U.S. oil and natural gas outlook

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By

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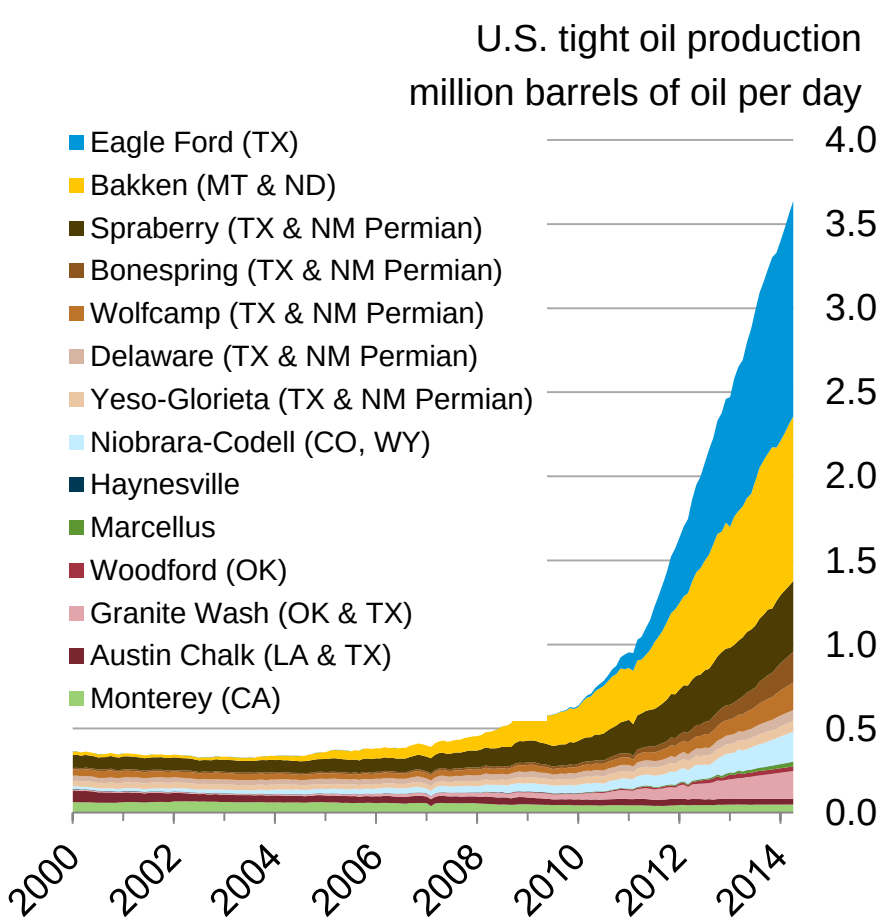
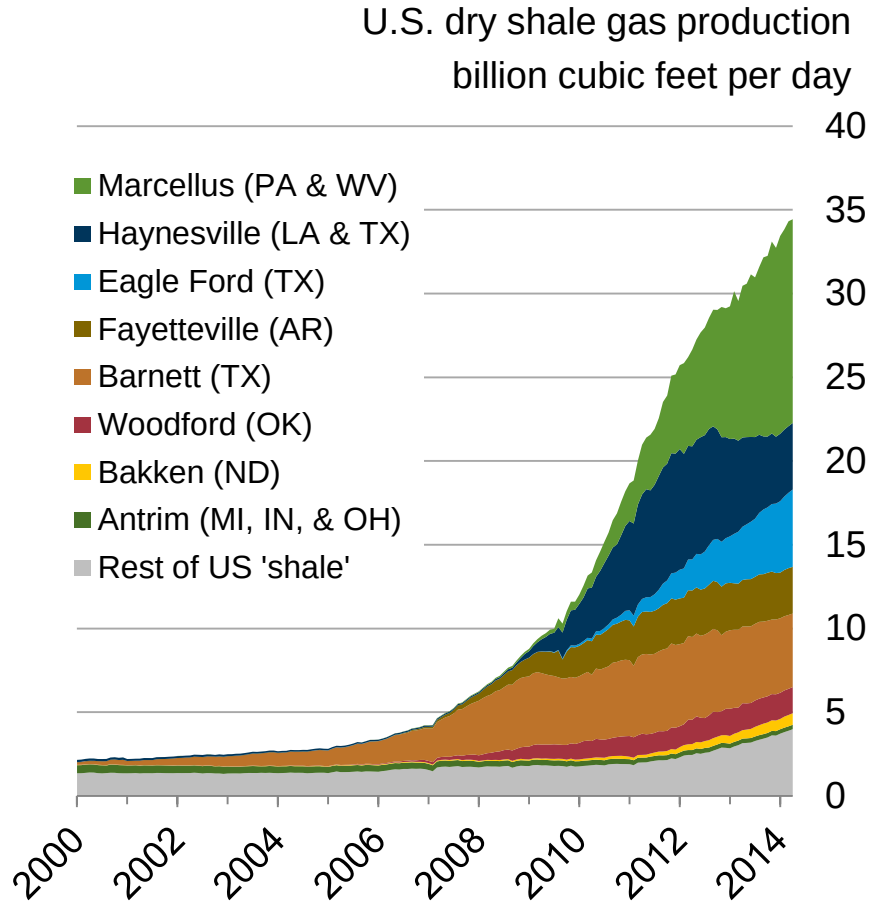
The U.S. has experienced a rapid increase in natural gas and oil production from shale and other tight resources





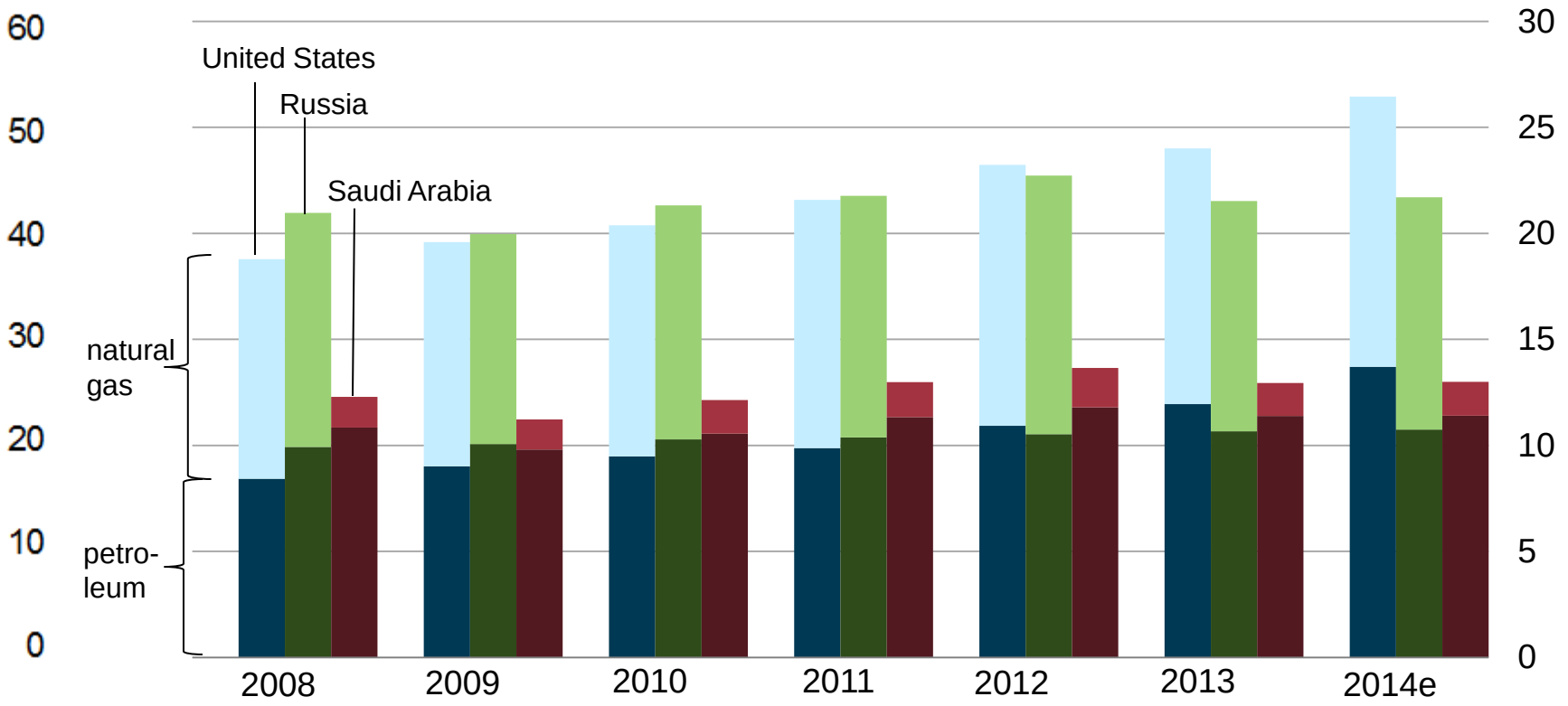
Sources: EIA derived from state administrative data collected by DrillingInfo Inc. Data are through April 2014 and represent EIA's official tight oil & shale gas estimates, but are not survey data. State abbreviations indicate primary state(s).

U.S. is the largest producer of petroleum and natural gas in the world

estimated U.S., Russia, and Saudi Arabia petroleum and natural gas production

quadrillion Btu

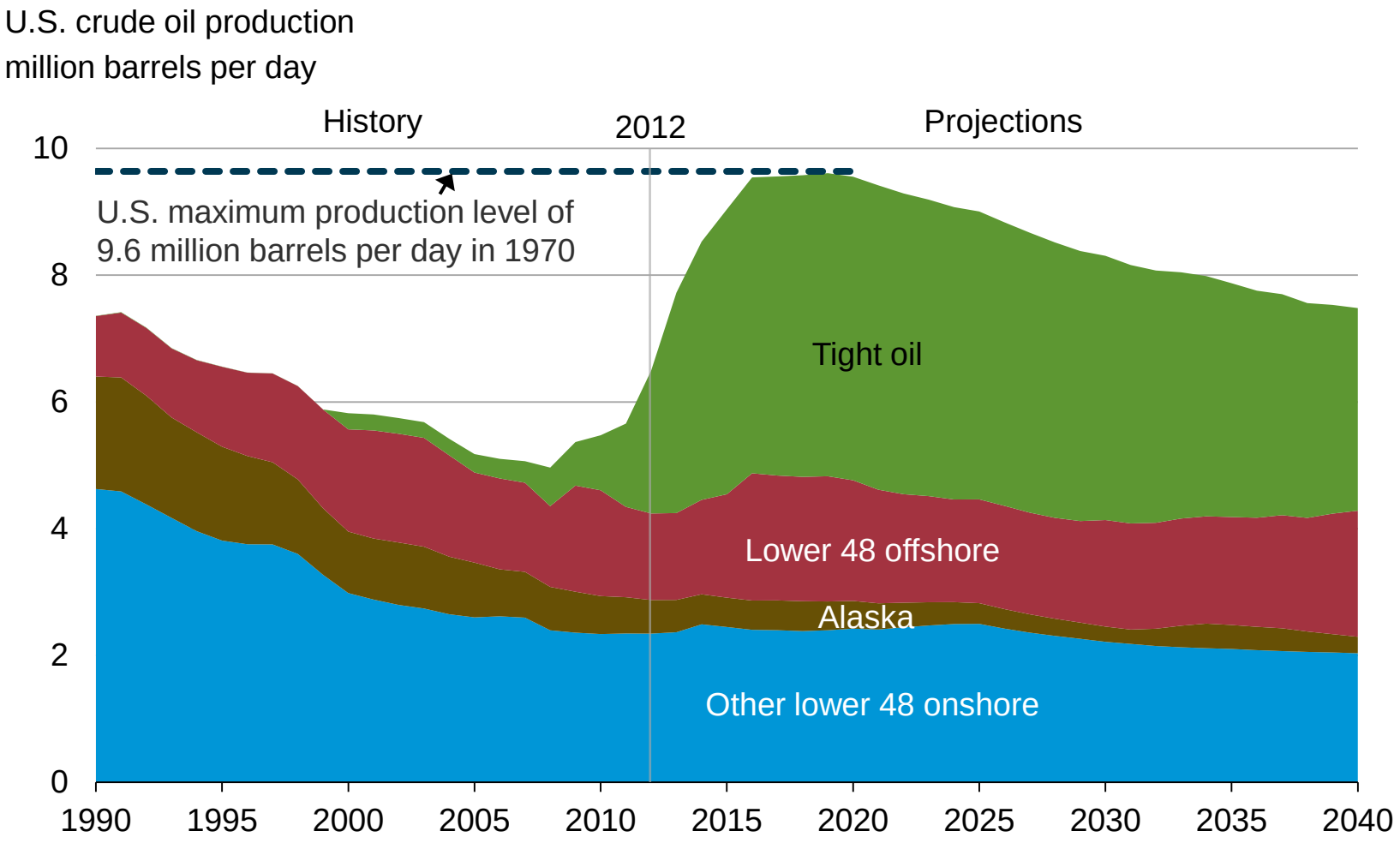
million barrels per day of oil equivalent



Source: U.S. Energy Information Administration

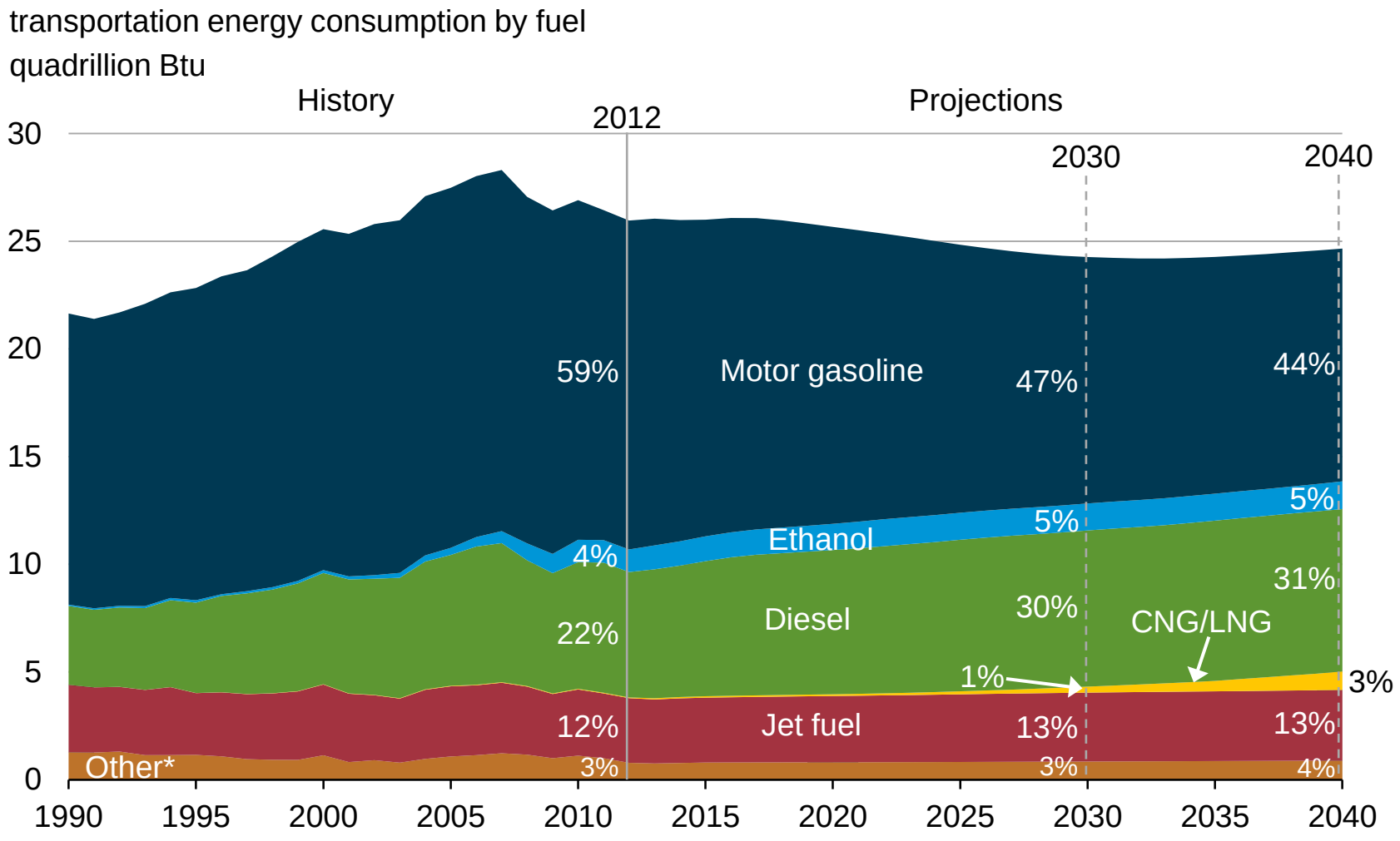
Note: Petroleum production includes crude oil, natural gas liquids, condensates, refinery processing gain, and other liquids, including biofuels; barrels per day oil equivalent were calculated using a conversion factor of 1 barrel oil equivalent=5.55 million British thermal units (Btu)

Growing tight oil and offshore crude oil production drive U.S. output close to historical high



Source: EIA, Annual Energy Outlook 2014 Reference case

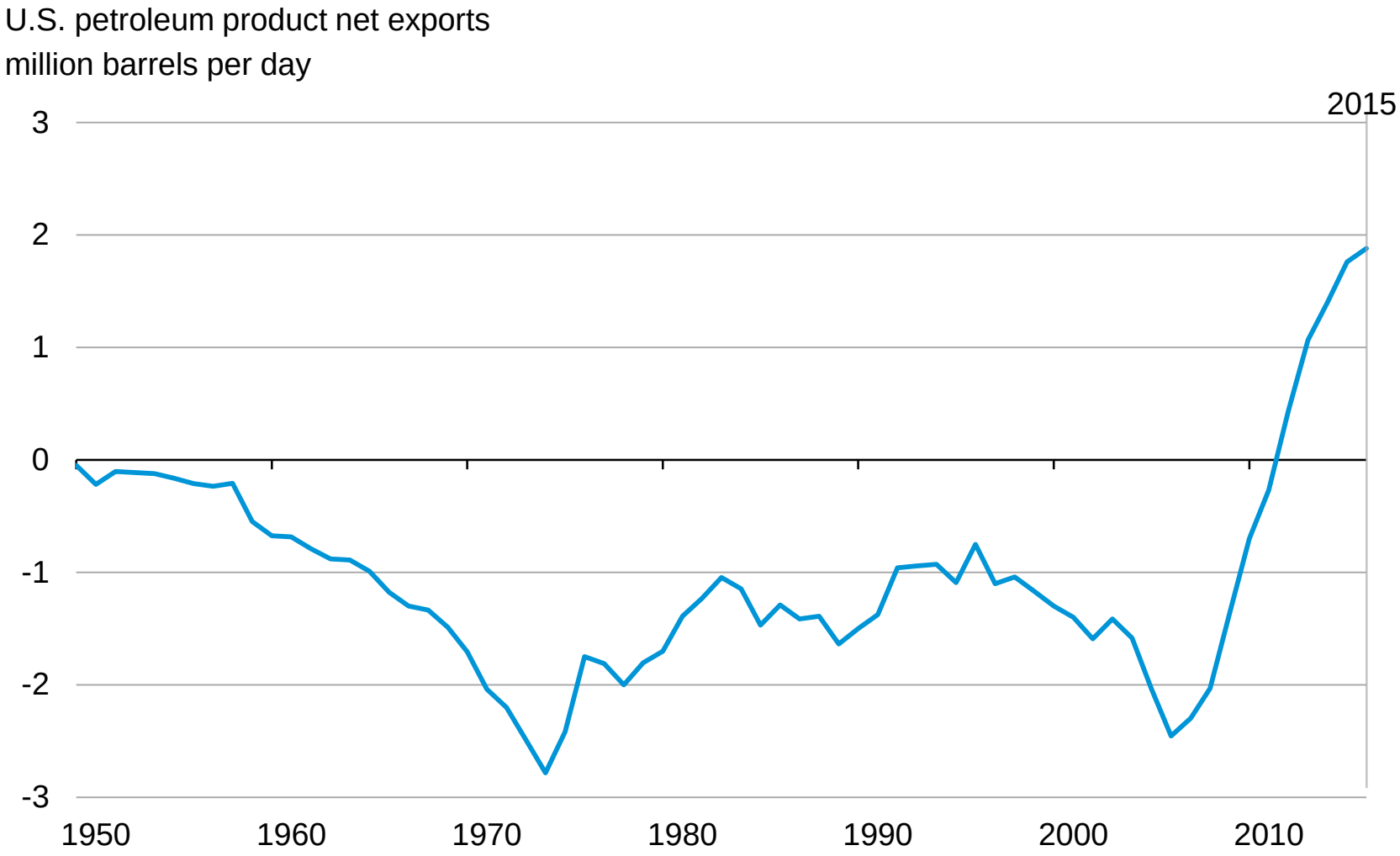
U.S. transportation sector motor gasoline demand declines, while diesel fuel accounts for a growing portion of the market



Source: EIA, Annual Energy Outlook 2014 Reference case

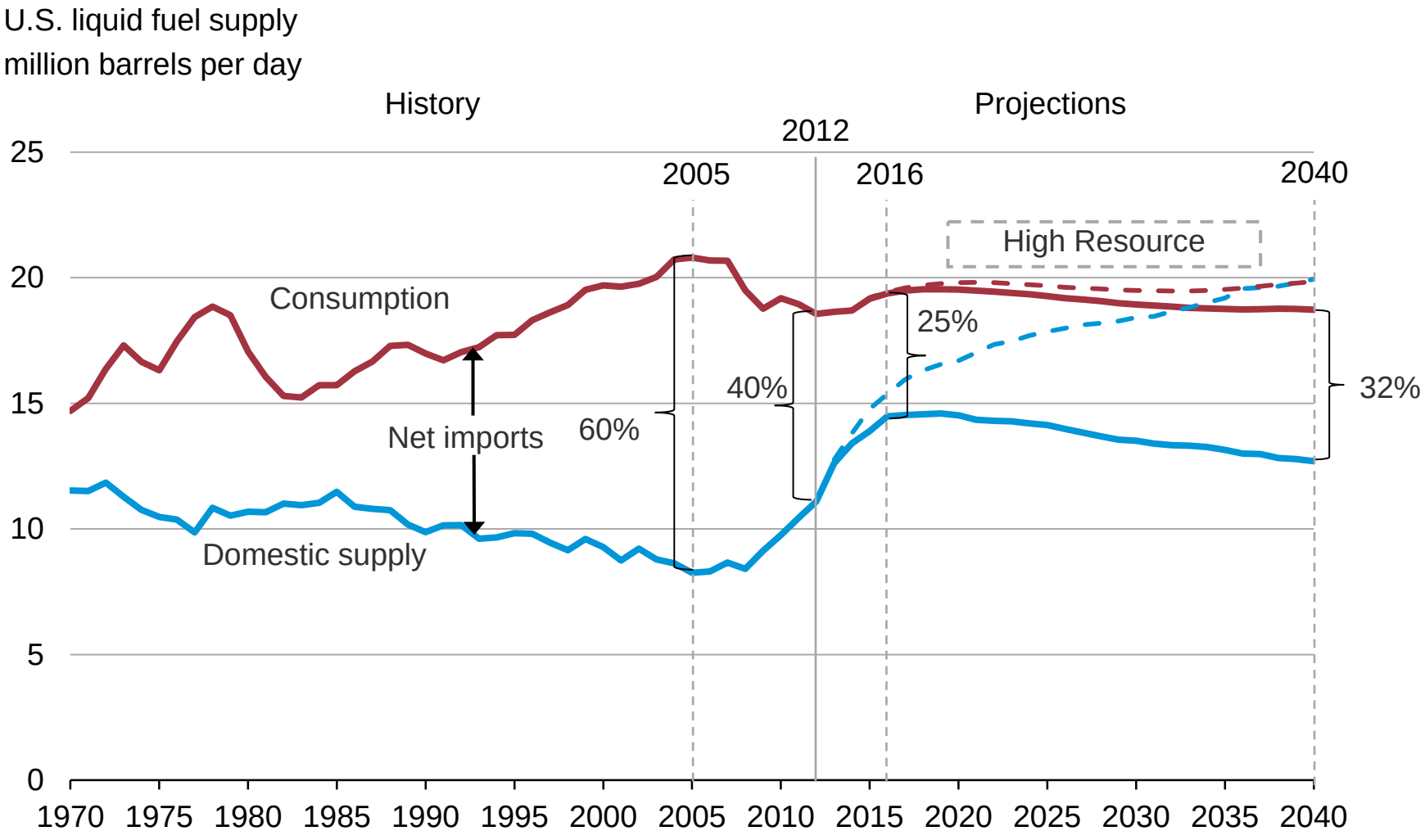
**Includes aviation gasoline, propane, residual fuel oil, lubricants, electricity, and liquid hydrogen*

U.S. is now a major net exporter of petroleum products



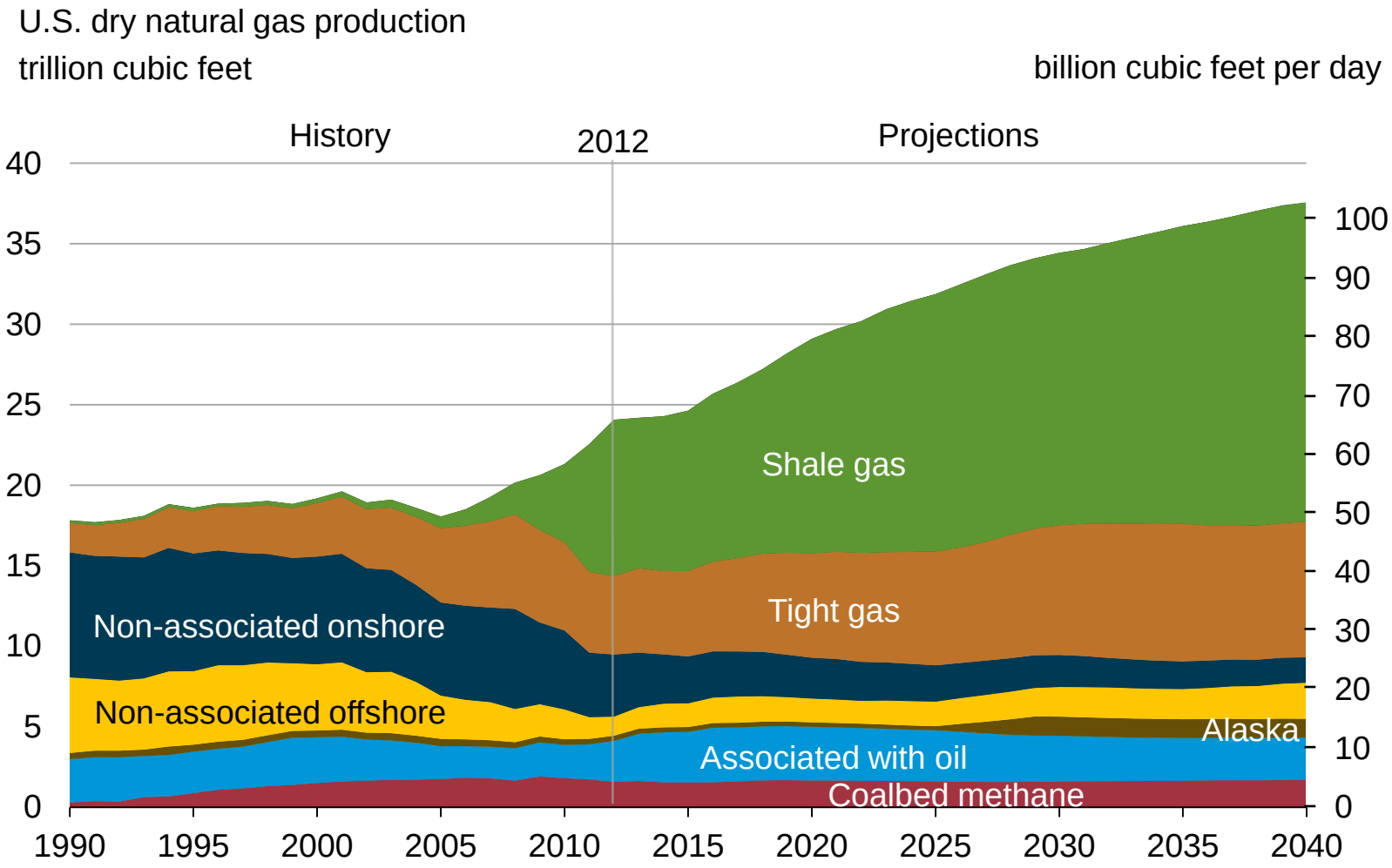
Source: EIA, Annual Energy Outlook 2014 Reference case and Short Term Energy Outlook

Although oil use is slightly increased in the High Resource case due to lower prices, net import dependence declines rapidly



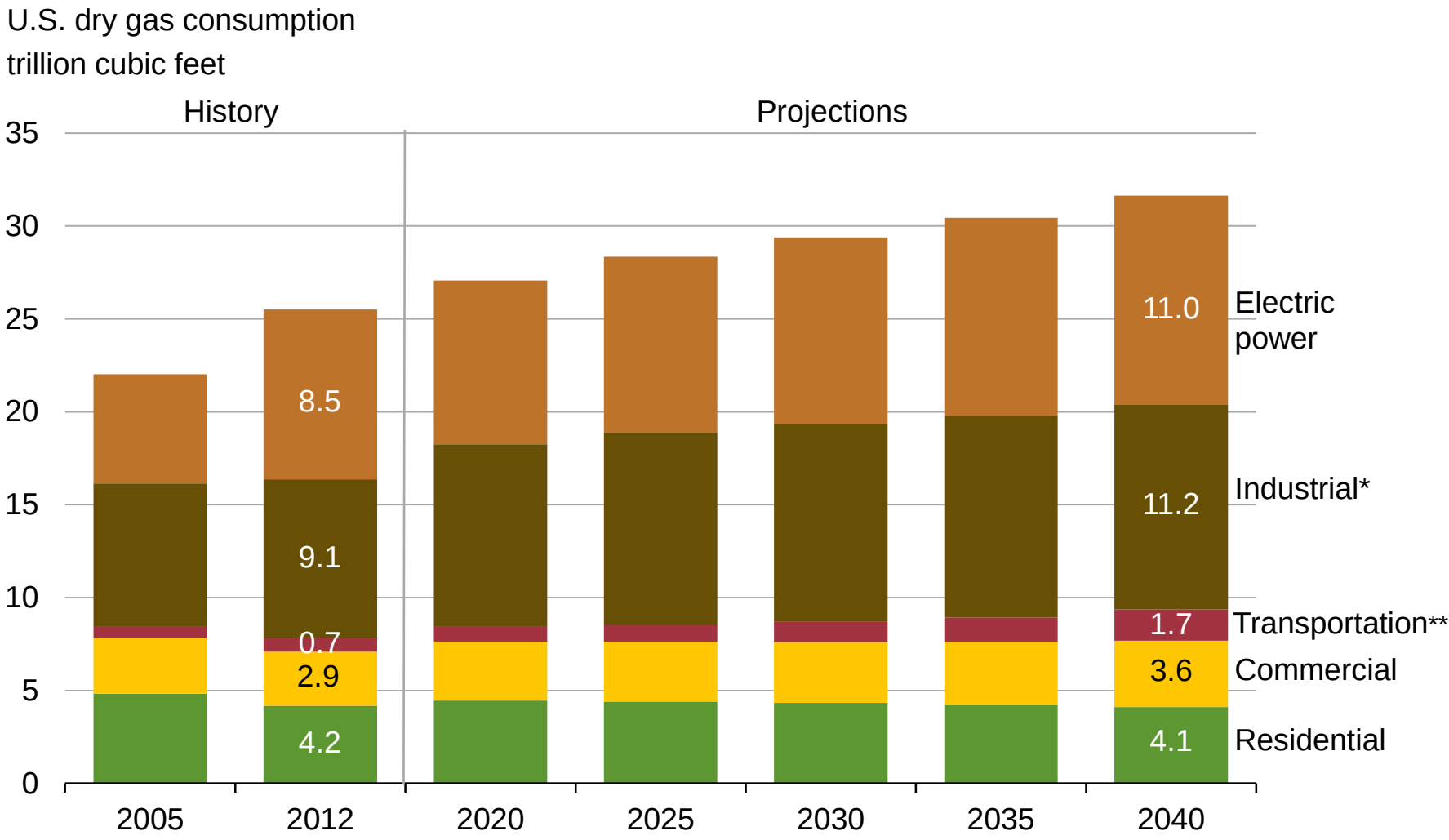
Source: EIA, Annual Energy Outlook 2014 Reference case and High Resource case

U.S. shale gas leads growth in total gas production through 2040 to reach half of U.S. output



Source: EIA, Annual Energy Outlook 2014 Reference case

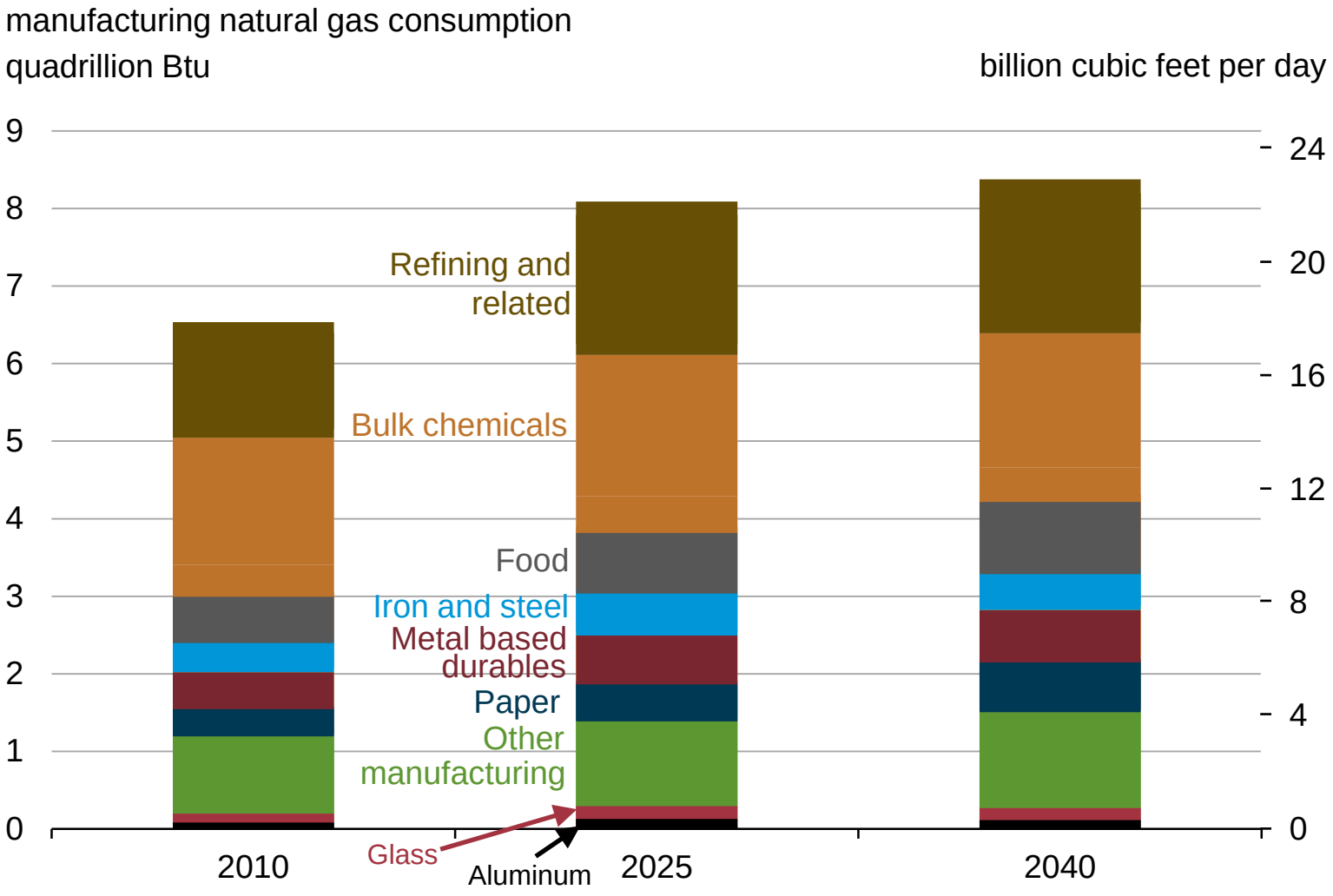
U.S. natural gas consumption growth is driven by electric power, industrial, and transportation use



Source: EIA, Annual Energy Outlook 2014 Reference case

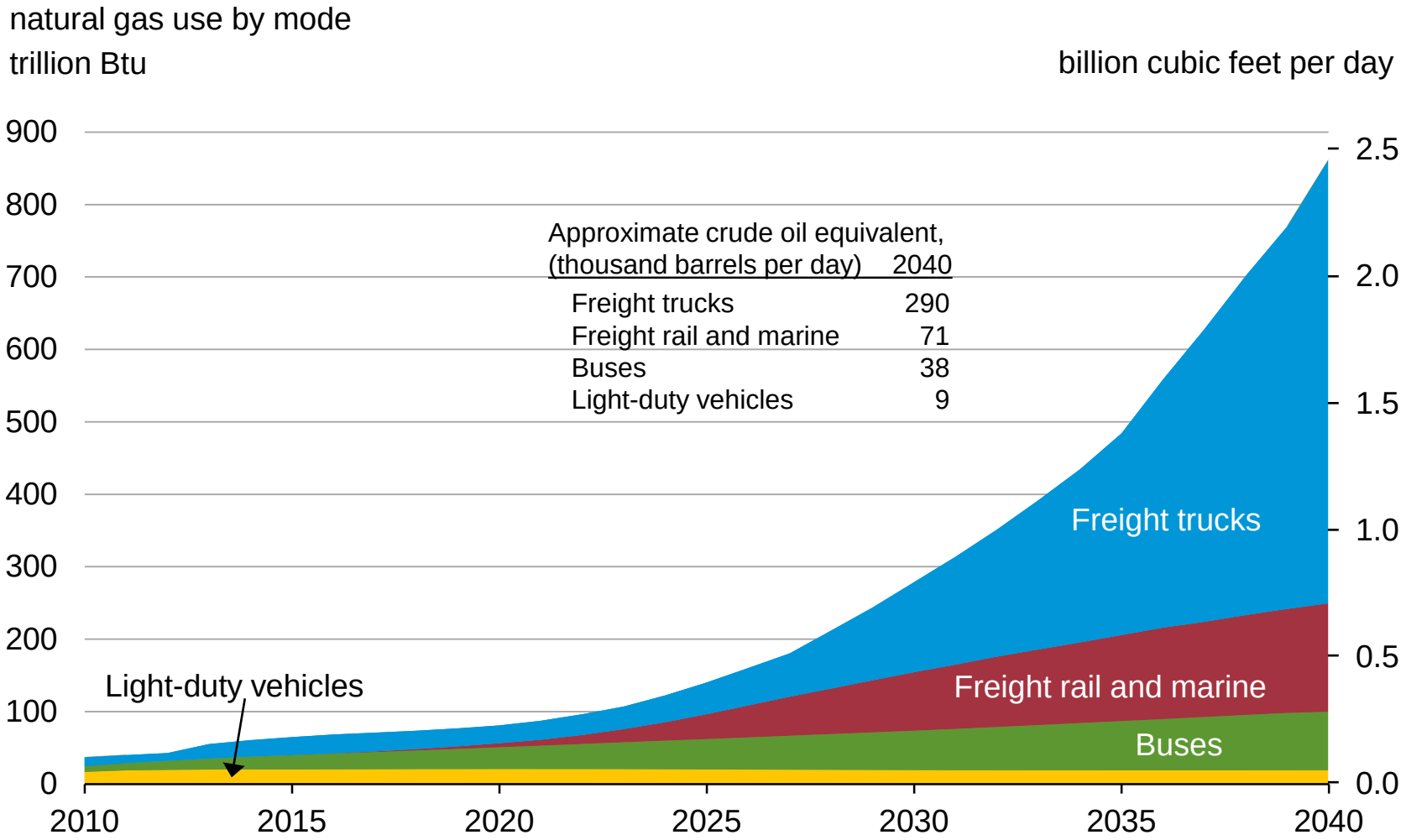
**Includes combined heat-and-power and lease and plant fuel*
***Includes pipeline fuel*

U.S. manufacturing output and natural gas use grows with low natural gas prices, particularly in the near term



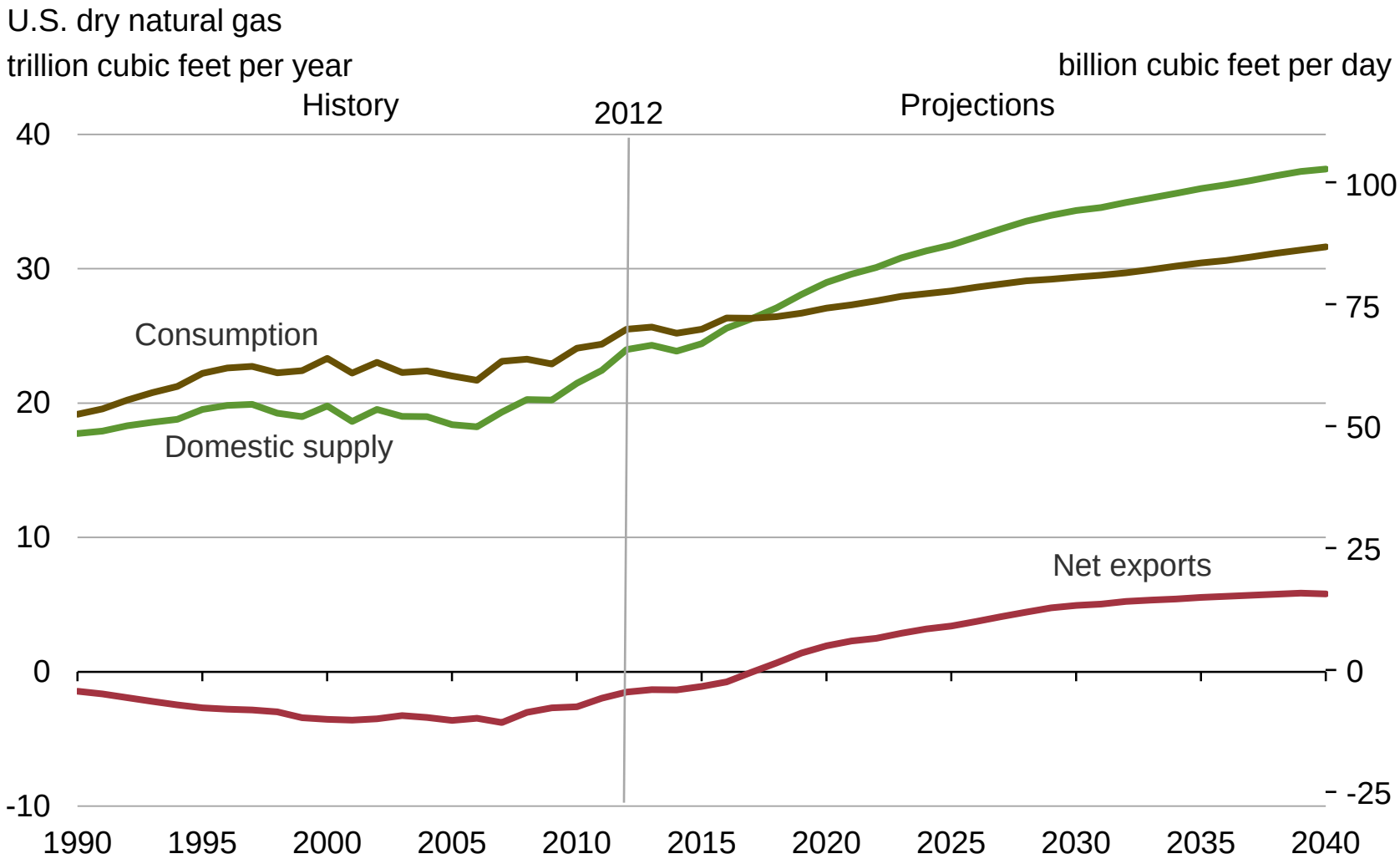
Source: EIA, Annual Energy Outlook 2014 Reference case

U.S. natural gas use in the transportation sector grows rapidly with the largest share in freight trucks



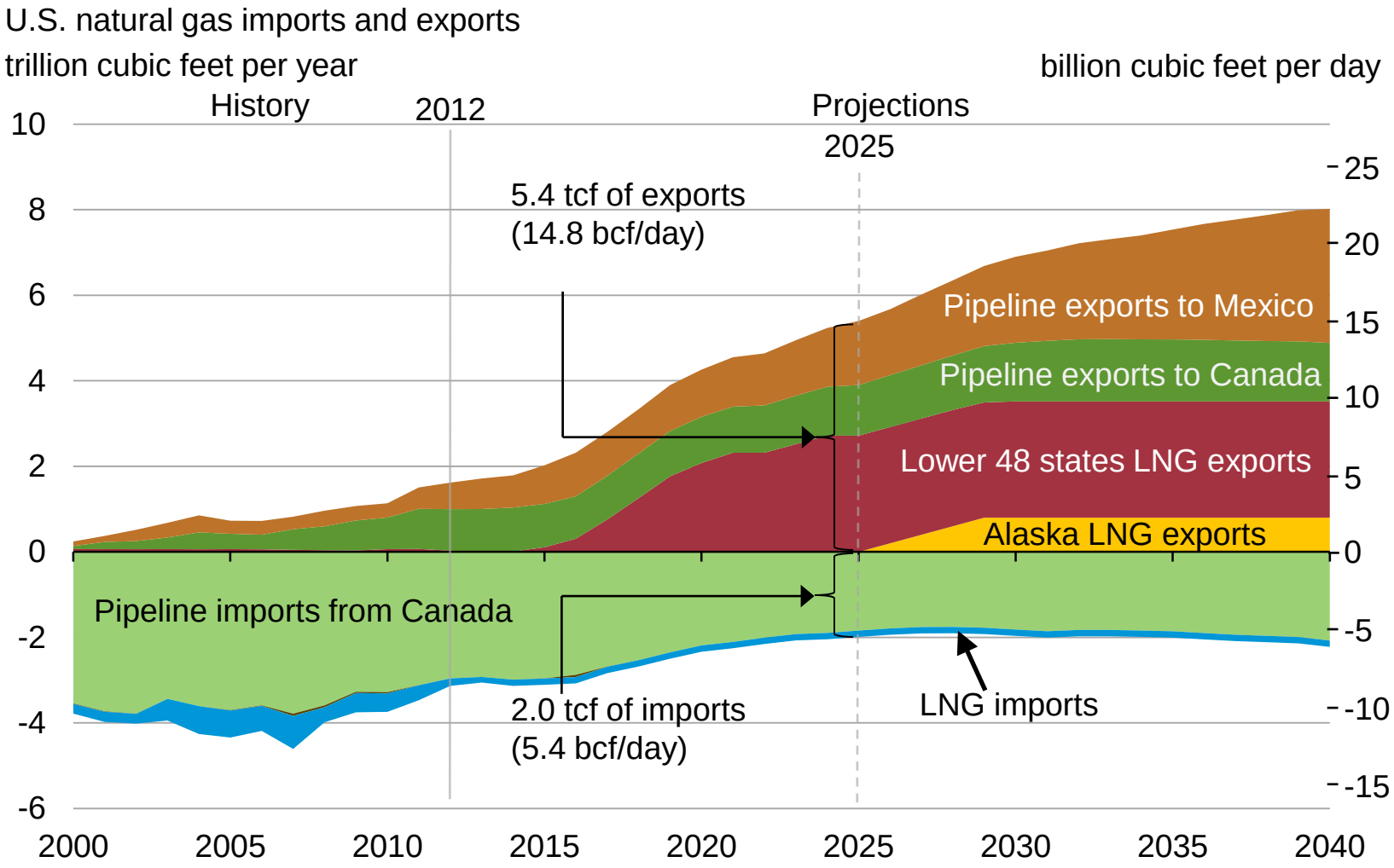
Source: EIA, Annual Energy Outlook 2014 Reference case

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



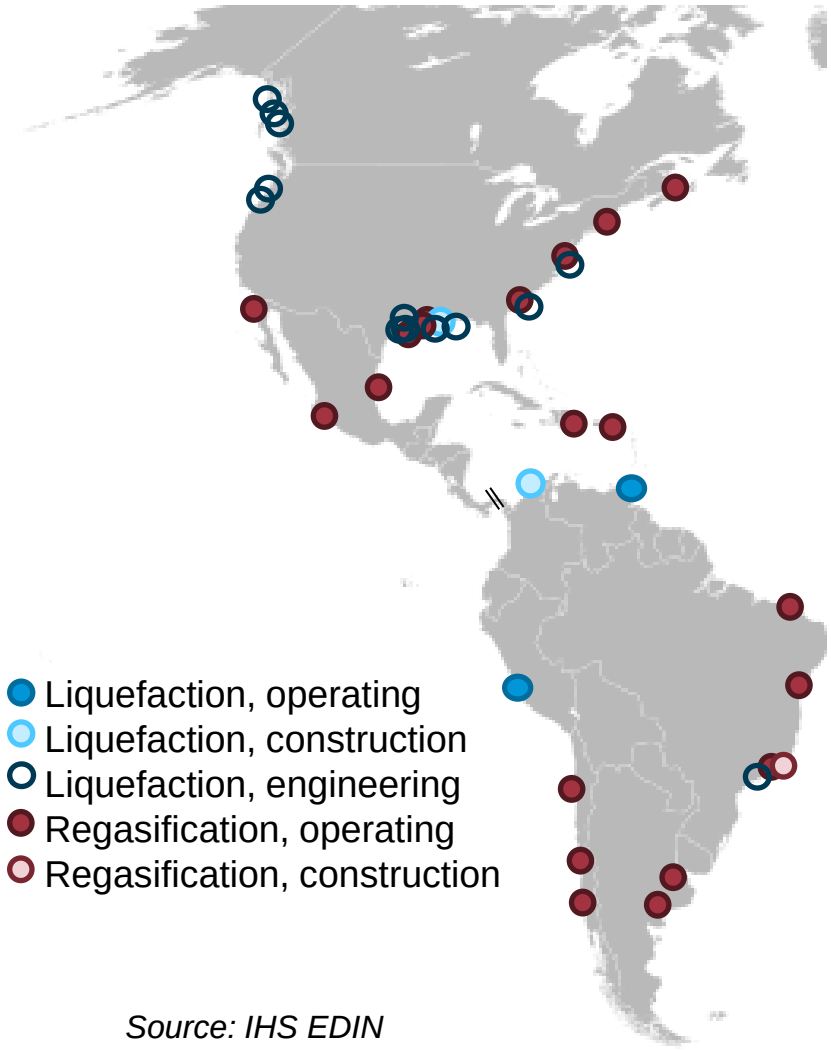
Source: EIA, Annual Energy Outlook 2014 Reference case

U.S. natural gas trade



Source: EIA, Annual Energy Outlook 2014 Reference case

Liquefaction and regasification projects in the Americas



Source: IHS EDIN

Note: Displays larger import/export facilities only

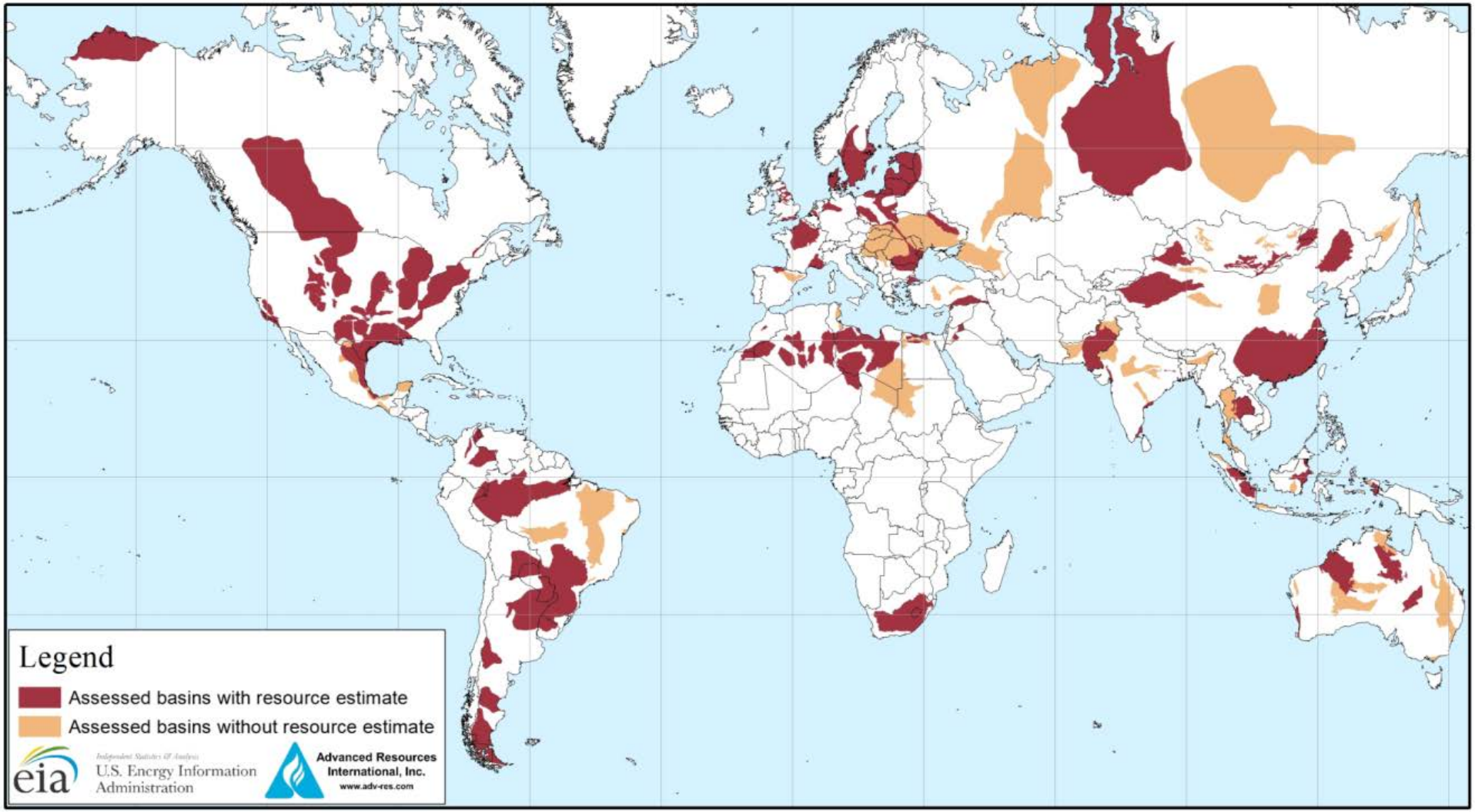
Liquefaction (bcf/d)

Country	Operating	Construction	Engineering
Peru	0.6		
Trinidad and Tobago	2.0		
Colombia		0.1	
United States		1.2	13.1
Brazil			0.4
Canada			3.3
Total	**2.6**	**1.3**	**16.8**

Regasification (bcf/d)

Country	Operating	Construction	Engineering
Argentina	0.9		
Brazil	1.2	0.8	
Canada	1.0		
Chile	0.6		
Dominican Republic	0.2		
Mexico	2.3		
Puerto Rico	0.4		
United States	10.2		
Total	**16.8**	**0.8**	**0**

EIA / ARI assessed shale oil and shale gas resources 2013



Source: United States basins from EIA and United States Geological Survey, other basins from ARI based on data from various published studies

Top ten countries with technically recoverable shale resources

Monterey downgrade will lower this to 45

Shale gas

Rank	Country	Trillion cubic feet
1	China	1,115
2	Argentina	802
3	Algeria	707
4	United States	665
5	Canada	573
6	Mexico	545
7	Australia	437
8	South Africa	390
9	Russia	285
10	Brazil	245
	World total	**7,299**

Shale oil

Rank	Country	Billion barrels
1	Russia	75
2	United States	58
3	China	32
4	Argentina	27
5	Libya	26
6	Australia	18
7	Venezuela	13
8	Mexico	13
9	Pakistan	9
10	Canada	9
	World total	**345**

Source: United States: EIA and USGS; Other basins: ARI.

Note: ARI estimates U.S. *shale gas resources at 1,161 trillion cubic feet* and *U.S. shale oil resources at 48 billion barrels* .

Geopolitical implications of shale resources

- Shale oil is both light and sweet — the rapid growth in its supply has implications for crude oil pricing relationships, the value of different refinery configurations, refinery output slates, transportation logistics, exports, and SPR operations
- High volumes of shale oil production, with other drivers, could diminish the market share and pricing power of key OPEC producers
- Russia's share of Europe's gas market could be reduced by increased European shale production
- China's success in shale development and its future LNG imports (and coal use) are inversely related
- Shorter lead times for the 'manufacturing' model of production from shale resources may reduce price volatility (over an extended period) compared to the conventional 'exploration/development' model

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 Portal | www.eia.gov/state

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