

# *Long-Term Energy Market Trends*

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**2007 Pepper Hamilton Energy Conference**

**April 19, 2007**

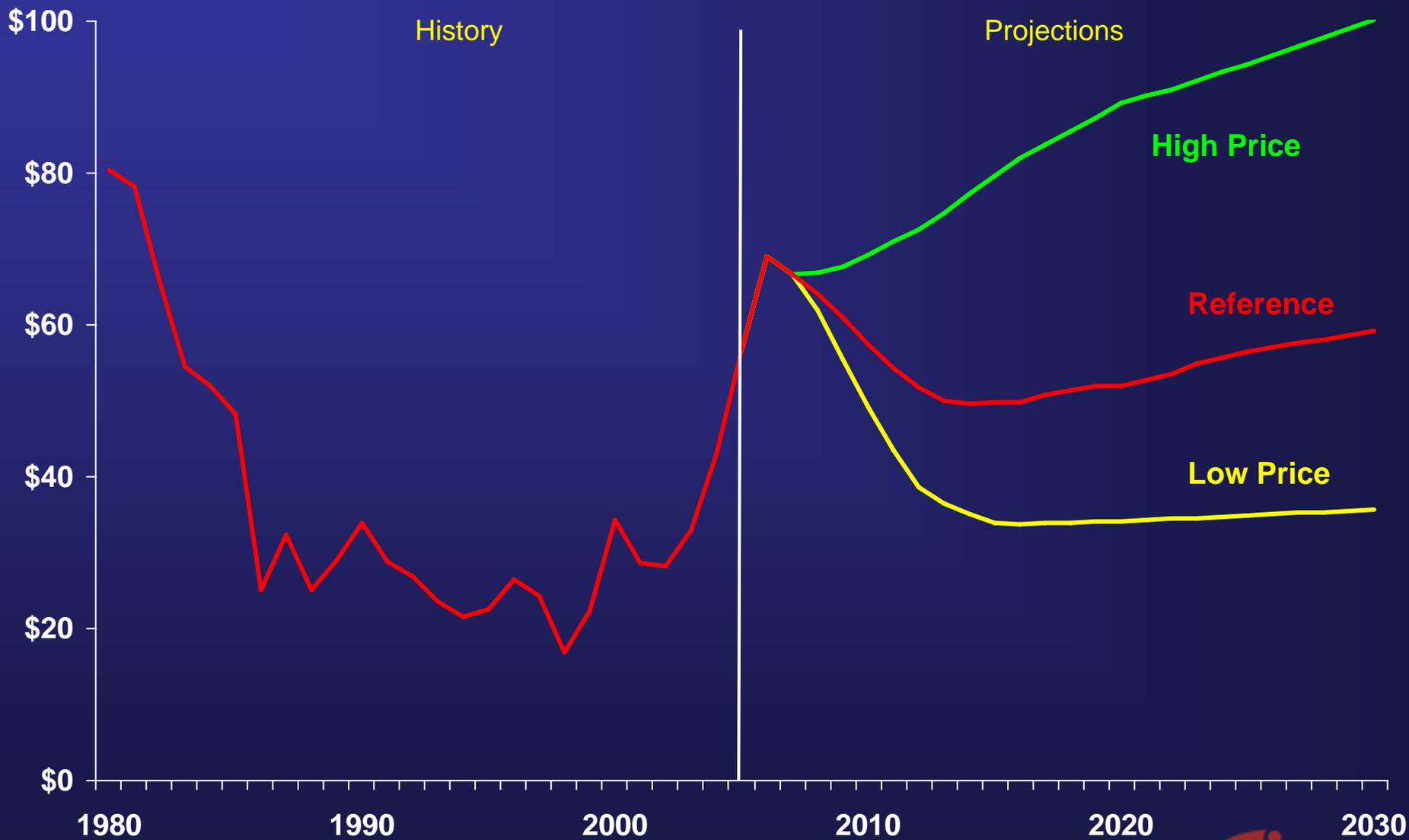
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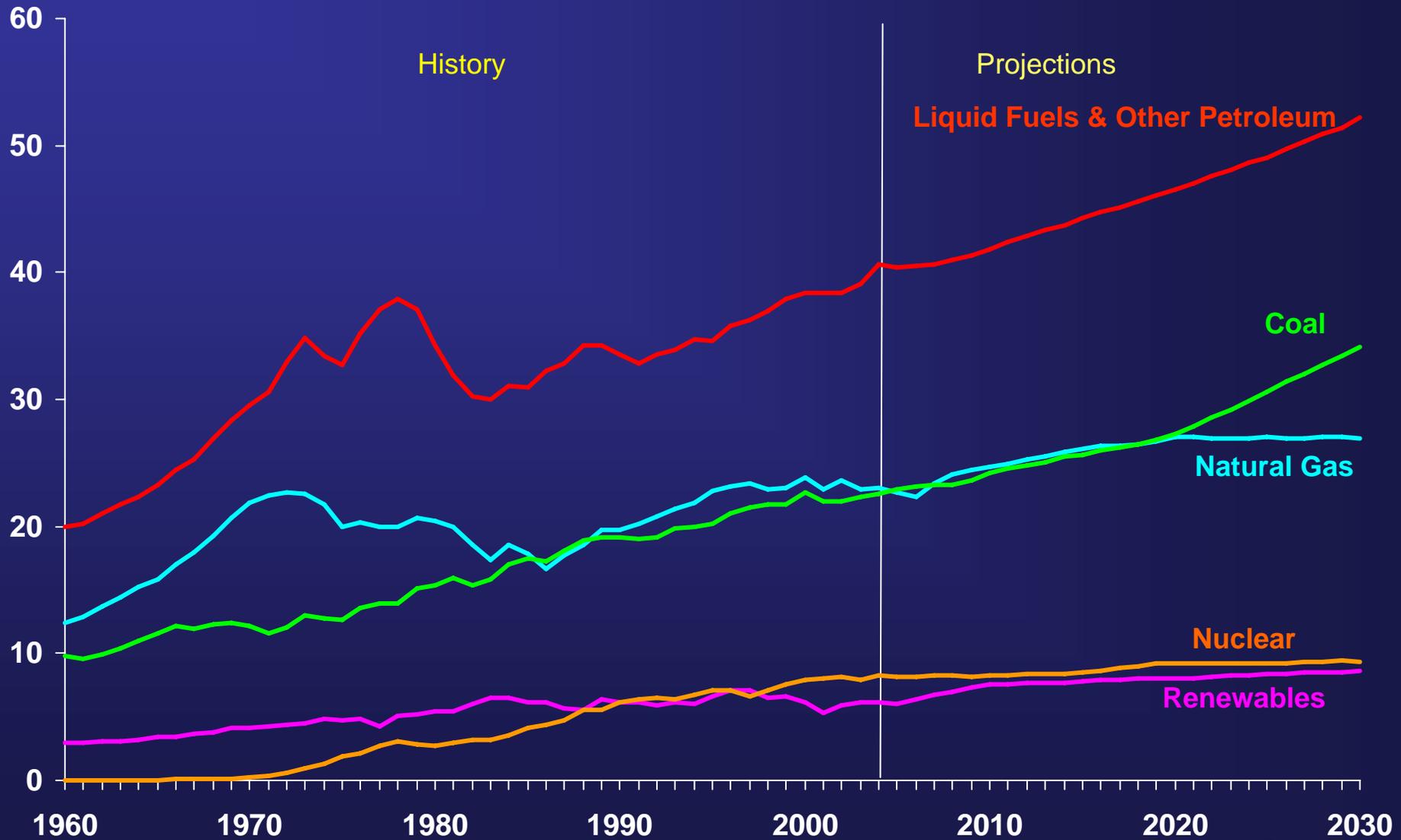
## ***Annual Energy Outlook 2007* reference case indicates that through 2030....**

- Traditional fossil fuels are expected to continue to meet the bulk of energy requirements over the projection period
- U.S. energy demand is projected to grow at an average annual rate of 1.1 percent
- The energy efficiency of the economy is projected to increase at an average annual rate of 1.8 percent
- U.S. oil import dependence, measured as a share of U.S. oil use, is not expected to increase over the next 25 years
- U.S. natural gas use is projected to be level off over the last decade of the projection
- Future growth in U.S. natural gas supplies depends on unconventional domestic production, natural gas from Alaska, and liquefied natural gas imports
- Carbon dioxide emissions from energy are projected to grow at an average annual rate of 1.2 percent

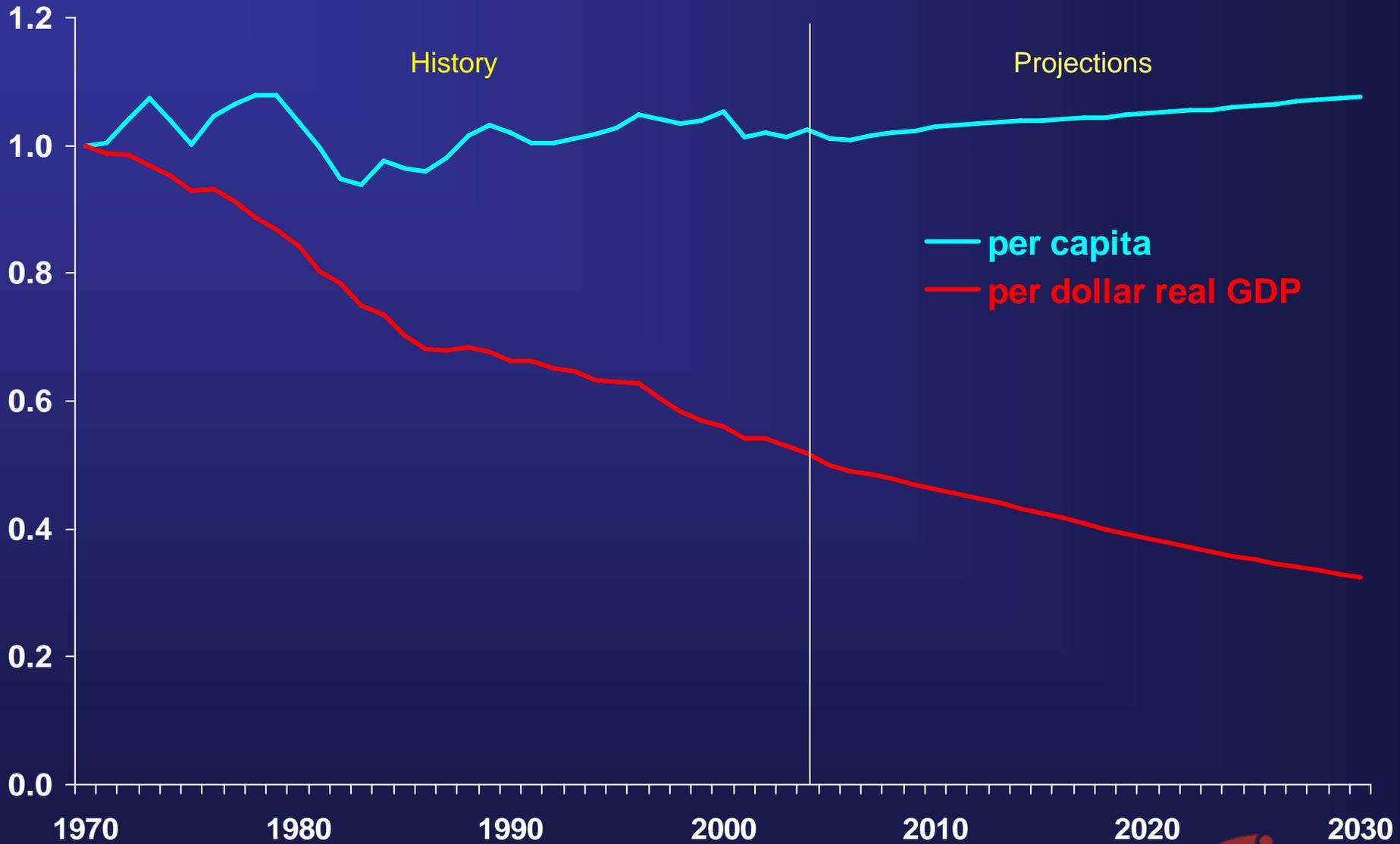
# World Oil Price, 1980-2030 (2005 dollars per barrel)



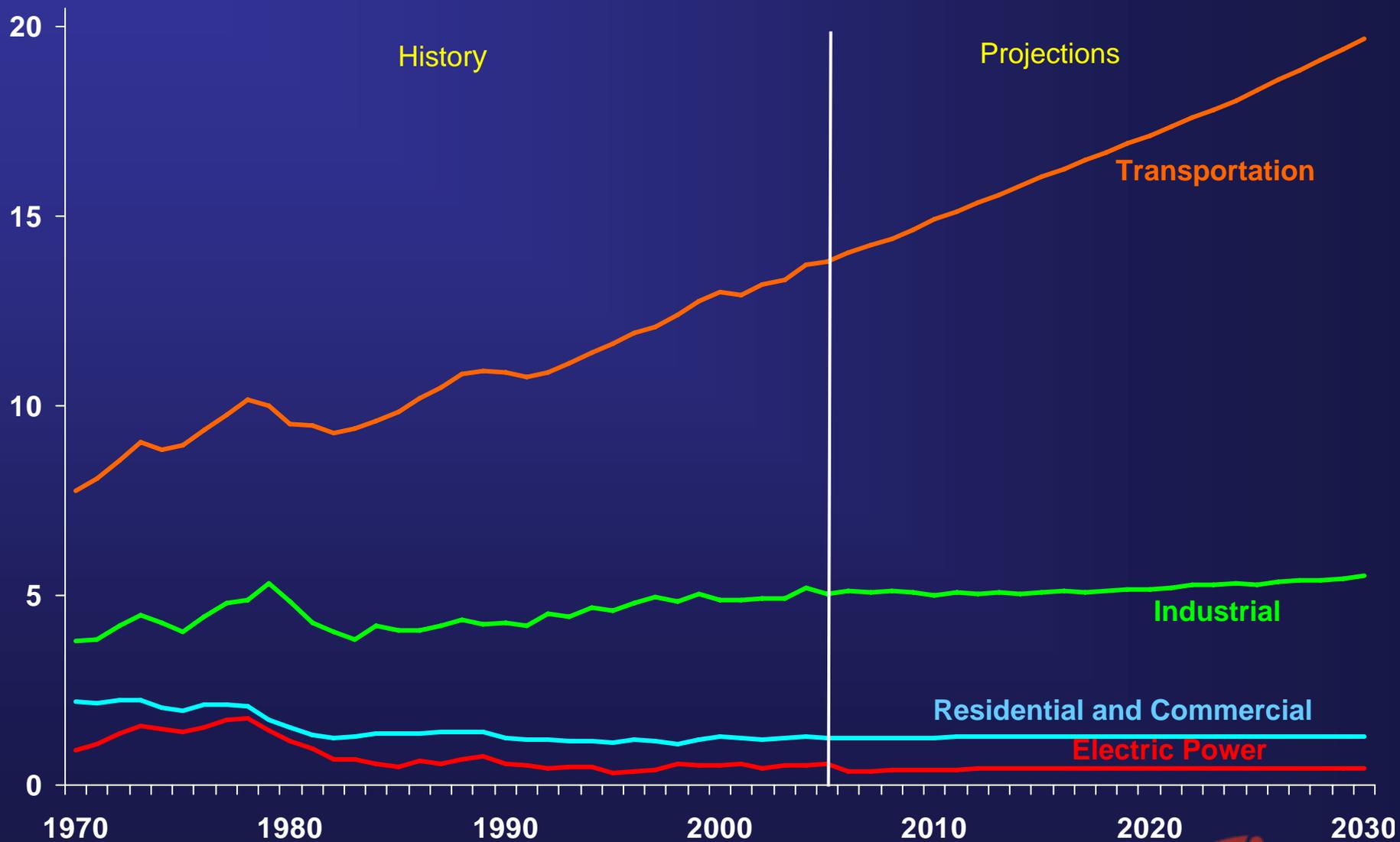
# U.S. Primary Energy Consumption by Fuel, 1960-2030 (quadrillion Btu)



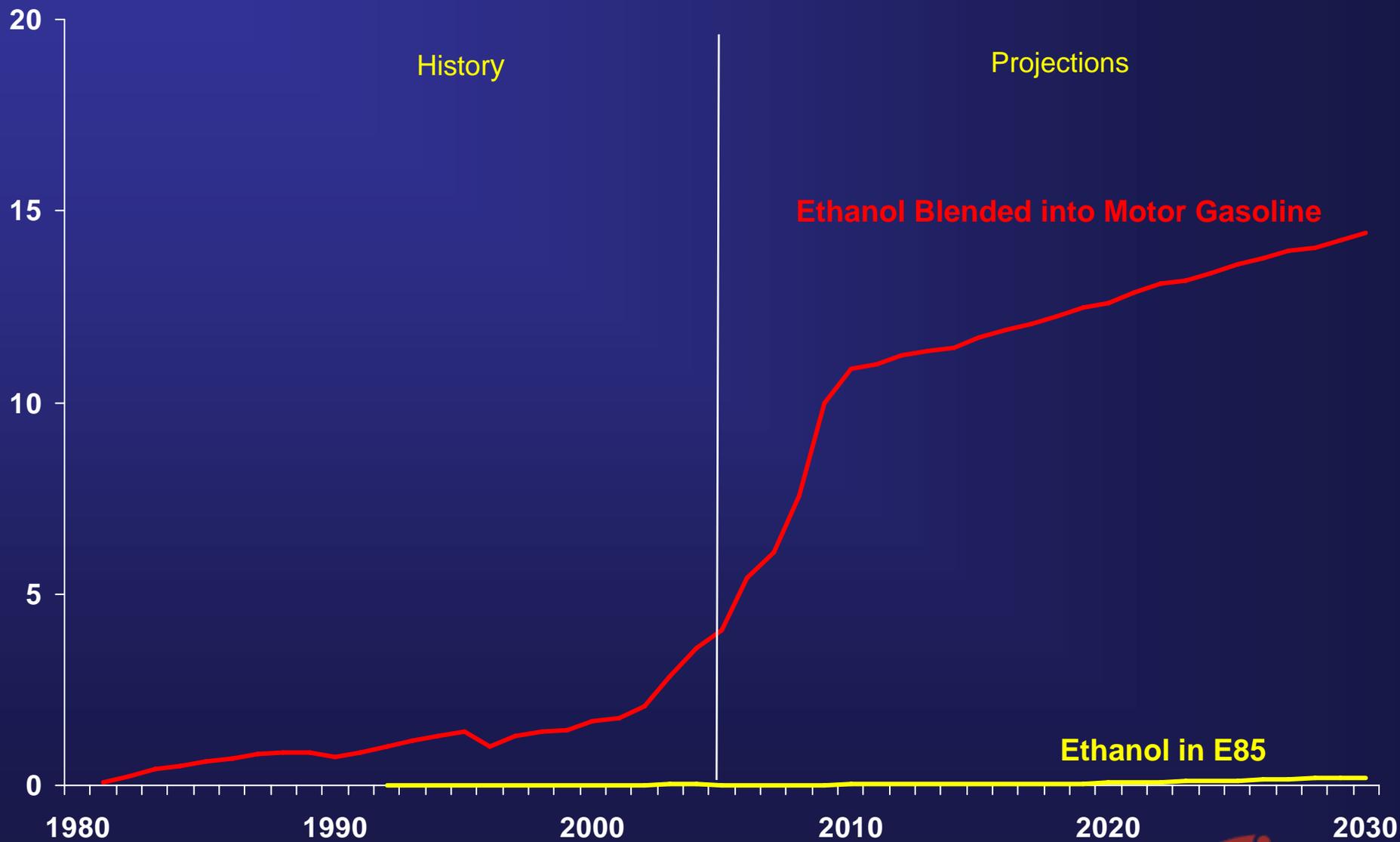
# U.S. Energy Use per Capita and per Dollar of Real Gross Domestic Product, 1970-2030 (index, 1970 = 1)



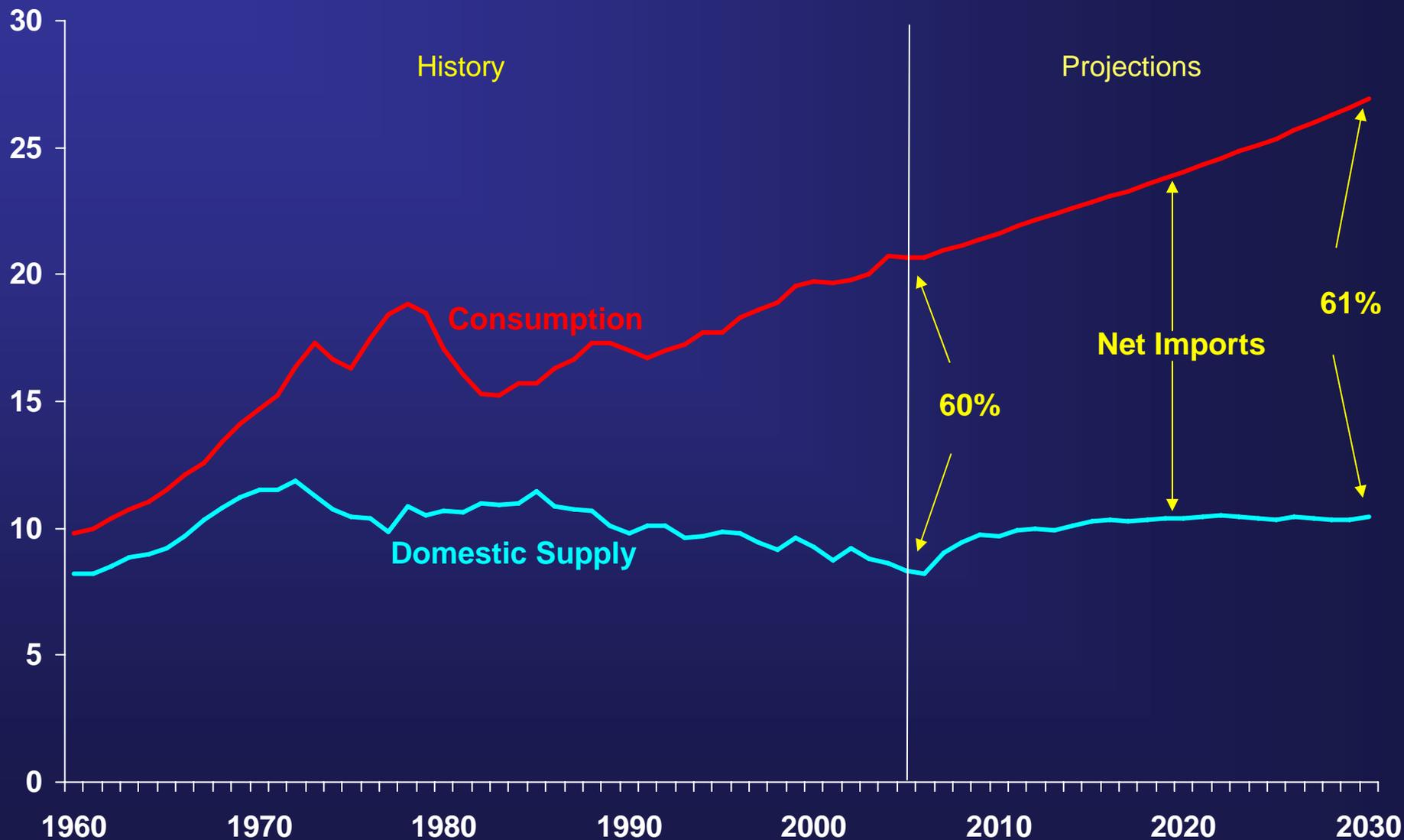
# Consumption of Liquids and Other Petroleum Products by Sector, 1970-2030 (million barrels per day)



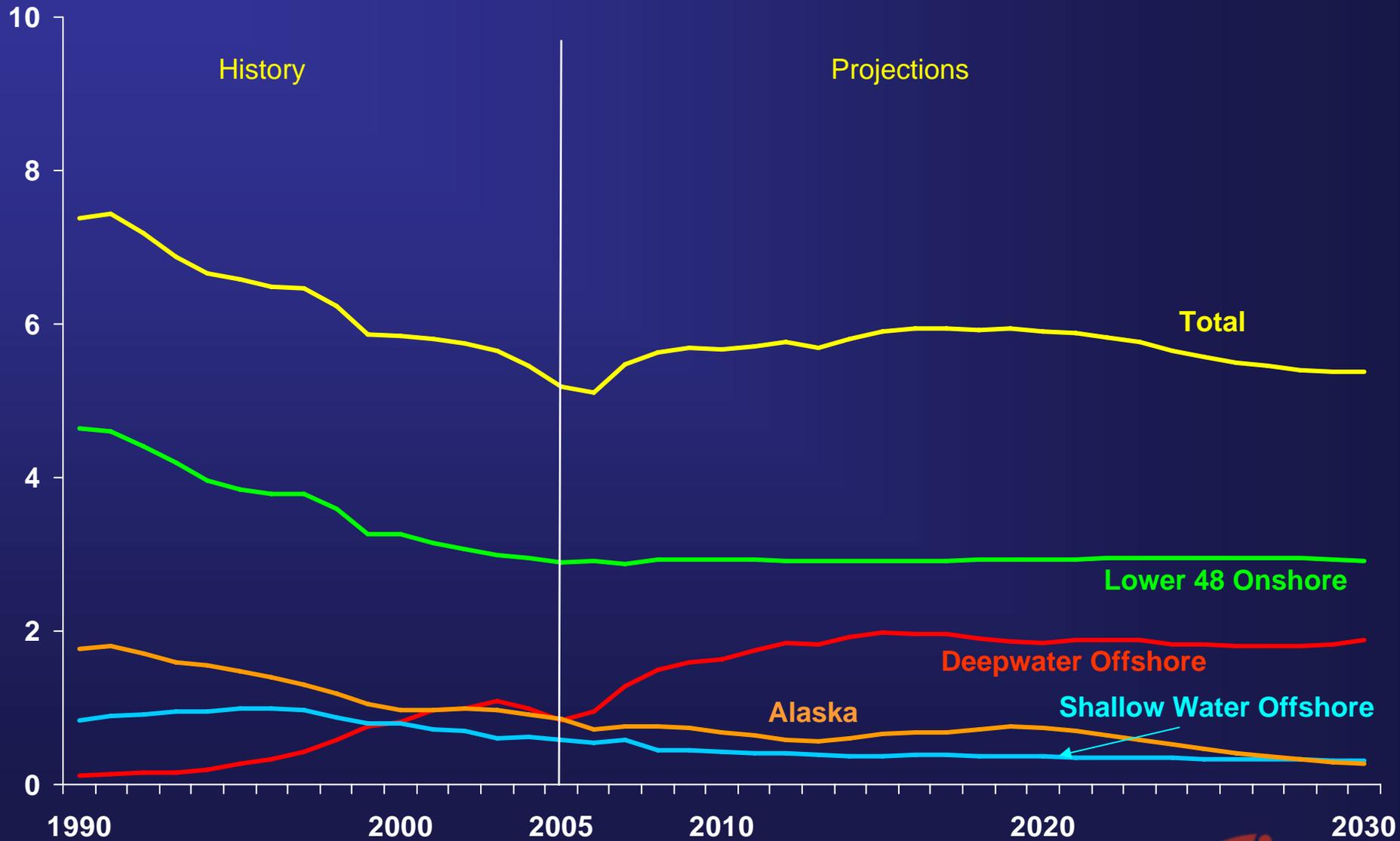
# Ethanol Consumption as E85 and Blended with Motor Gasoline, 1981-2030 (billion gallons)



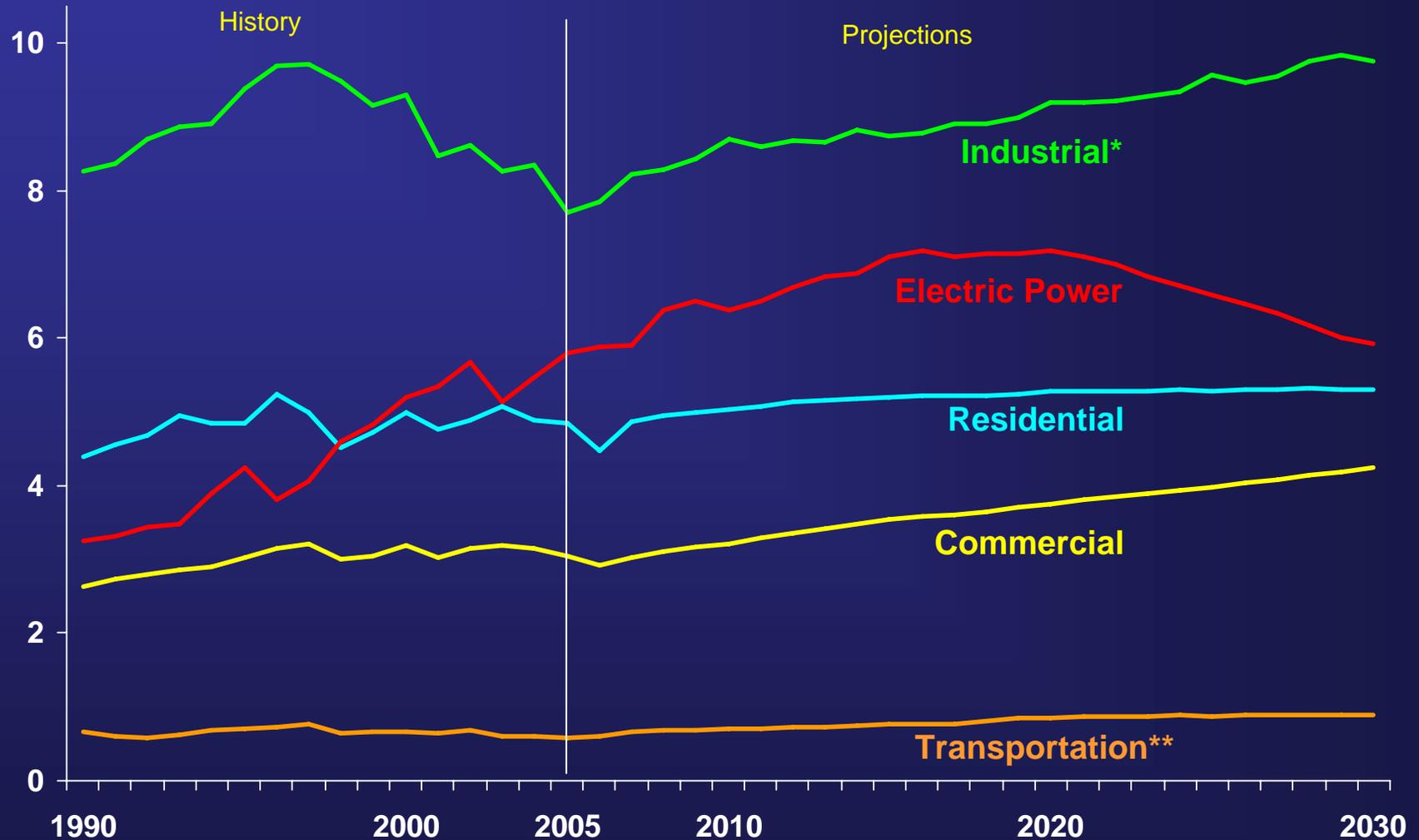
# U.S. Petroleum/Liquids Supply, Consumption, and Net Imports, 1960-2030 (million barrels per day)



# U.S. Crude Oil Production by Source, 1990-2030 (million barrels per day)



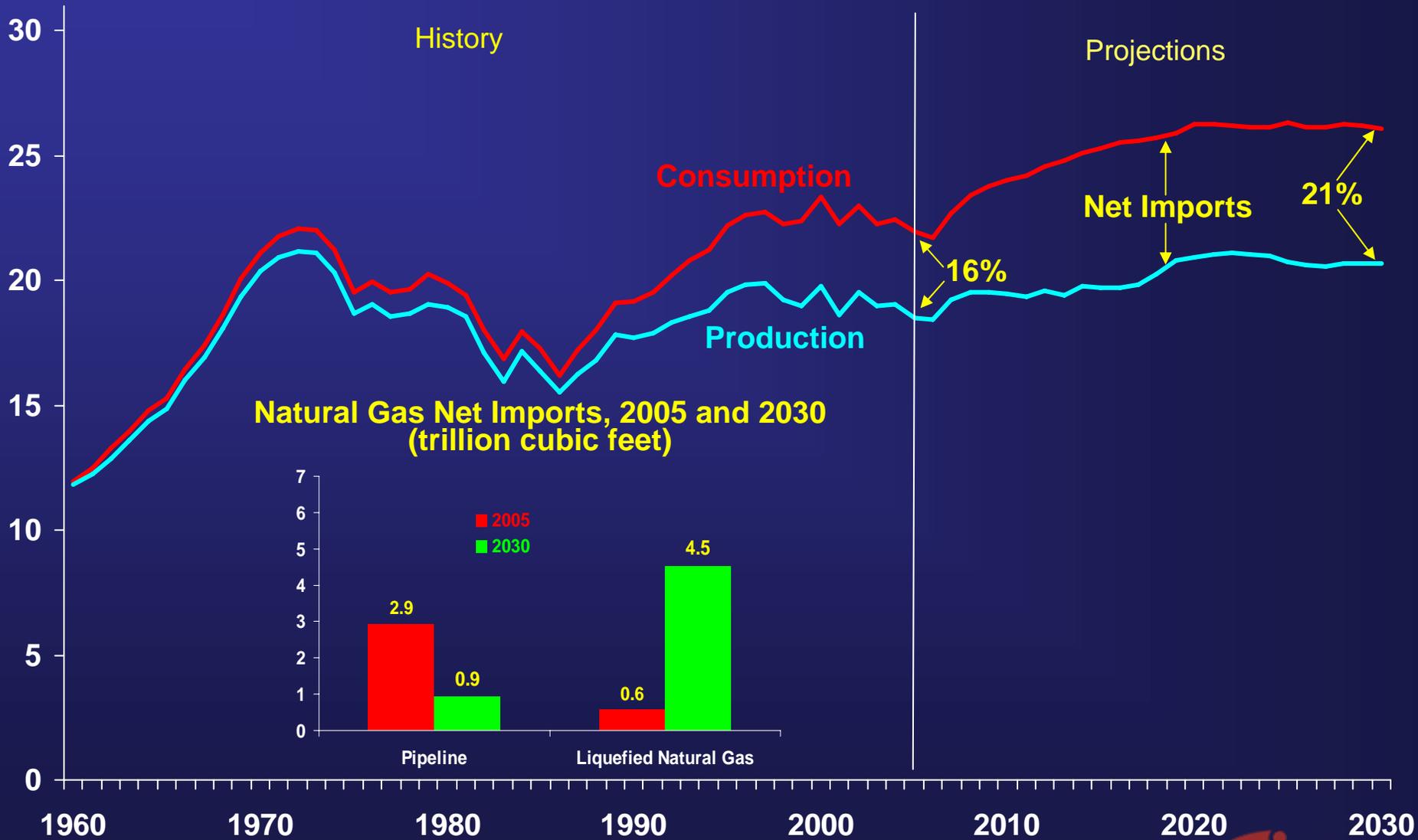
# U.S. Natural Gas Consumption by Sector, 1990-2030 (trillion cubic feet)



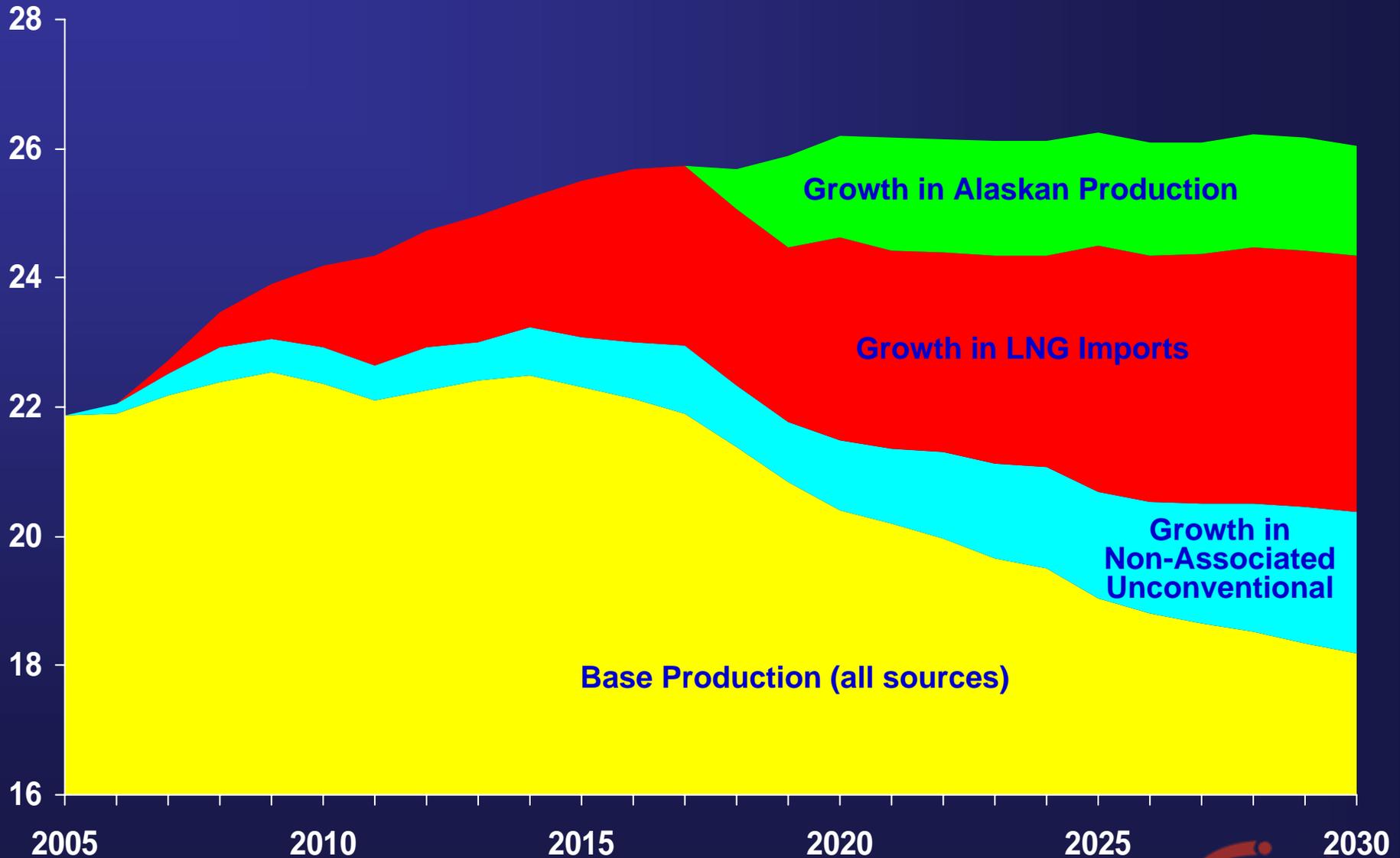
\* Includes lease and plant fuel

\*\* Includes pipeline fuel

# U.S. Natural Gas Production, Consumption, and Net Imports, 1960-2030 (trillion cubic feet)



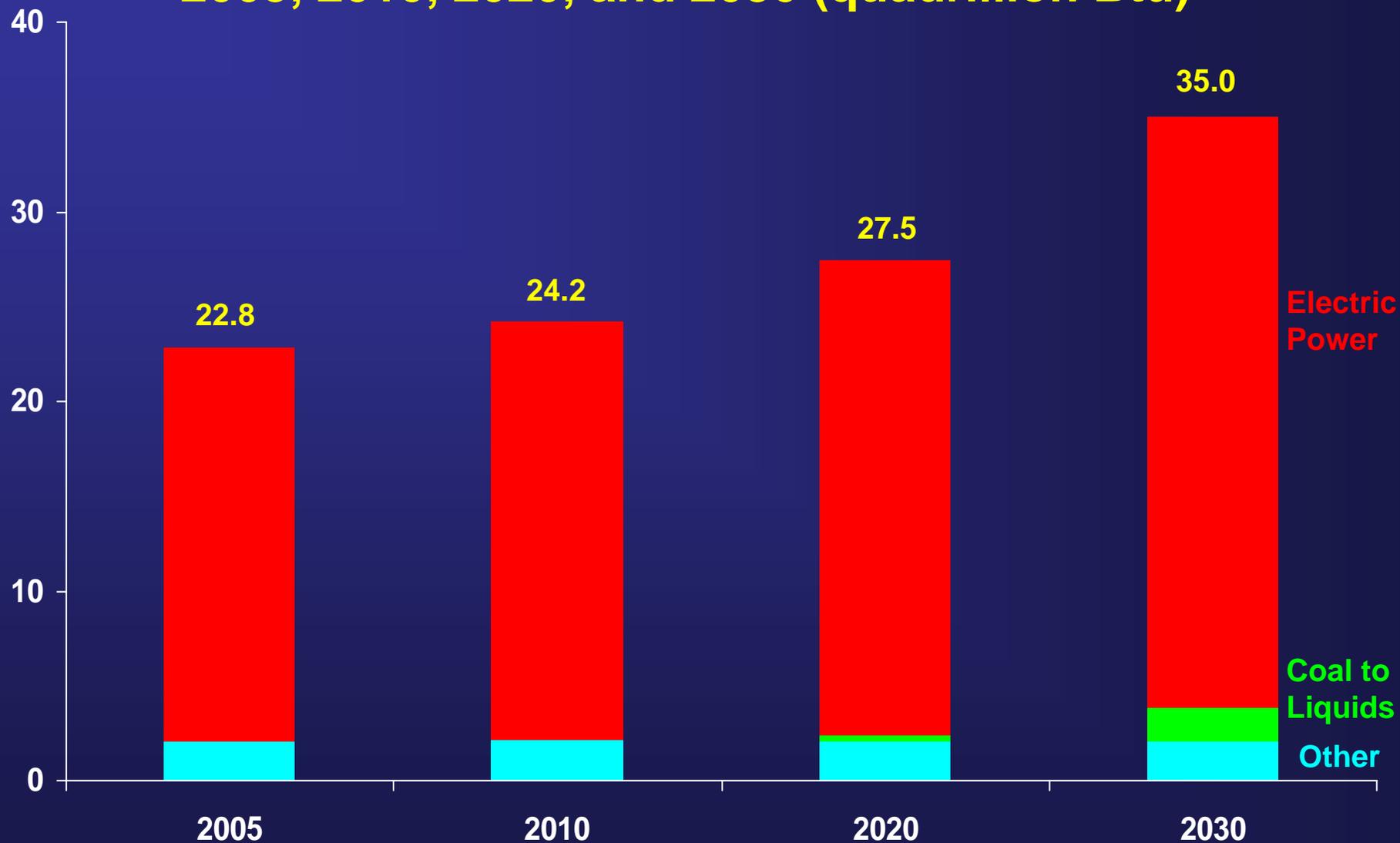
# Major Sources of Incremental U.S. Natural Gas Supply, 2006-2030 (trillion cubic feet)



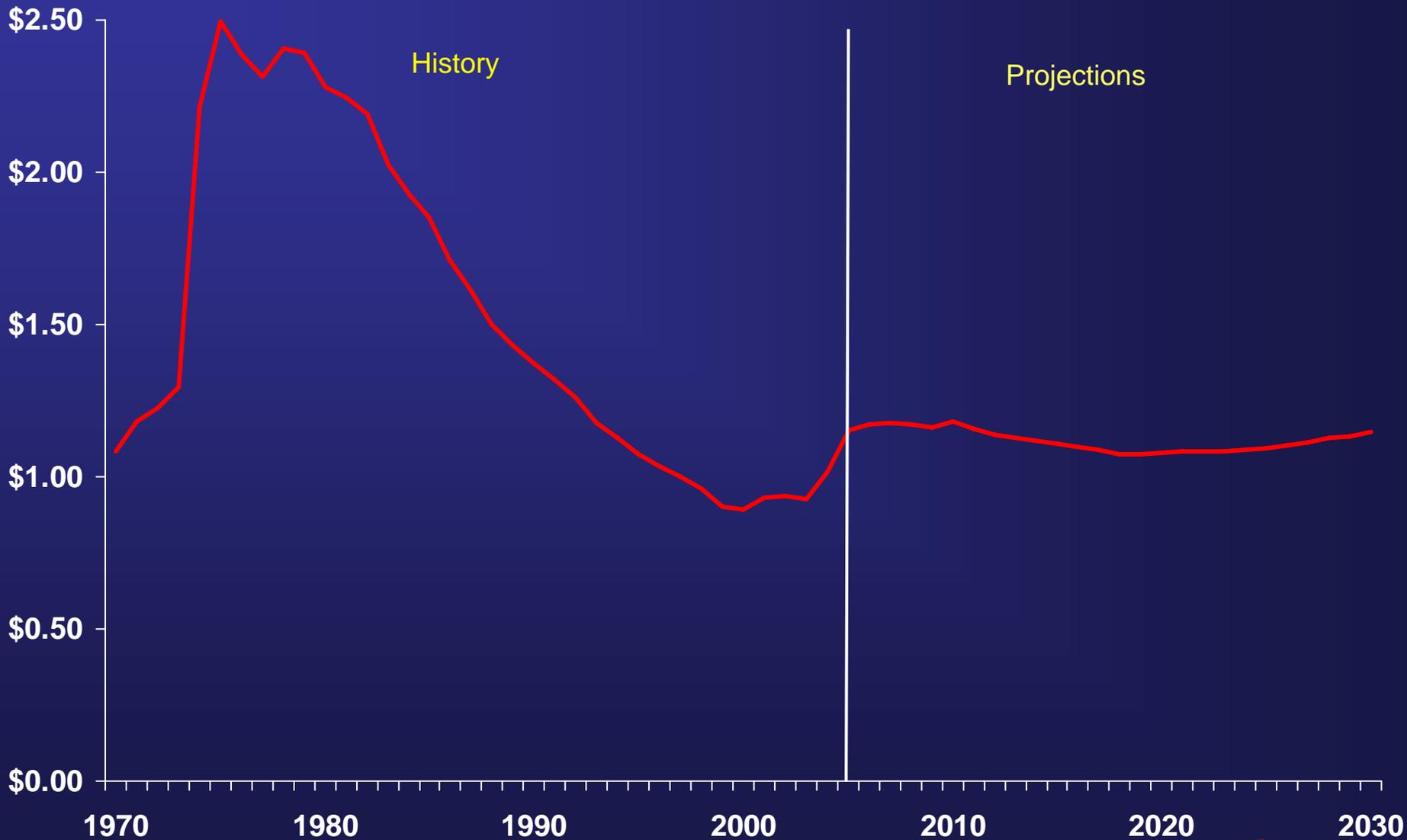
# U.S. Natural Gas Wellhead Price, 1970-2030 (2005 dollars per thousand cubic feet)



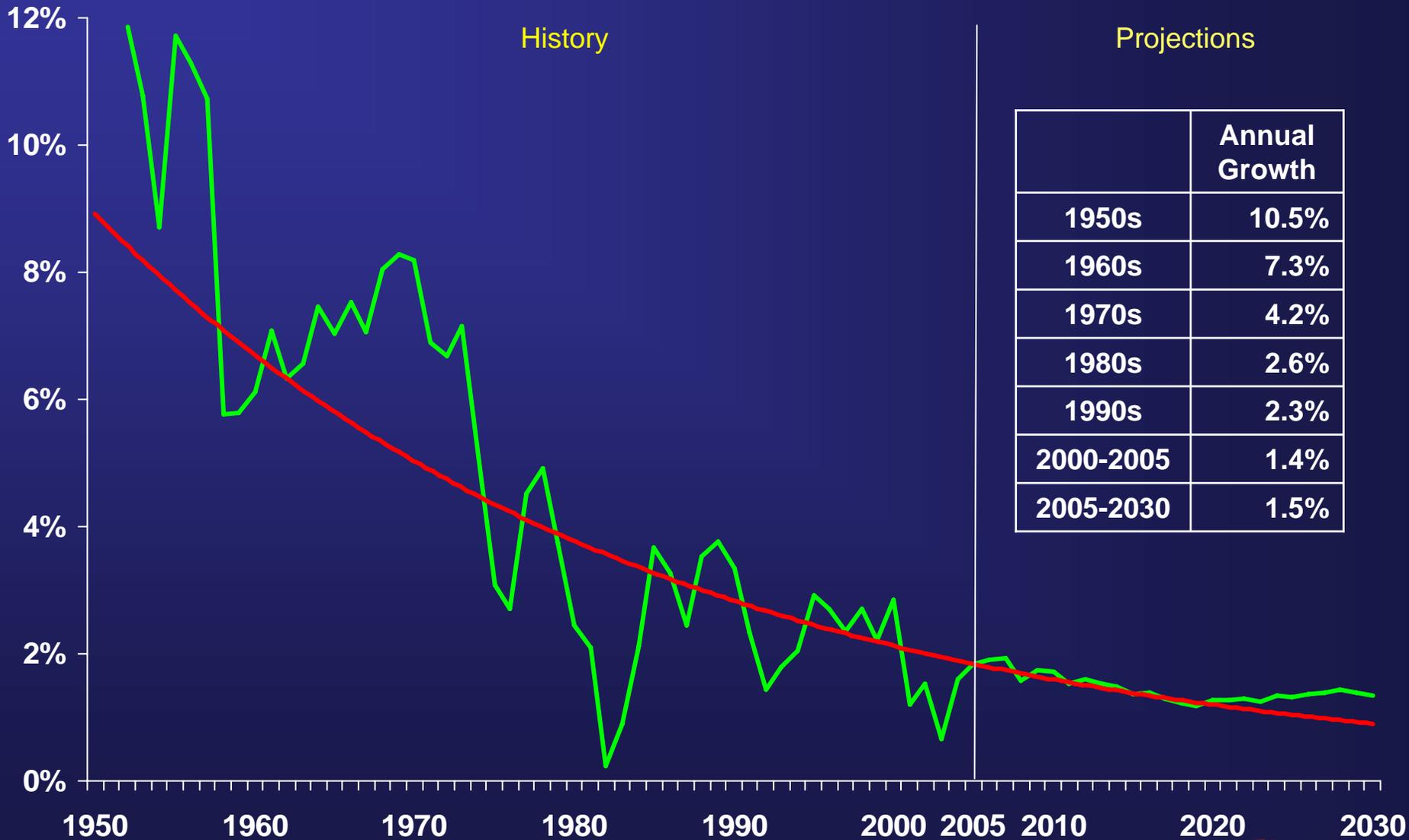
# U.S. Coal Consumption by Sector, 2005, 2010, 2020, and 2030 (quadrillion Btu)



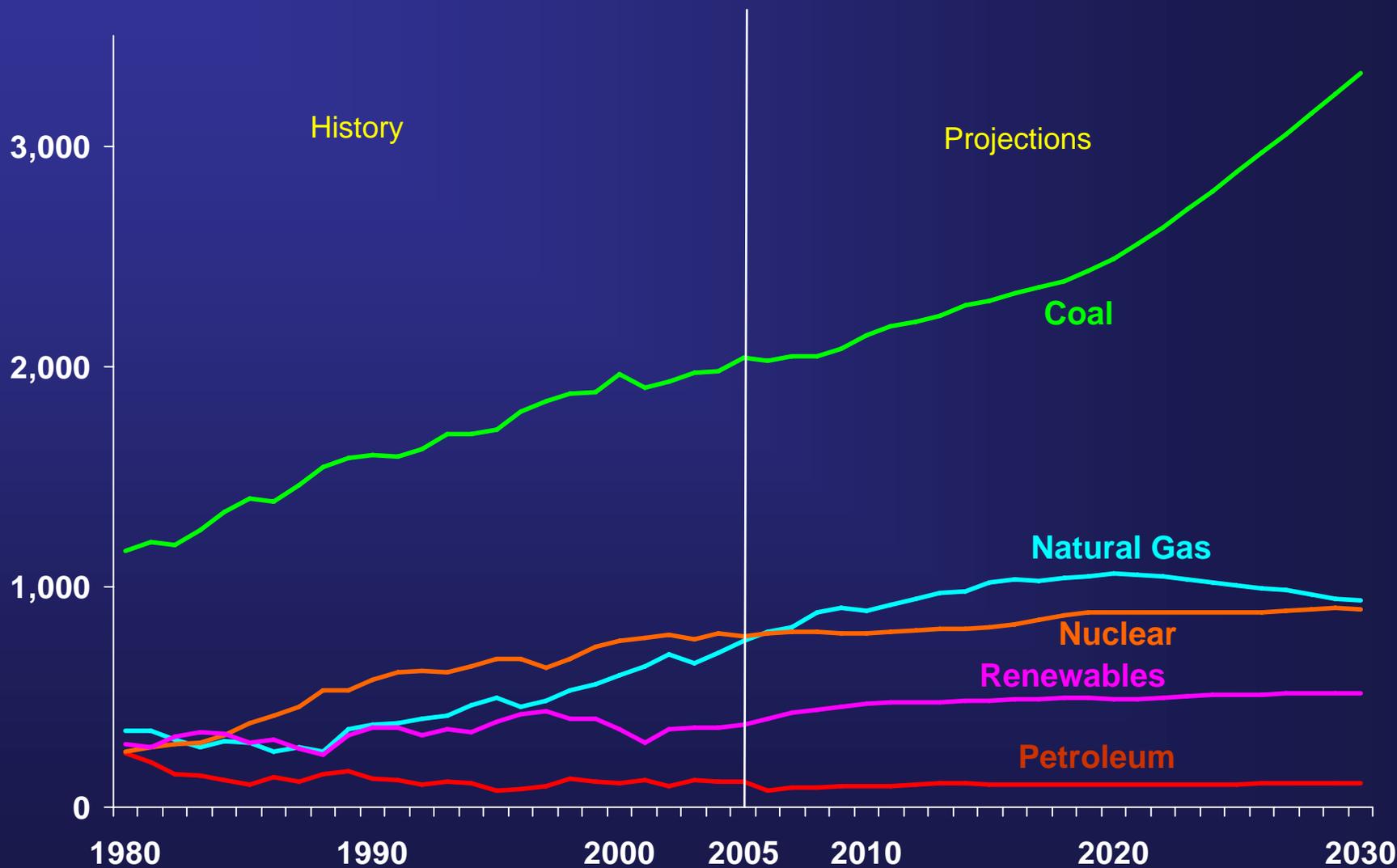
# U.S. Coal Minemouth Price, 1970-2030 (2005 dollars per million Btu)



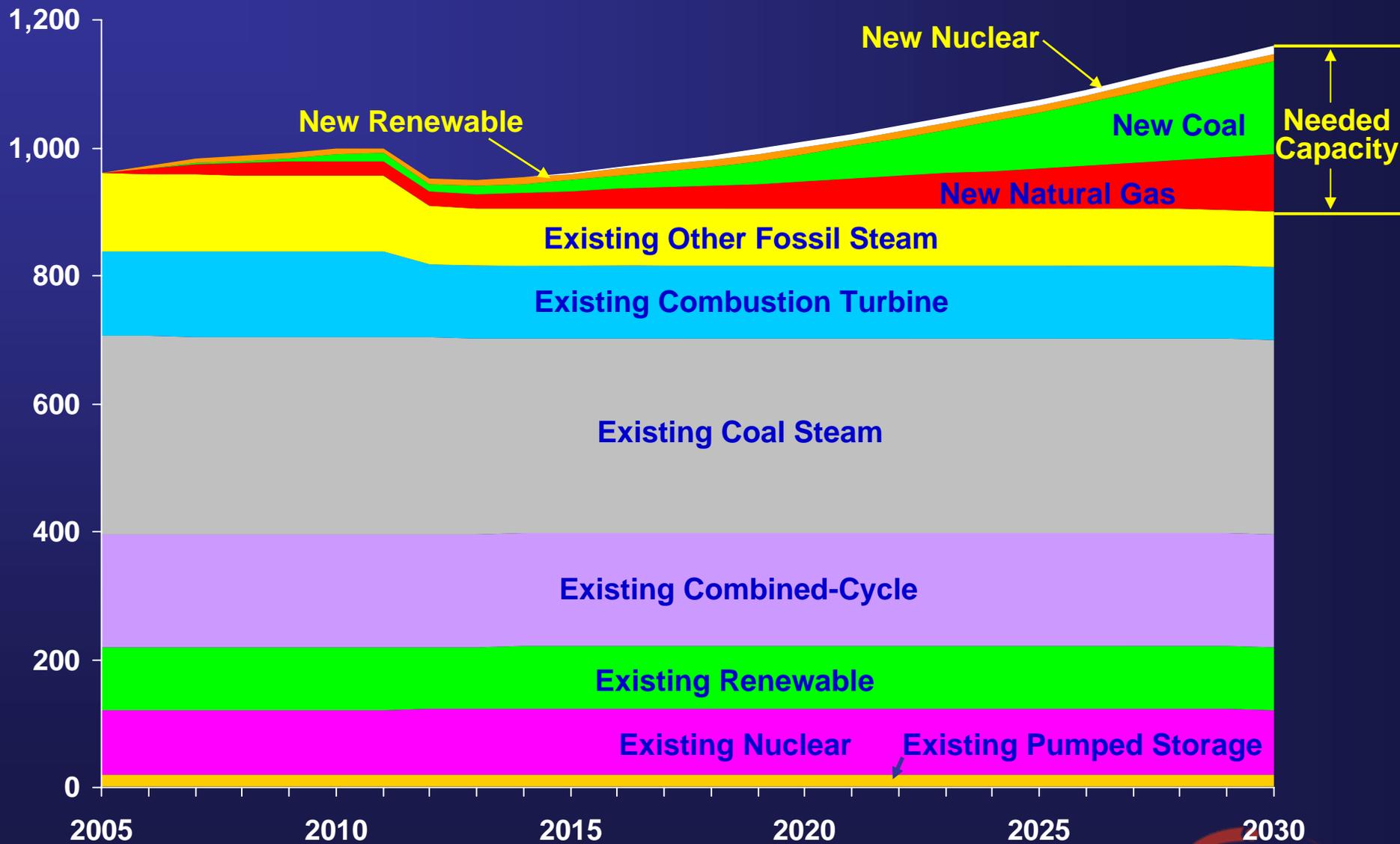
# 3-Year Rolling Average Electricity Demand Growth (with exponential trend line)



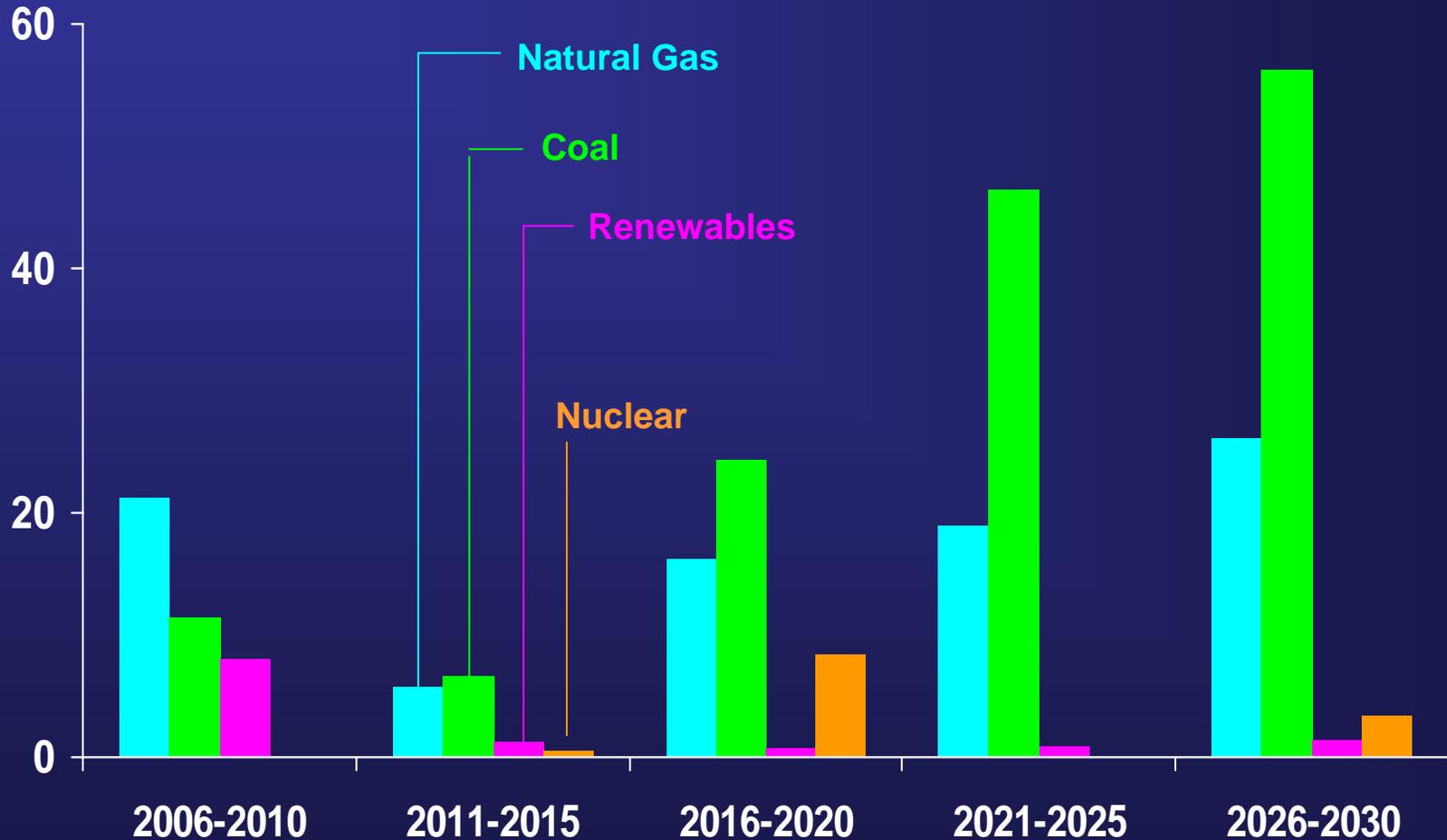
# U.S. Electricity Generation by Fuel, 1980-2030 (billion kilowatthours)



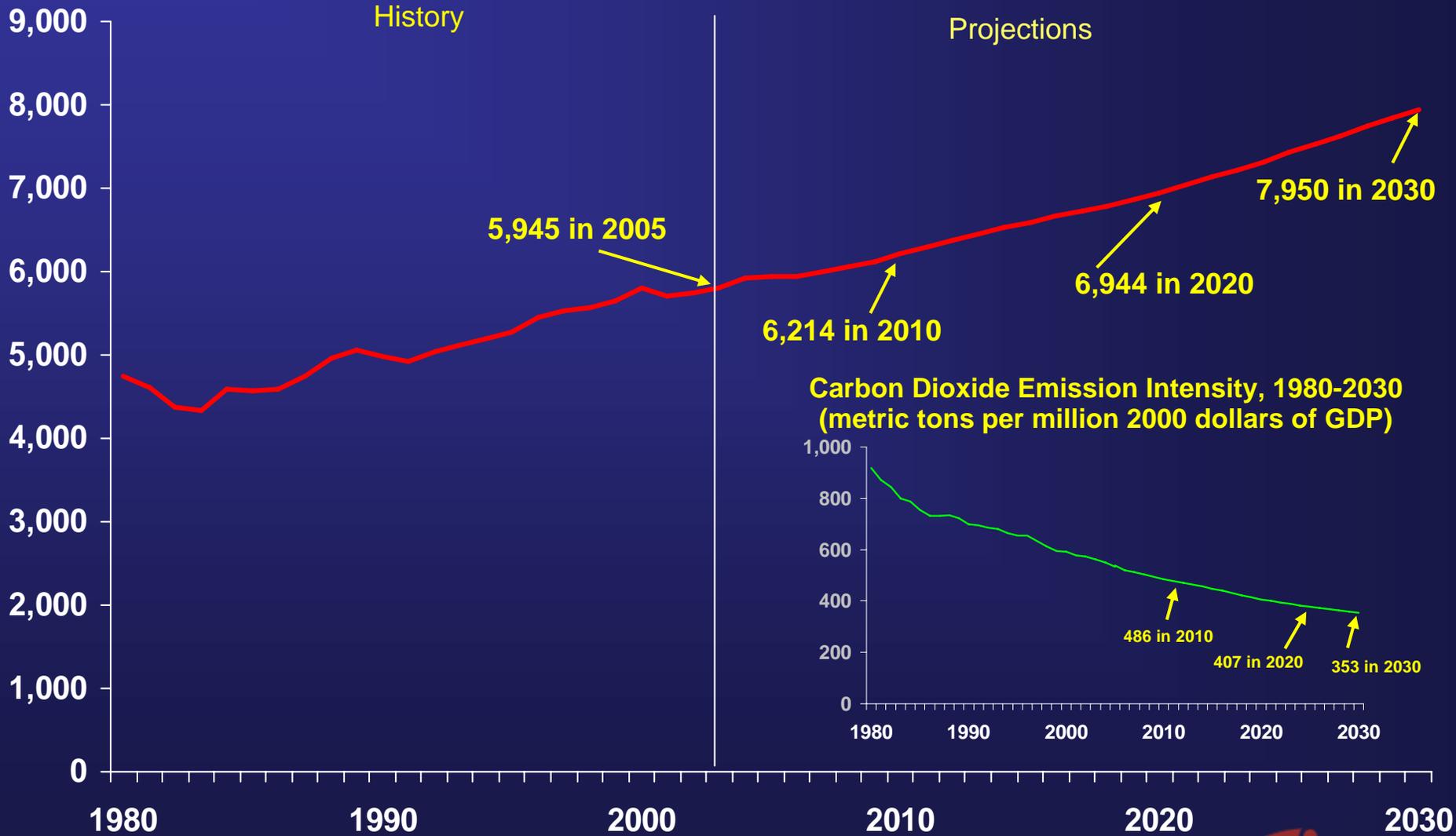
# U.S. Electricity Generating Capacity, including Combined Heat and Power, 2005-2030 (gigawatts)



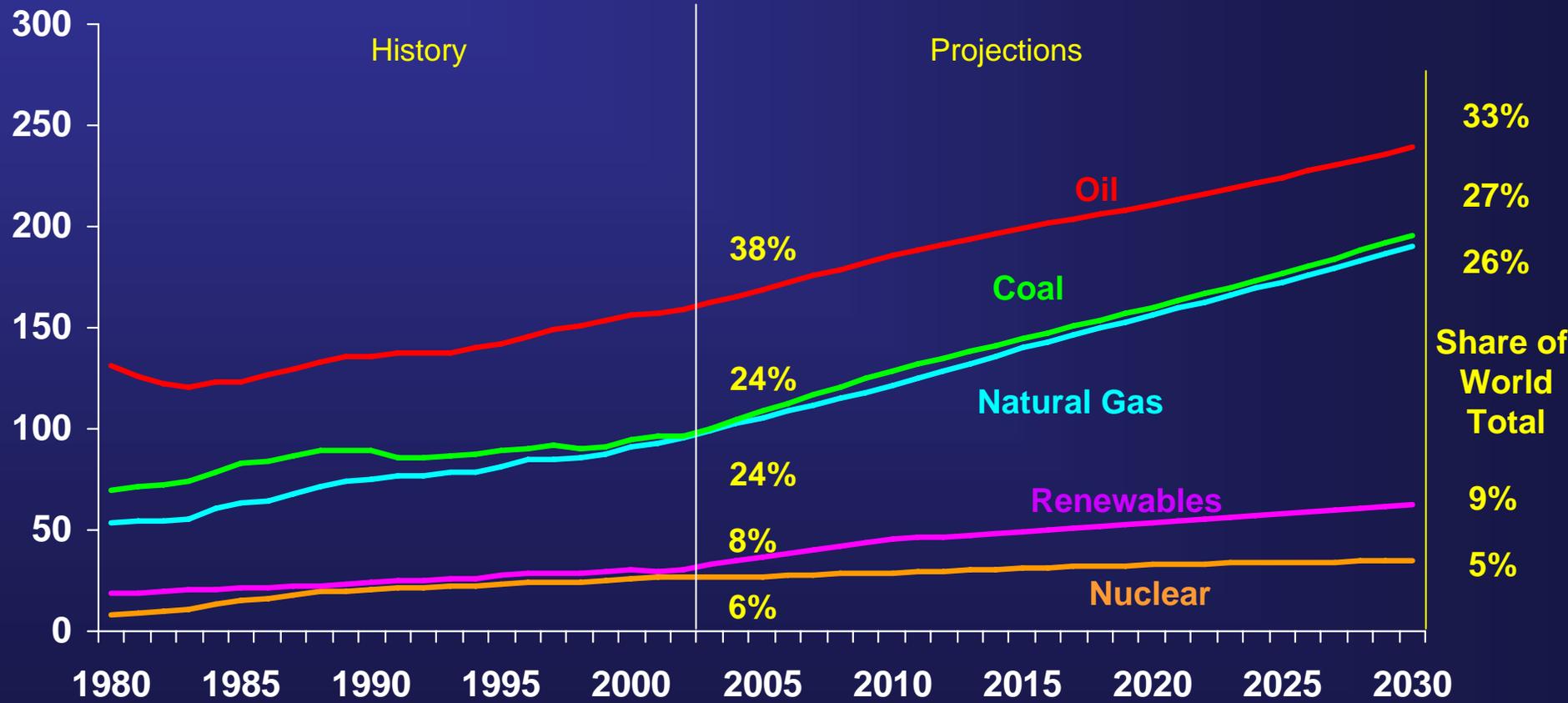
# U.S. Electricity Generation Capacity Additions by Fuel, 2006-2030 (gigawatts)



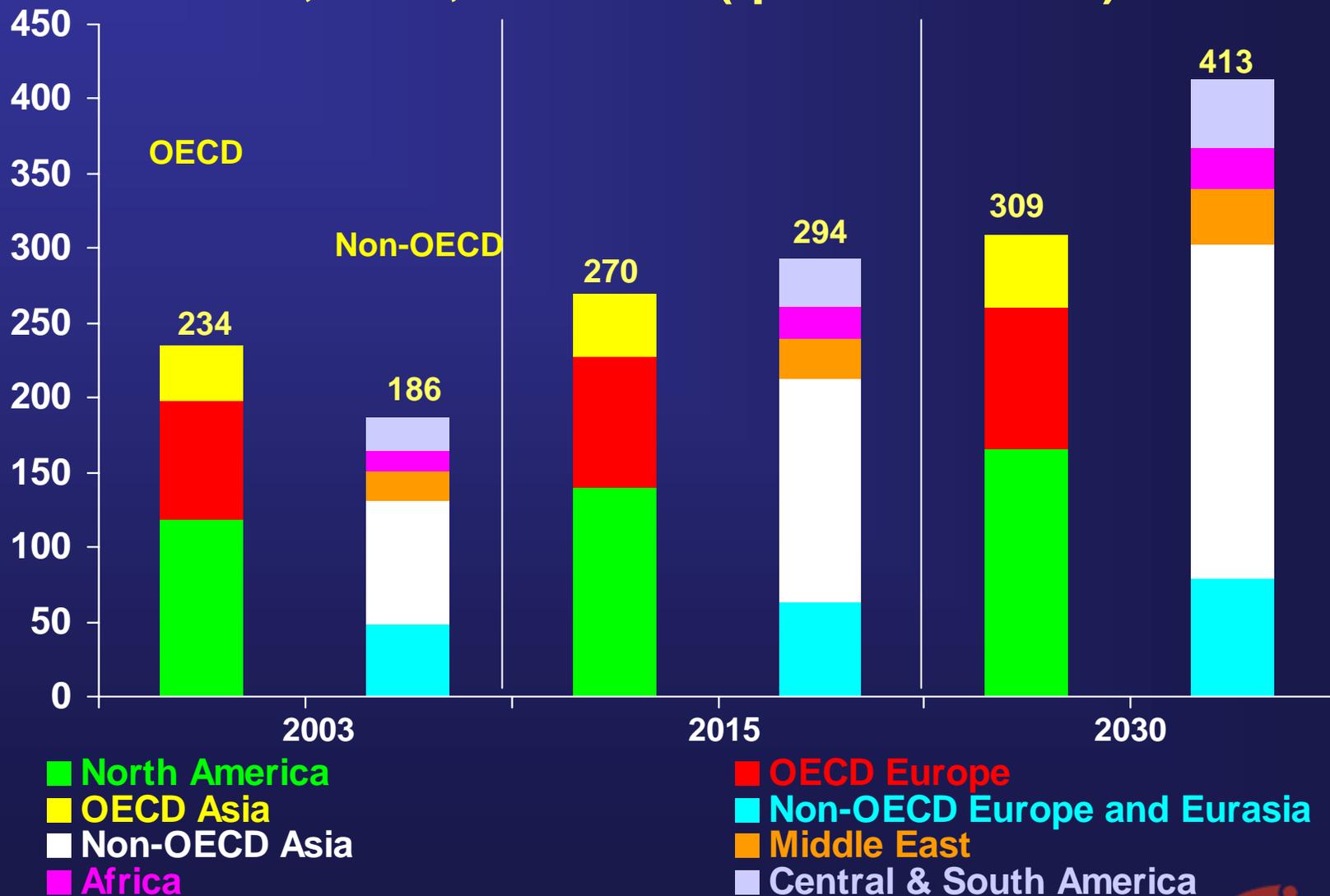
# U.S. Energy-Related Carbon Dioxide Emissions, 1980-2030 (million metric tons)



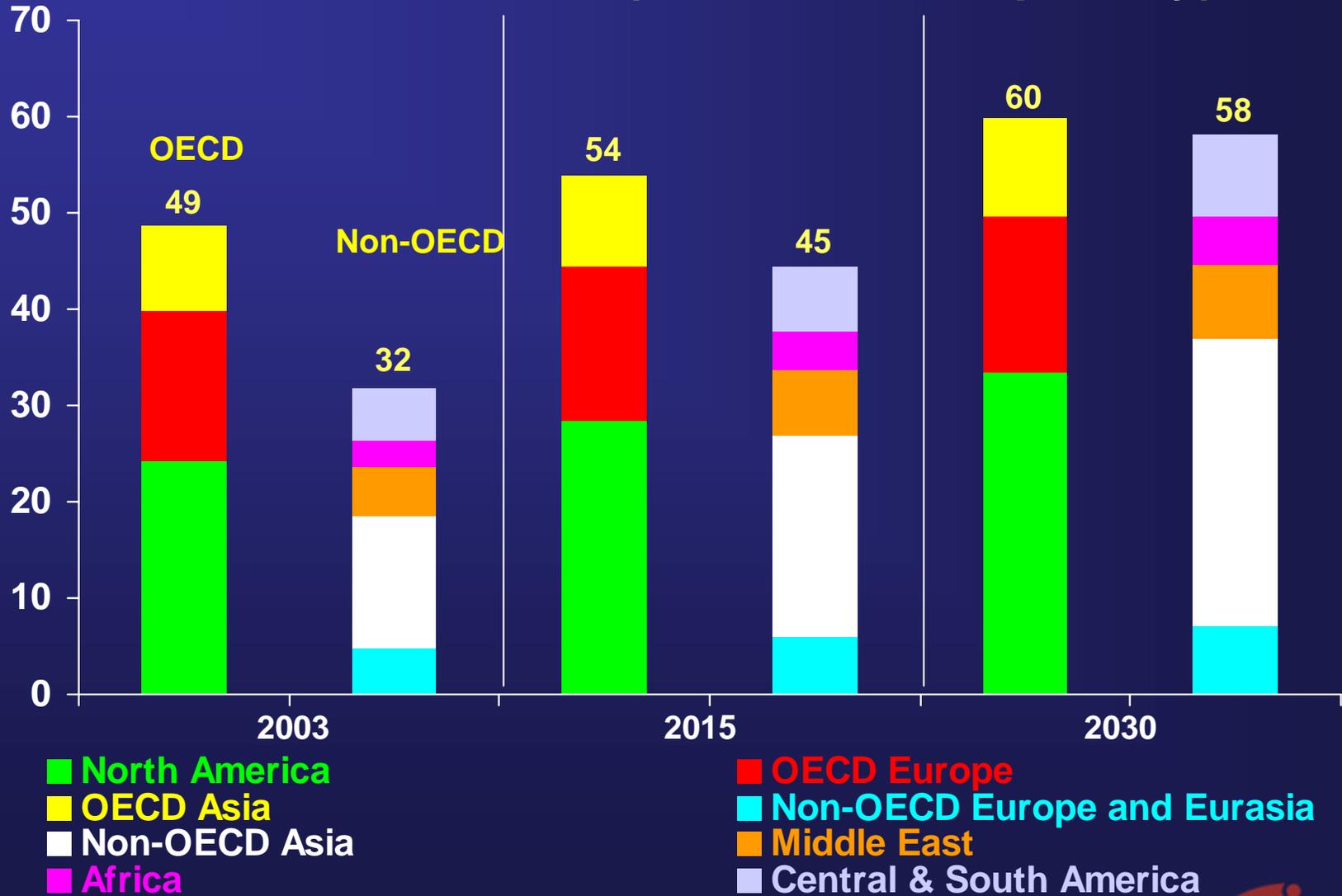
# World Marketed Energy Use by Fuel, 1980-2030 (quadrillion Btu)



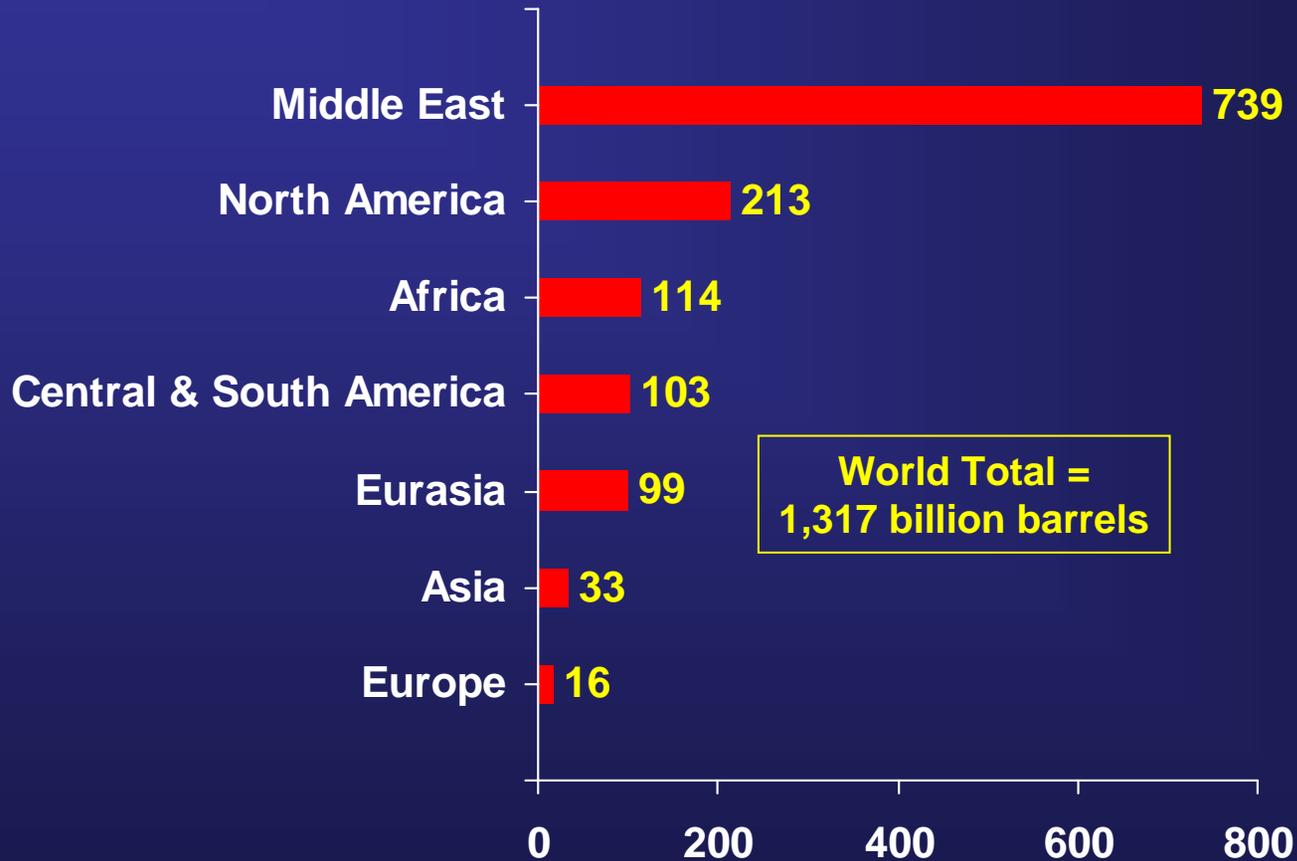
# World Energy Consumption, 2003, 2015, and 2030 (quadrillion Btu)



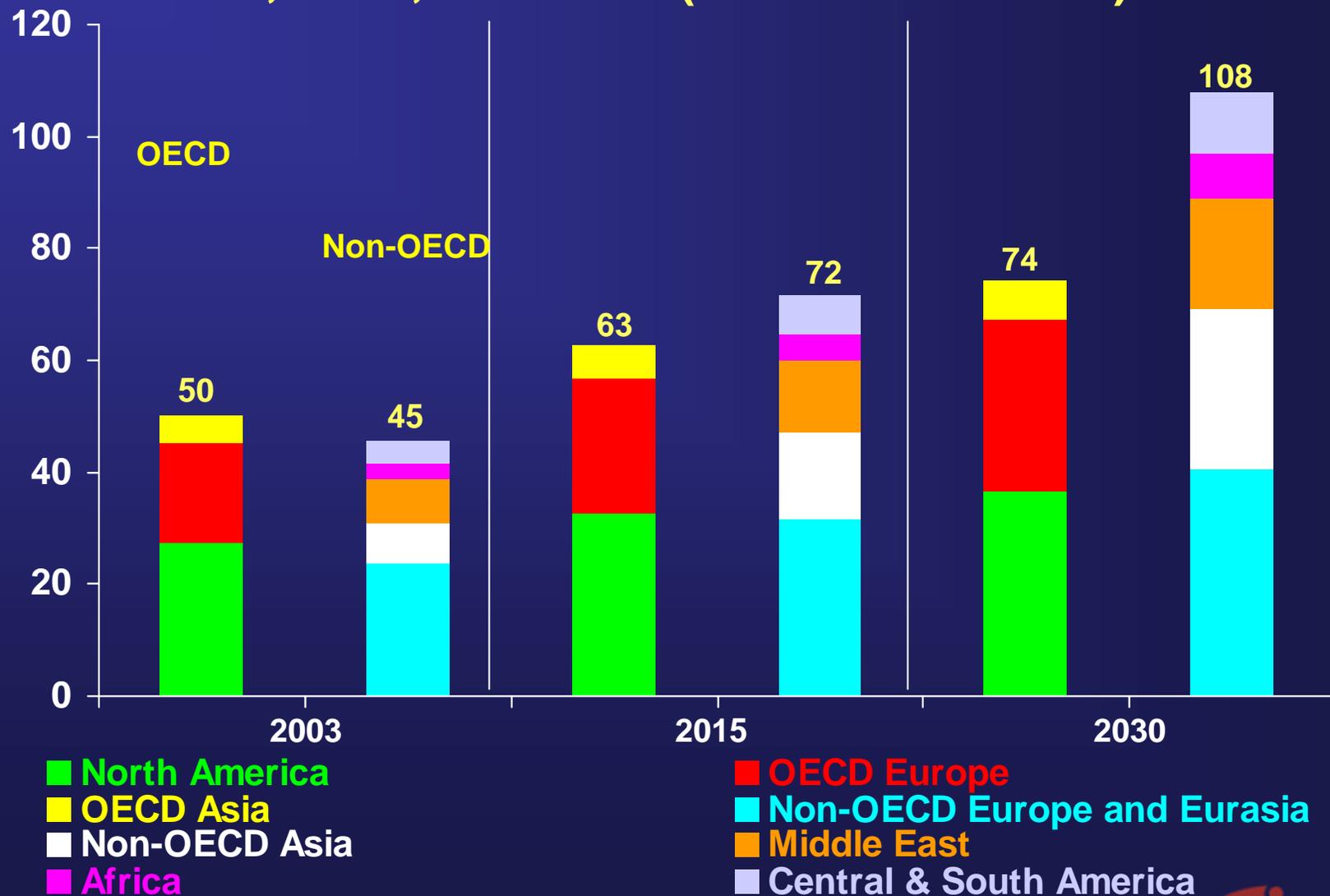
# World Oil Consumption, 2003, 2015, and 2030 (million barrels per day)



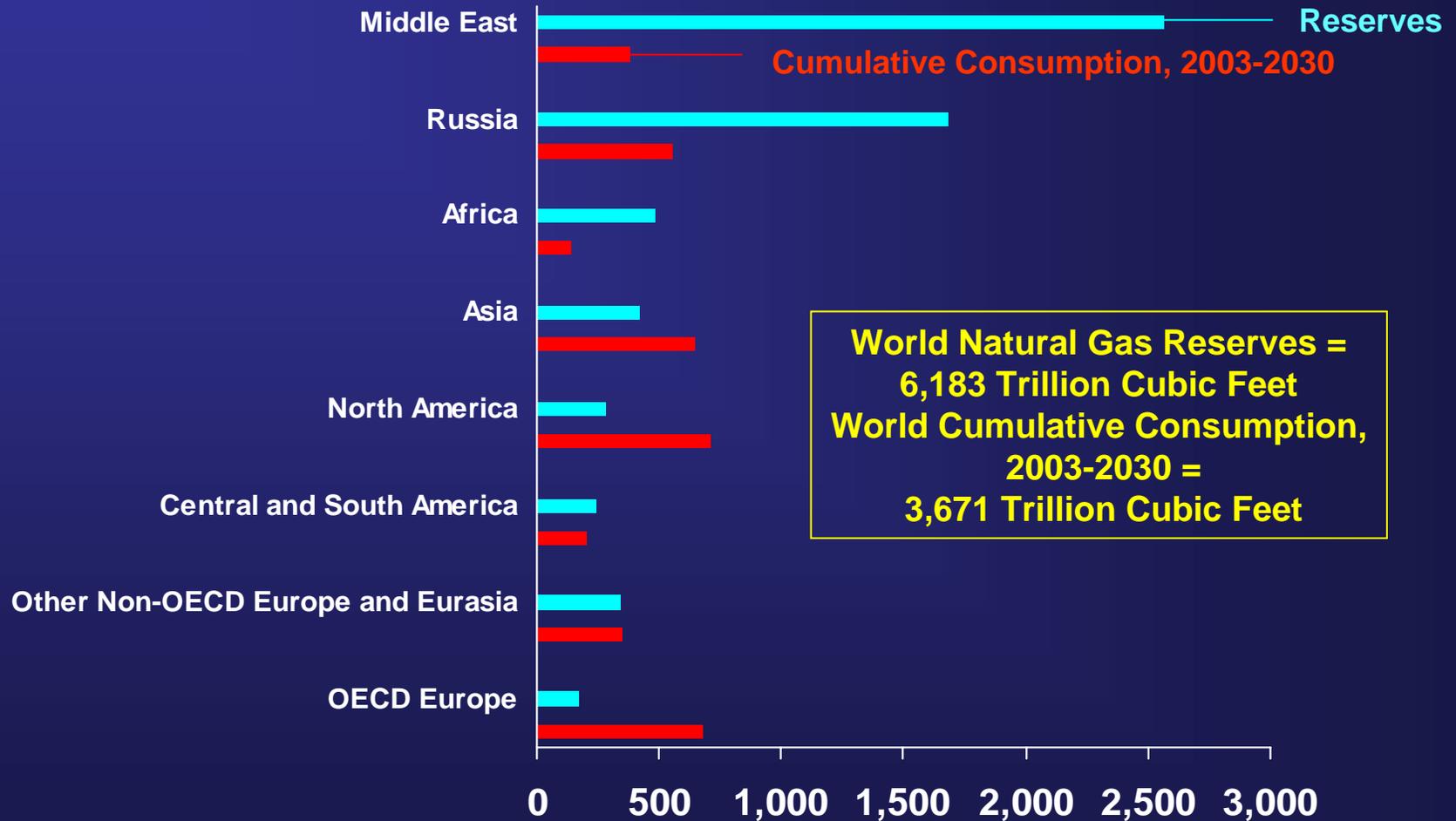
# World Proved Oil Reserves, as of January 1, 2007 (billion barrels)



# World Natural Gas Consumption, 2003, 2015, and 2030 (trillion cubic feet)



# World Natural Gas Reserves, as of January 1, 2007, and Cumulative Consumption, 2003-2030 (trillion cubic feet)



**World Natural Gas Reserves = 6,183 Trillion Cubic Feet**  
**World Cumulative Consumption, 2003-2030 = 3,671 Trillion Cubic Feet**



## Periodic Reports

*Petroleum Status and Natural Gas Storage Reports, weekly*

*Short-Term Energy Outlook, monthly*

*Annual Energy Outlook 2007, February 2007*

*International Energy Outlook 2006, June 2006, next issue May 2007*

## Examples of Special Analyses

*“Economic Effects of High Oil Prices,” Annual Energy Outlook 2006*

*Analysis of Oil and Gas Production in the Arctic National Wildlife Refuge,*

*March 2004*

*The Global Liquefied Natural Gas Market: Status and Outlook, December 2003*

*“Restricted Natural Gas Supply Case,” Annual Energy Outlook 2005*

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