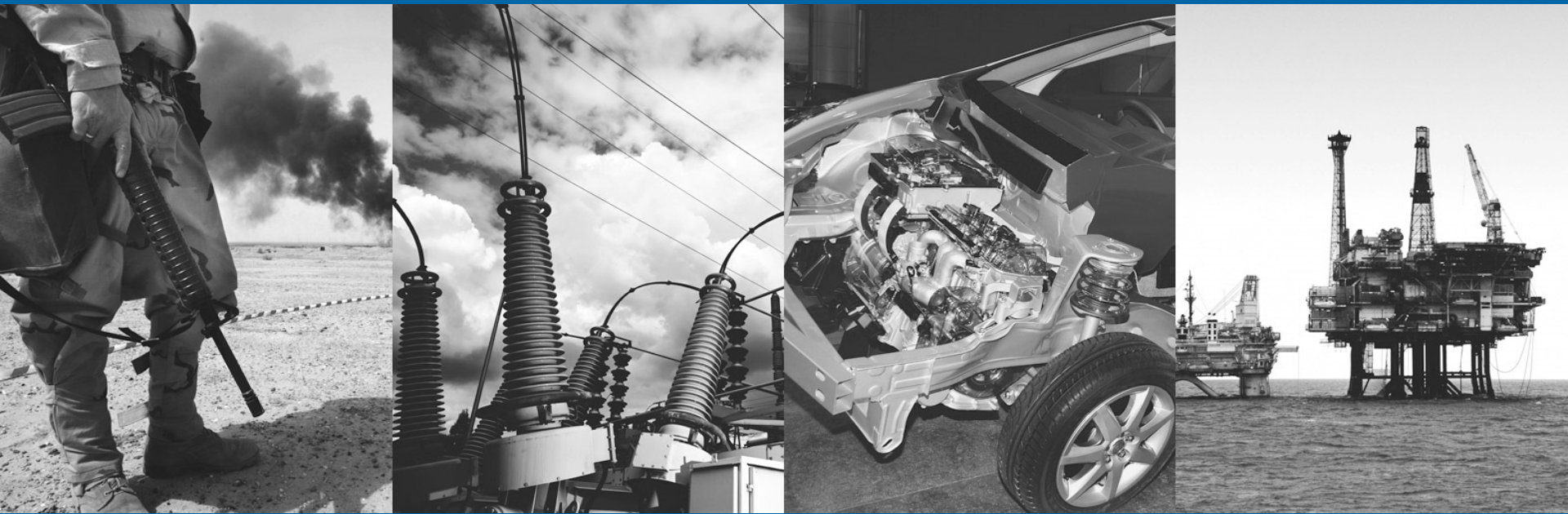


Energy Security Fact Pack

Q4 2014



Securing America's
Future Energy



@Securing_Energy
#SAFEenergyfacts

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SAFE's Energy Security Fact Pack provides a data-driven overview of the latest trends in U.S. energy security, including domestic and global oil production and consumption, oil market dynamics, energy prices, consumer spending on oil, fuel efficiency, and alternative fuel vehicles.

Q4 2014: Oil Prices Plunge to Multi-Year Lows

Global oil prices continued to fall in Q4, ending the year at \$55 per barrel (bbl) (Brent), less than half their mid-June highs [Slide 4]. Notably, and despite dissension from some members, OPEC's November 27 meeting saw the cartel maintain production levels. Although prices have since declined below \$50/bbl (in mid-January), and the death of King Abdullah of Saudi Arabia briefly generated speculation that the kingdom's oil policy might shift, the commitment appears robust.

Nevertheless, lower oil prices are affecting governments, oil companies, and other market participants worldwide. For example, Iraq's total revenues were approximately 30% lower in December 2014 than they were in the summer despite production reaching a 35-year high. Moreover, several major international oil companies have announced cuts in capital expenditures for 2015, and while overall U.S. oil production growth is still expected to remain positive this year, the rig count (reflective at least in the short term of exploration and development rather than production) has fallen approximately 22% since the end of November [Slide 6].

Oil price volatility (49% annualized monthly in December vs. 16% January to June) has returned to levels not seen since 2008/9 [Slide 23], but lower prices helped U.S. consumers reduce spending on petroleum fuels by 9% quarter-over-quarter (q-o-q) in Q4 [Slide 22].

The Q4 2014 Fact Pack includes a 'Charts of the Quarter' section focused on the global oil demand and supply balance, oil prices, and the effects of current trends on domestic oil production activities and oil companies.

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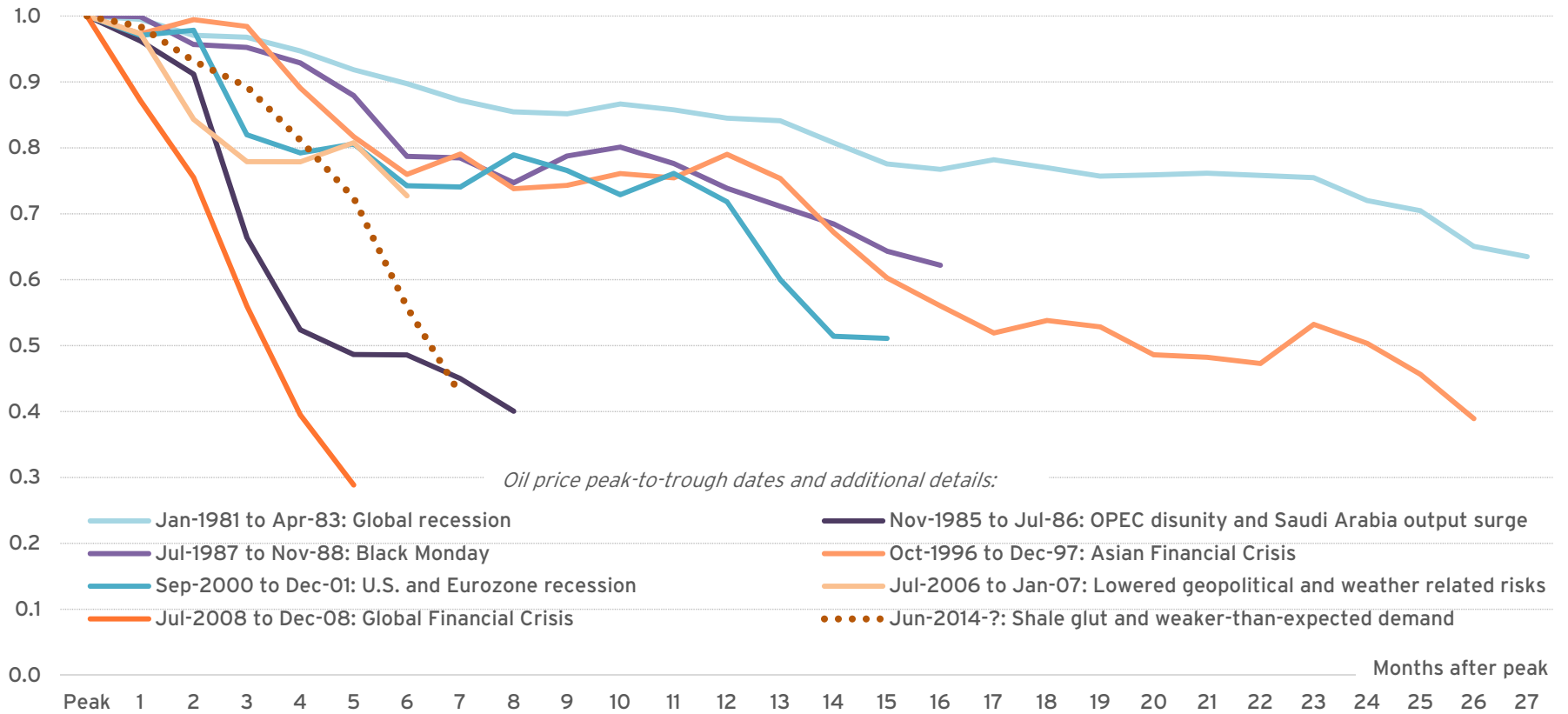
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Historical Oil Price Declines, Indexed

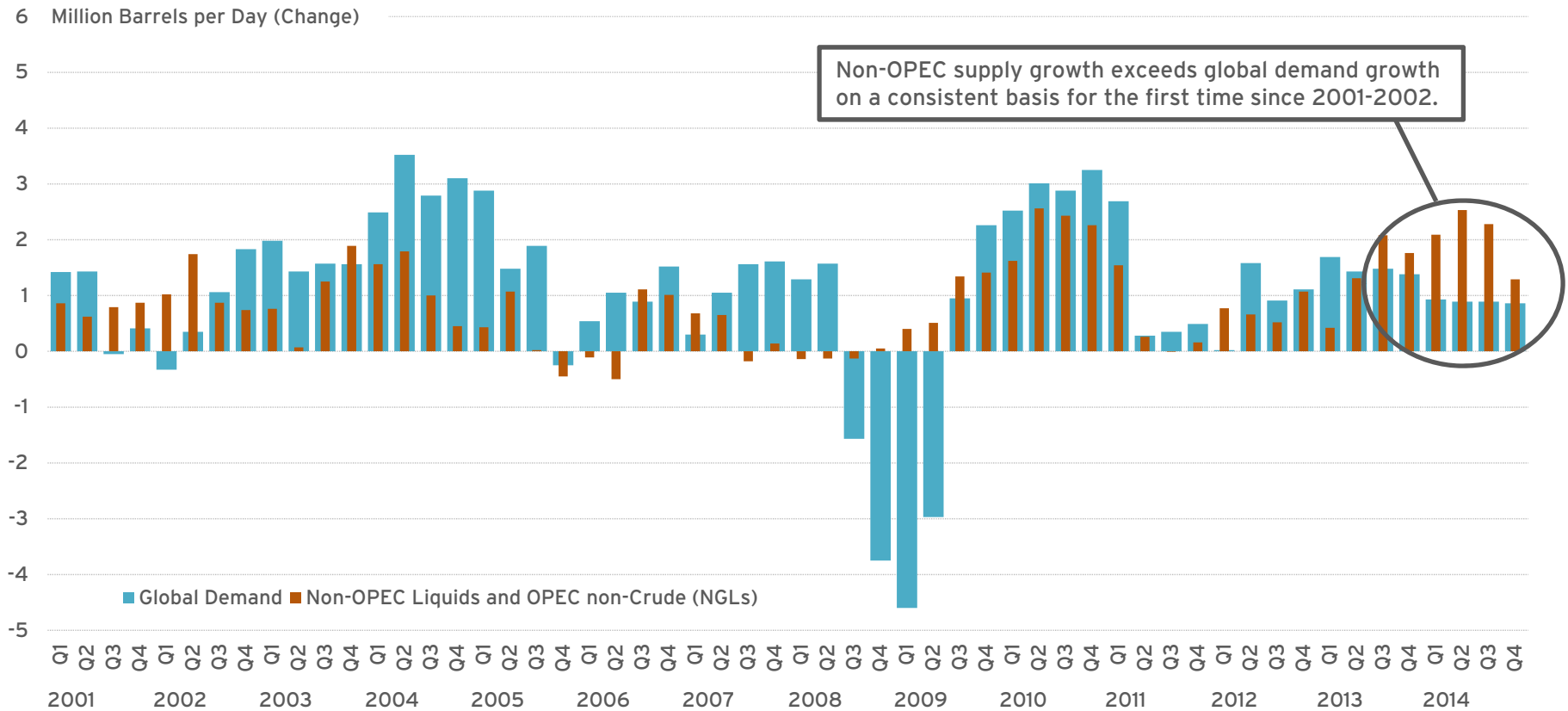
The current collapse in oil prices already ranks as one of the swiftest and most severe in modern history, on par with declines observed in 1985/86 and 2008. Prices have fallen more than 50% versus their June 2014 peak.



Source: SAFE analysis based on data from U.S. EIA

Y-o-Y Changes in Global Oil Supply and Demand

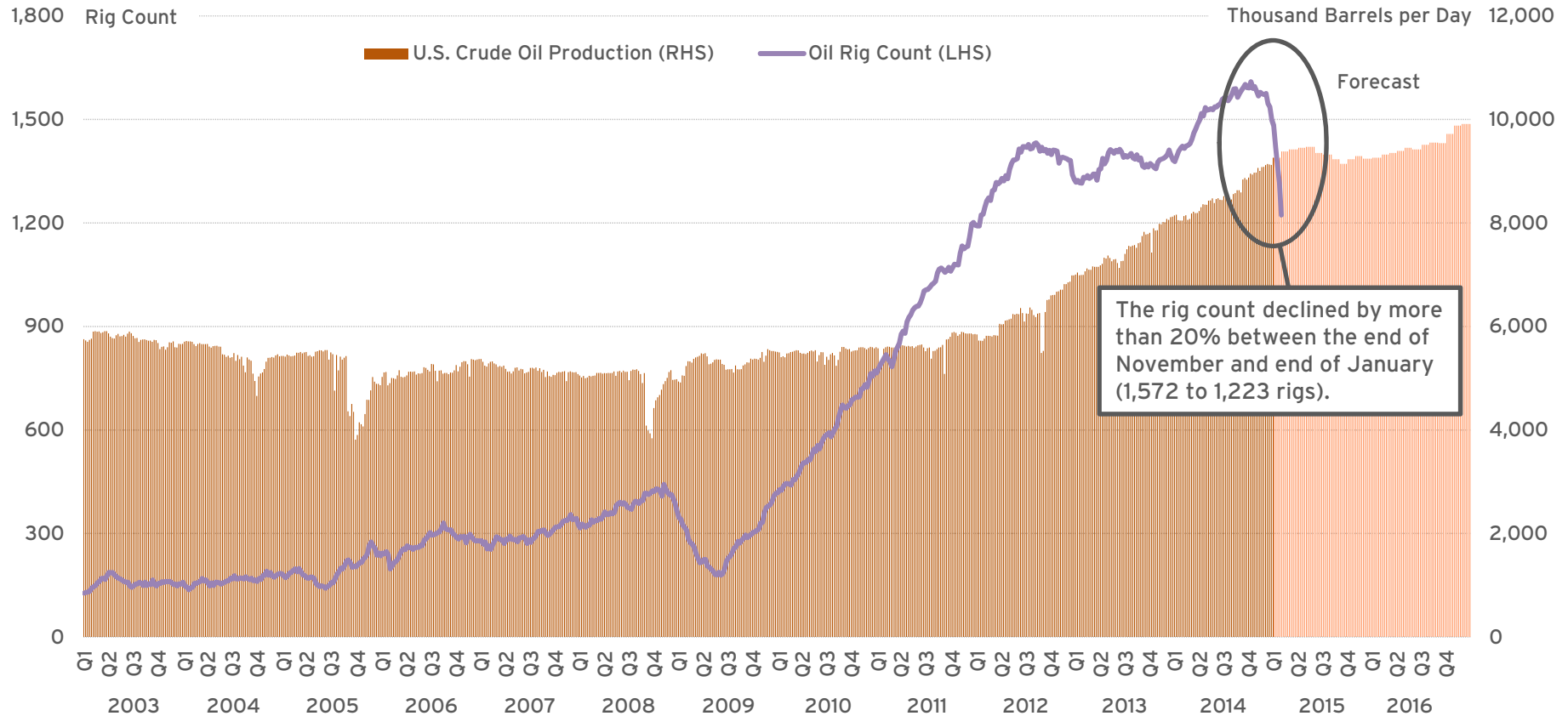
Growth in non-OPEC liquids supply has exceeded global oil demand growth for six straight quarters, placing downward pressure on the amount of crude oil supply that the market needs from OPEC. Most forecasters expect this general trend to continue in 2015.



Source: U.S. EIA

U.S. Rig Count and Crude Oil Production

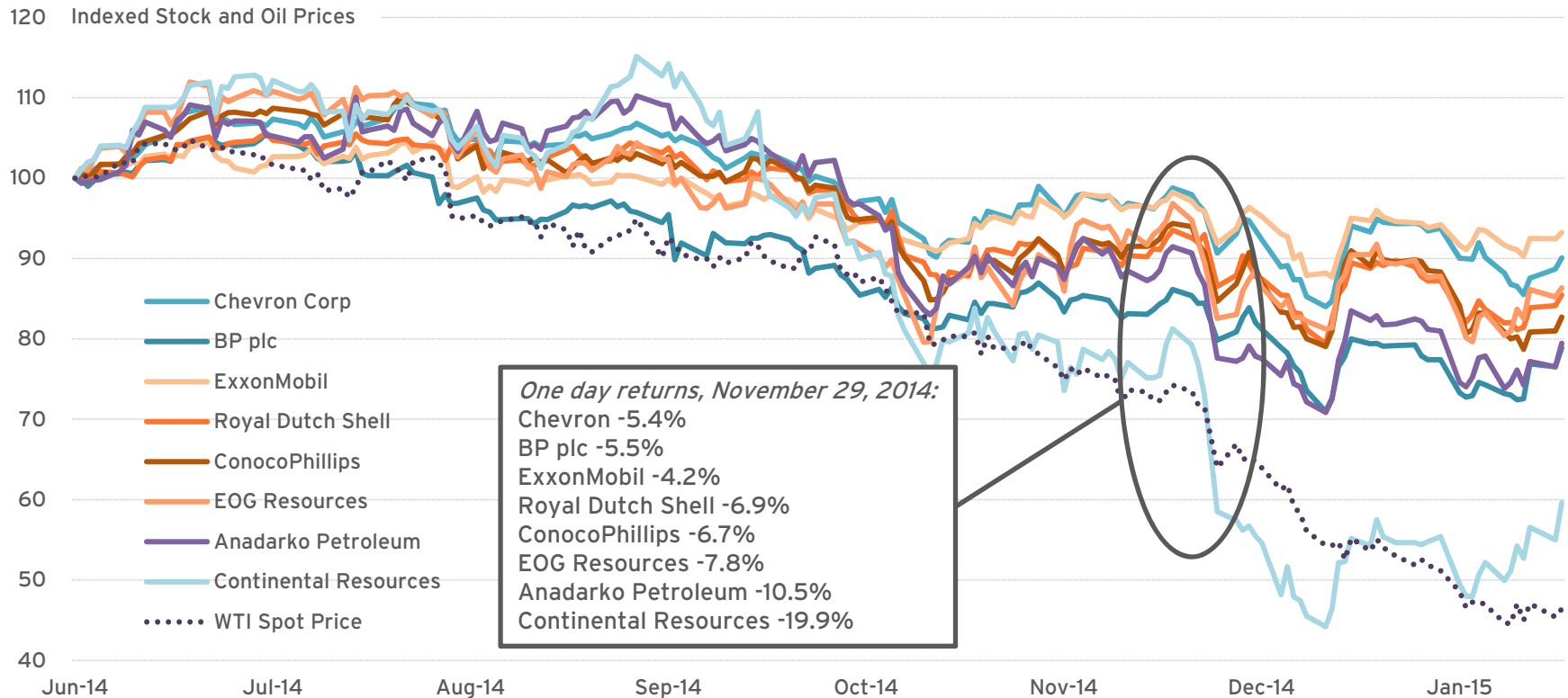
During December and January, the U.S. oil rig count fell substantially, though production growth is still currently expected to remain positive in 2015 overall. The count remained steady at more than 1,500 between April and November 2014 despite declining prices from June onwards.



Source: U.S. EIA and Baker Hughes

Indexed Oil Company Valuations and Oil Price

Since oil prices began their slide in June 2014, the public valuation of many major oil companies has also declined. OPEC's November 27 meeting resulted in a \$8/bbl fall in oil prices, triggering sizeable losses: ExxonMobil 4.2%, BP 5.5%, and Continental 19.9% in one day.

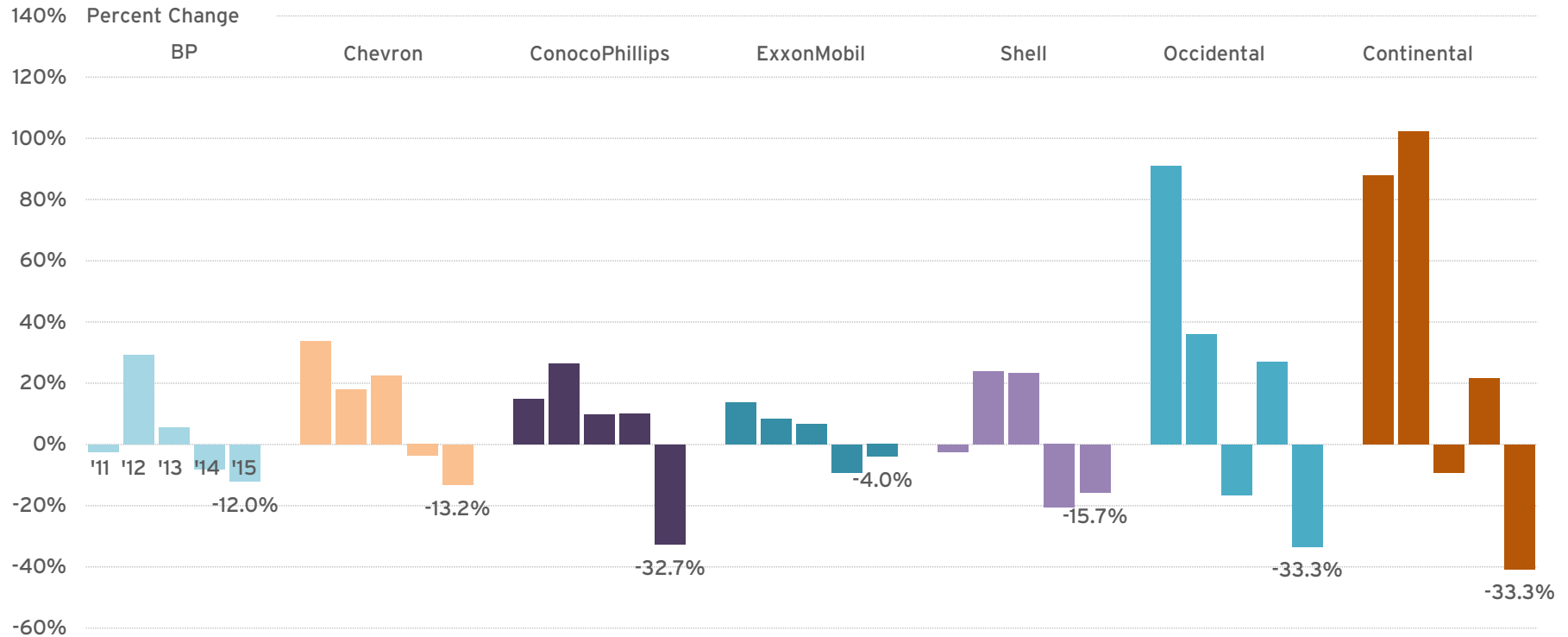


Note: Stock prices are adjusted for dividends and splits.

Source: SAFE analysis based on data from Yahoo! Finance and U.S. EIA

Y-o-y Change in Oil Company Capital Expenditures

Lower oil prices have forced companies to rapidly adjust their spending plans for 2015. For some, this represents a sizeable shift away from a period of increasing investment observed in recent years due in part to previously higher price levels.



Notes: ExxonMobil will release 2015 capital expenditure plans in March, but has indicated that it expects budgets below \$37 billion over the next several years. Shell announced that they would reduce capital expenditures by \$15 billion through 2017 (estimate is generated using 2014 expenditures less \$5 billion for 2015). Continental released an estimate of total 2014 capital expenditures on November 5, 2014, which has been used to calculate Q4 expenditures.

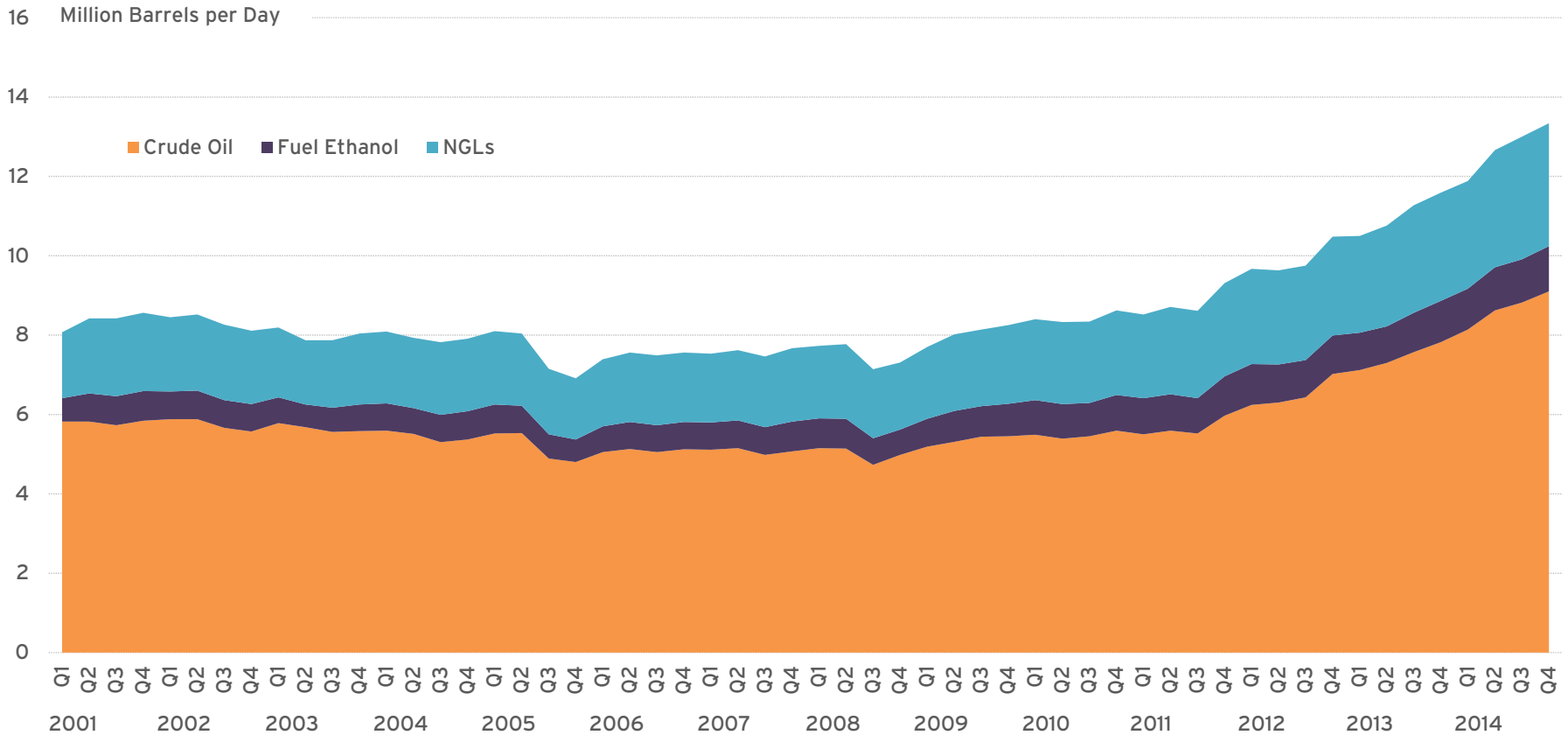
Source: SAFE analysis based on data from corporate earnings statements and press releases

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U.S. Oil Production

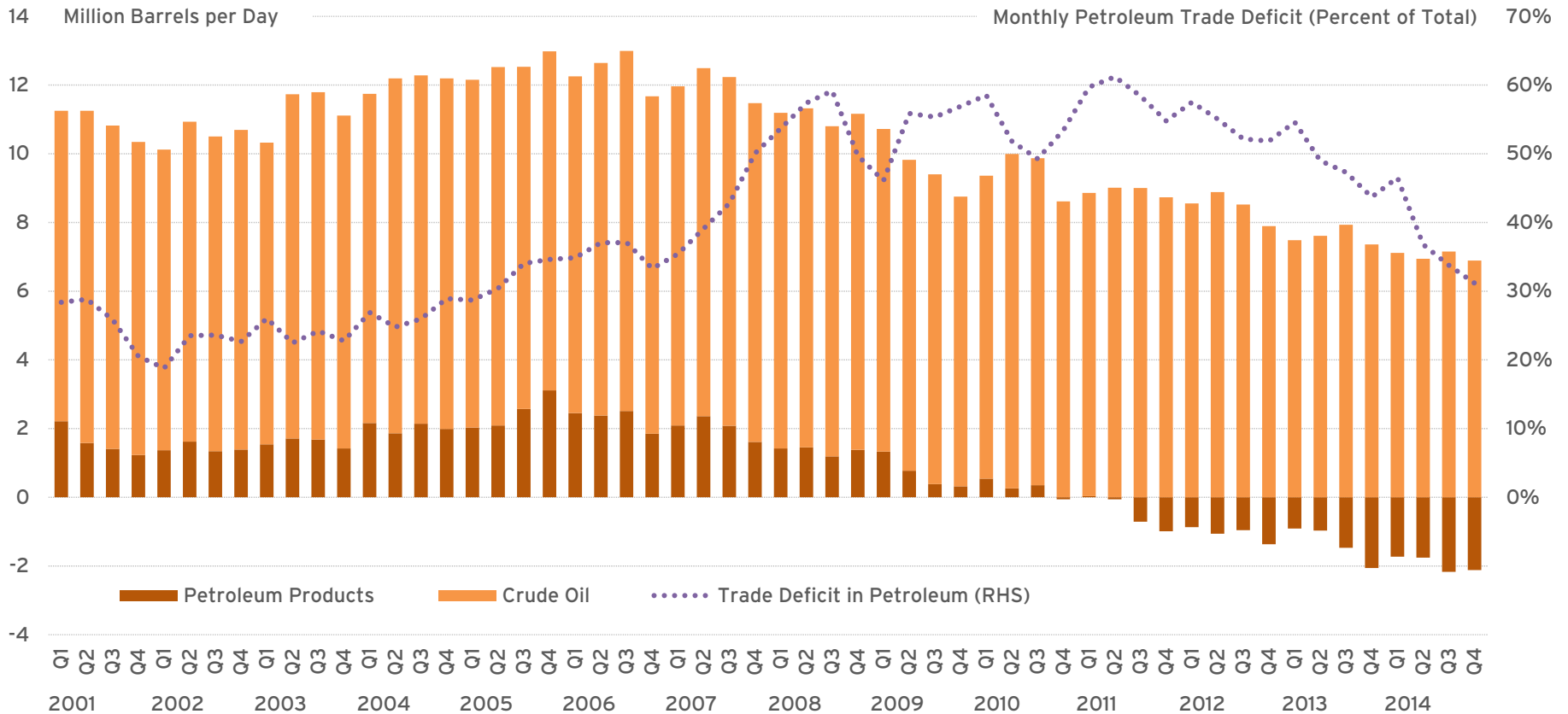
Domestic crude oil production increased by 1 mbd in Q4 2014 (y-o-y), roughly 14%. Inclusive of fuel ethanol and natural gas liquids (NGLs), total U.S. liquids production is more than 5.2 mbd higher than it was in 2008, making the country the world's largest liquids producer.



Source: U.S. EIA

U.S. Oil Trade

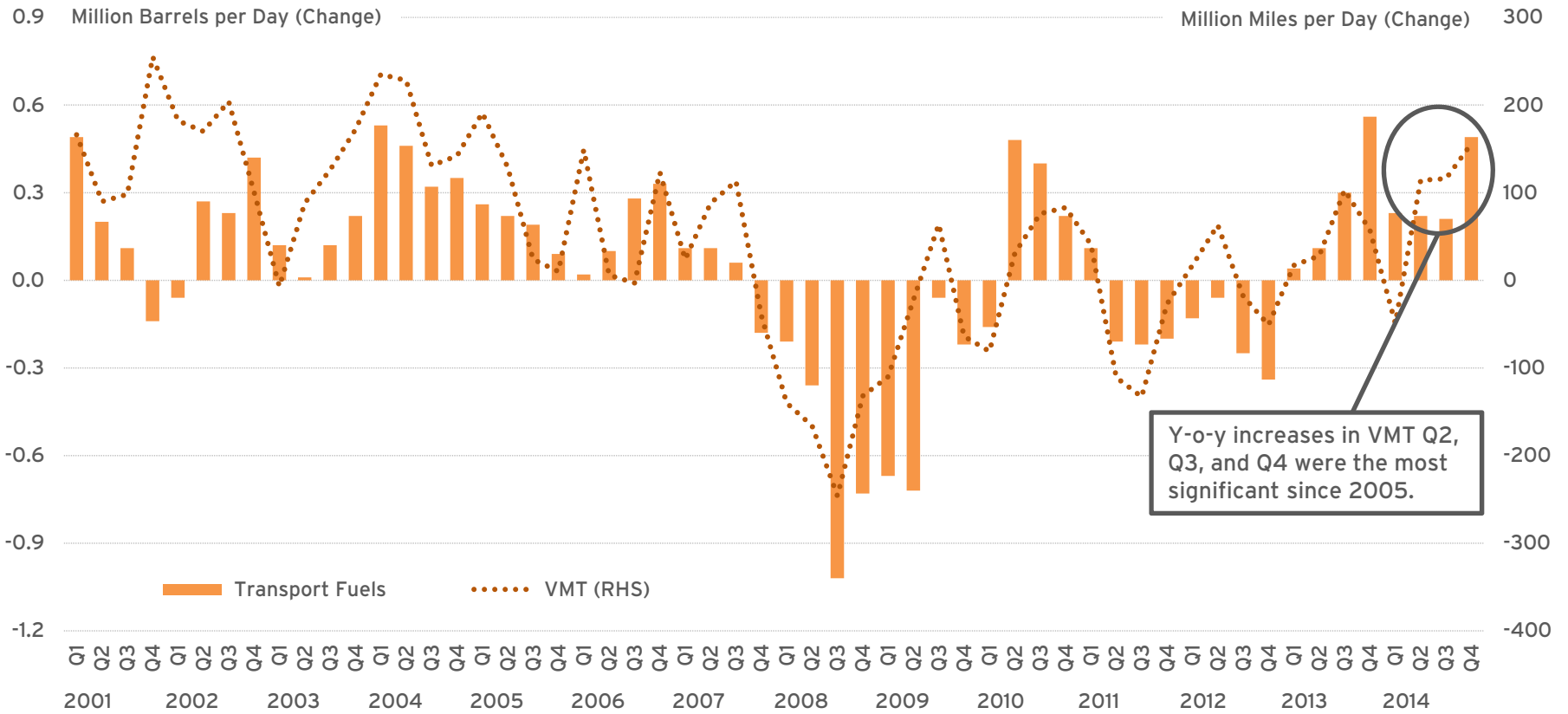
Total U.S. net oil imports have fallen more than 60% since 2005 and in Q4 fell to 4.7 mbd (-0.6 mbd y-o-y). The United States became a net exporter of petroleum products in 2011. In Q4, net petroleum product exports reached 2.1 mbd.



Source: U.S. EIA

U.S. Transportation Fuel Demand

U.S. demand for gasoline, diesel, and jet fuel has been growing y-o-y since 2013, though total oil demand is still more than 5% below its pre-recession peak. Total vehicle miles traveled (VMT) have fluctuated since 2007 after years of growth, but increased 2% in Q4 y-o-y.



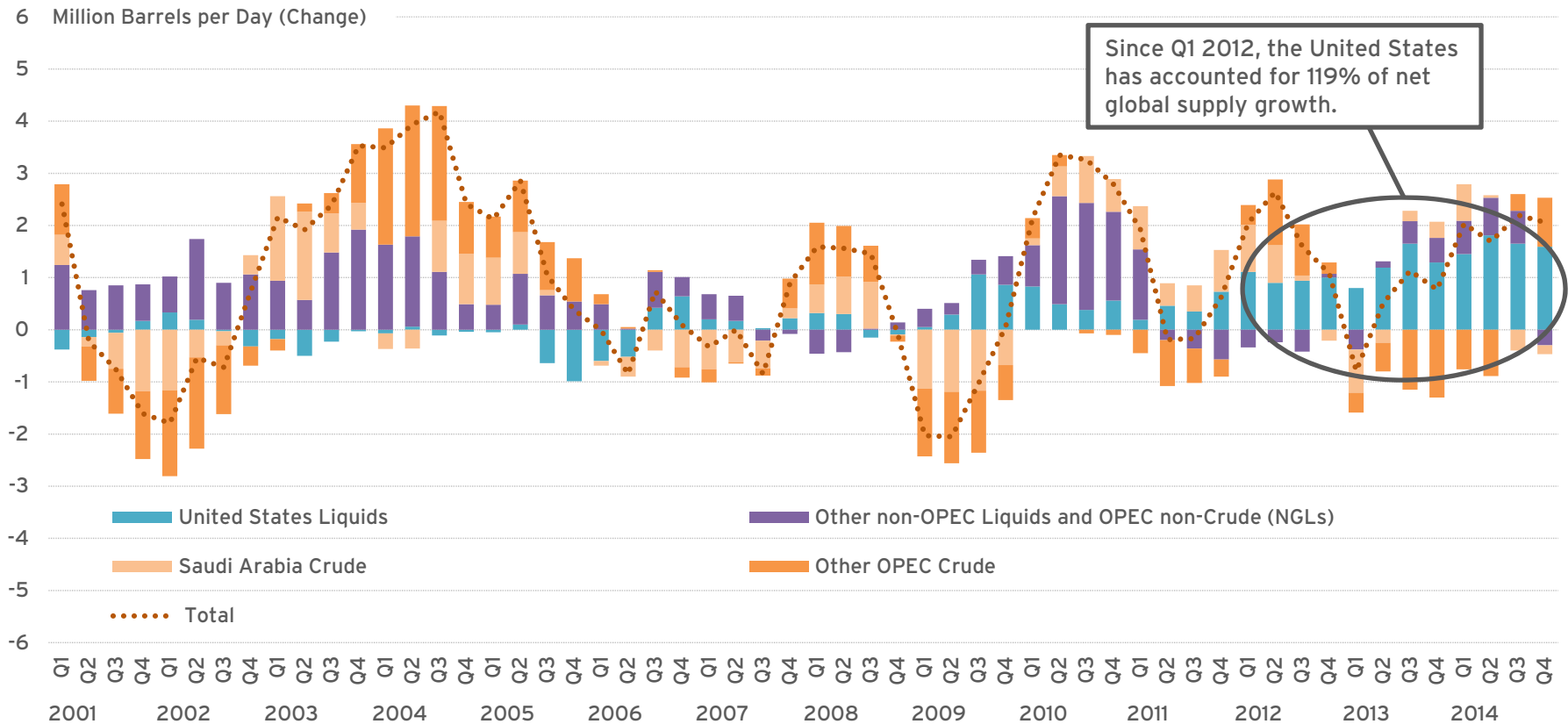
Source: U.S. EIA

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OPEC and Non-OPEC Oil Supply

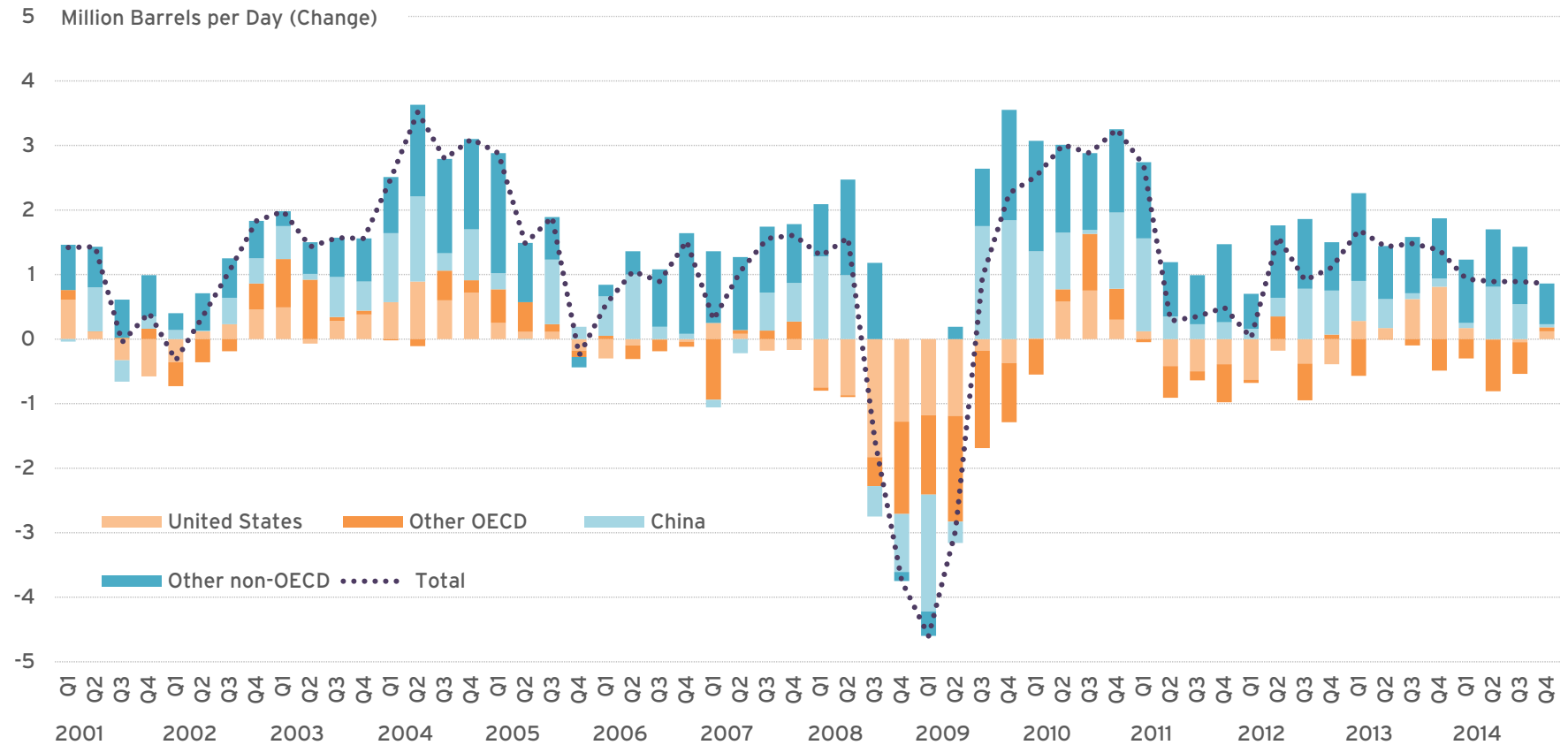
Global production grew 2 mbd (y-o-y) on the back of higher U.S. supply (+1.6 mbd y-o-y) in Q4. Non-Saudi OPEC supply y-o-y was also positive in September 2014 for the first time in roughly two years. The United States has been a strong source of supply growth since early 2012.



Source: U.S. EIA

OECD and Non-OECD Oil Demand

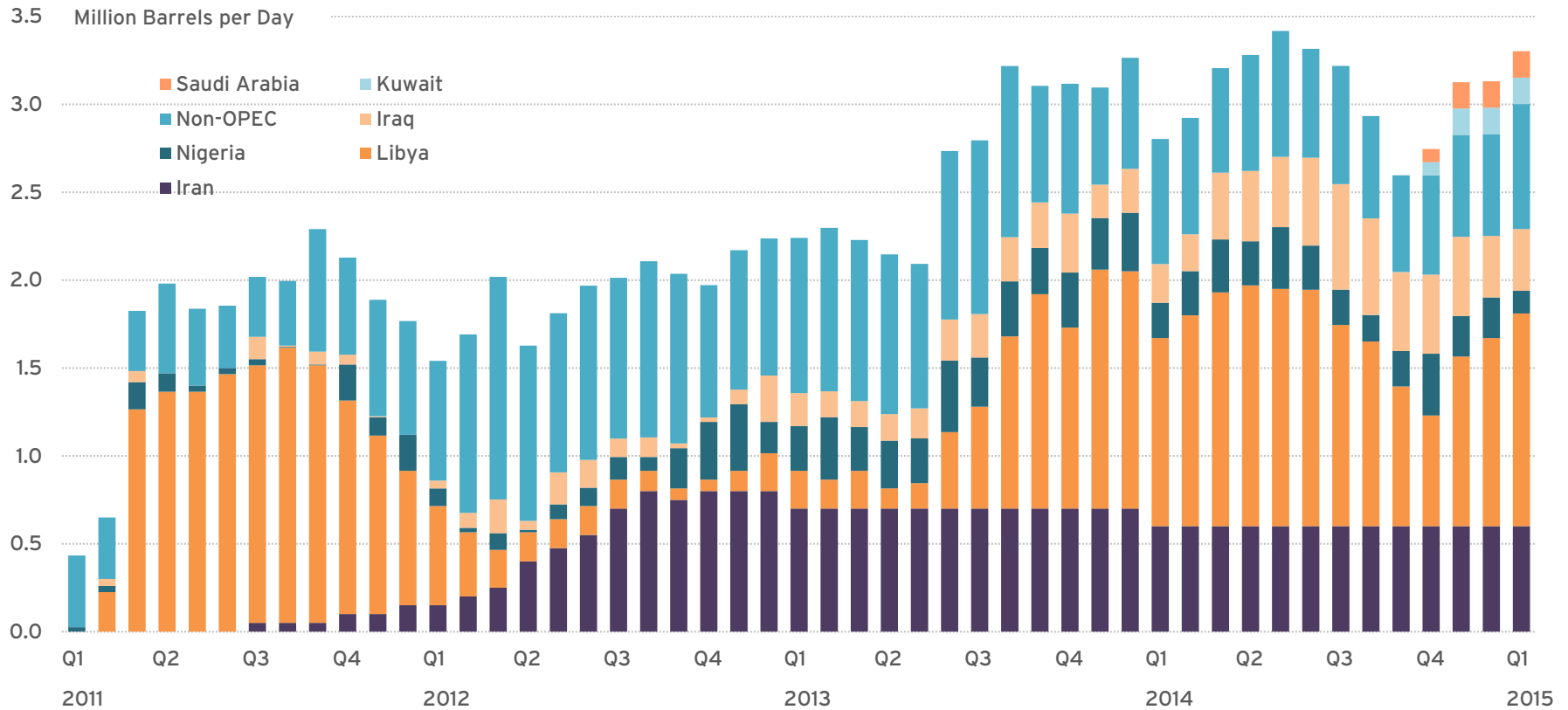
Global oil demand increased by approximately 0.9 mbd (y-o-y) in Q4. Non-OECD countries accounted for the majority of the increase. Global oil demand has risen since 2009, reaching 93.2 mbd in Q4, although China's demand remained flat y-o-y.



Source: U.S. EIA

Estimated Global Unplanned Crude Oil Outages

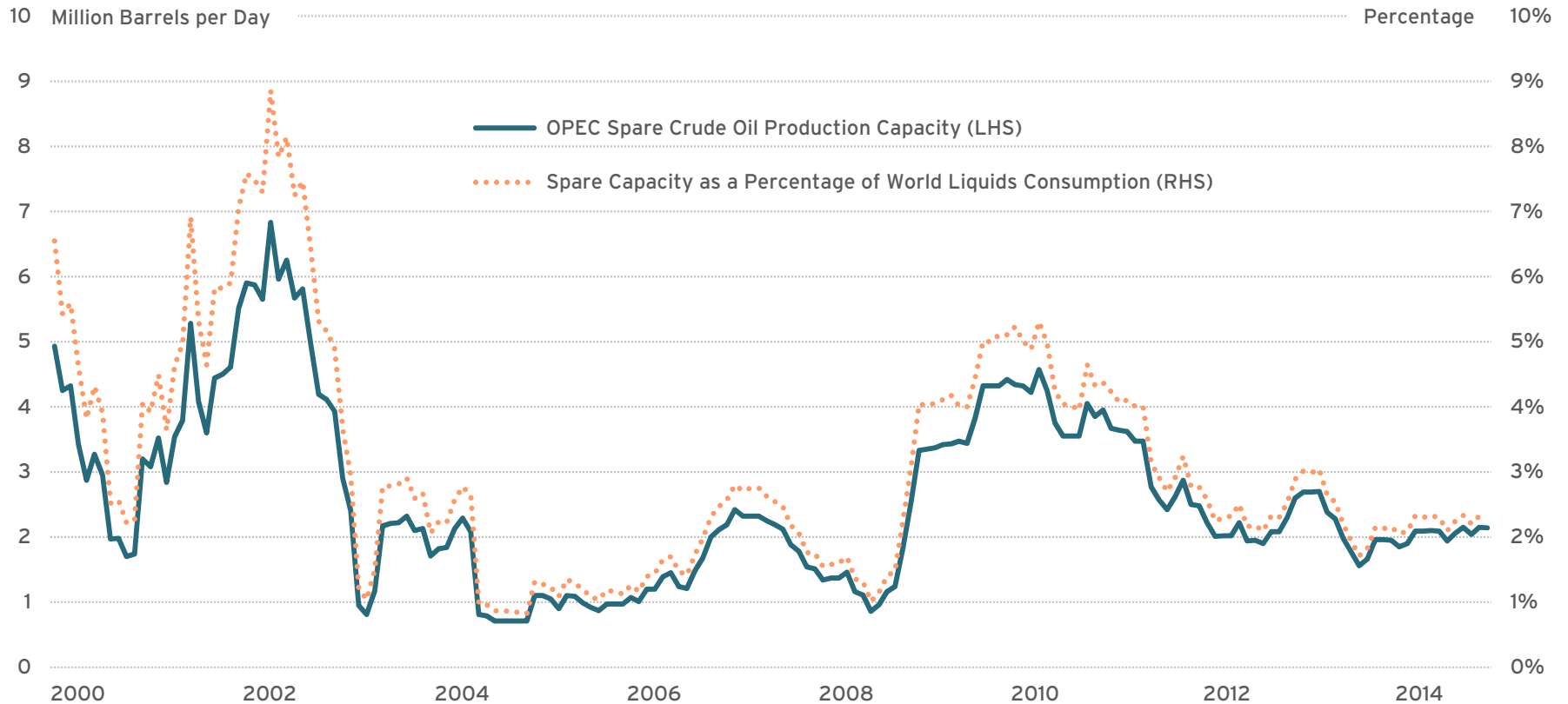
Despite monthly fluctuations, quarterly estimated unplanned oil outages remained relatively steady in Q4 at 2.9 mbd. Libya's declining outages (since May 2014) began to reverse in Q4. Total outages have grown from approximately 2.5 mbd in October to 3.4 mbd in December.



Source: U.S. EIA

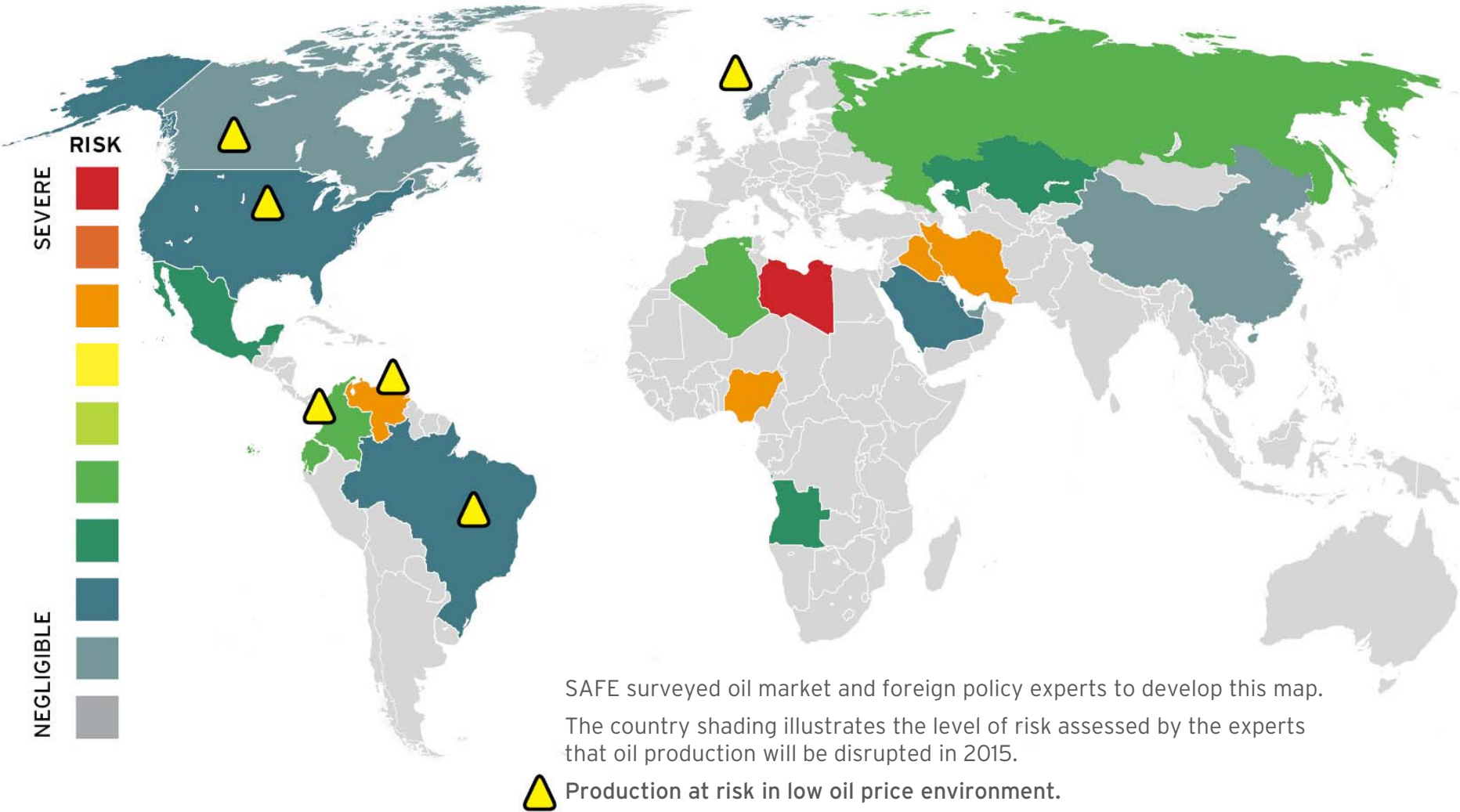
OPEC Spare Crude Oil Production Capacity

OPEC spare crude oil production capacity is estimated at 2.1 mbd in Q4 (+0.2 mbd y-o-y). This is equivalent to approximately 2.3% of global consumption. The majority of OPEC spare capacity is held in Saudi Arabia.



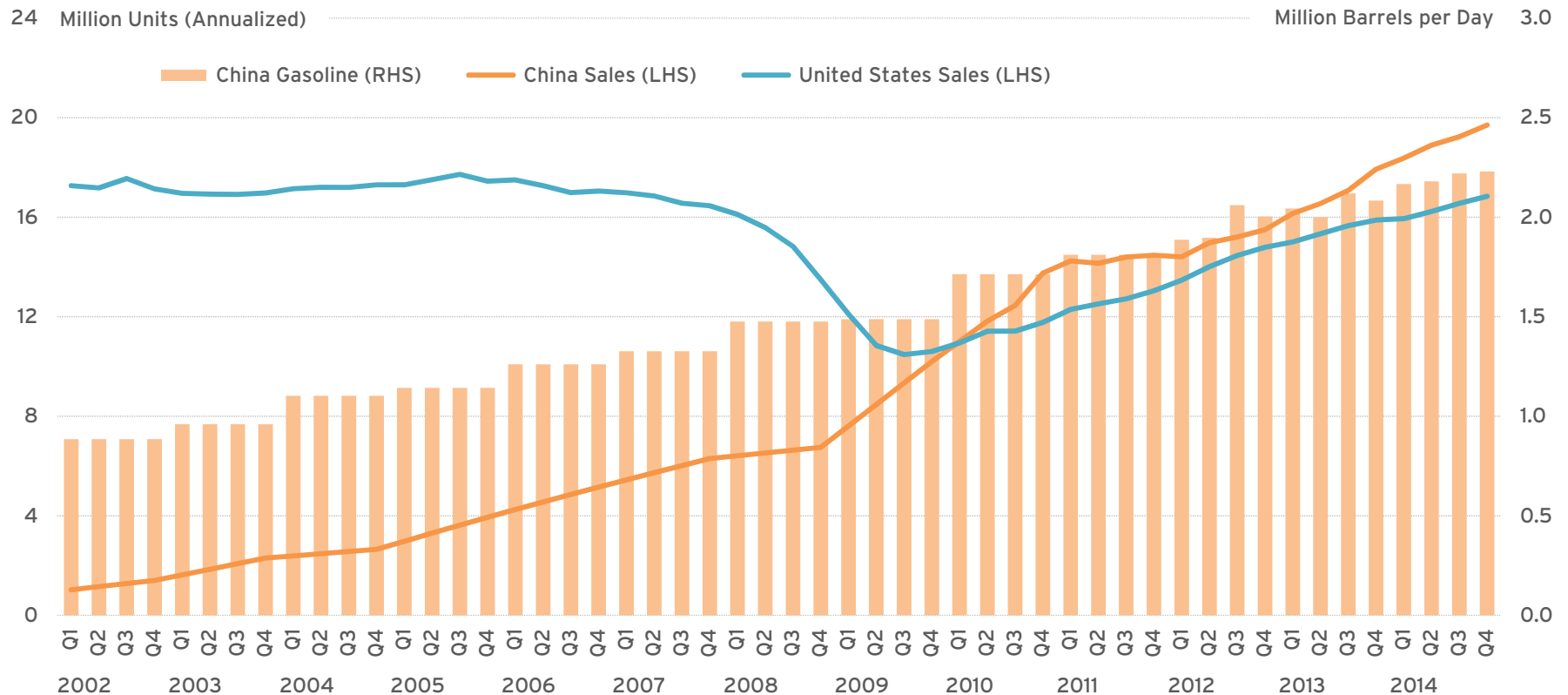
Source: U.S. EIA

Barrels at Risk Map



China Passenger Vehicle Sales and Gasoline Demand

Although there are only approximately 90 passenger vehicles per 1,000 people in China (versus 800 in the United States), sales have exceeded those in the United States since 2010. Gasoline demand also continues to surge, rising approximately 7% y-o-y in Q4 2014.



Note: Four-quarter rolling averages presented for China's vehicle sales before 2010 and annual averages presented for China's gasoline demand before 2012

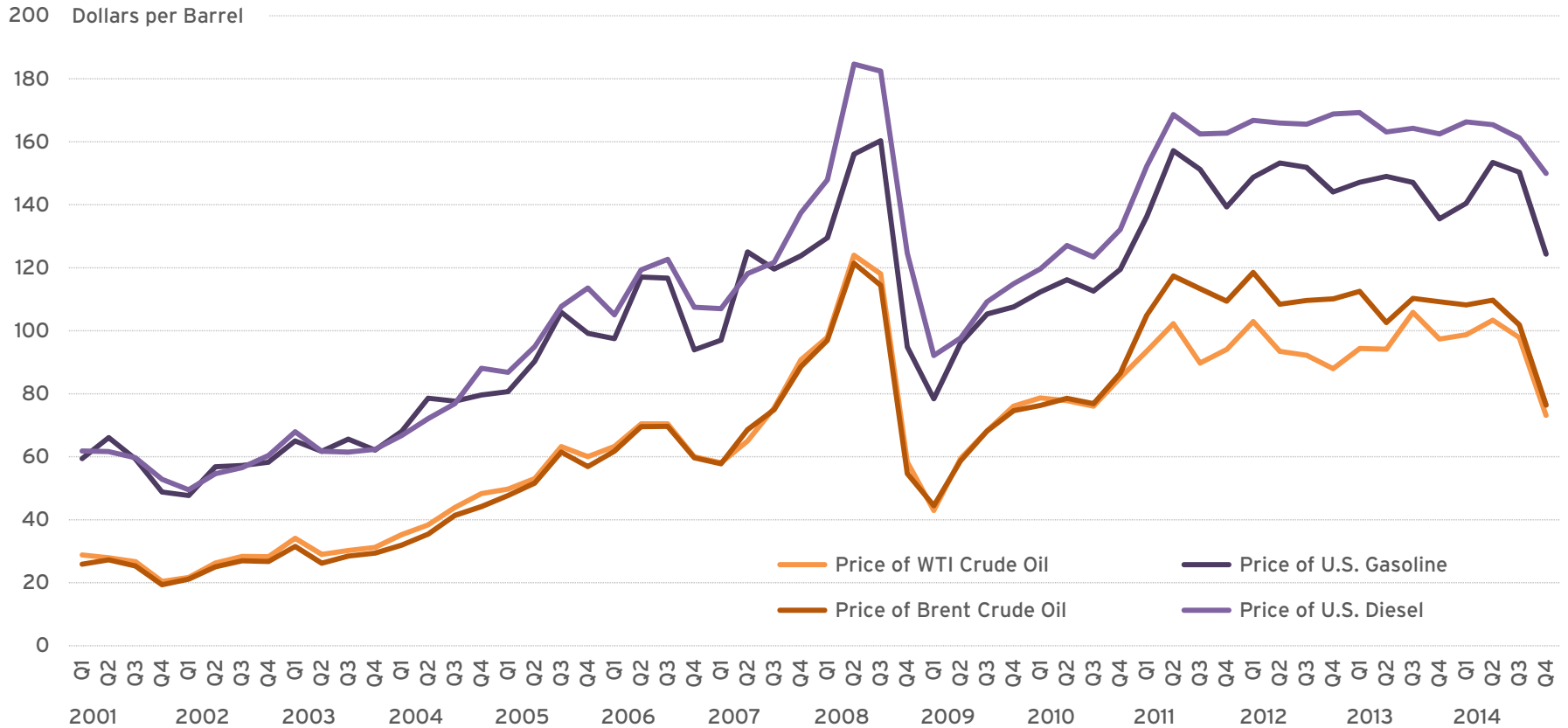
Source: SAFE analysis based on data from: BEA, IEA, Platts, and China Association of Automobile Manufacturers

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Global Crude Oil Prices and Domestic Fuel Prices

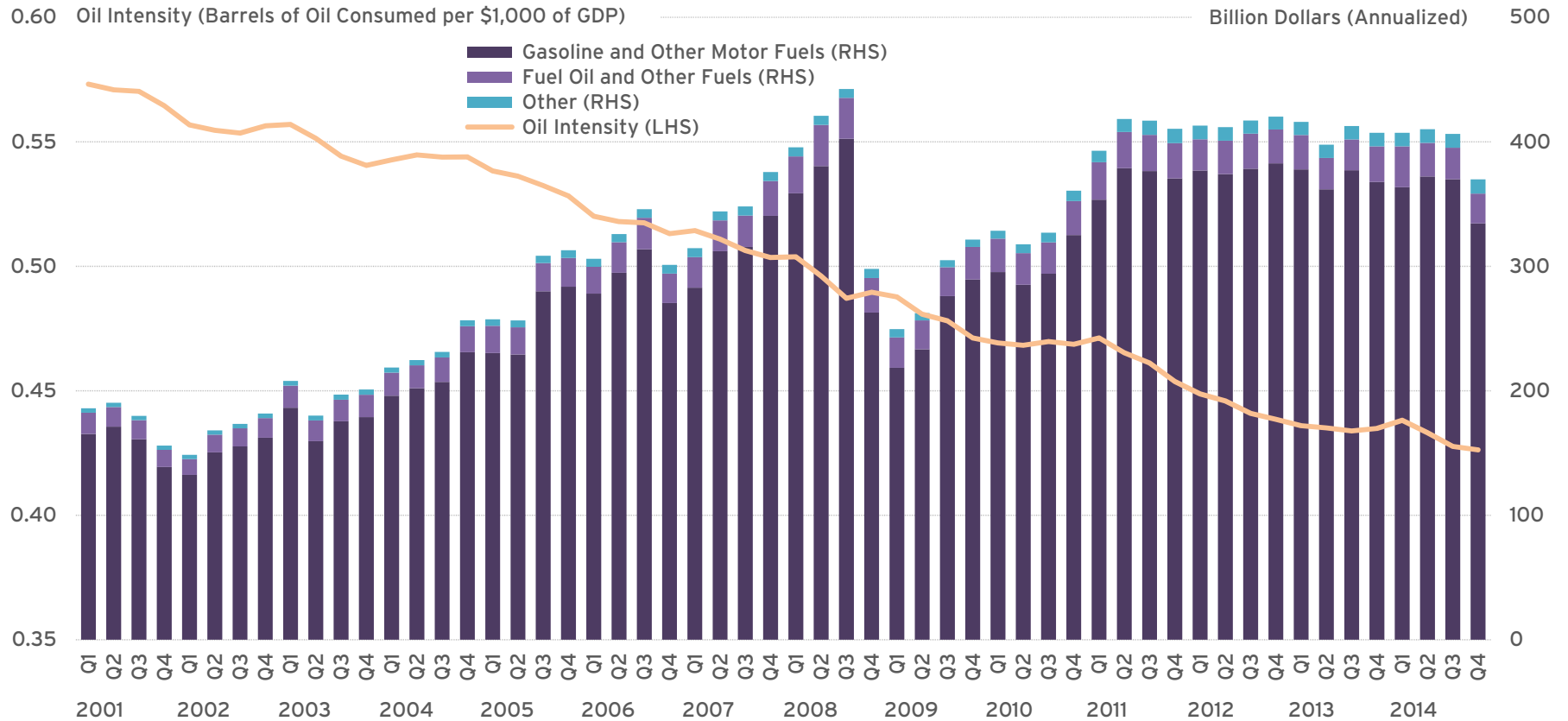
Domestic petroleum product prices like gasoline and diesel correlate closely with prevailing global crude oil benchmarks. These prices have risen markedly since 2000, but have fallen in recent months. December average Brent = \$62/bbl, WTI = \$59/bbl, U.S. gasoline = \$2.63/gal.



Source: U.S. EIA

Oil Intensity and Household Expenditures on Fuel

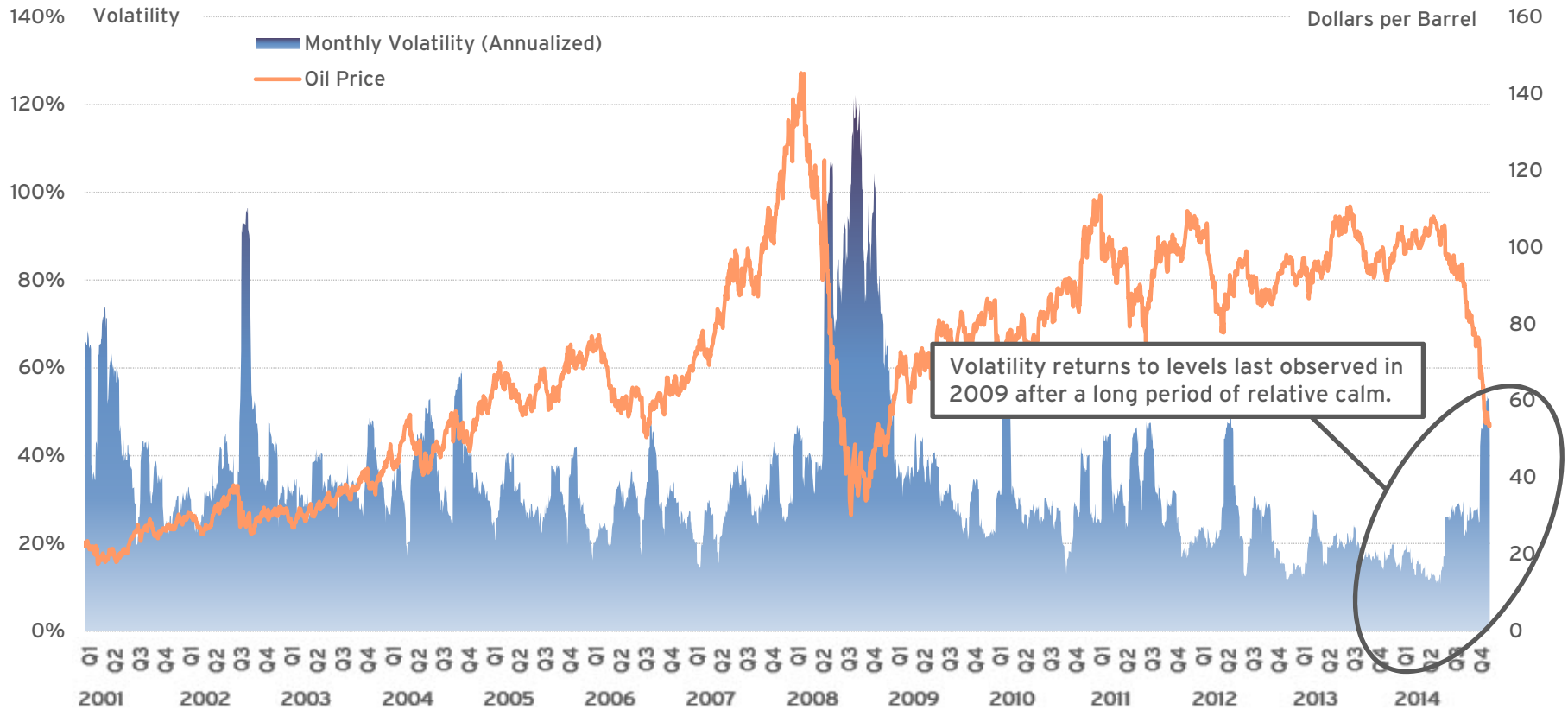
U.S. oil intensity remained steady in Q4 at 0.43 barrels per \$1,000 of GDP. However, household spending on petroleum fuels fell by 9% q-o-q to an annualized level of \$370 billion as oil and petroleum product prices declined.



Source: SAFE analysis based on data from: U.S. EIA and BEA

Oil Price and Estimated Oil Price Volatility

The sharp decline in oil prices witnessed in H2 2014 marked the return of oil price volatility, which touched levels last seen in 2009 after a period of relative stability. 30-day volatility averaged 34% in Q4 versus 16% for H1.



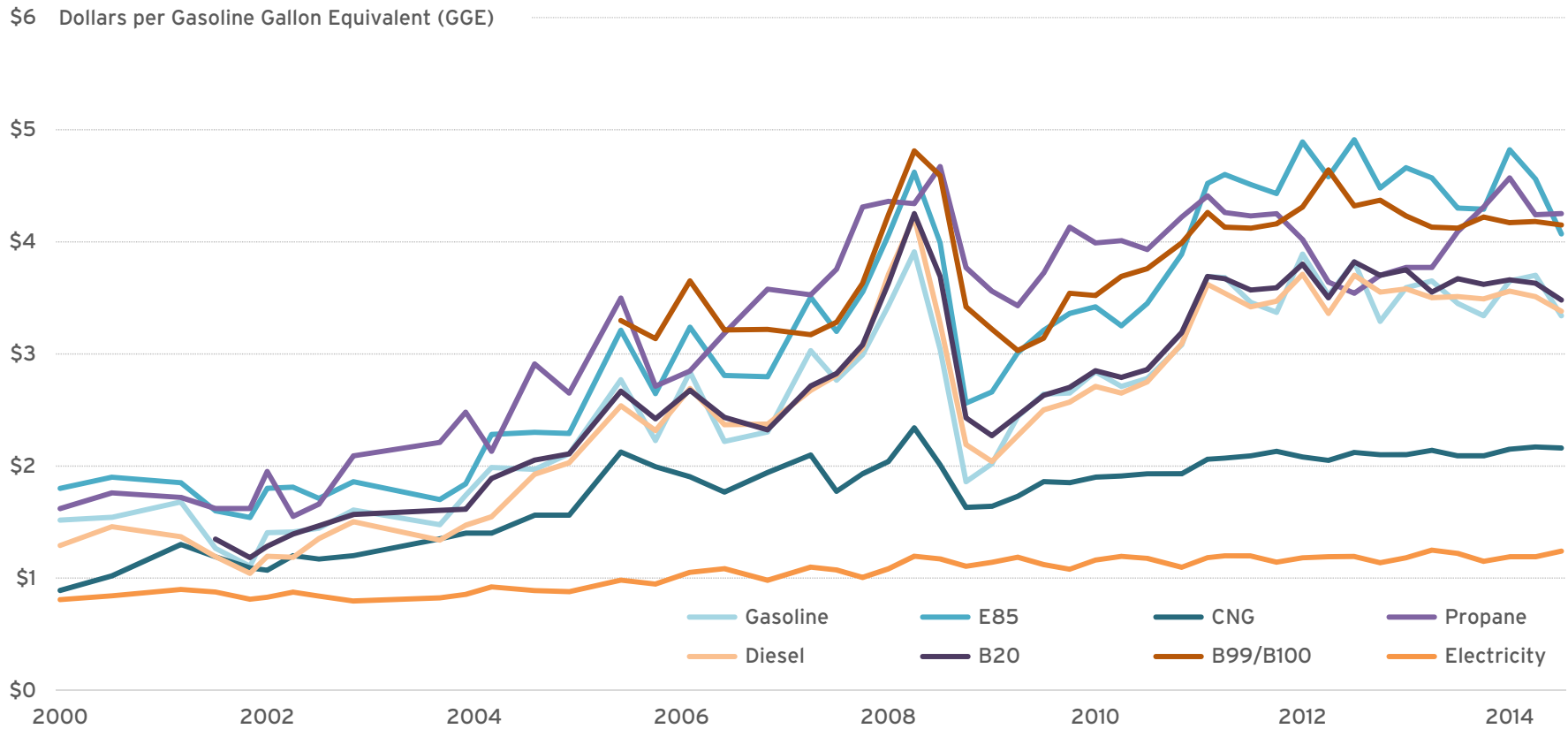
Source: SAFE analysis based on data from U.S. EIA

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Average Retail Fuel Prices

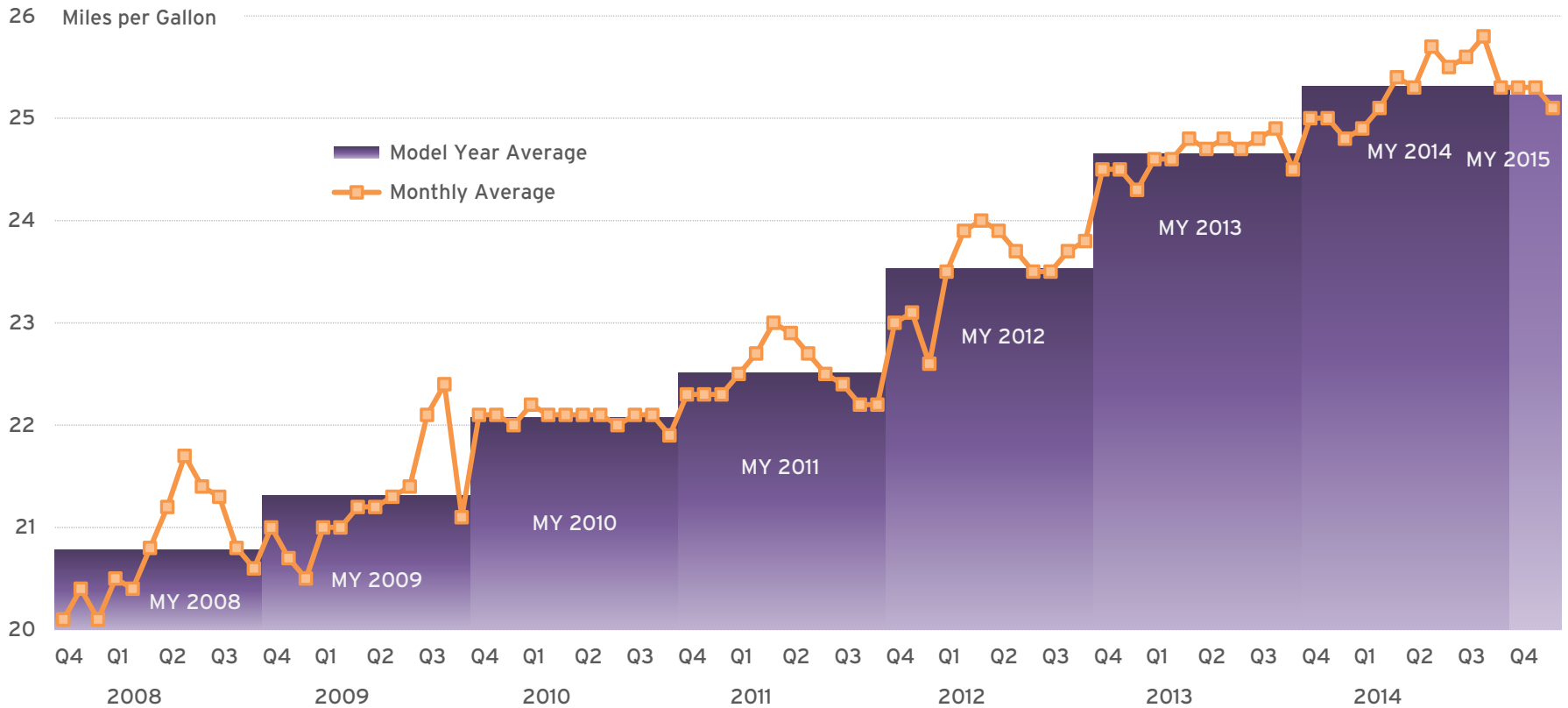
Liquid fuel prices have risen and experienced substantial volatility since 2000. The prices of compressed natural gas (CNG) and electricity remain relatively stable and have increased far less over the same time period.



Source: Clean Cities Alternative Fuel Price Reports

New Light-Duty Vehicle Sales Fuel Economy Ratings

The average fuel economy rating of new light-duty vehicle sales fell to 25.2 miles per gallon (mpg) in Q4, the first decline since Q1 2011 to Q2 2011 (-0.1 mpg q-o-q and +0.3 mpg y-o-y), but remains approximately 14% higher than 2009 levels.

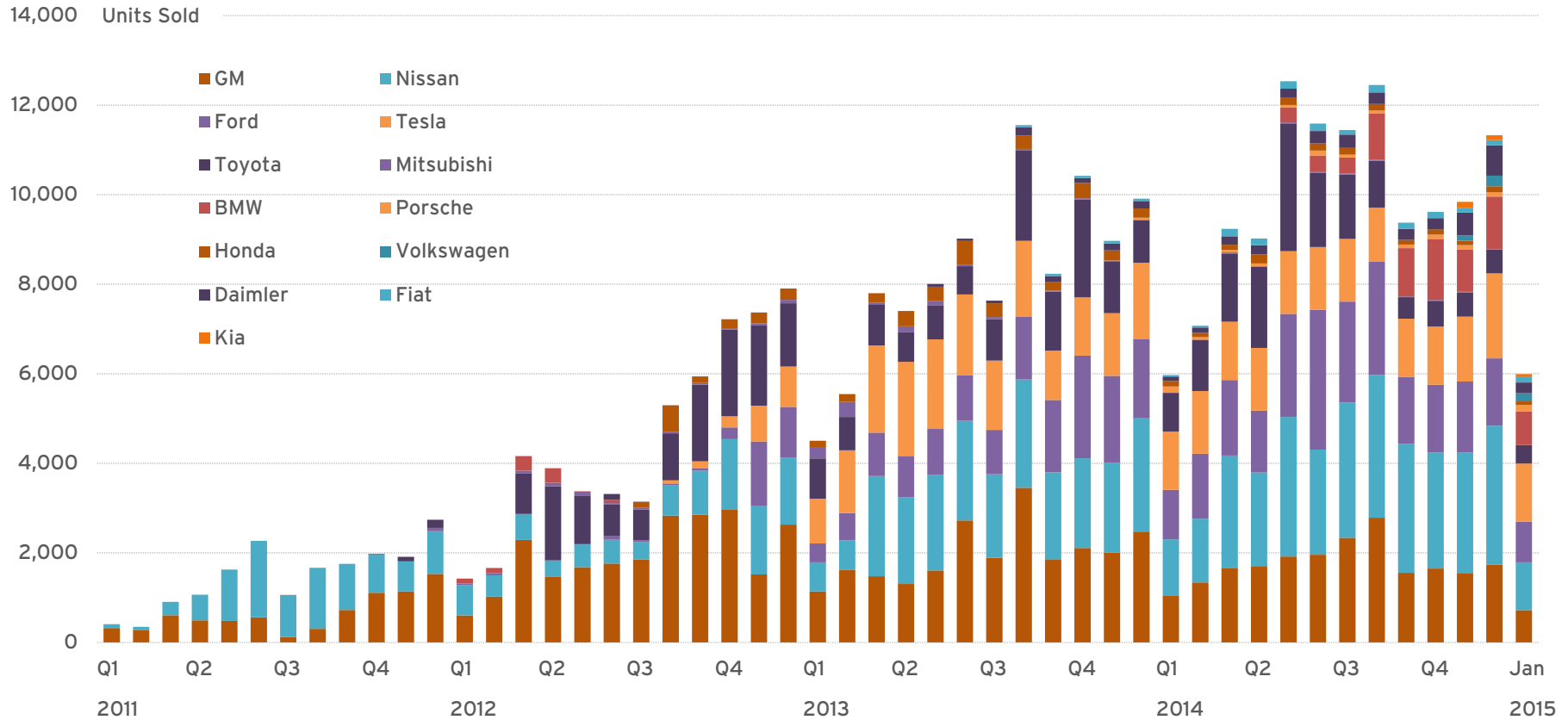


Note: Average sales-weighted fuel-economy rating of purchased new light-duty vehicles

Source: Michael Sivak and Brandon Schoettle, University of Michigan Transportation Research Institute

Plug-in Electric Vehicle Sales

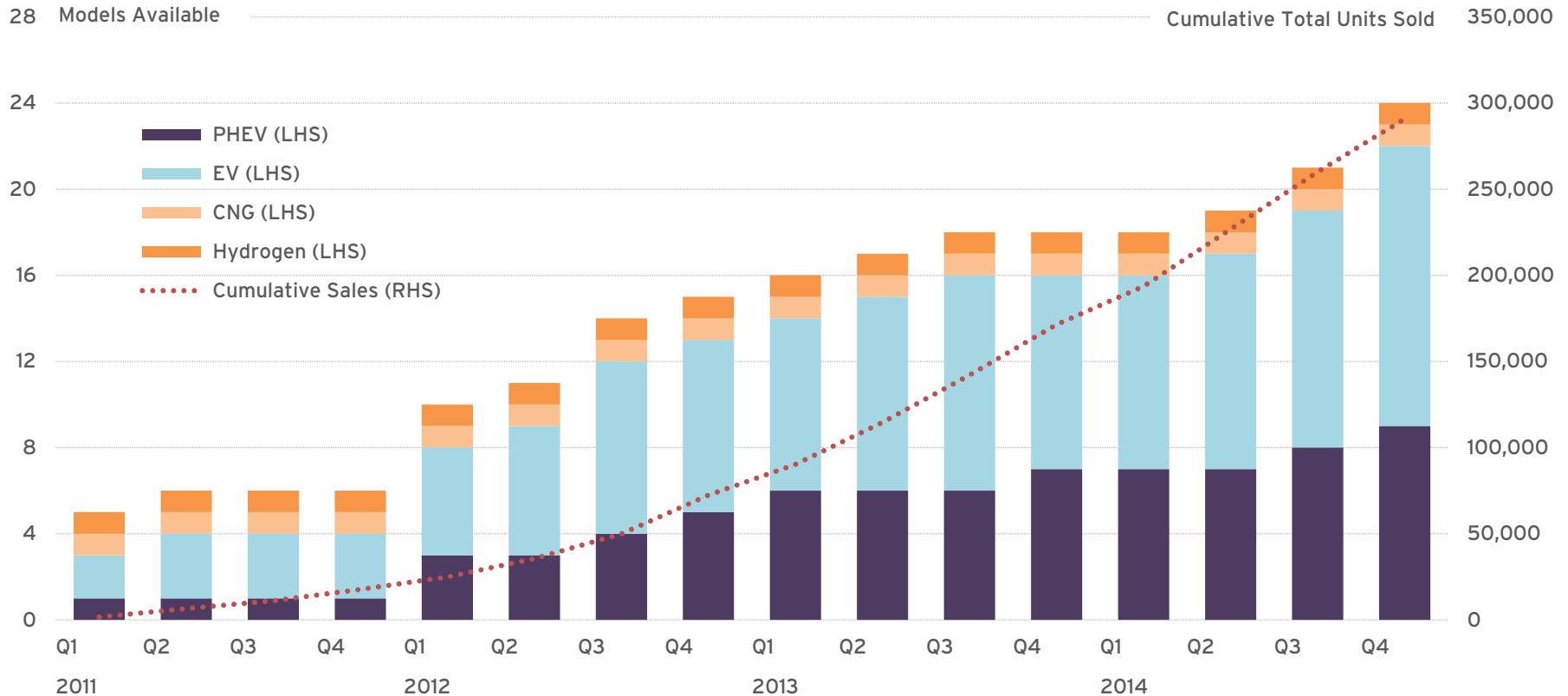
Approximately 30,000 plug-in electric vehicles (PEVs) were sold in Q4, unchanged y-o-y. BMW's i3 overtook Ford's Fusion Energi and Toyota's Prius PHEV to become the fourth-highest seller after Nissan's LEAF, Tesla's Model S, and GM's Chevy Volt.



Source: HybridCars.com

Alternative Fuel Vehicle Model Availability

The number of light-duty passenger alternative fuel vehicle (AFV) models available to U.S. buyers rose to 24 in Q4 2014, more than a three-fold increase from 2011. Cumulative total AFV sales rose to an estimated 290,000 units.

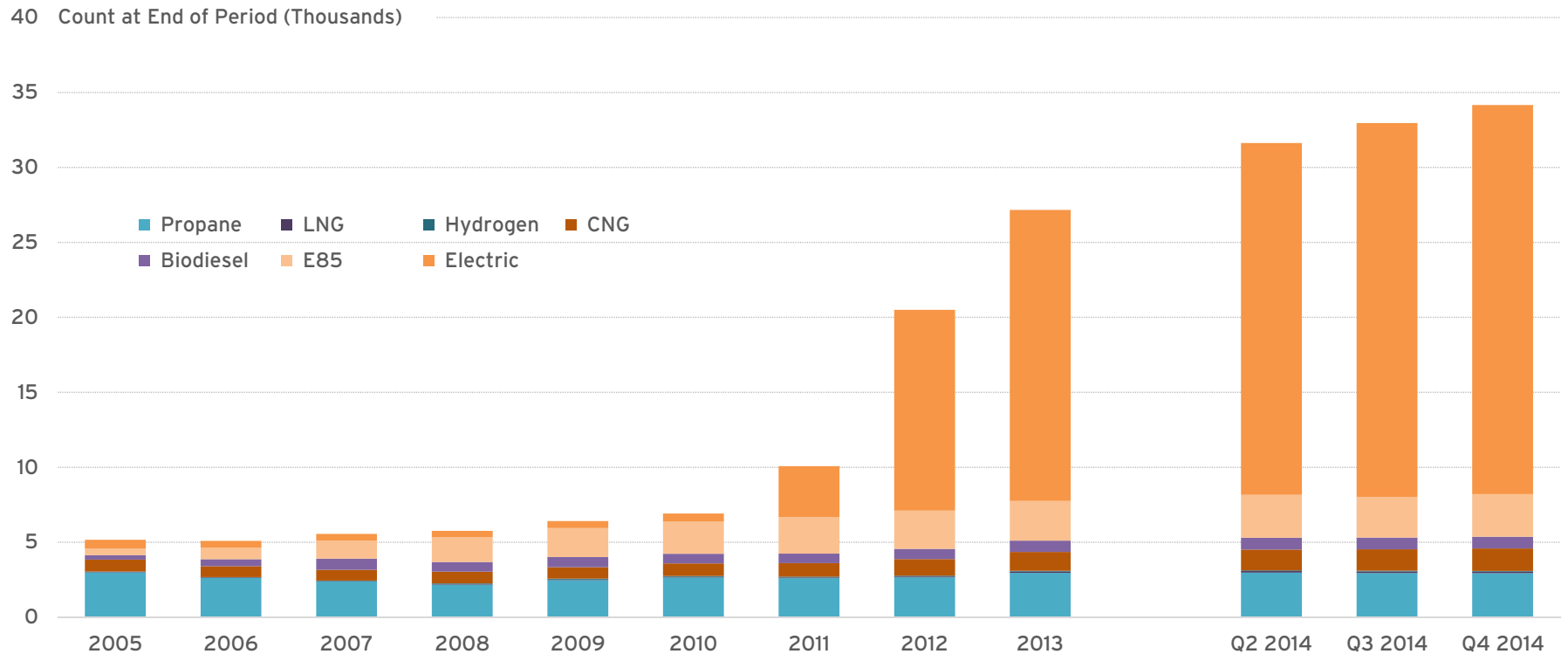


Note: Several available models are not included in 'Cumulative Sales'

Source: SAFE analysis based on data from HybridCars.com (several available models not included in sales)

Alternative Fueling Stations Installed by Type

The number of alternative fueling stations nationwide increased by 26% through the end of 2014 versus the end of 2013, a net addition of approximately 7,000 stations. 93% of these additions were for PEVs.



Note: Starting in 2011, electric charge equipment was counted by the plug rather than by the geographic location. This is different than other fuels, which only count the geographic location regardless of how many dispensers or nozzles are on site.

Source: U.S. DOE, EERE, Alternative Fuels Data Center

About, Links, and Contact

ABOUT

Securing America's Future Energy (SAFE) is a nonpartisan, not-for-profit organization committed to reducing America's dependence on oil and improving U.S. energy security in order to bolster national security and strengthen the economy. SAFE has an action-oriented strategy addressing politics and advocacy, business and technology, and media and public education.

SAFE's Energy Security Fact Pack provides a data-driven overview of the latest trends in U.S. energy security, including domestic and global oil production and consumption, oil market dynamics, energy prices, consumer spending on oil, fuel efficiency, and alternative fuel vehicles.



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