

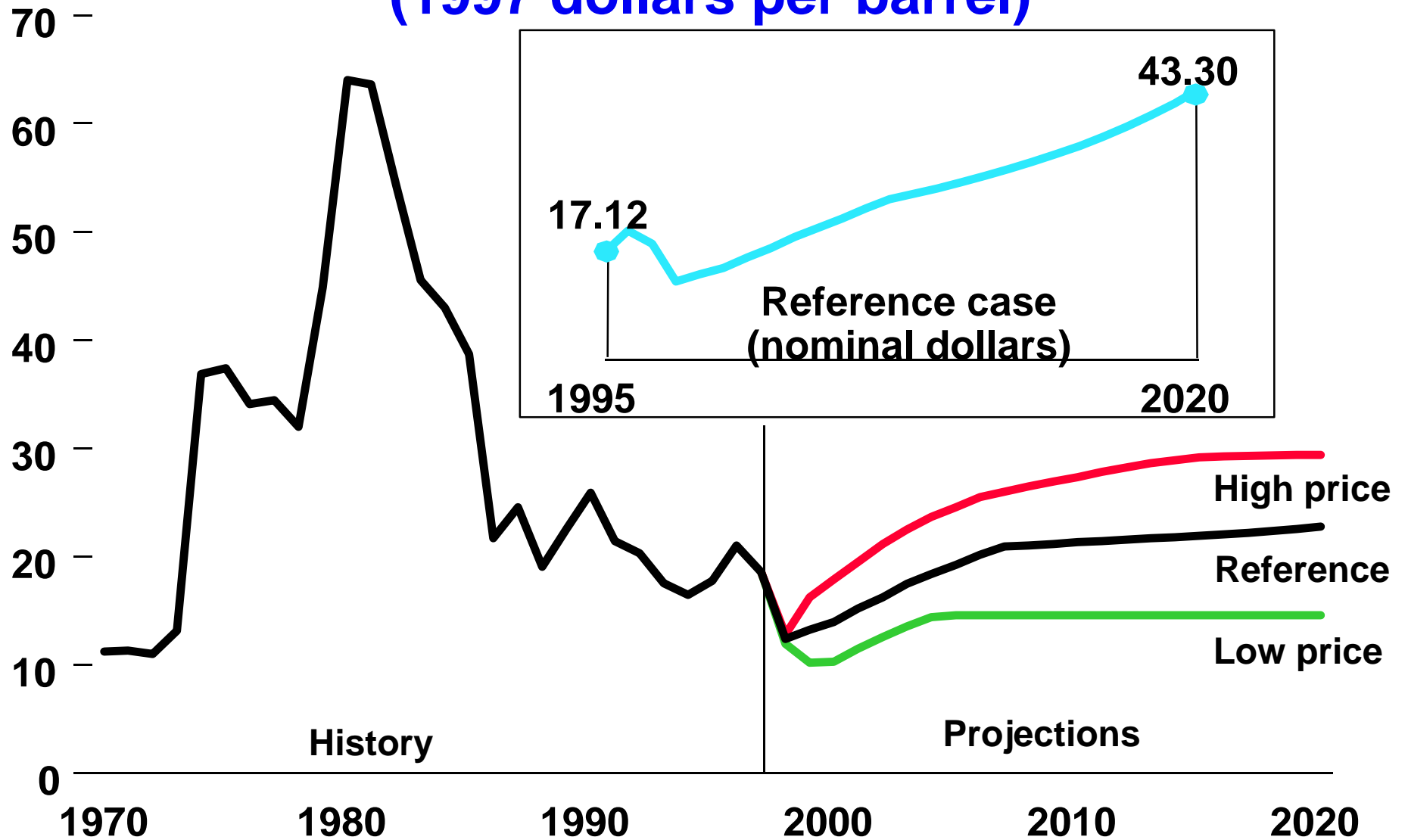
**Presented to Mining Technology Symposium  
Morgantown, WV**

**June 23, 1999**

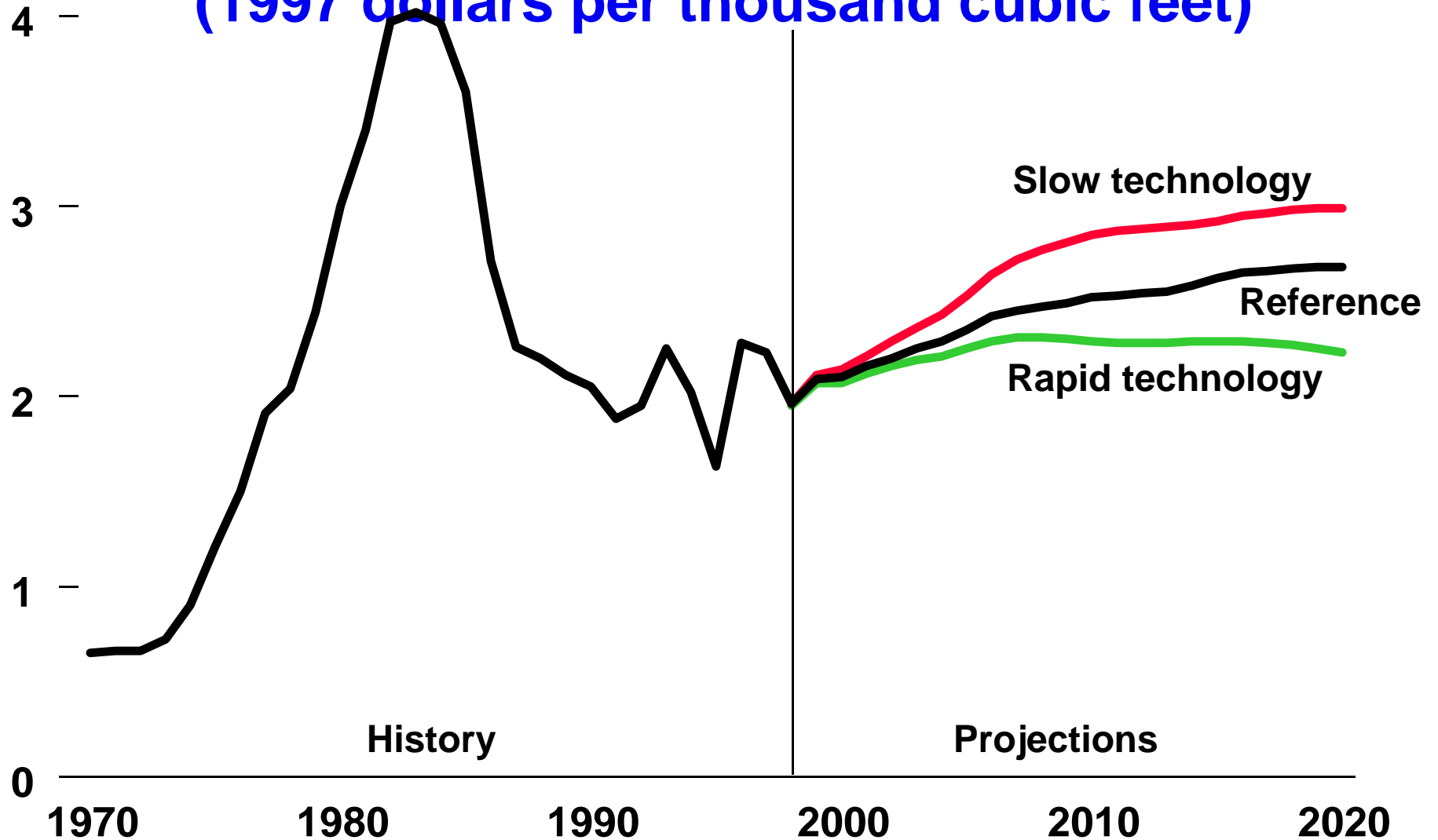
**The Outlook for U.S. Coal Markets Through 2020**

**Mary J. Hutzler  
U.S. Energy Information Administration  
Washington, D.C.**

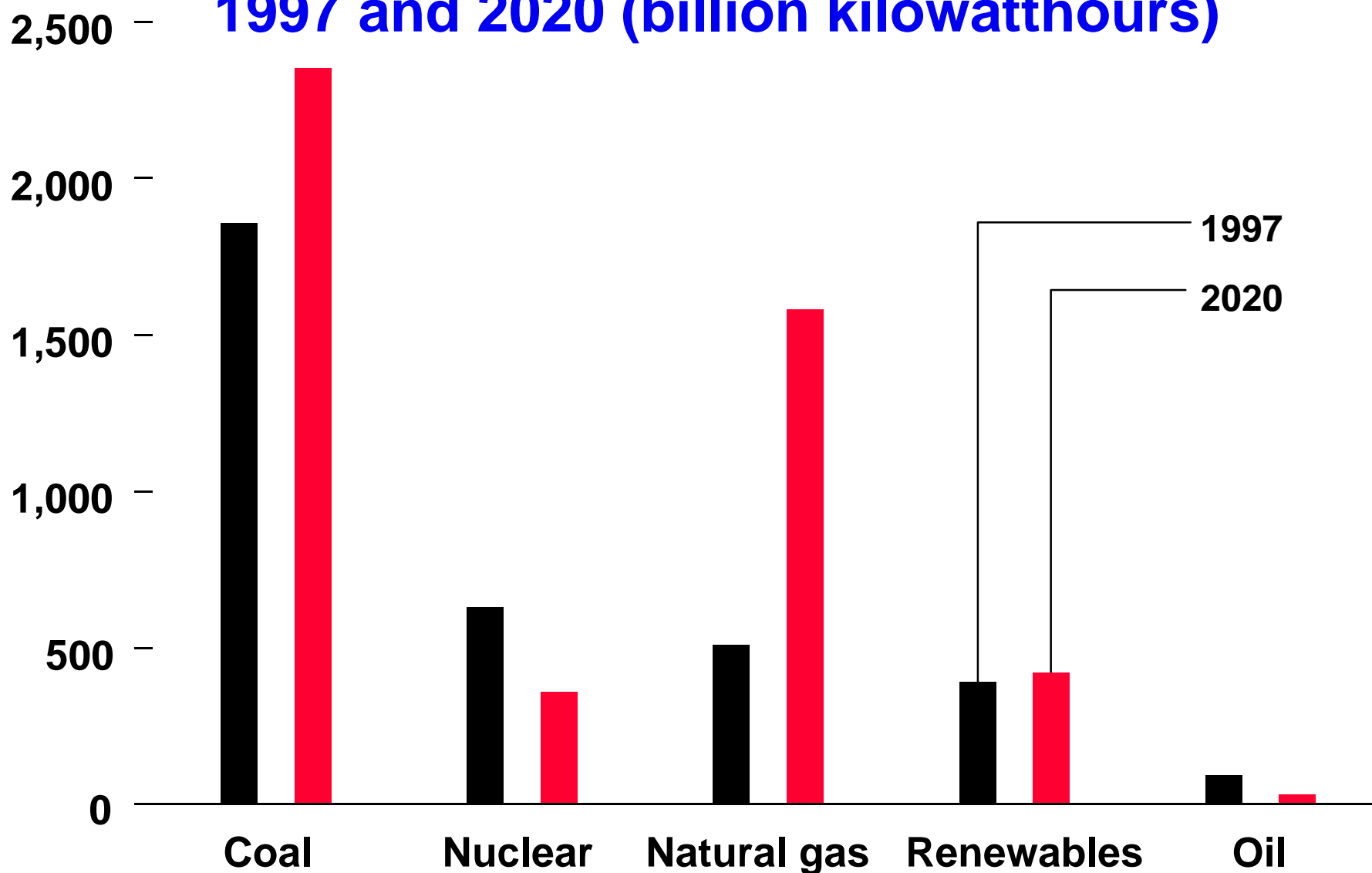
# World Oil Prices in Three Cases, 1970-2020 (1997 dollars per barrel)



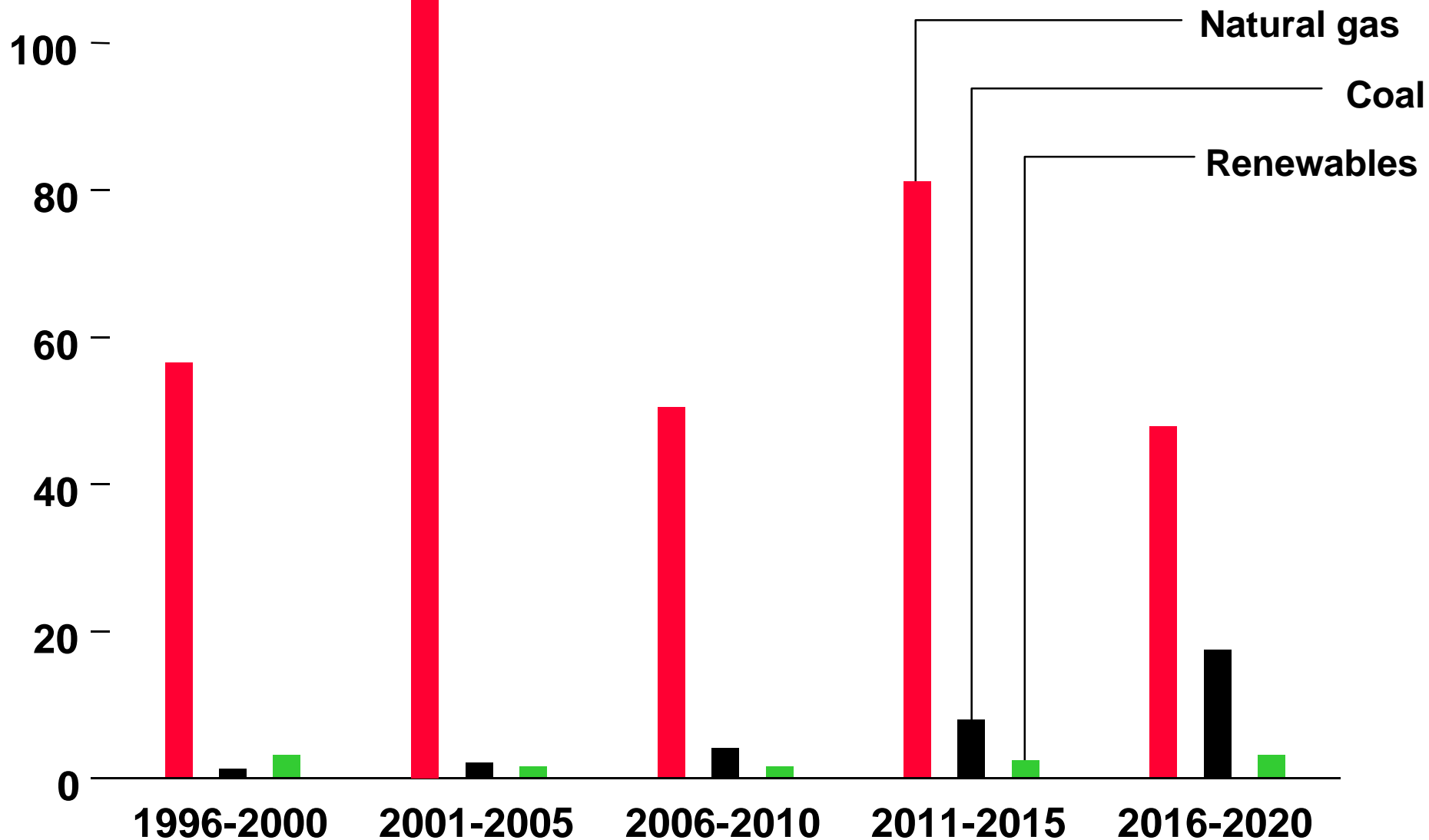
# Lower 48 Natural Gas Wellhead Prices in Three Cases, 1970-2020 (1997 dollars per thousand cubic feet)



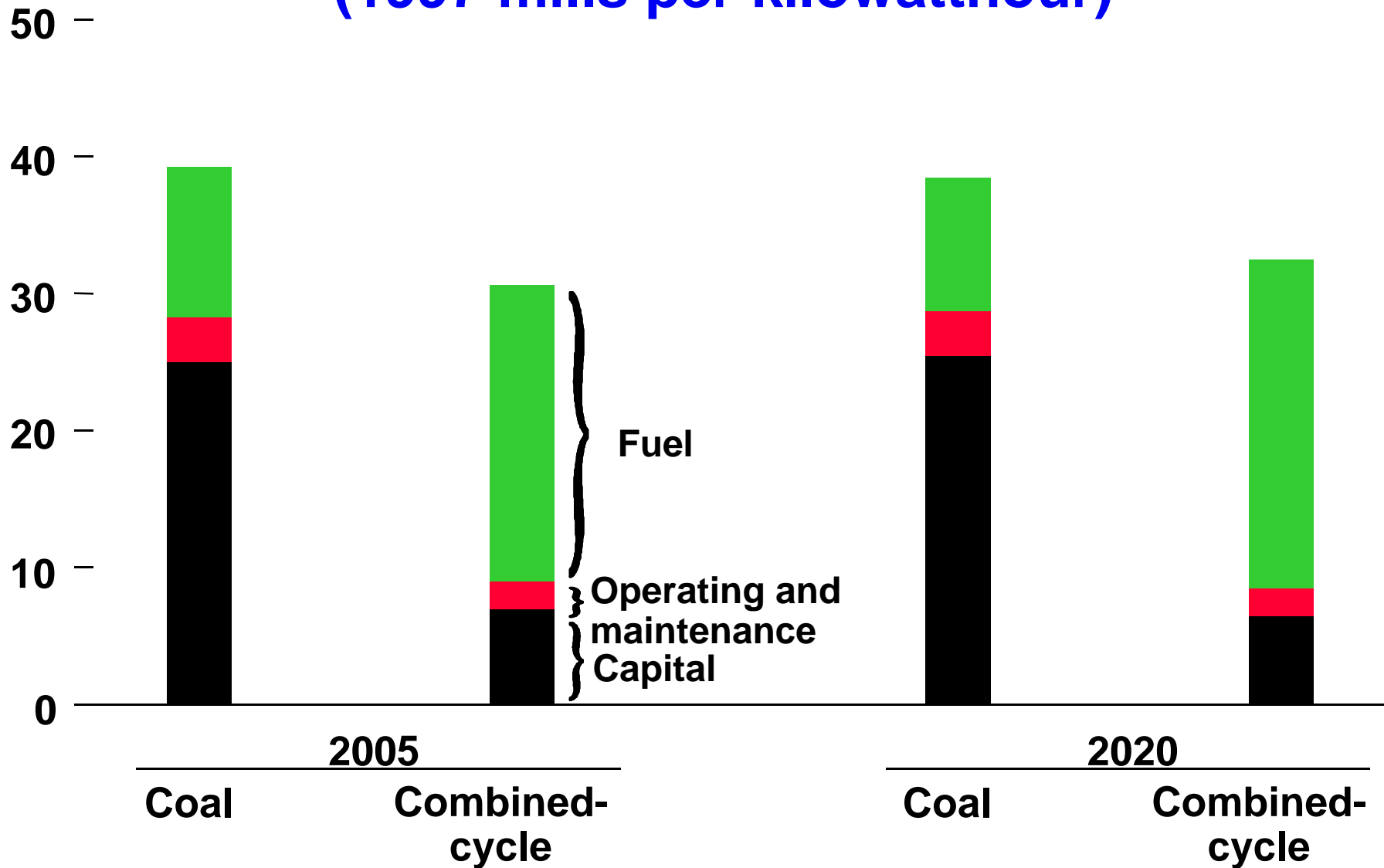
# Electricity Generation by Fuel, 1997 and 2020 (billion kilowatthours)



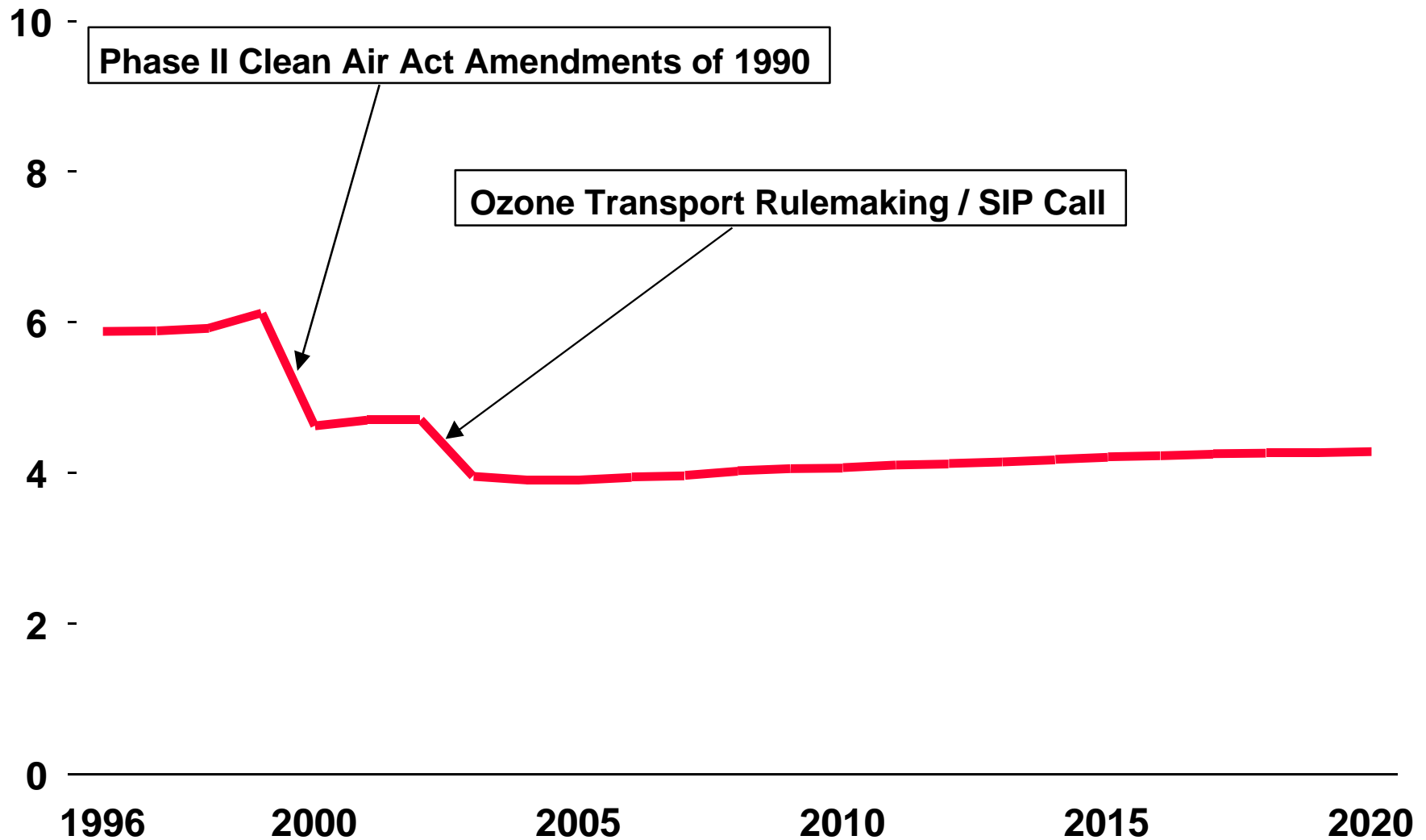
# Electricity Generation and Cogeneration Capacity Additions by Fuel Type, 1996-2020 (gigawatts)



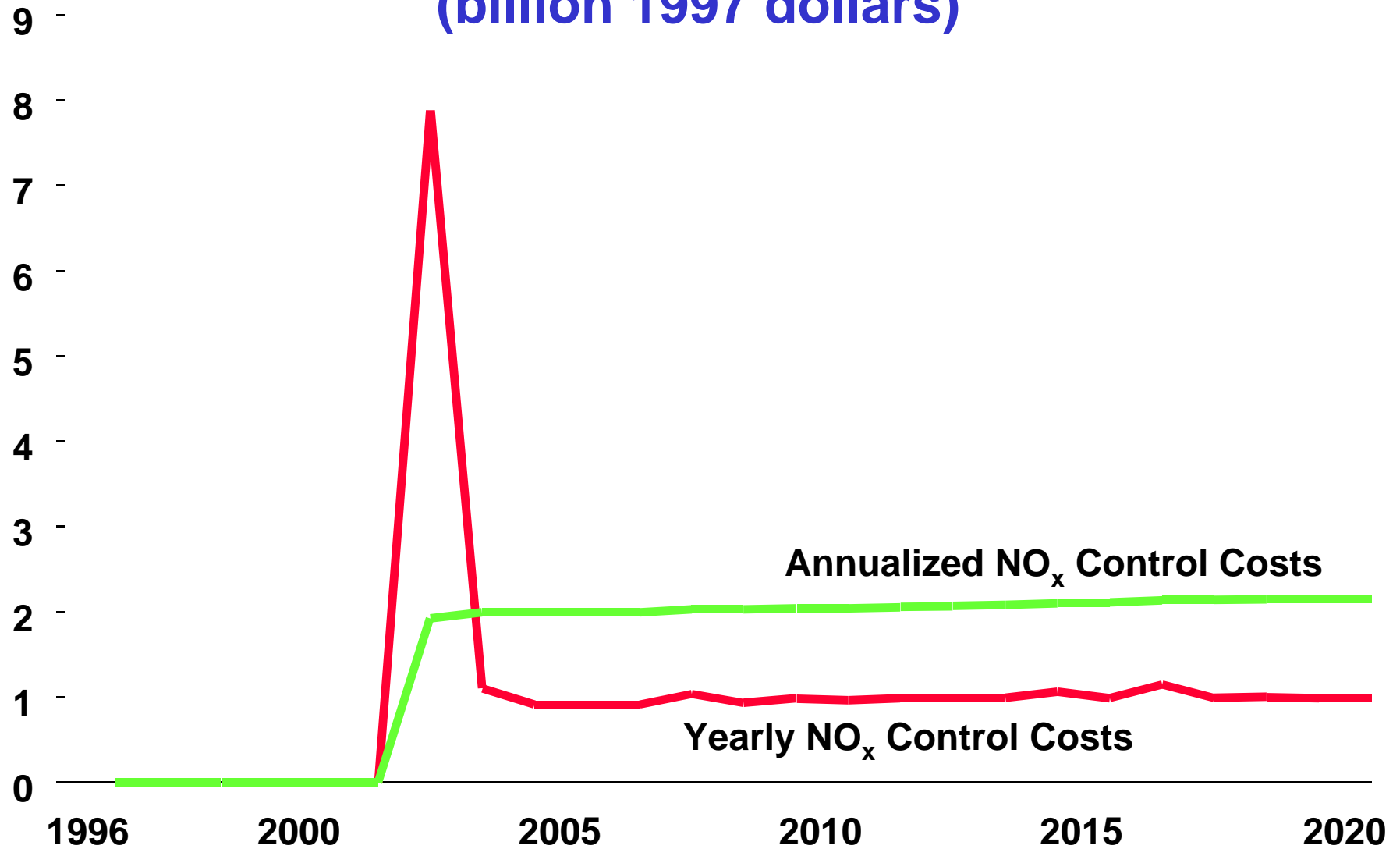
# Electricity Generation Costs, 2005 and 2020 (1997 mills per kilowatthour)



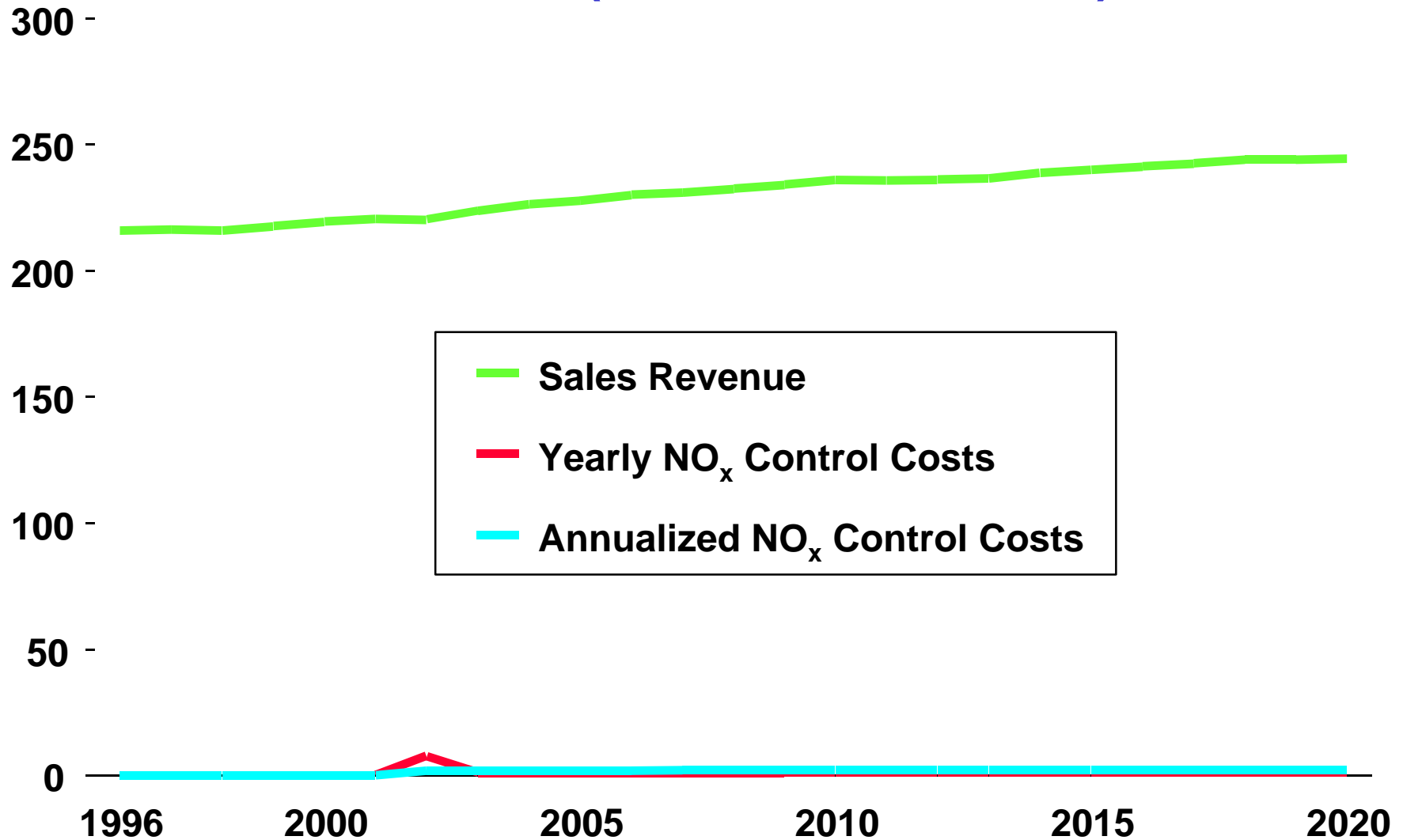
# New Legislation Reduces NO<sub>x</sub> Emissions from Powerplants, 1996-2020 (million tons)



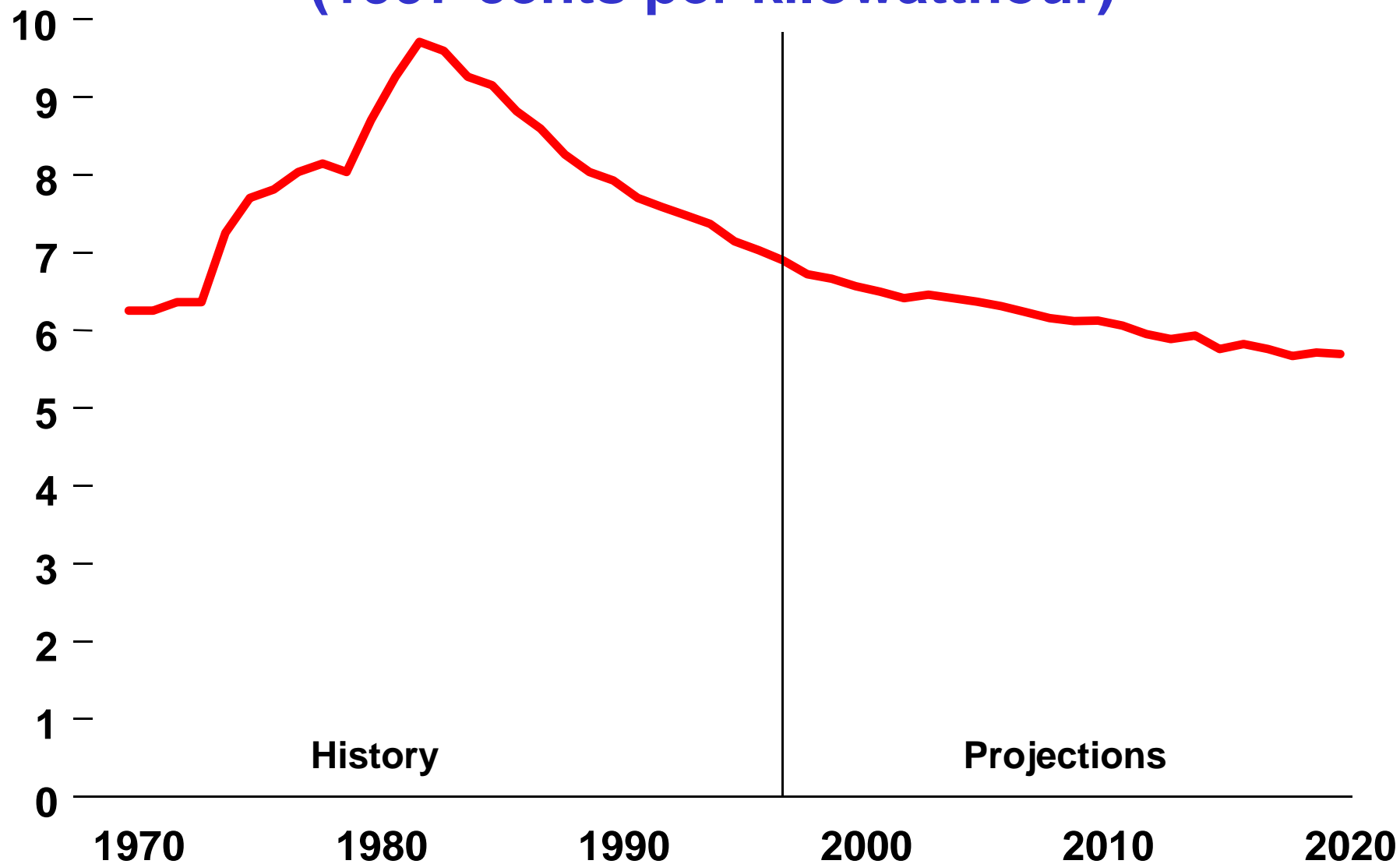
# SIP Call NO<sub>x</sub> Control Costs, 1996-2020 (billion 1997 dollars)



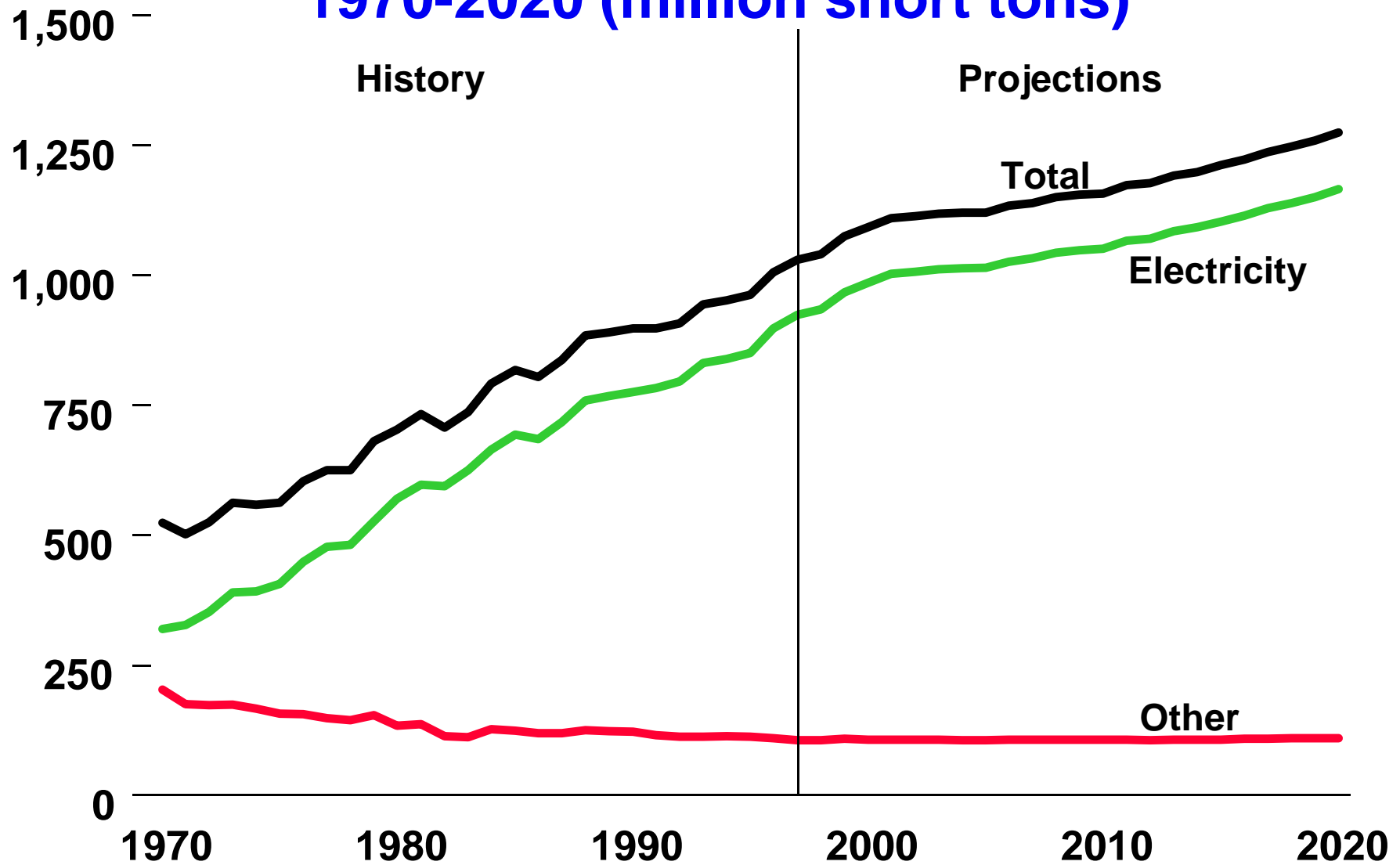
# SIP Call NO<sub>x</sub> Control Costs Relative to Sales Revenue, 1996-2020 (billion 1997 dollars)



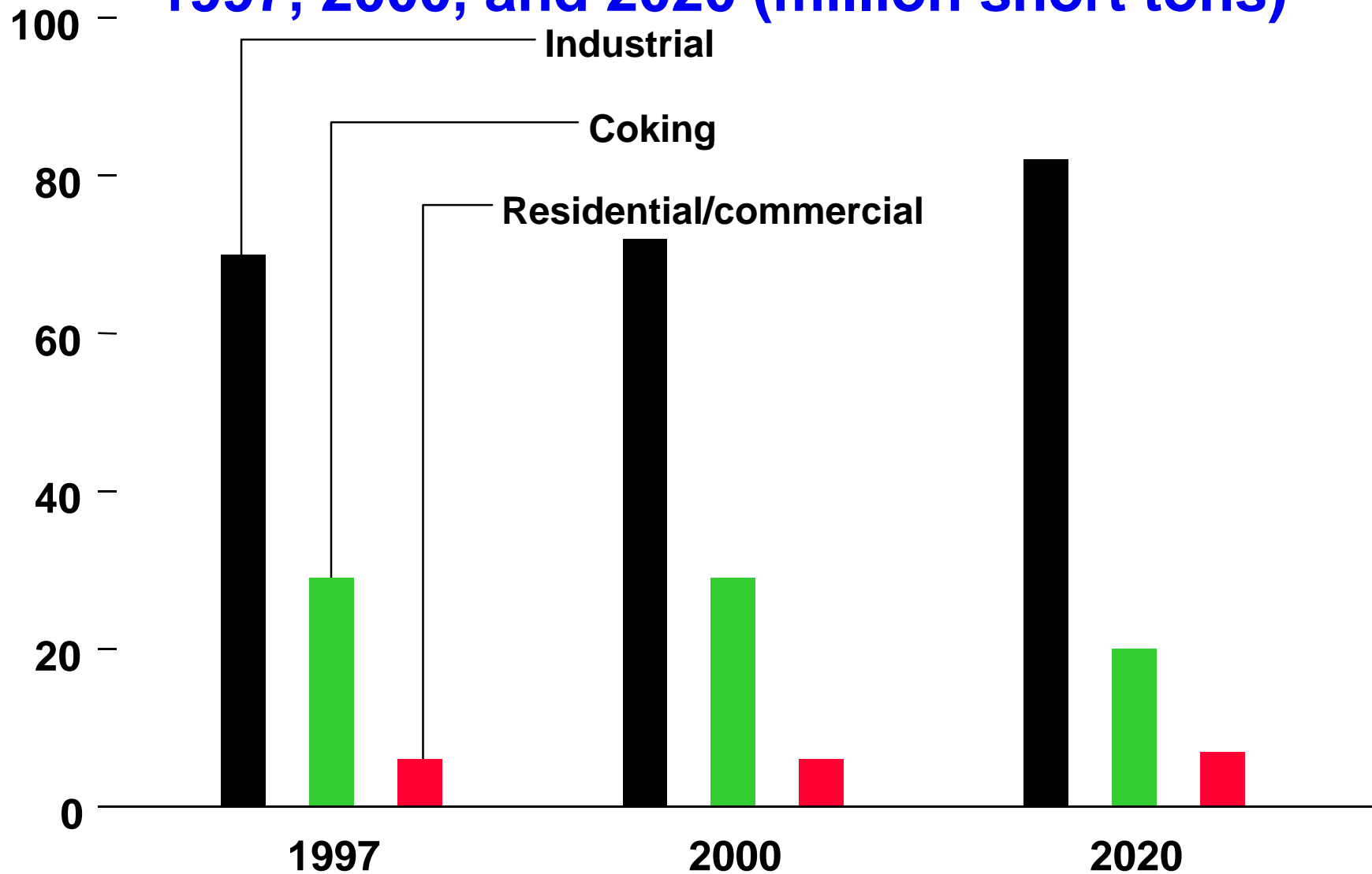
# Electricity Price Projections, 1970-2020 (1997 cents per kilowatthour)



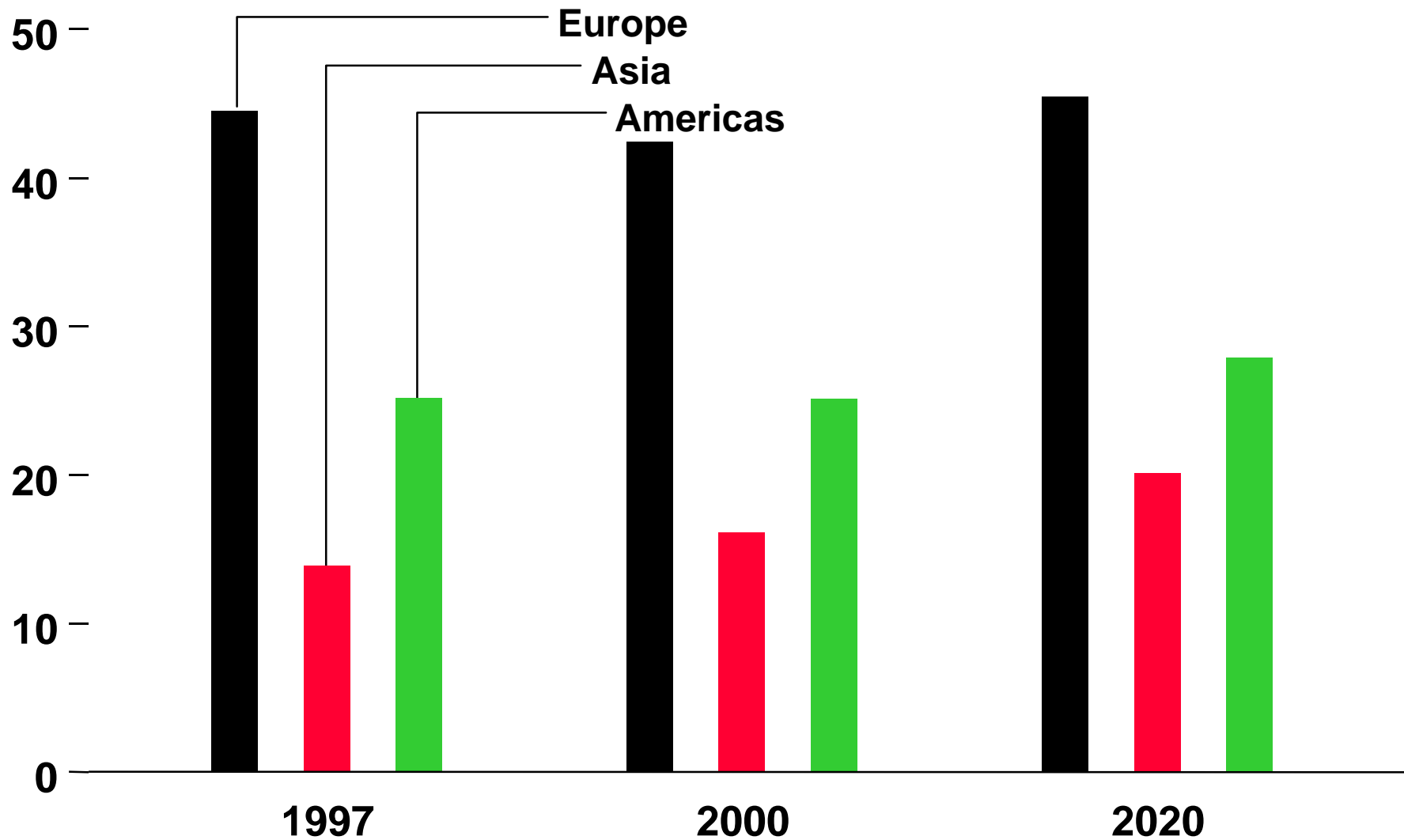
# Electricity and Other Coal Consumption, 1970-2020 (million short tons)



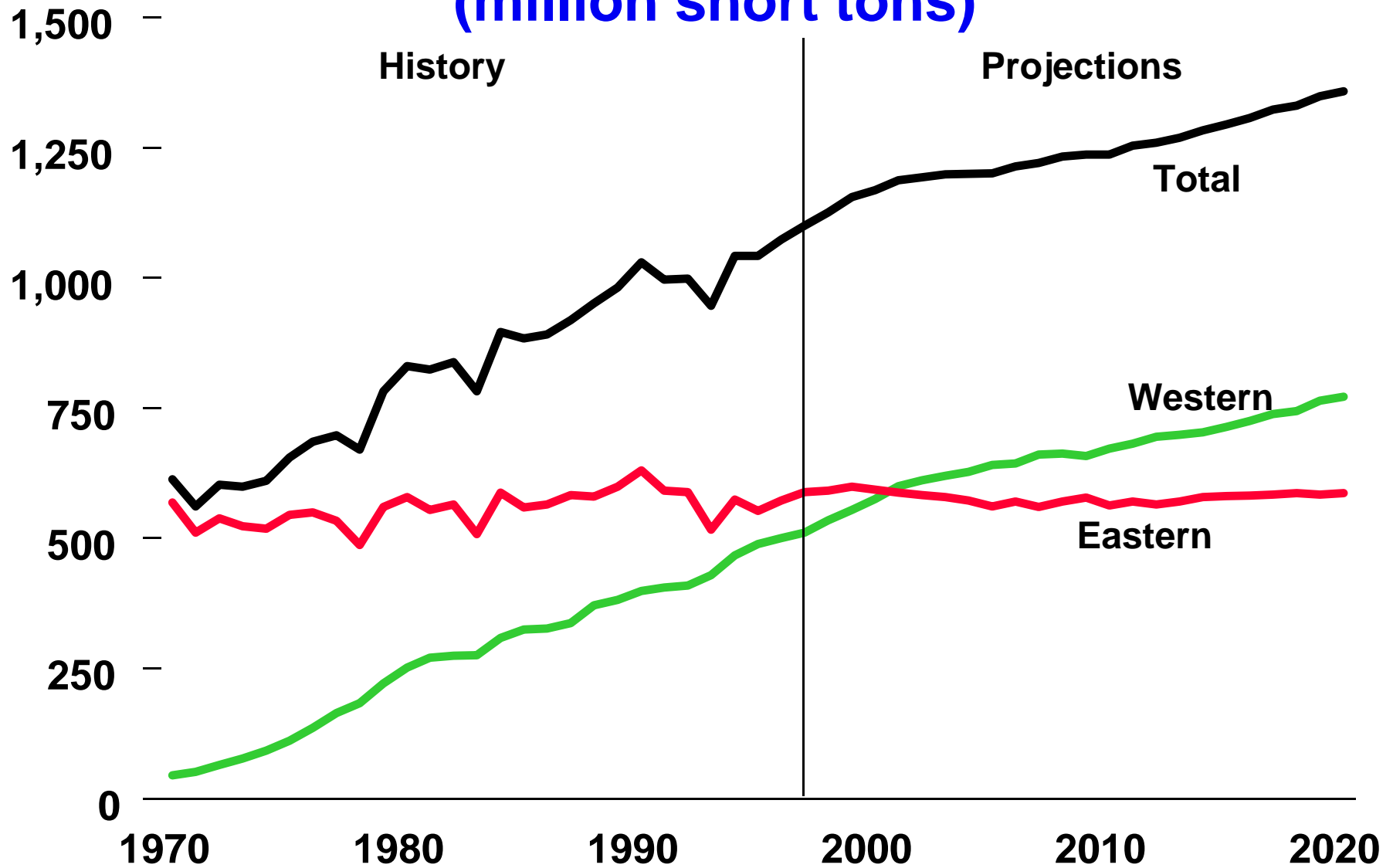
# Non-Electricity Coal Consumption by Sector, 1997, 2000, and 2020 (million short tons)



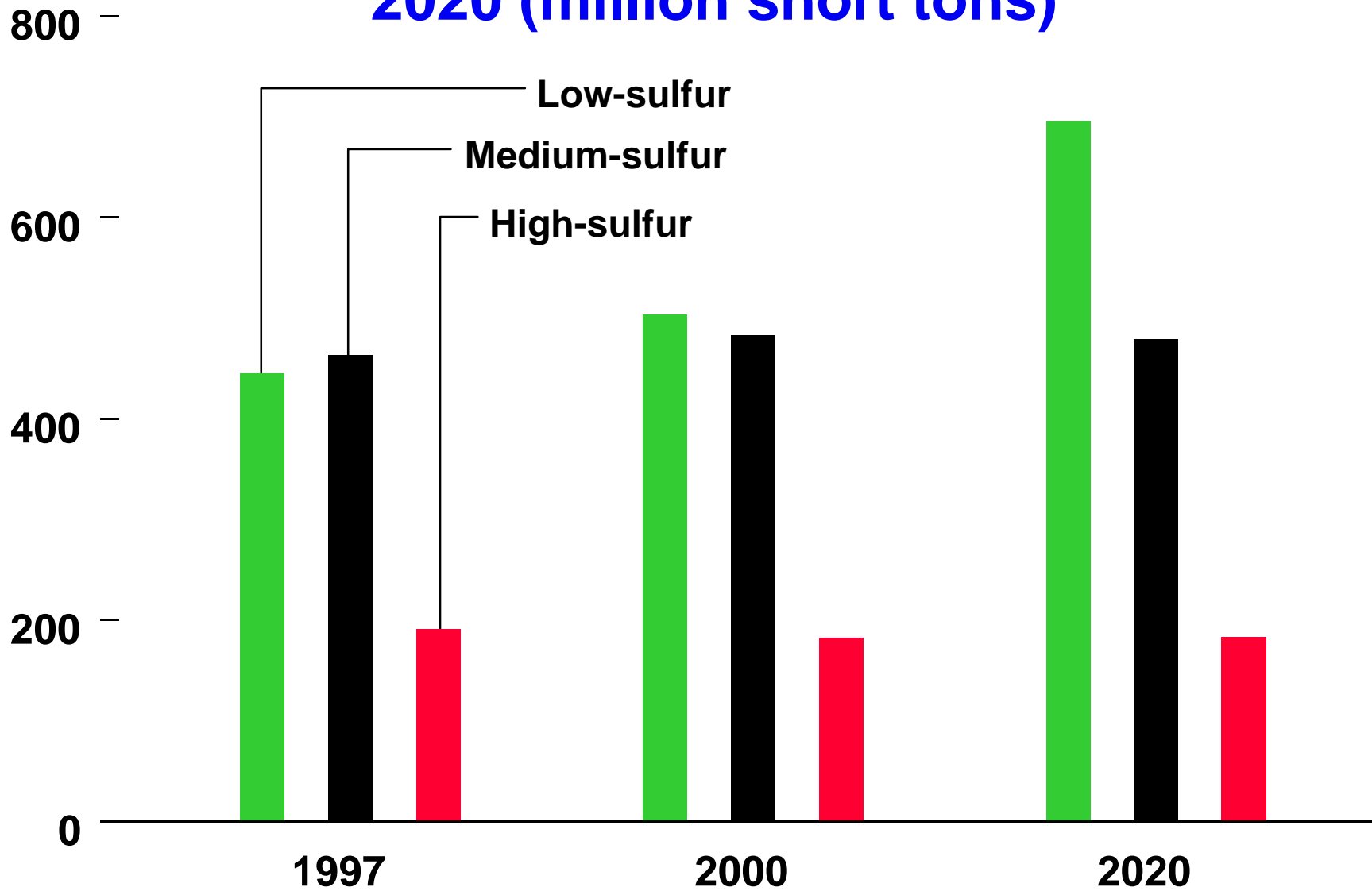
# U.S. Coal Exports by Destination, 1997, 2000, and 2020 (million short tons)



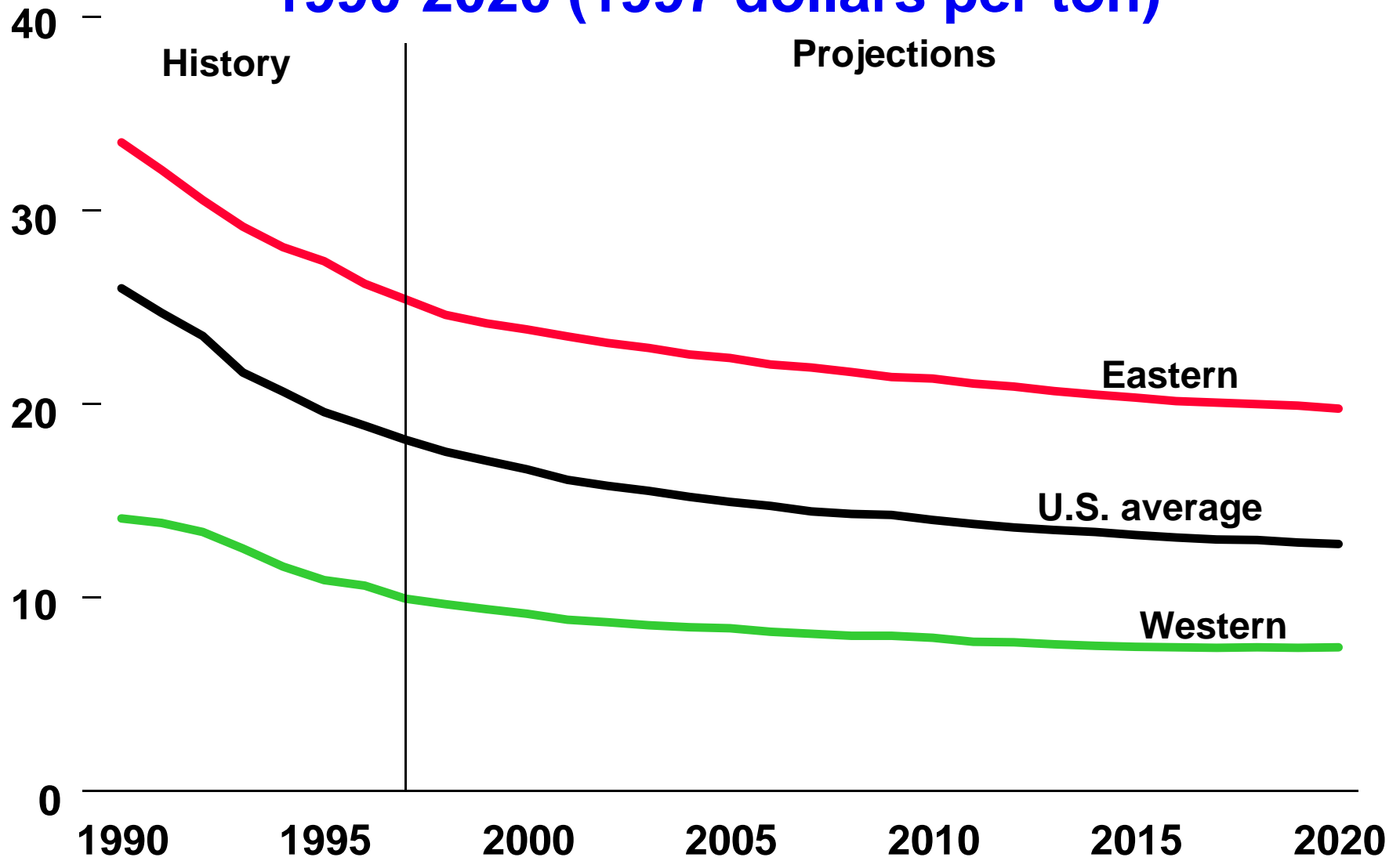
# Coal Production by Region, 1970-2020 (million short tons)



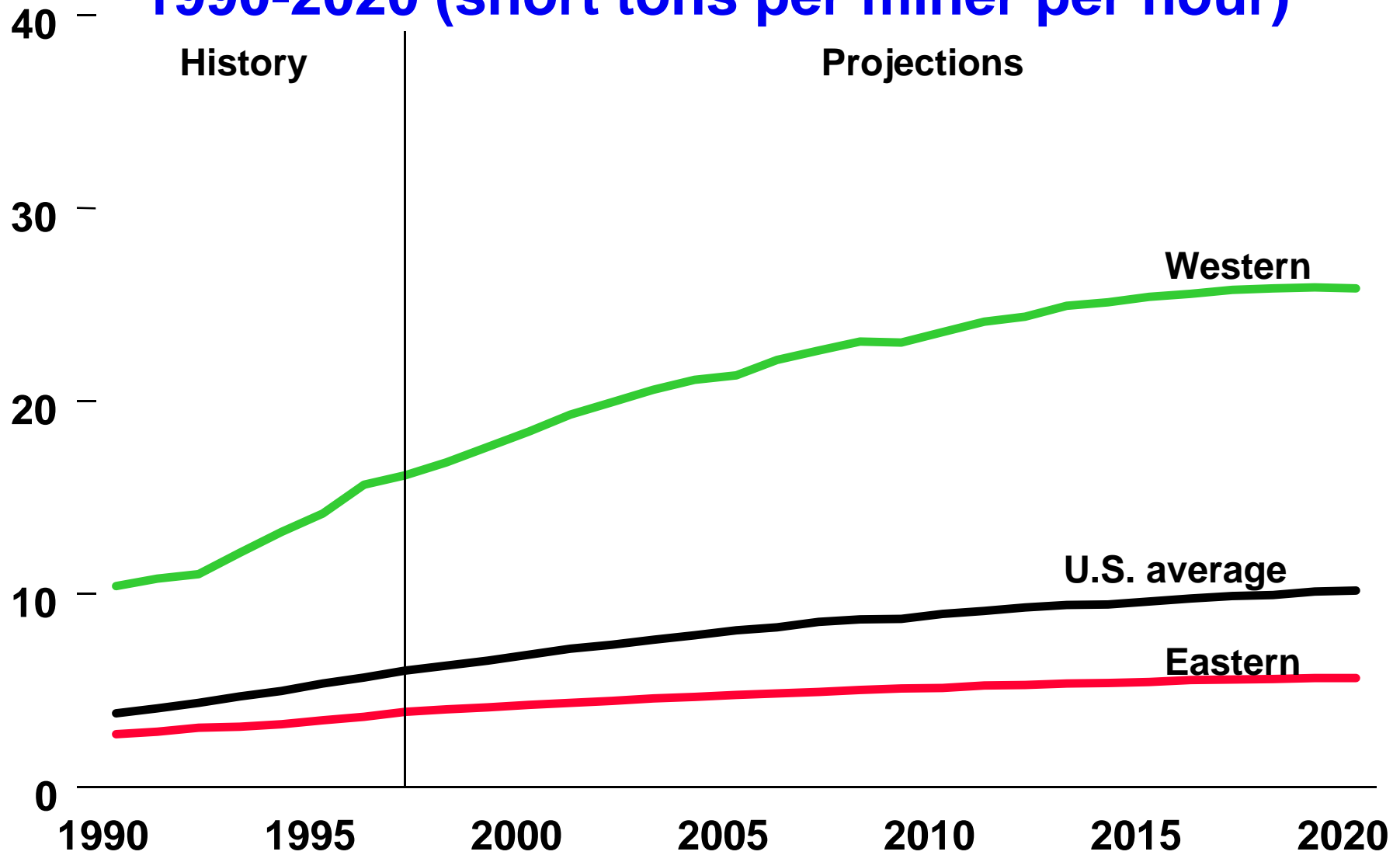
# Coal Distribution by Sulfur Content, 1997, 2000, and 2020 (million short tons)



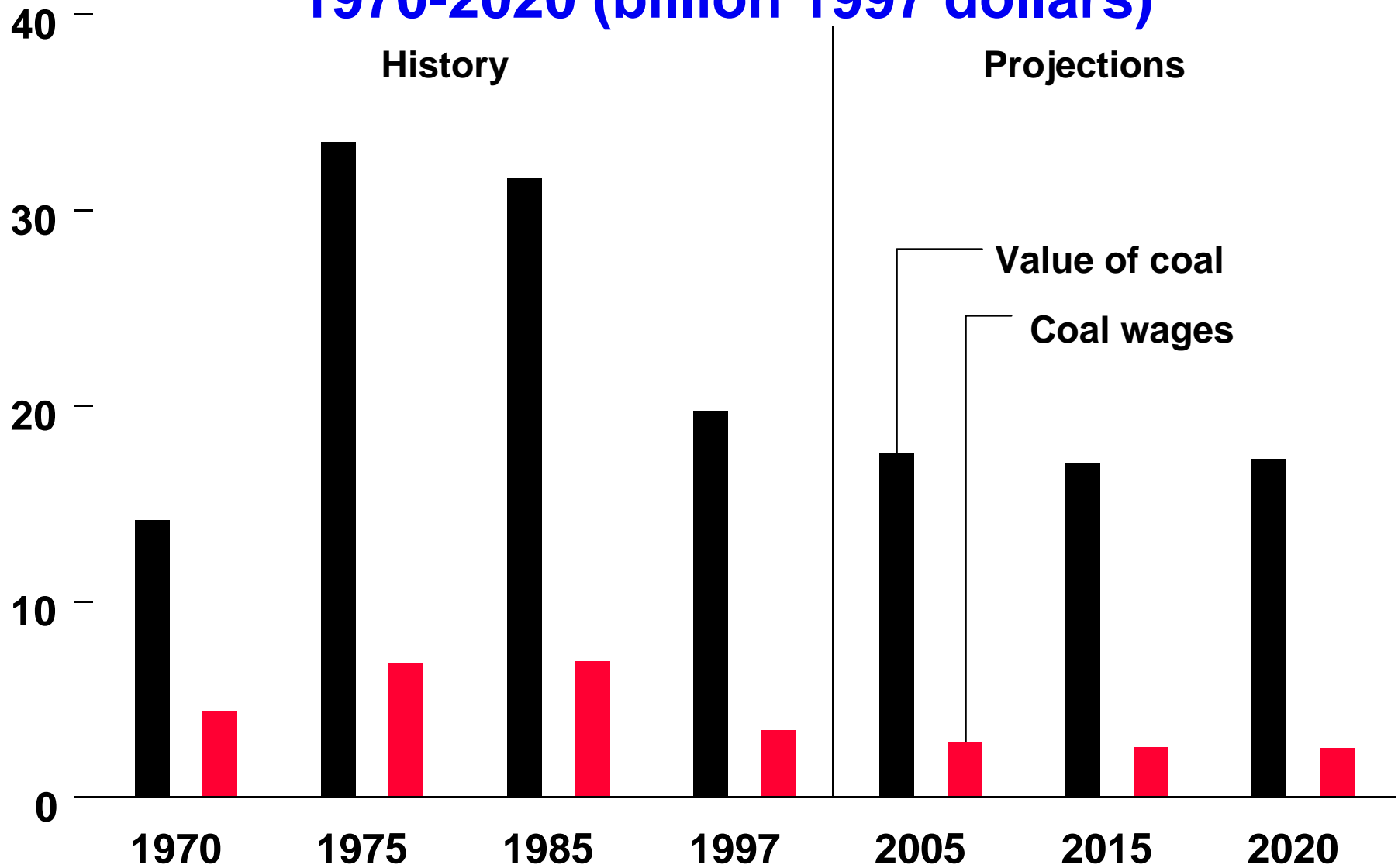
# Average Minemouth Price of Coal by Region, 1990-2020 (1997 dollars per ton)



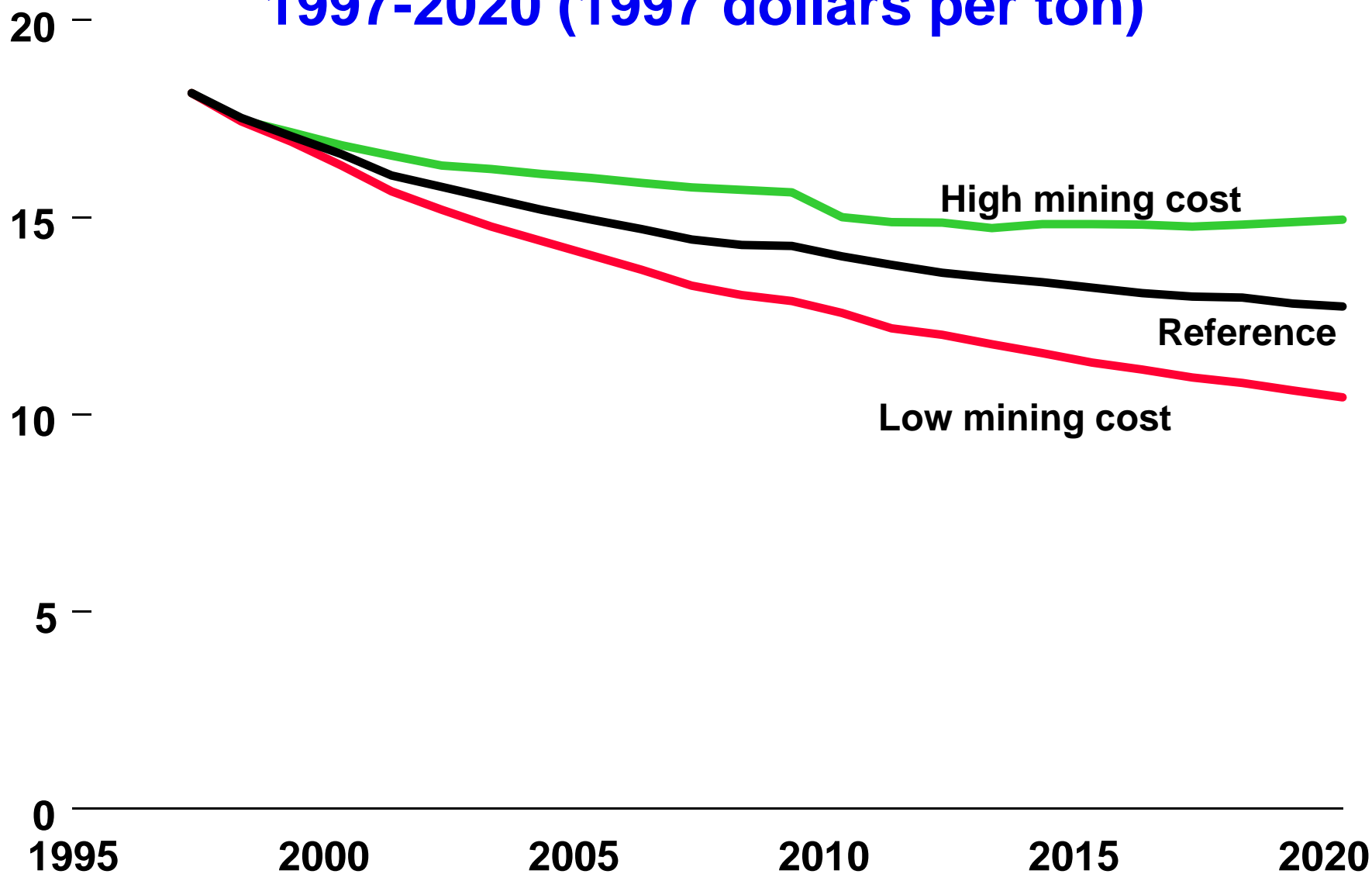
# Coal Mining Labor Productivity by Region, 1990-2020 (short tons per miner per hour)



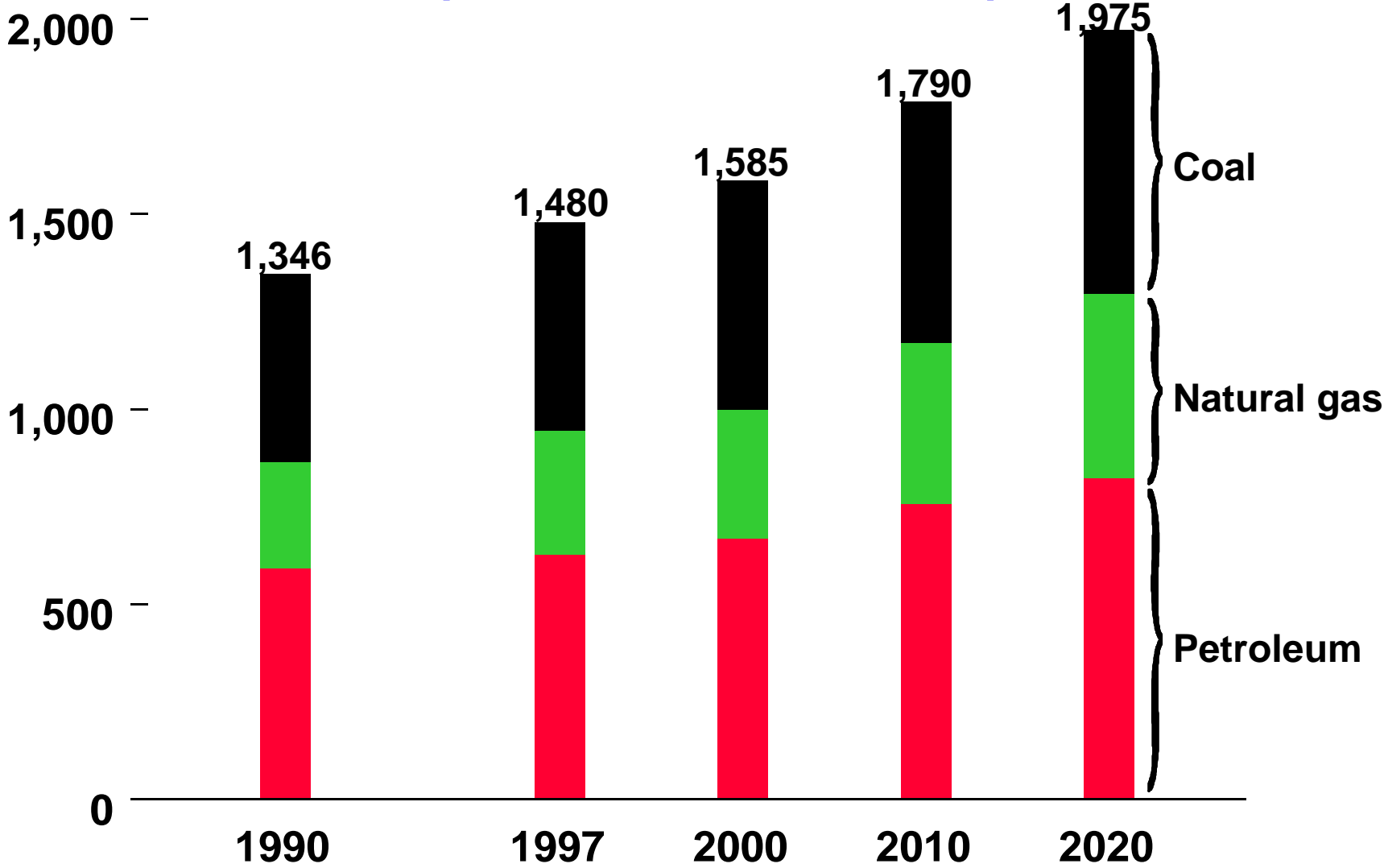
# Labor Cost Component of Minemouth Coal Prices, 1970-2020 (billion 1997 dollars)



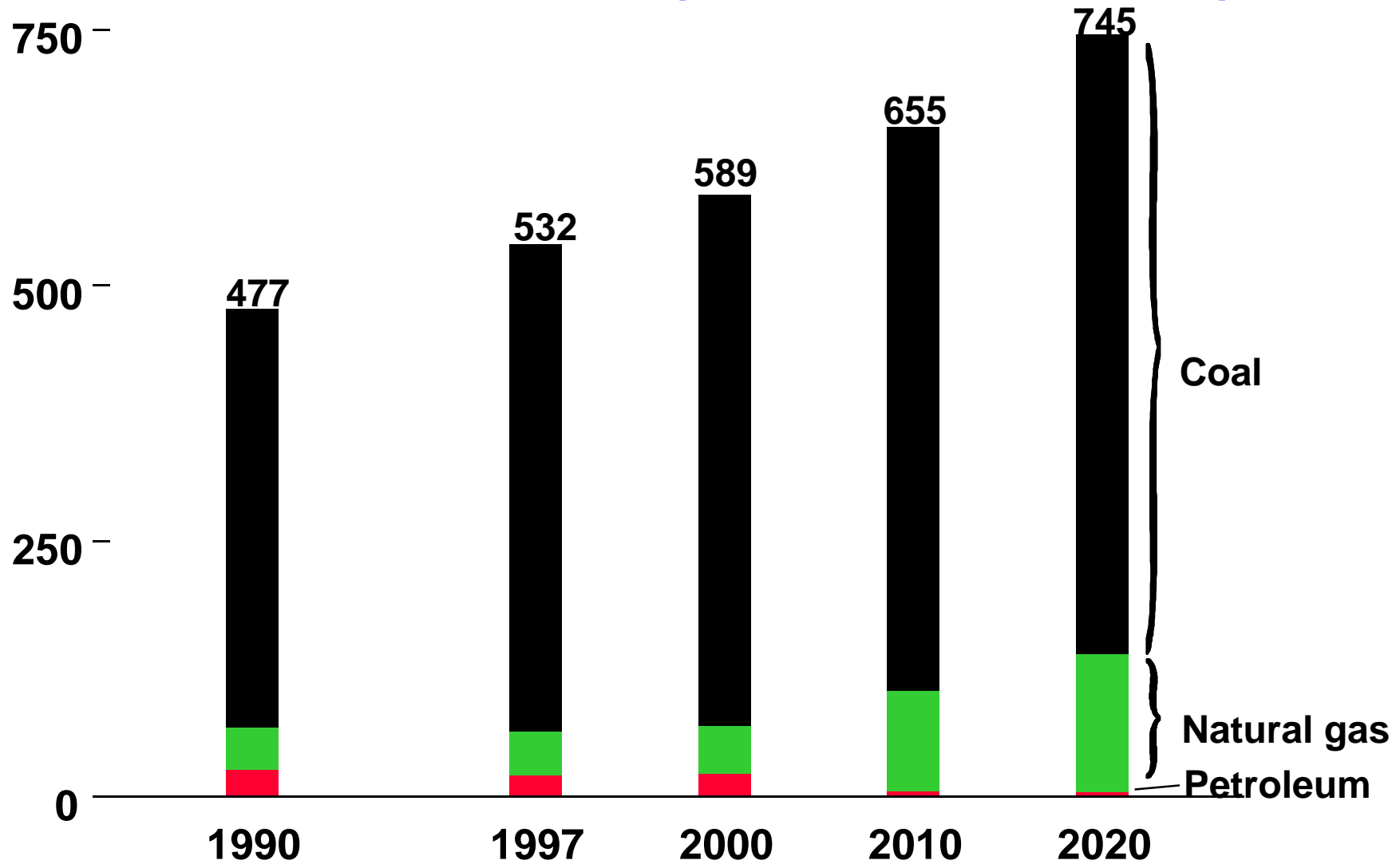
# Average Minemouth Coal Prices in Three Cases, 1997-2020 (1997 dollars per ton)



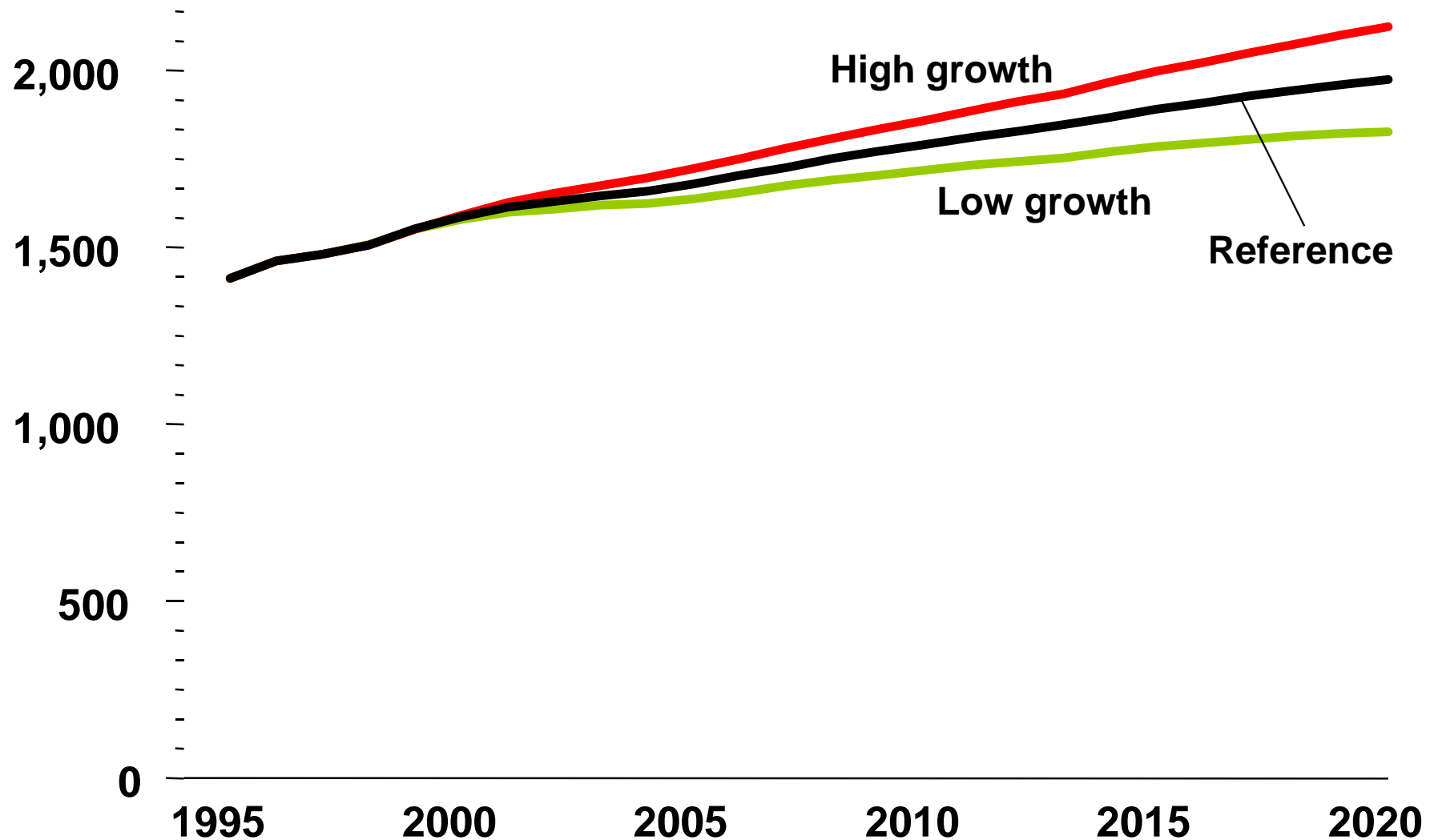
# Carbon Emissions by Fuel, 1990-2020 (million metric tons)



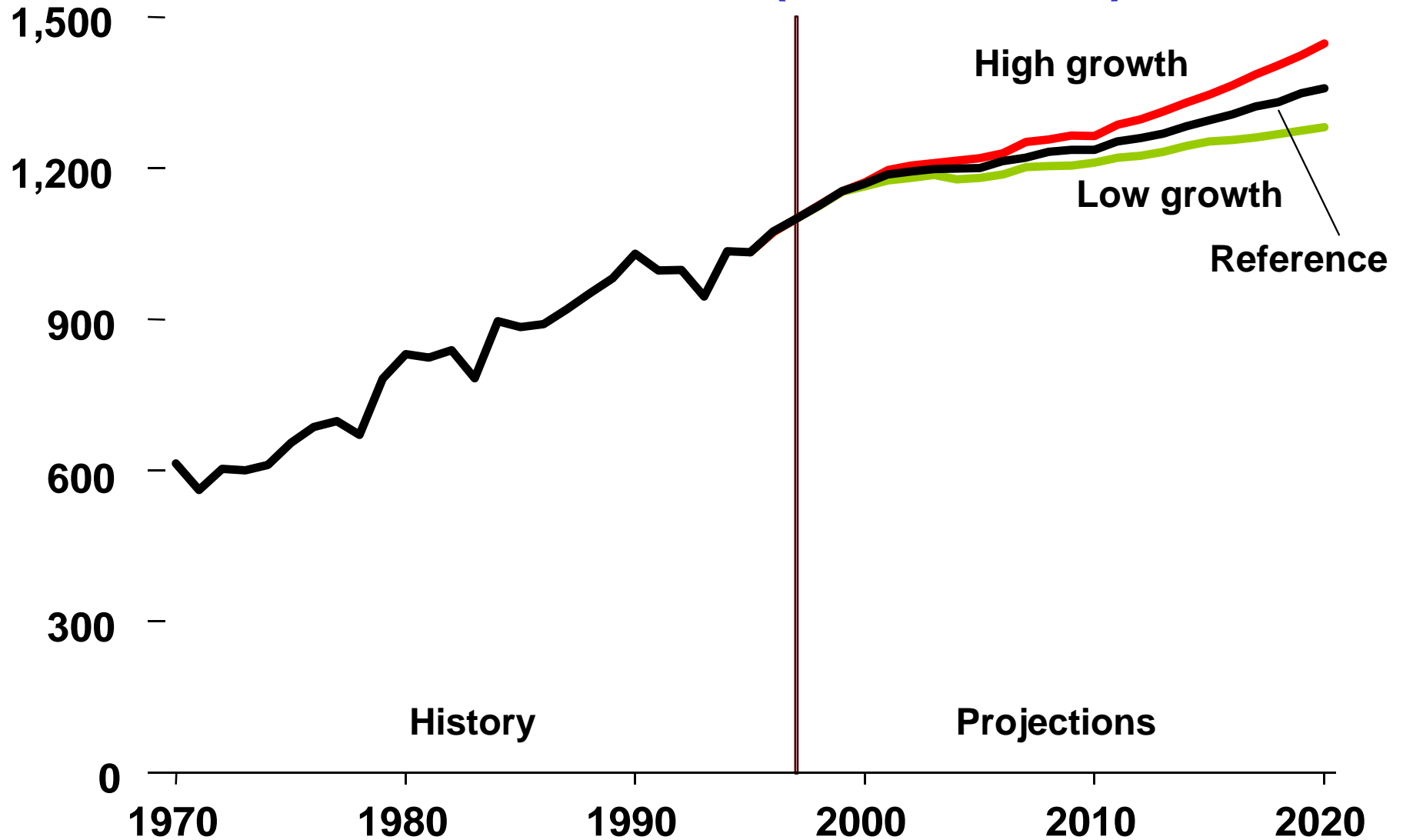
# Carbon Emissions from Electricity Generation by Fuel, 1990-2020 (million metric tons)



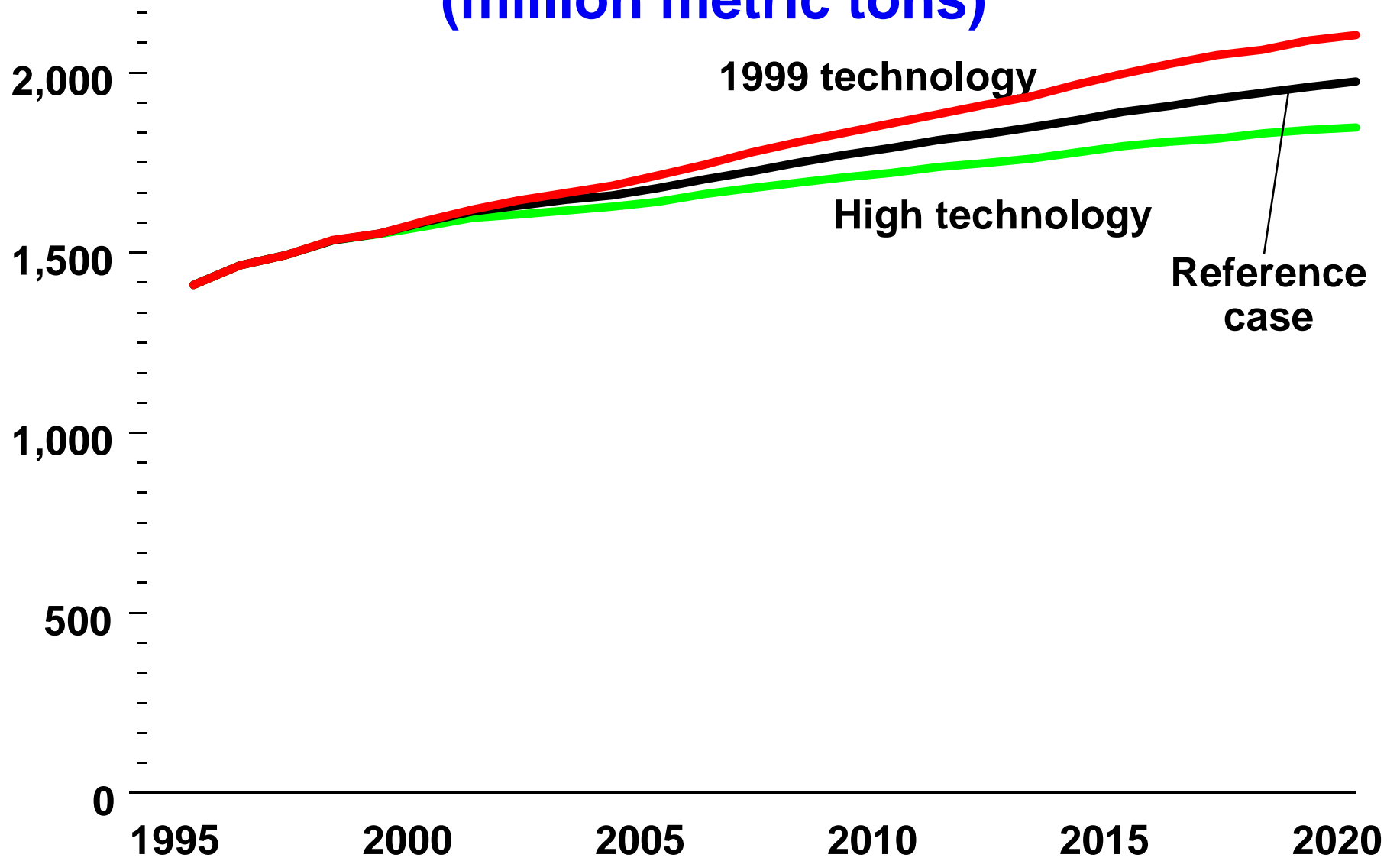
# Carbon Emissions in Three Macroeconomic Growth Cases, 1990-2020 (million metric tons)



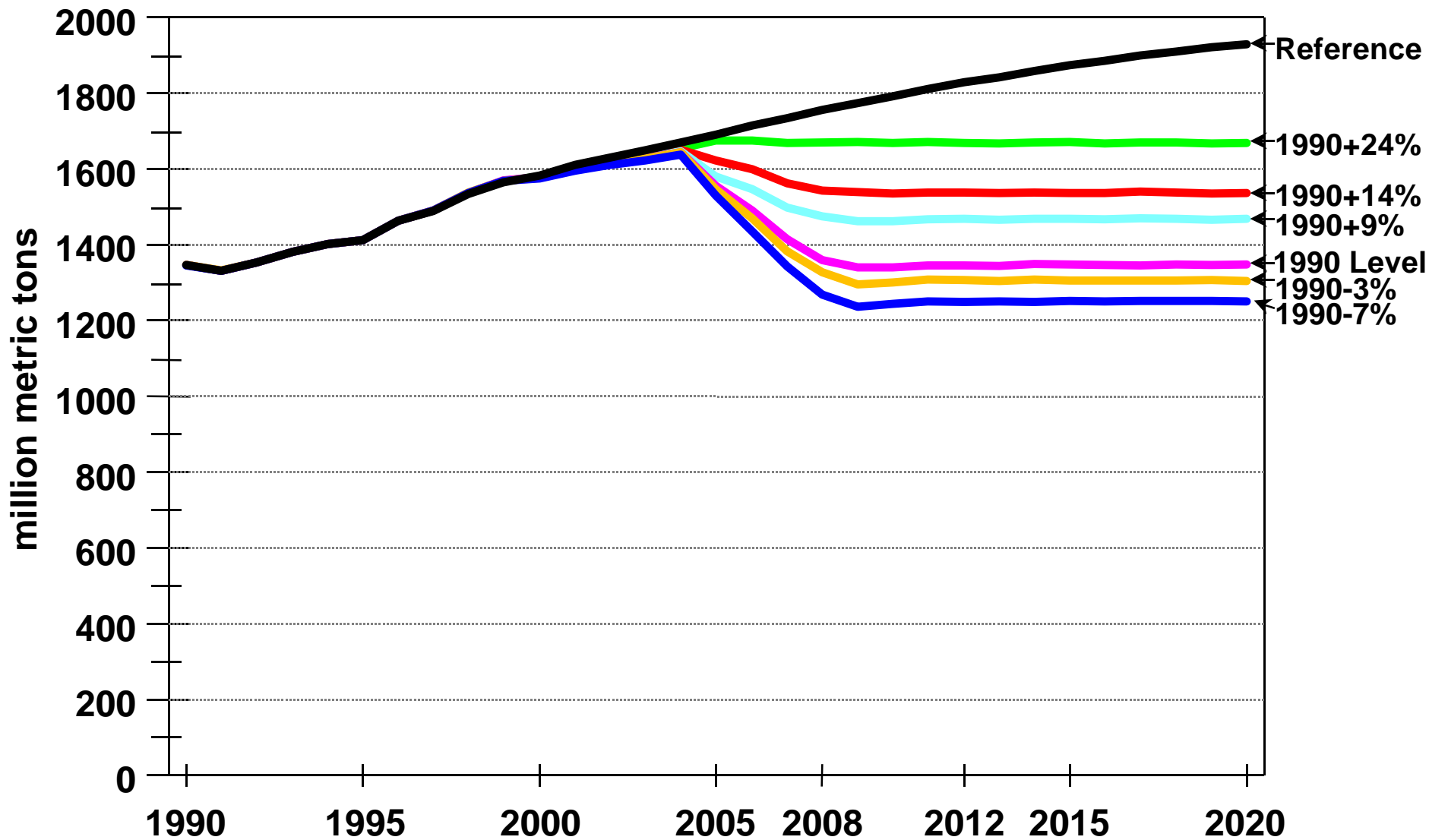
# Coal Production in Three Macroeconomic Growth Cases, 1970-2020 (million tons)



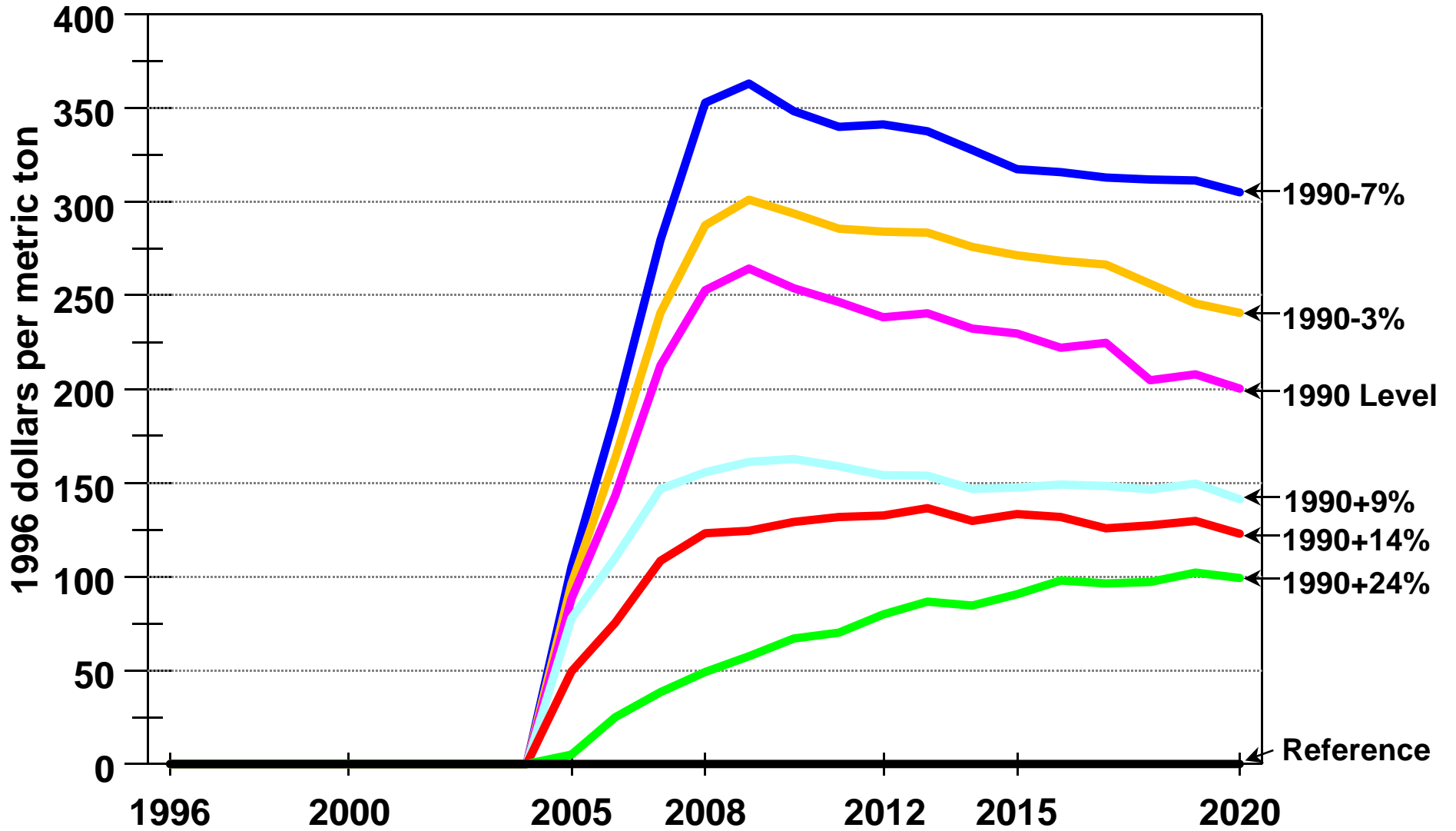
# U.S. Carbon Emissions in Three Cases, 1995-2020 (million metric tons)



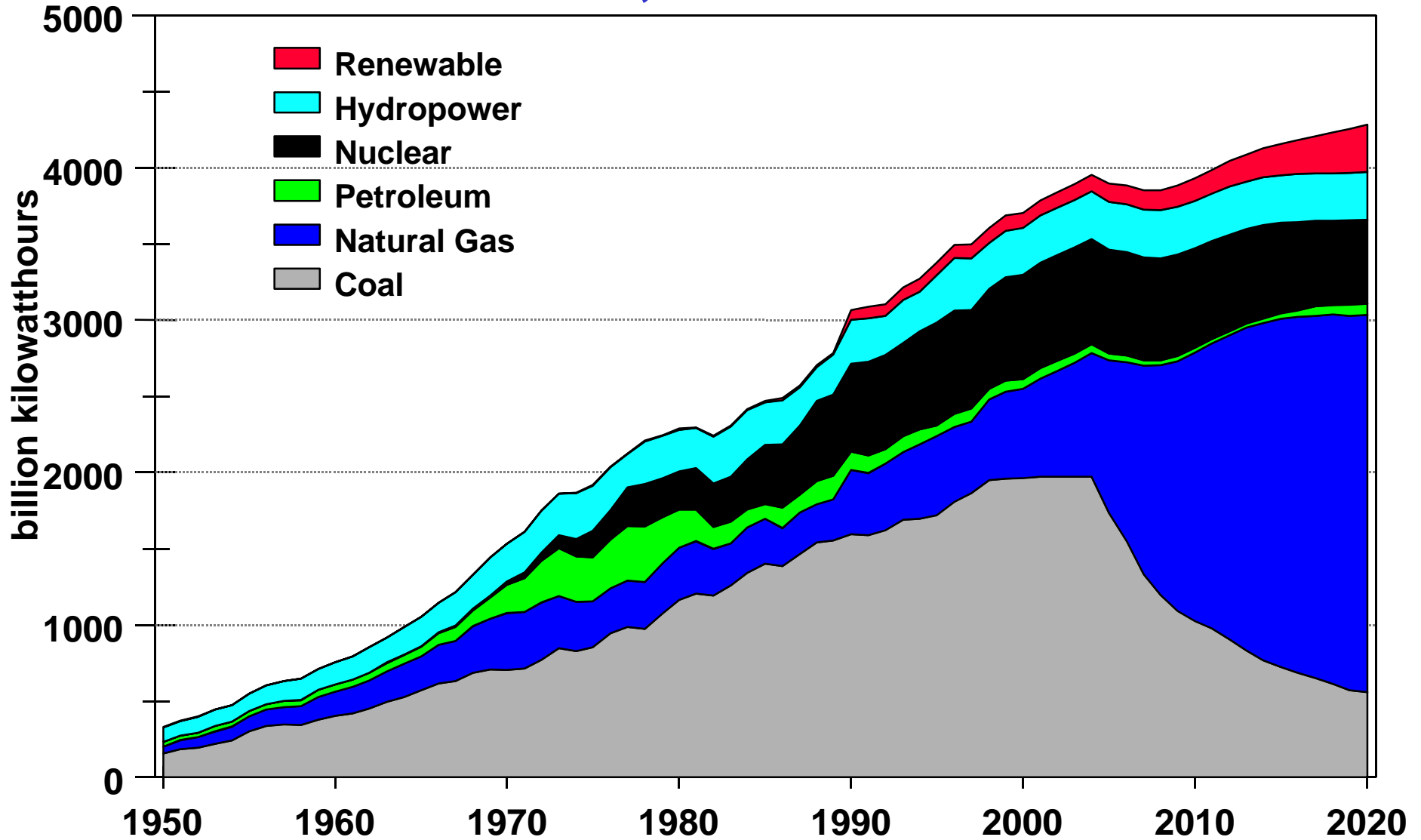
# Carbon Emissions in the Reference and Six Target Cases, 1990-2020



# Carbon Prices in the Six Target Cases, 1996-2020



# Electricity Generation by Fuel in the 9%-above-1990 Case, 1950-2020



# U.S. Coal Production, 1970-2020 (million tons)

