

EIA's Oil Outlook 2016



for

The Federal Reserve Banks of Dallas and Kansas City

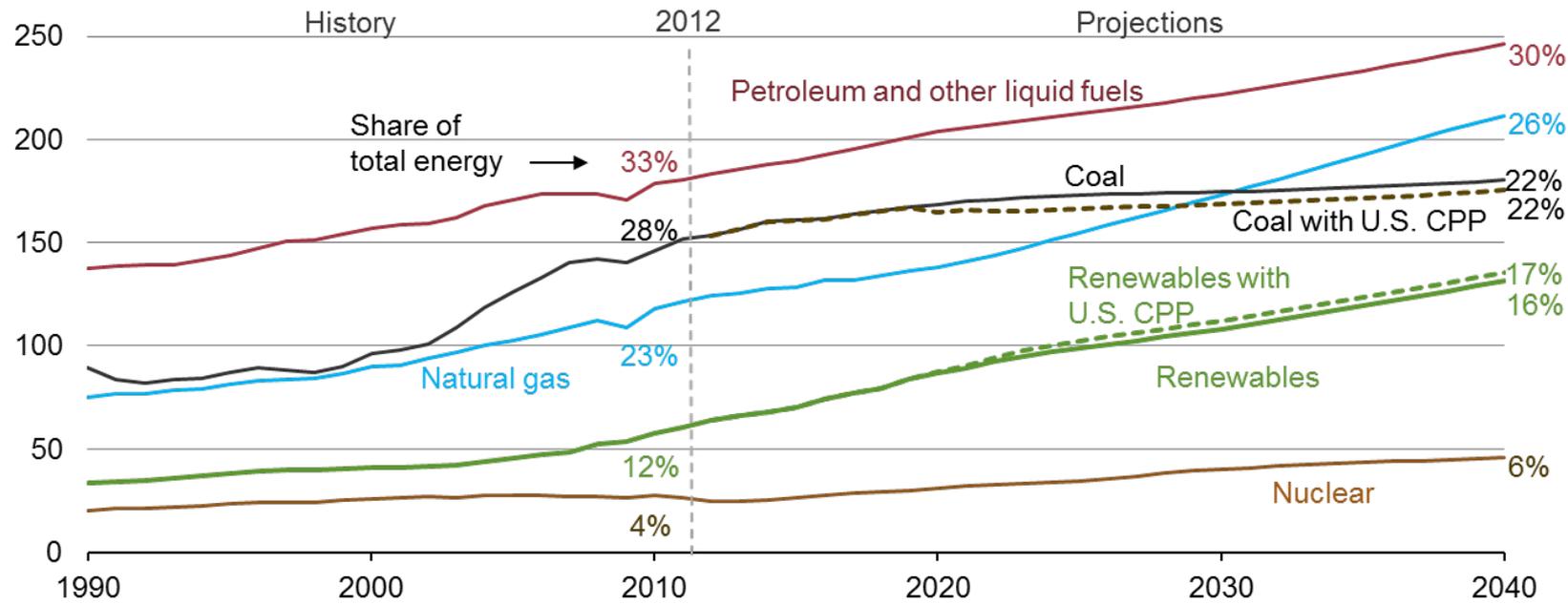
November 18, 2016 | Houston, TX

by

Adam Sieminski, Administrator

Global energy shares: renewables grow fastest, coal use plateaus, natural gas surpasses coal by 2030, and oil maintains its leading share

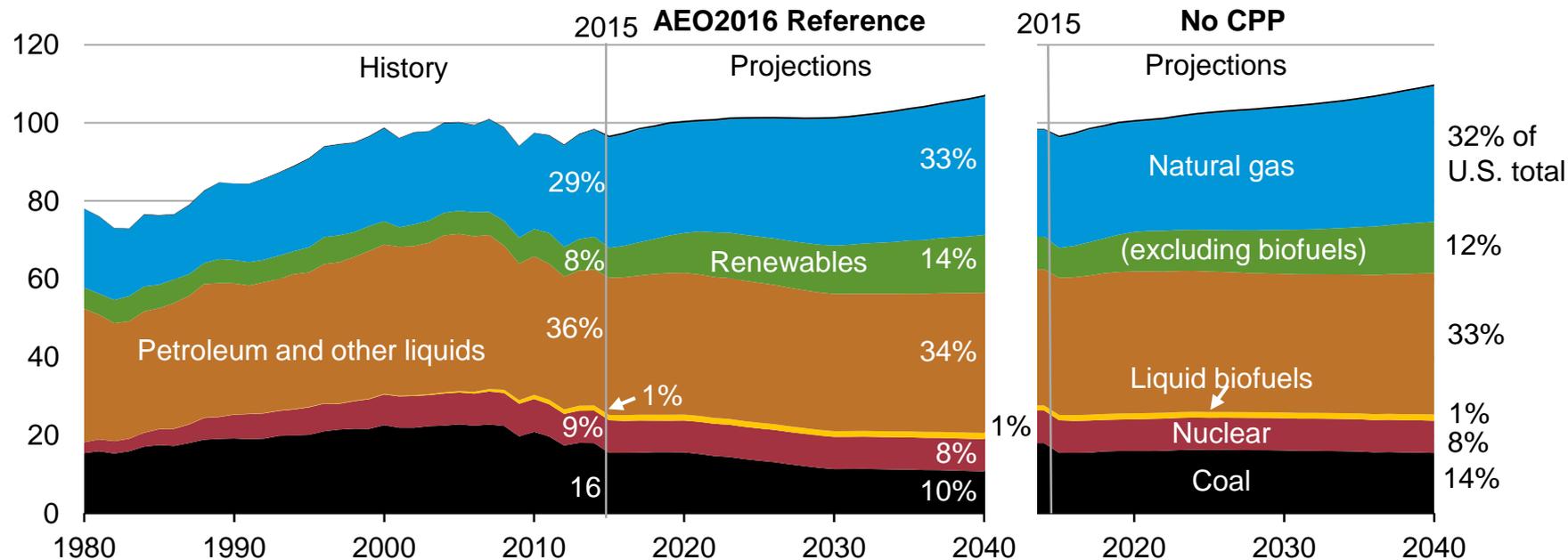
world energy consumption
quadrillion Btu



Source: EIA, International Energy Outlook 2016 and EIA, Analysis of the Impacts of the Clean Power Plan (May 2015)

Reductions in energy intensity largely offset impact of GDP growth, leading to slow projected growth in U.S. energy use

U.S. primary energy consumption
quadrillion Btu



Source: EIA, Annual Energy Outlook 2016

Many issues increase uncertainty...

- Implementation and strength of climate and environmental policies
- Economic growth in key economies (U.S., Europe, China, Brazil, Russia)
- Technology improvement rates (both supply and demand)
- Unrest in oil producing countries / OPEC production
- Future of nuclear generating capacity

U.S. oil outlook

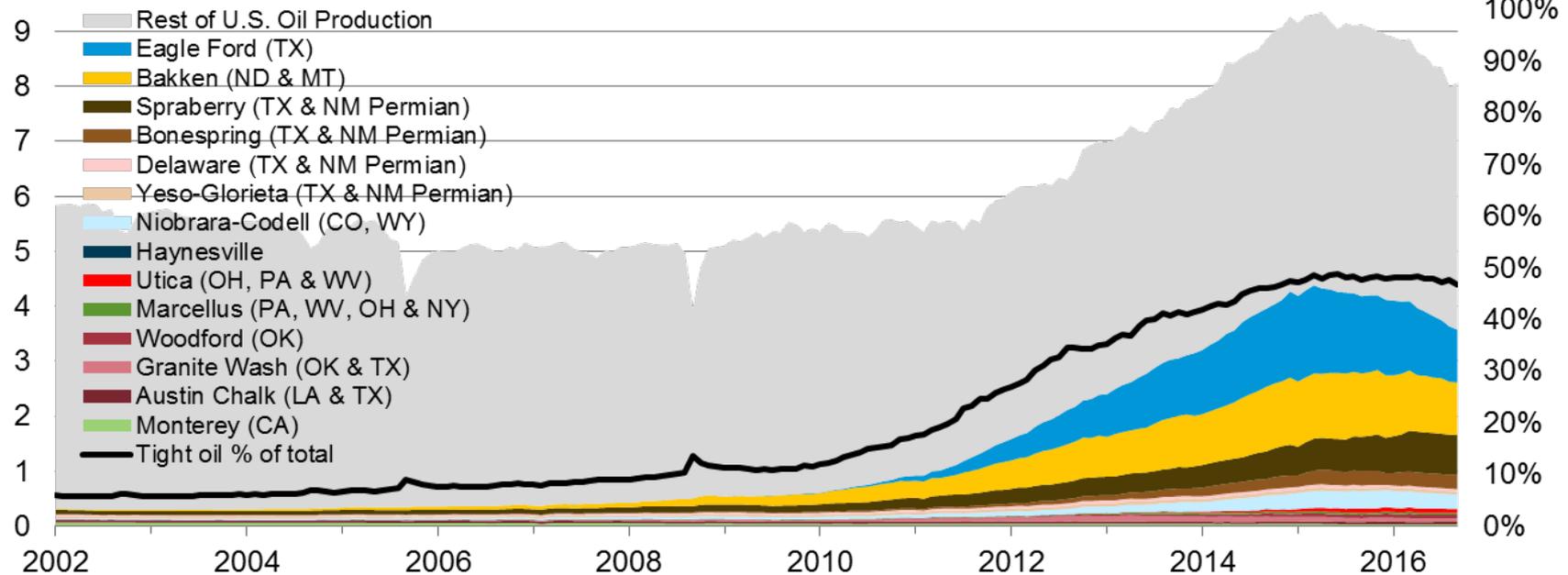
Estimated U.S. tight oil production was 3.9 MMbbl/d in September 2016 about 47% of total U.S. oil production (8.4 MMbbl/d)

tight oil production

million barrels of oil per day

tight oil production as a

percent of total oil production

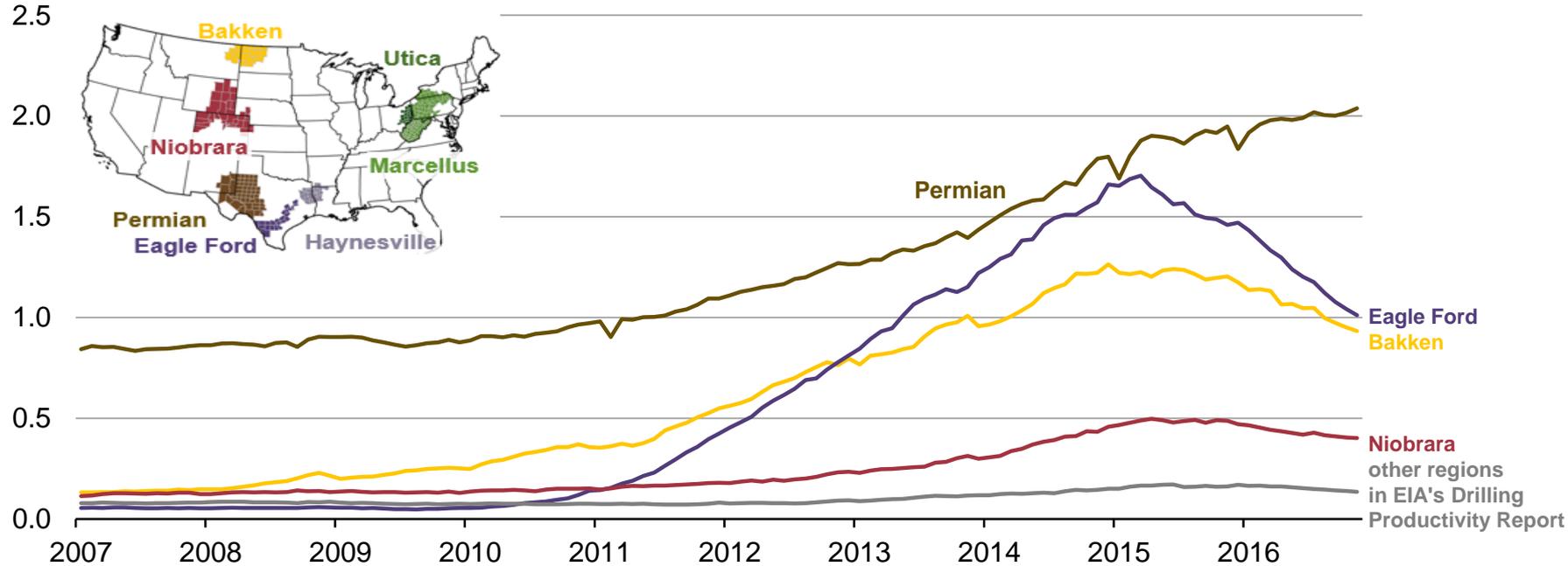


Sources: EIA derived from state administrative data collected by DrillingInfo Inc. Data are through September 2016 and represent EIA's official tight oil estimates, but are not survey data. State abbreviations indicate primary state(s).

U.S. oil drilling increasingly focused in Permian Basin

Oil production in selected regions (Jan 2007 - Dec 2016)

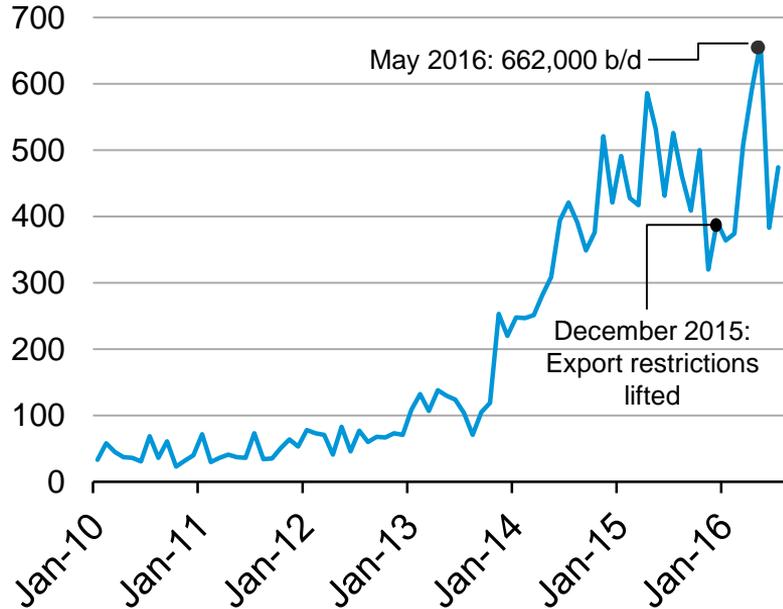
million barrels per day



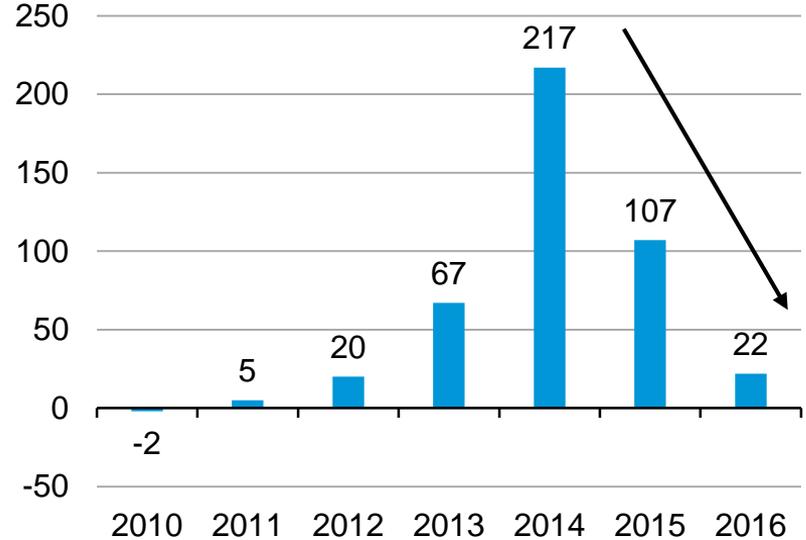
Source: U.S. Energy Information Administration, Drilling Productivity Report, November 2016

U.S. crude oil exports have grown, but the rate of growth is decelerating

monthly U.S. crude oil exports
thousand barrels per day



U.S. crude oil exports year-over-year change
thousand barrels per day



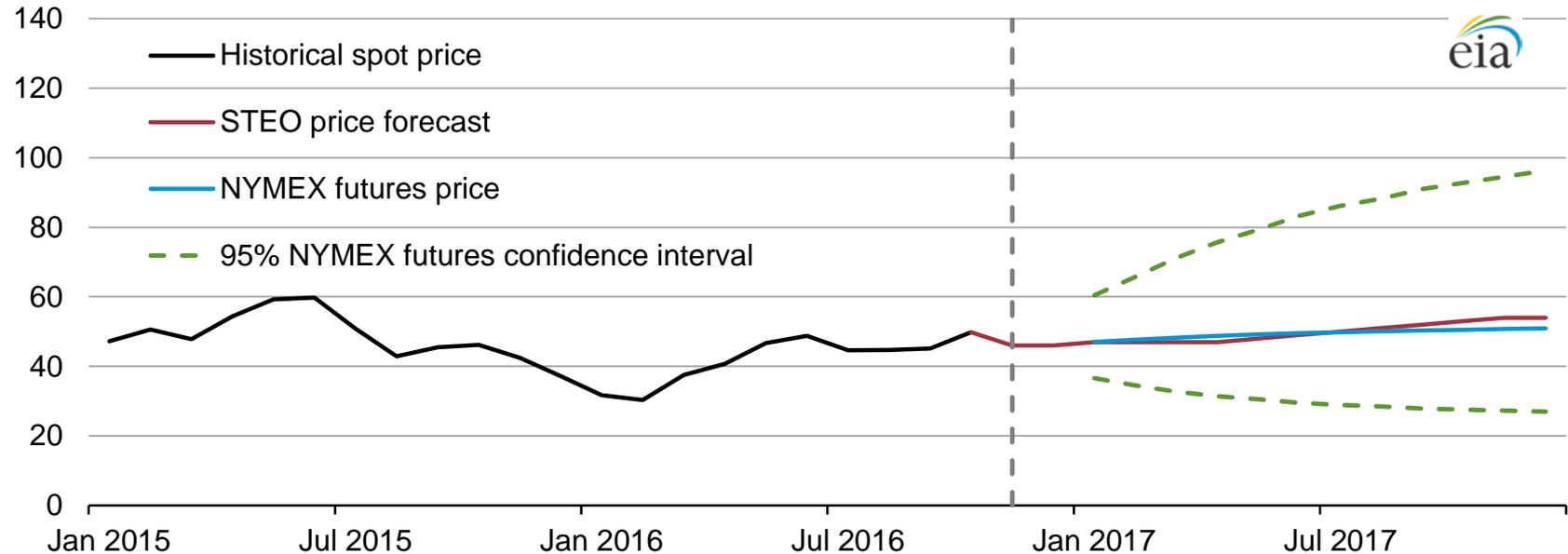
Note: 2016 data through July is compared to full year 2015

Source: U.S. Energy Information Administration, Petroleum Supply Monthly

EIA forecasts West Texas intermediate crude oil spot price to average \$47/b this winter

West Texas intermediate (WTI) crude oil price

dollars per barrel

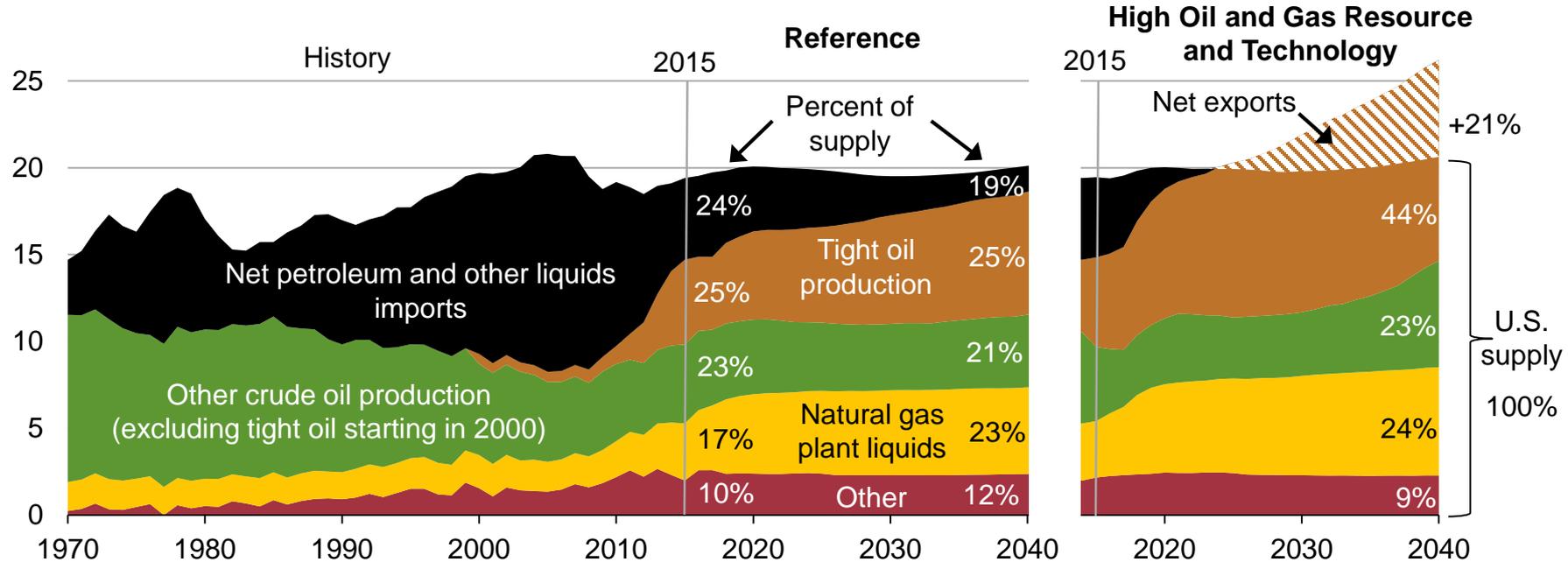


Note: Confidence interval derived from options market information for the 5 trading days ending October 6, 2016. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Source: EIA Short-Term Energy Outlook, November 2016, and CME Group.

Combination of increased tight oil production and higher fuel efficiency drives projected decline in oil imports

U.S. liquid fuels supply
million barrels per day



Note: "Other" includes refinery gain, biofuels production, all stock withdrawals, and other domestic sources of liquid fuels

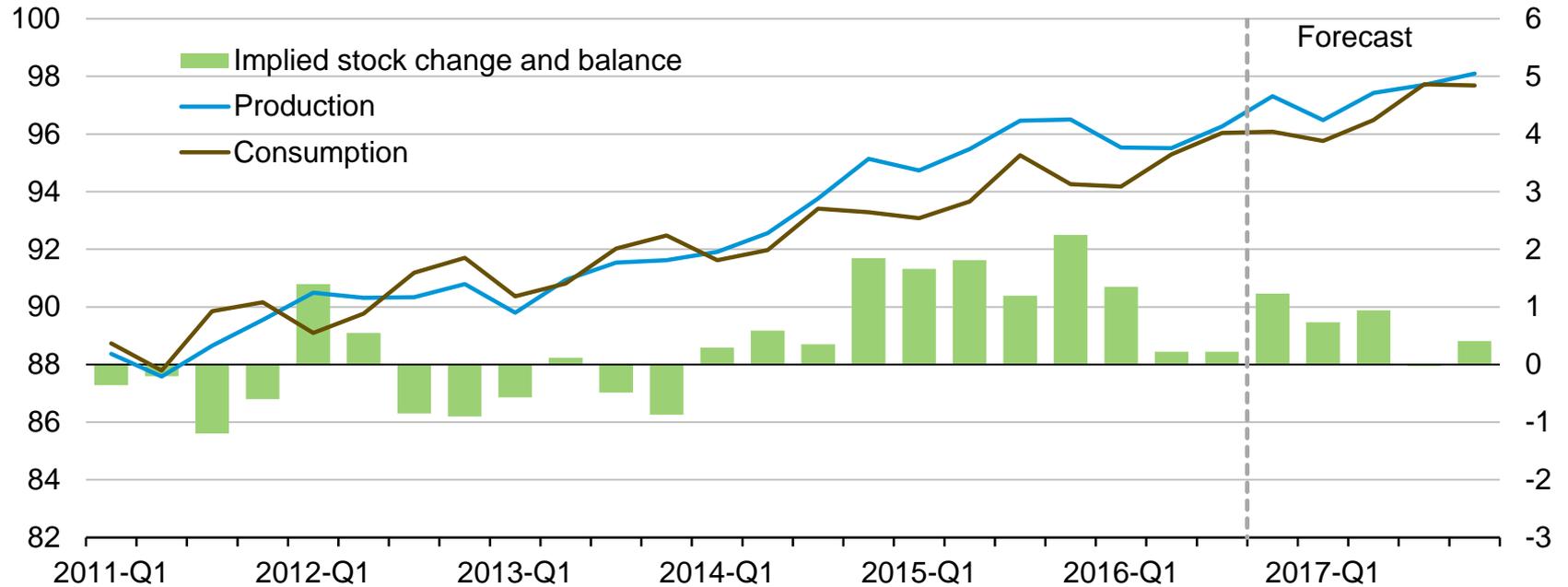
Source: EIA, Annual Energy Outlook 2016

International oil outlook

World liquid fuels production and consumption balance

world production and consumption
million barrels per day (MMb/d)

implied stock change and balance
million barrels per day (MMb/d)

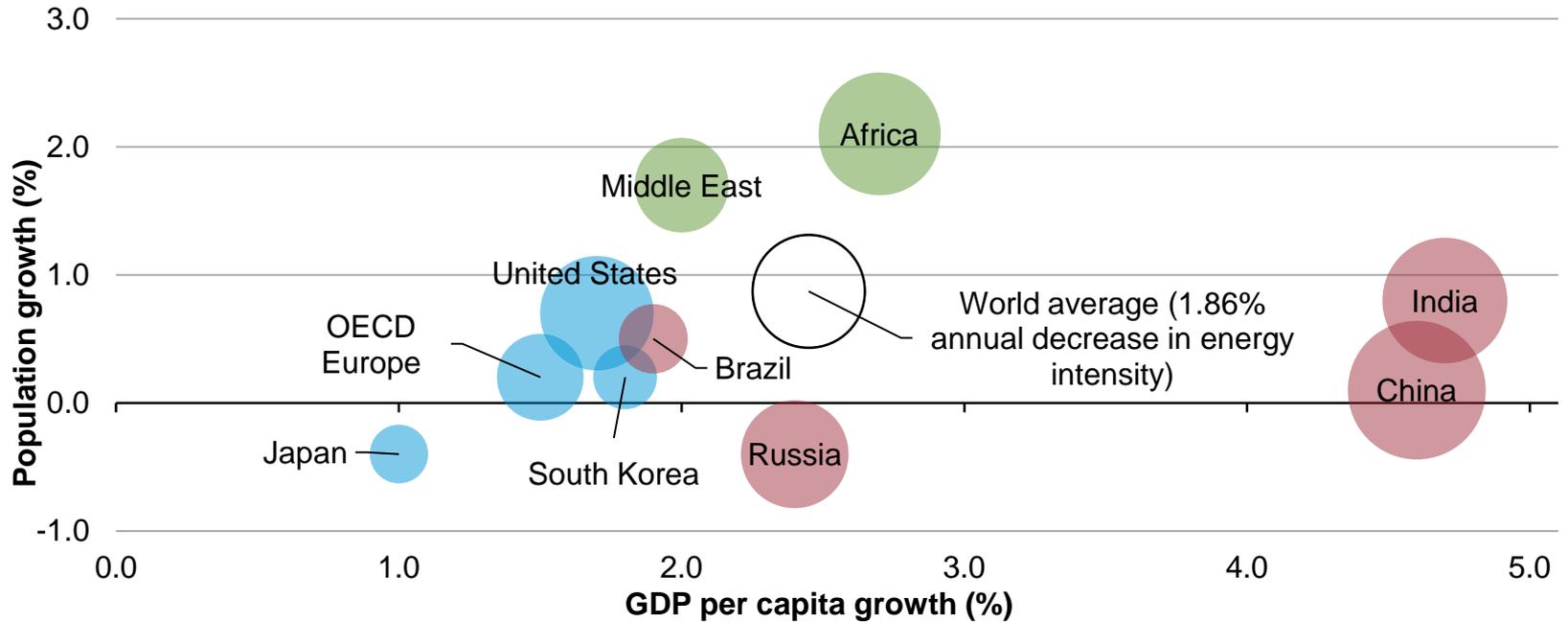


Source: Short-Term Energy Outlook, November 2016

Economic activity and population drive increases in energy use; energy intensity (E/GDP) improvements moderate this trend

average annual percent change (2012–40)

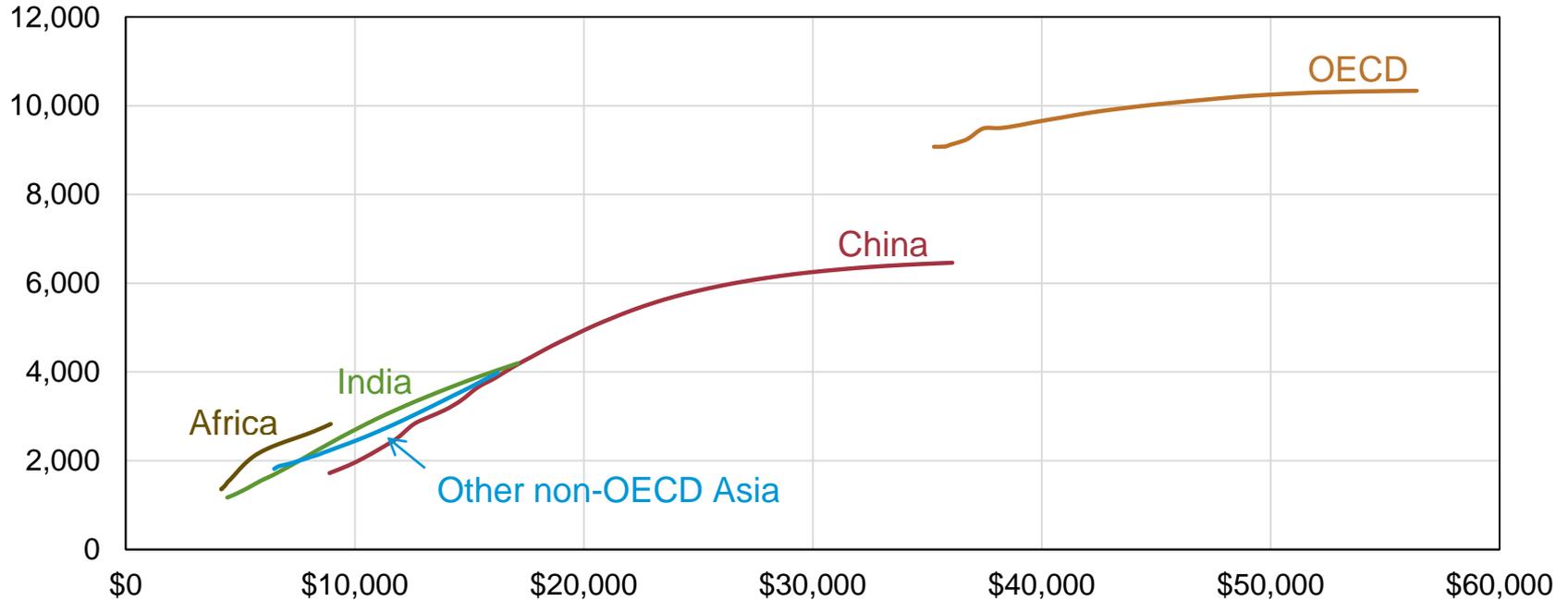
percent per year



Source: EIA, International Energy Outlook 2016

Passenger-miles per person will rise as GDP per capita grows; travel growth is largely outside the OECD

passenger-miles per capita (left-axis) and GDP per capita (horizontal-axis) for selected country groupings 2010–40



Source: EIA, *International Energy Outlook 2016*

For more information

U.S. Energy Information Administration home page | www.eia.gov

Annual Energy Outlook | www.eia.gov/aeo

Short-Term Energy Outlook | www.eia.gov/steo

International Energy Outlook | www.eia.gov/ieo

Monthly Energy Review | www.eia.gov/mer

Today in Energy | www.eia.gov/todayinenergy

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