

Energy Security Fact Pack

Q2 2015



Securing America's
Future Energy



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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.

Q2 2015: Phase 2 Heavy-Duty Standards to Reduce Fuel Use

- Global oil prices rose slightly in Q2, ending the quarter at \$60 per barrel (bbl) (Brent), up from \$56 per barrel in March—before falling to below \$50 today. Gasoline prices also increased, though they remained approximately 25% lower year-over-year (y-o-y) [Slide 23].
- Demand for oil in the U.S transport sector is being stimulated by lower prices, and has in fact increased steadily in recent years [Slide 4], exposing the U.S. economy to oil price volatility. A growing share of sector demand is attributable to medium- and heavy-duty vehicles. Recently proposed (not yet final) Phase 2 fuel economy standards for these vehicles could reduce projected growth in fuel demand substantially over the next two decades [Slides 7 & 8].
- Growth in global oil supplies—led by the United States with +1.4 million barrels per day (mbd) y-o-y—exceeded growth in global oil demand, and non-OPEC supply growth exceeded demand for the ninth consecutive quarter [Slides 15-17].
- Though lower than Q1 levels, oil price volatility remains far higher than 2013 to 2014 levels. Uncertainty surrounding the changing trajectory of U.S. and global supplies, China's economic growth rate, OPEC's strategy, ongoing conflict in the Middle East, and other factors suggest oil price volatility is likely to endure for the foreseeable future [Slide 6].

The Q2 2015 Fact Pack includes a 'Charts of the Quarter' section focused on trends in U.S. transportation oil demand, oil spending, oil price volatility, and fuel/oil savings from the proposed Phase 2 fuel economy standards for medium- and heavy-duty vehicles and engines.

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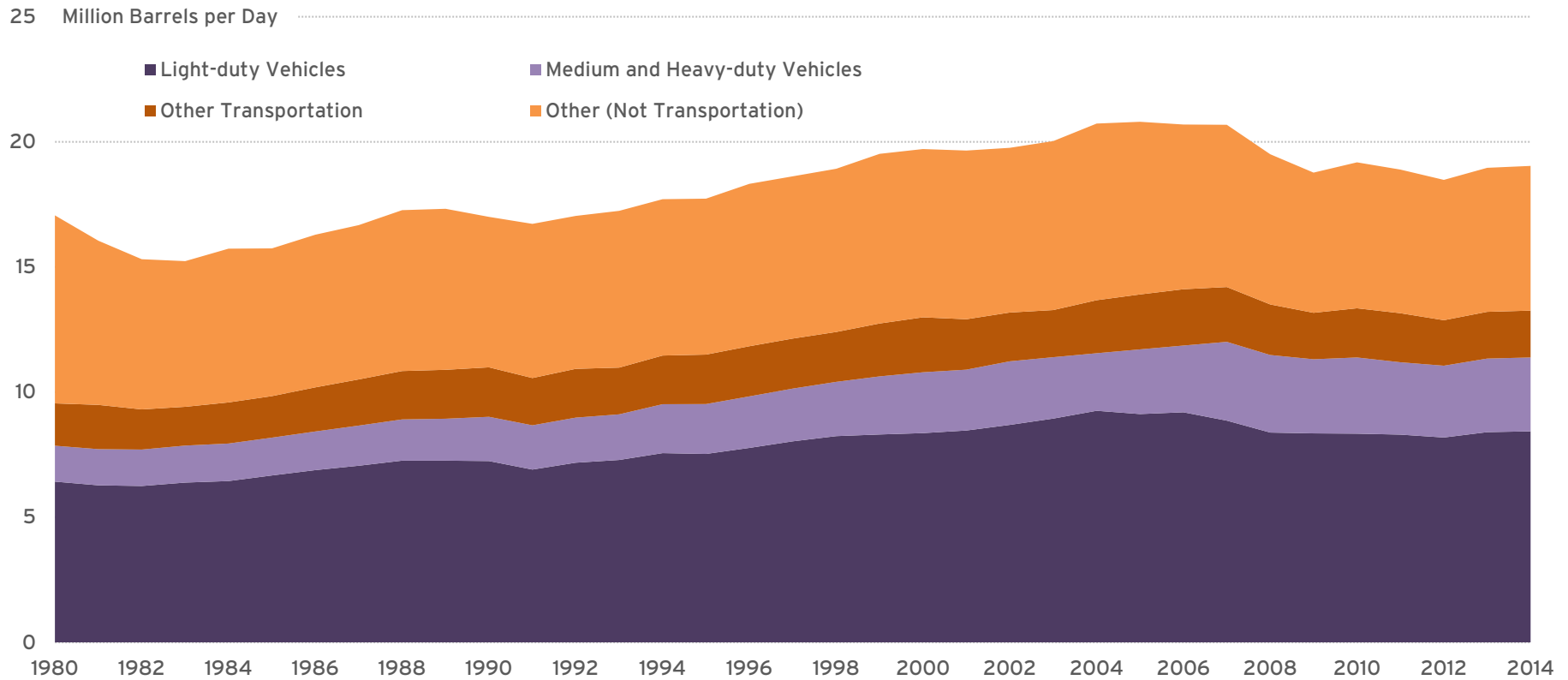
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Medium- and Heavy-Duty Vehicles' Growing Share of Oil Use

Demand for oil from the U.S. transportation sector has risen in recent years, but remains below its pre-recession peak. The share of oil demand attributable to medium- and heavy-duty vehicles has doubled since the early 1970s to more than 20%.

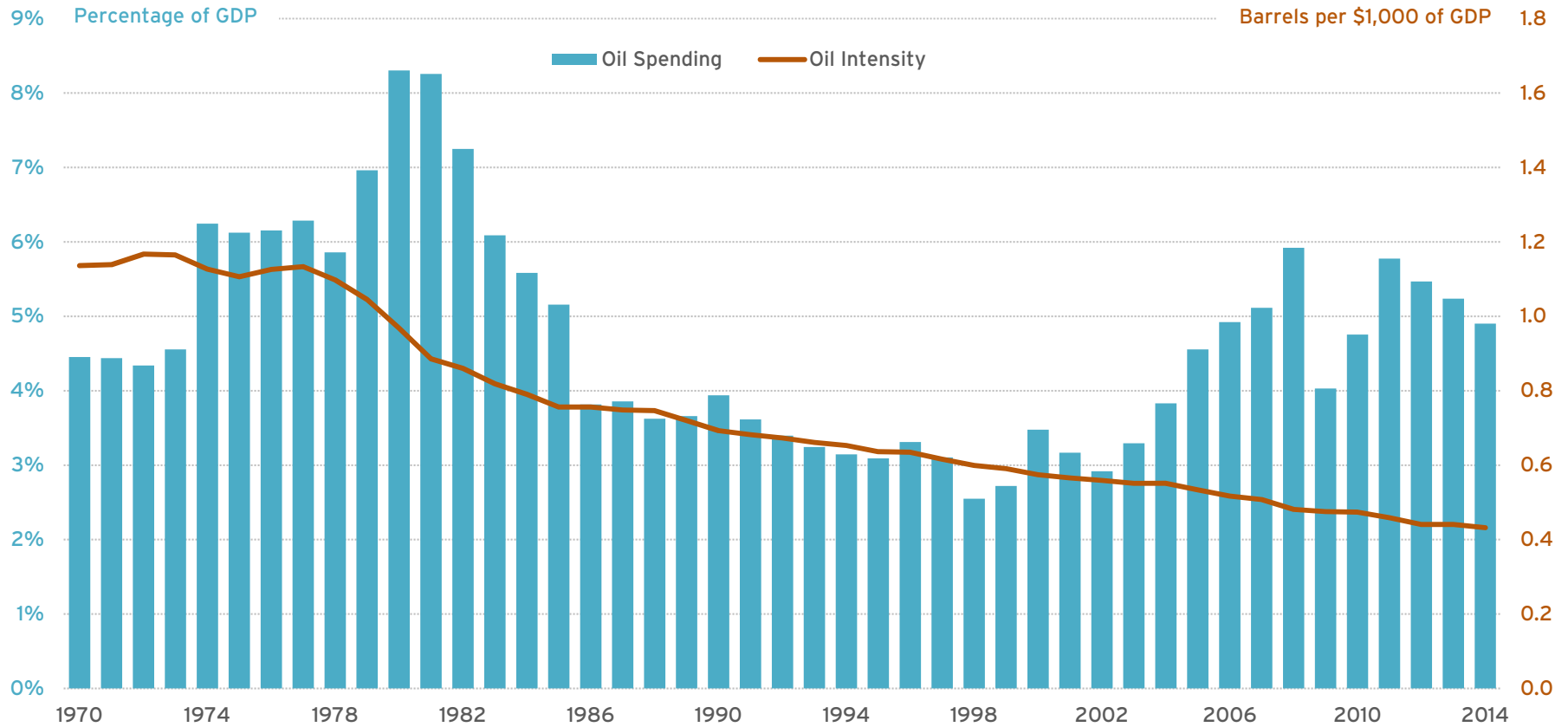


Note: Allocation of total 2013 and 2014 demand is estimated

Source: SAFE analysis based on data from U.S. EIA and Oak Ridge National Laboratory

U.S. Oil Spending and Intensity Declined in 2014

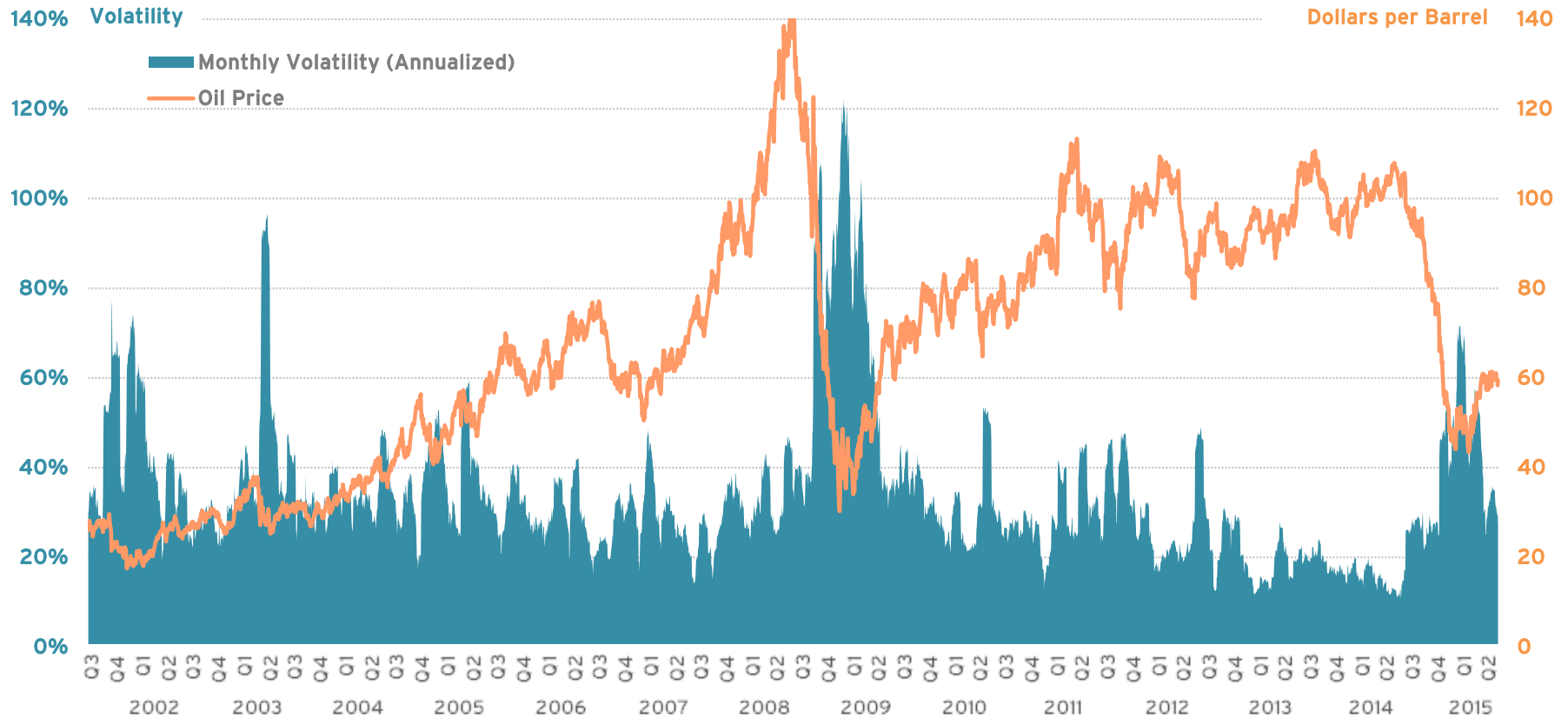
The U.S. economy continues to become gradually less oil-intensive and U.S. oil spending declined for a third straight year in 2014, reaching levels last seen in 2006. Total U.S. spending on petroleum fuel exceeded a combined \$3.5 trillion between 2011 and 2014.



Source: SAFE analysis based on data from U.S. EIA and Bureau of Economic Analysis

Oil Price and Estimated Oil Price Volatility Remain Elevated

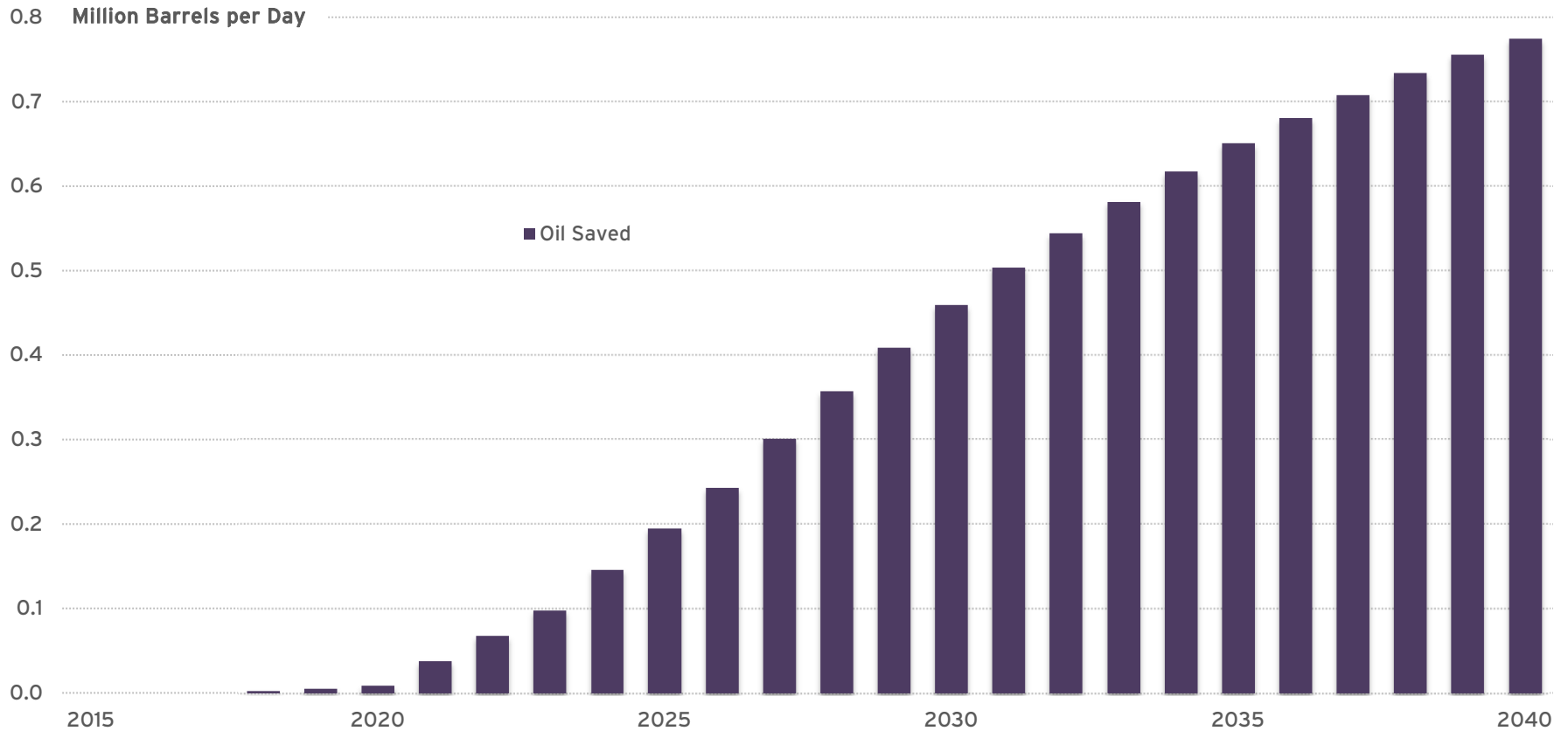
The sharp decline in oil prices that began last summer marked the return of significant oil price volatility, which touched levels last seen in 2009. Although down from 54% in Q1, 30-day volatility averaged 33% in Q2 versus 16% in Q2 2014.



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

Estimated Fuel Savings from EPA and NHTSA Phase 2 Rule

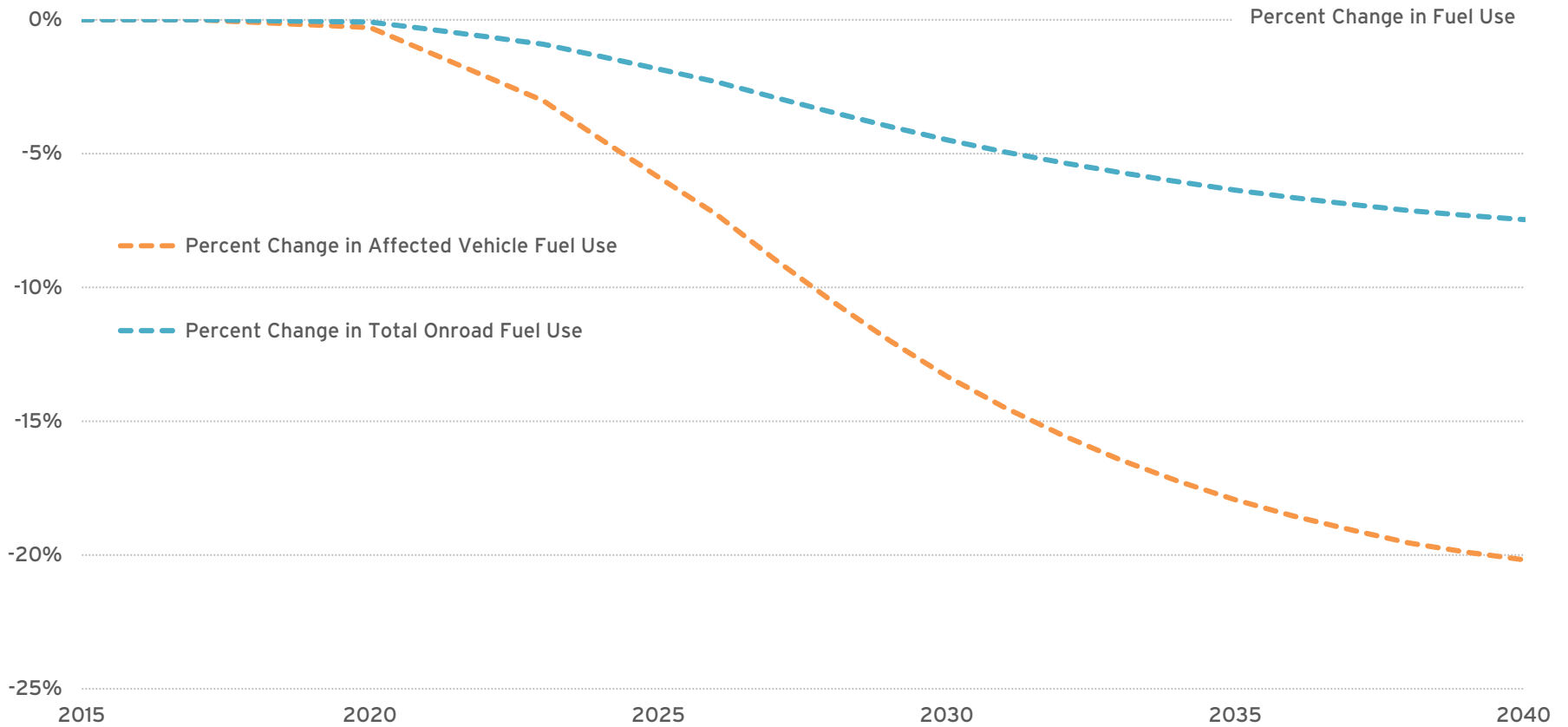
Analysis of the recently proposed Phase 2 standard for medium- and heavy-duty vehicles suggests that by 2040 the rule, covering vehicles in model years 2018-2027, could reduce oil use by 0.77 mbd.



Source: Meszler Engineering Services and SAFE

Projected Change in Fuel Consumption from Phase 2 Rule

While heavy-duty vehicles comprise only 7% of vehicles on the road, they use approximately 30% of the energy. The Phase 2 standard will reduce fuel use in the medium- and heavy-duty segments (more than 20% by 2040), while reducing overall on road fuel use.



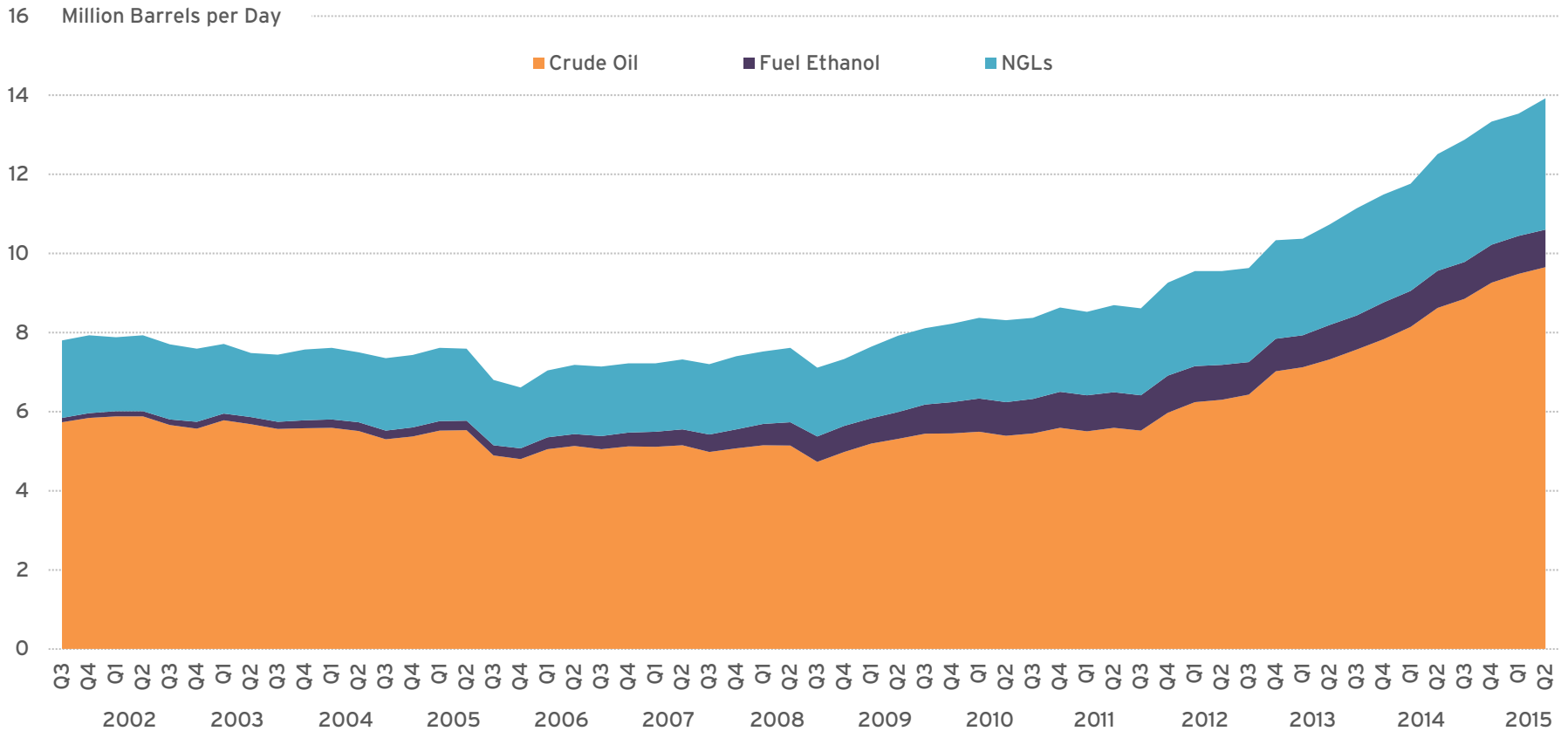
Source: Meszler Engineering Services and SAFE

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U.S. Oil Production Reaches New Highs

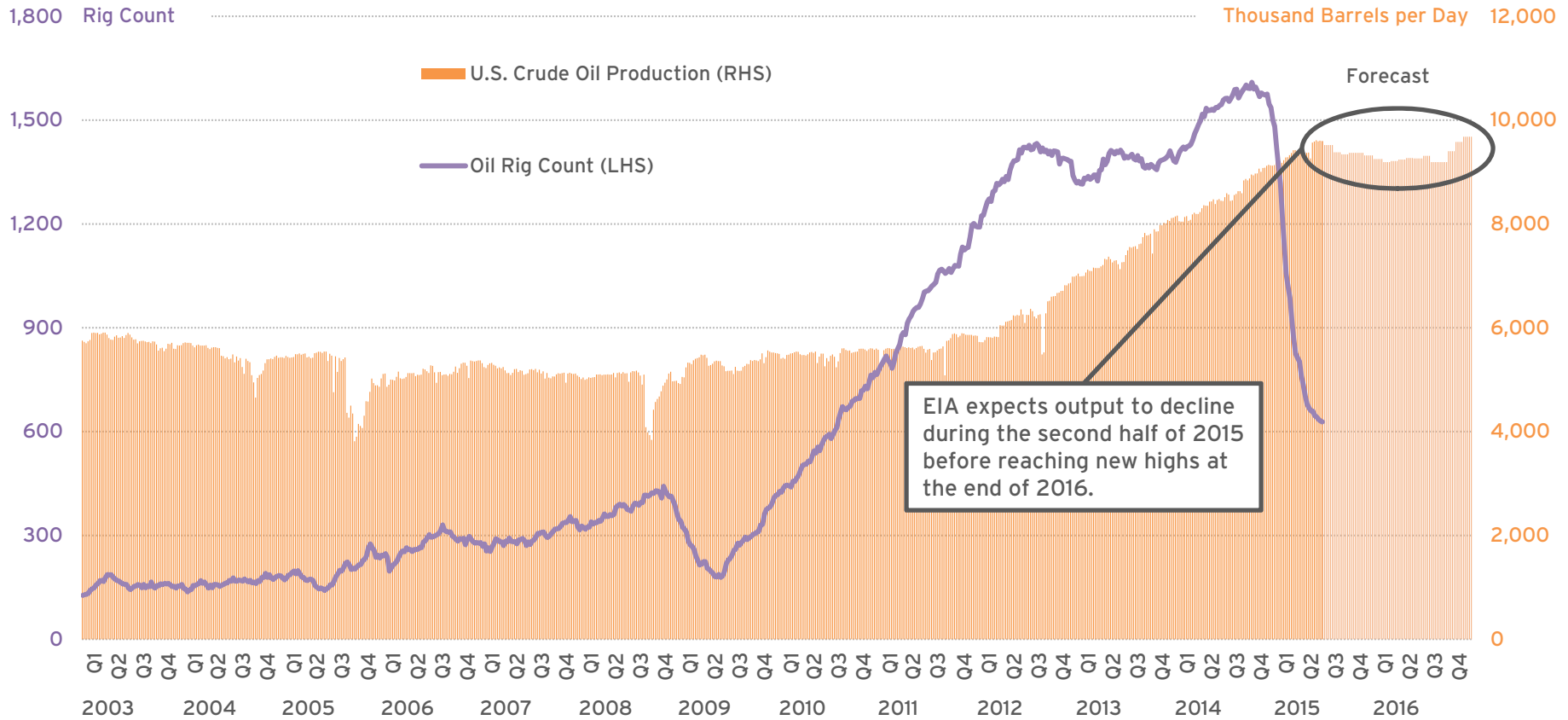
Domestic crude oil production increased by 1 mbd in Q2 2015 (y-o-y), or roughly 12%. Inclusive of fuel ethanol and natural gas liquids (NGLs), total U.S. liquids production is approximately 6 mbd higher than in 2008, making the country the world's largest liquids producer.



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

U.S. Rig Count Drops Precipitously

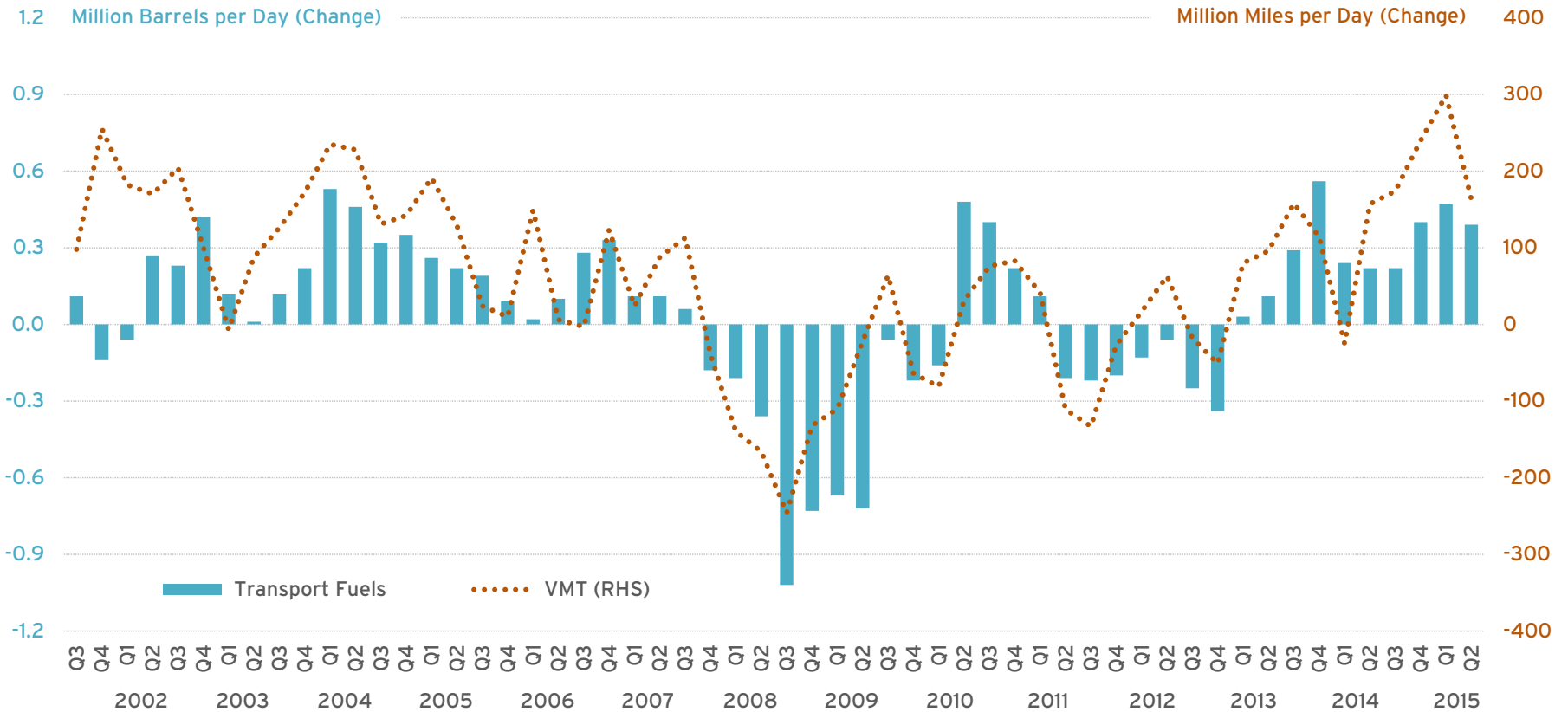
After reaching historic highs in Q4 2014, the oil rig count dropped sharply. The drop to 608 rigs through Q2 2015 represents more than a 55% decrease y-o-y. Nevertheless, U.S. oil production continued to grow in Q2.



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

Y-o-Y VMT Falls Following Historic Highs

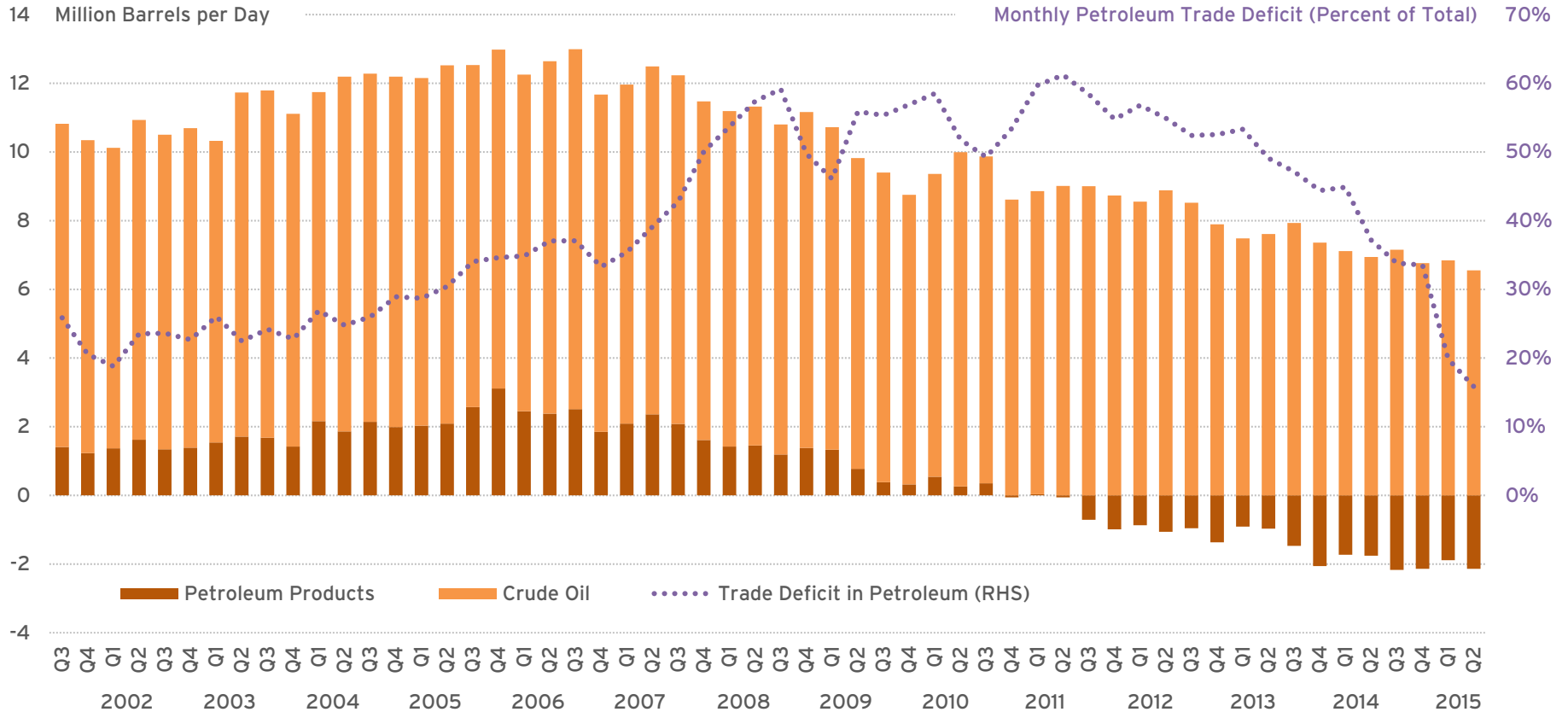
U.S. demand for gasoline, diesel, and jet fuel has been growing y-o-y since 2013. Total vehicle miles traveled (VMT) increased by approximately 160 million miles in Q2 (y-o-y), VMT's fifth consecutive quarter of positive growth.



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

U.S. Net Oil Imports Continue to Fall

Total U.S. net oil imports have fallen more than 64% since 2005 and in Q2 fell to 4.4 mbd (-0.8 mbd y-o-y). The United States became a net exporter of petroleum products in 2011. In Q2, net petroleum product exports reached more than 2.1 mbd.



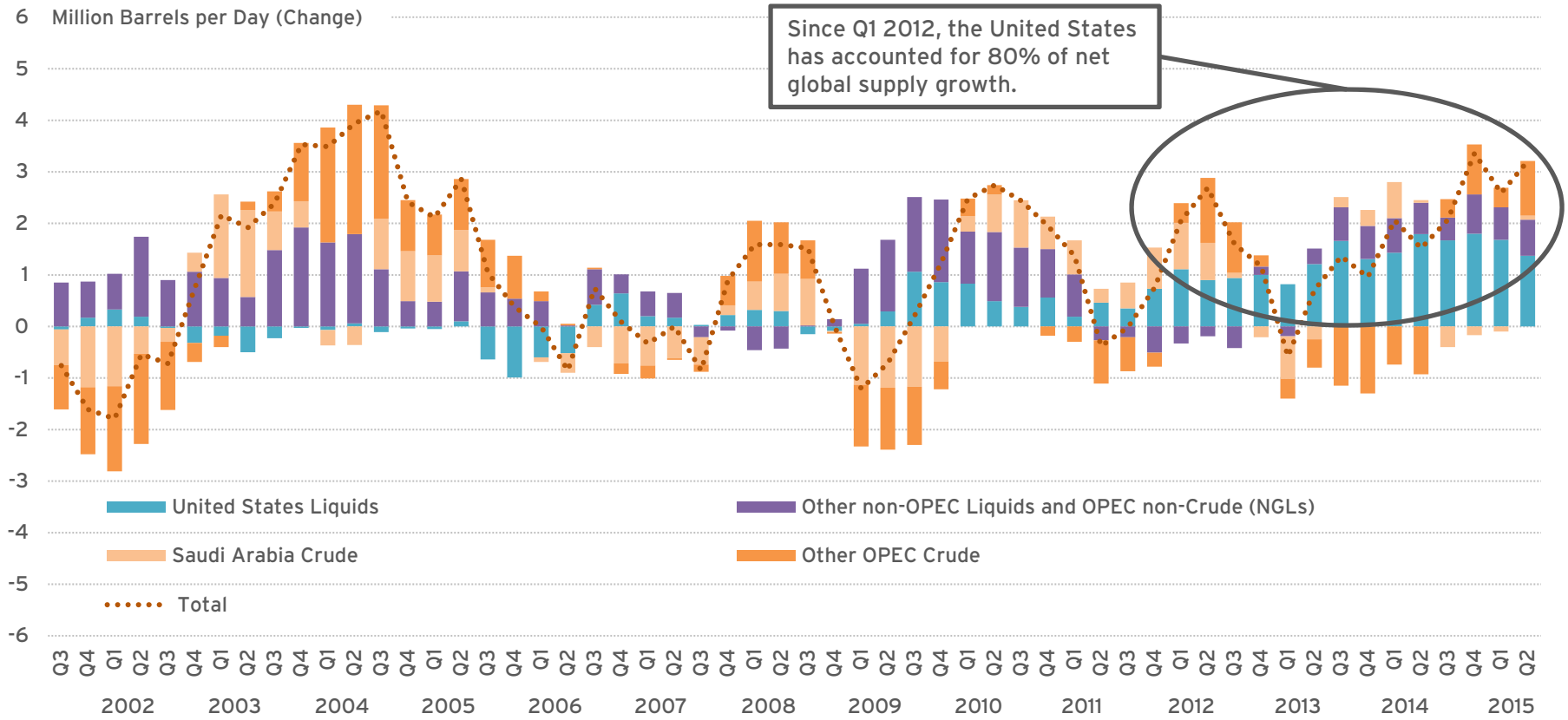
Source: SAFE analysis based on data from U.S. EIA

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Global Oil Supply Continues Strong Growth

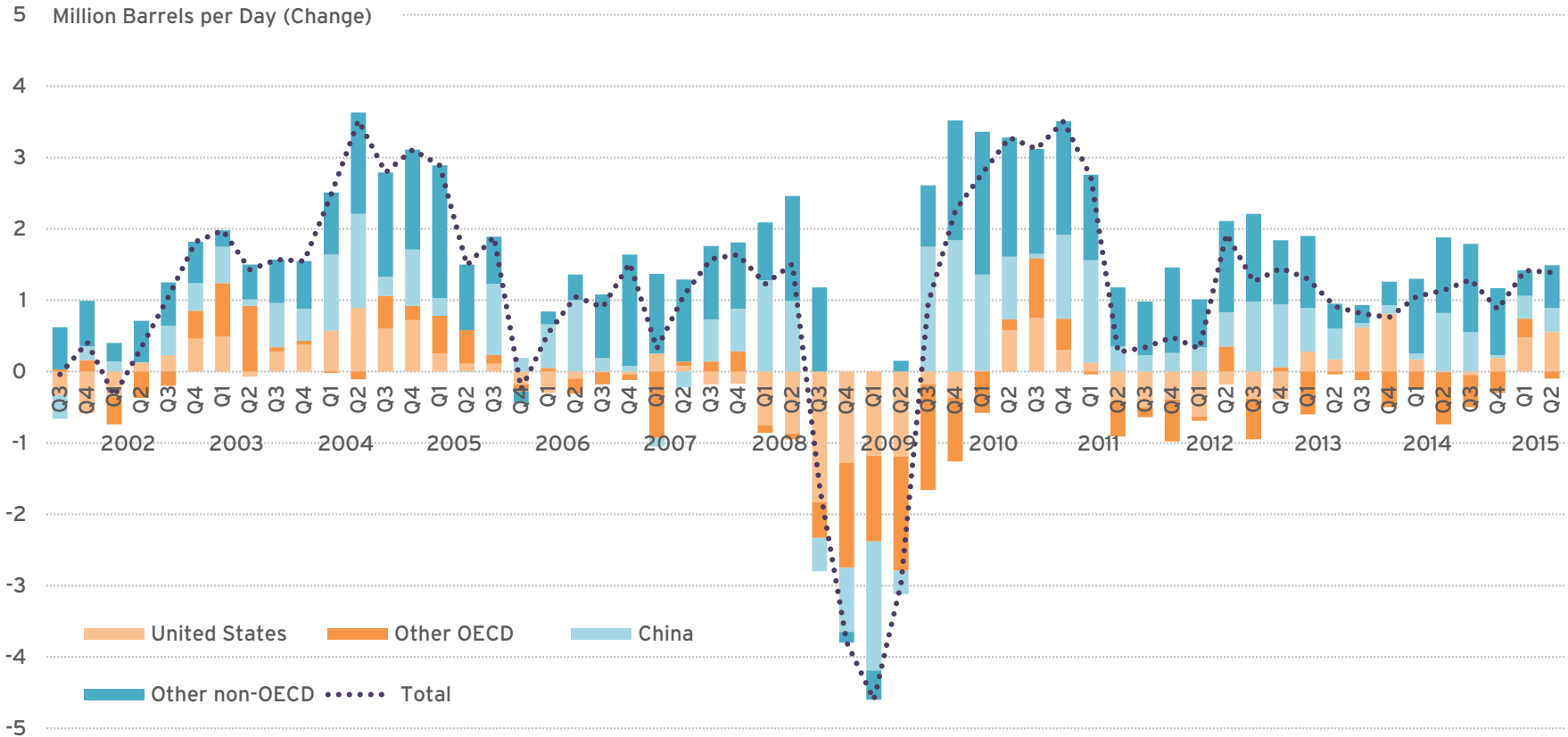
Global production grew more than 3 mbd (y-o-y) on the back of higher U.S. supply (+1.4 mbd y-o-y) in Q2. Non-Saudi OPEC supply continued its recent positive trend (1 mbd y-o-y) for the fourth consecutive quarter.



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

Global Oil Demand Slowly Rising

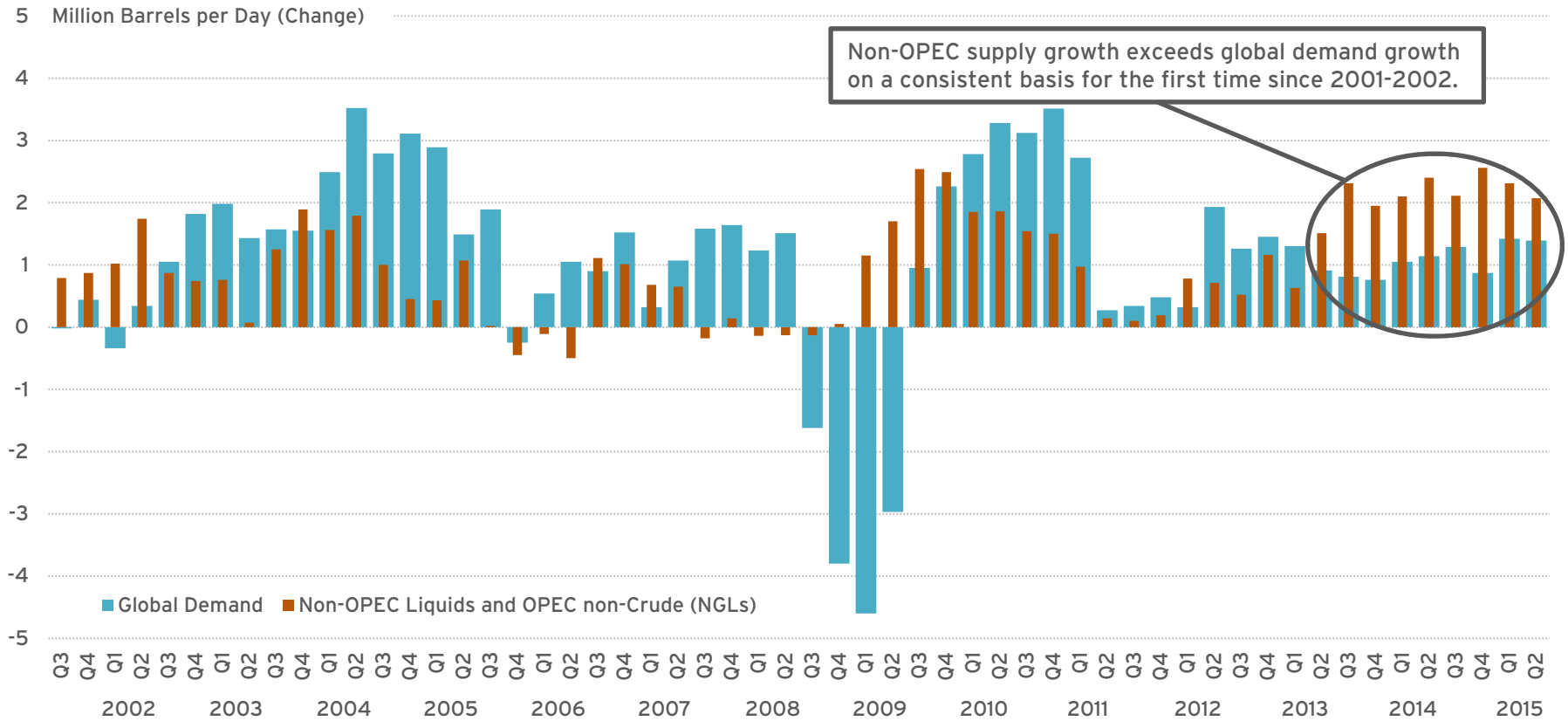
Global oil demand grew by approximately 1.4 mbd (y-o-y) in Q2. Non-OECD countries and the United States (alone +0.6 mbd y-o-y) accounted for the majority of the increase. Global oil demand has increased since 2009, reaching 93.1 mbd in Q2 2015.



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

Global Supply Continues to Outstrip Demand

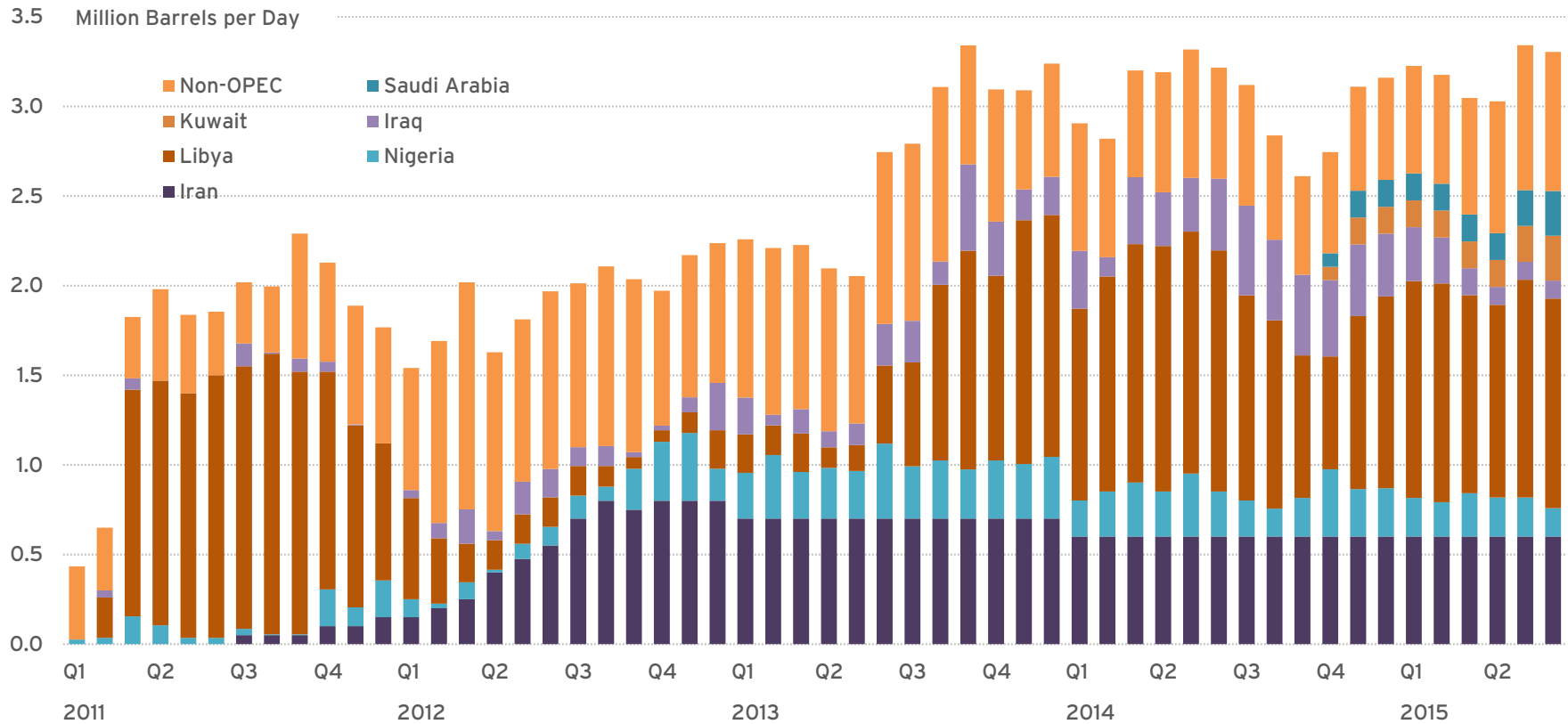
Growth in non-OPEC liquids supply has exceeded global oil demand growth for nine straight quarters, placing downward pressure on the amount of crude oil supply that the market needs from OPEC. Most forecasters expect this general trend to continue for the rest of 2015.



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

Unplanned Crude Oil Outages Increase in Recent Months

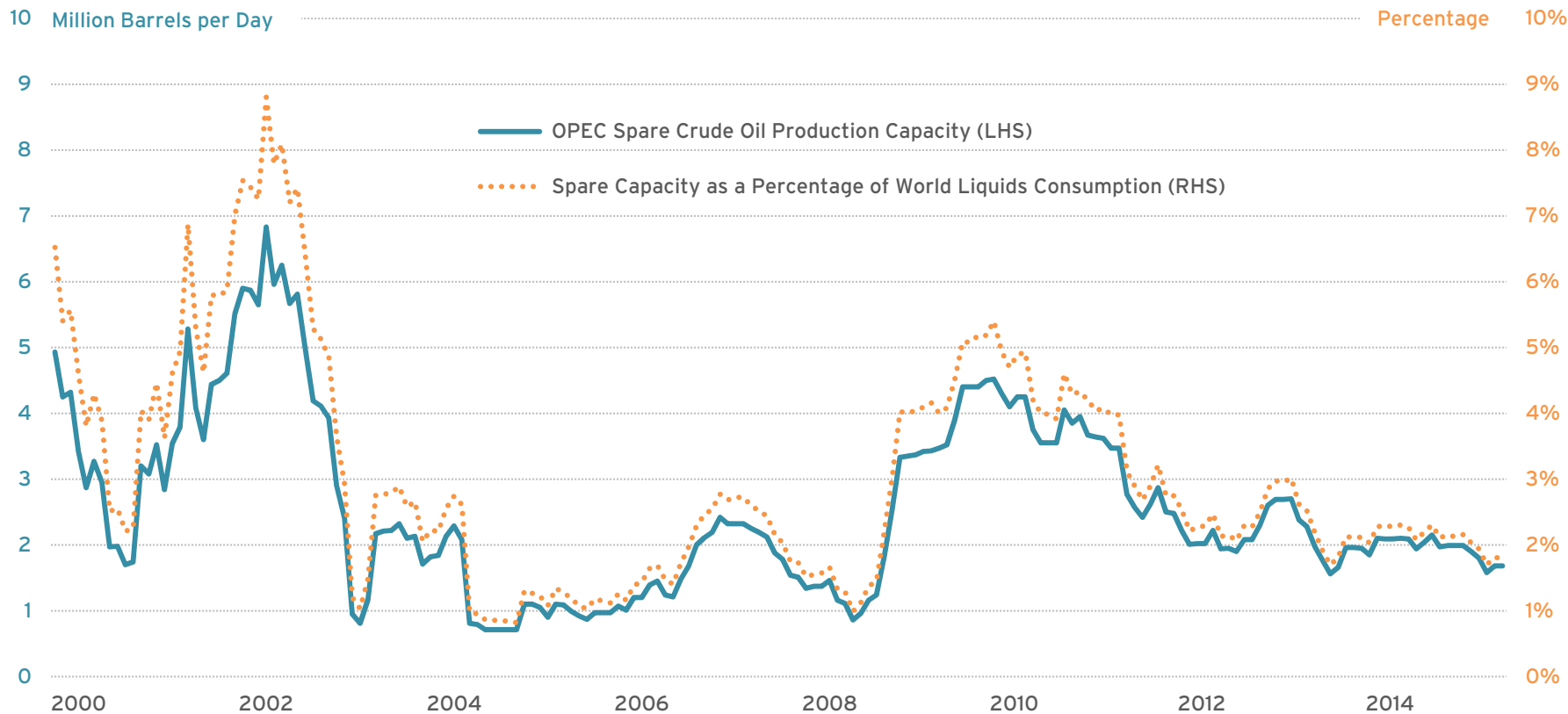
Global unplanned oil outages remained relatively steady in Q2, increasing just 0.1 mbd quarter-over-quarter (q-o-q). However, total outages have increased in recent months from 3 mbd in April to 3.3 mbd in June, mainly due to higher outages in Libya and non-OPEC producers.



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

OPEC Spare Crude Oil Production Capacity Remains Steady

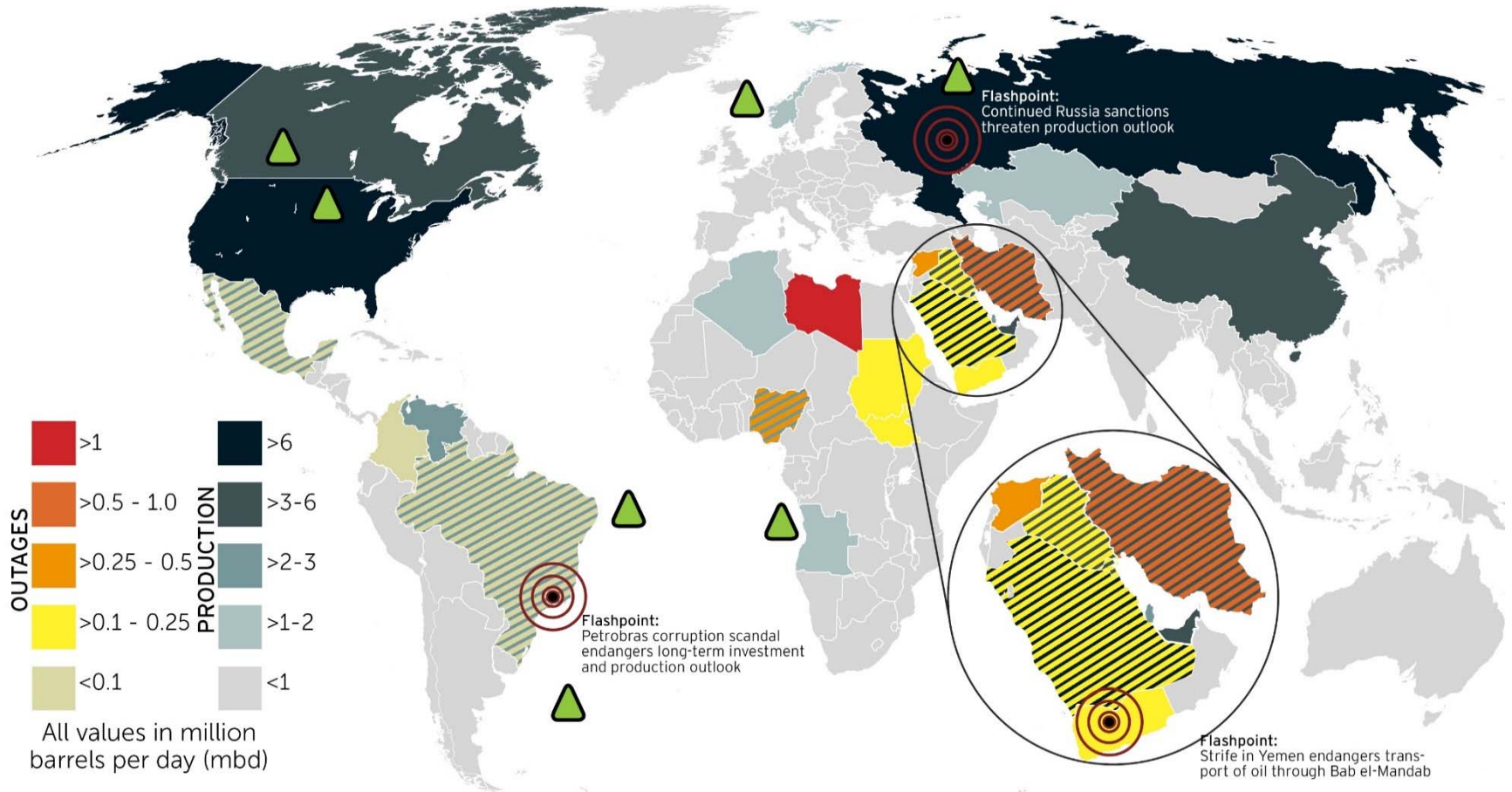
OPEC spare crude oil production capacity is estimated at 1.7 mbd in Q2 (-0.4 mbd y-o-y). This is equivalent to approximately 1.8% of global consumption. The majority of OPEC's spare production capacity is held by Saudi Arabia.



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

Barrels at Risk Map

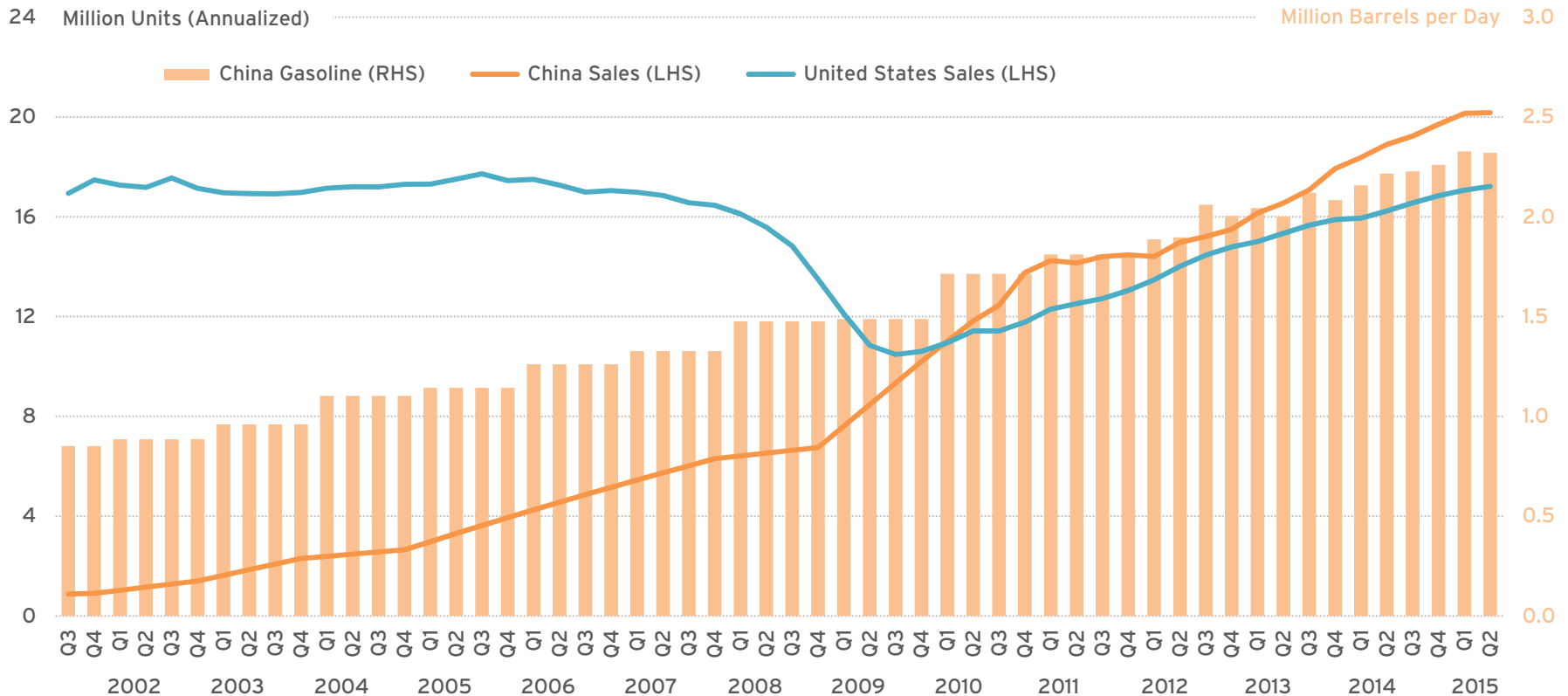
Total oil supply outages averaged 3.3 mbd in Q2. Geopolitical tensions in oil-producing regions and alongside major transit chokepoints threaten to increase disruptions, while political issues contribute to decreased production outlooks in nations like Russia and Brazil.



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

China Vehicle Sales and Gasoline Demand Rise

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 rise, although more slowly in Q2 at 4.5% y-o-y (versus 7.3% in Q1).



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

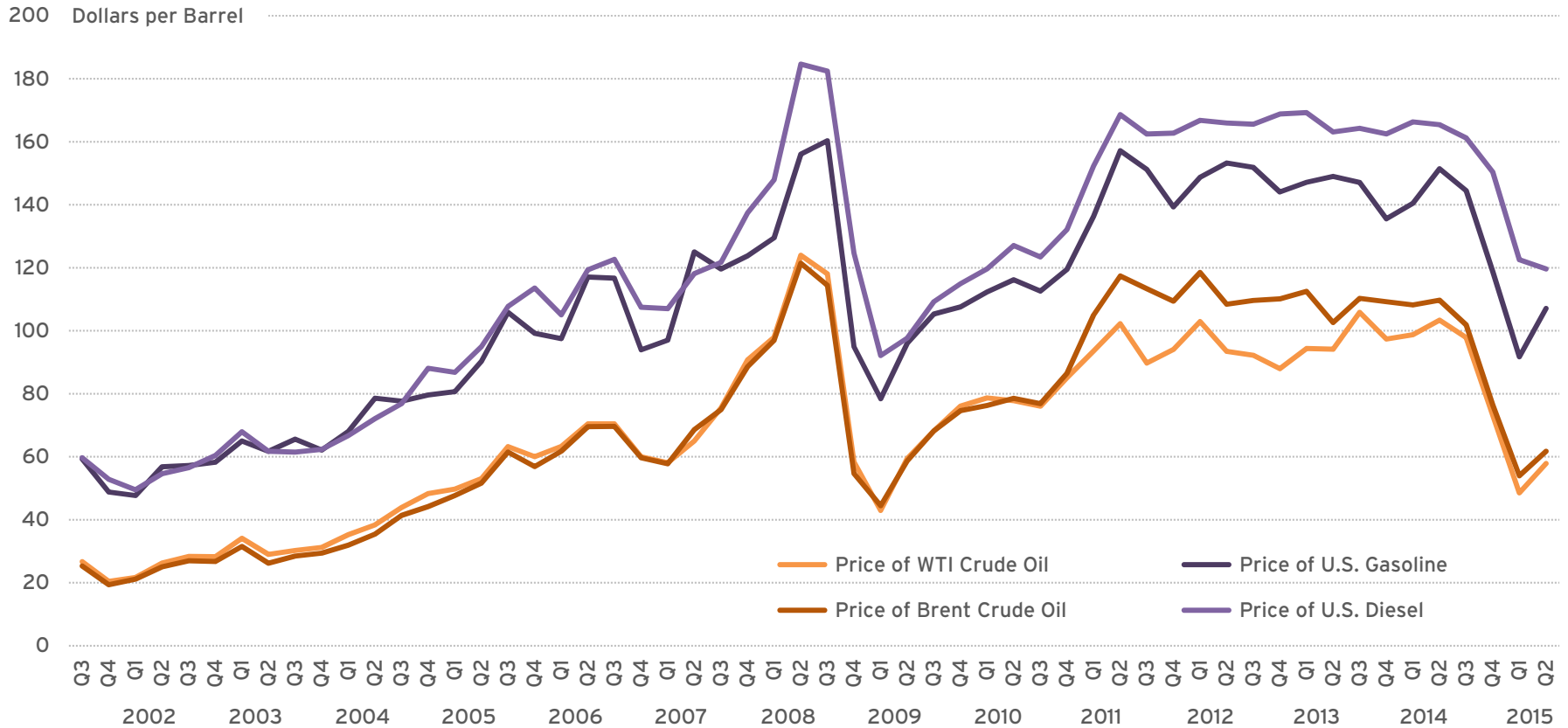
Source: SAFE analysis based on data from BEA, IEA, and China Association of Automobile Manufacturers

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Oil and Fuel Prices Far Lower Than in Recent Years

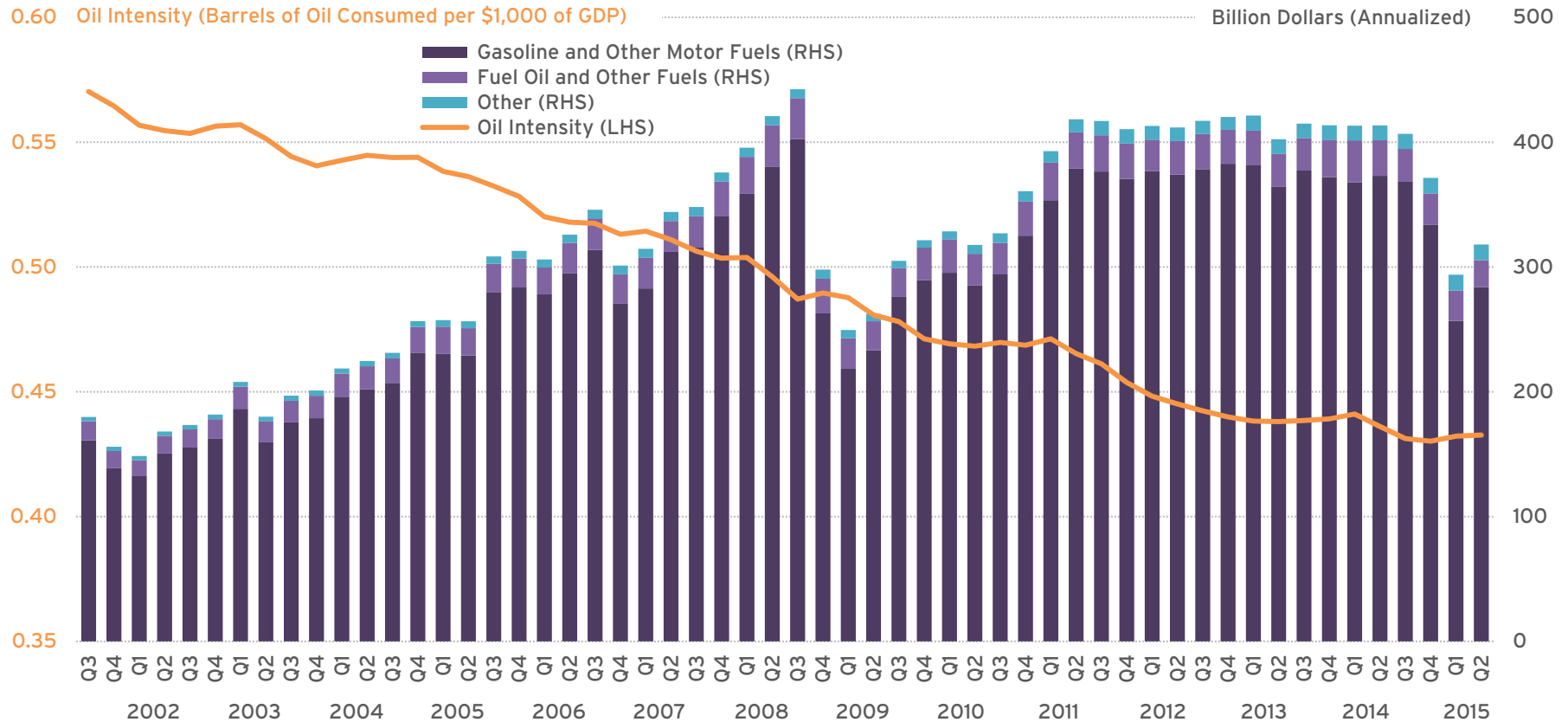
Domestic petroleum product prices like gasoline and diesel correlate closely with prevailing global crude oil benchmarks. Oil and gasoline prices rebounded slightly from Q1 to Q2. June average Brent = \$61/bbl, WTI = \$60/bbl, U.S. gasoline = \$2.89/gal.



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

Oil Intensity Flat and Household Expenditures Down

U.S. oil intensity remained steady in Q2 at 0.43 barrels per \$1,000 of GDP. However, household spending on petroleum fuels fell by 23% y-o-y to an annualized level of \$318 billion due to depressed oil and petroleum product prices.



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

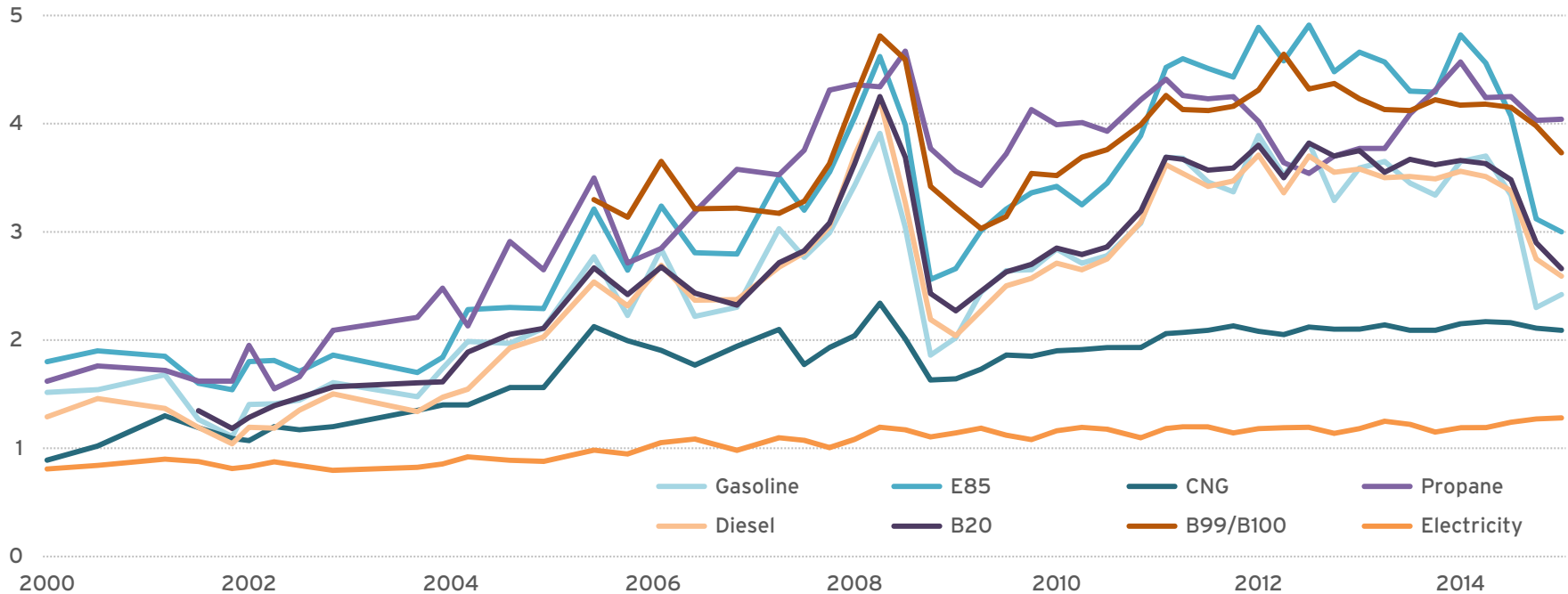
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Liquid Retail Fuel Prices Remain Depressed

Despite recent decreases, liquid fuel prices have risen overall since 2000 while experiencing substantial volatility. Meanwhile, the prices of compressed natural gas (CNG) and electricity have remained relatively stable and have increased far less over the same time period.

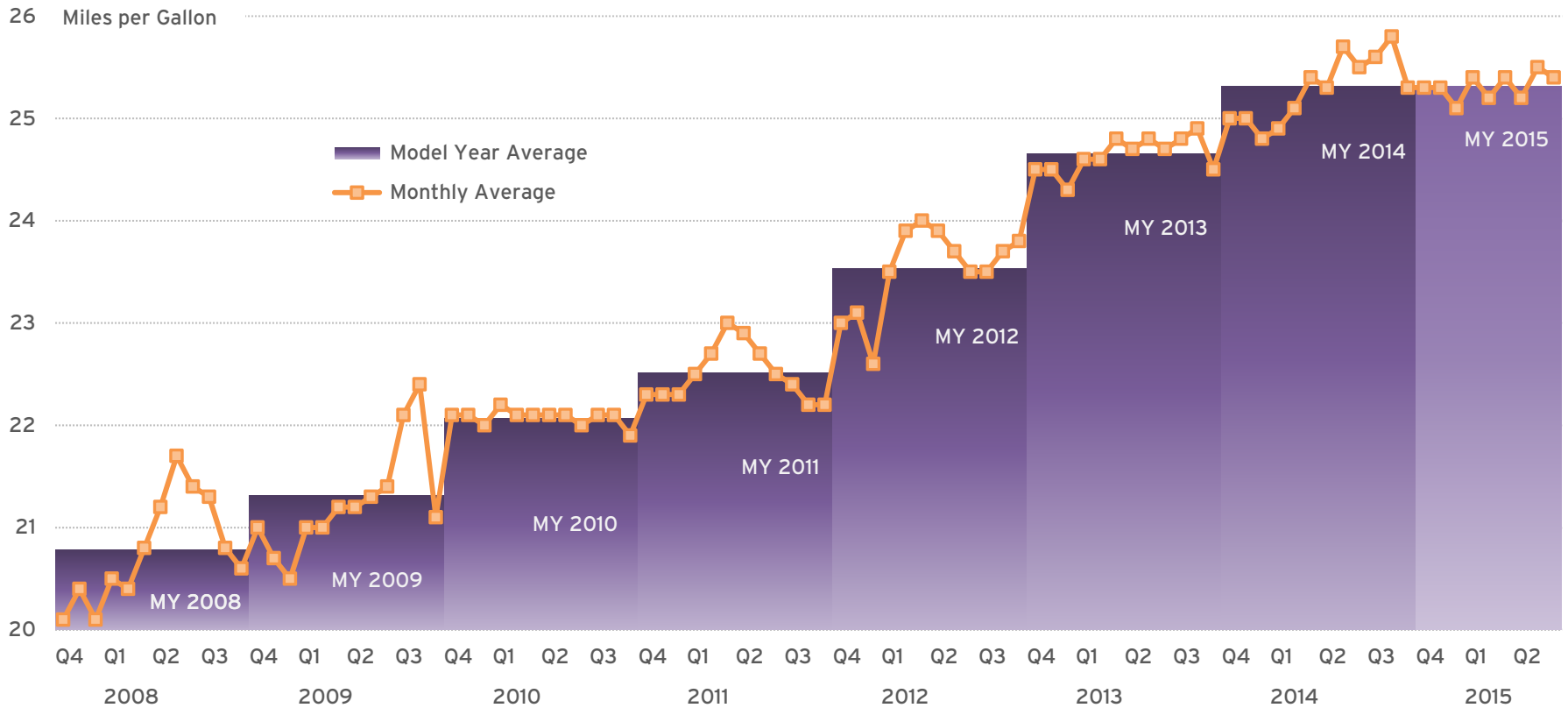
6 Dollars per Gasoline Gallon Equivalent (GGE)



Source: SAFE analysis based on data from Clean Cities Alternative Fuel Price Reports

New Light-Duty Vehicle Fuel Economy Ratings Remain Flat

The average fuel economy rating of new light-duty vehicle sales remained steady y-o-y, a marked change versus the MY 2008 to 2014 period, when it consistently increased. MY 2015 is currently unchanged y-o-y at 25.4 mpg, approximately 18% higher than 2009 levels.

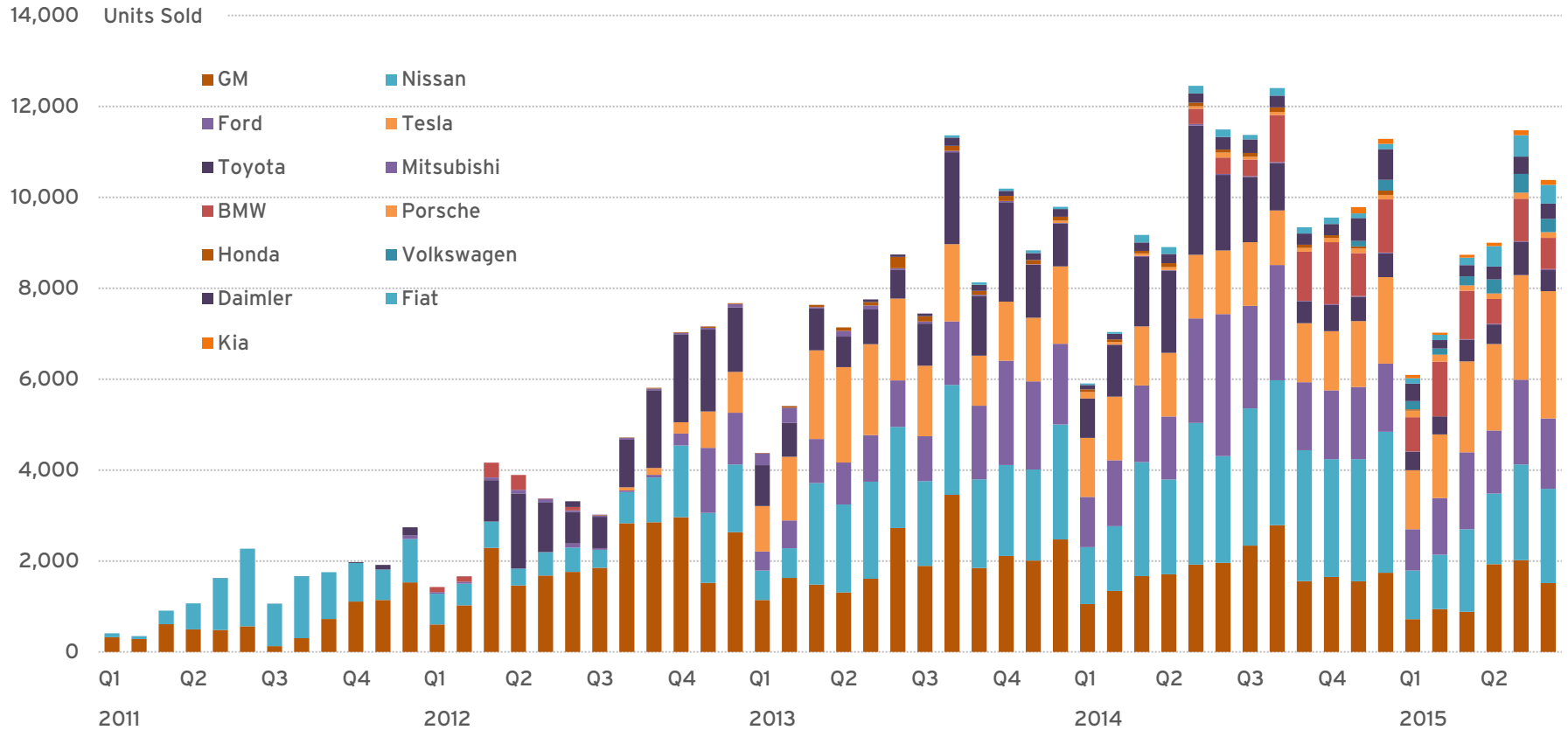


Note: Average sales-weighted fuel-economy rating of purchased new light-duty vehicles.

Source: SAFE analysis based on data from Michael Sivak and Brandon Schoettle, University of Michigan Transportation Research Institute

Plug-in Electric Vehicle Sales Sluggish in 2015

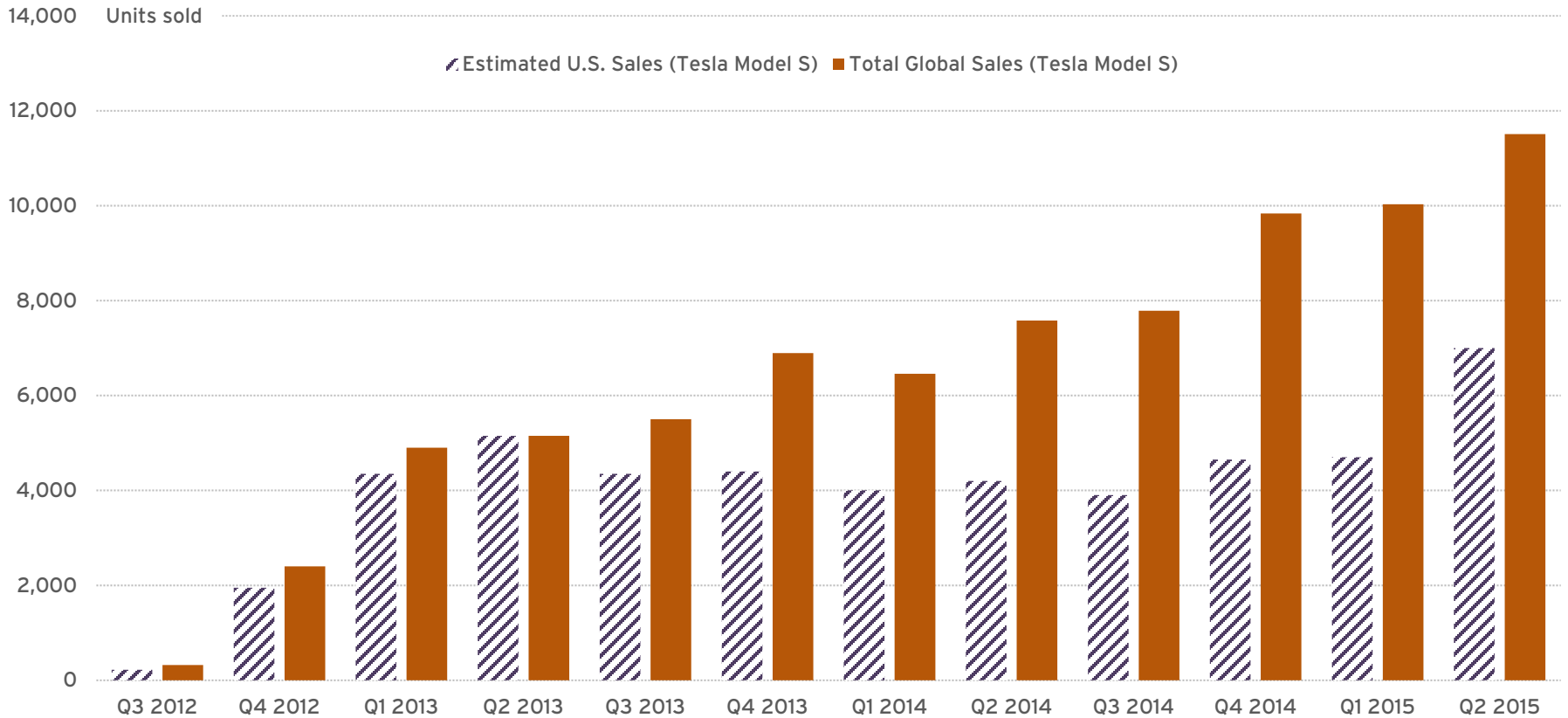
Approximately 31,000 plug-in electric vehicles (PEVs) were sold in Q2, down 6.3% y-o-y. Tesla's Model S continued to lead the market, outselling its nearest competitor (Nissan's LEAF) by 22%. The six best-selling vehicles accounted for approximately 73% of total sales.



Source: SAFE analysis based on data from HybridCars.com

Spotlight on Tesla's Sales

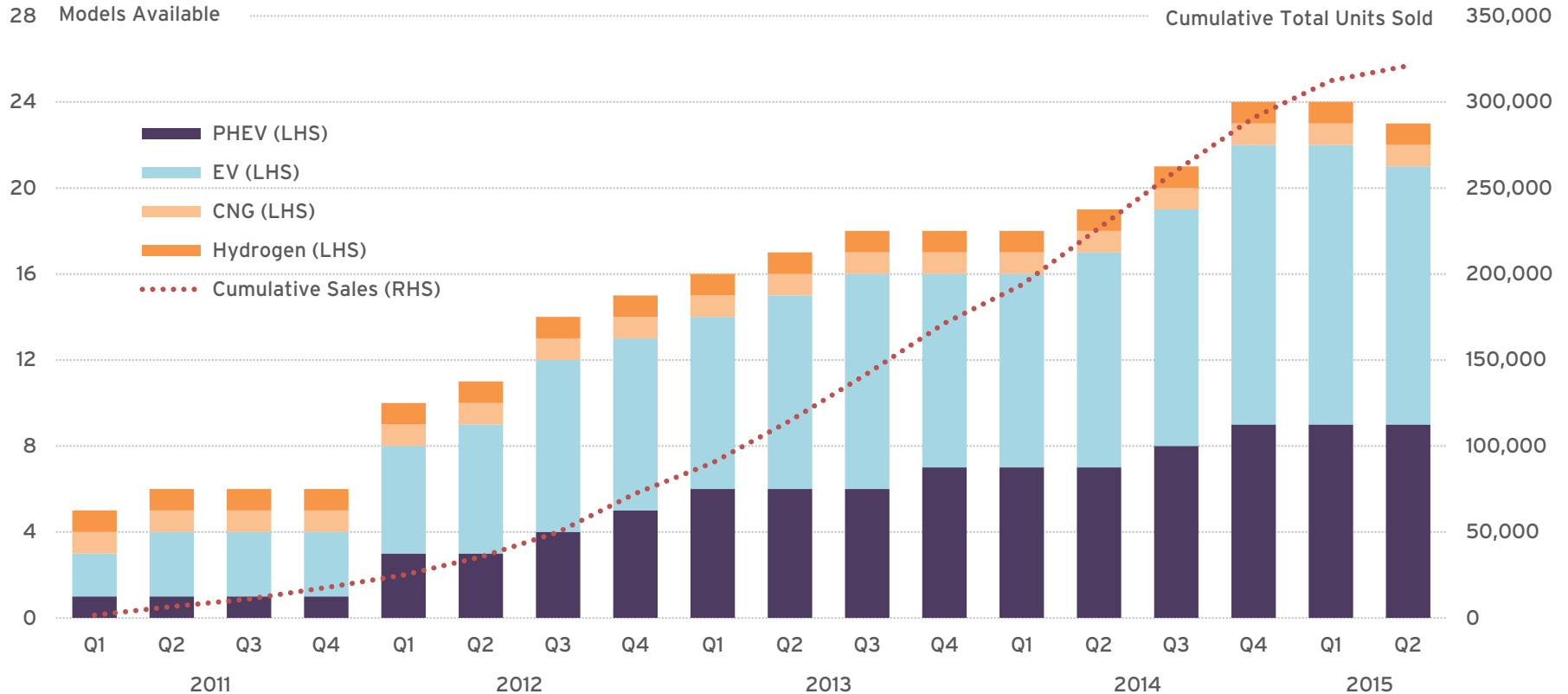
Tesla has set a goal of selling 50,000-55,000 vehicles globally in 2015. Through Q2, Tesla sold 21,537 vehicles and has met roughly 40% of its 2015 sales target. The Model X, currently slated for release in Q3 2015, is expected to help Tesla meet this goal.



Source: Tesla and Hybridcars.com

Available Models of Alternative Fuel Vehicles Stable

The number of light-duty passenger alternative fuel vehicle (AFV) models available to U.S. consumers fell by one in Q2 2015. The total number available still represents more than a three-fold increase from Q1 2011. Cumulative total AFV sales rose to an estimated 321,000 units.

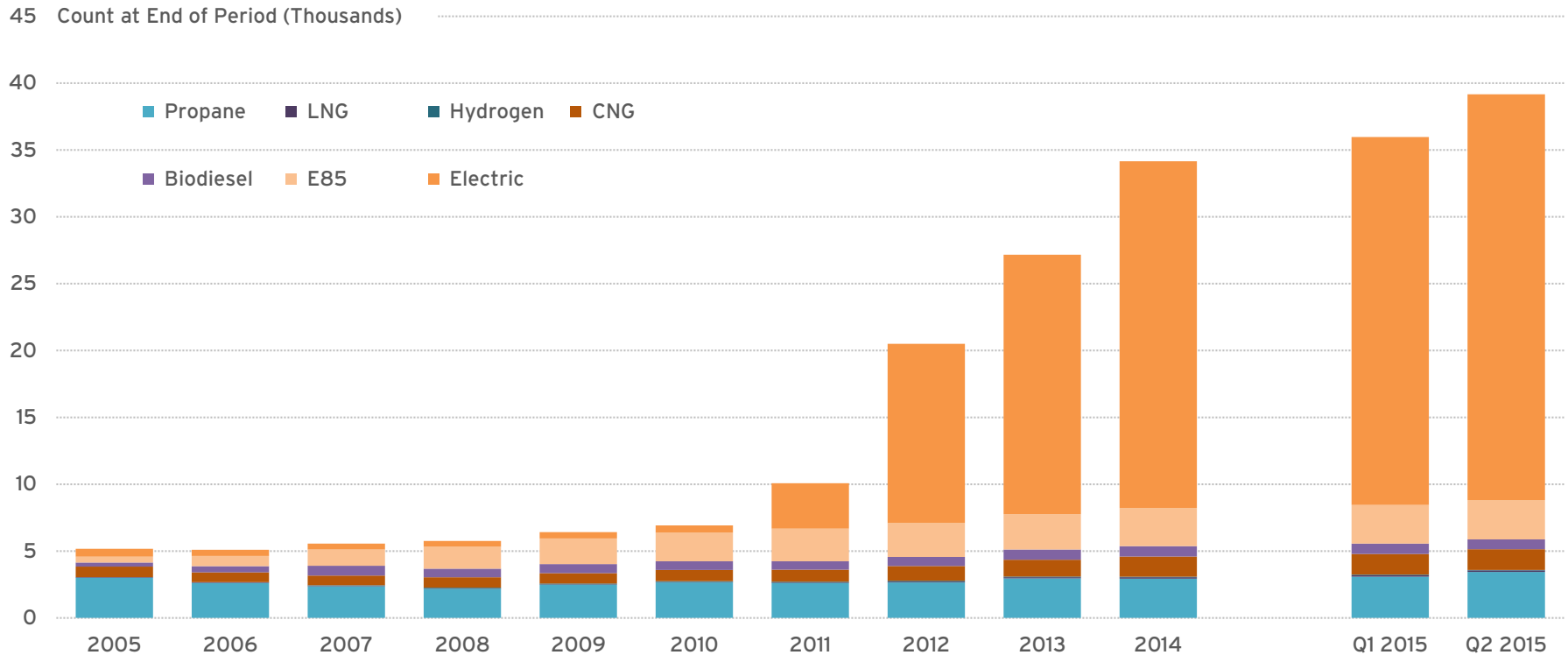


Note: Several available models are not included in 'Cumulative Sales.'

Source: SAFE analysis based on data from HybridCars.com

Alternative Fueling Stations Increase

The number of alternative fueling stations nationwide increased more than 33% through the end of Q2 2015 versus 2013, a net addition of approximately 12,000 stations. The vast majority of these new additions (91%) were for electric charging.



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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Oil Security Index: www.oilsecurityindex.org



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