

# The U.S. Oil and Natural Gas Production Outlook



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*for*

*PRG Energy Outlook Conference*

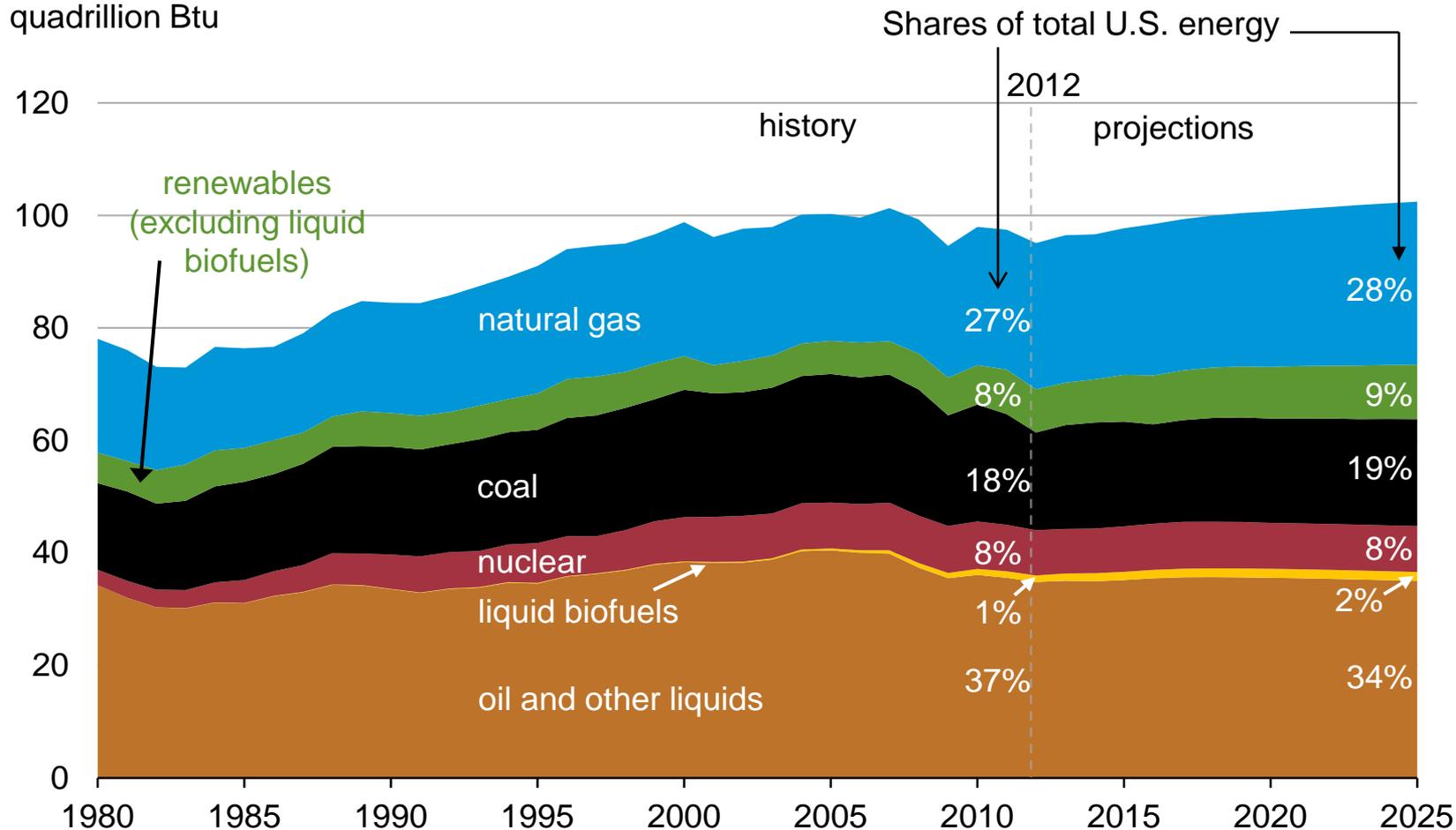
*September 22, 2014*

*by*

*Adam Sieminski, Administrator*

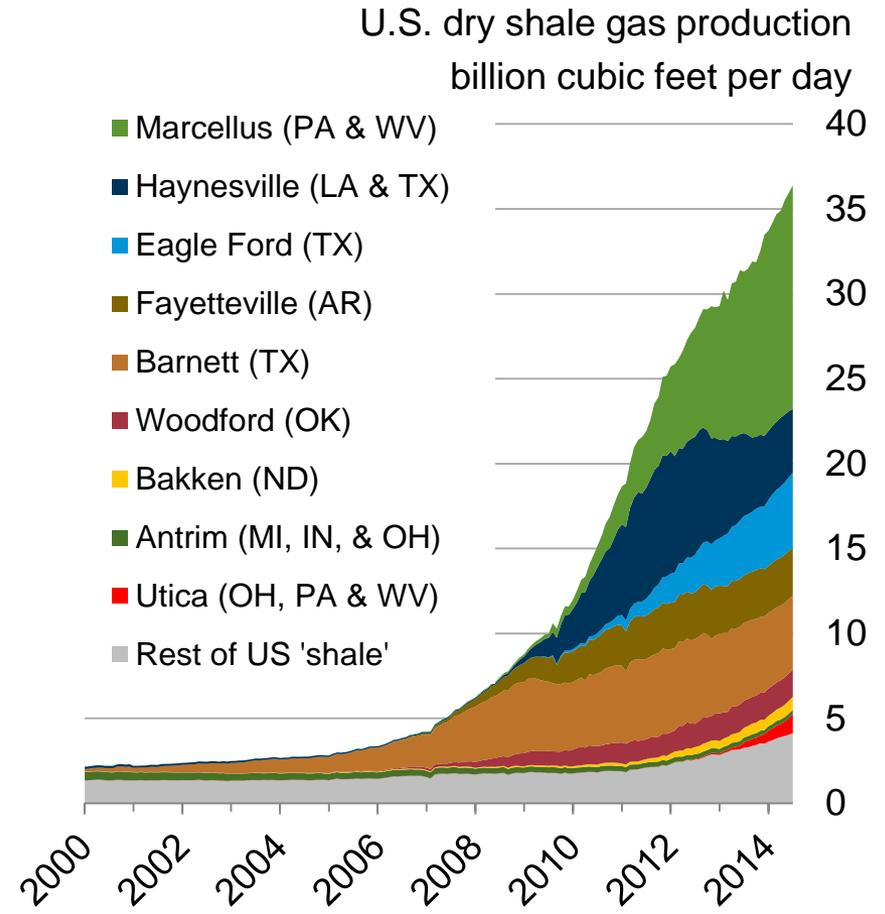
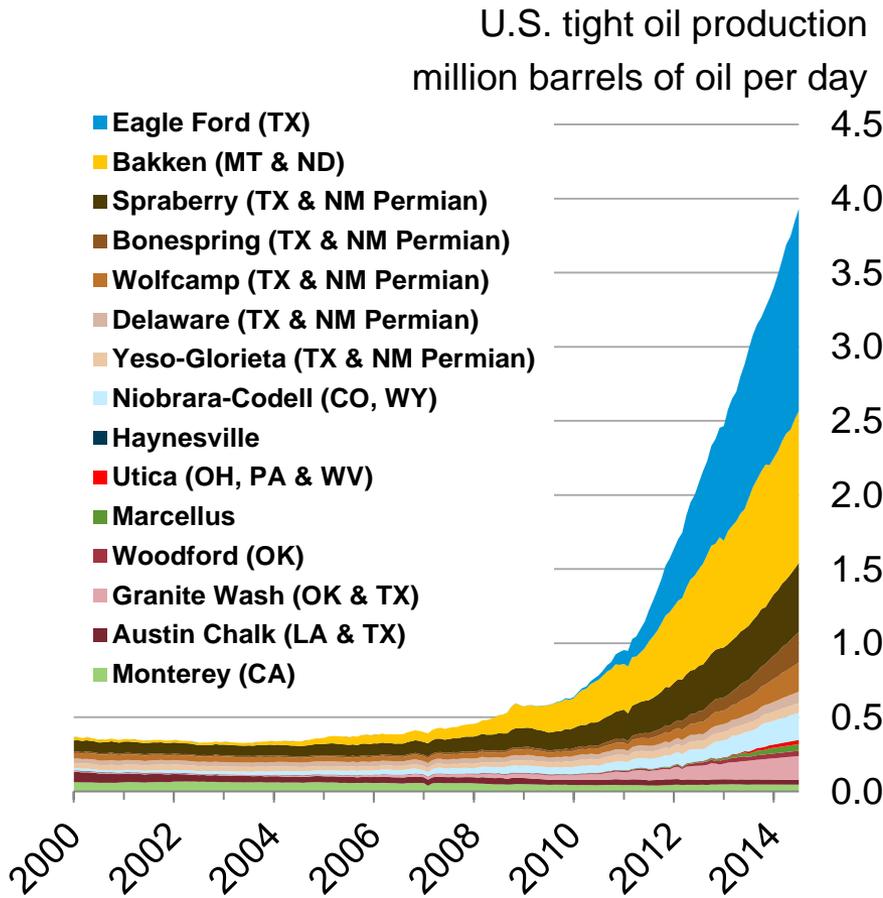
# U.S. energy use grows slowly over the projection reflecting steady growth in GDP offset by improving energy efficiency

U.S. primary energy consumption  
quadrillion Btu



Source: EIA, Annual Energy Outlook 2014 Early Release

# The U.S. has experienced a rapid increase in natural gas and oil production from shale and other tight resources



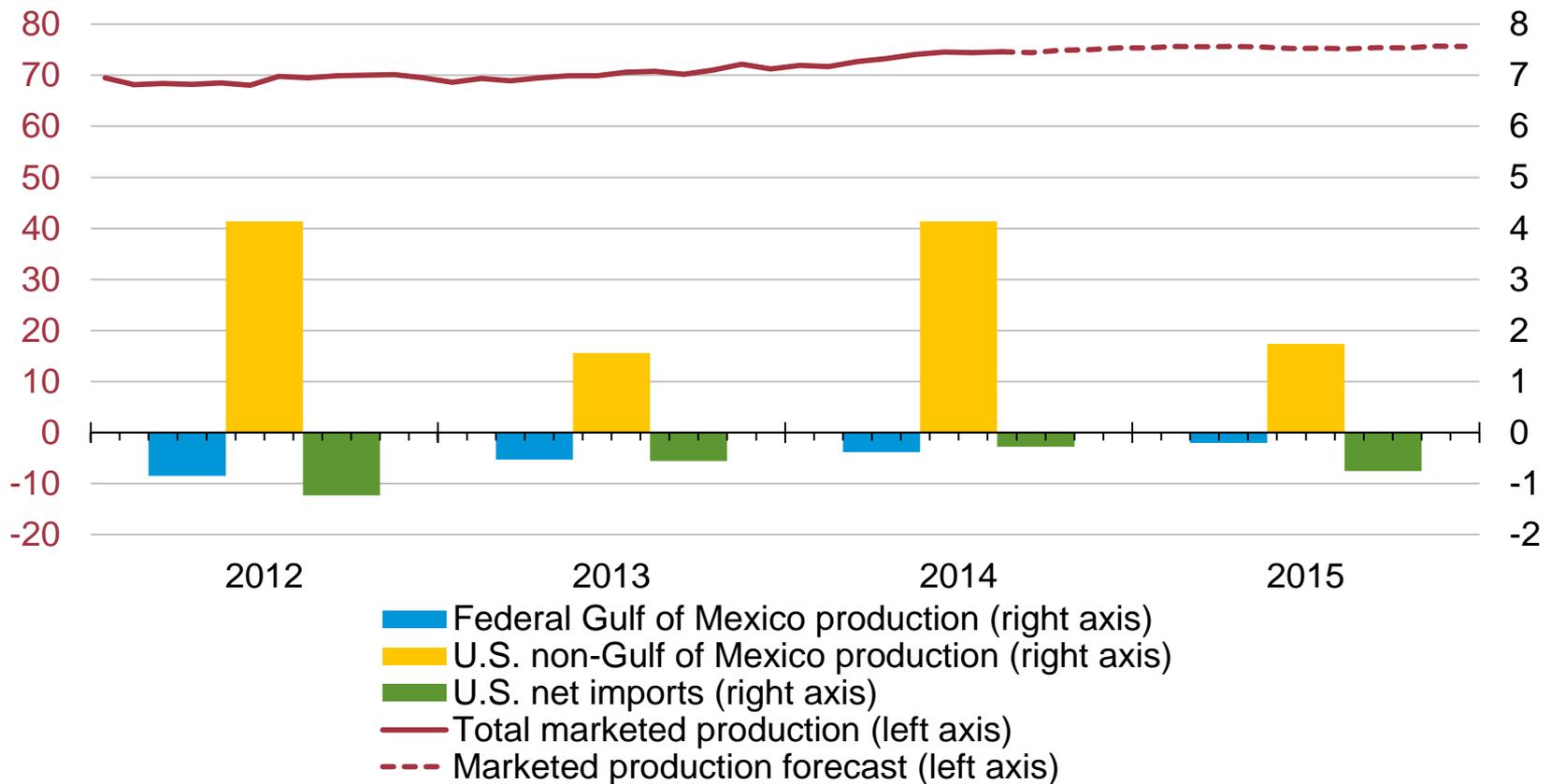
Sources: EIA derived from state administrative data collected by DrillingInfo Inc. Data are through July 2014 and represent EIA's official tight oil & shale gas estimates, but are not survey data. State abbreviations indicate primary state(s).

# Onshore natural gas production continues to grow, outpacing declines in offshore and causing net imports to shrink

## U.S. Natural Gas Production and Imports

billion cubic feet per day (Bcf/d)

annual change (Bcf/d)

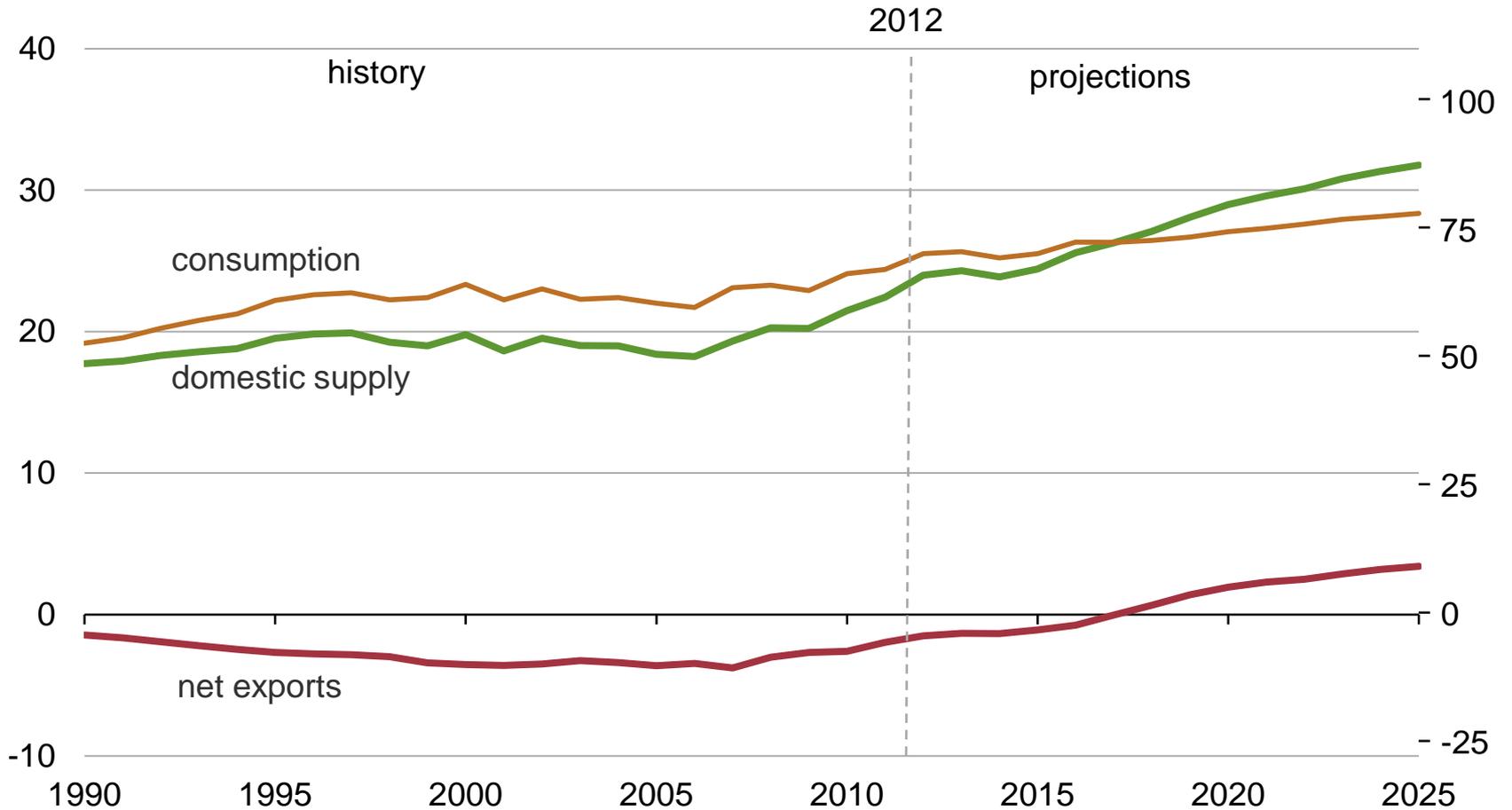


Source: Short-Term Energy Outlook, September 2014

# U.S. becomes a net exporter of natural gas in the near future

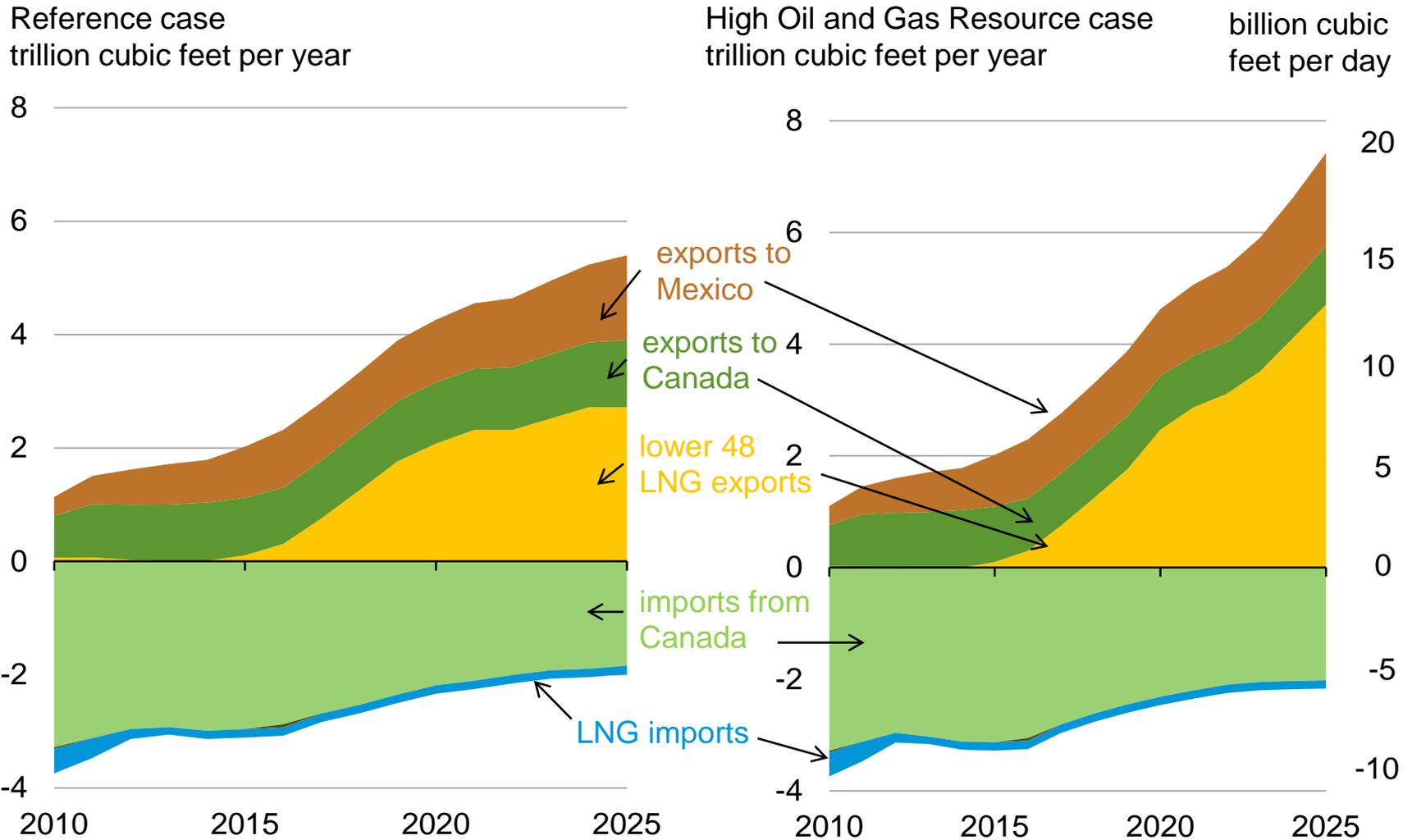
U.S. dry natural gas  
trillion cubic feet per year

billion cubic feet per day



Source: EIA, Annual Energy Outlook 2014 Reference case

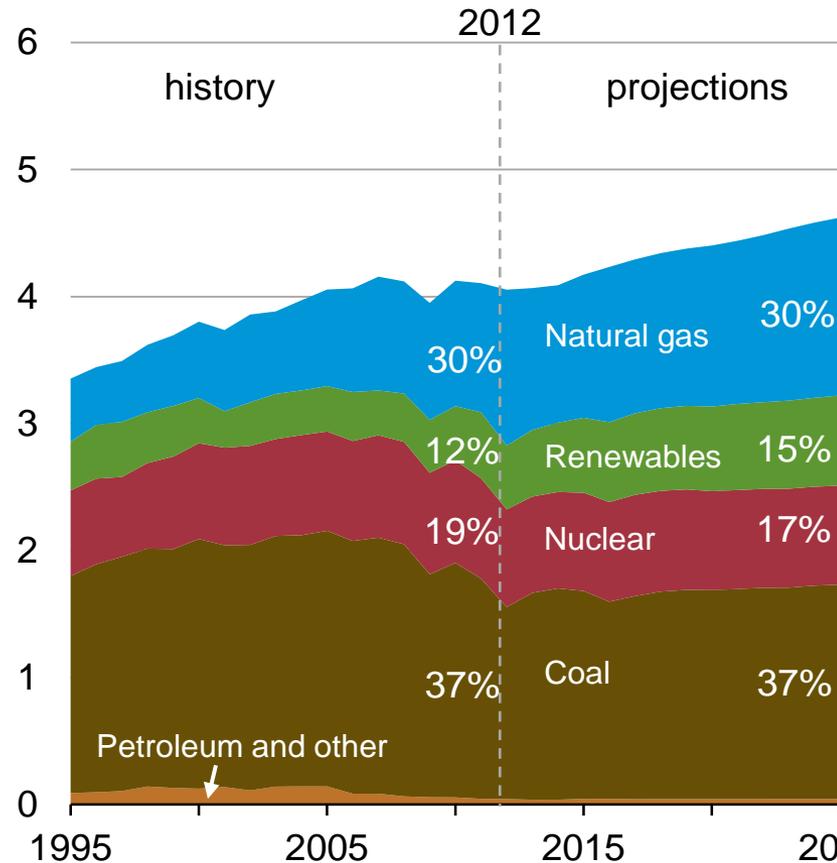
# Projected U.S. natural gas trade depends on assumptions regarding resources and future technology advances



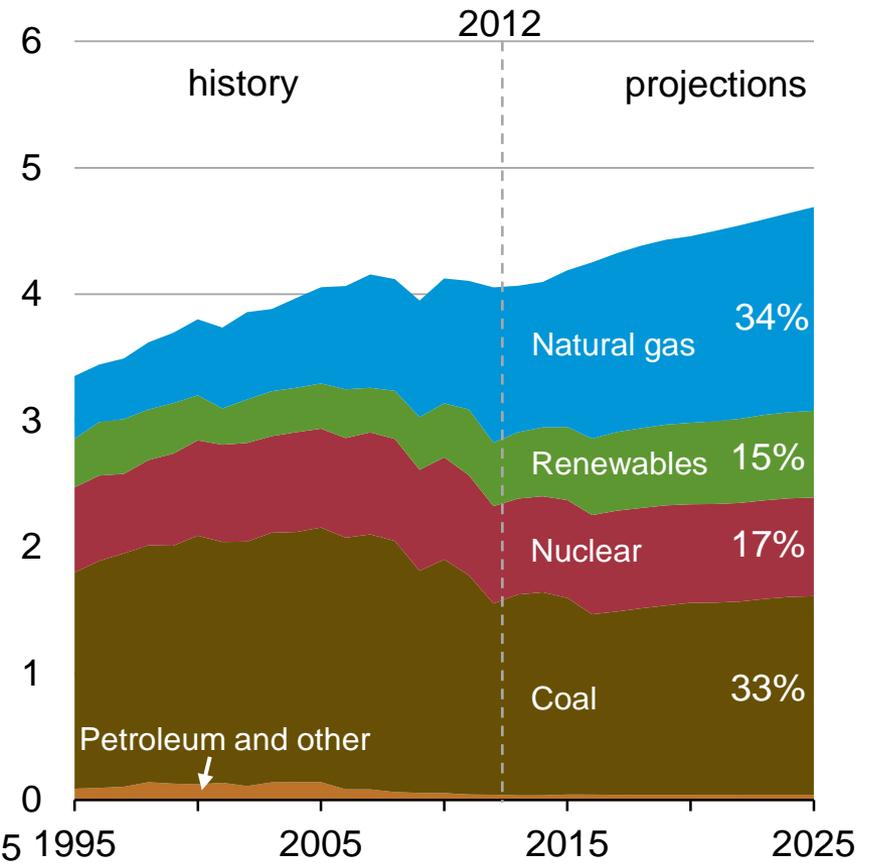
Source: EIA, Annual Energy Outlook 2014 Reference case and High Oil and Gas Resource case

# Coal generation is reduced in a high gas availability case, but it does not gain much in a low gas availability case

U.S. electricity net generation, Reference case  
trillion kilowatthours



U.S. electricity net generation, High Resource case  
trillion kilowatthours



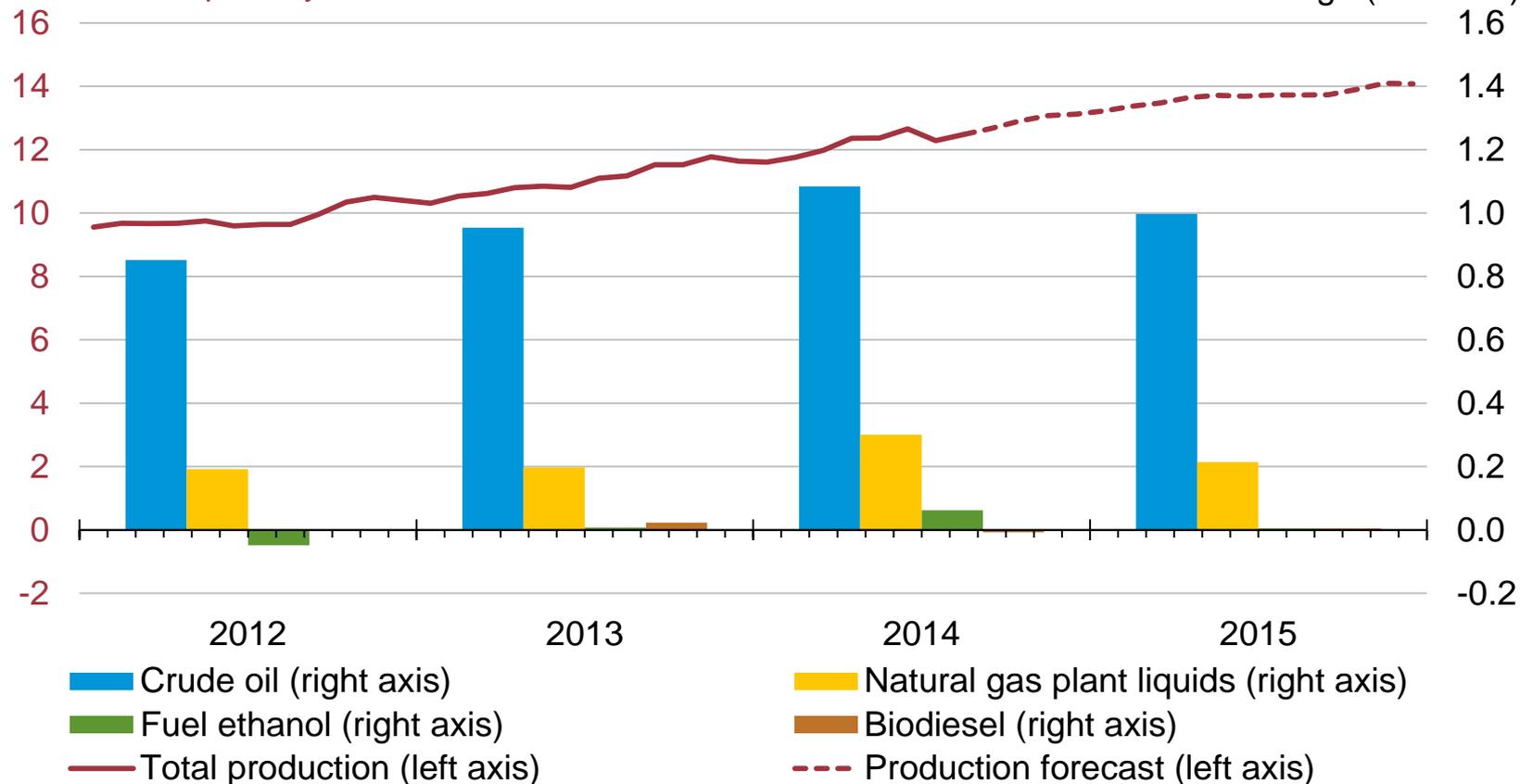
Source: EIA, Annual Energy Outlook 2014 Reference case and High Oil and Gas Resource case

# Production of crude oil and liquids is projected to grow by over 1.2 million barrels per day in both 2014 and 2015

## U.S. Crude Oil and Liquid Fuels Production

million barrels per day

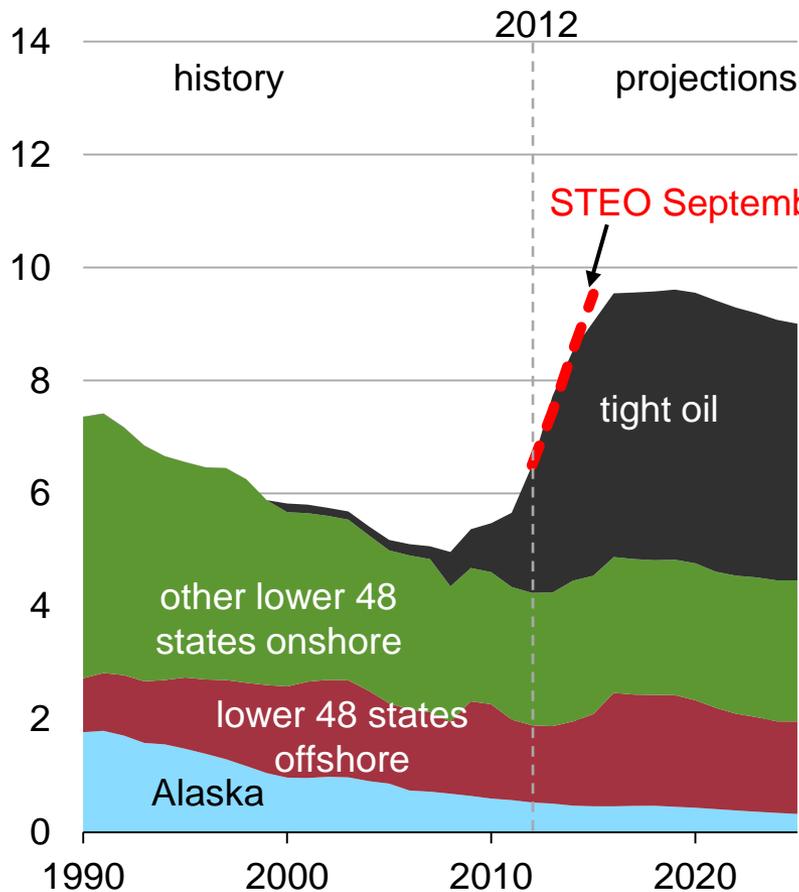
annual change (MMbbl/d)



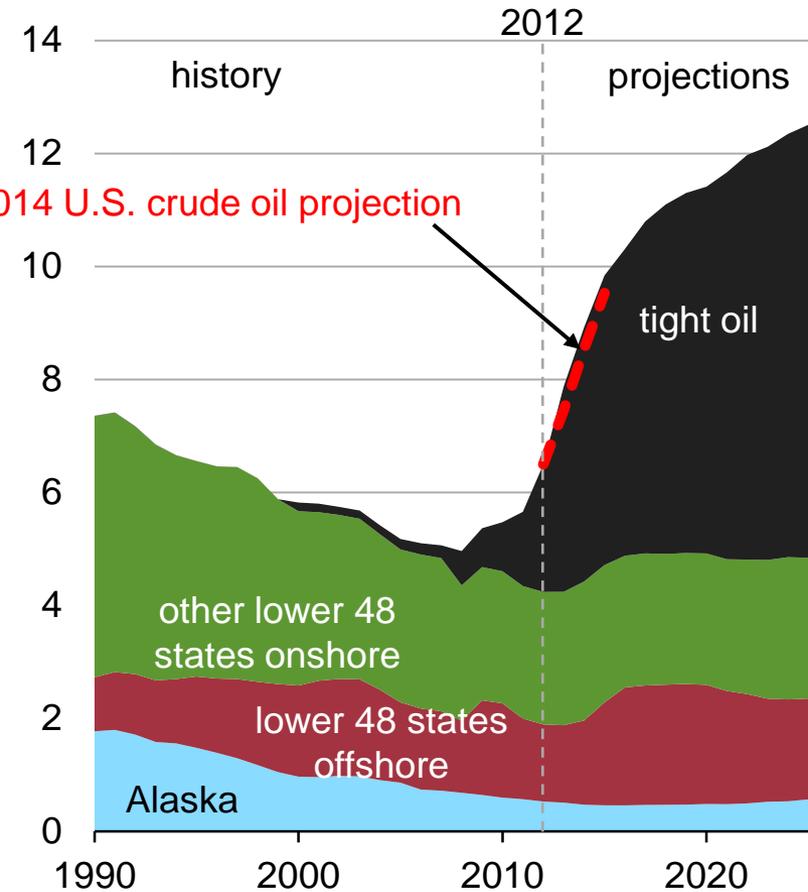
Source: Short-Term Energy Outlook, September 2014

# Resource and technology assumptions have major implications for projected U.S. crude oil production beyond the next few years

Reference case  
million barrels per day



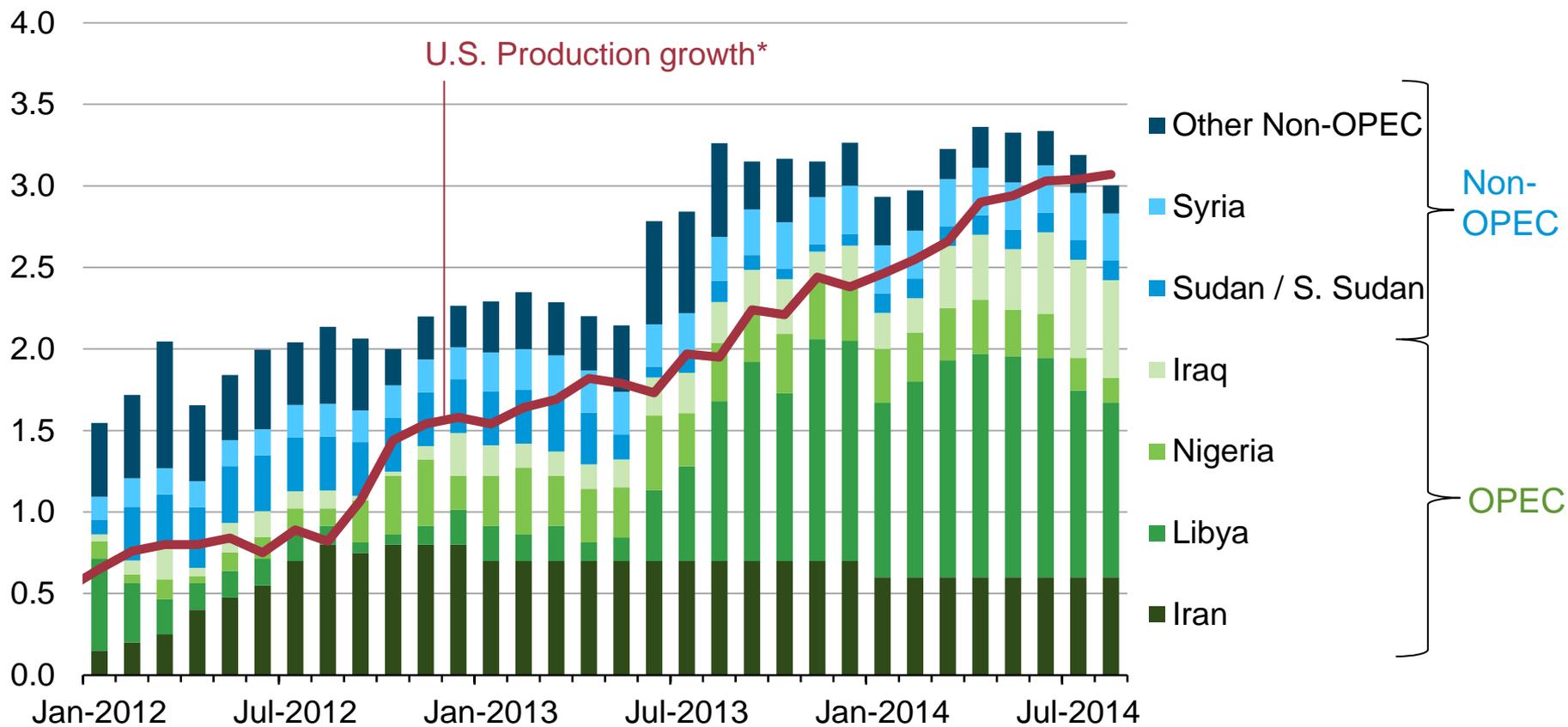
High Oil and Gas Resource case  
million barrels per day



Source: EIA, Annual Energy Outlook 2014 Reference case and High Oil and Gas Resource case; Short Term Energy Outlook, September 2014

# U.S. oil production growth helping to offset unplanned outages

estimated unplanned crude oil production outages  
million barrels per day

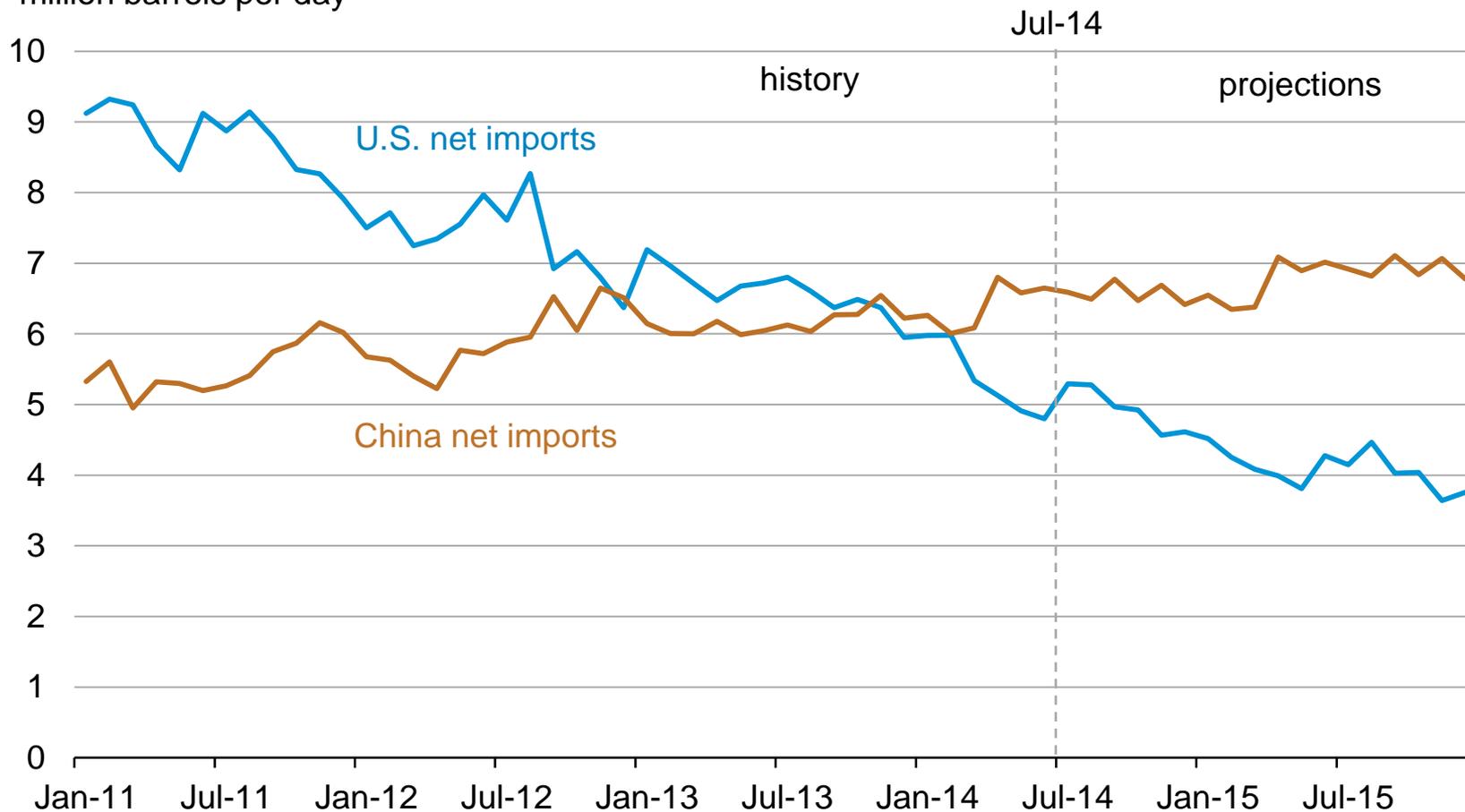


Source: EIA, Short-Term Energy Outlook, September 2014

\*monthly production delta versus Jan. 2011 production level

# Growing U.S. oil production and rising demand in China have together made China the world's largest net oil importer

net imports for China and the United States  
million barrels per day

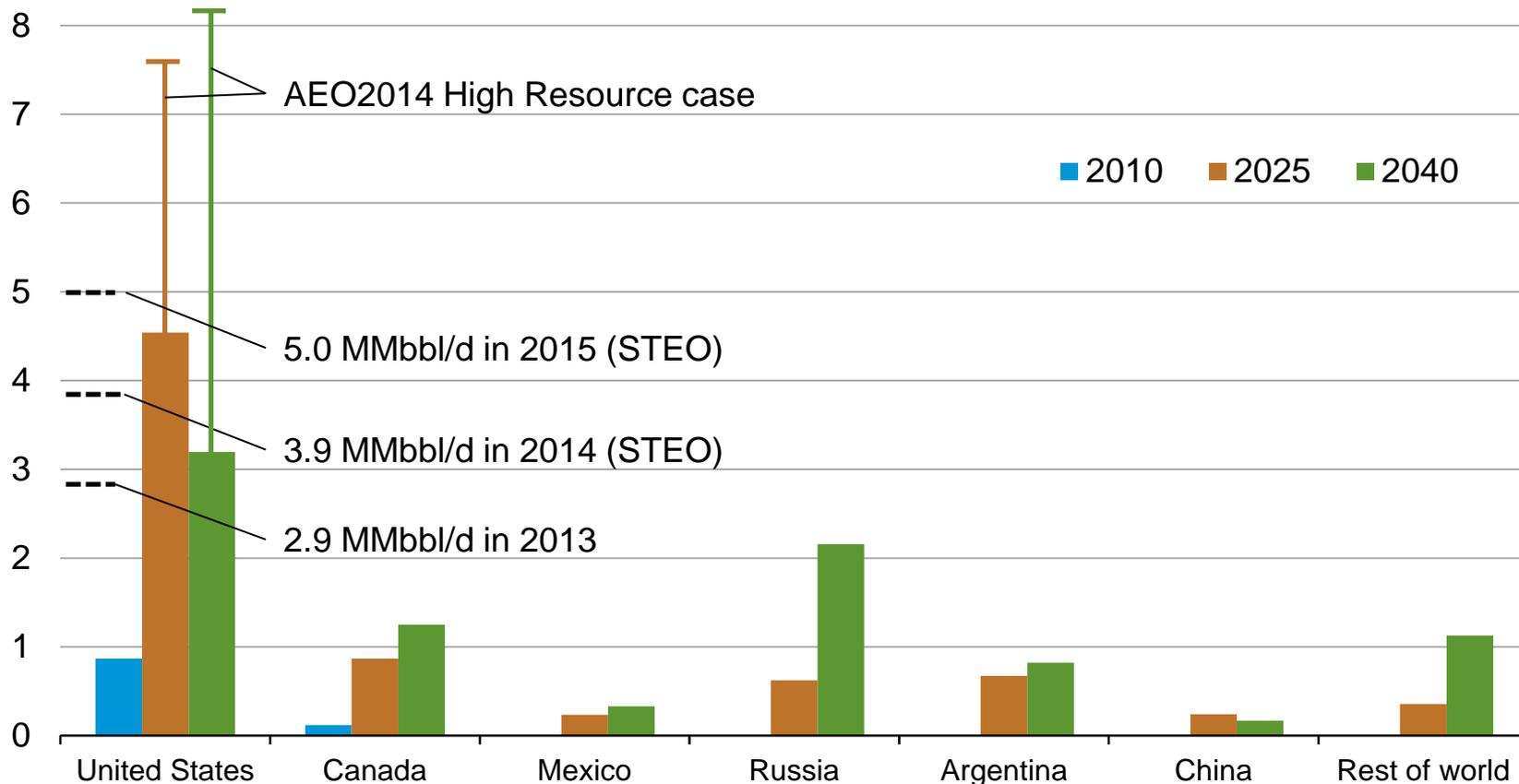


Note: Net oil imports are defined as total liquid fuels consumption less domestic production

Source: EIA, Short-Term Energy Outlook, September 2014

# Tight oil production will spread to nations outside of the United States and Canada over the projection

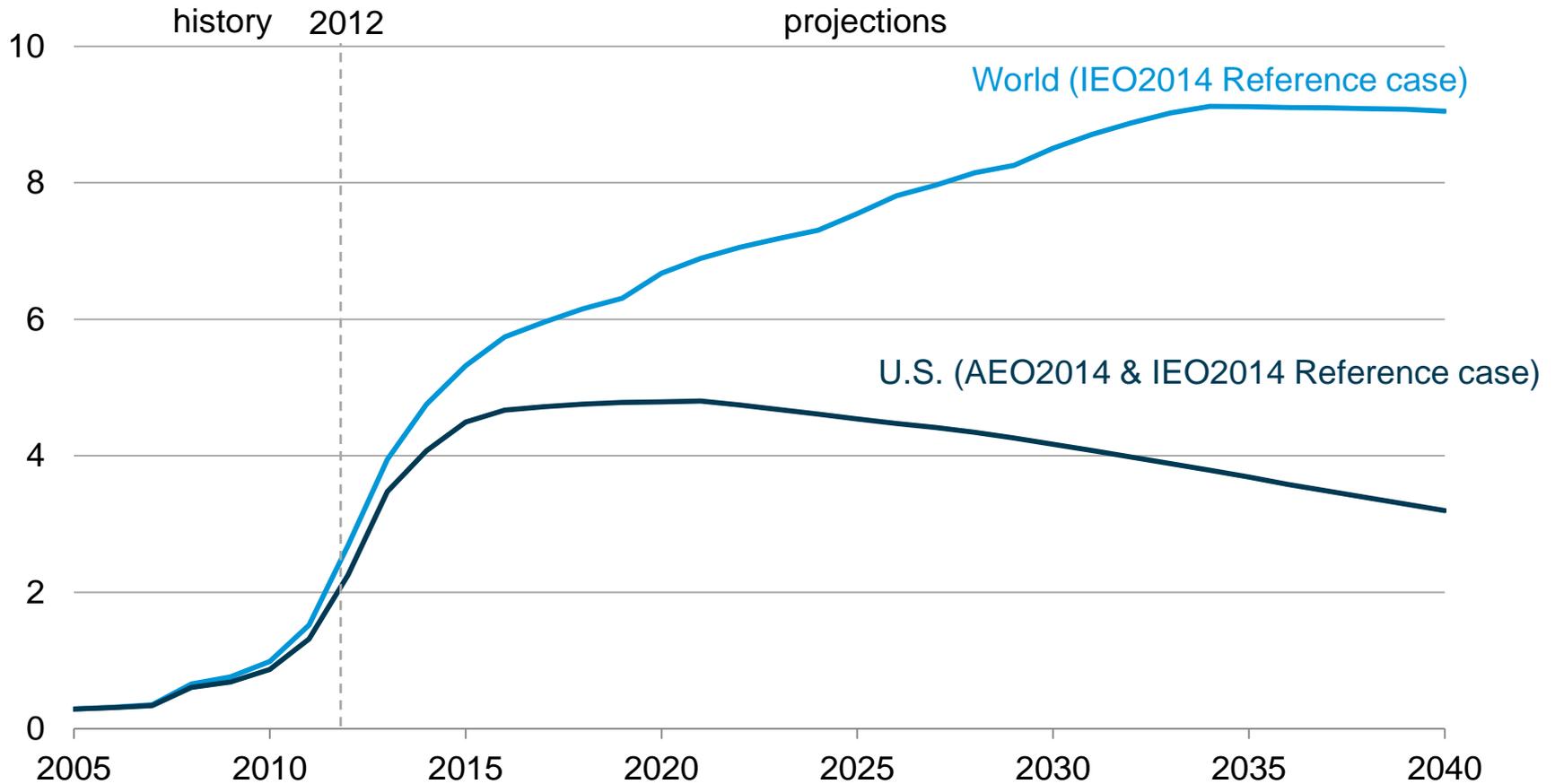
tight oil production, Reference case  
million barrels per day



Source: EIA, International Energy Outlook 2014

# EIA Reference scenario shows world tight oil production increasing to almost 8 million b/d in 2025

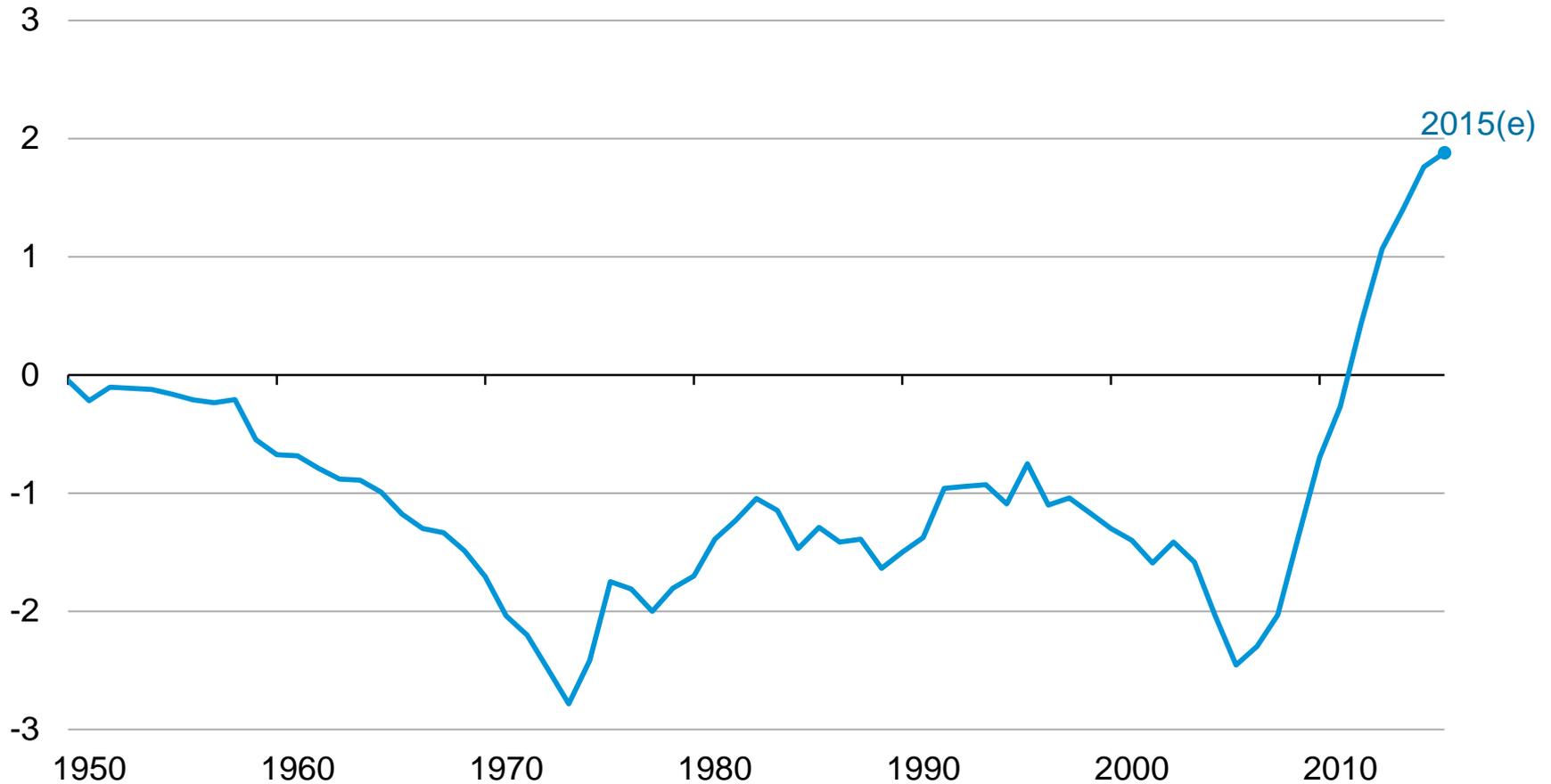
tight oil production  
million barrels per day



Source: EIA, Annual Energy Outlook 2014 and International Energy Outlook 2014

# U.S. is already a major net exporter of petroleum products

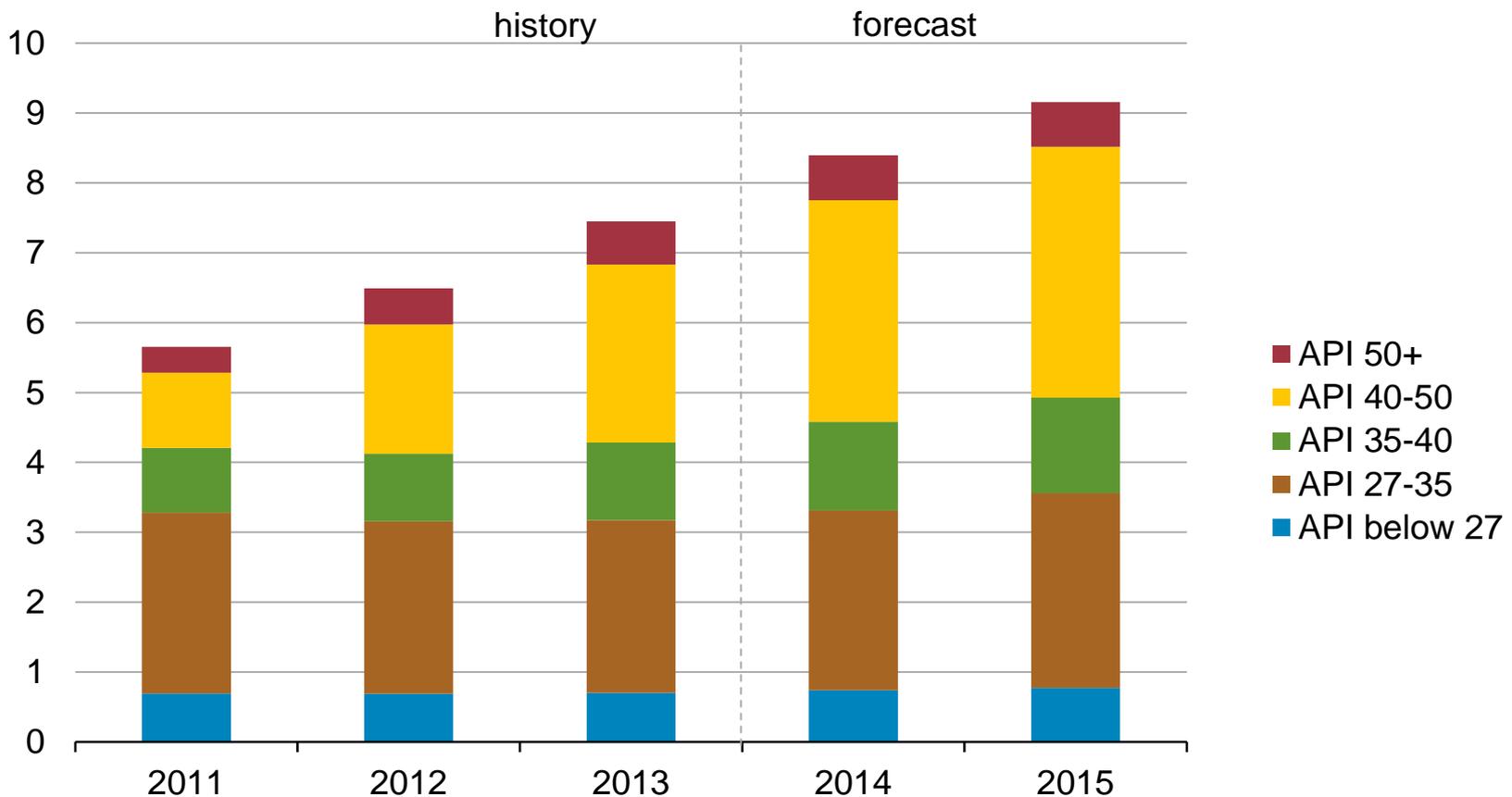
U.S. petroleum product net exports  
million barrels per day



Source: EIA, Annual Energy Outlook 2014 Reference case and Short Term Energy Outlook

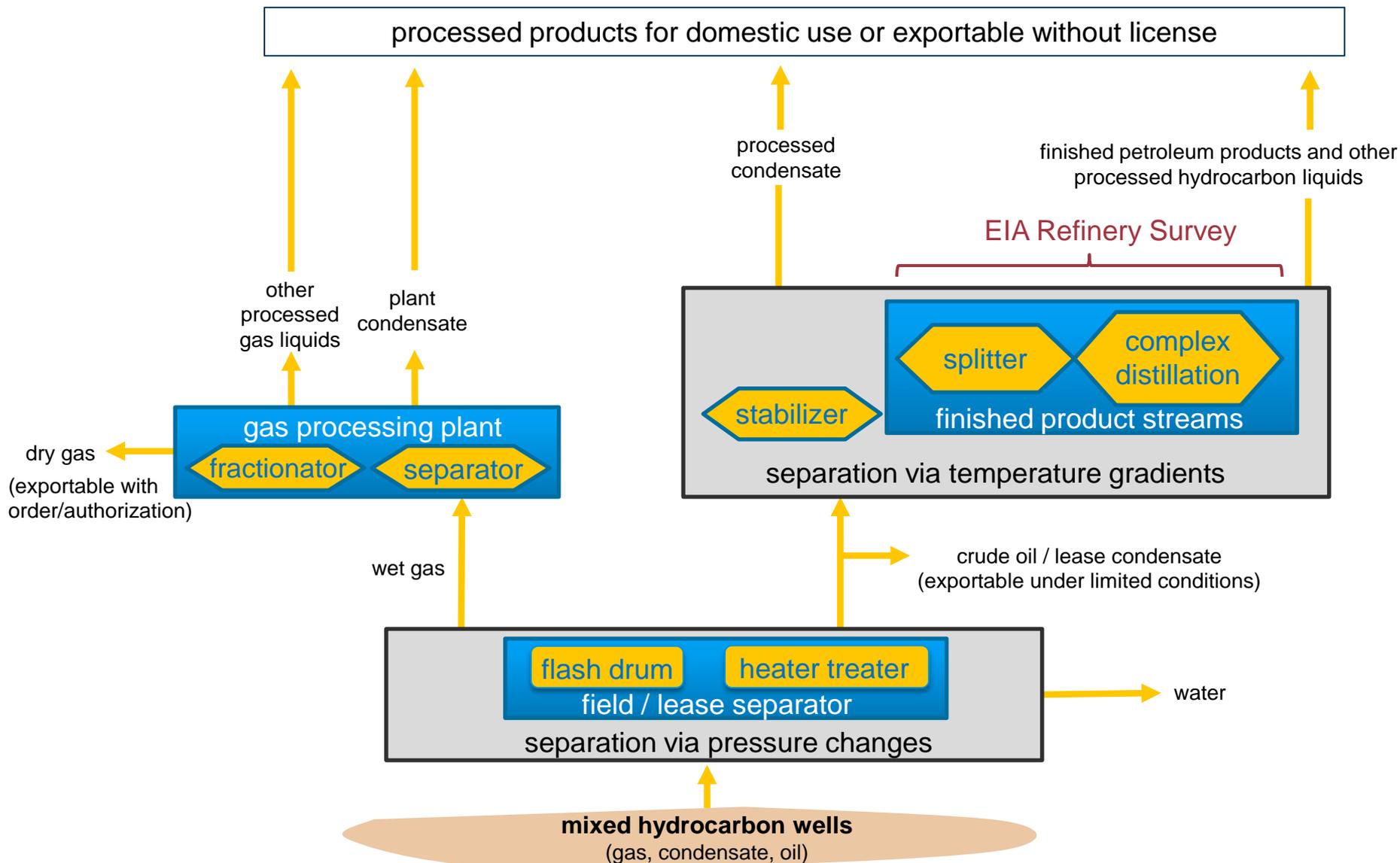
# Most of the growth in production between 2011 and 2015 consists of sweet grades with API gravity of 40 or above

U.S. crude oil production by type  
million barrels of oil per day



Source: EIA, DrillingInfo, Colorado DNR, Texas RRC. <http://www.eia.gov/analysis/petroleum/crudetypes/>

# Distillation processes and resulting products



## For more information

U.S. Energy Information Administration home page | [www.eia.gov](http://www.eia.gov)

Annual Energy Outlook | [www.eia.gov/aeo](http://www.eia.gov/aeo)

Short-Term Energy Outlook | [www.eia.gov/steo](http://www.eia.gov/steo)

International Energy Outlook | [www.eia.gov/ieo](http://www.eia.gov/ieo)

Monthly Energy Review | [www.eia.gov/mer](http://www.eia.gov/mer)

Today in Energy | [www.eia.gov/todayinenergy](http://www.eia.gov/todayinenergy)

Drilling Productivity Report | [www.eia.gov/petroleum/drilling/](http://www.eia.gov/petroleum/drilling/)