

Energy by Rail

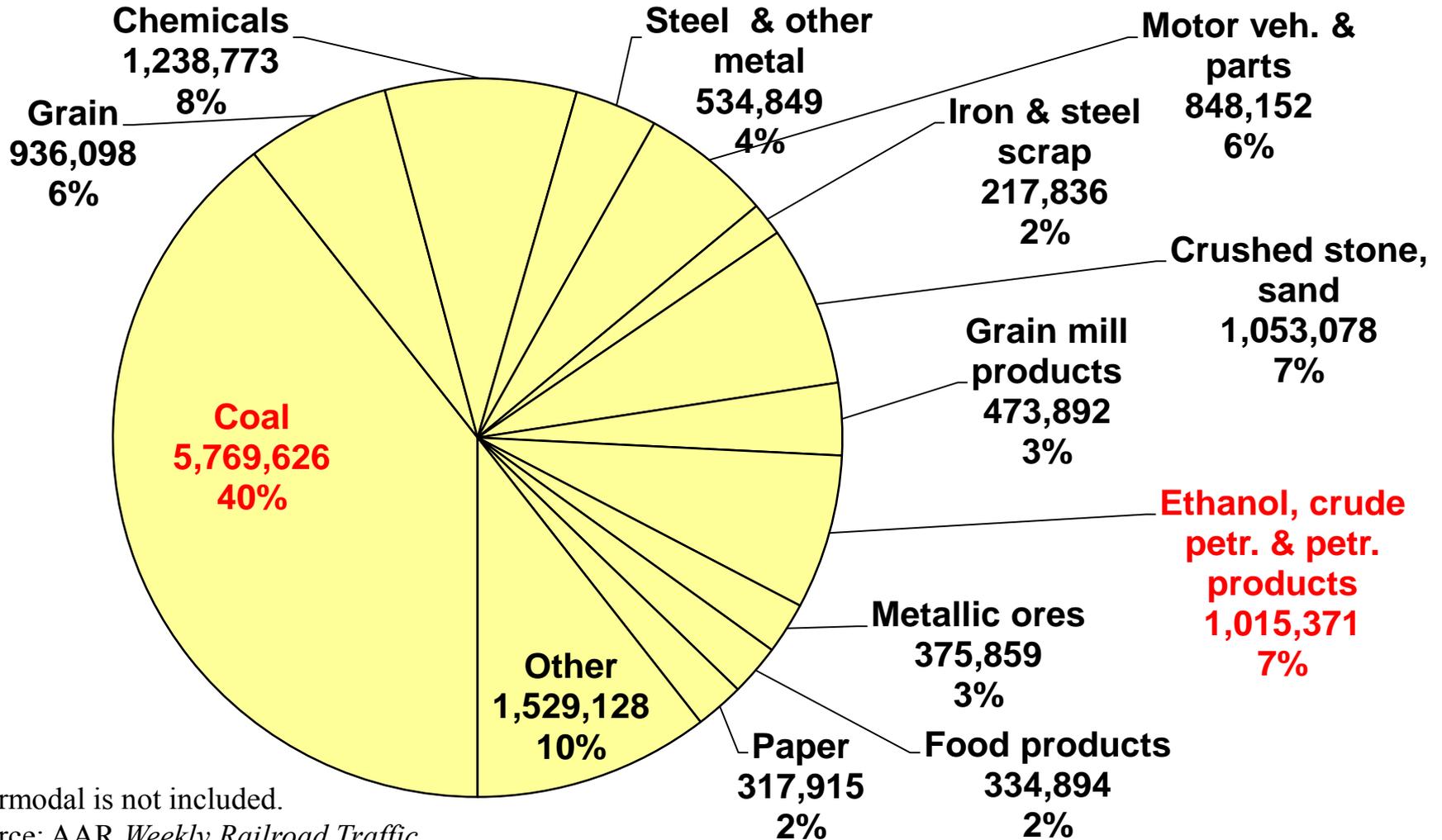
Department of Energy
Chicago, Illinois
August 8, 2014



ASSOCIATION OF
AMERICAN RAILROADS



U.S. Rail Carload Traffic by Commodity in 2013



Intermodal is not included.

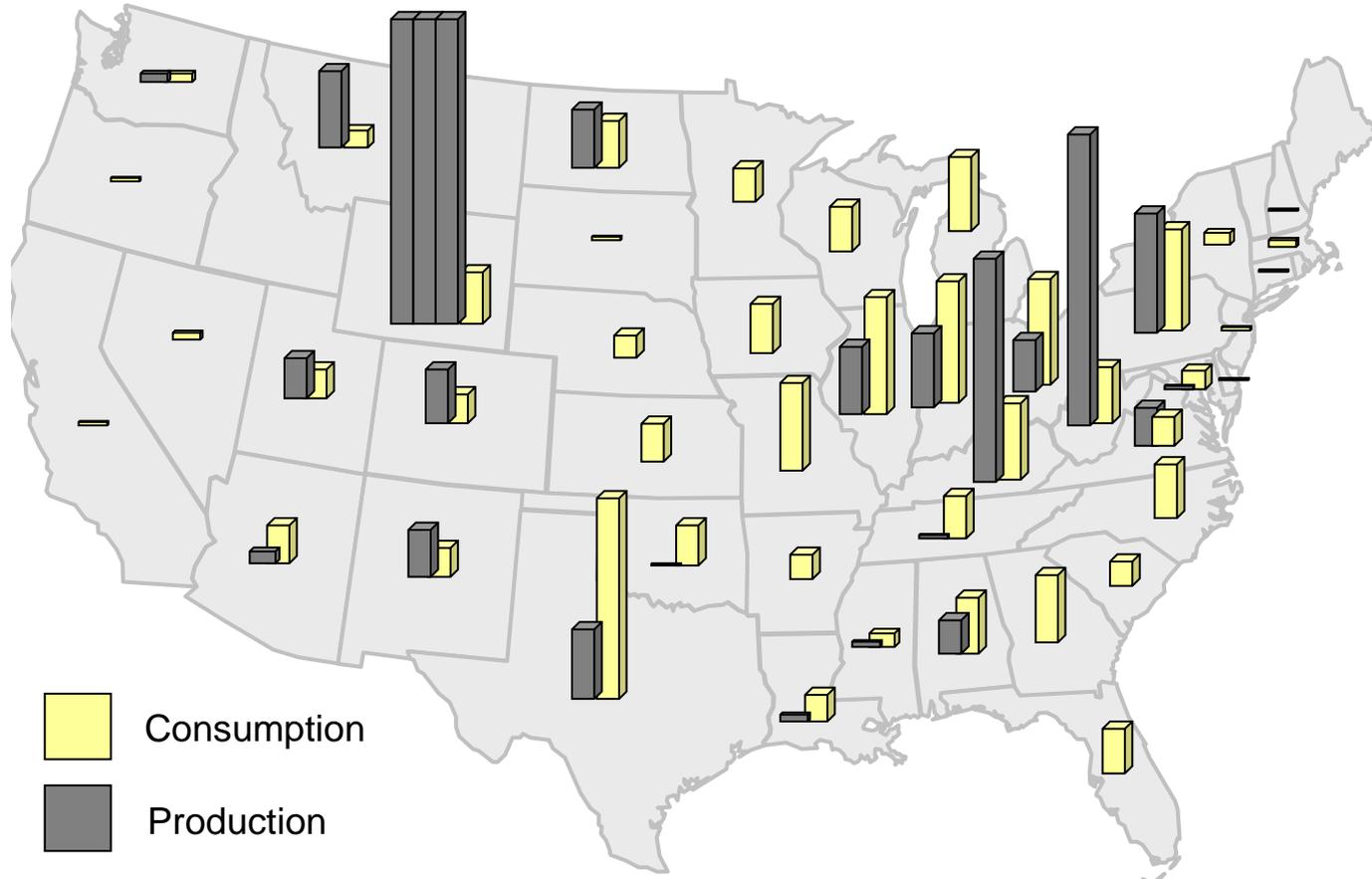
Source: AAR *Weekly Railroad Traffic*



Coal by Rail

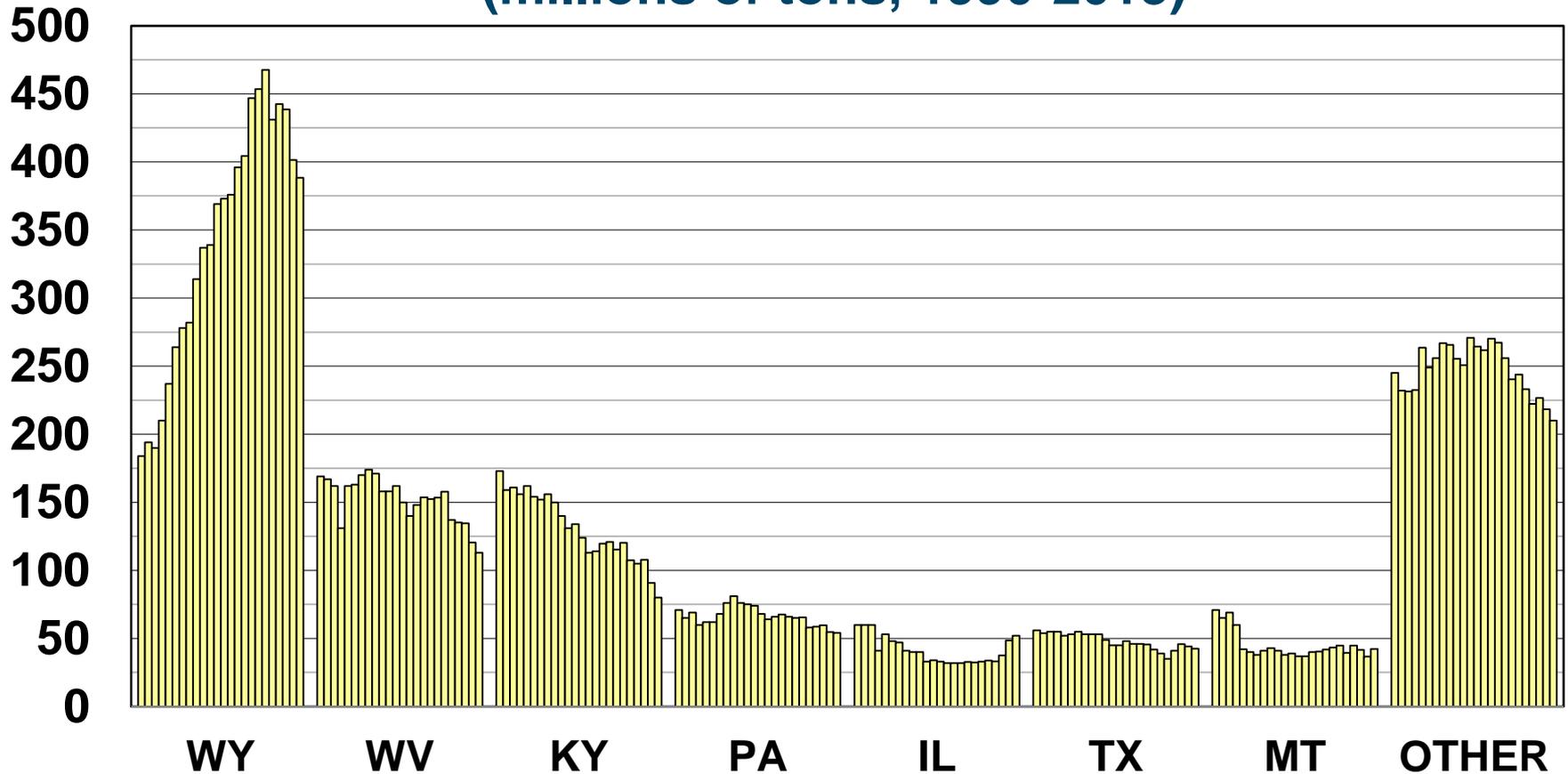


Coal Production vs. Consumption



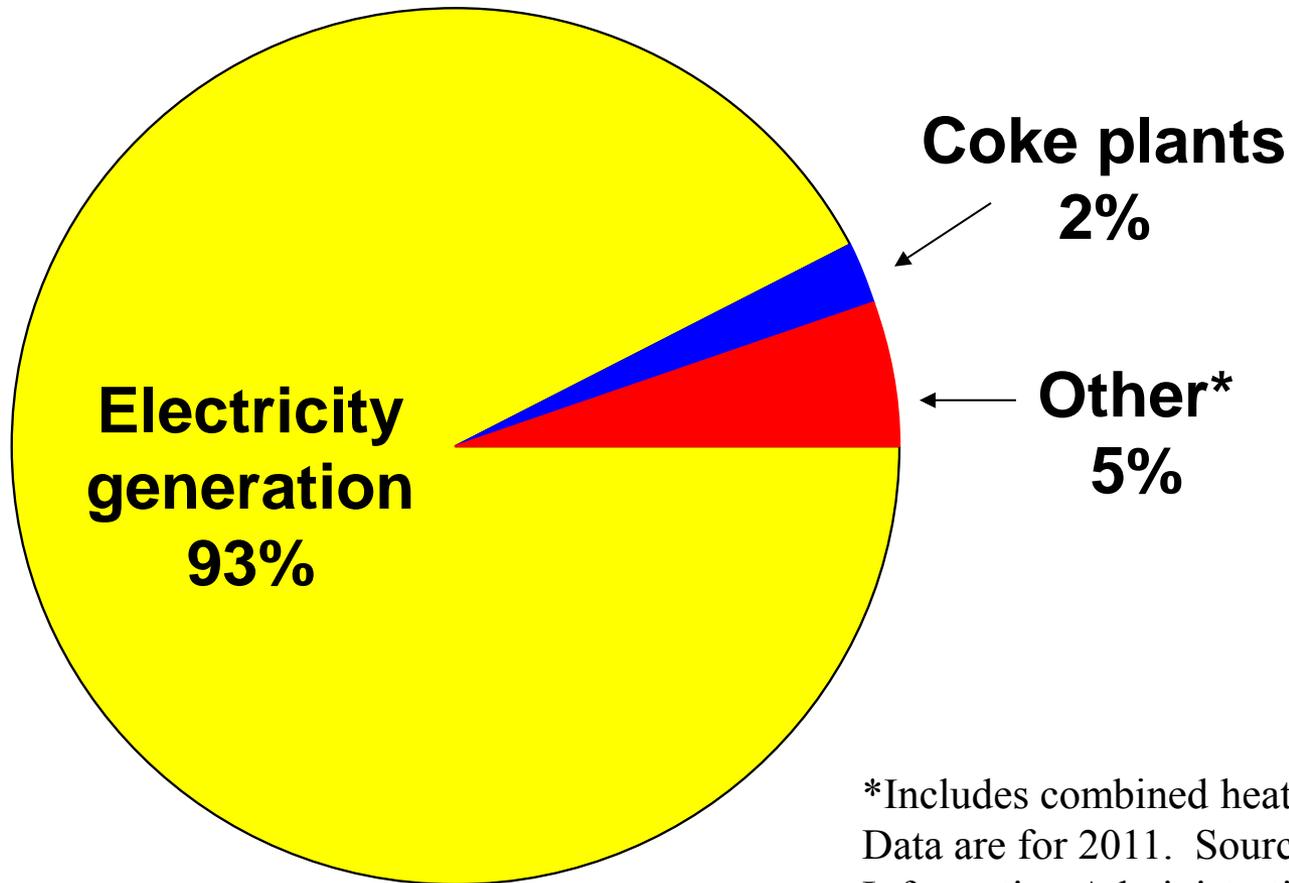
WY, WV, KY Dominate Coal Production

(millions of tons, 1990-2013)



Source: Energy Information Administration

U.S. Coal Consumption by End User

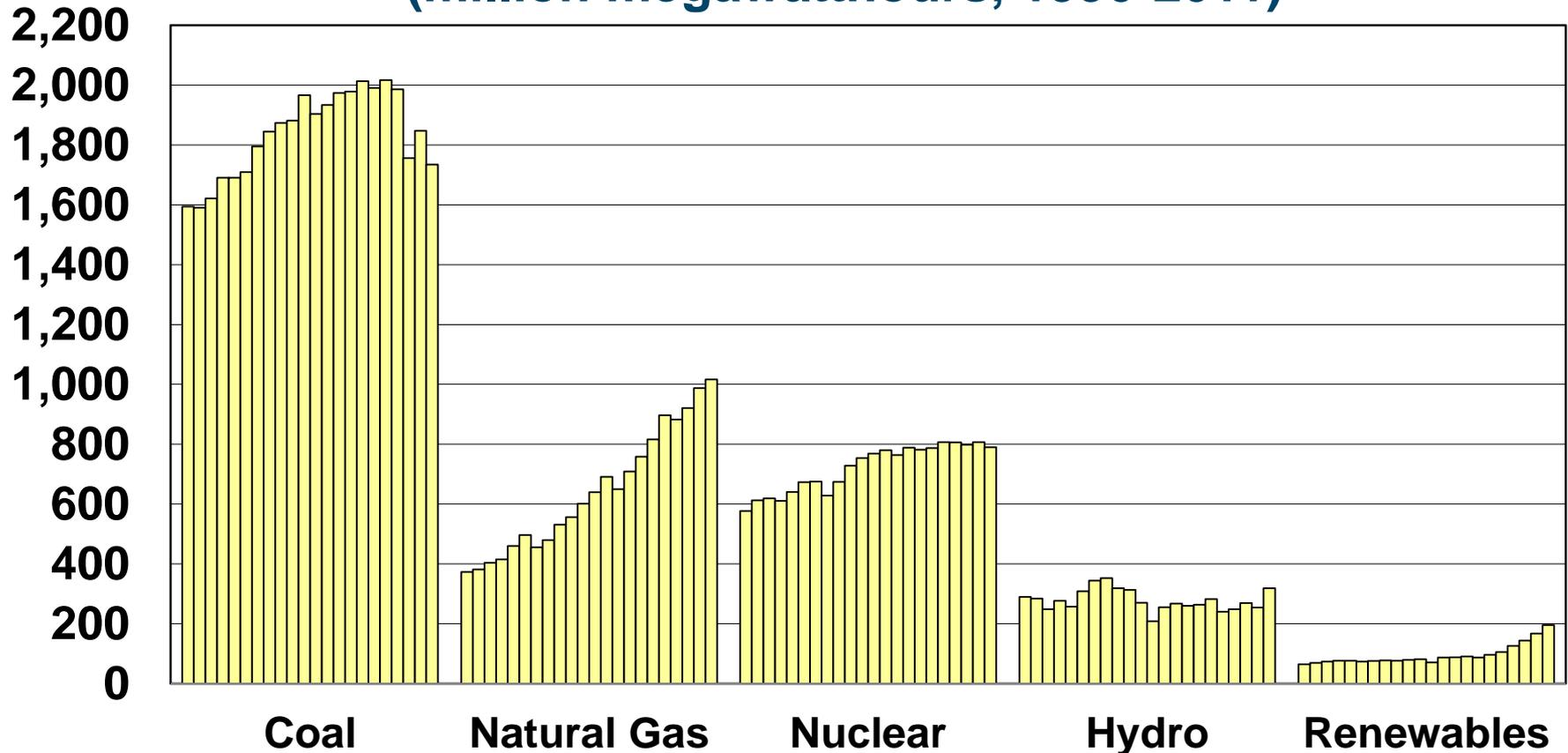


*Includes combined heat and power.
Data are for 2011. Source: Energy
Information Administration



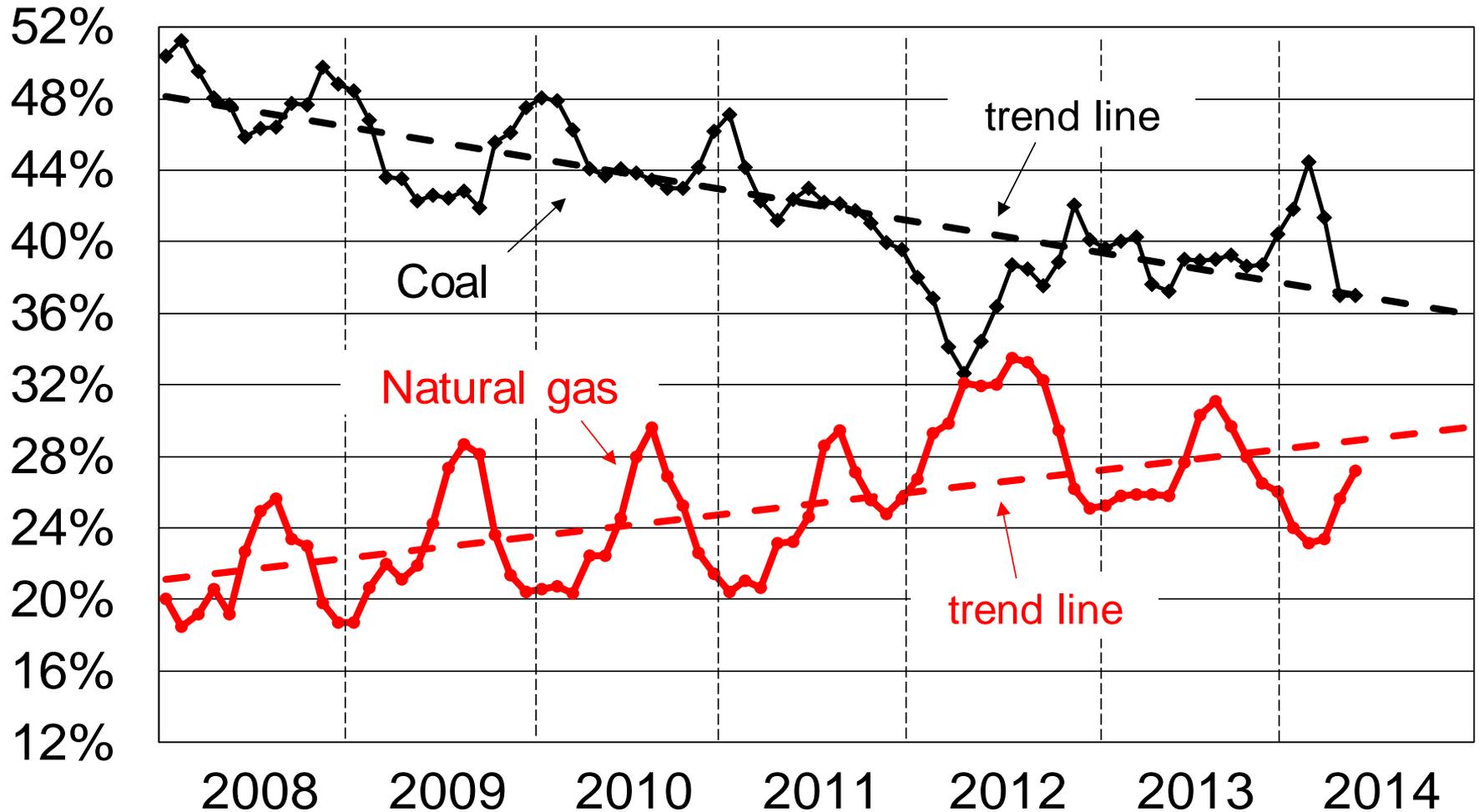
U.S. Electricity Generation by Type of Fuel

(million megawatthours, 1990-2011)



Source: Energy Information Administration

Coal vs. Natural Gas as % of U.S. Electricity Generation: Jan. 2008 - May 2014

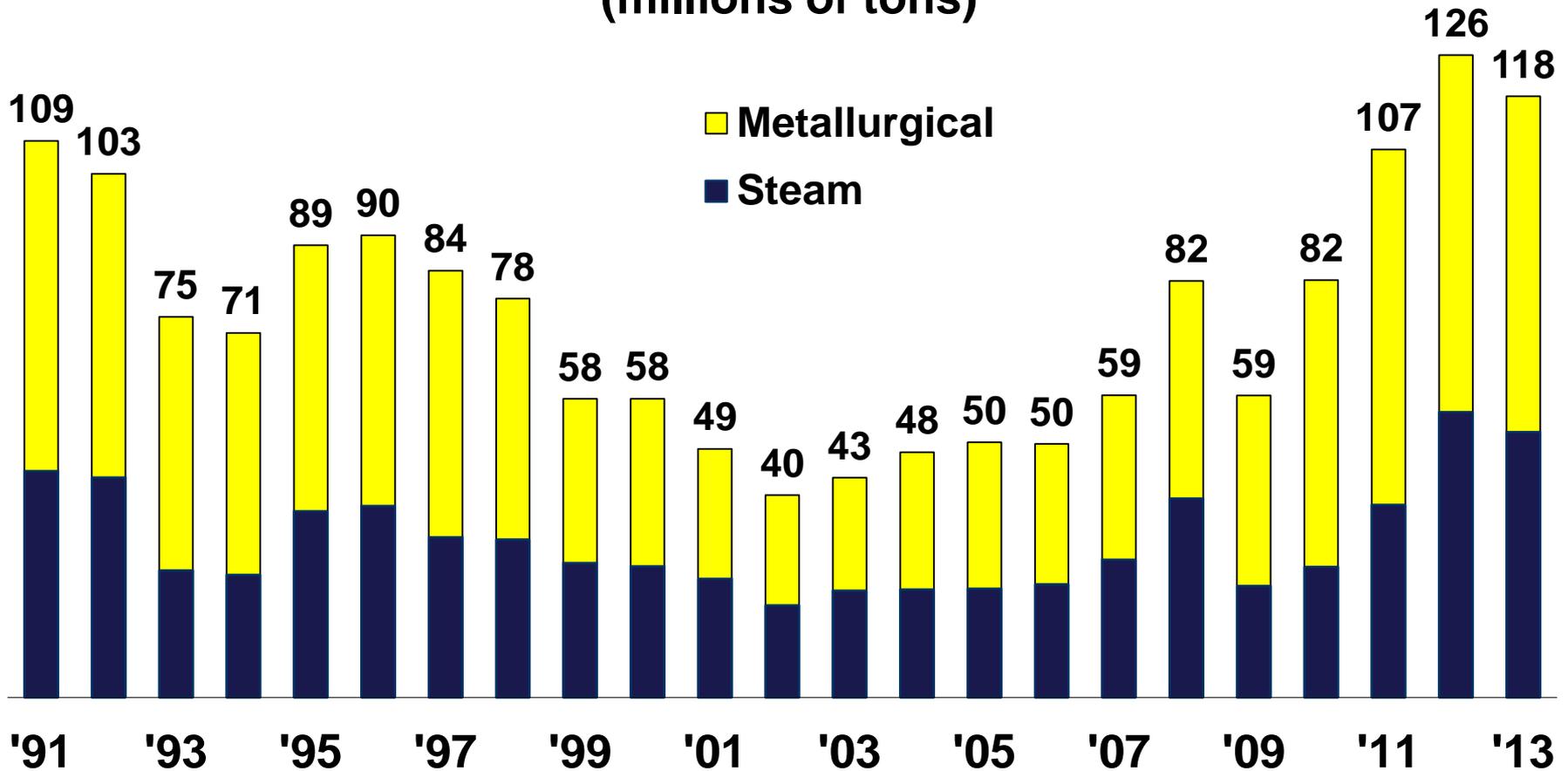


Source: Energy Information Administration



Record Coal Exports in 2012 and 2013

(millions of tons)

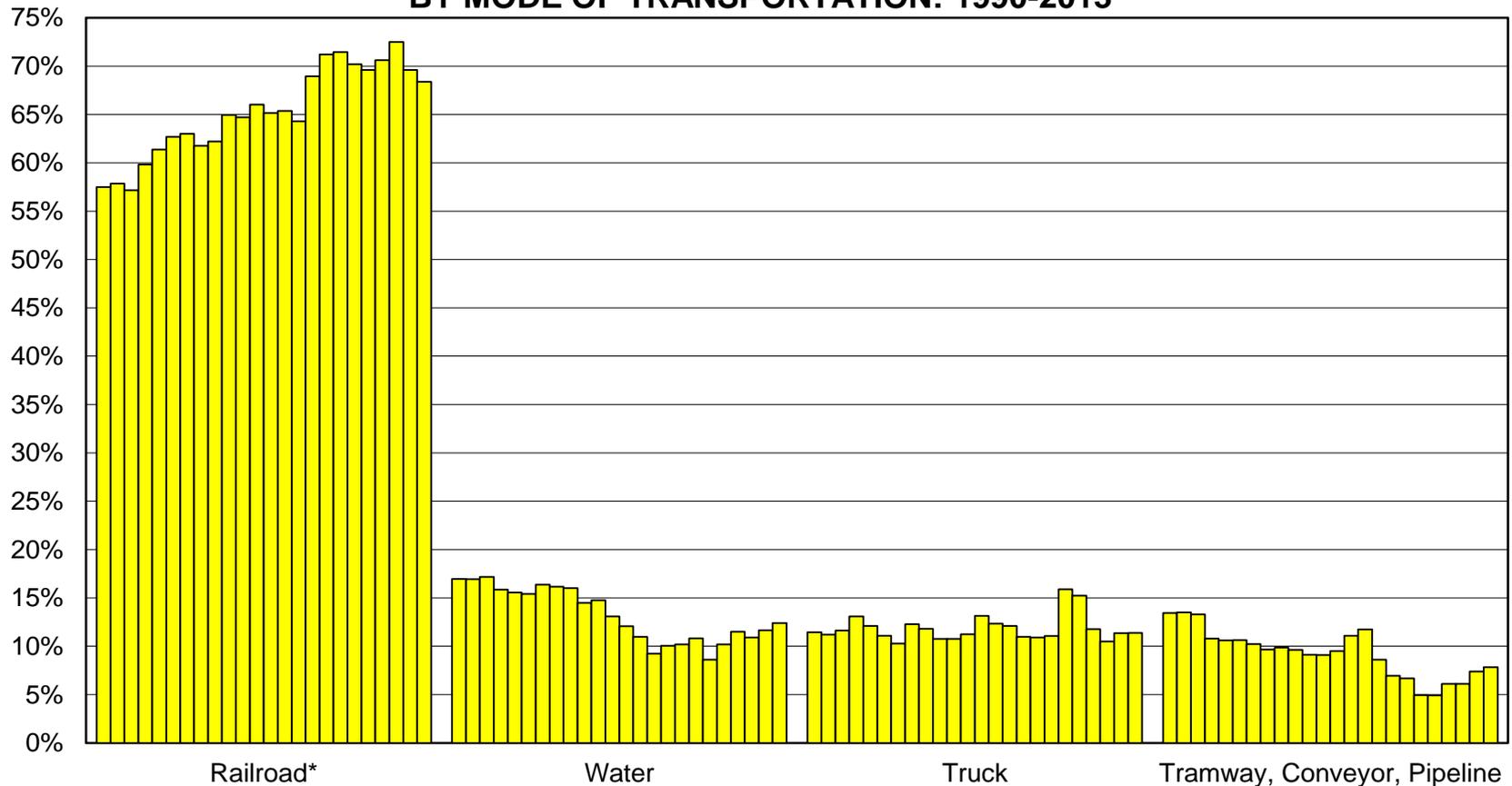


Source: Energy Information Administration



Modal Distribution of Coal Movements

**COAL SHIPMENTS TO FINAL U.S. DESTINATIONS
BY MODE OF TRANSPORTATION: 1990-2013**



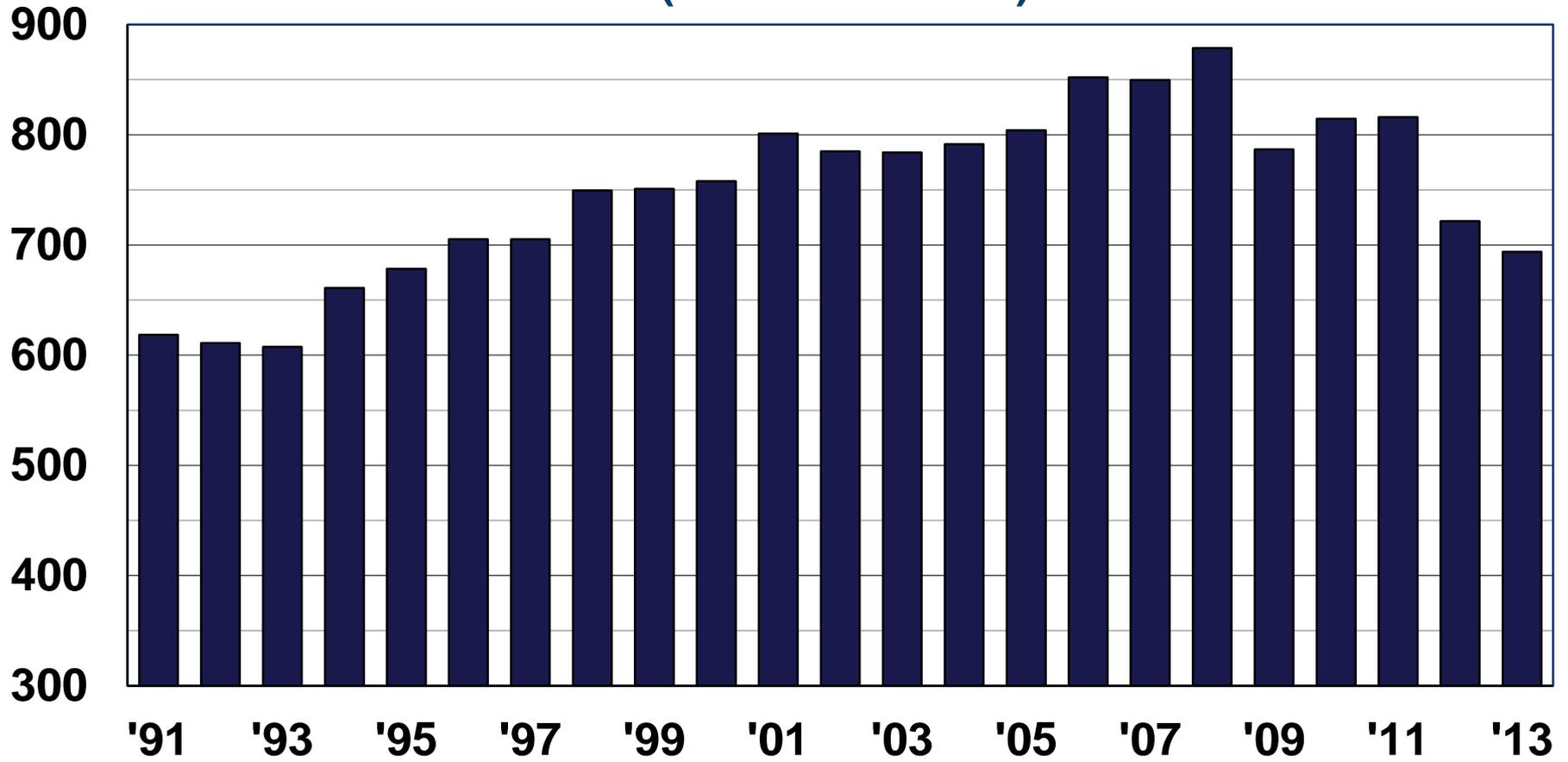
*Includes "private" railroads operated by utilities or mines.

Source: Energy Information Administration

U.S. Rail Coal Tonnage



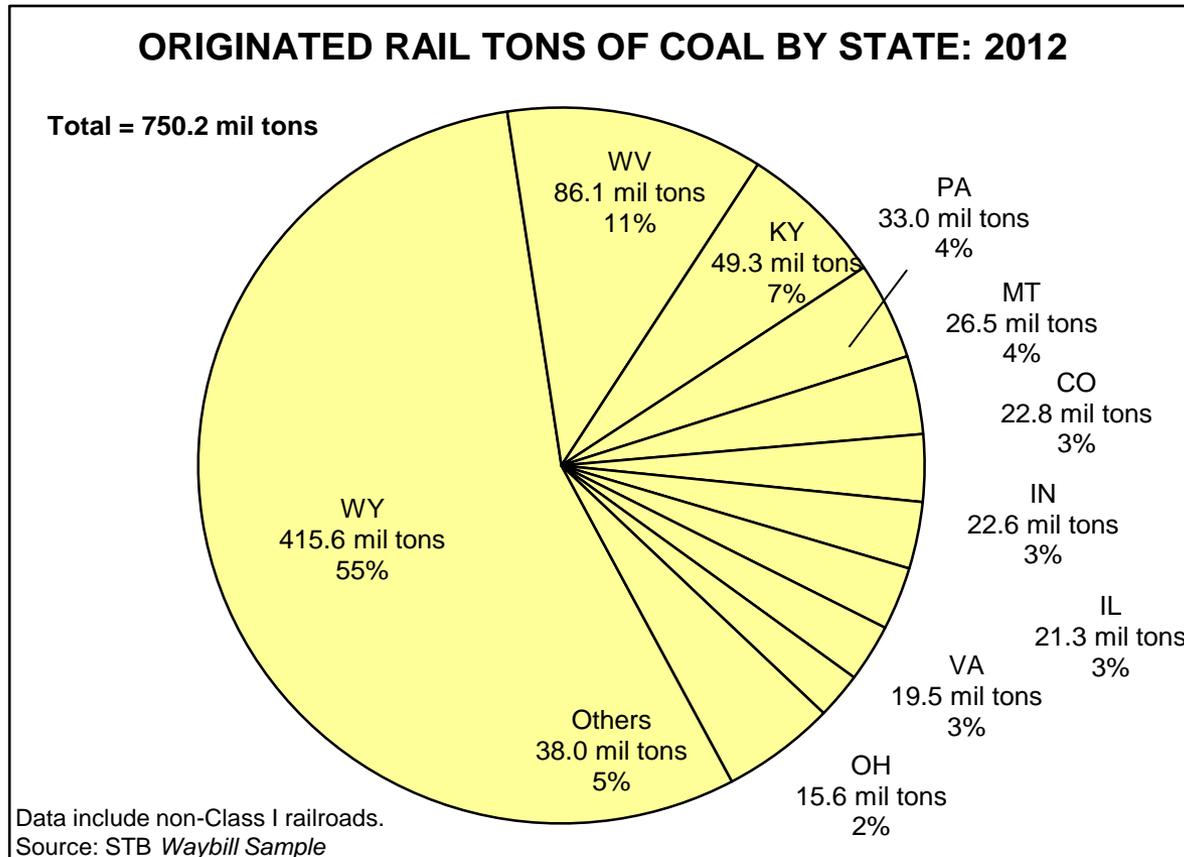
(millions of tons)



Data are originated tons for Class I railroads. Source: AAR

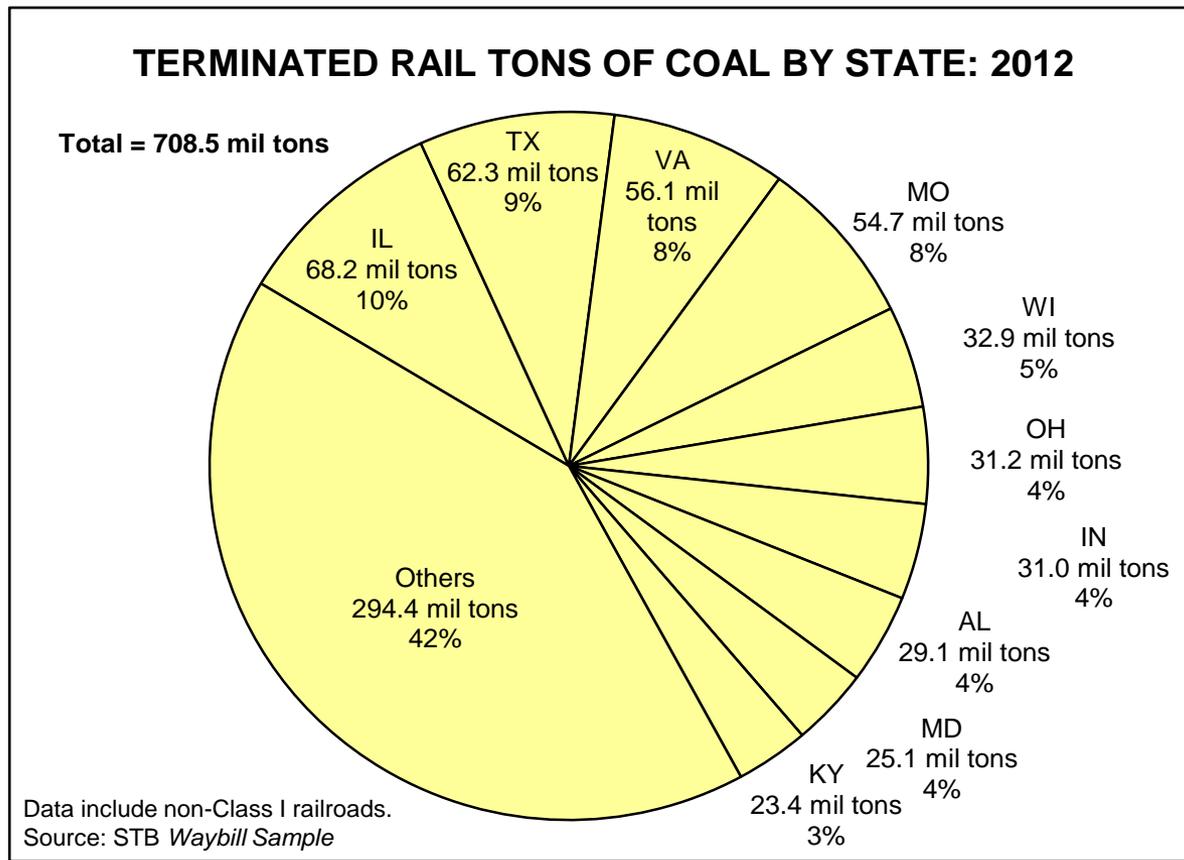


Originated Rail Coal by State





Terminated Rail Coal by State

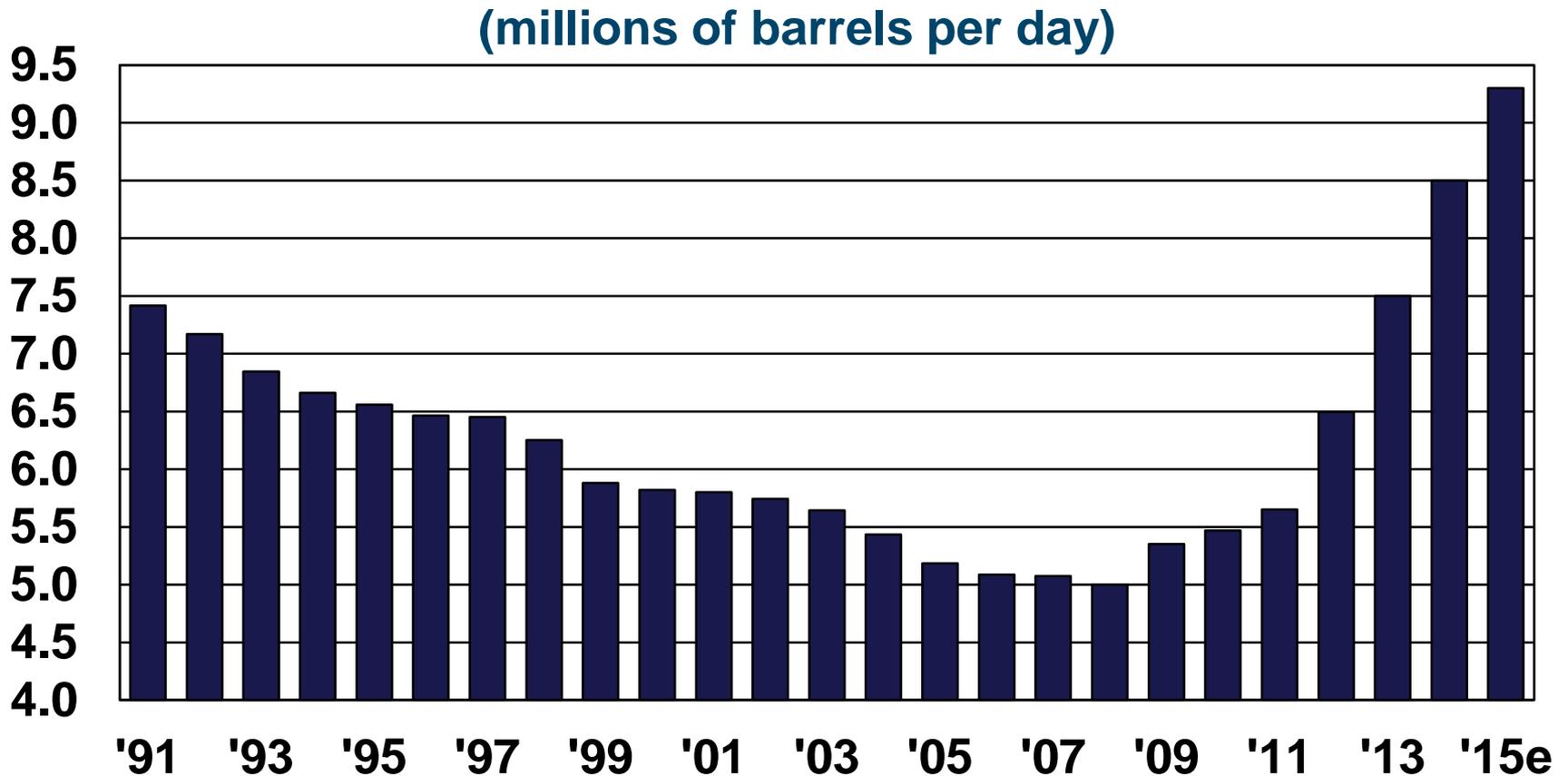




Crude Oil By Rail



U.S. Crude Oil Production



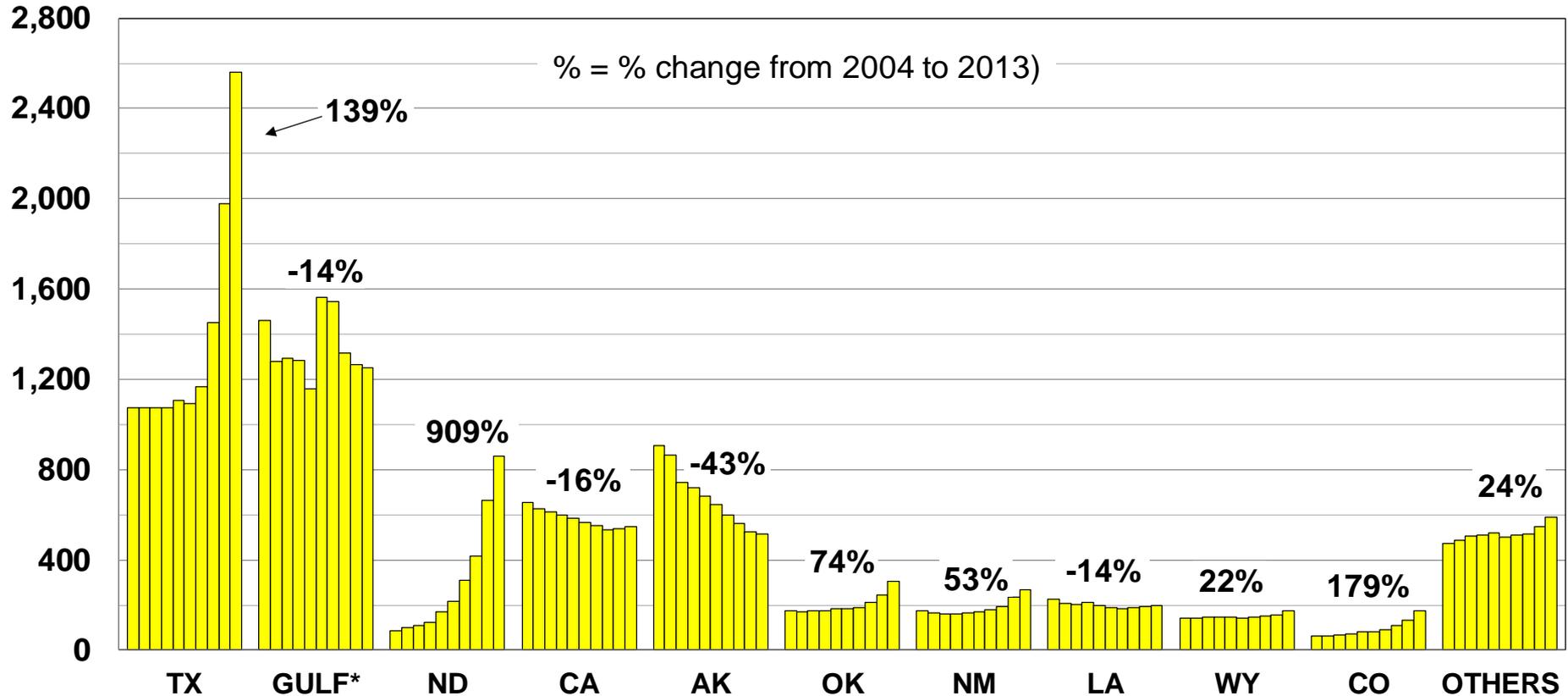
e - Energy Information Administration estimate

Source: EIA



U.S. Crude Oil Production by State: 2004-2013

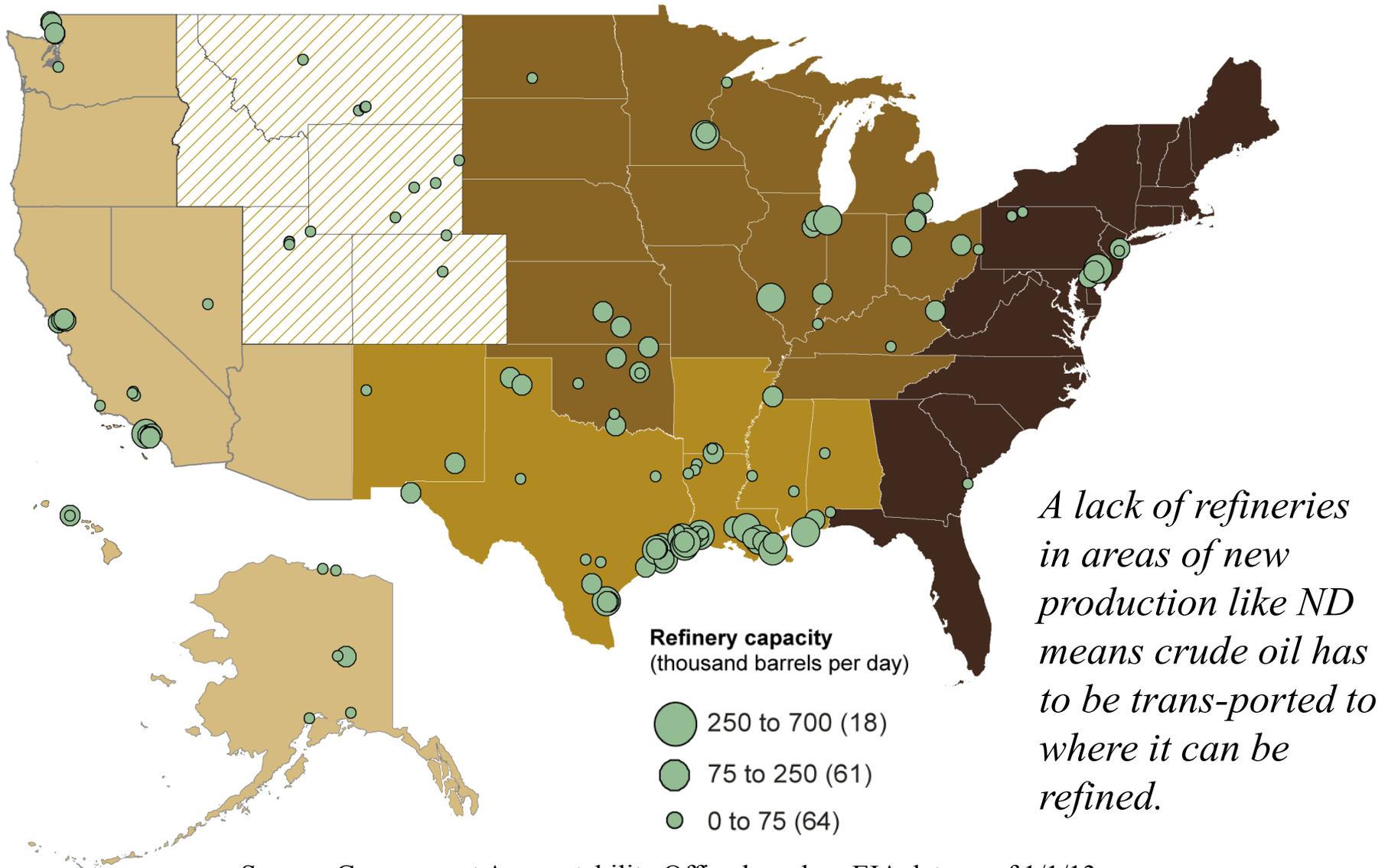
(millions of barrels per day)



*Federal offshore Gulf of Mexico

Source: EIA

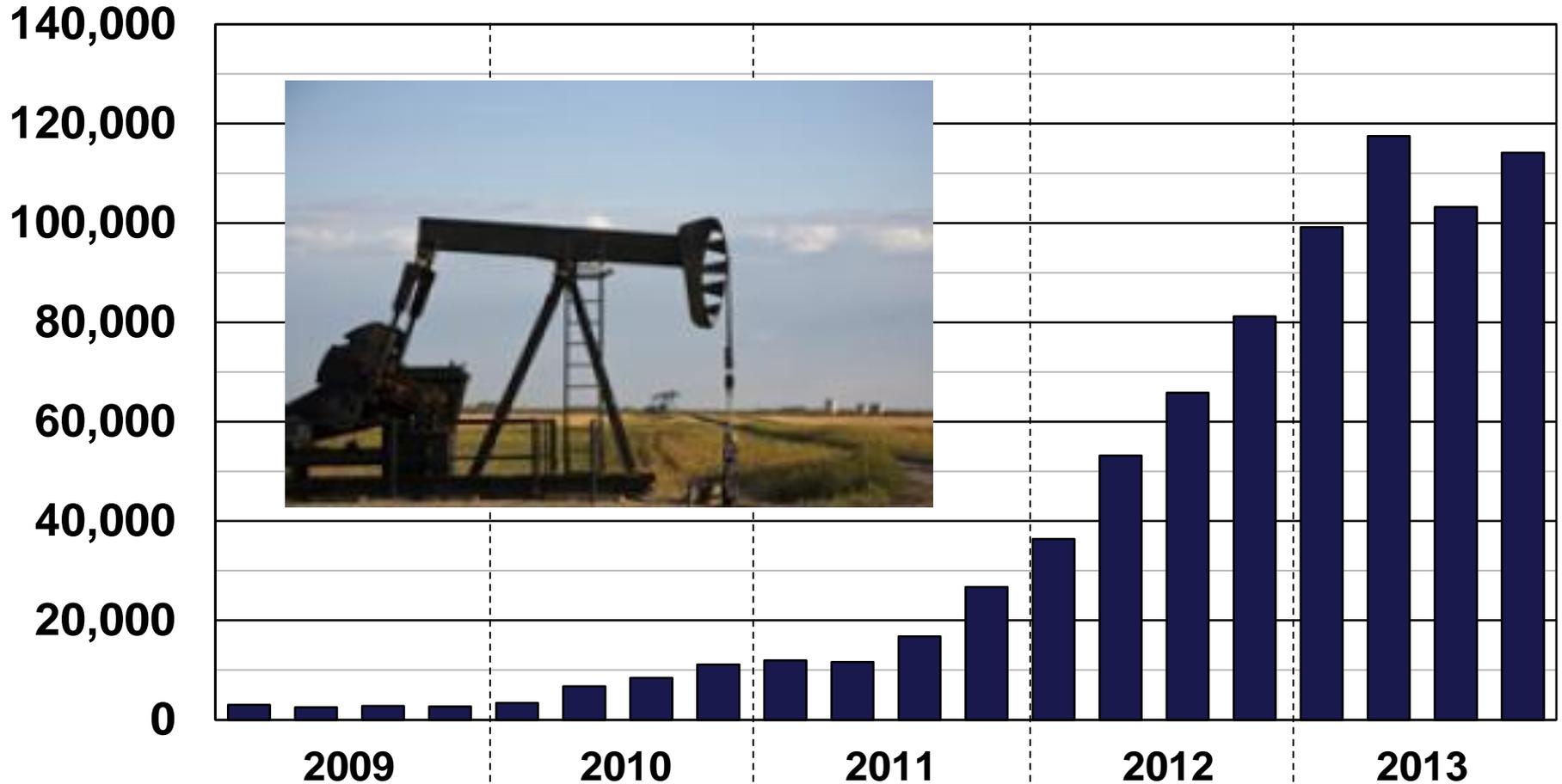
U.S. Oil Refineries



Source: Government Accountability Office based on EIA data as of 1/1/13



Terminated Carloads of Crude Oil on U.S. Class I Railroads



Source: AAR

Why Move Crude by Rail?

- Geographic flexibility
- Responsiveness
- Efficiency
- Underlying infrastructure
- Isolation of commodity



Crude Oil as a % of Total Originated Class I Carloads



Source: AAR



What Does the Future Hold for Crude by Rail?

- Flexibility will remain a key competitive advantage
- Tank car safety improvements
- Price spreads?
- Pace of pipeline expansion unclear
- Bottom line: here to stay



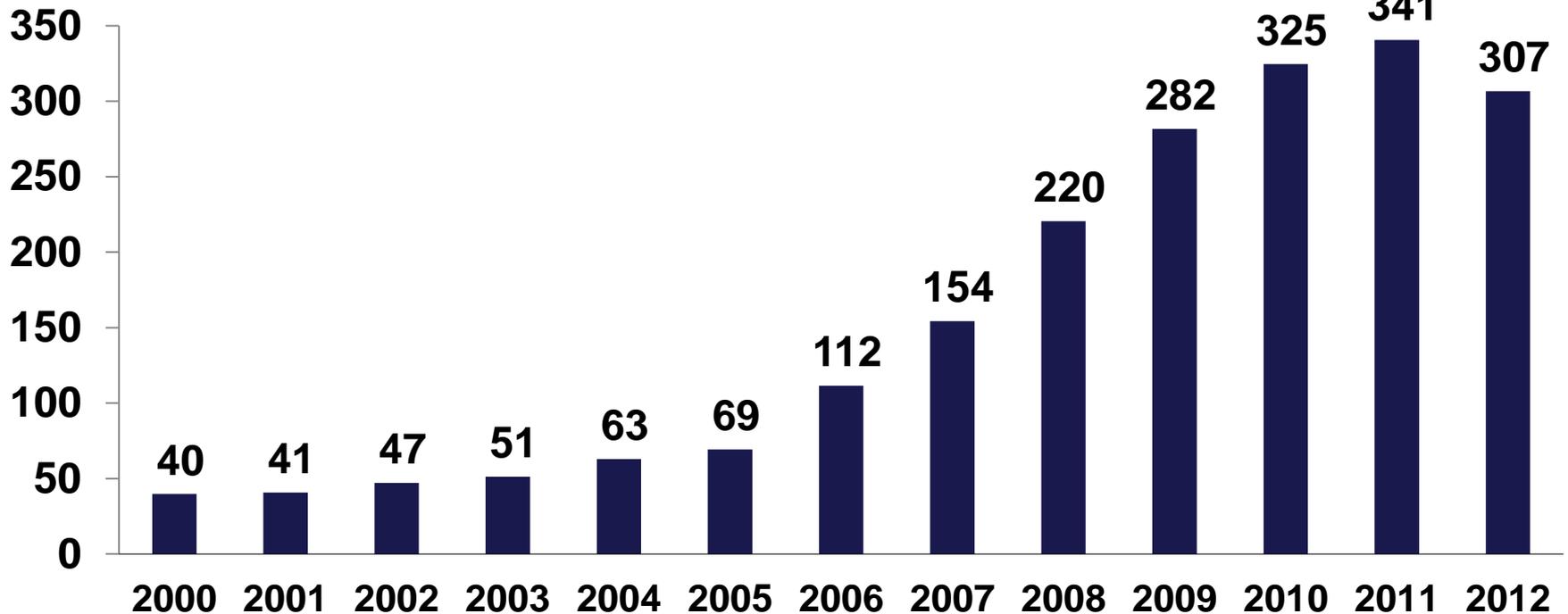


Ethanol by Rail



Ethanol Carloads 2000 - 2012

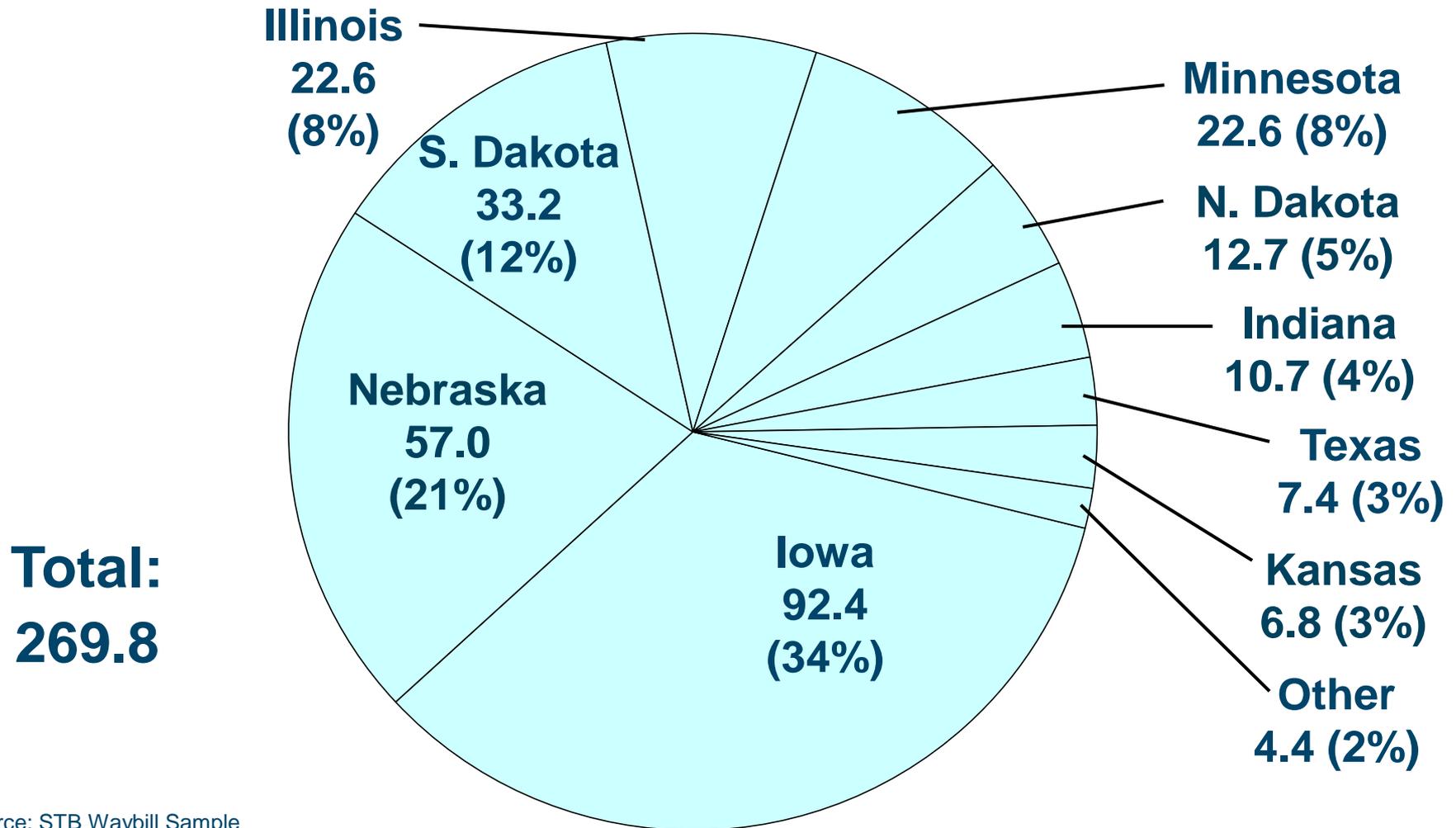
Ethanol by Rail
(thousands of carloads)



Source: STB Waybill Sample



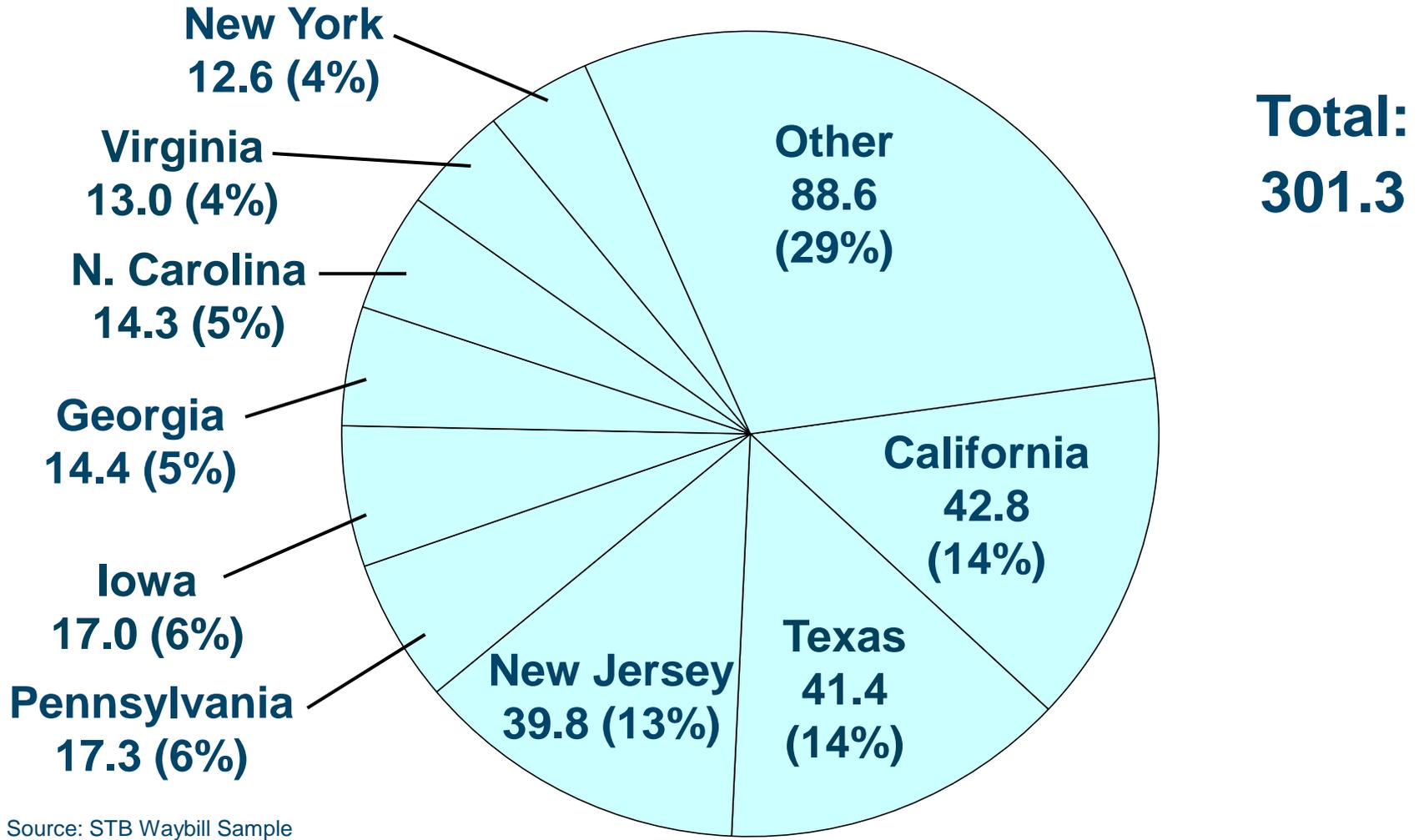
Origins of Ethanol by Rail (thousands of carloads)



Source: STB Waybill Sample



Destinations of Ethanol by Rail (thousands of carloads)



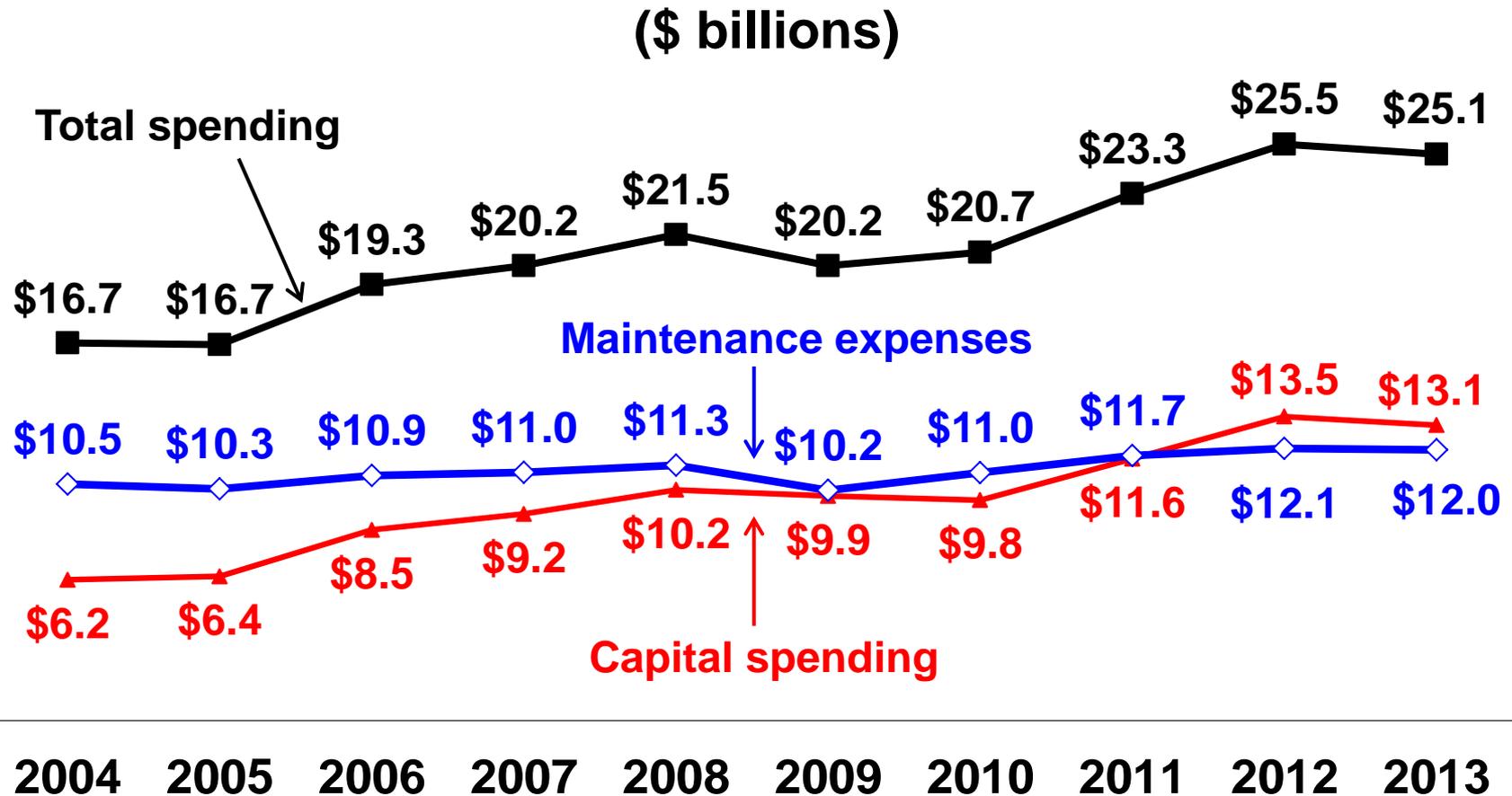
Source: STB Waybill Sample



Rail Investment



Spending by U.S. Railroads on Infrastructure & Equipment

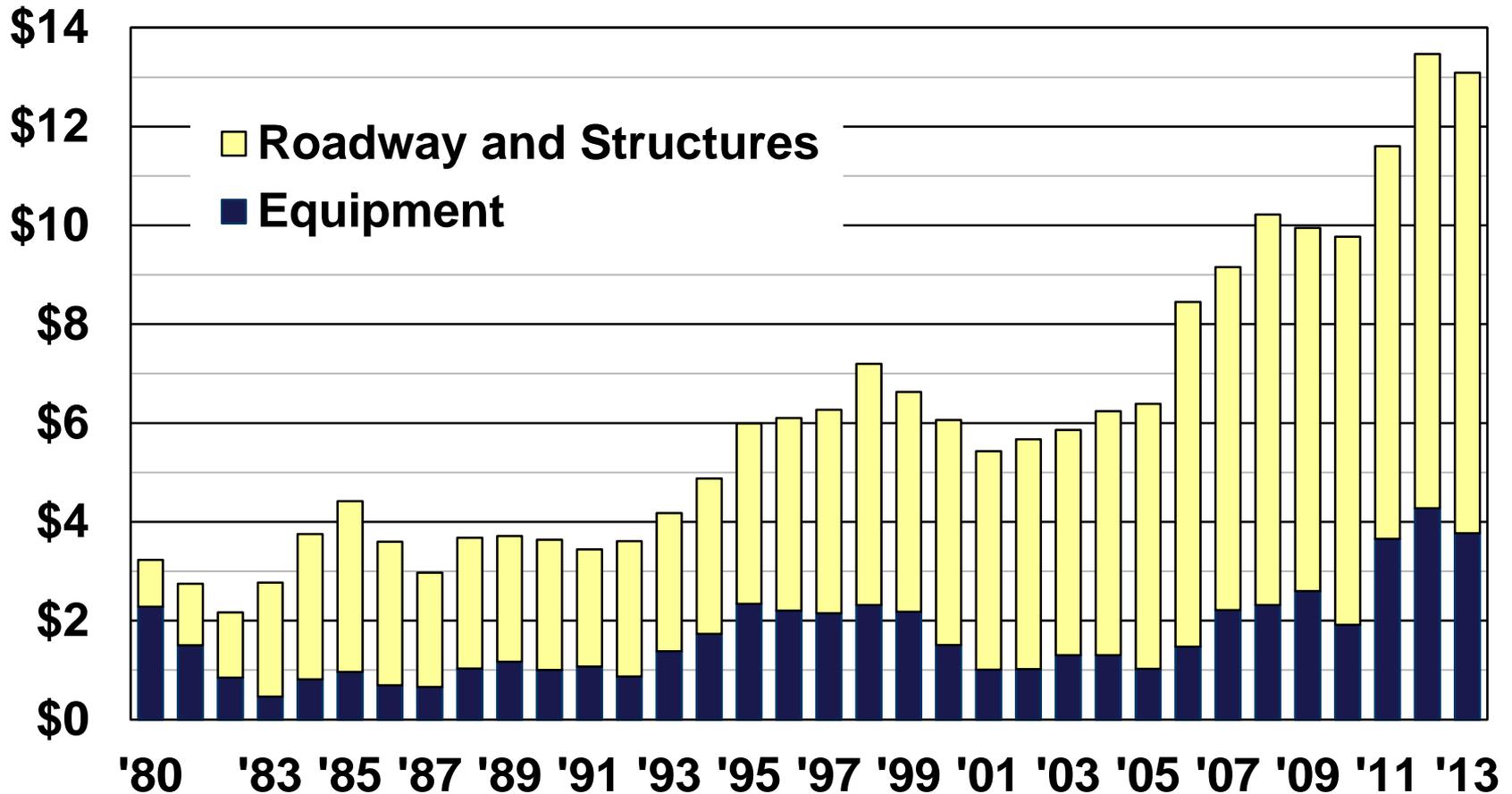


Data are for Class I railroads. Source: AAR



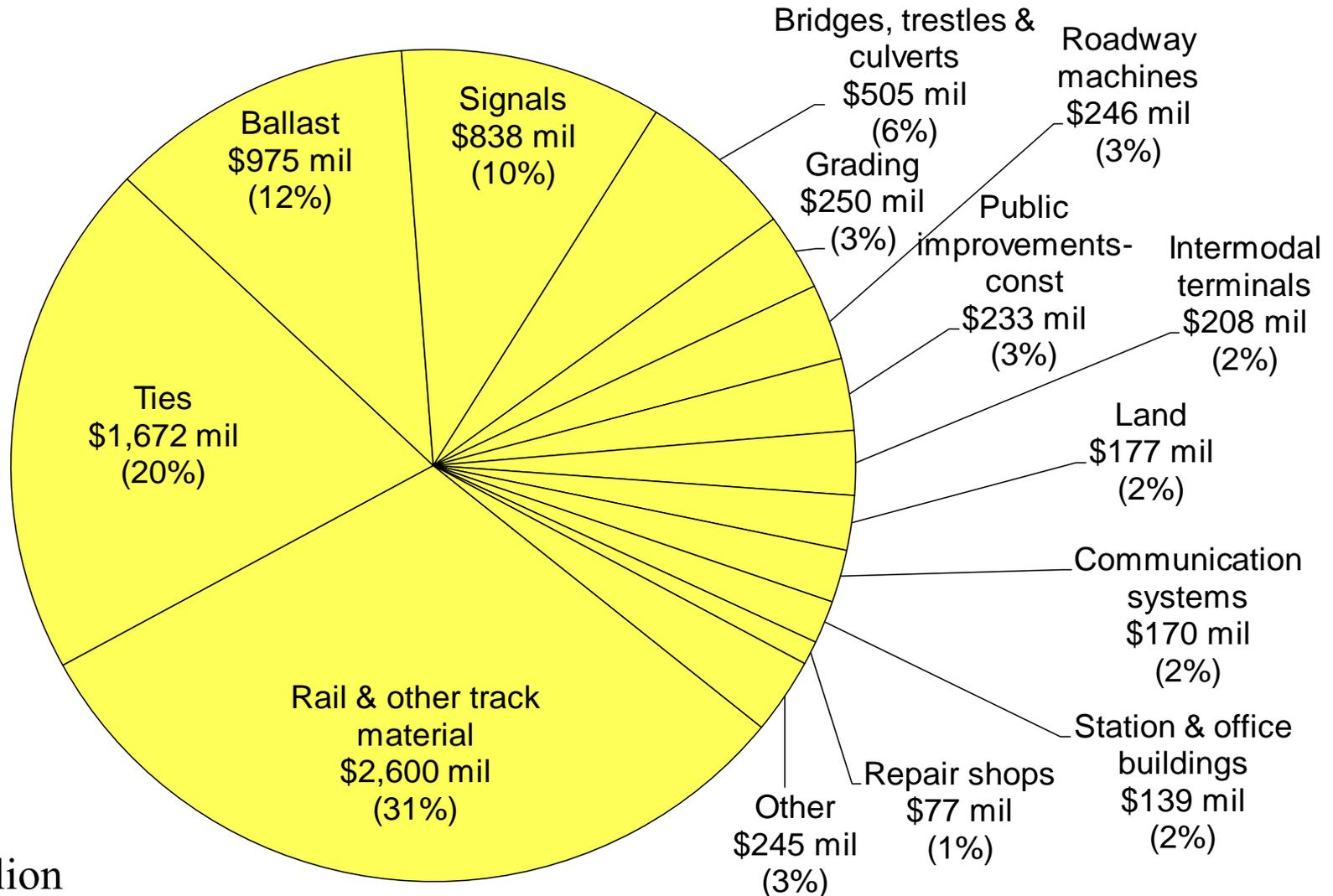
Railroad Capital Spending

(\$ billions, current dollars)



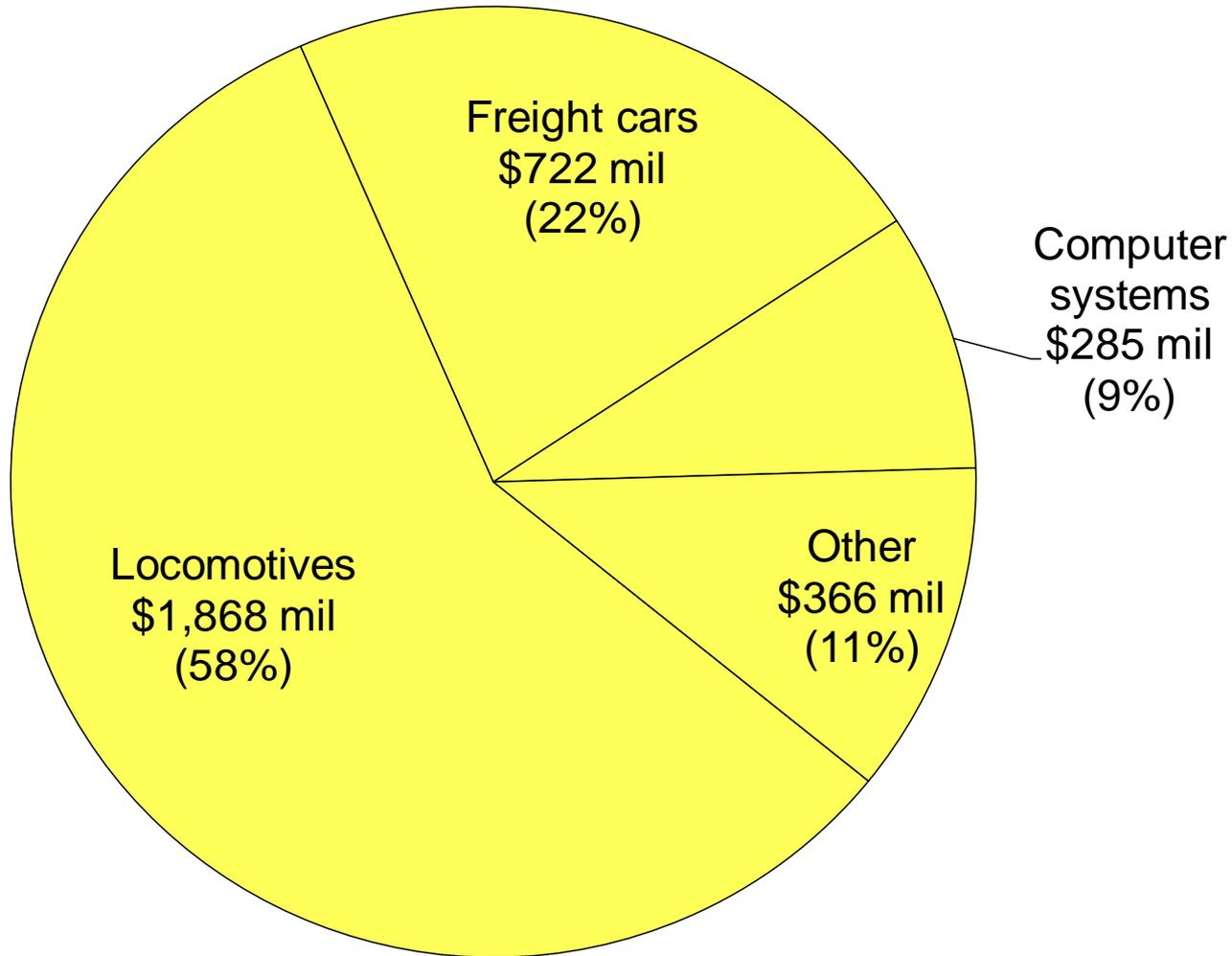
Data are for Class I railroads. Source: AAR

U.S. Freight Railroad Capital Spending for Infrastructure (average per year 2009-2013)



Total =
\$8.3 billion

U.S. Freight Railroad Capital Spending for Equipment (average per year 2009-2013)



Total =
\$3.2 billion



Assn. of American Railroads

www.aar.org



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