



NATIONAL ENERGY TECHNOLOGY LABORATORY

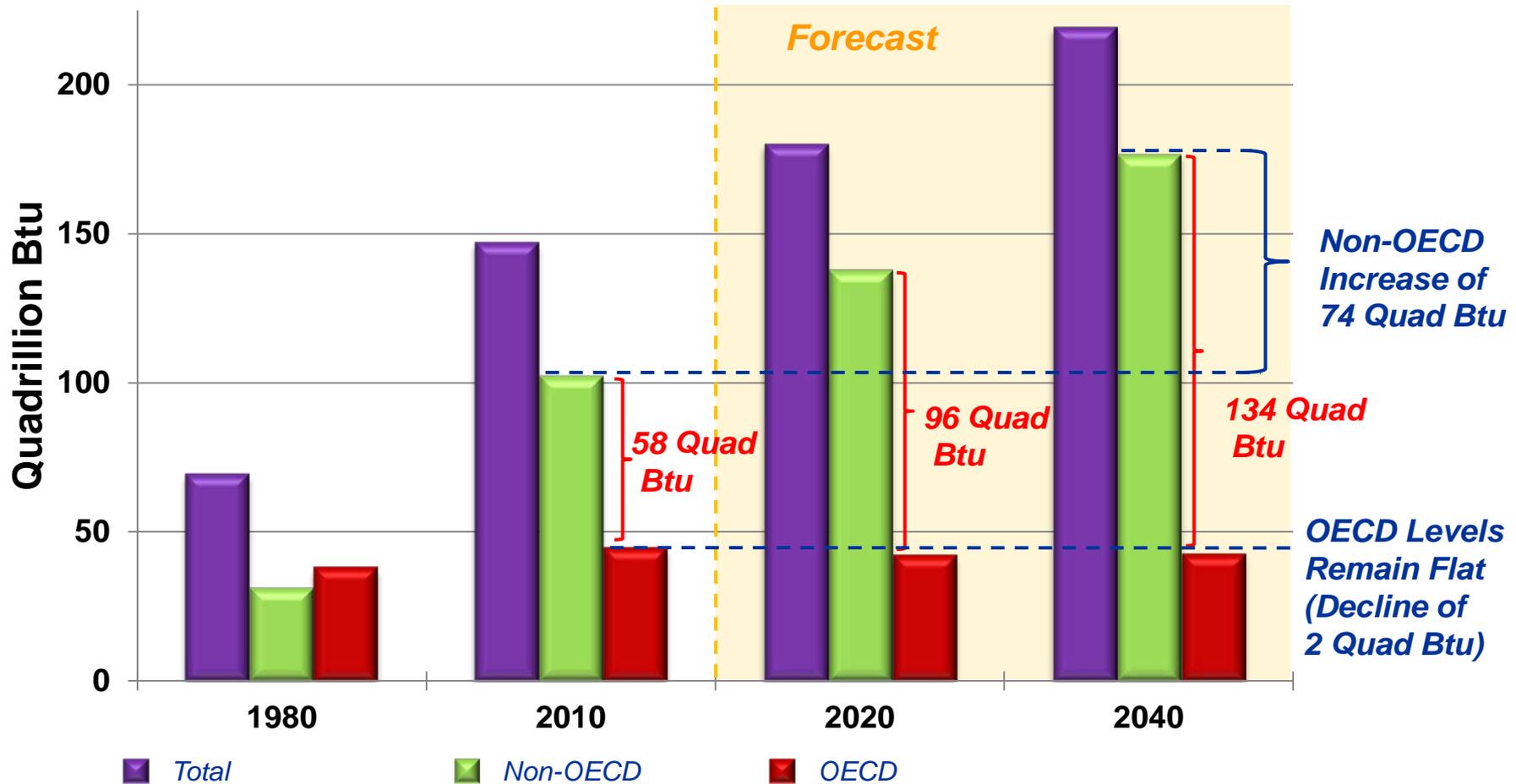


SEAP Product

Perspective on the U.S. Coal Industry

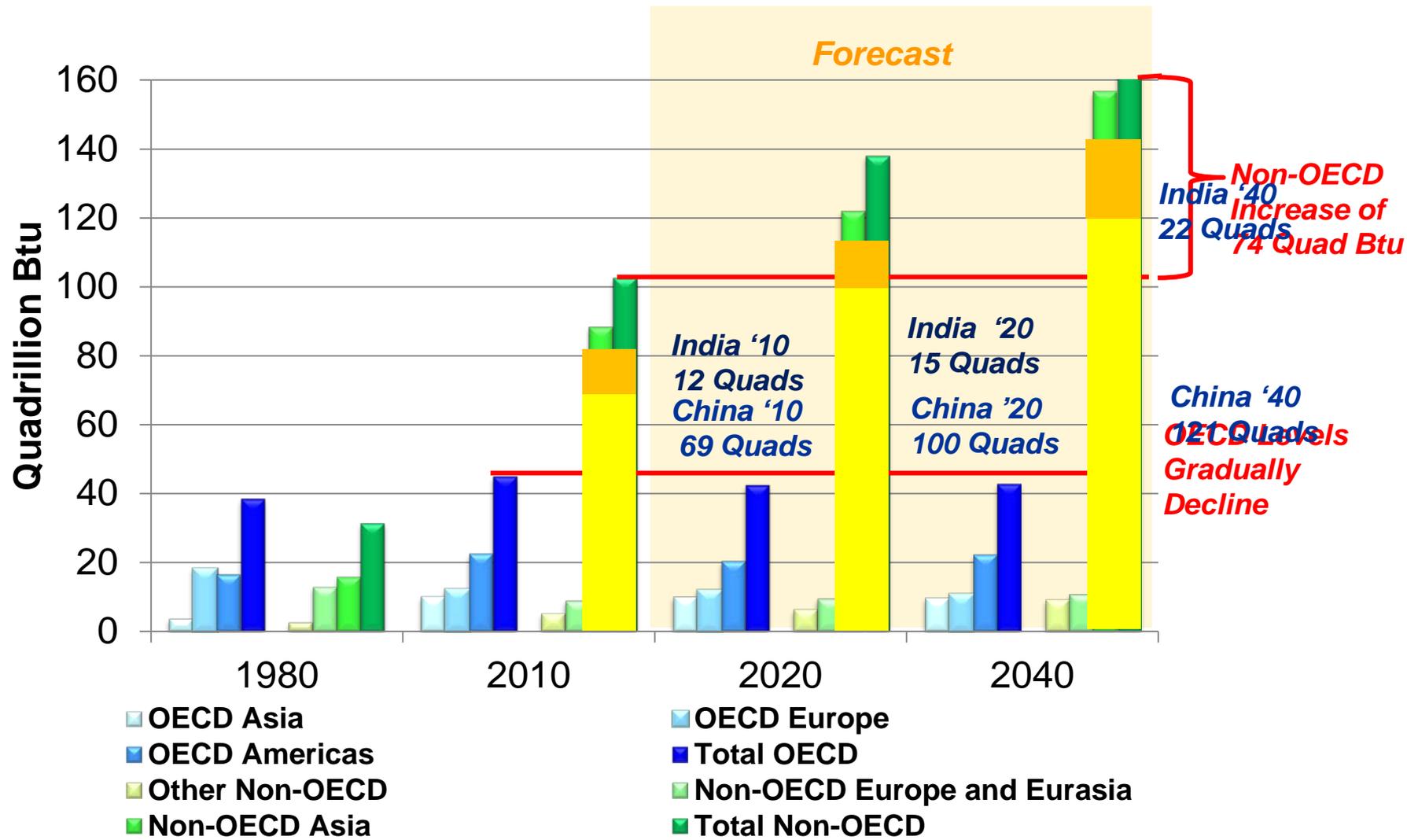
September 2013

World Coal Consumption 1980 - 2040



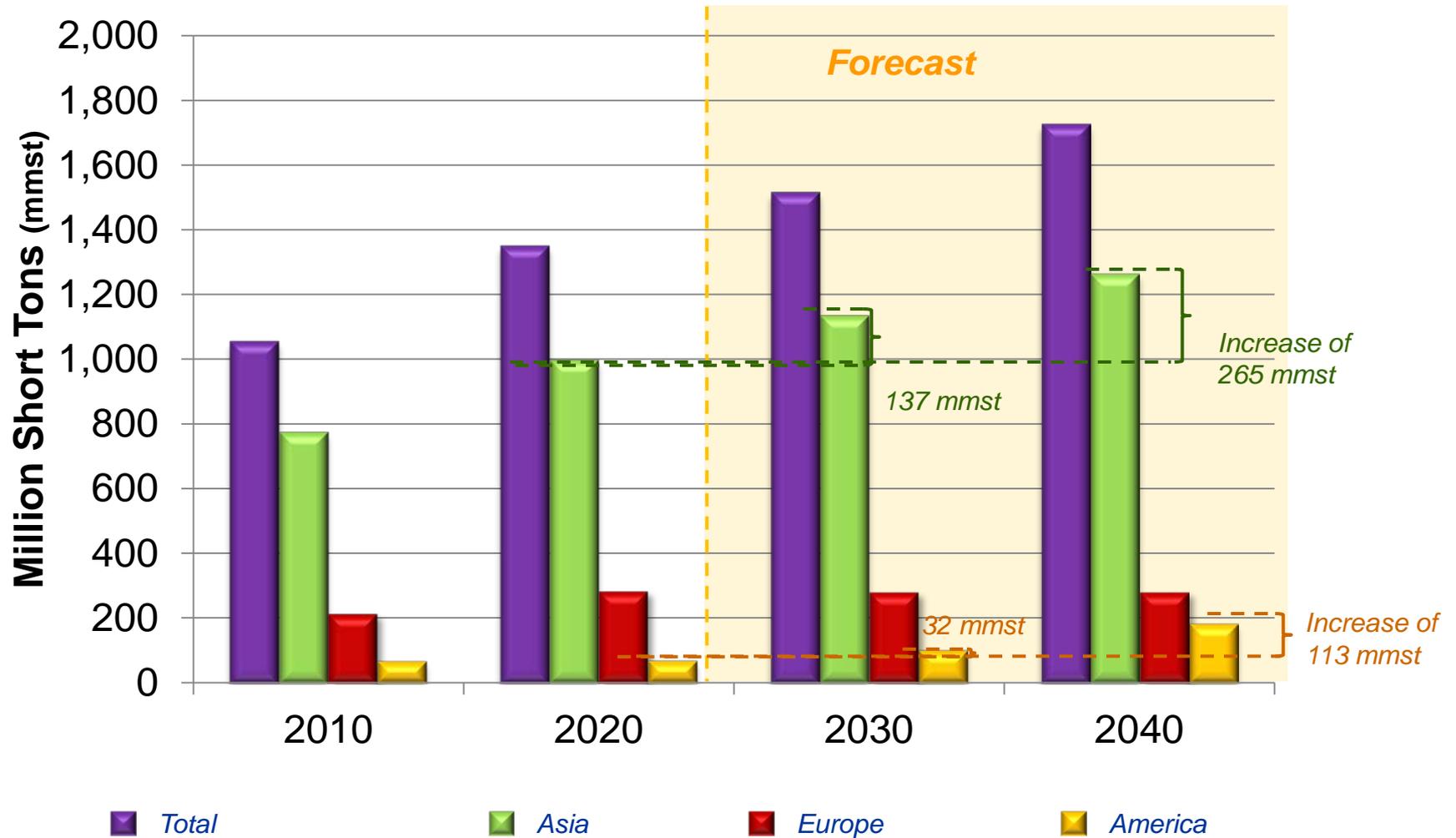
Source: EIA International Outlook 2013, International Energy Statistics

World Coal Consumption by Region

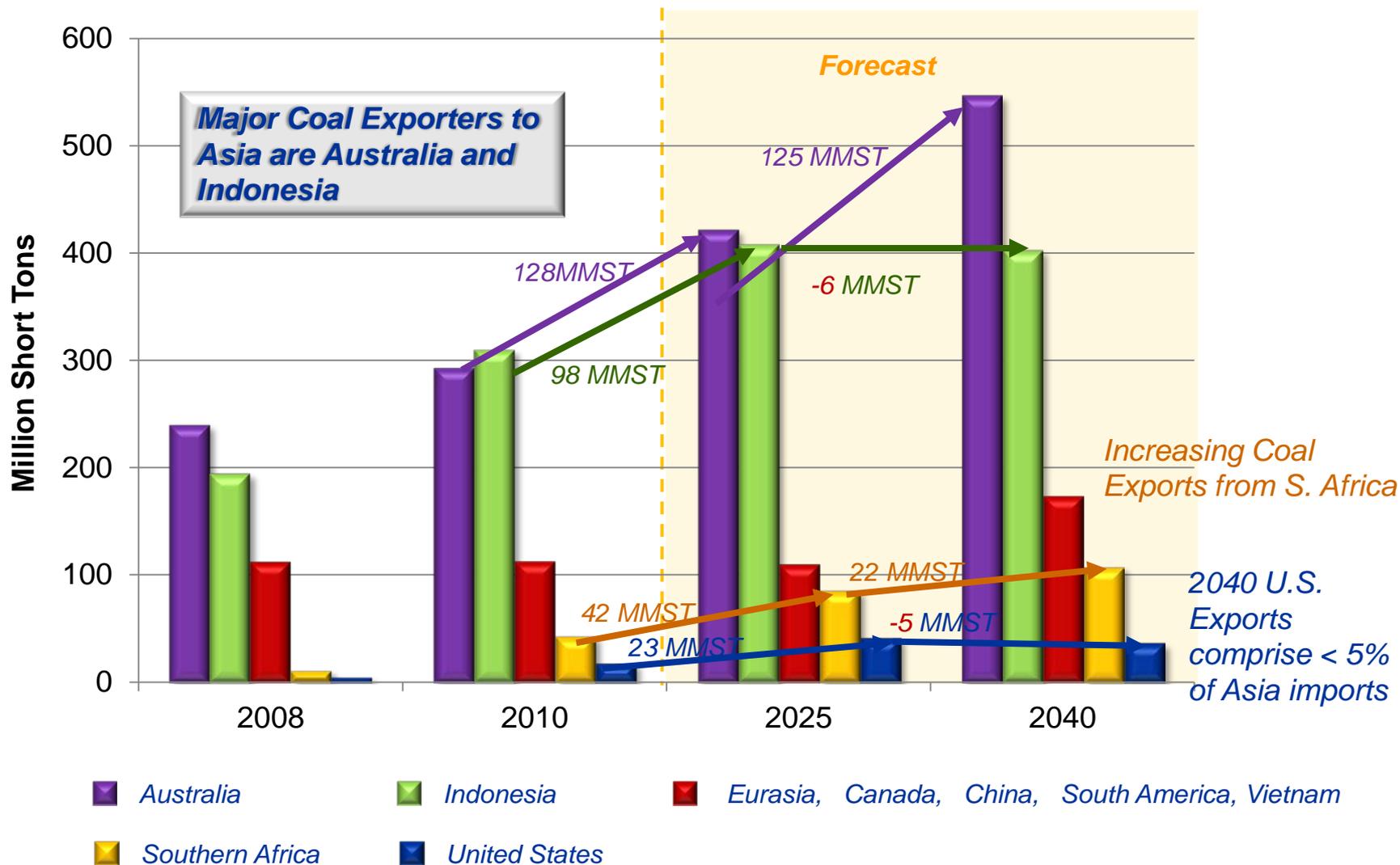


Source: EIA International Outlook 2013, International Energy Statistics

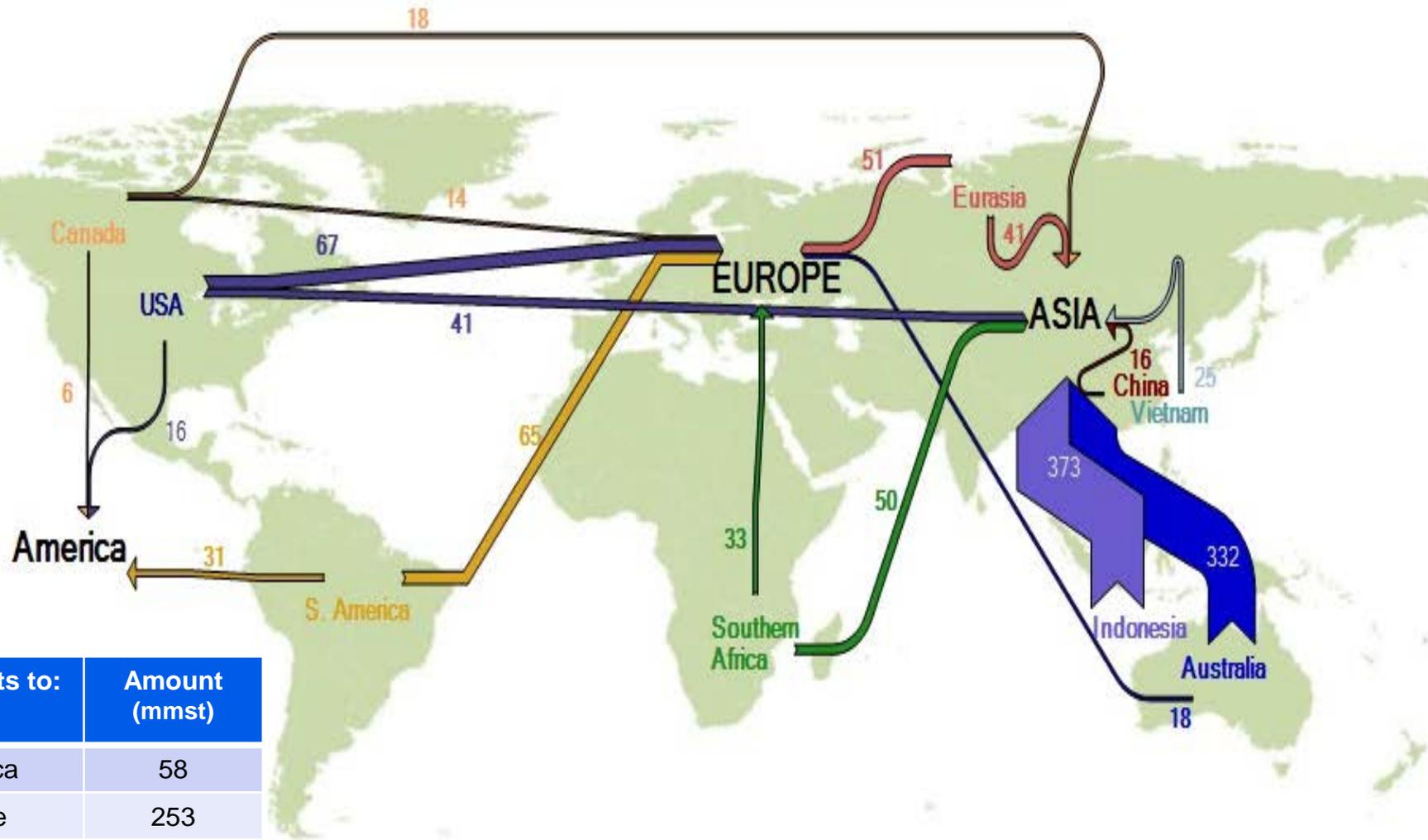
World Coal Imports by Region



Coal Exports to Asia



Top Exports to America, Asia, and Europe Year 2012 in Millions of Short Tons

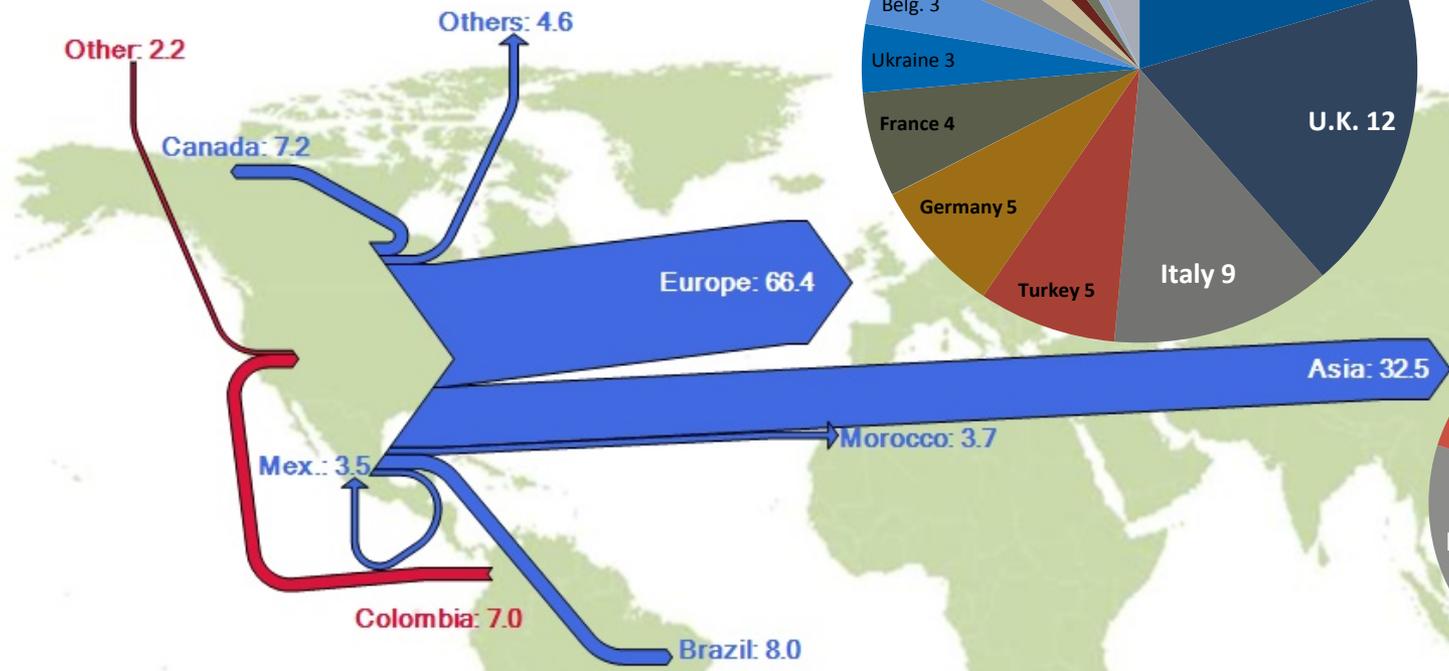
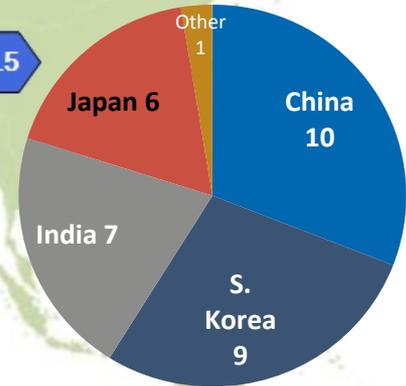
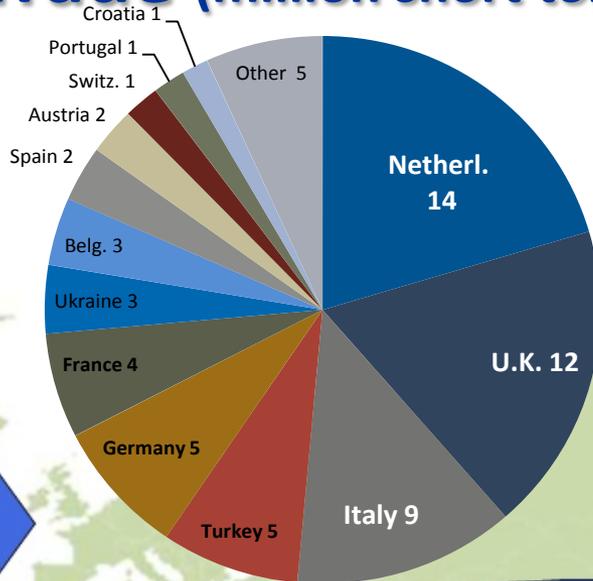


Exports to:	Amount (mmst)
America	58
Europe	253
Asia	897

Map only displays exports >= 6mmst

2012 U.S. Coal Trade (million short tons)

U.S. exports are dispersed to various European and Asian countries



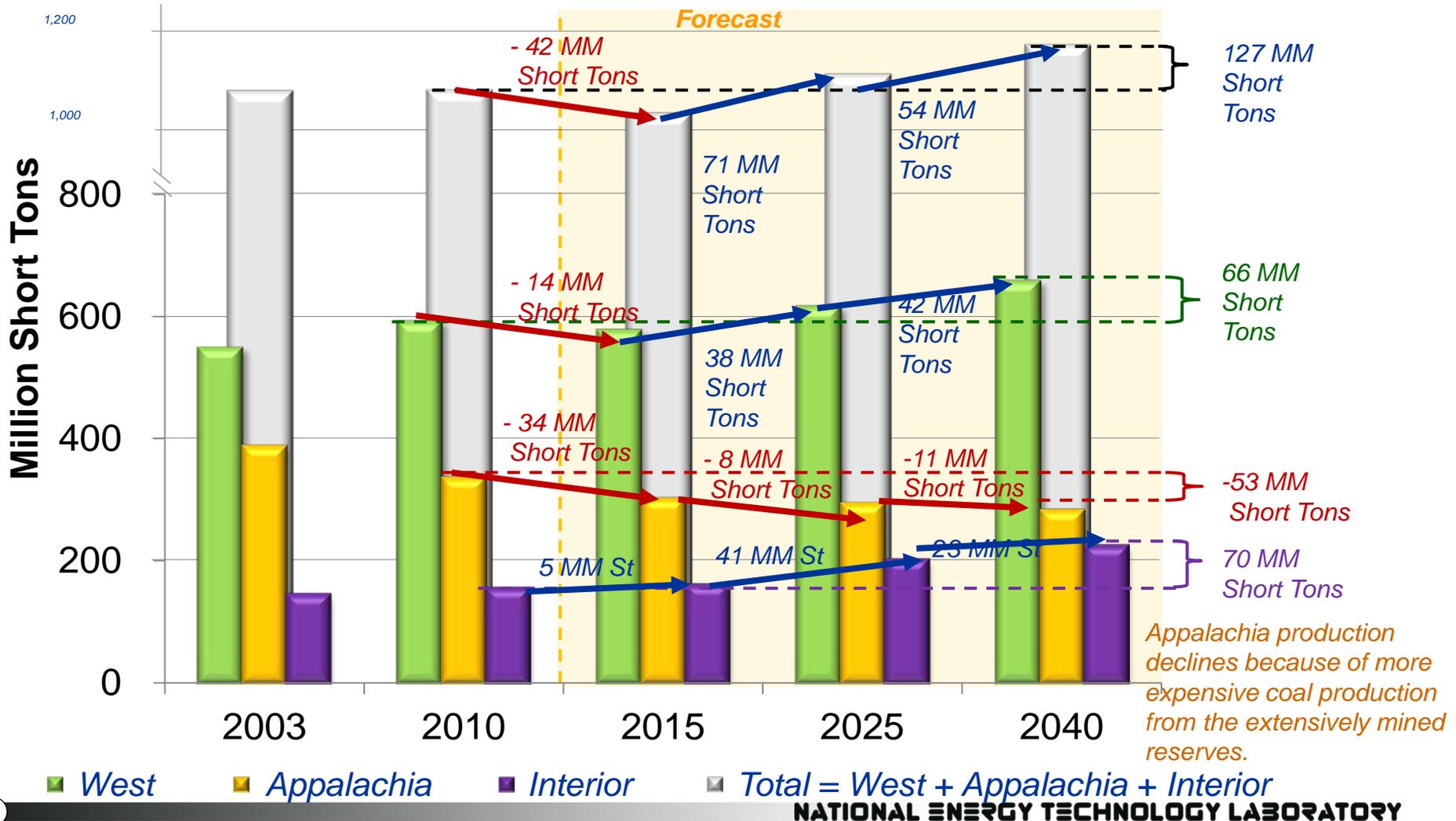
■ Exports ■ Imports



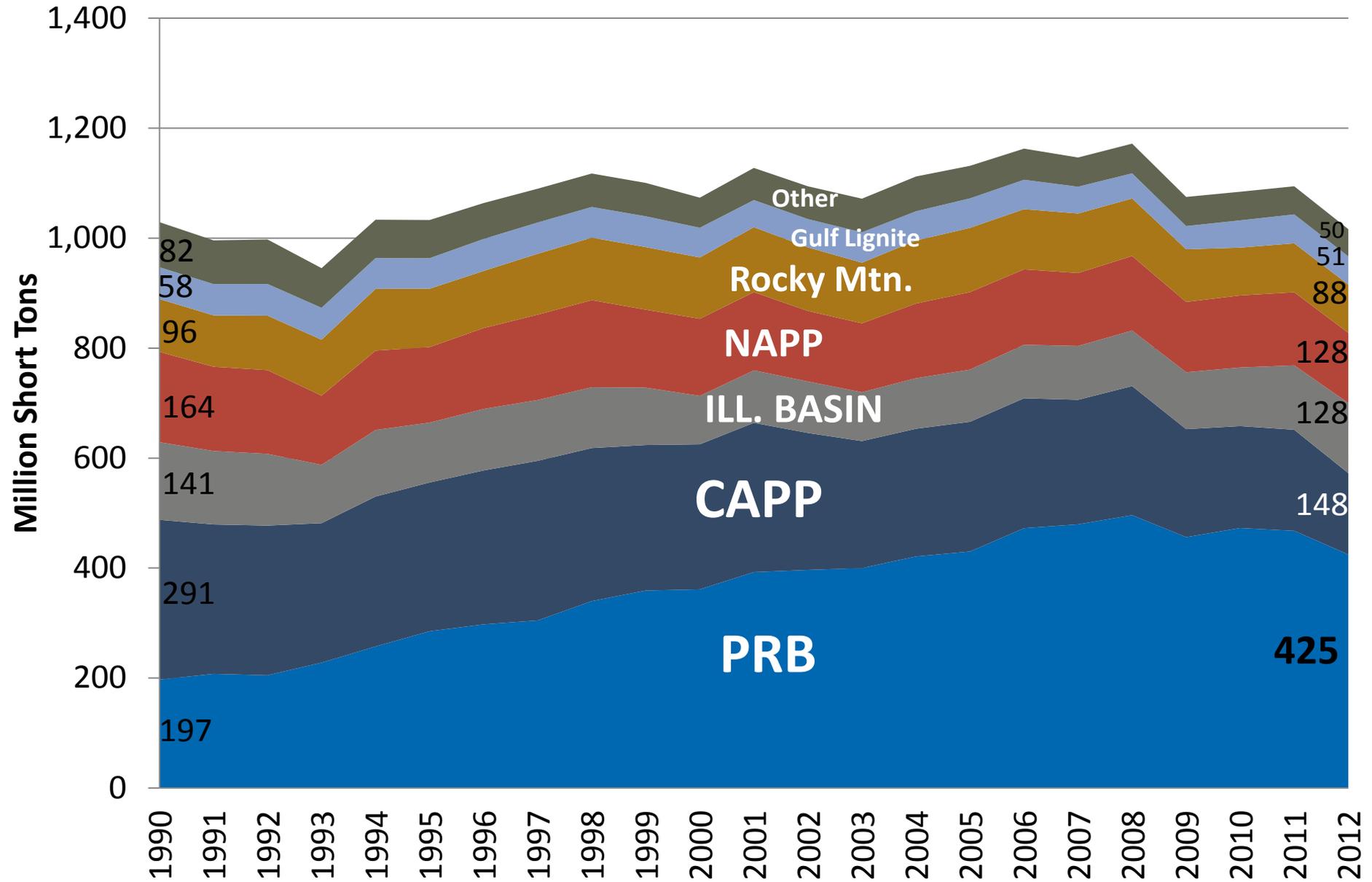
U.S. Coal Production (2003-2040)

Coal production falls due to retirement of coal-fired capacity, low natural gas prices, lack of growth in electricity demand, and increasing generation from renewables.

Coal production increases due to more intensive use of remaining coal-fired capacity, and electricity demand and natural gas price increase.

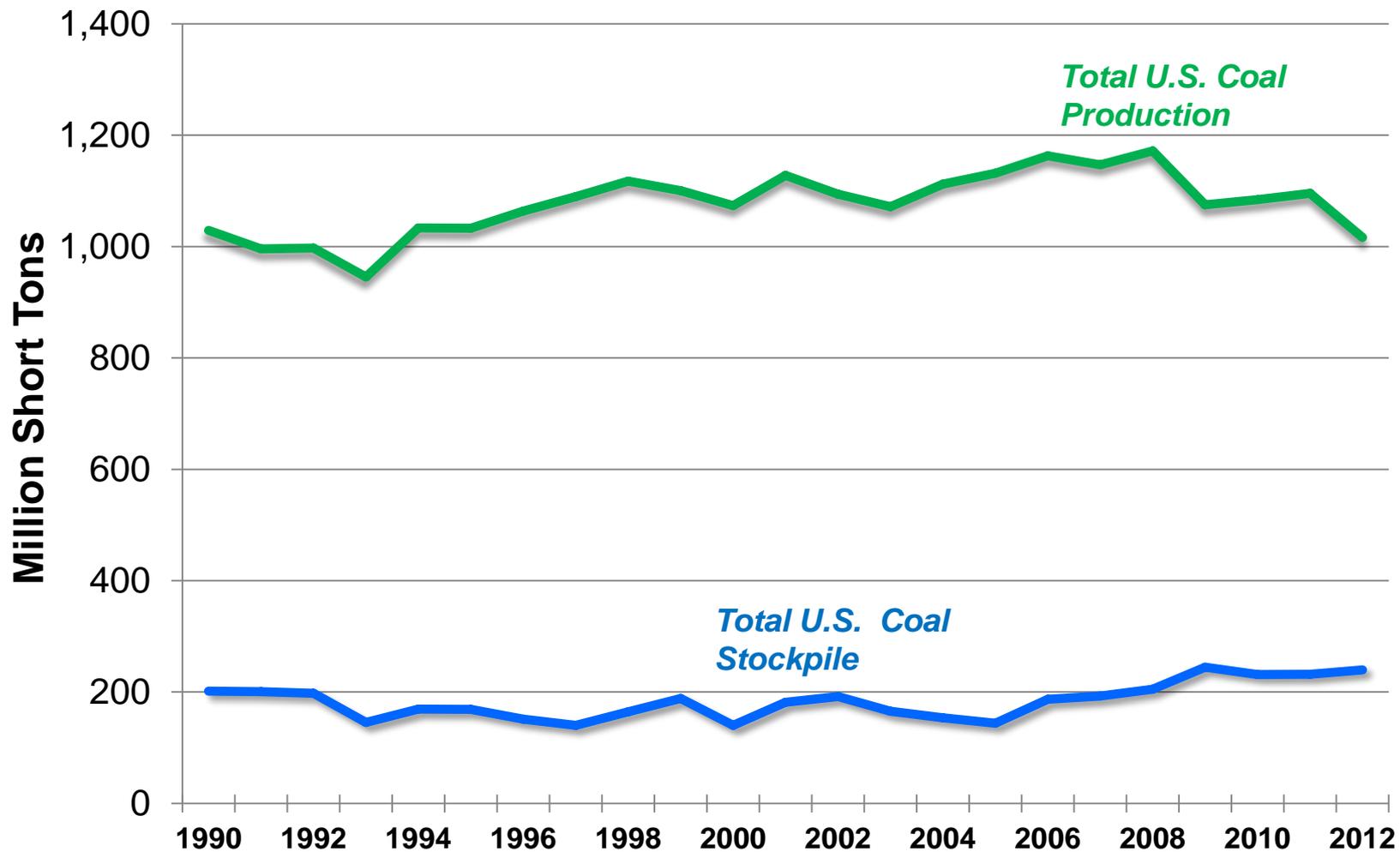


U.S. Coal Production (1990-2012)

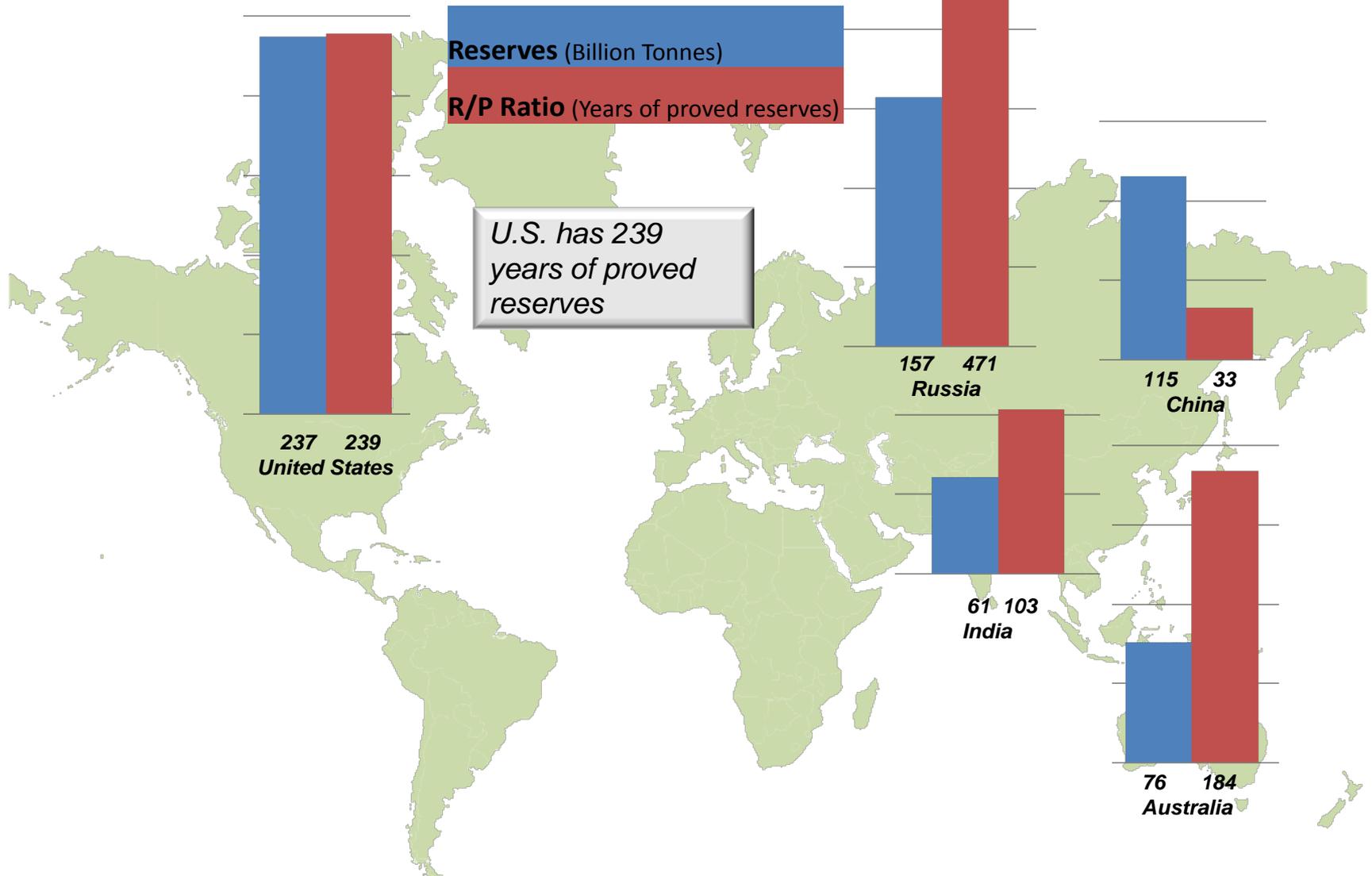


Sources: Ventyx; EIA, Annual Energy Review, Monthly Energy Review

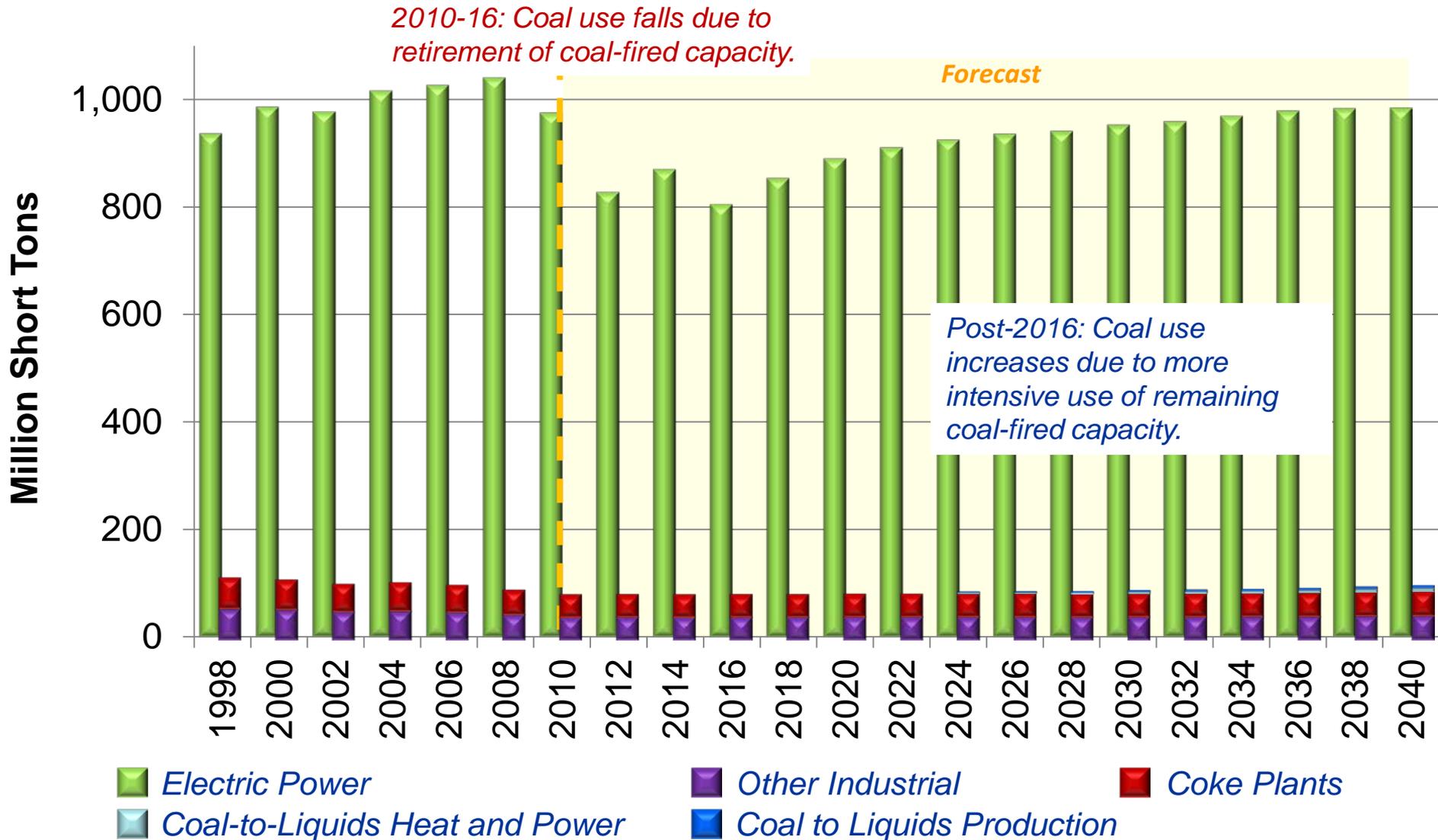
U.S. Coal Production and Stockpiles 1990-2012



Proved Coal Reserves (Top 5 Countries)

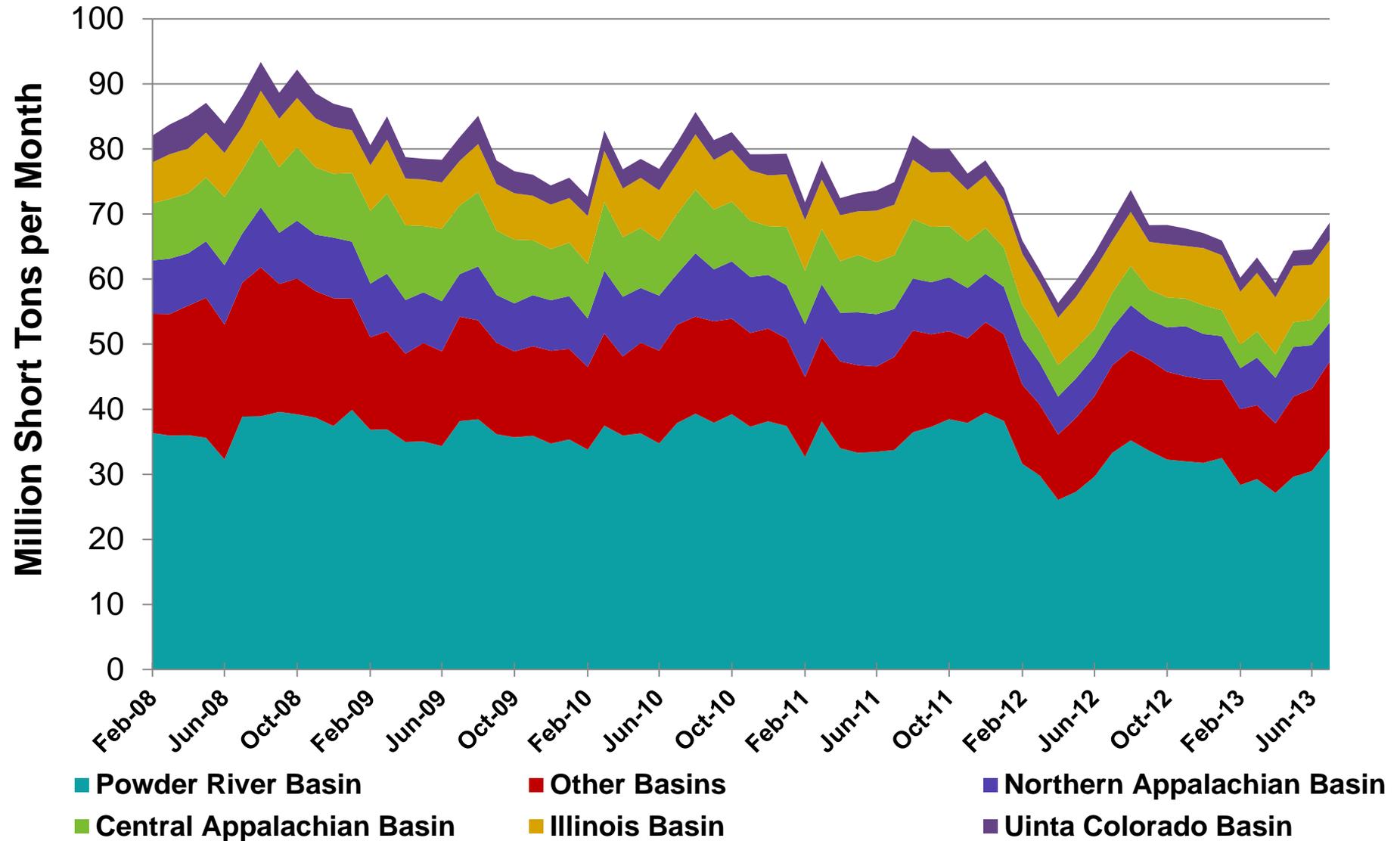


Coal Consumption by Sector 1998-2040

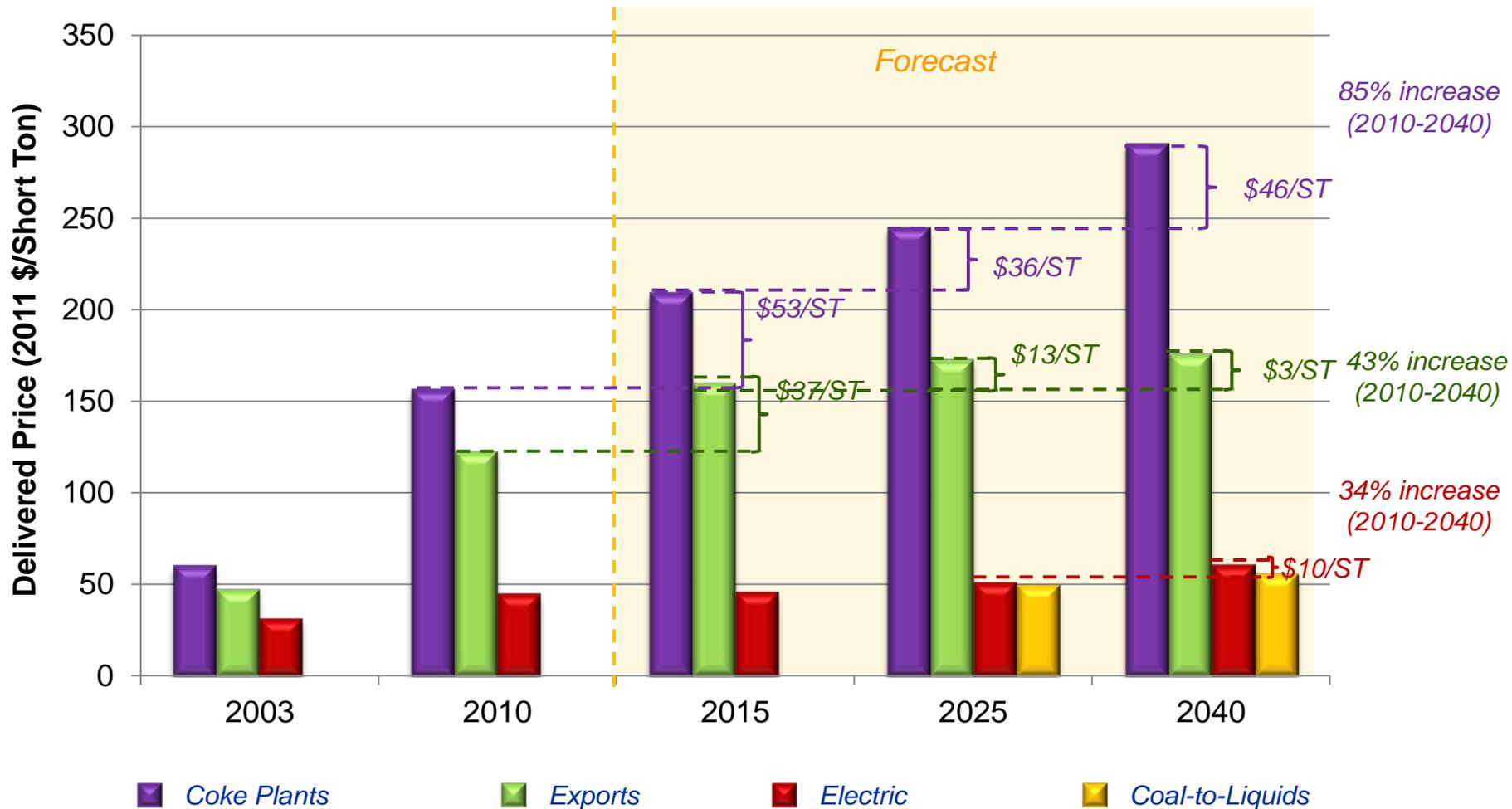


- Electric Power
- Other Industrial
- Coke Plants
- Coal-to-Liquids Heat and Power
- Coal to Liquids Production

Coal Purchases by Supply Region (Monthly)

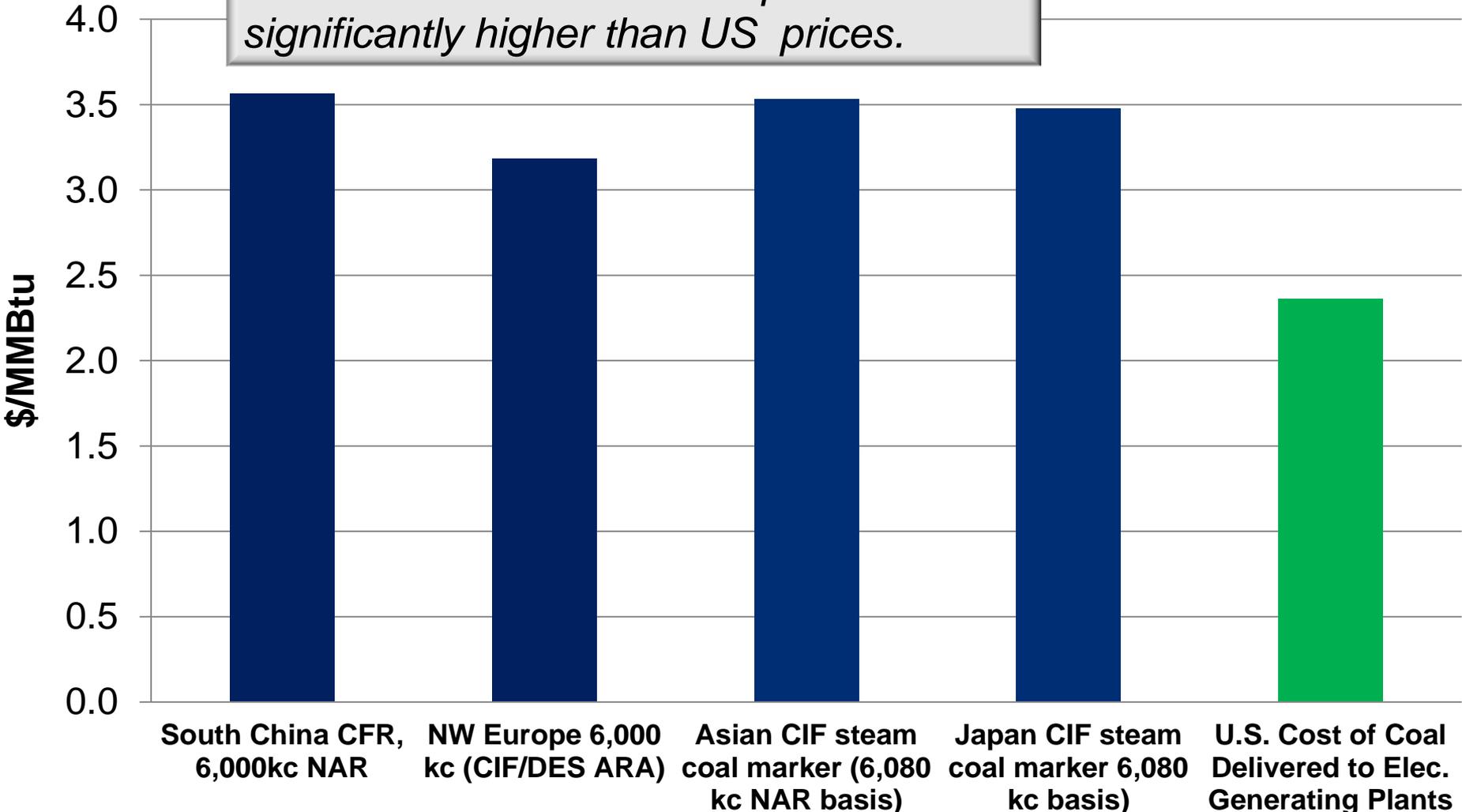


U.S. Coal Delivered Price by Sector 2003-2040



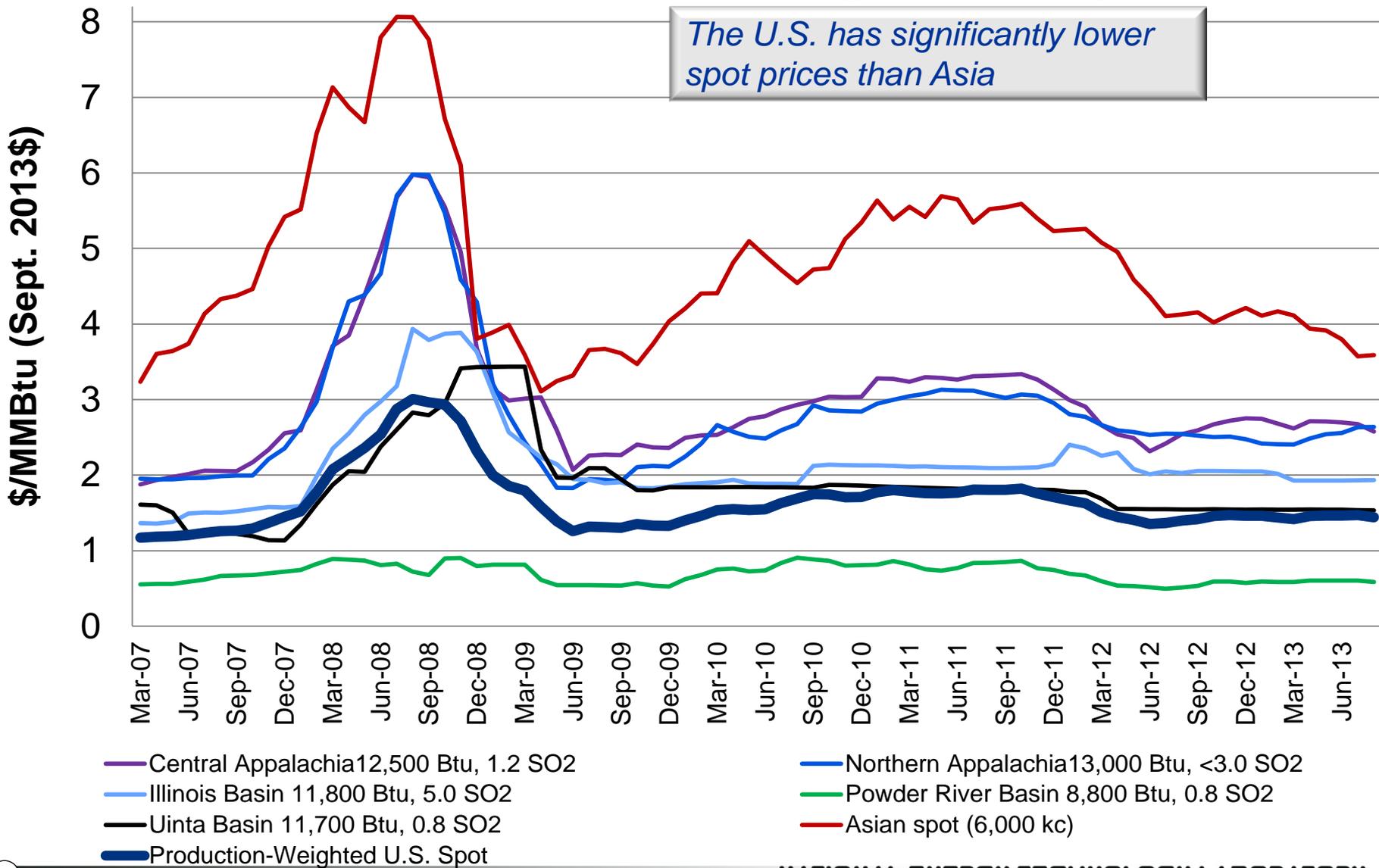
Delivered Steam Coal Prices (August 2013)

International delivered coal prices are significantly higher than US prices.



Notes: kc = kilocalorie; CFR = Cost and freight (excludes Chinese taxes); CIF = Cost, Insurance and Freight; DES = Delivered Ex Ship; ARA = Antwerp/Rotterdam/Amsterdam; NAR = Net As Received

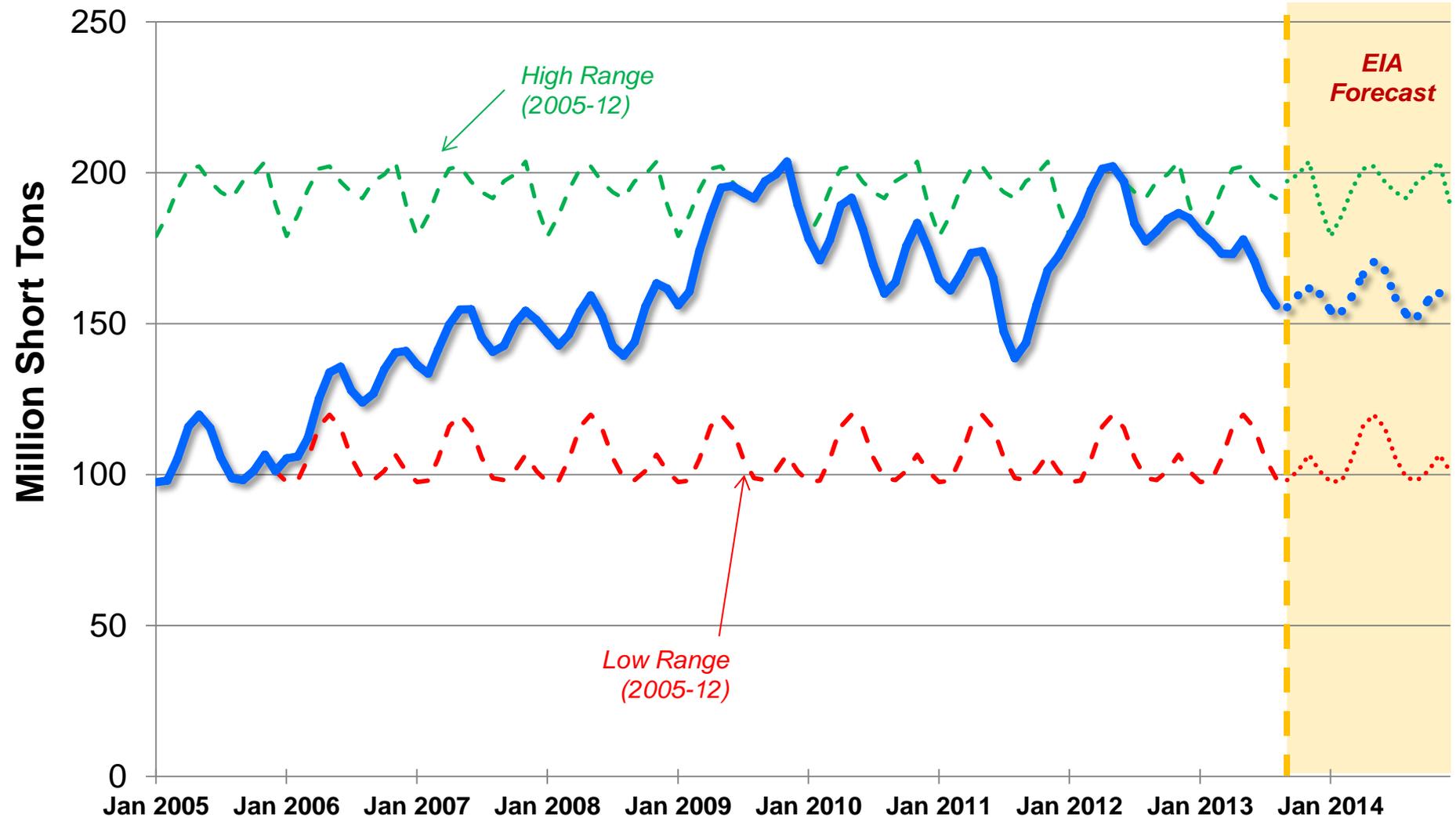
U.S./Asia Coal Spot Price Comparison (March 2007-August 2013)



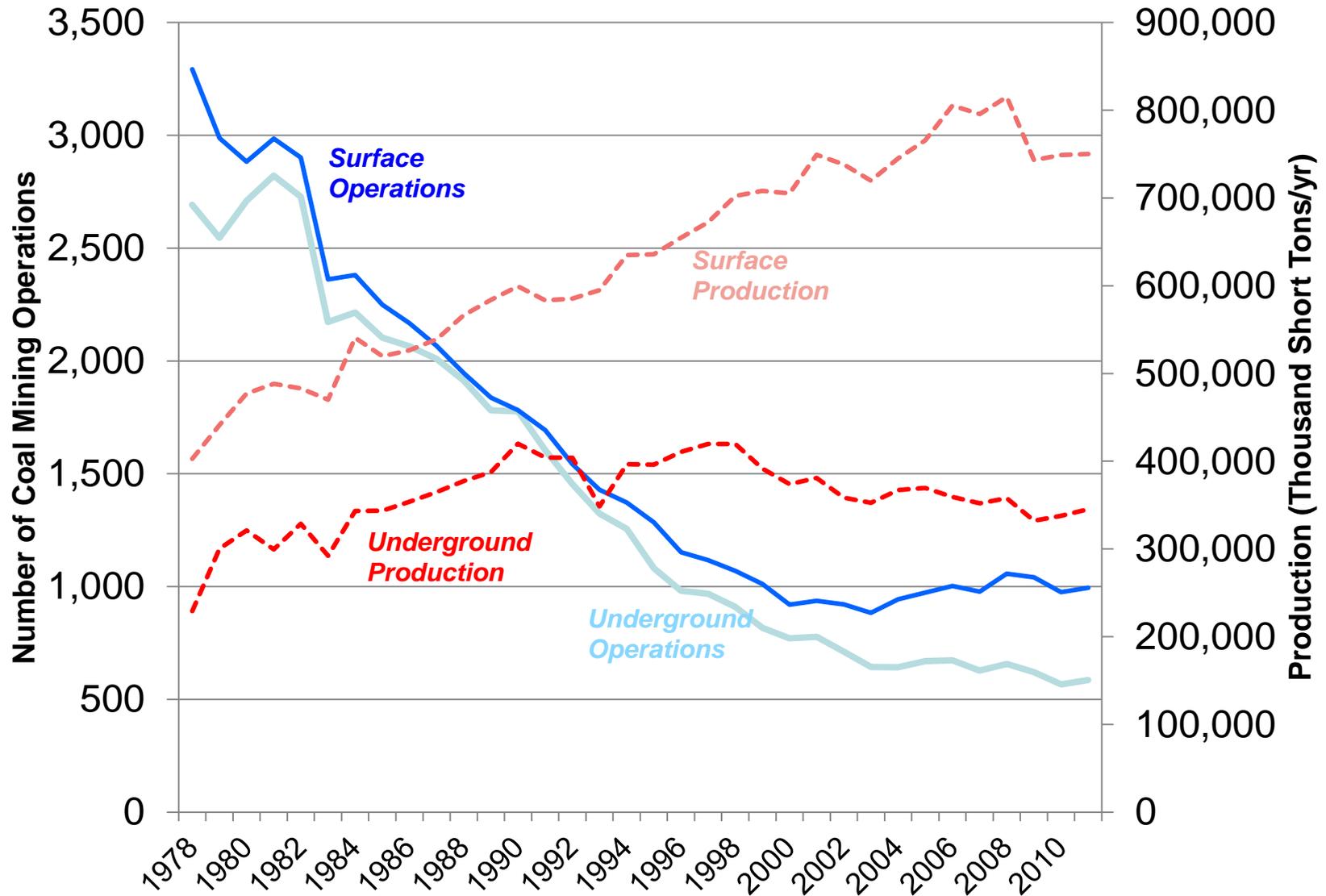
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Data Sources: IHS McCloskey Coal Report; SNL; EIA, Coal News and Markets, Short Term Energy Outlook (historical and projected CPI data); Ventyx Coal Basin Production data(used to obtain weights)

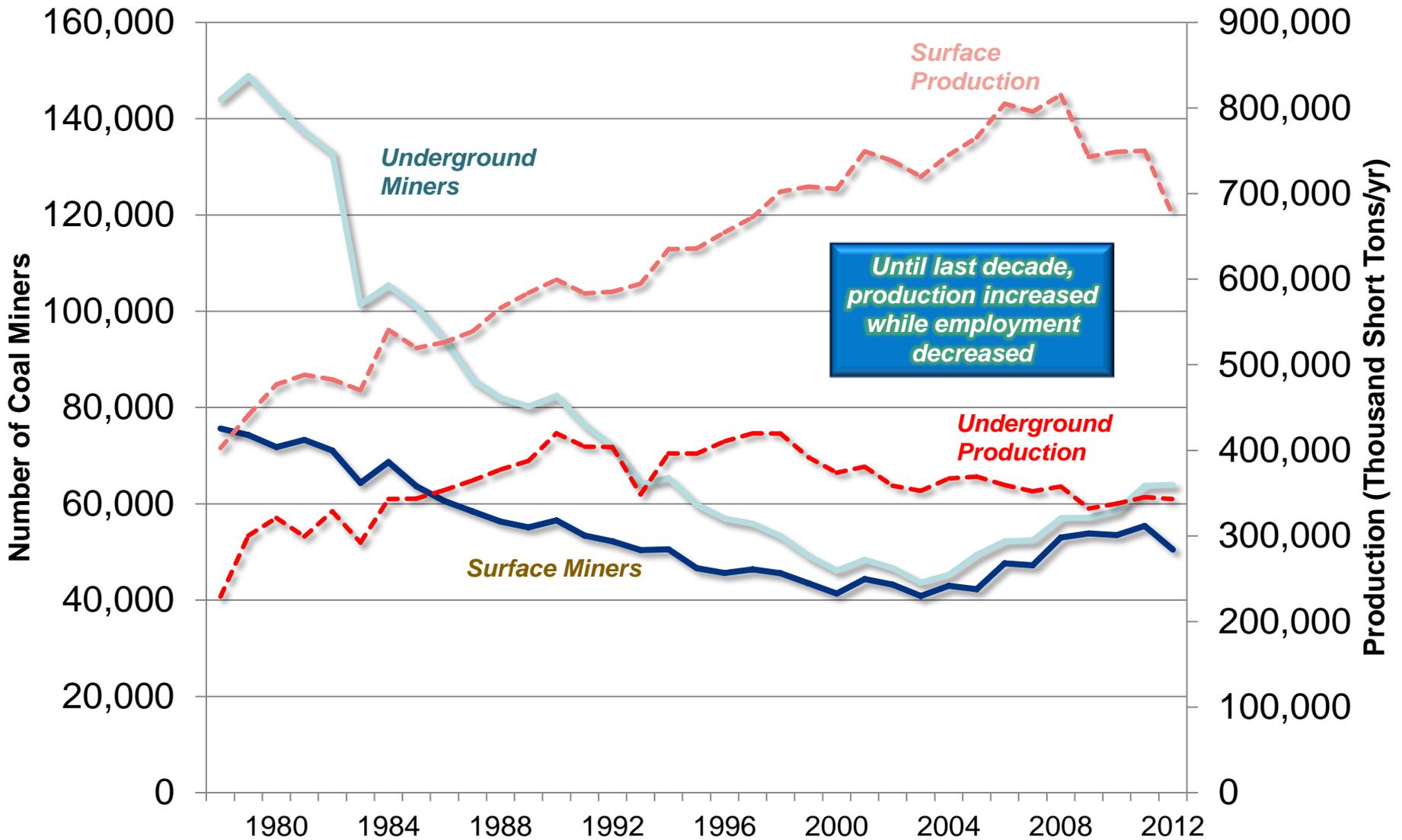
U.S. Electric Coal Stockpiles



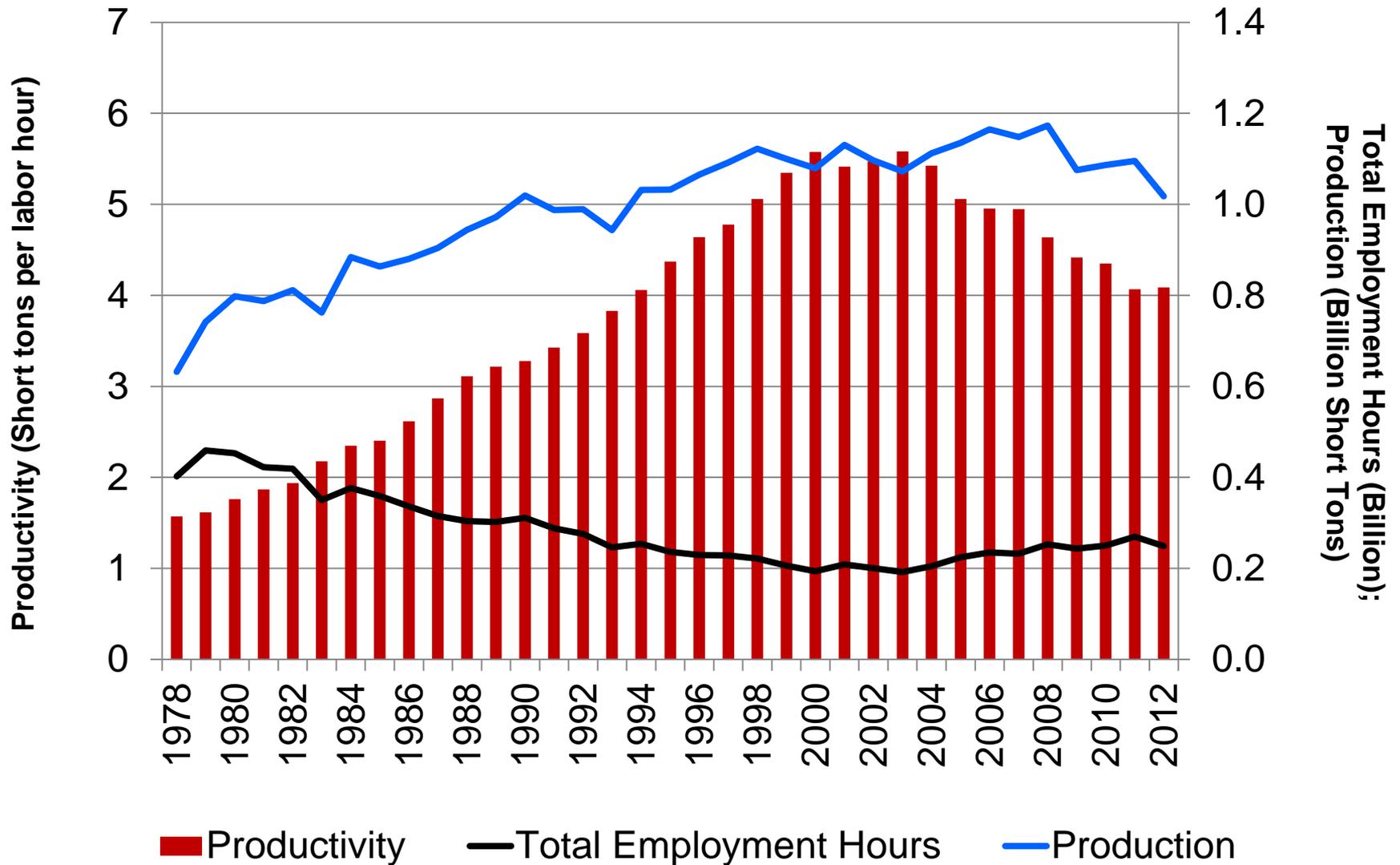
U.S. Coal Operations and Production



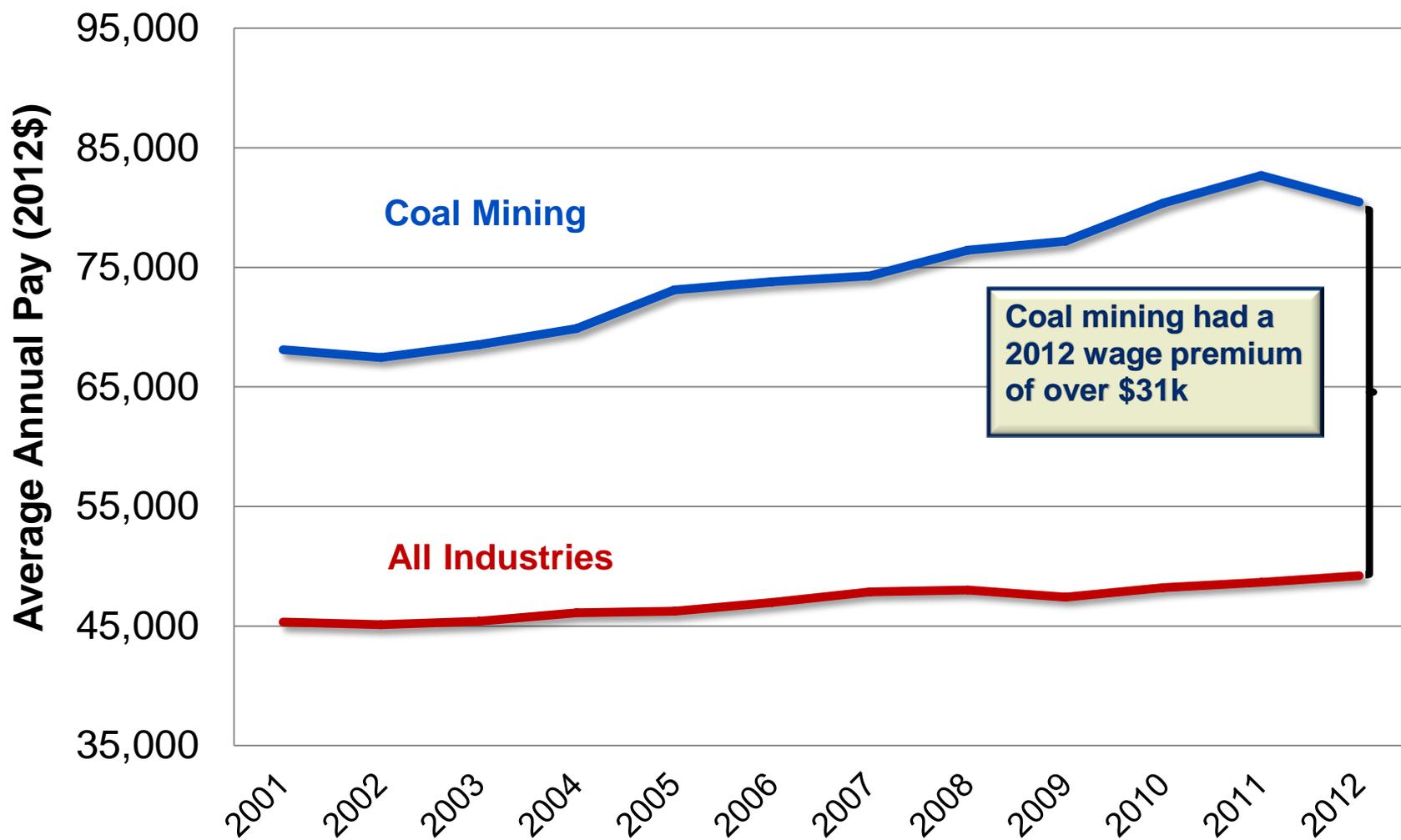
U.S. Coal Employment and Production



Coal Labor Productivity (1978-2012)

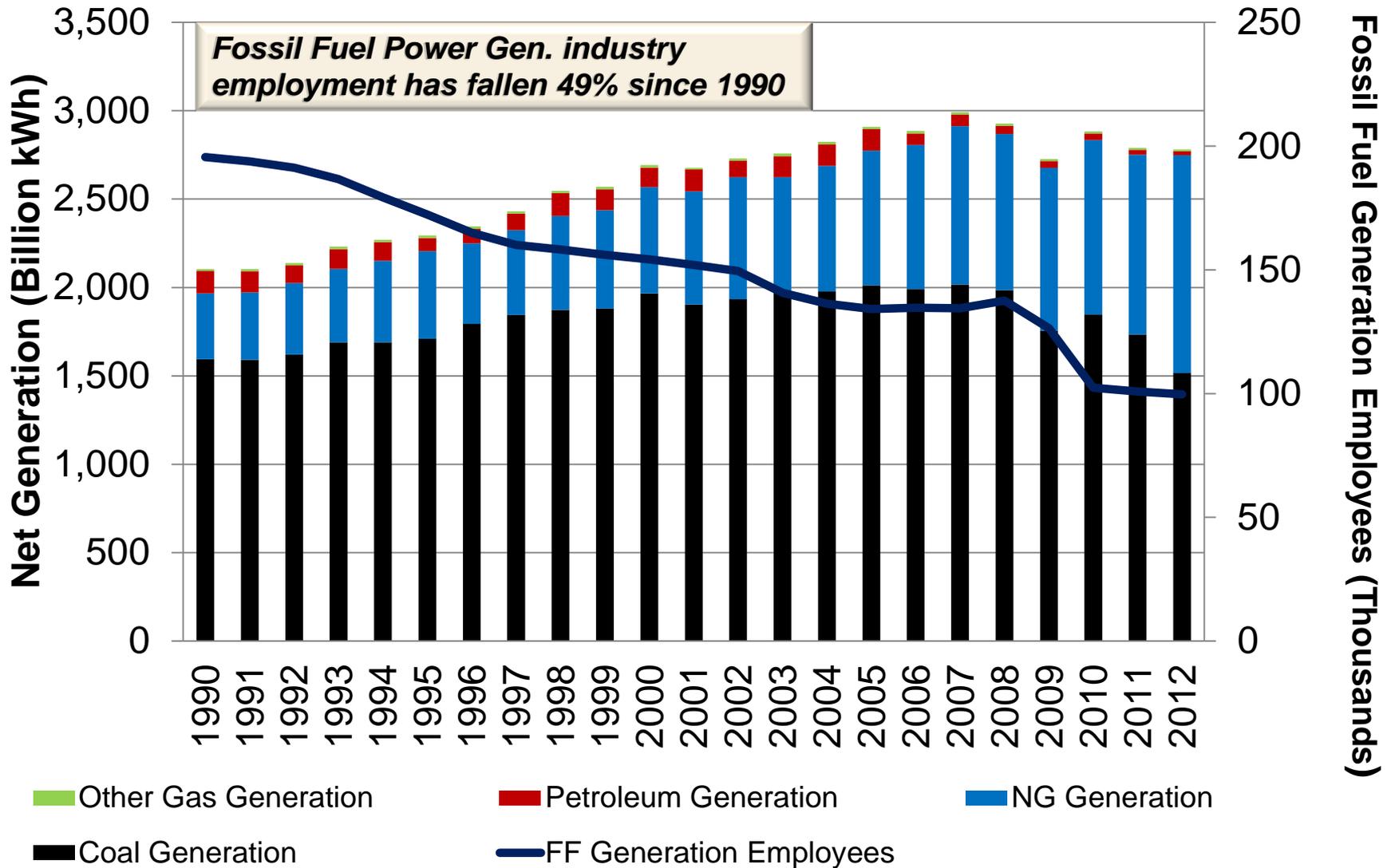


Coal Mining* Pay Versus Other Industries (2001-2012)

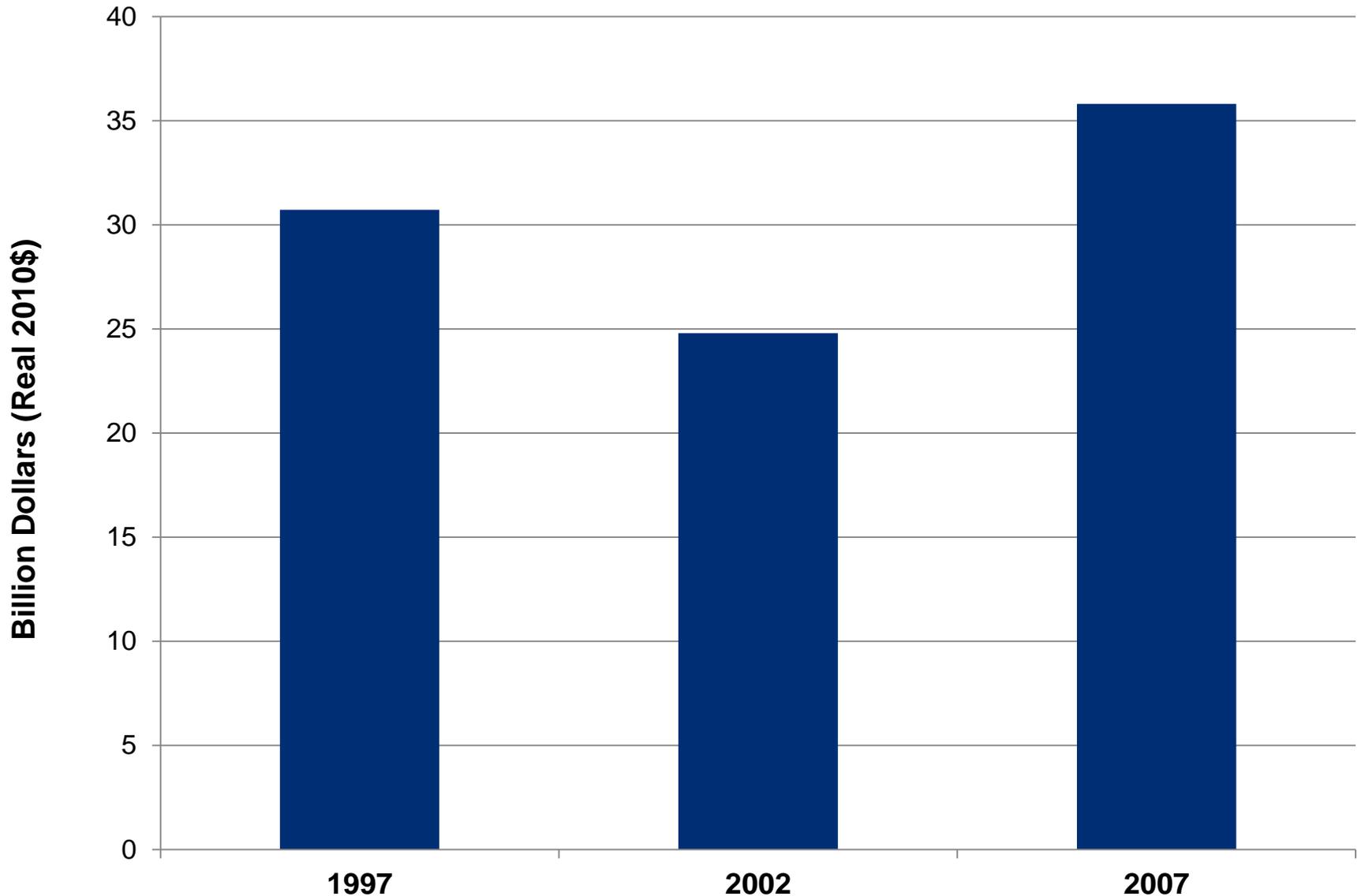


*NAICS 2121 Coal Mining

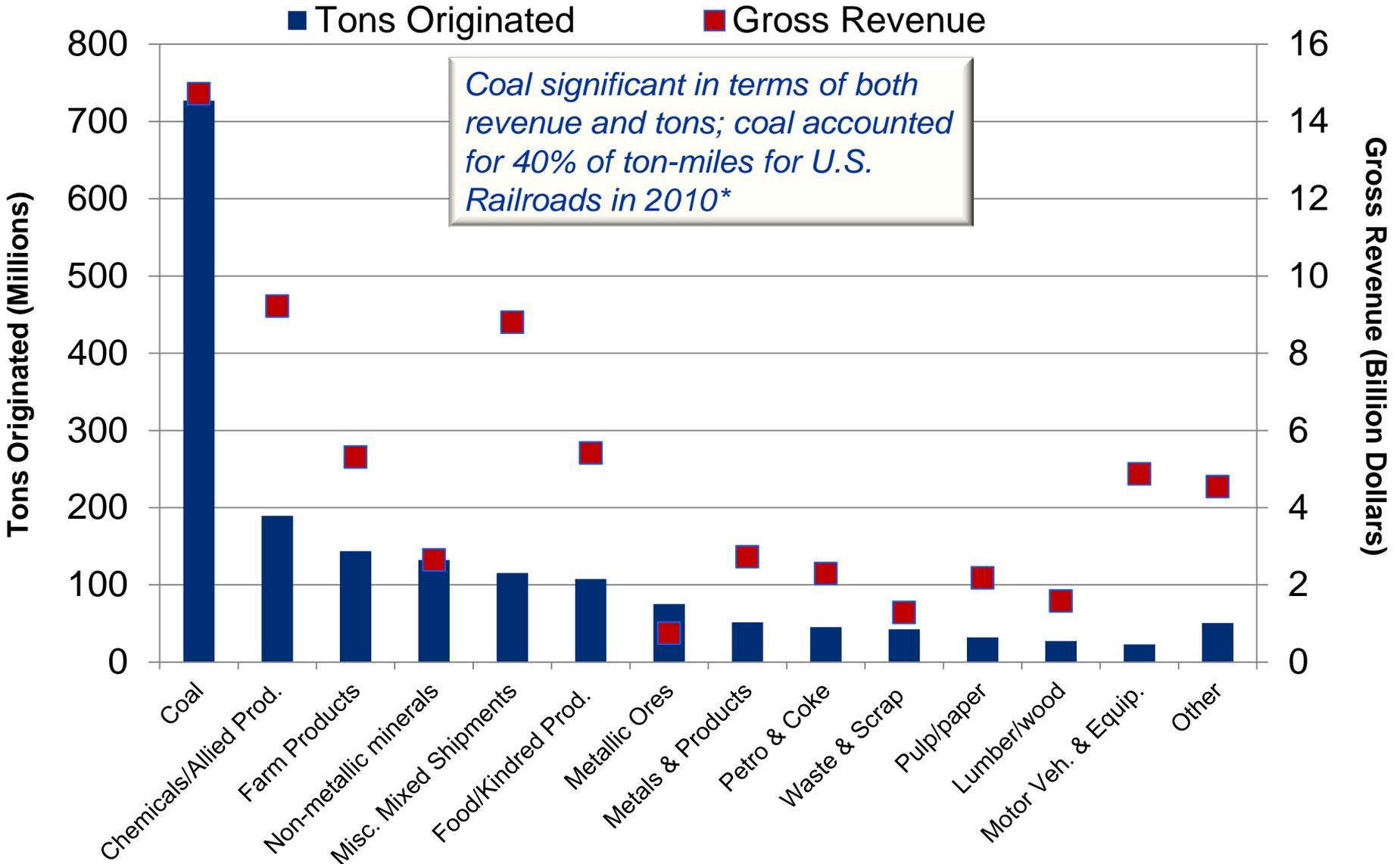
Fossil Fuel Power Generation and Employment (1990-2012)



Coal Mining Value of Shipments

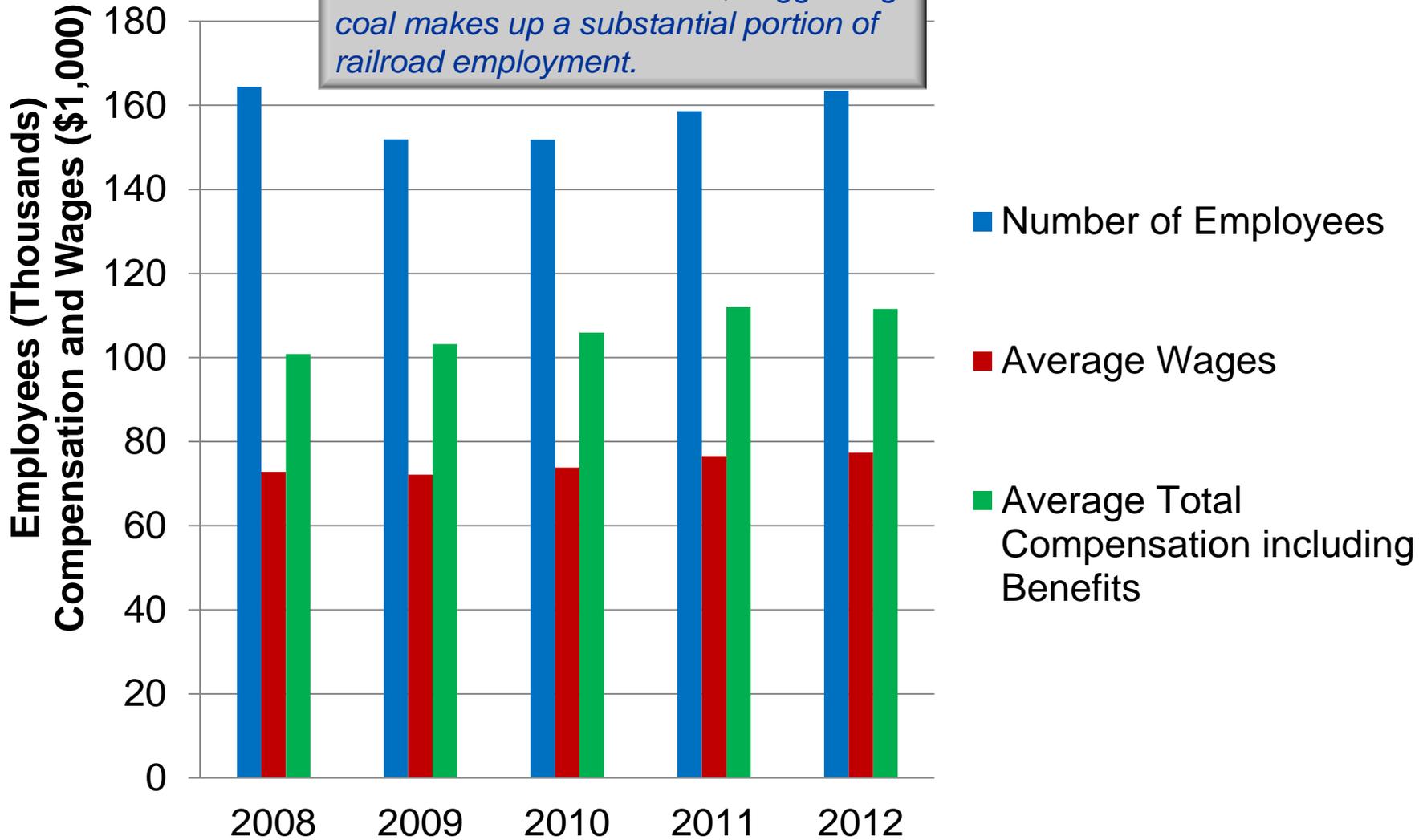


2012 Class I Railroad Statistics

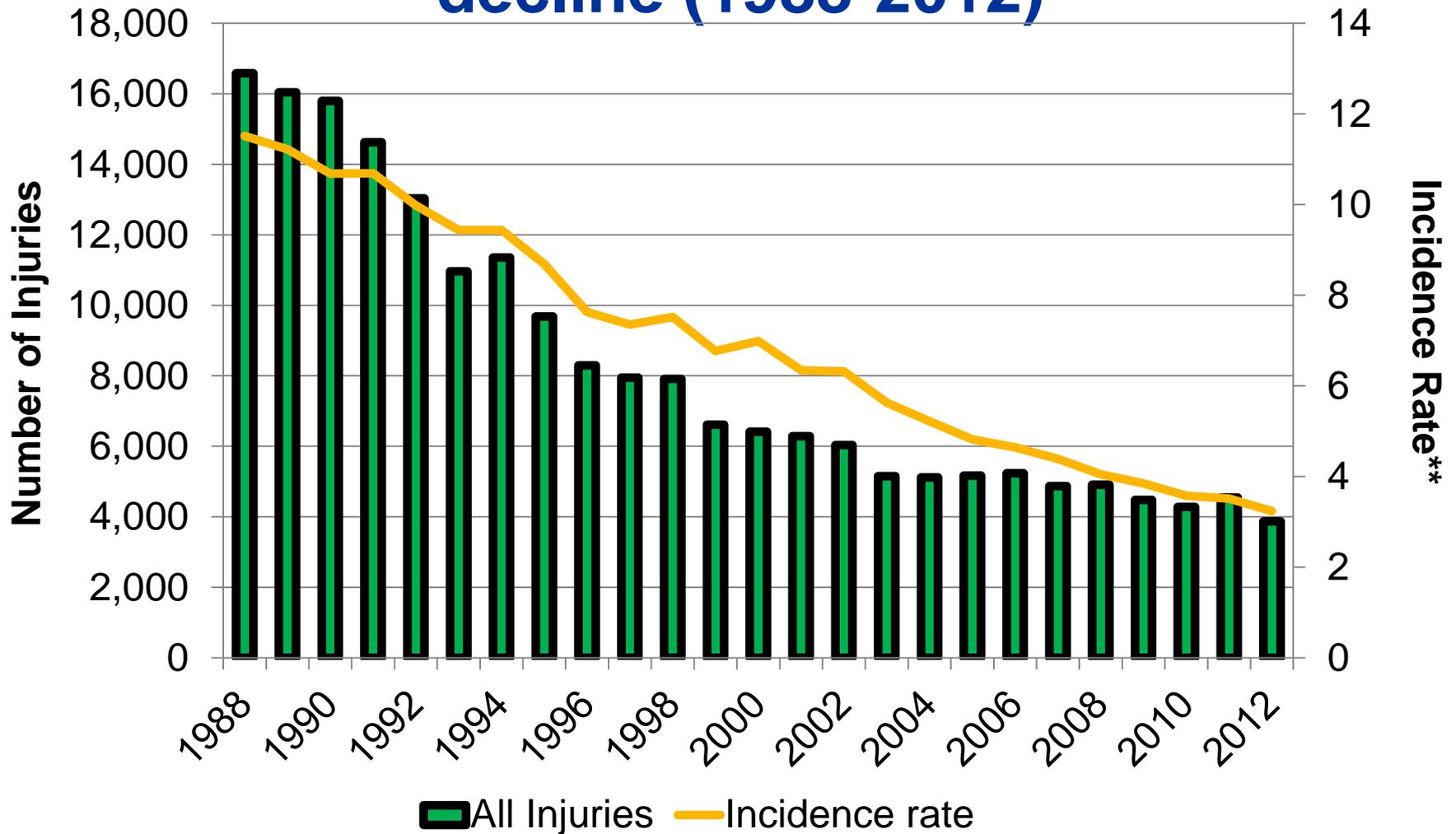


U.S. Class I Railroad Employment

Coal accounted for 40 percent of U.S. Railroad ton-miles in 2010, suggesting coal makes up a substantial portion of railroad employment.*



Mining Industry (non-office) Injuries* on the decline (1988-2012)



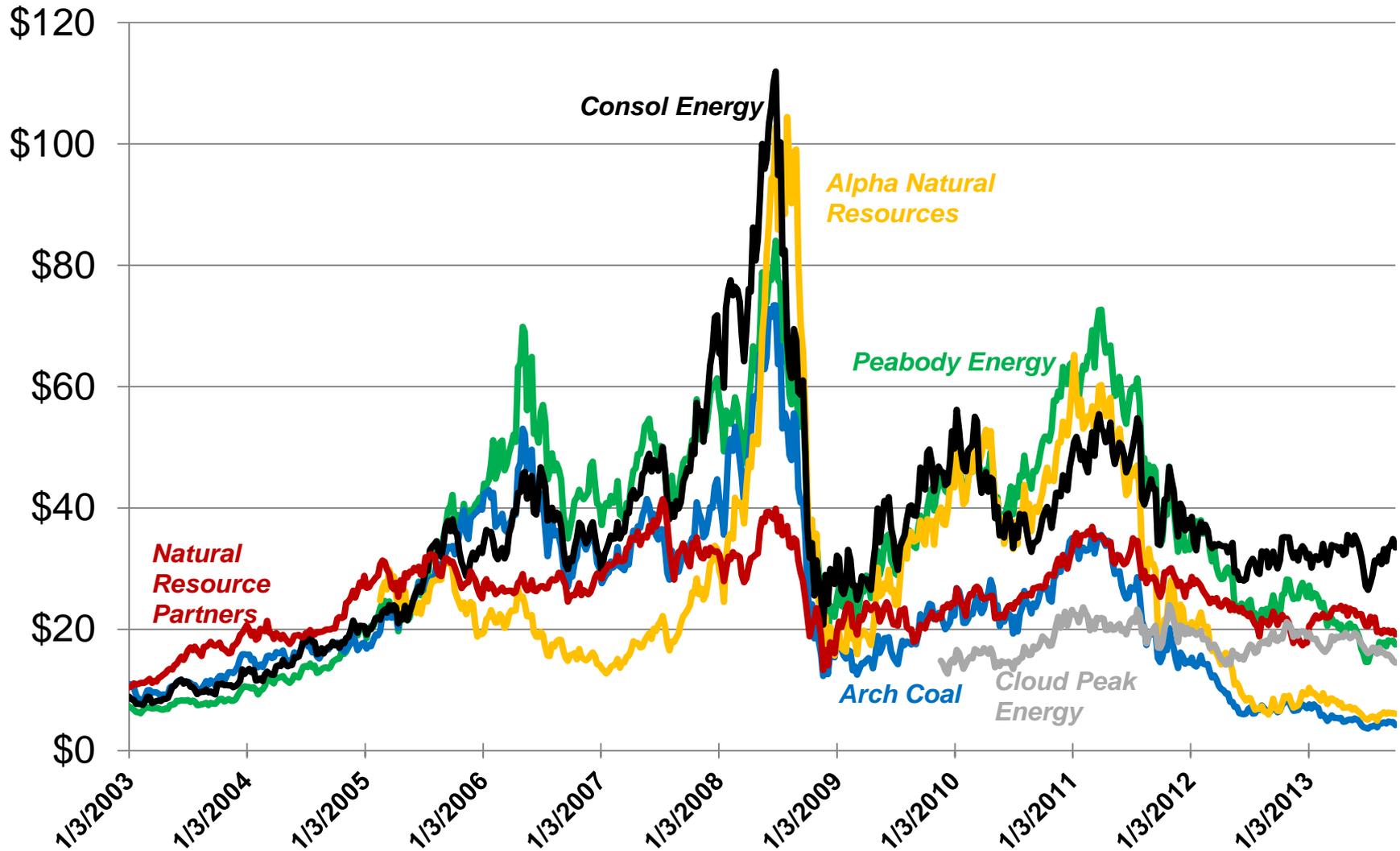
*Number of injuries includes mining, indep shops/prep plants for operators and contractors

**Incidence Rate = (Number of Injuries/Employment Hours) x 200,000

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Source: Mine Safety and Health Administration (MSHA): Historical Data Table 8; Mine Injury and Worktime Reports 2009, 2010, 2011, and 2012 (Tables 1 and 5)

Select Coal Company Stock Prices (Weekly)



U.S. Coal Co. Market Caps

