



# WV Consensus Coal Forecast: 2014

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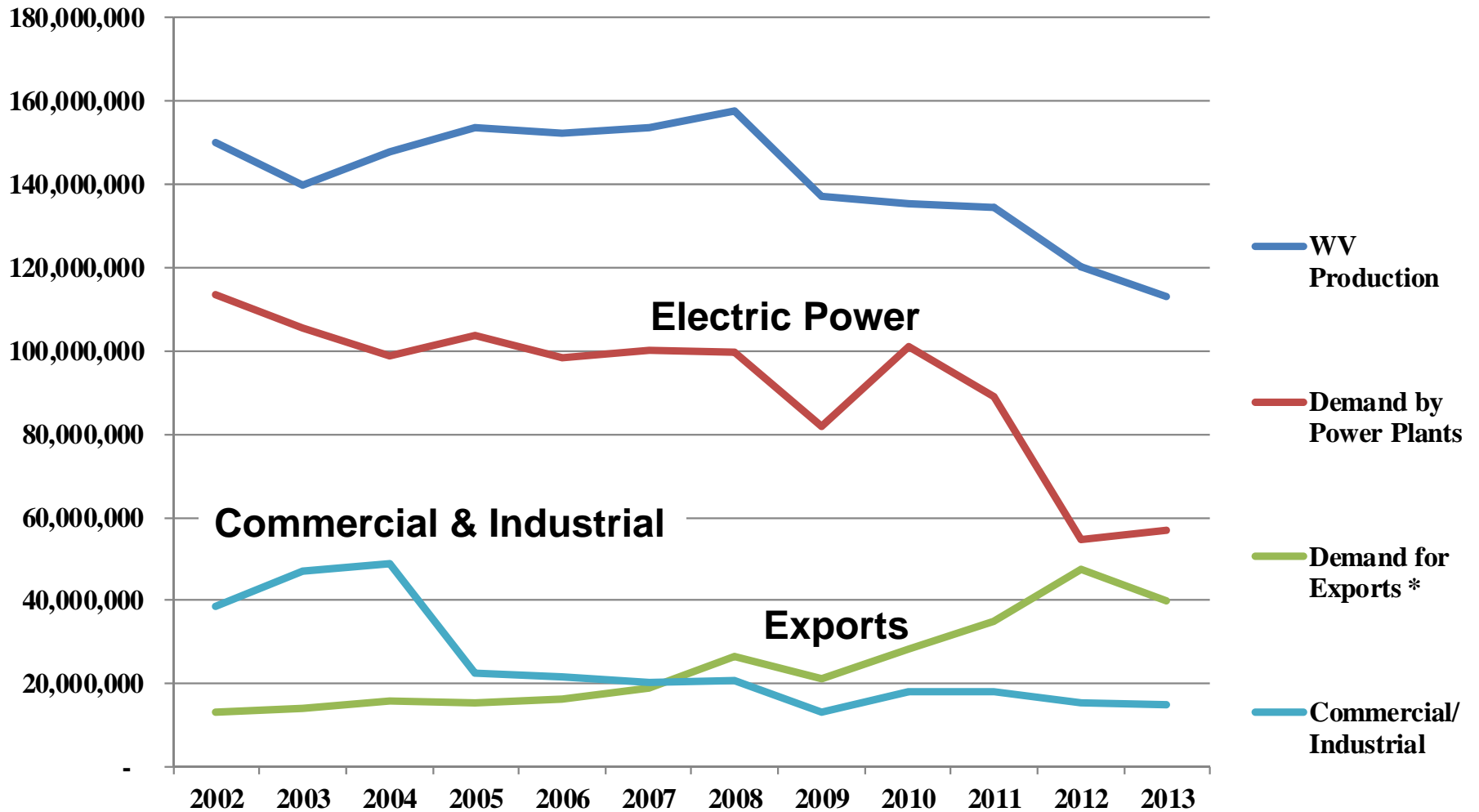


# Study Components

- Industry Analysis
  - Trends for major market segments
- Development of CBER West Virginia Coal Production Forecast
  - Incorporating analysis of demand from regional electricity generation
- Construction of Consensus forecast
  - Compilation of four separately developed industry forecasts



# Consumption/Distribution Trends for WV Coal



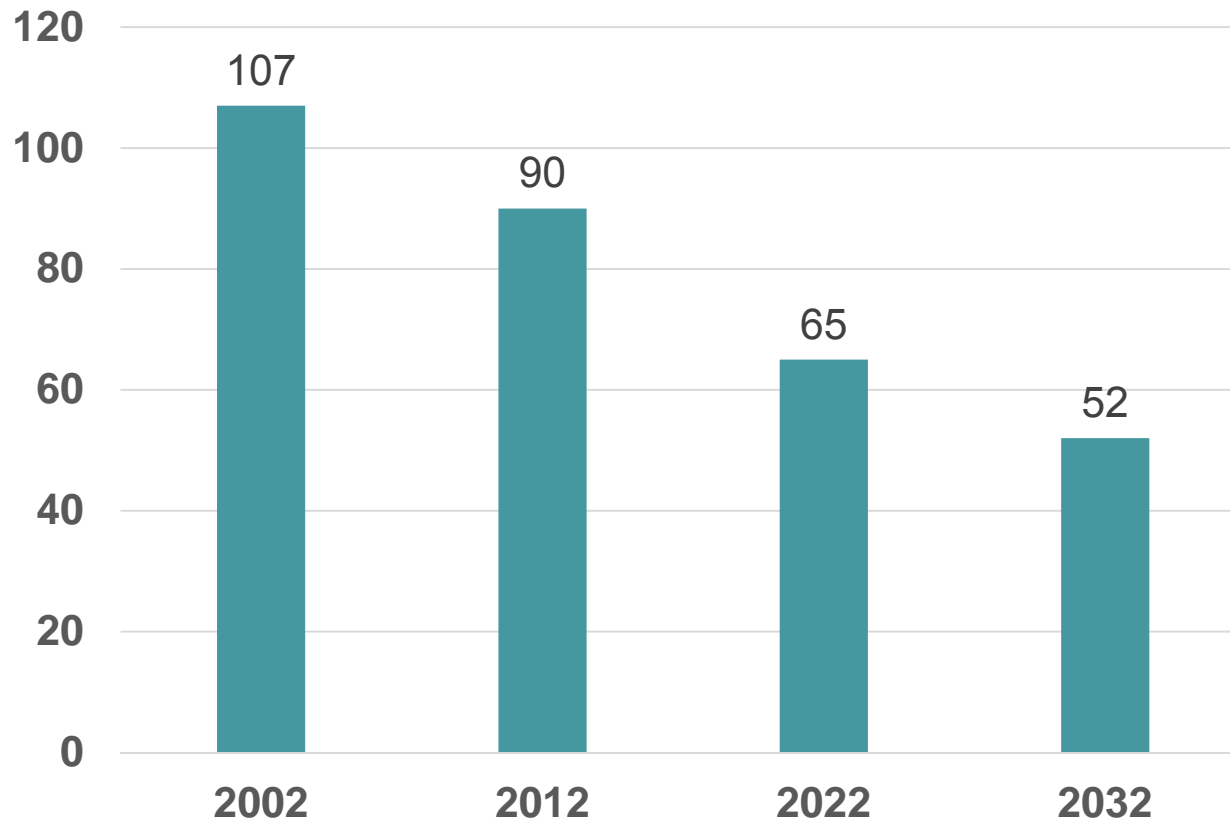


# Electricity Sector

- Mercury & Air Toxics Standard (MATS) rule-induced closures underway; will peak in 2015
- $\geq 78$  plants that were WV coal customers between 2002 and 2012 have already retired or announced retirement
- Clean Air Act (CAA) Section 111(d) impacts uncertain



## # of Plants Using WV Coal



Future years are based on announced and simulated retirement.

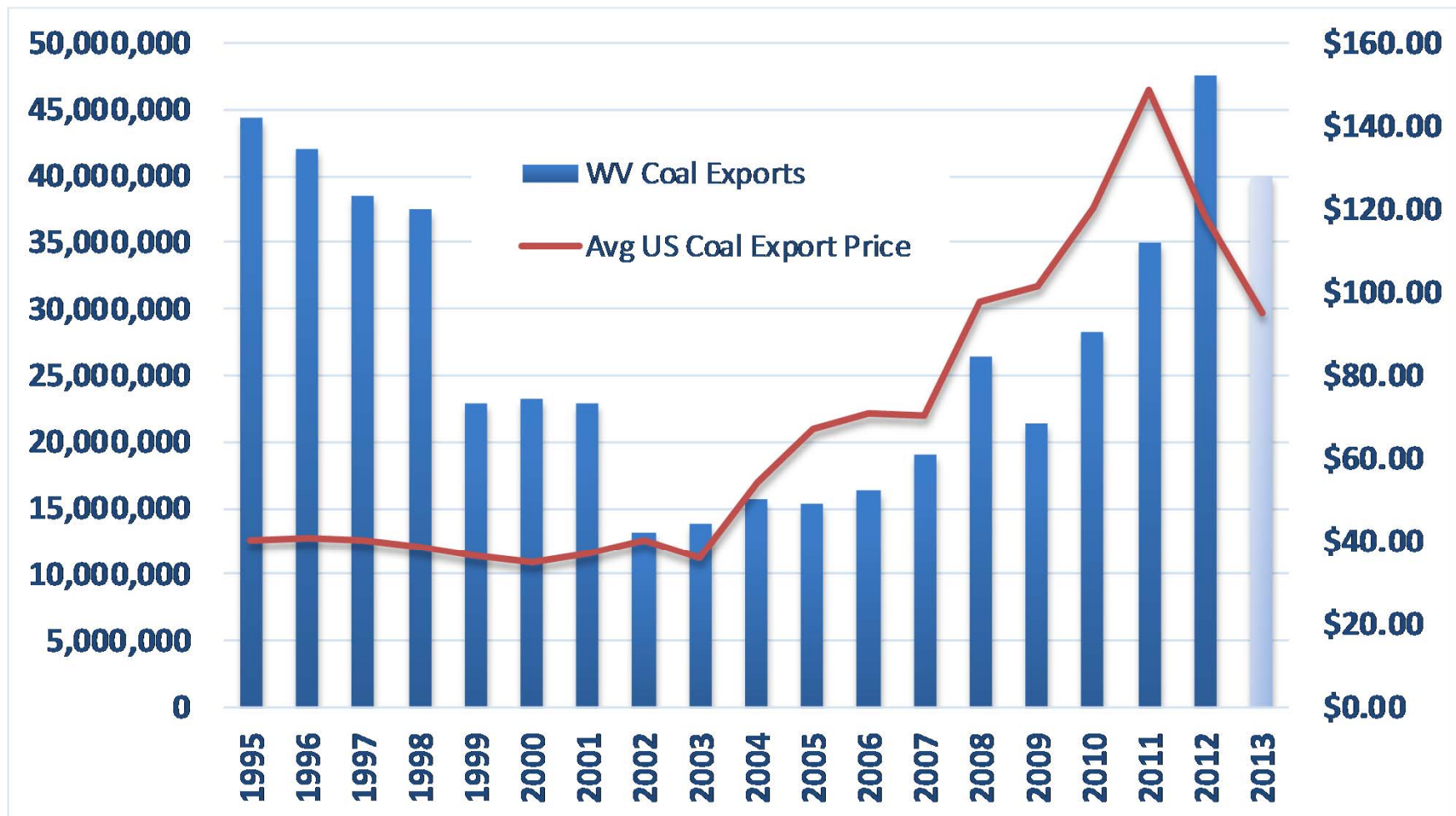


# Industrial Sector

- Coking industry – conversion to gas in longer term horizon; in short term total demand for coal likely to be stable
- Coal-based self-generators – some conversion to gas now; WV coal customers converting:
  - RED-Rochester (Eastman Business Park utility infrastructure)
  - Fernandina Beach Mill (paper mill)
  - PPG Natrium? (chlorine production)



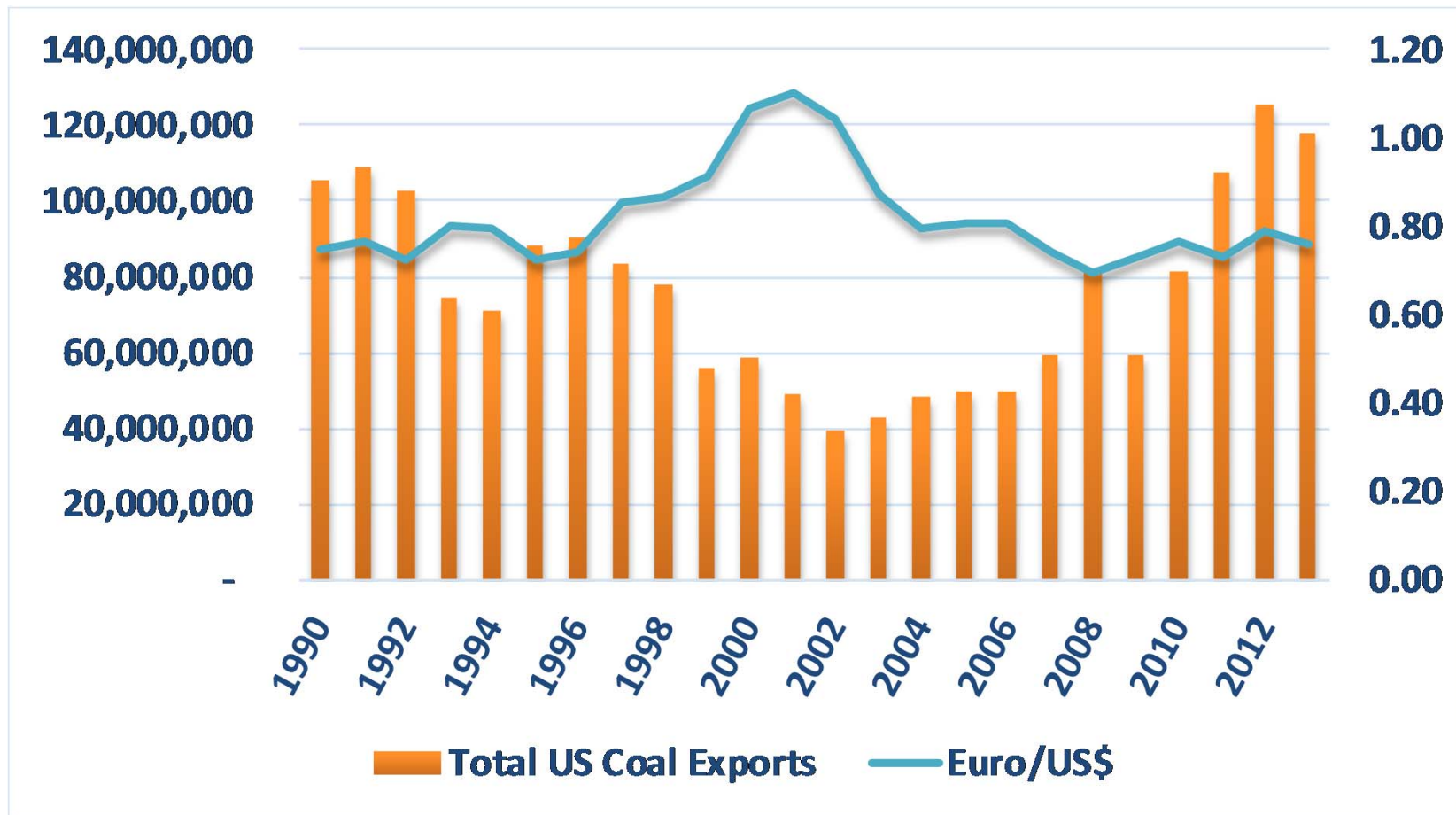
## WV Coal Exports (tons) and Nominal US Prices 1995 through 2012



\* 2013 volumes estimated by CBER



## US Coal Exports (tons) and Euro/US\$ Exchange Rate







# Component Forecasts

- Energy Information Administration
- Energy Ventures Associates
- BBER
- CBER



# EIA's Base Case Forecast

- **National Energy Modeling System (NEMS) – general equilibrium model; forecasts for Northern, Central and Southern Appalachia**
- **Assumptions/Expectations**
  - Rising real coal prices
  - Increasing use of coal for electricity generation
  - Increasing coal exports
  - Steep decline in Appalachian production through 2016, then relatively flat through 2035
- **Weight: 30% S-T; 41% L-T**





# EVA's Forecast

- **Linear Programming power plant dispatch model**
- **Assumptions/Expectations**
  - **Electricity sector demand for Appalachian coal will fall by 50% from 2012 to 2040.**
  - **Domestic demand for metallurgical coal from Appalachia will rise by 20% by 2040.**
  - **Non-coke industrial demand for Appalachian coal will fall by 40% by 2040.**
  - **Decline in both met and steam exports from Appalachia.**
- **Weight: 21% S-T; 27% L-T**





# BBER's Forecast

- **Econometric Model – short term forecast only, through 2019**
- **Assumptions/Expectations**
  - WV production falls to 101 million tons in 2016
- **Weight: 25% S-T**



# CBER's Forecast

- **Econometric/Vector Autoregression Model**
  - Initial short-term forecast includes projected demand for WV coal in regional power generation
  - Long-term forecast utilizes historical patterns in quarterly production data
- **Assumptions/Expectations**
  - 2012 treated as a structural break in historical patterns
  - 6.5% decline annually (2013 through 2022) in demand for WV coal by electricity sector
  - Moderate growth in export markets for WV coal
- **Weight: 24% S-T; 32% L-T**





# Consensus Forecast

