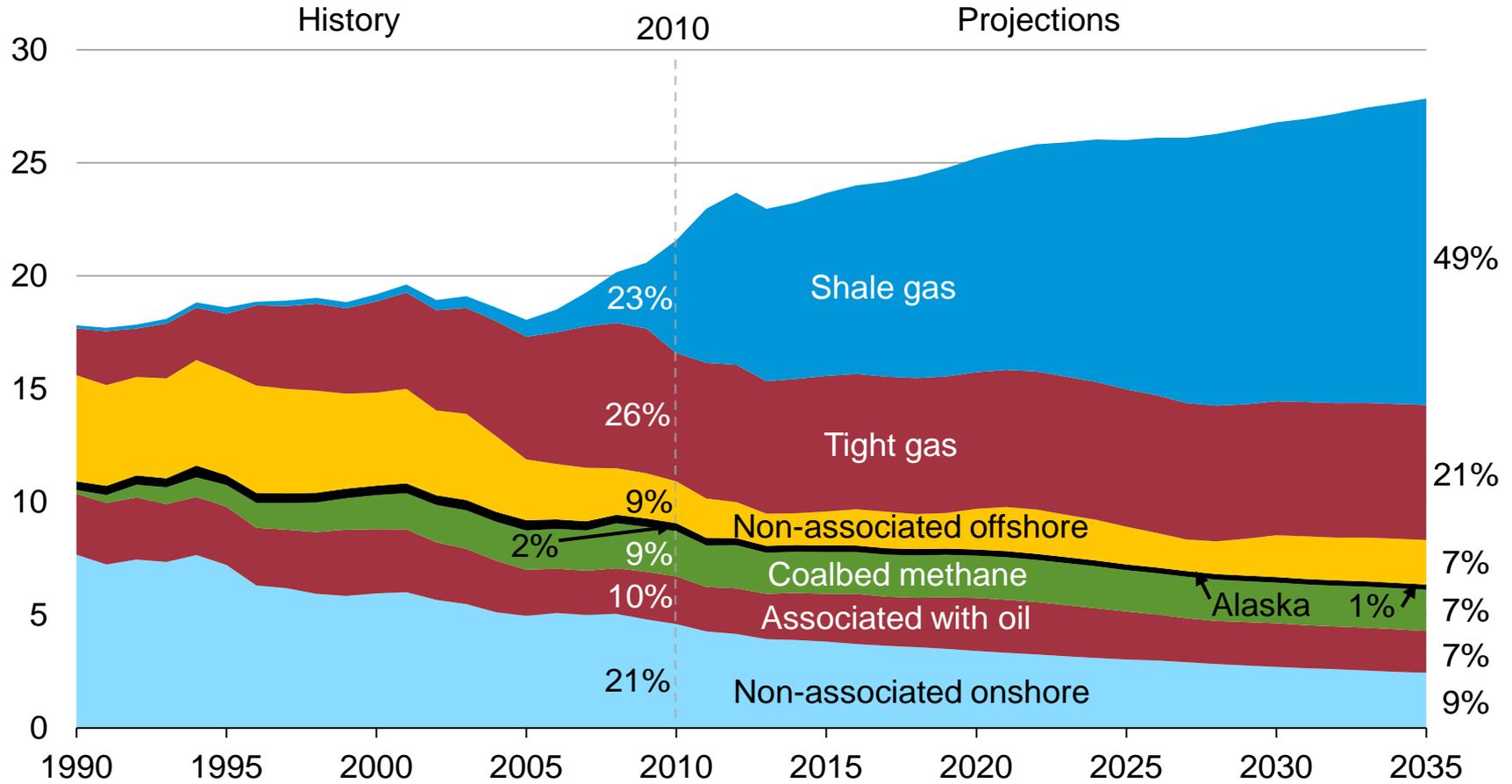


*Alaska resource estimates prior to AEO2009 reflect resources from the North Slope that were not included in previously published documentation.

Source: EIA, Annual Energy Outlook

Growing shale gas supplies are projected to more than offset declines in other U.S. natural gas production sources

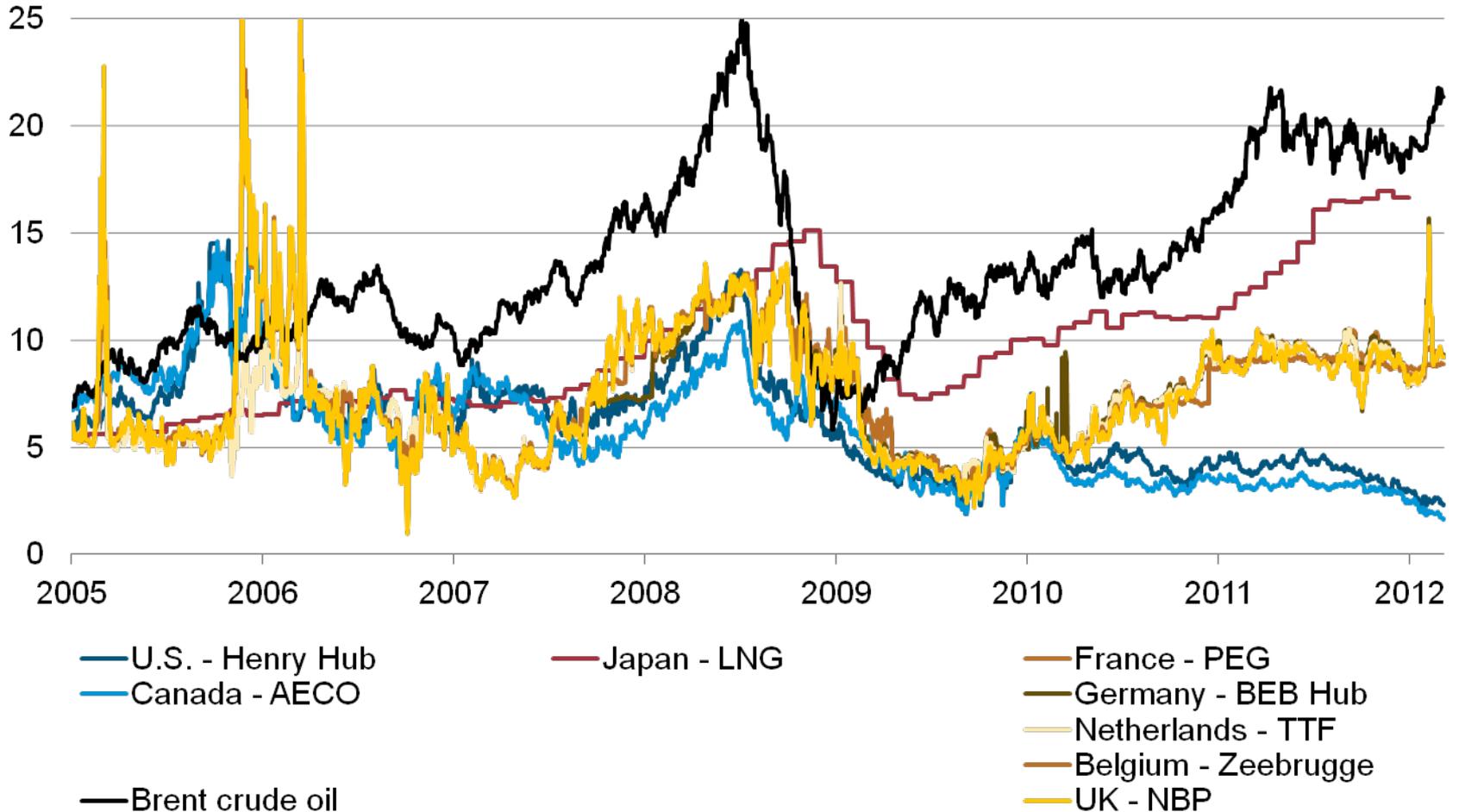
U.S. dry gas production
trillion cubic feet per year



Source: EIA, Annual Energy Outlook 2012 Early Release

Global spot natural gas and crude oil prices with average monthly LNG prices in Japan

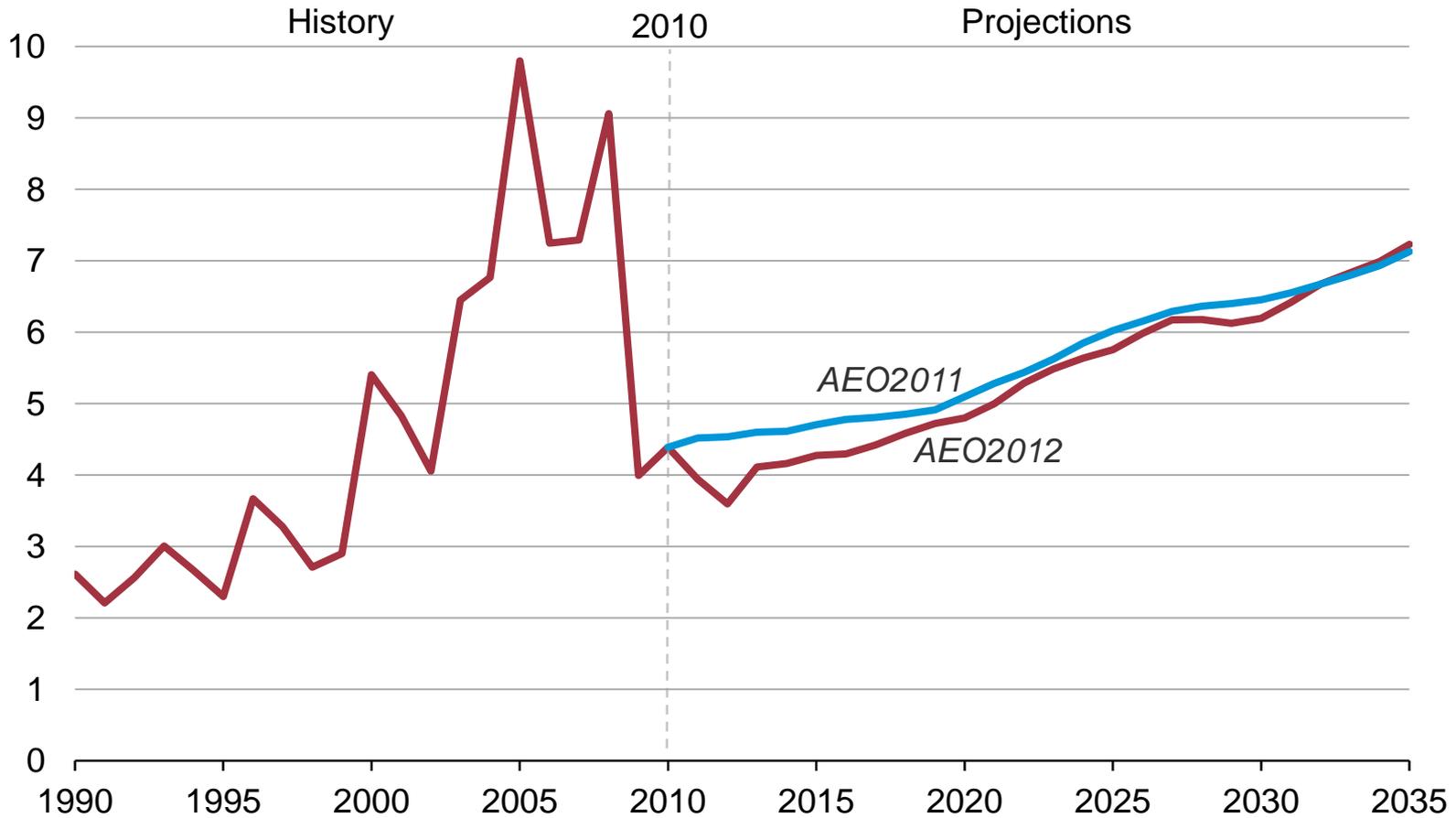
U.S. dollars per million British thermal unit



Source: EIA based on Bloomberg as of 3/5/2012

EIA's natural gas price projections are slightly lower than in *AEO2011*, consistent with recent market developments

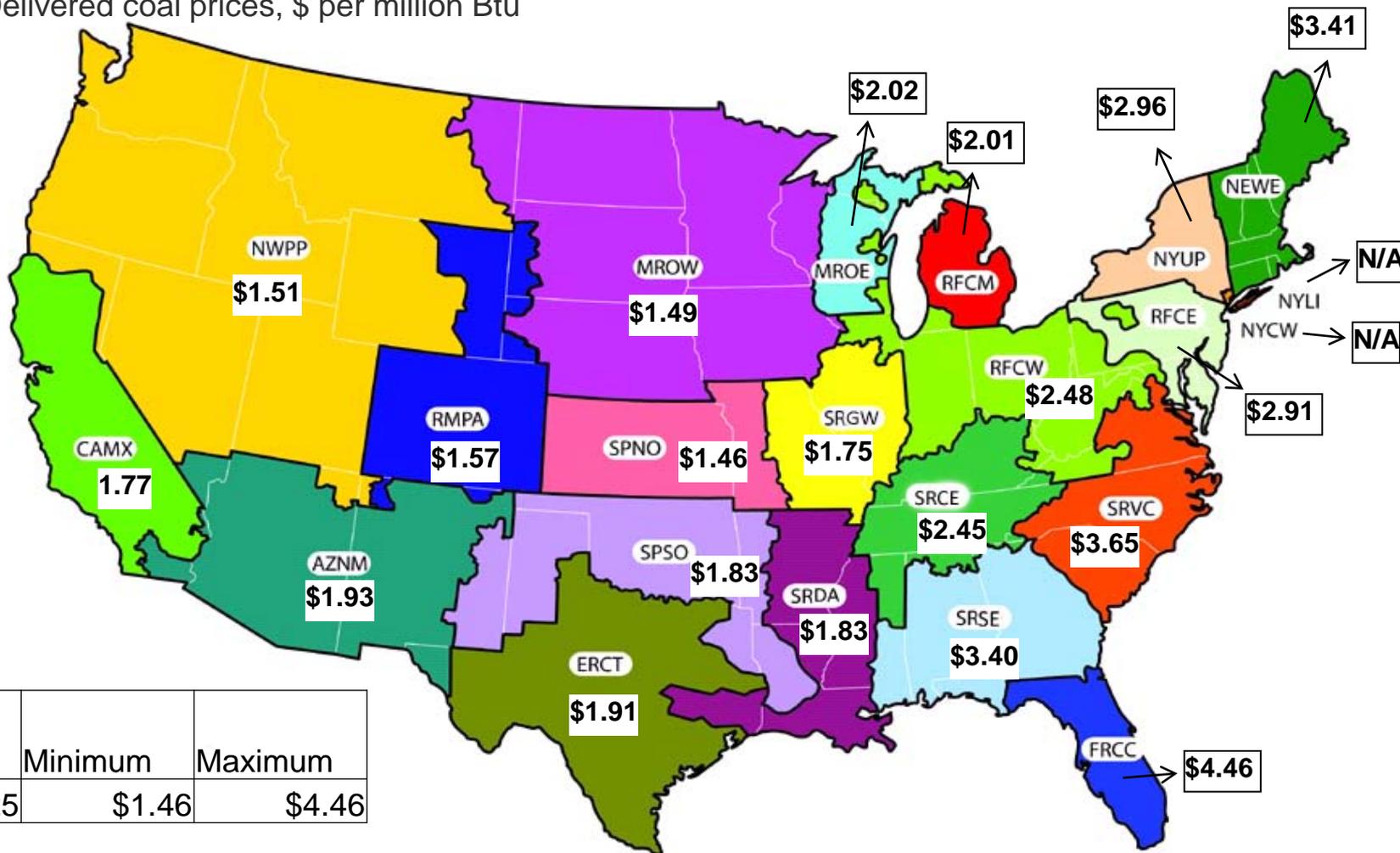
natural gas spot price (Henry Hub)
2010 dollars per million Btu



Sources: EIA, Annual Energy Outlook 2012 Early Release and EIA, Annual Energy Outlook 2011

The average delivered price of coal to electricity generators varies widely across U.S. regions – transport costs are a key reason

2010 Delivered coal prices, \$ per million Btu

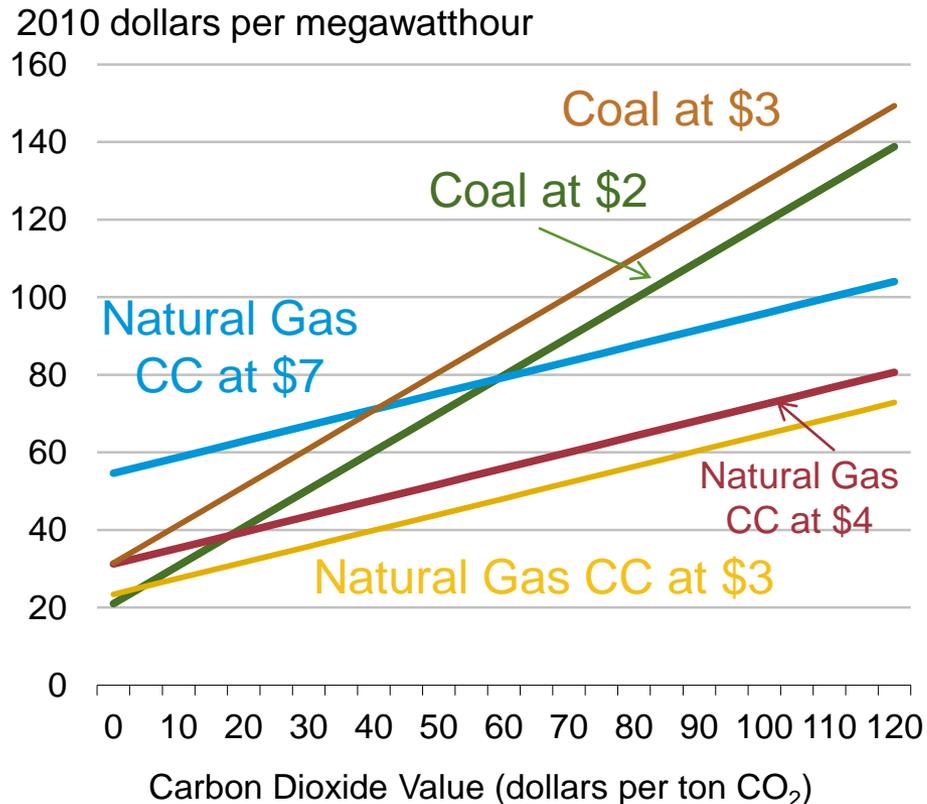


| National Average | Minimum | Maximum |
|------------------|---------|---------|
| \$2.25 | \$1.46 | \$4.46 |

Source: EIA, Annual Energy Outlook 2012 Early Release

Operating costs: existing plants with and without a value on carbon

Fuel Cost for Existing Coal and Combined Cycle Natural Gas Units with a Value Placed on Carbon Dioxide Emissions



- The “crossover point” for least-cost dispatch of coal and natural gas capacity depends on both fuel prices and the carbon value. At lower natural gas prices, the “crossover” occurs at a lower carbon value.
- Environmental operating costs and retrofit costs for pollution controls at existing coal-fired plants can “raise the bar” for their continued operation.
 - For retrofit decisions, the unit’s perceived “useful life,” which plays a critical role, can be affected by views regarding future climate policies

For more information

U.S. Energy Information Administration home page | www.eia.gov

Short-Term Energy Outlook | www.eia.gov/steo

Annual Energy Outlook | www.eia.gov/aeo

International Energy Outlook | www.eia.gov/ieo

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