

International energy markets



For

Cheung Kong Graduate School of Business

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by

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U.S. Energy Information Administration



Independent Statistics & Analysis

U.S. Energy Information
Administration

Mandate: EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment

Independence: EIA, an element of the Department of Energy, is one of 14 federal statistical agencies; by law, its data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government

Mission: EIA provides data and analysis to help stakeholders understand the rapidly changing energy sector in areas such as:

- Oil and gas production
- Changing energy trade flows
- Oil price volatility and projections
- Vehicle, building, and manufacturing consumption trends
- Distributed renewables generation
- Coal and nuclear power outlooks

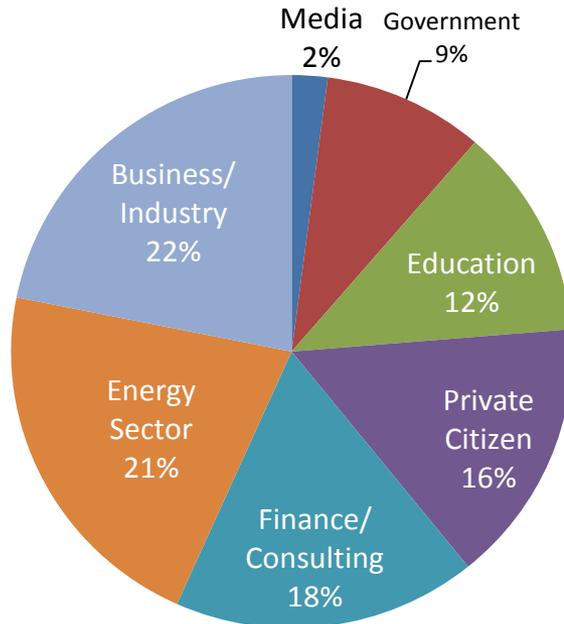
EIA principles

- Provide relevant energy statistics and analysis as a public good
- Be accurate and objective
- Protect the confidentiality of respondents
- Maintain the public trust

EIA information is used by a range of stakeholders

Examples of Activities

EIA Customers



Source: 2014 EIA Web Customer Survey

Government

- Executive Agencies – WH, DOE, & EPA use EIA data to track energy markets and program performance and to analyze policy proposals
- Congress – policy development and agency funding
- State Governments – planning and program development

Energy Sector

- Consumers – monitor price forecasts
- Producers – track inventory statistics

Business/Industry

- Manufacturers – market research

Finance/Consulting

- Commodities Analysts – market response to supply data

Media/Education

- Journalists – cite energy statistics
- Teachers – use Energy Kids materials
- Researchers – energy forecasting and modeling

Private Citizens

- Public – research gasoline prices

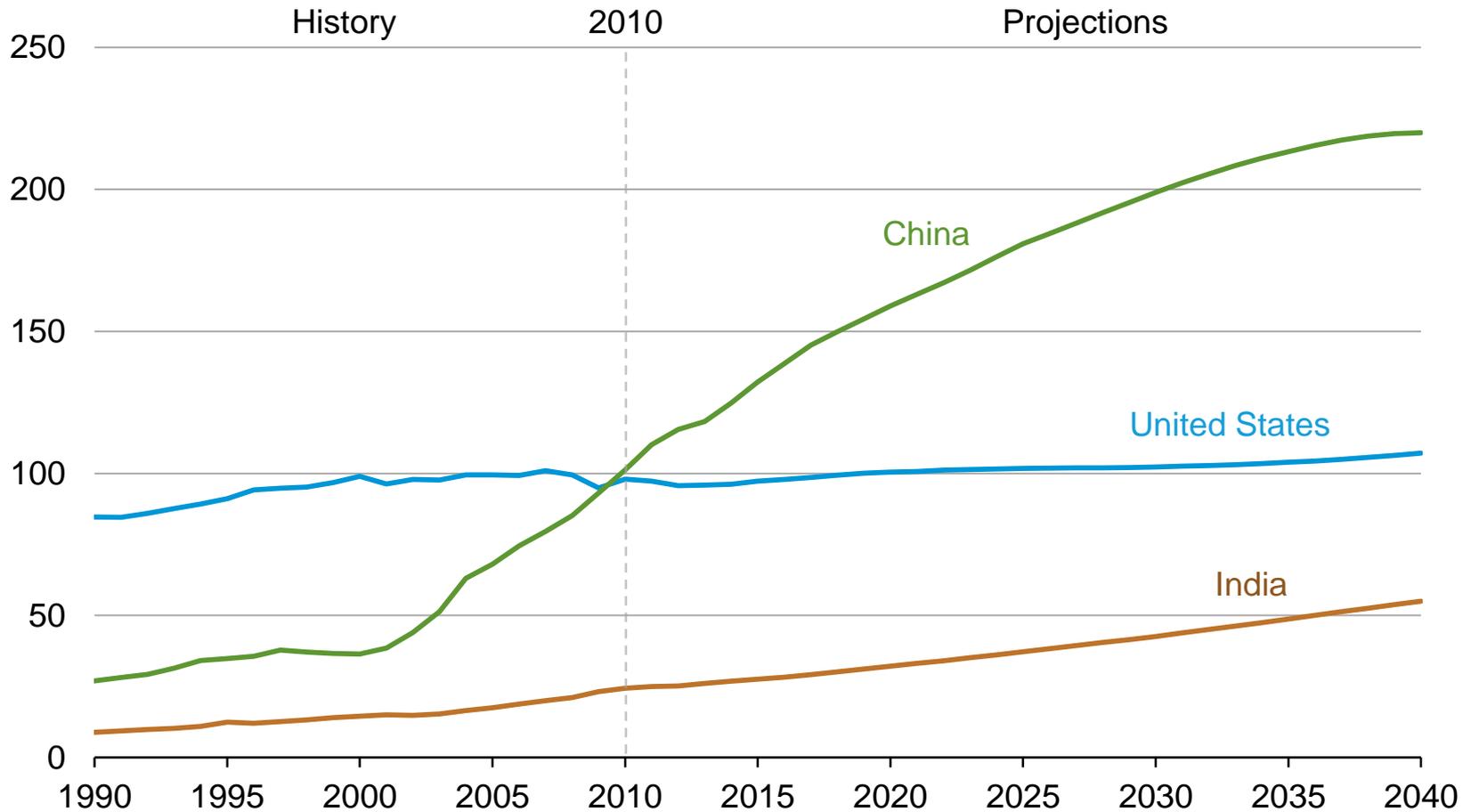
Customer-focused Performance Results

- **Quality:** 95% of customers are satisfied or very satisfied with the quality of EIA information
- **Timeliness:** 96% of selected EIA recurring products meet their release date target

The importance of China in the global energy markets

By 2040, China's energy use will be double the U.S. level; India's a little more than half despite its faster GDP growth

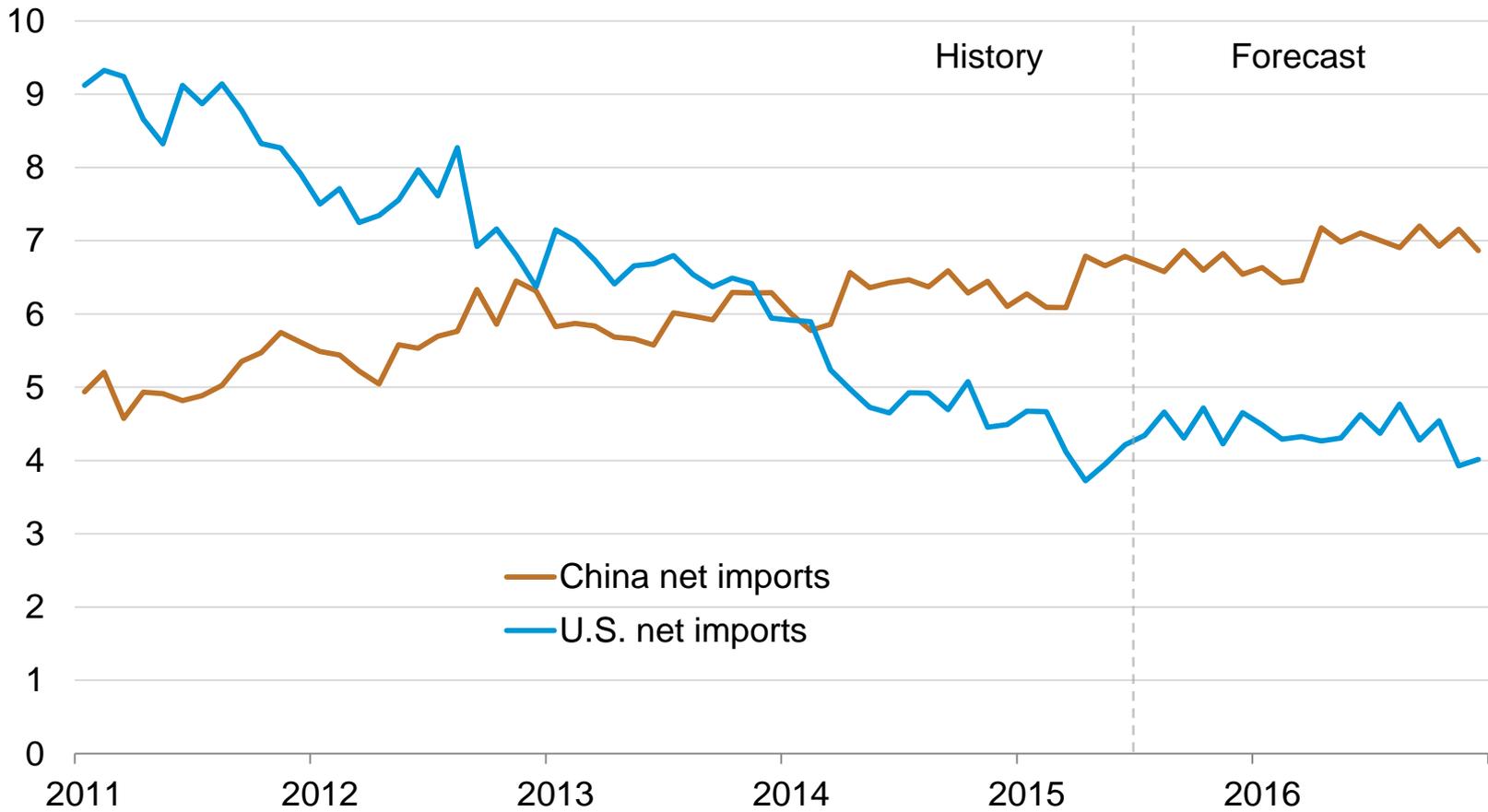
energy consumption by selected country
quadrillion Btu



Source: EIA, International Energy Outlook 2013

Net oil imports: Trends in the largest consuming countries

million barrels per day (MMb/d)



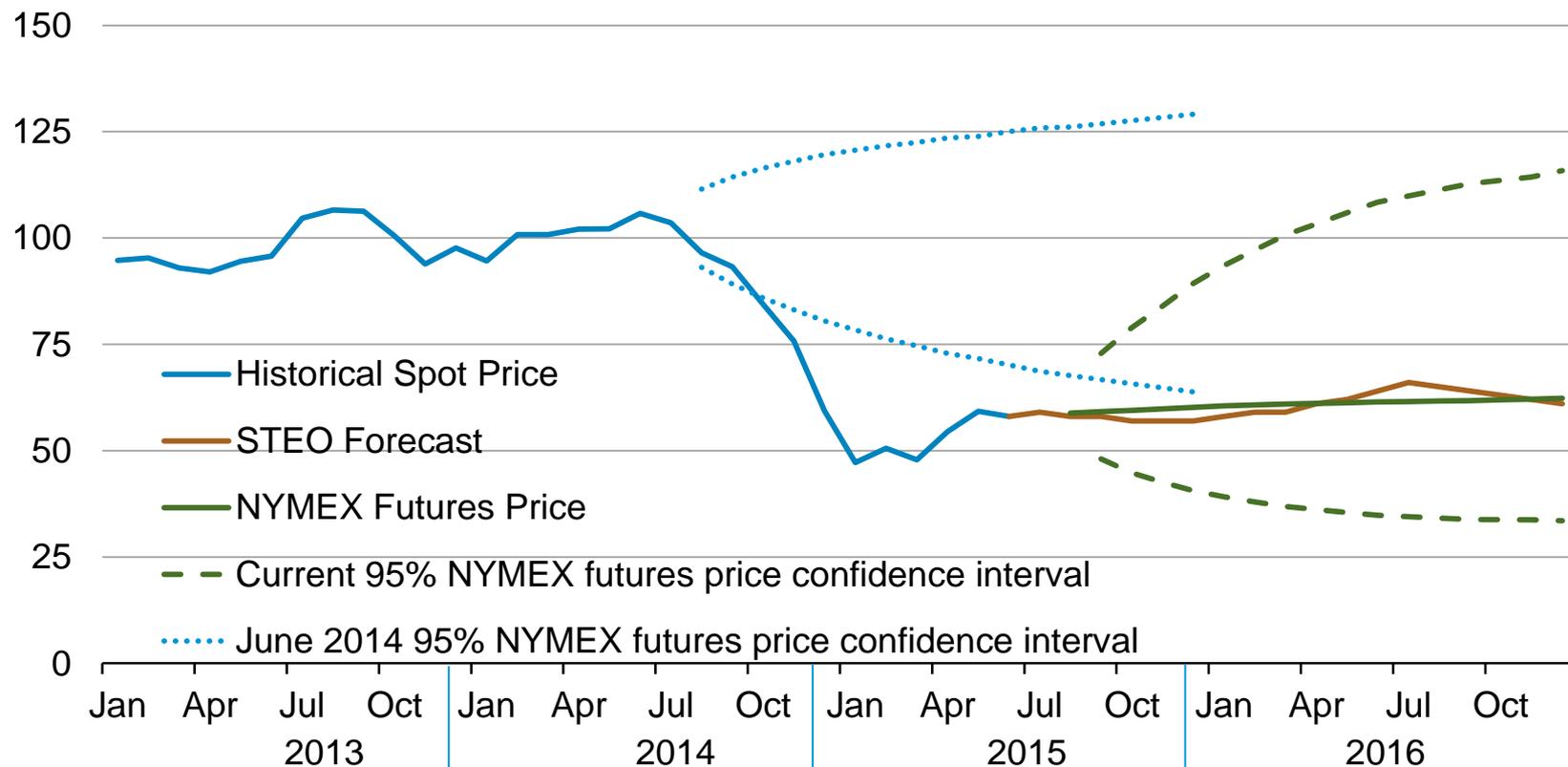
Source: EIA, Short-Term Energy Outlook, July 2015

Current oil and gas markets

For oil prices, the market-implied confidence band is very wide

WTI price

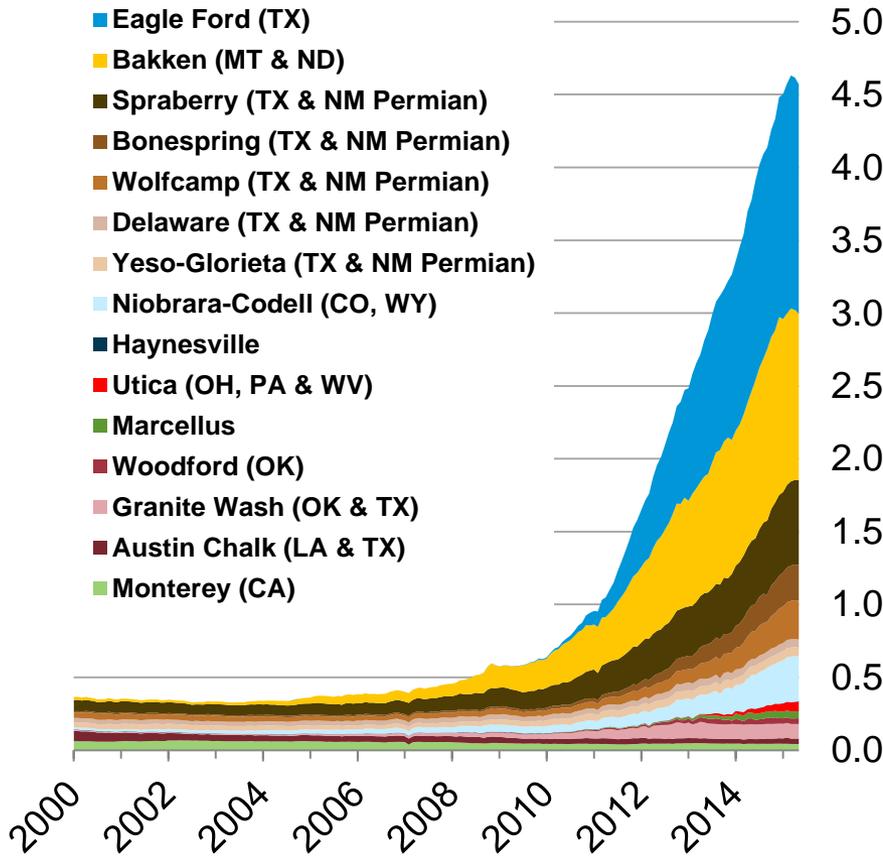
dollars per barrel



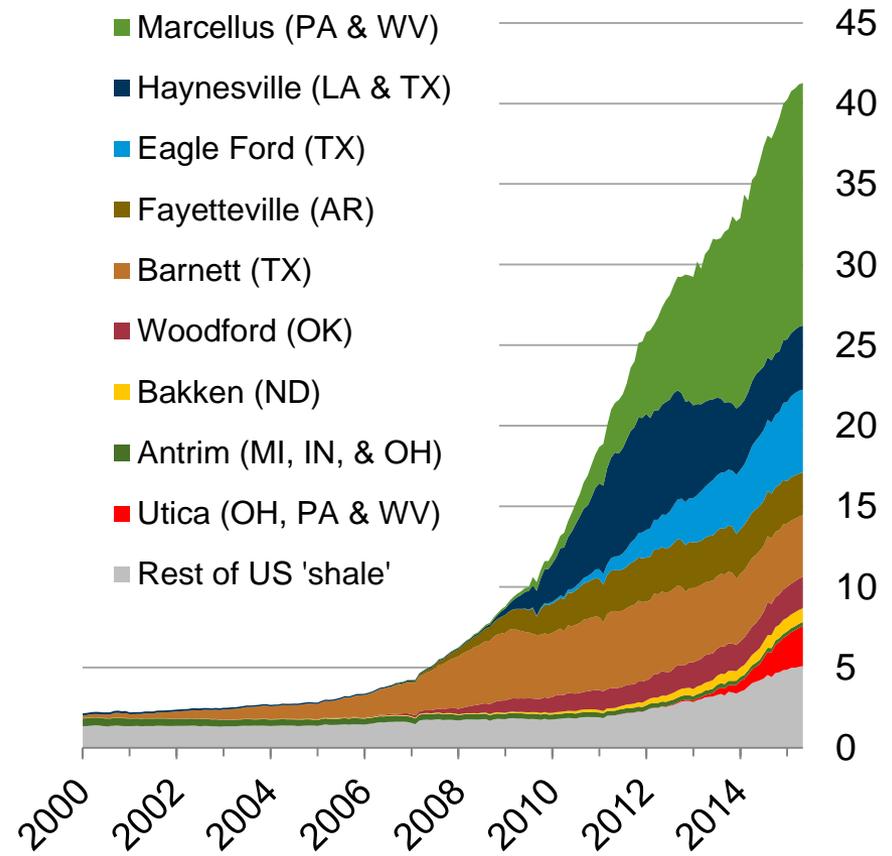
Source: EIA, Short-Term Energy Outlook, July 2015

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

U.S. tight oil production
million barrels of oil per day



U.S. dry shale gas production
billion cubic feet per day

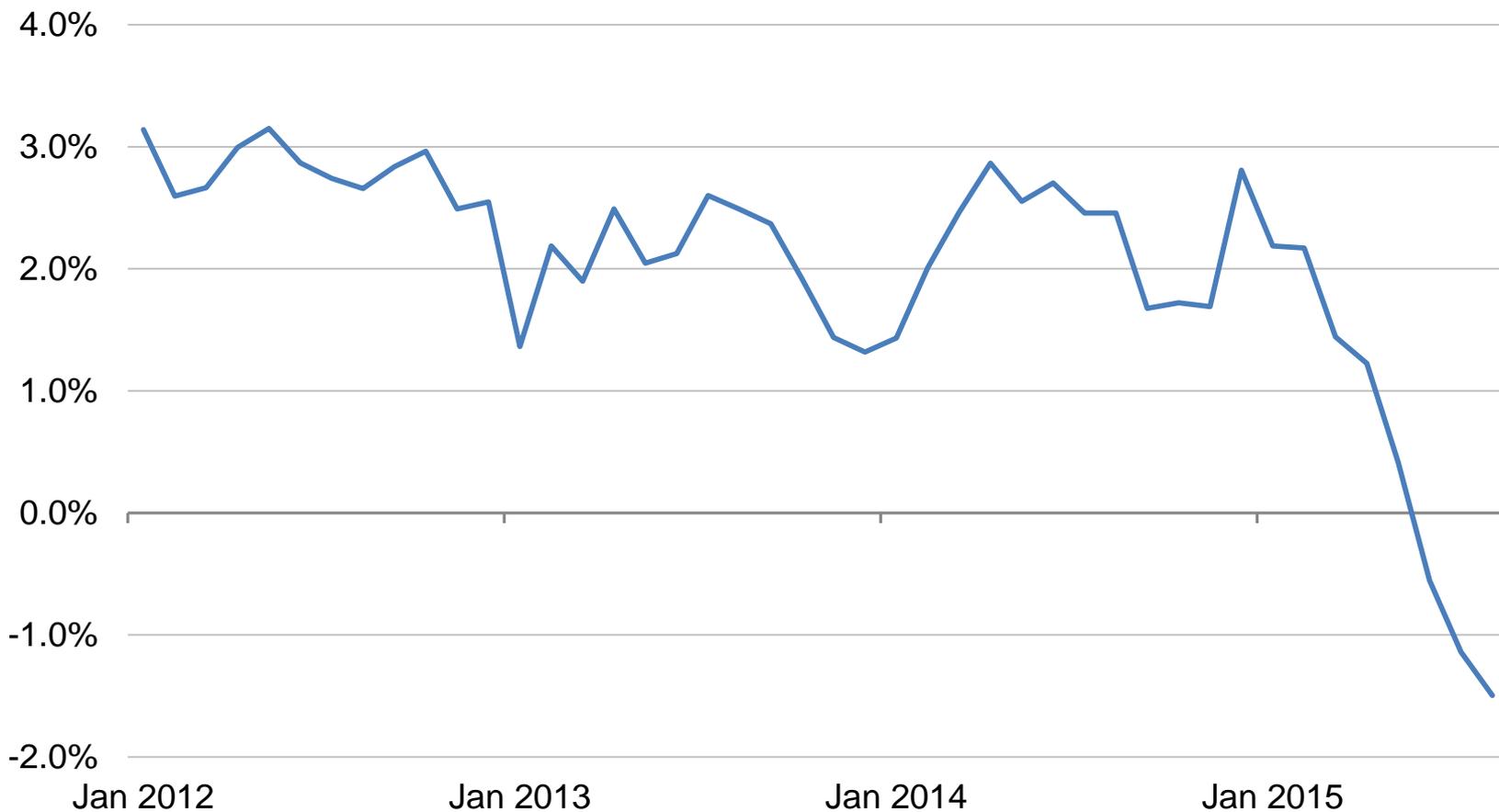


Sources: EIA derived from state administrative data collected by DrillingInfo Inc. Data are through May 2015 and represent EIA's official tight oil & shale gas estimates, but are not survey data. State abbreviations indicate primary state(s).

Production growth in top crude producing regions (Permian, Bakken, Niobrara, and Eagle Ford) reverses in early 2015

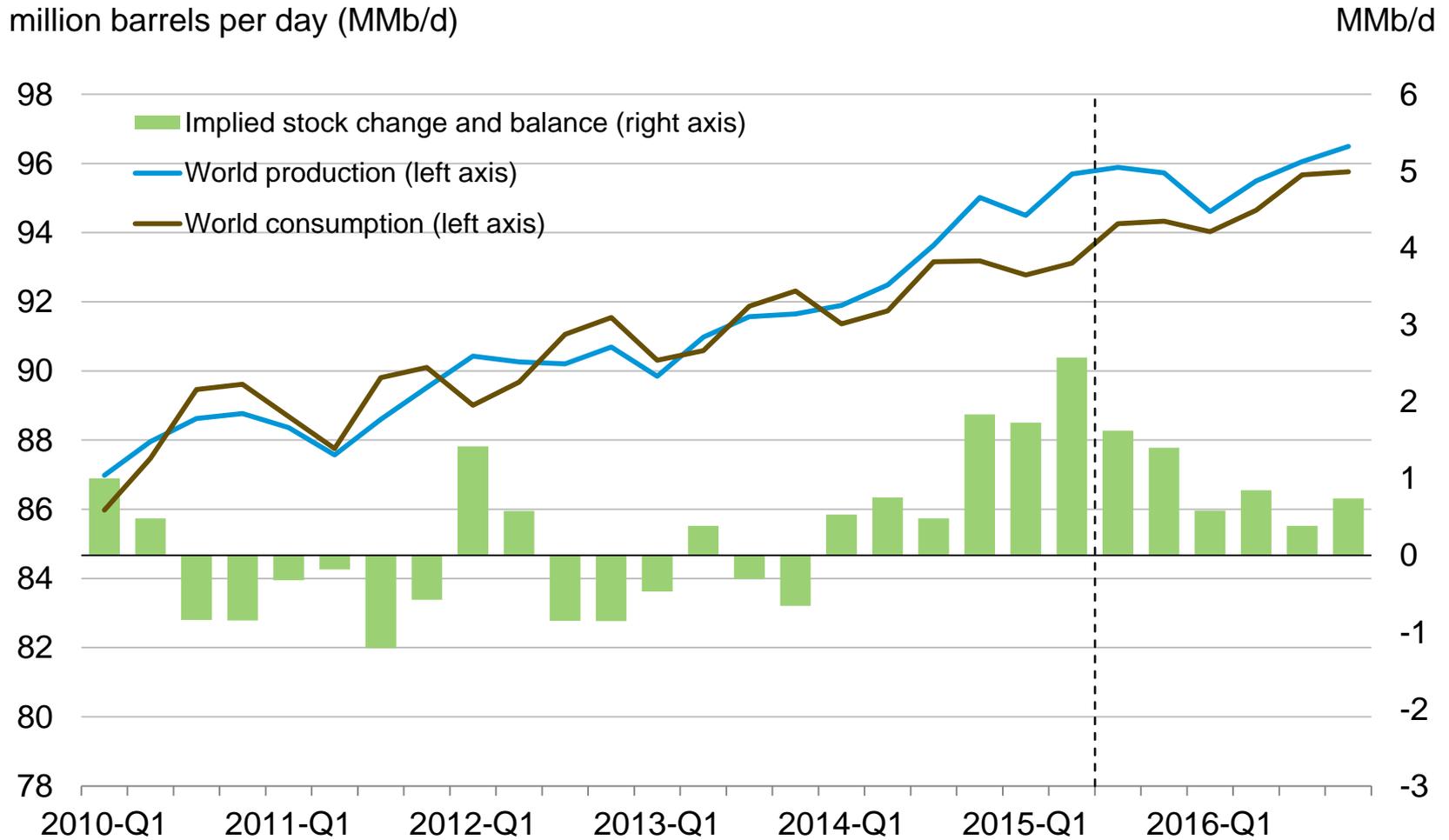
monthly percent change

three month rolling average



Source: EIA, Drilling Productivity Report, July 2015

Oil supply and demand begin to rebalance in 2016

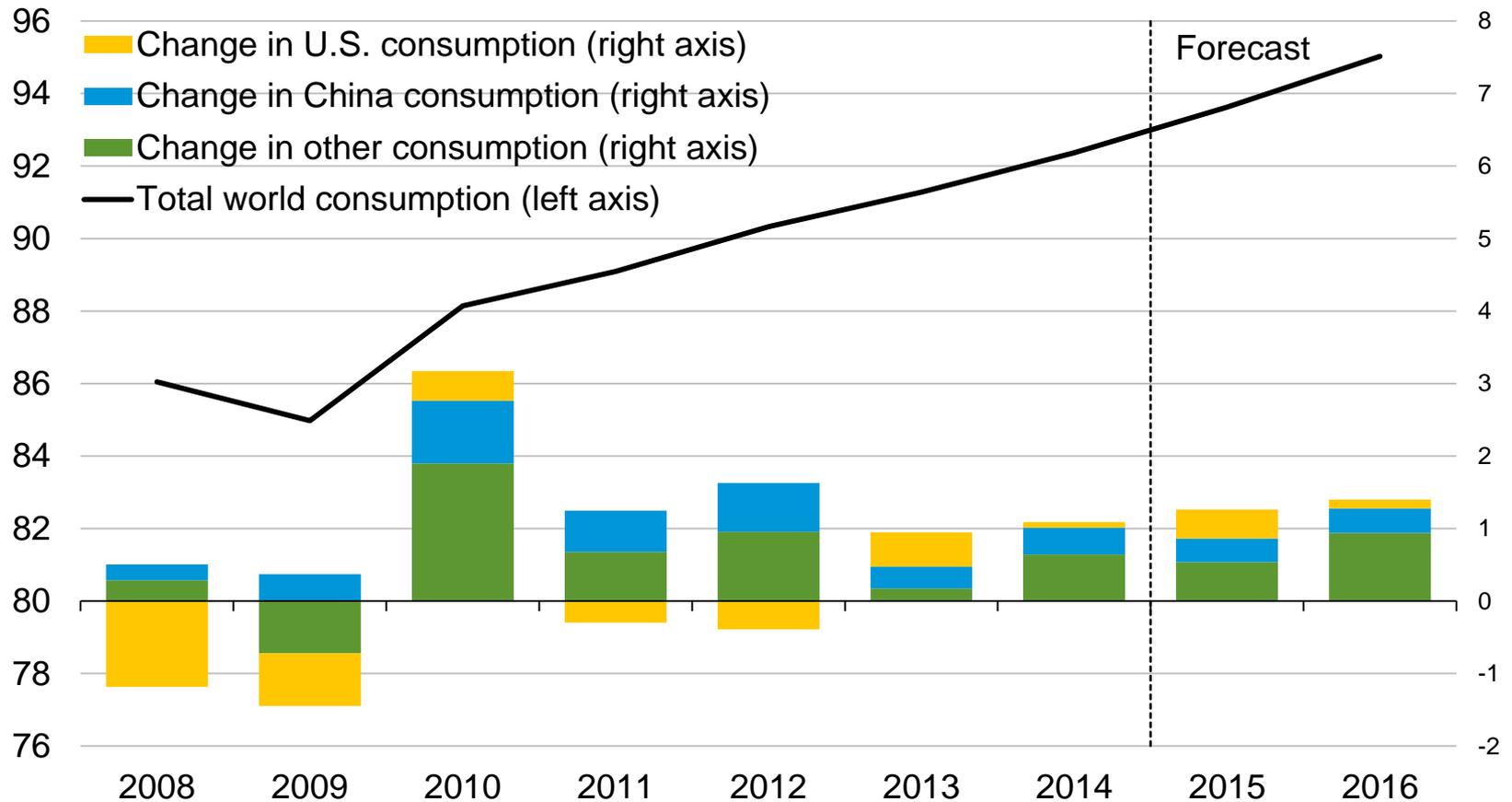


Source: EIA, Short-Term Energy Outlook, July 2015

Surprises in liquid fuel demand to the upside are rare

world liquid fuels consumption
million barrels per day (MMb/d)

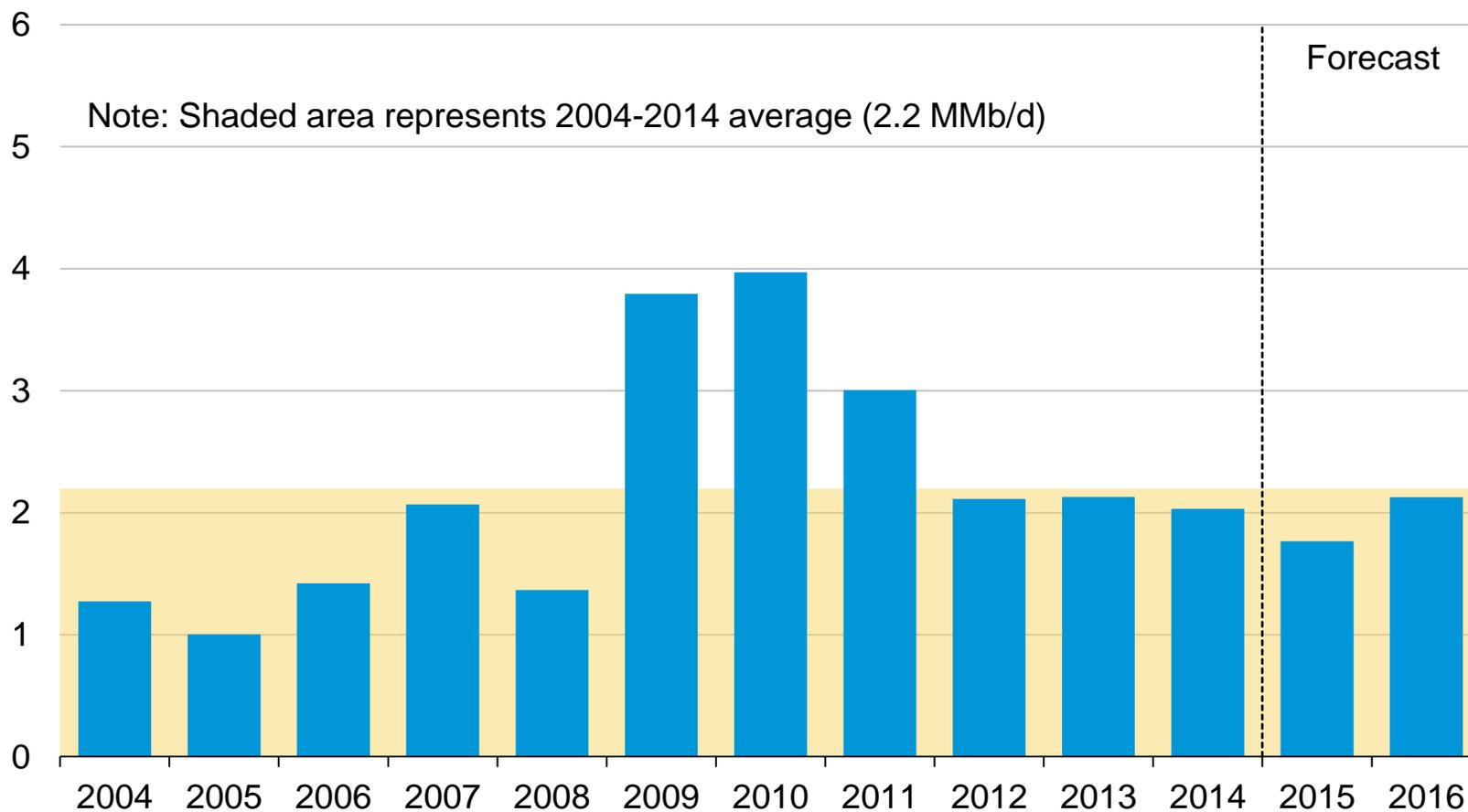
annual change
million barrels per day



Source: EIA, Short-Term Energy Outlook, July 2015

OPEC surplus crude oil production capacity remains moderate to low

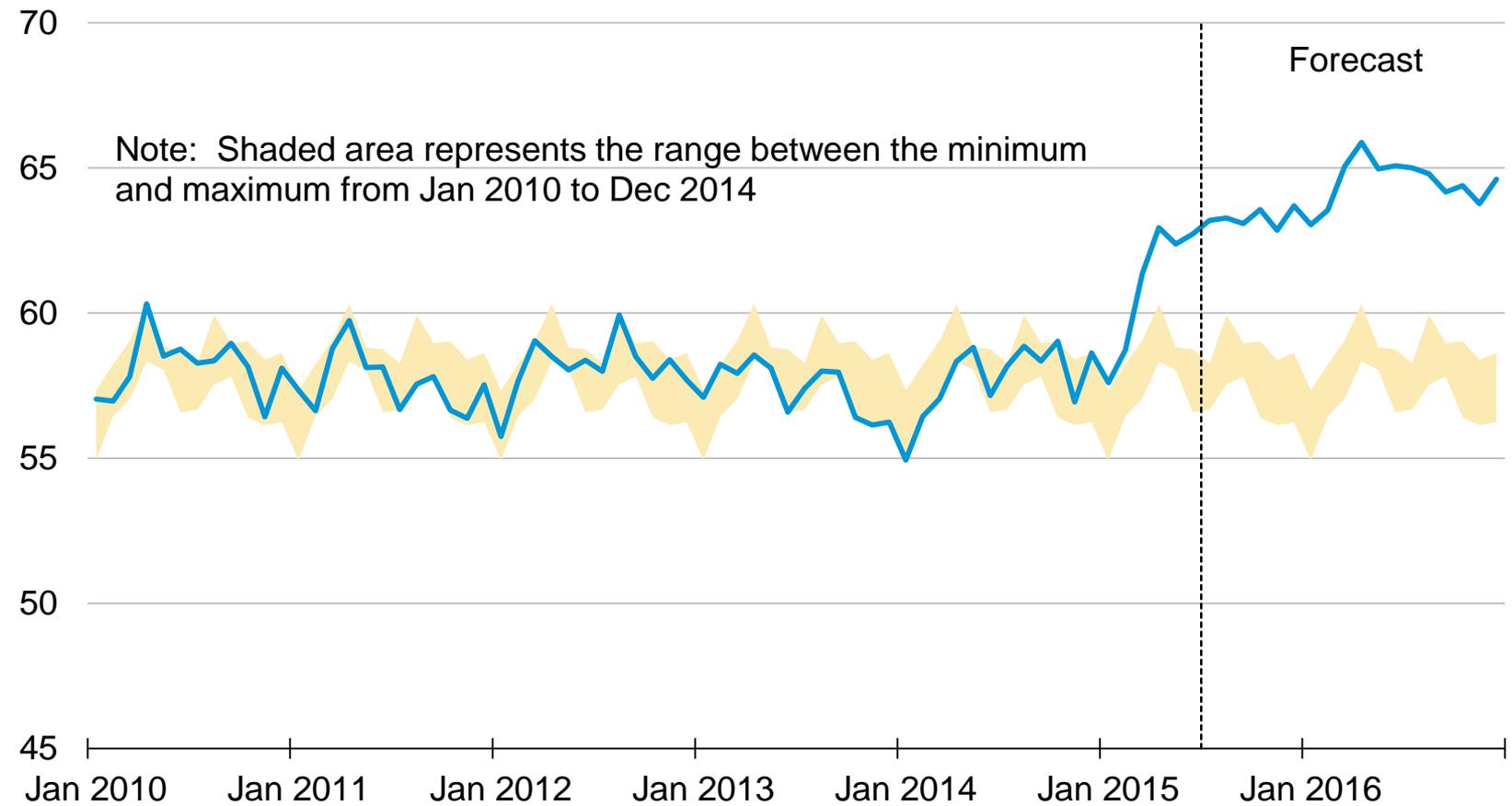
million barrels per day (MMb/d)



Source: EIA, Short-Term Energy Outlook, July 2015

OECD commercial petroleum stocks remain high

days of supply

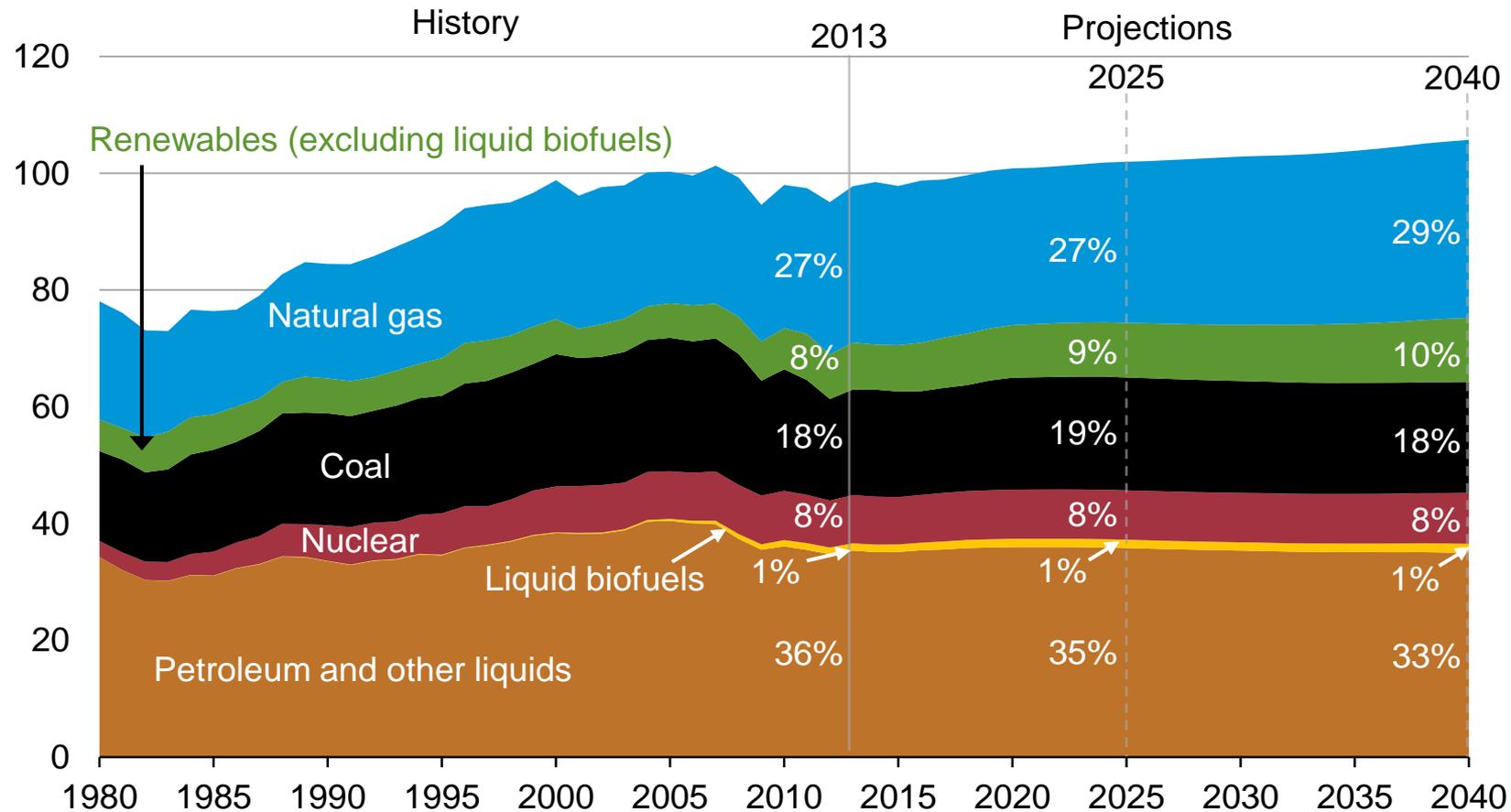


Source: EIA, Short-Term Energy Outlook, July 2015

Long-term U.S. energy projections

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

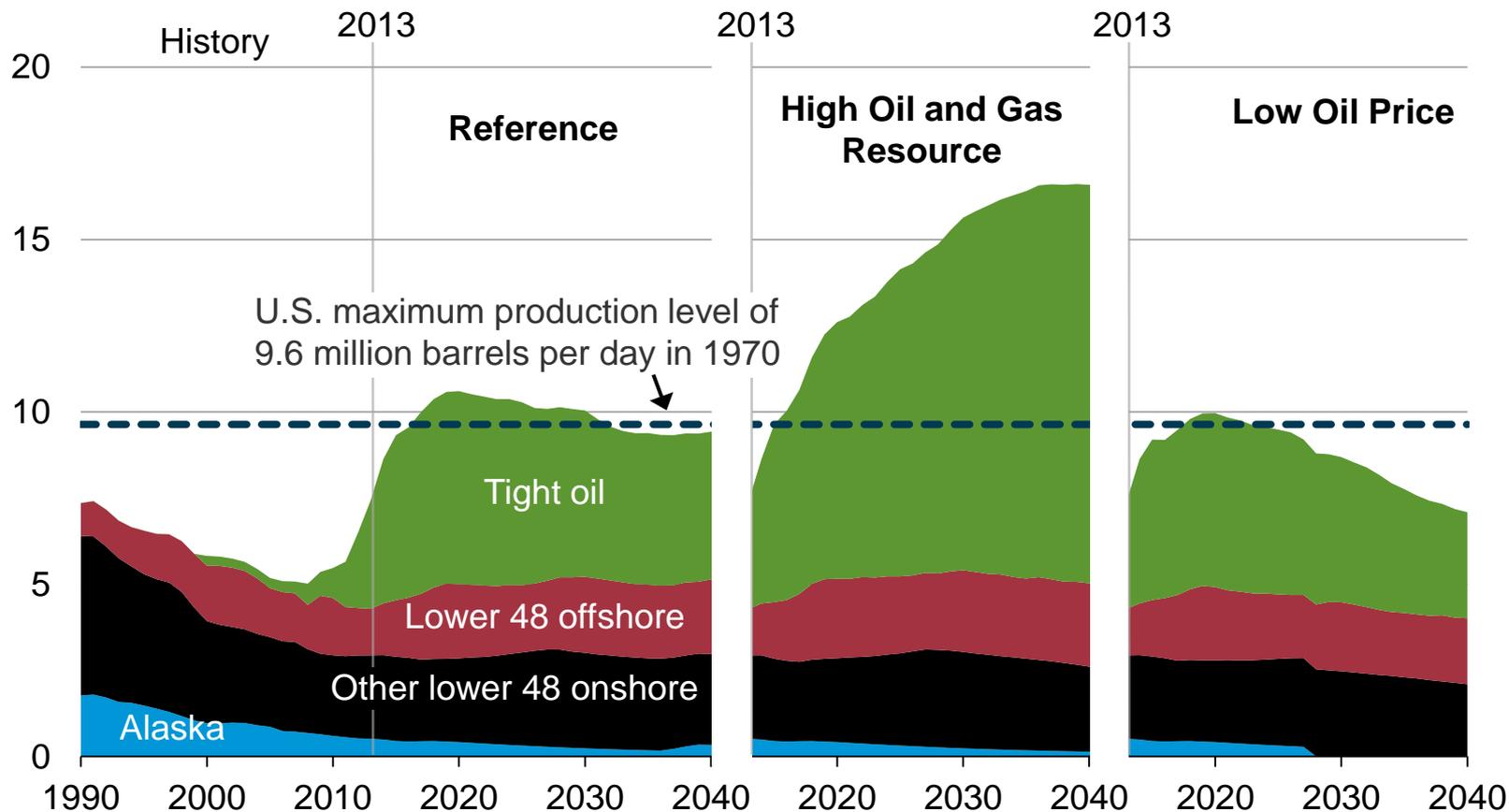
U.S. primary energy consumption
quadrillion Btu



Source: EIA, Annual Energy Outlook 2015, Reference case

U.S. crude oil production: Supply rises above previous historical highs before 2020 in all AEO2015 cases, with a range of longer-term outcomes dependent on prices, resources and technology

U.S. crude oil production
million barrels per day (MMb/d)

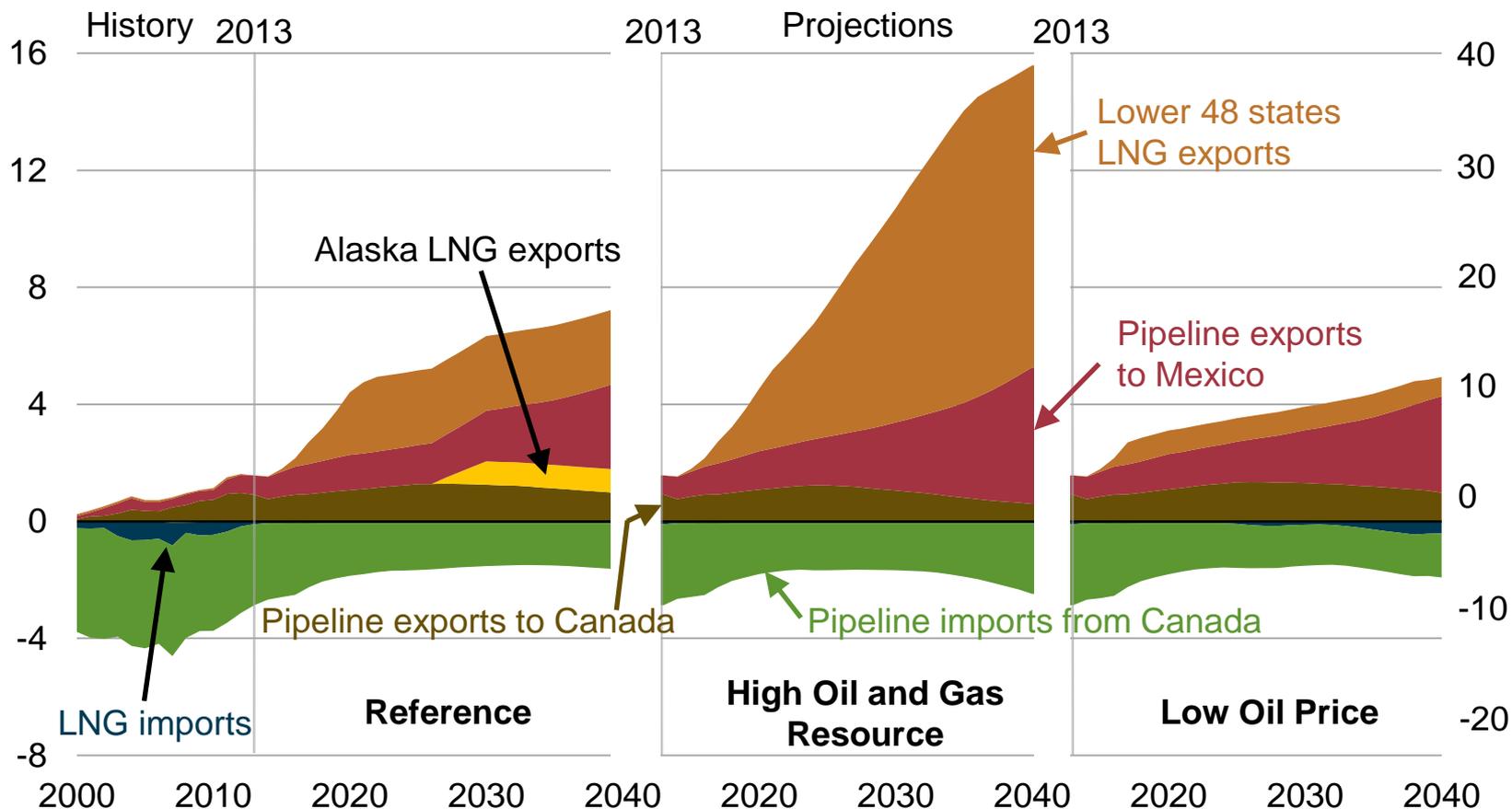


Source: EIA, Annual Energy Outlook 2015

U.S. natural gas trade: Projected U.S. natural gas trade reflects the spread between domestic natural gas prices and world energy prices, along with resource outcomes

U.S. natural gas imports and exports
trillion cubic feet

billion cubic feet per day



Source: EIA, Annual Energy Outlook 2015

U.S. energy trade

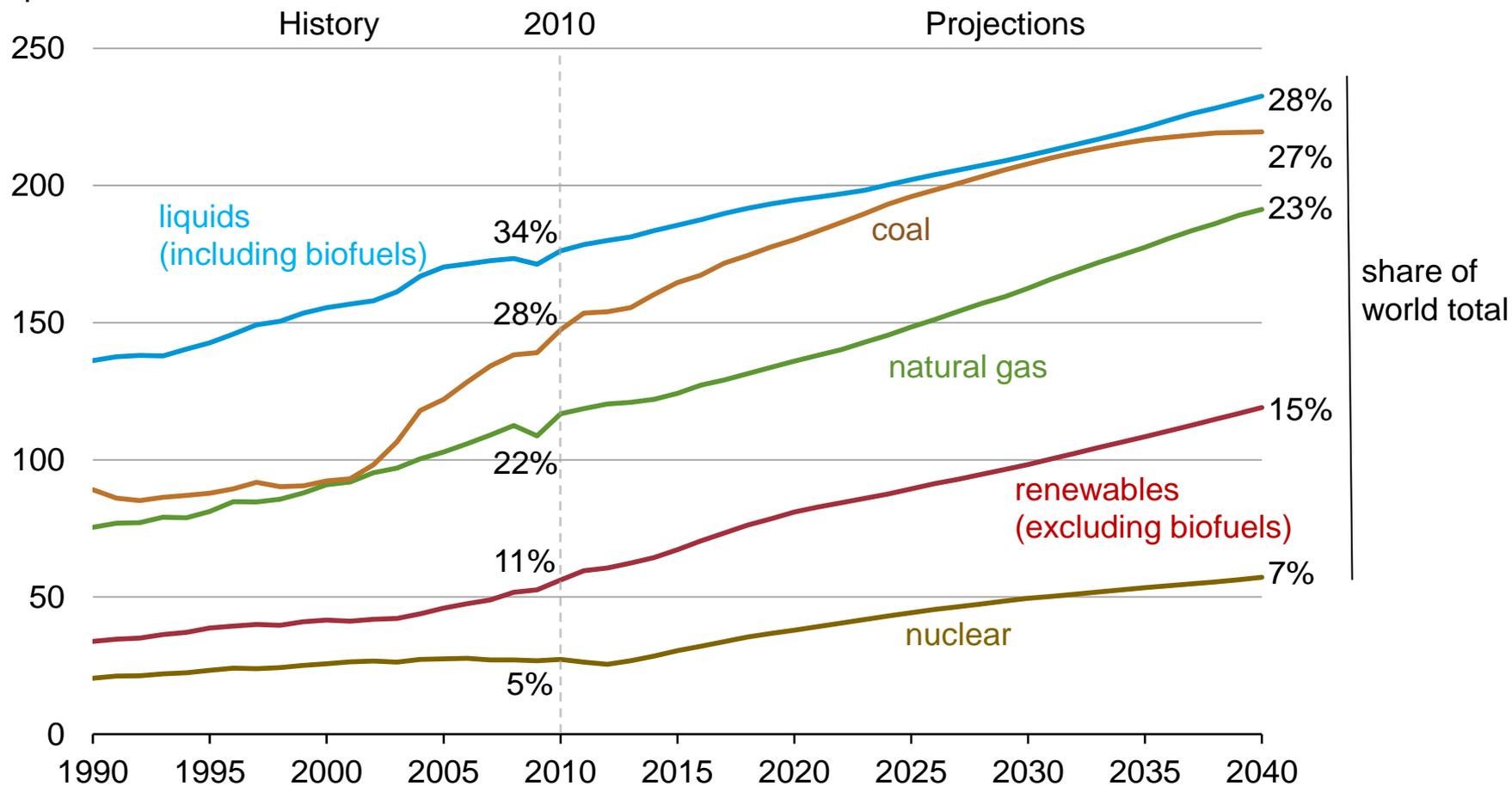
- Net exporter of petroleum products since 2010
- Crude oil export policy debate underway
- Net exporter of natural gas by 2017
- Net exports of coal are small and steady
- Net imports of electricity are small

Source: EIA, *Annual Energy Outlook 2015, Reference case*

Long-term international outlook

Renewable energy and nuclear power are the fastest growing source of energy consumption

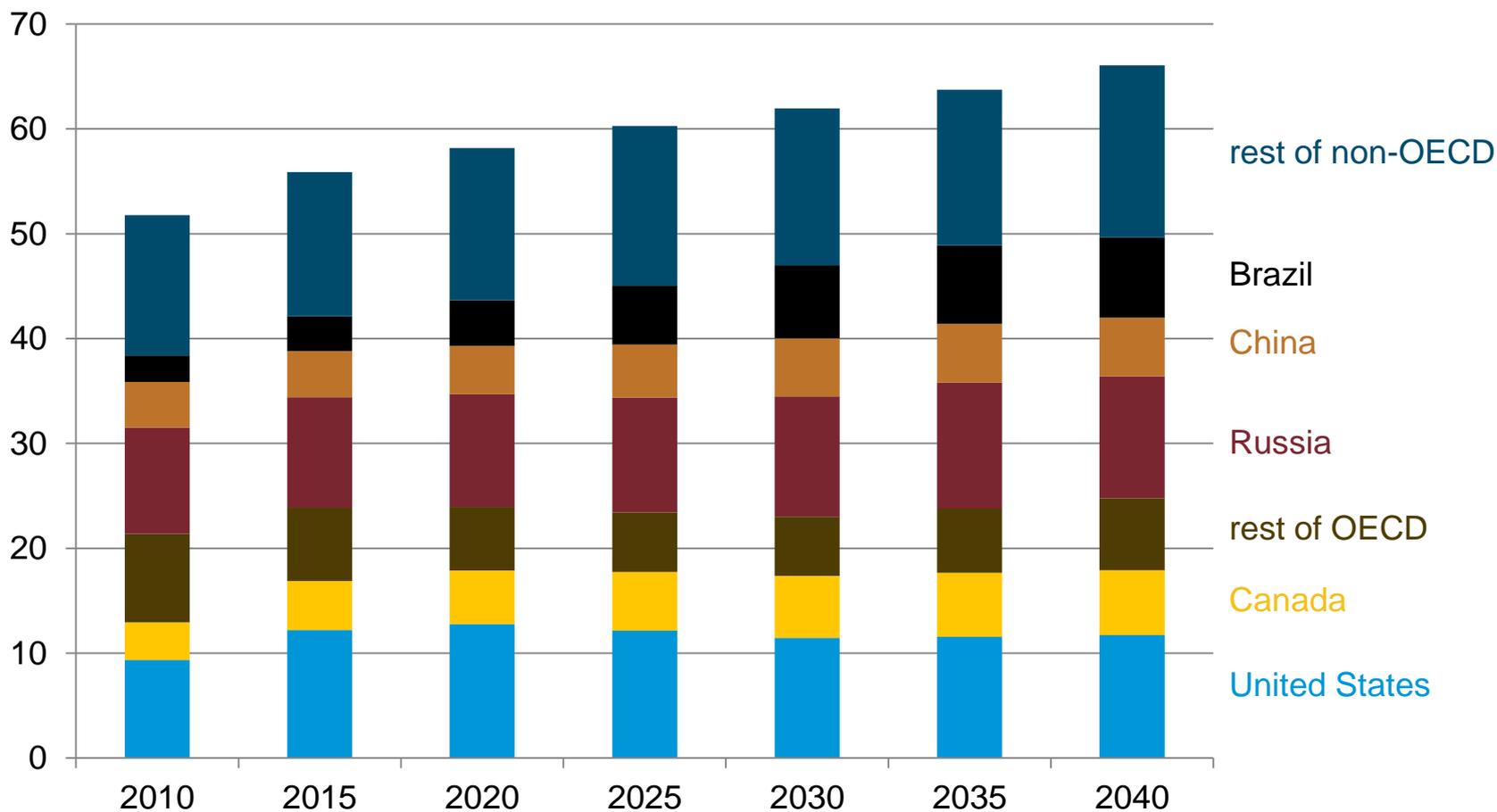
world energy consumption by fuel
quadrillion Btu



Source: EIA, International Energy Outlook 2013

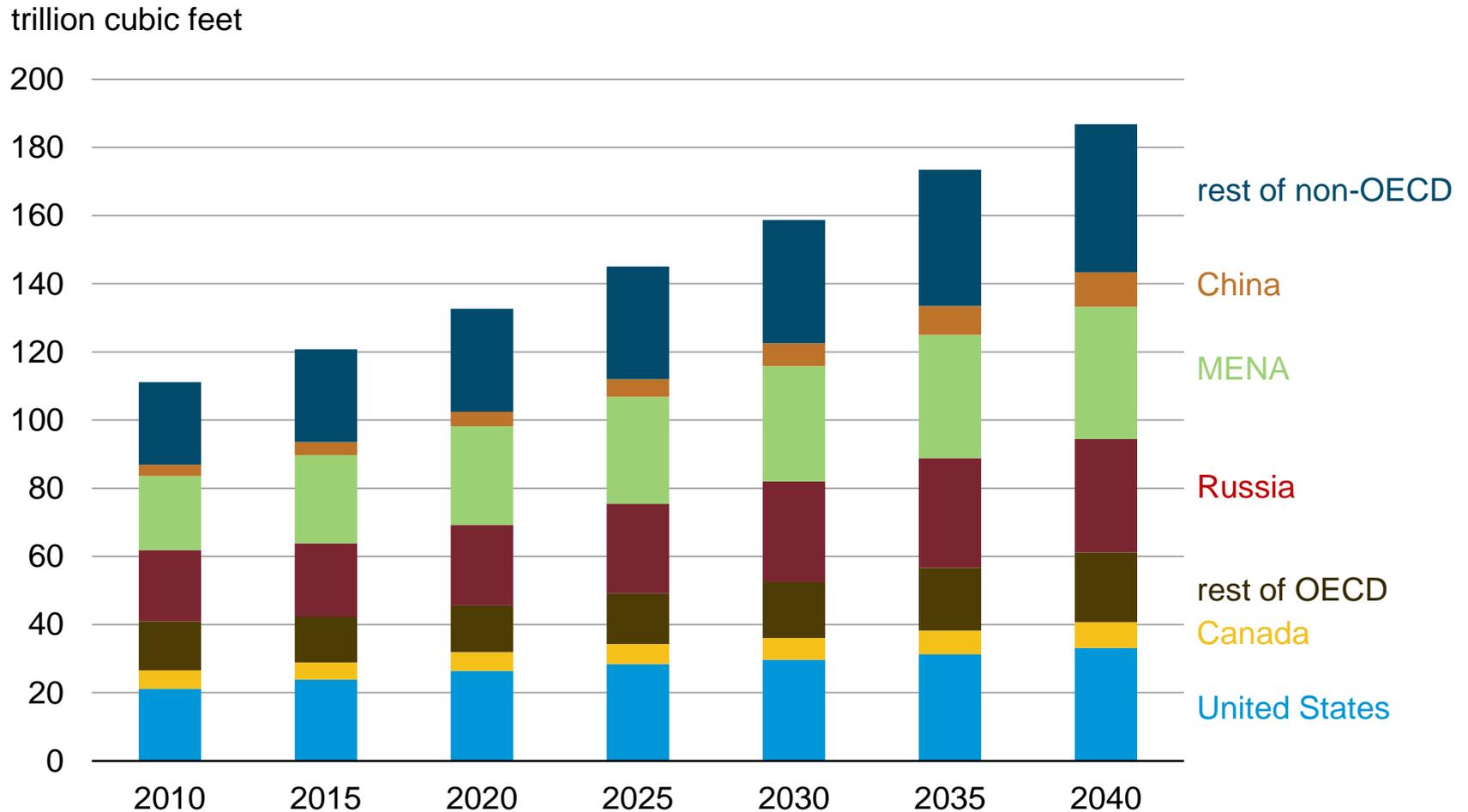
Non-OPEC petroleum and other liquids production

million barrels per day (MMb/d)



Source: EIA, International Energy Outlook 2013, Reference case

World natural gas production

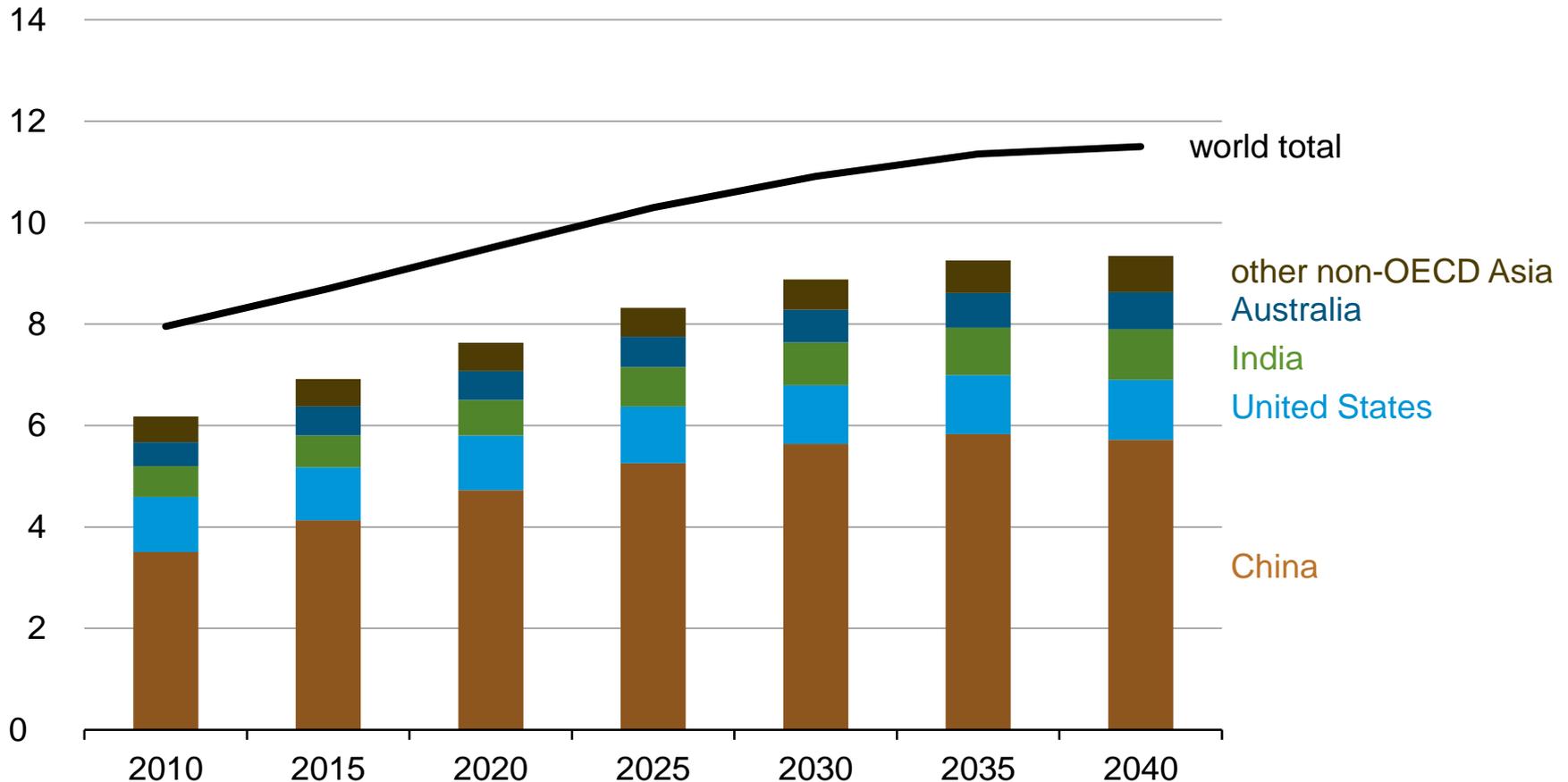


Note: The MENA region consists of the Middle East and North Africa countries

Source: EIA, International Energy Outlook 2013, Reference case

World coal production

billion short tons

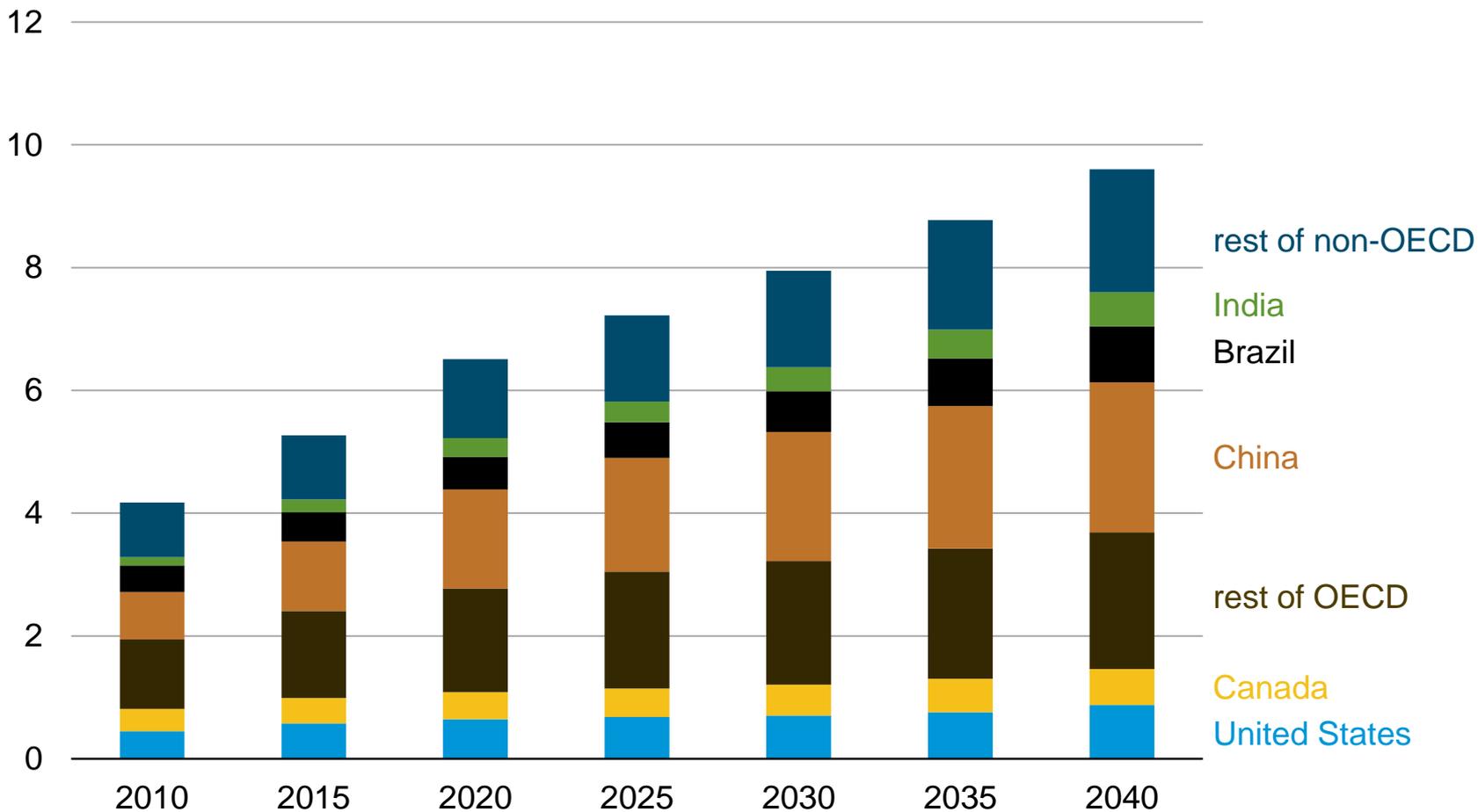


Note: Indonesia accounted for 72 percent of the total coal production in Other non-OECD Asia in 2010, rising from 52 percent in 2000. Throughout the projection period, Indonesia continues dominating the region's coal production.

Source: EIA, International Energy Outlook 2013, Reference case

World net hydropower and other renewable electricity generation

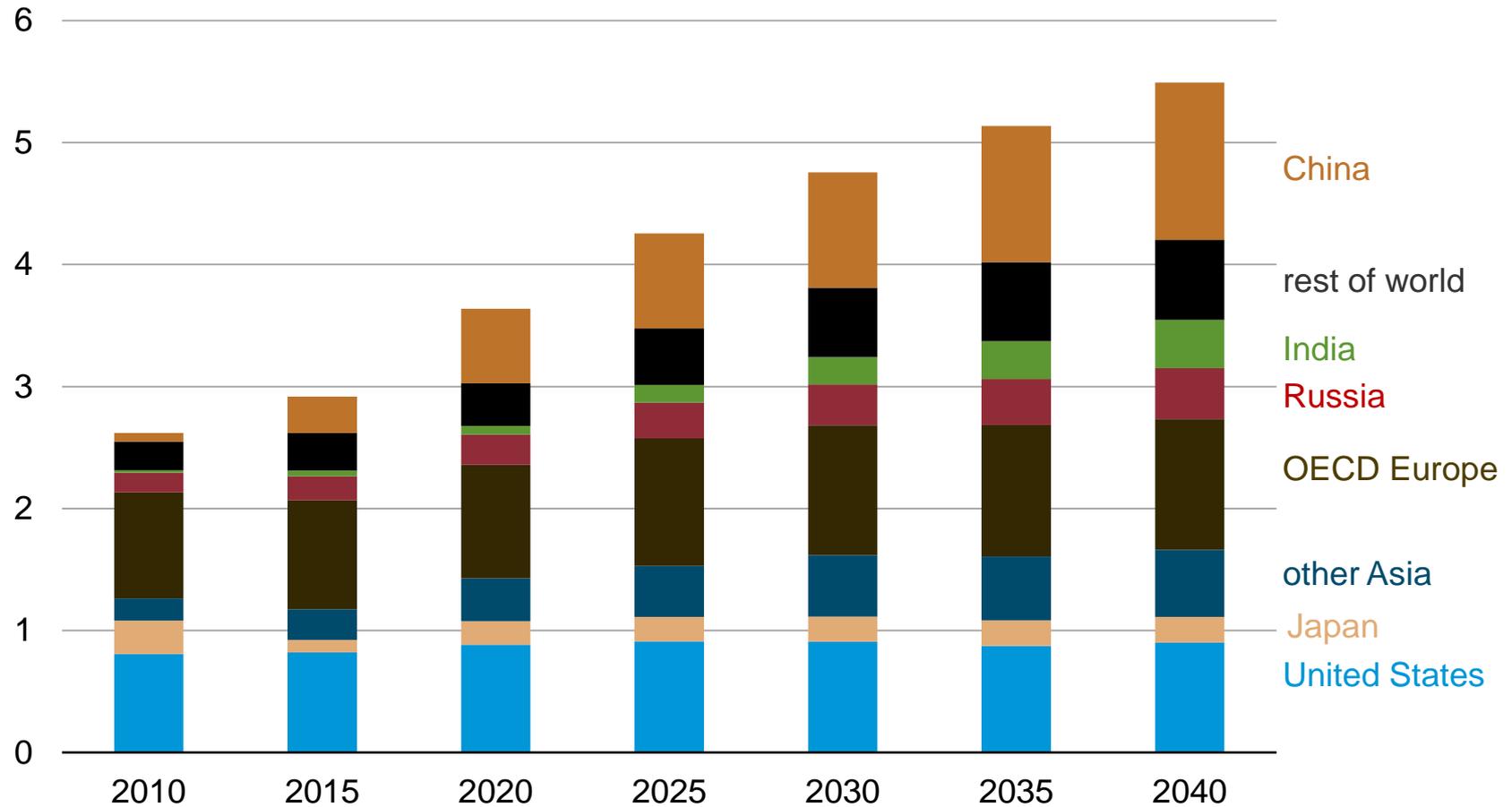
trillion kilowatthours



Source: EIA, International Energy Outlook 2013, Reference case

World net nuclear electricity generation

trillion kilowatthours



Source: EIA, International Energy Outlook 2013, Reference case

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

State Energy Profiles | www.eia.gov/state

Drilling Productivity Report | www.eia.gov/petroleum/drilling/

International Energy Portal | www.eia.gov/beta/international/?src=home-b1