

Energy Security Fact Pack

Q2 2016



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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 2016: Oil Market Rebalancing Slower Than Expected

- Global oil prices steadily increased during Q2, rising from a low of \$35 per barrel (bbl) (Brent) to a high of \$51/bbl. Thus far, 2016 has been among the most price volatile years in history [Page 23]. Gasoline prices were roughly 15% lower year-over-year (y-o-y), averaging just \$2.18 per gallon in the quarter [Page 20].
- Neither the decreases in global oil supply or increases in demand have been as strong as expected. However, non-OPEC production growth finally turned negative in Q2, and alongside steady increases in global demand, the market appears to be slowly returning to balance [Page 4 & 5]. U.S. output fell 0.4 million barrels per day (mbd) y-o-y in Q2, the first quarterly contraction since 2008. Meanwhile, non-OECD countries continued to account for the vast majority of global demand growth.
- With the market still oversupplied, the quantity of oil stored in commercial inventories has increased substantially, boosting forward cover [Page 6]. This stockpiling behavior complicates efforts to forecast future prices. Many analysts have downwardly revised estimates in recent quarters [Page 7].
- Although sales of plug-in electric vehicles reached historic highs in Q2, new light-duty truck sales accounted for approximately 60% of total light-duty vehicle sales [Page 28 & 22]. The average fuel economy rating of total sales remained flat [Page 26].

The Q2 2016 Fact Pack includes a 'Charts of the Quarter' section focused on global oil market dynamics, highlighting changes in supply and demand patterns, commercial inventories, and price projections.

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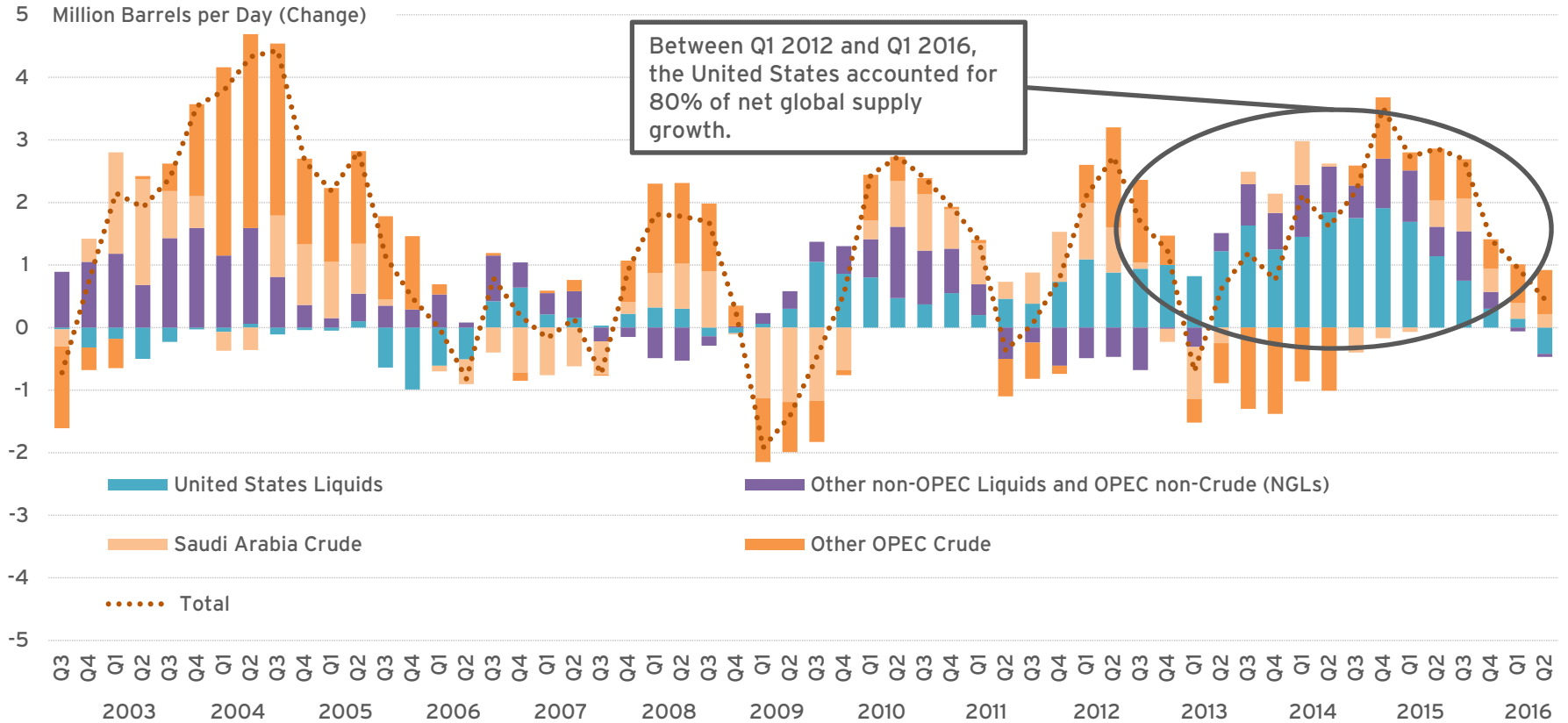
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Global Oil Supply Growth Slows

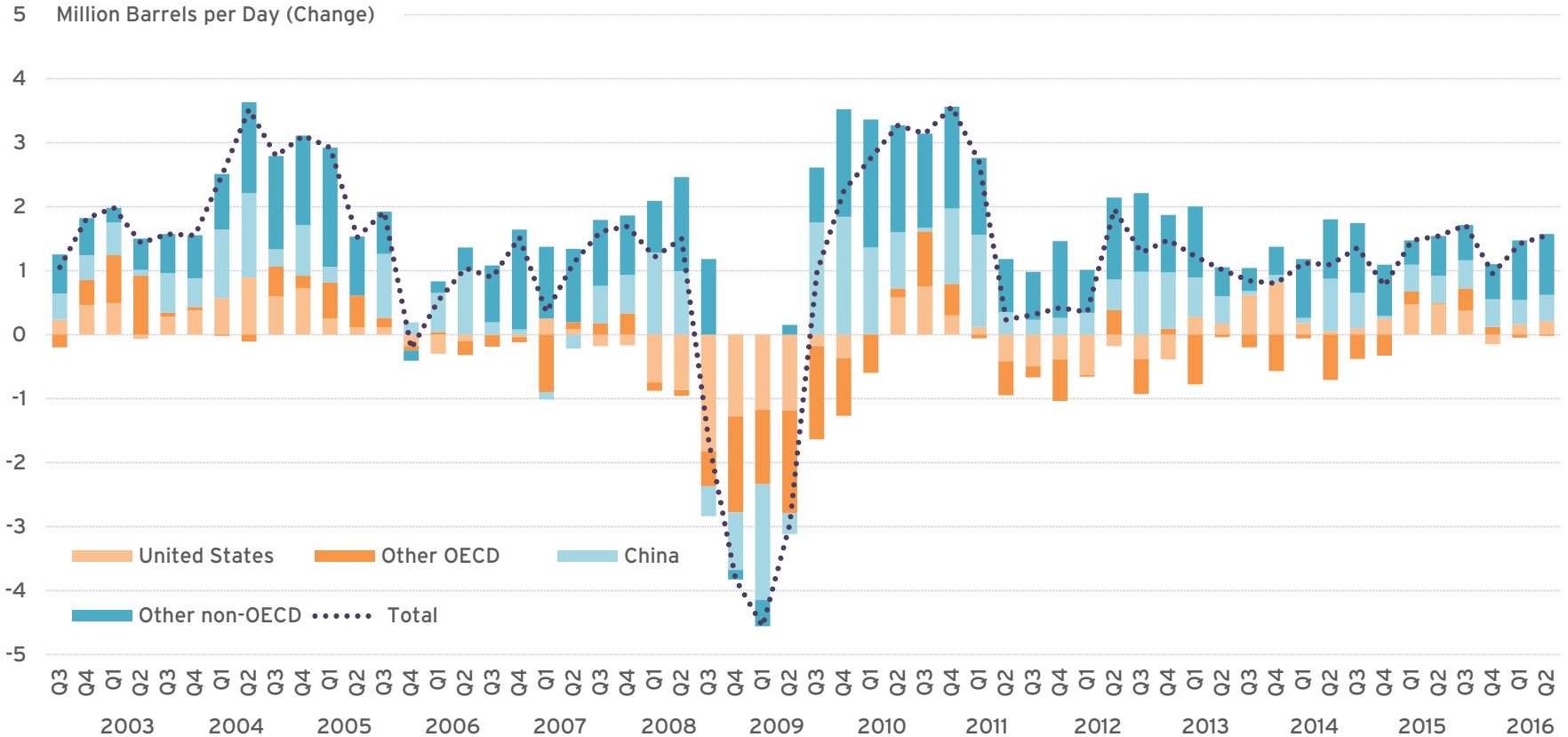
Global oil production grew just 0.4 mbd y-o-y in Q2 (it grew 2.9 mbd y-o-y in Q2 2015) as additional non-Saudi OPEC supply came online (+0.7 mbd y-o-y). Total U.S. liquids supply declined y-o-y for the first time in more than seven years in Q2 (-0.4 mbd).



Source: SAFE analysis based on data from EIA

Global Oil Demand Continues Steady Rise

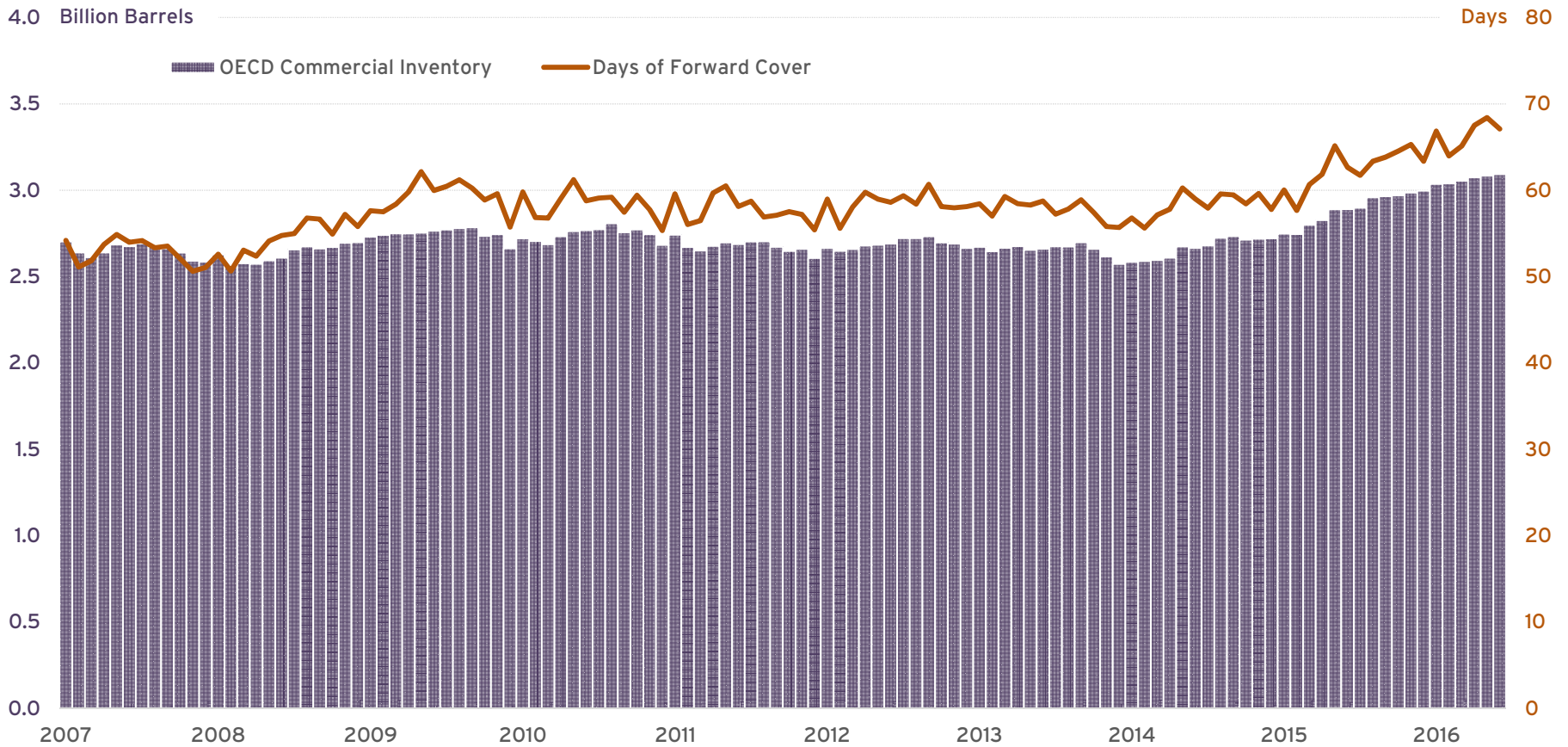
Global oil demand grew by approximately 1.6 mbd y-o-y in Q2 driven by non-OECD countries (+1.1 mbd y-o-y). U.S. demand increased 0.2 mbd y-o-y for a second consecutive quarter. Global oil demand has been increasing since 2009, reaching approximately 95 mbd in Q2.



Source: SAFE analysis based on data from EIA

Crude Oil and Other Liquids Inventory Reach New Highs

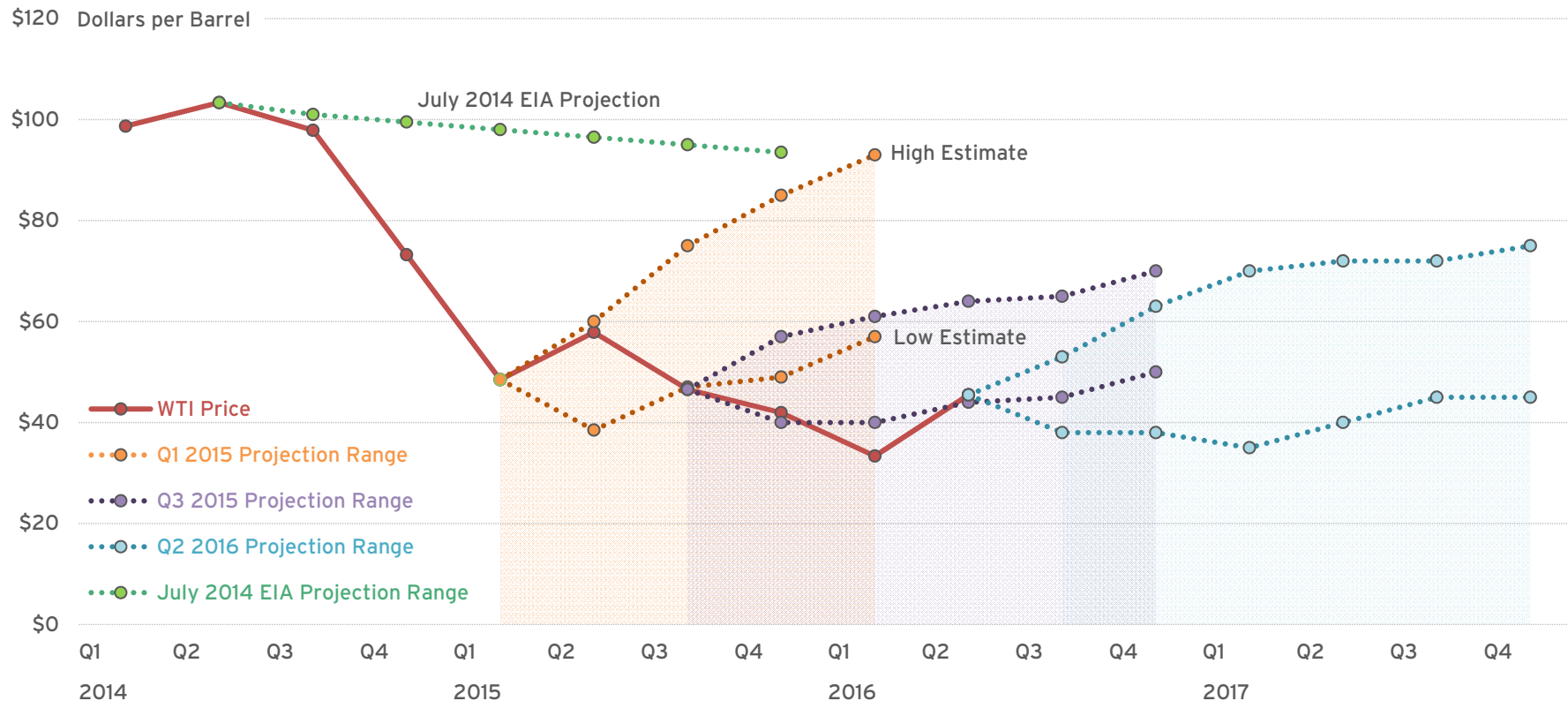
Many nations are increasing oil stockpiles. In the OECD, commercial stocks rose to 3.1 billion barrels in June (+7% y-o-y, or 203 million barrels). These supplies provide an estimated 67 days of forward cover, an increase of 8 days versus June 2014.



Source: SAFE analysis based on data from EIA

Future Prices Remain Uncertain

Market uncertainty complicates efforts to forecast future oil prices. Investment bank estimates have varied widely over the past two years, now anticipating 2017 prices between \$45/bbl and \$75/bbl. As recently as Q1 2015, some banks forecast prices above \$90/bbl for Q1 2016.



Note: Includes only investment bank price projections provided to The Wall Street Journal.

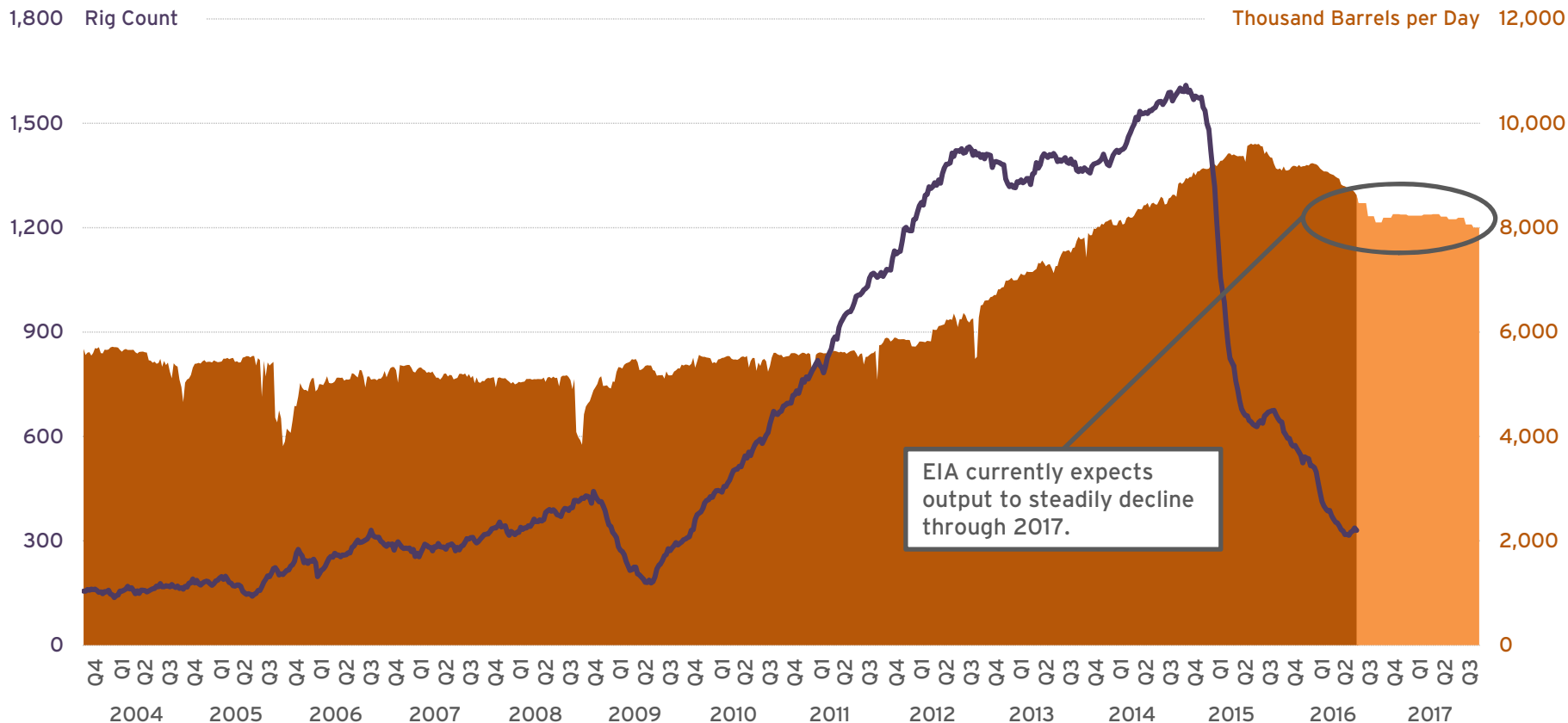
Source: SAFE analysis of data based on The Wall Street Journal's monthly archive of investment bank price forecasts and EIA

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U.S. Oil Producers Under Pressure

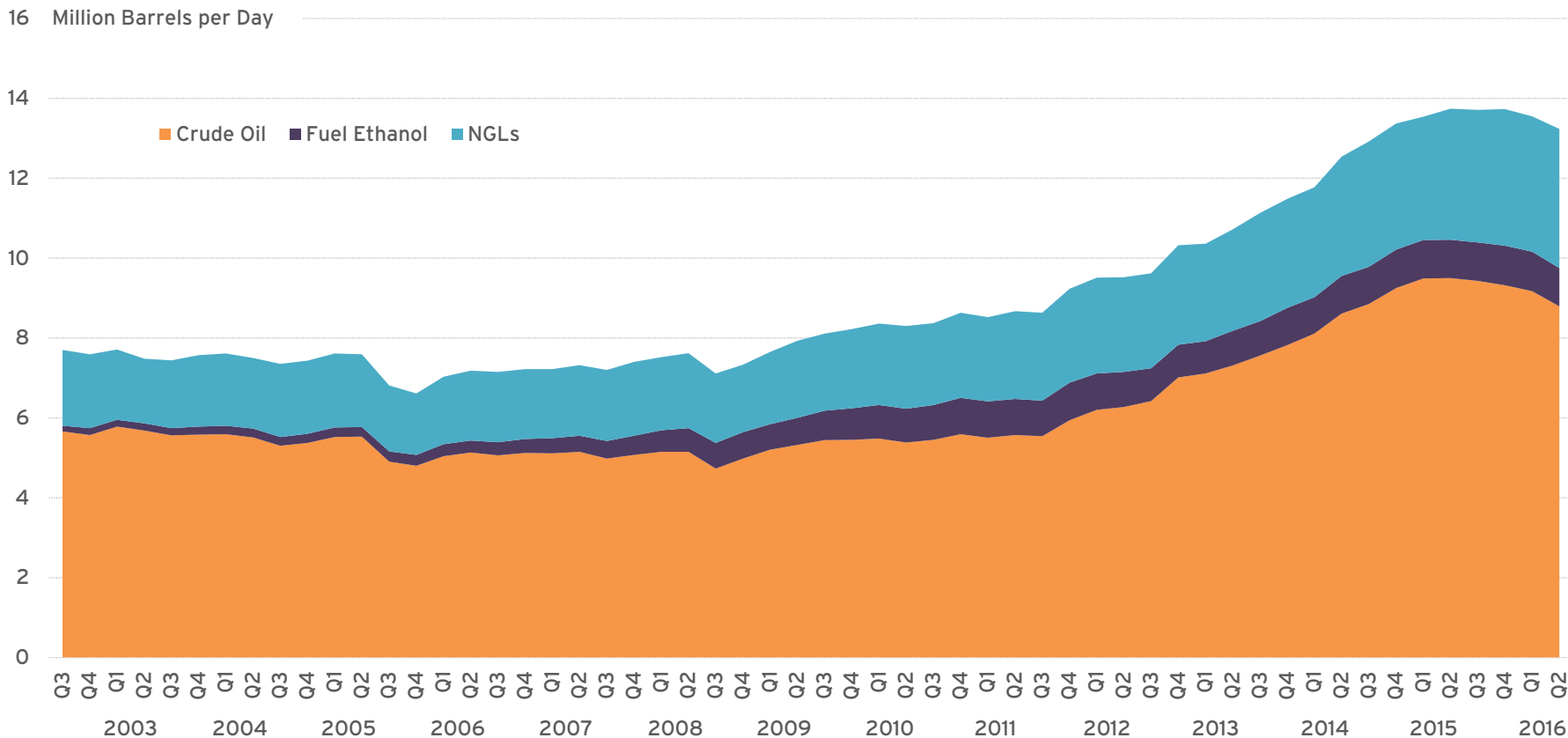
After reaching historic highs in Q4 2014, the oil rig count dropped sharply for several quarters. Q2 2016 witnessed a further decline of more than 11%, from 372 to 330. U.S. crude oil production fell more than 0.2 mbd quarter-over-quarter (q-o-q) in Q2 2016.



Source: EIA and Baker Hughes

U.S. Oil Production Continues to Fall

U.S. liquids production fell 0.5 mbd y-o-y in Q2. Inclusive of fuel ethanol and natural gas liquids (NGLs), total U.S. liquids production nevertheless remains approximately 6.2 mbd higher than in 2008, making the U.S. the world's largest liquids producer.

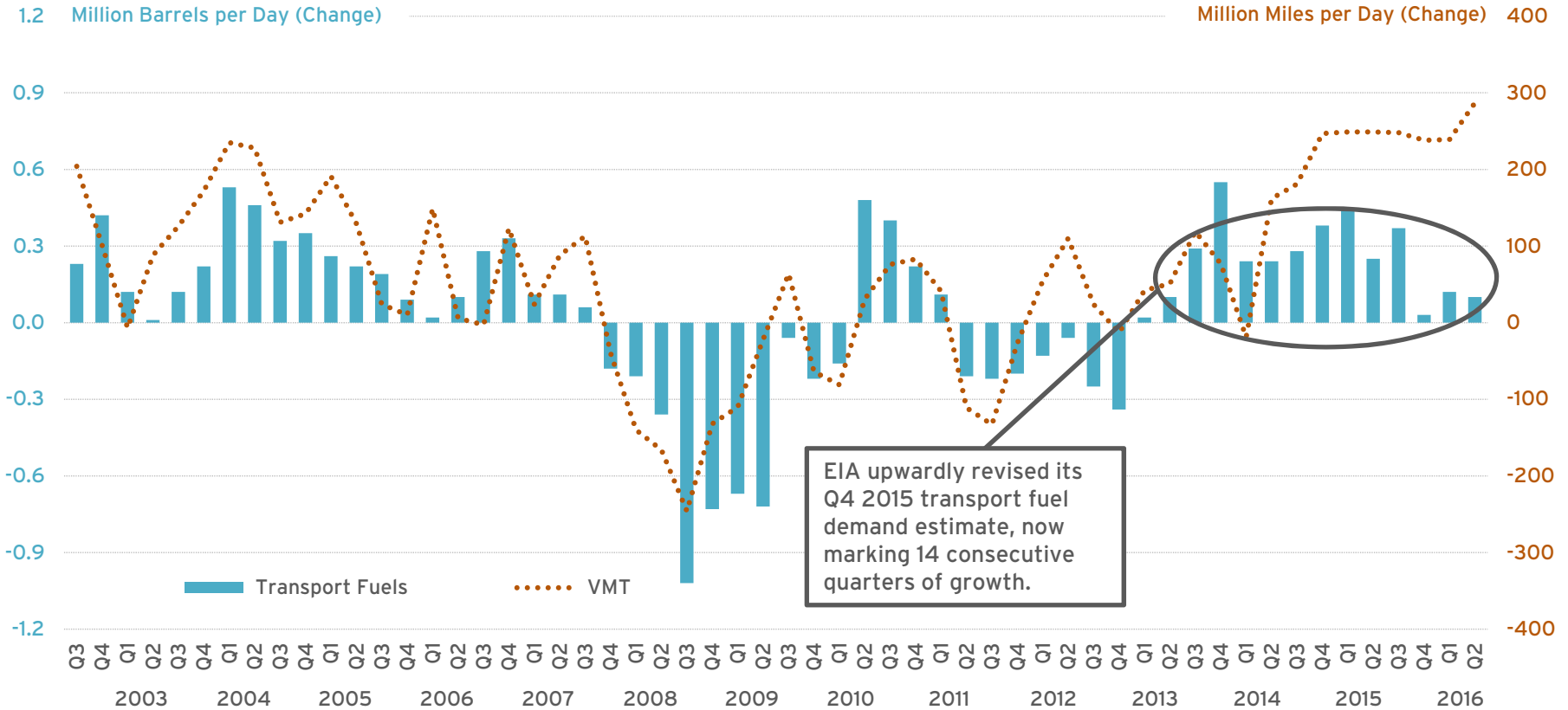


Source: SAFE analysis based on data from EIA



Y-o-Y Transportation Fuel Demand Growth Slows

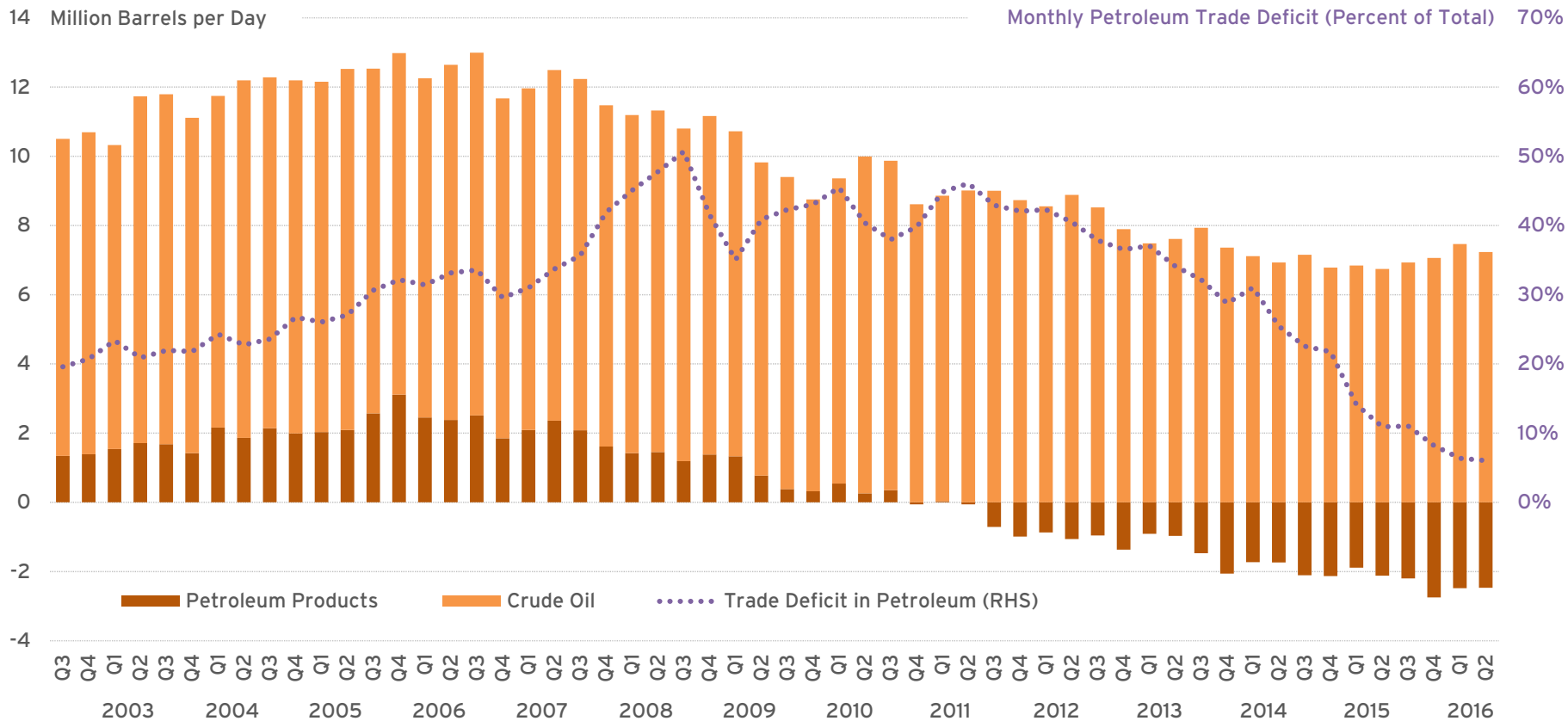
U.S. demand for gasoline, diesel, and jet fuel was 14.6 mbd in Q2, growing 1% y-o-y. Total vehicle miles traveled (VMT) has increased for 9 consecutive quarters, in Q2 growing by approximately 3.2% (+287 million miles y-o-y).



Source: SAFE analysis based on data from EIA

U.S. Petroleum Trade Deficit Continues to Slide

Total U.S. net oil imports have fallen 62% since 2005, but in Q2 rose to 4.8 mbd (+0.15 mbd y-o-y, or roughly 3%). The United States became a net exporter of petroleum products in 2011. In Q2, net petroleum product exports reached 2.5 mbd.



Source: SAFE analysis based on data from EIA

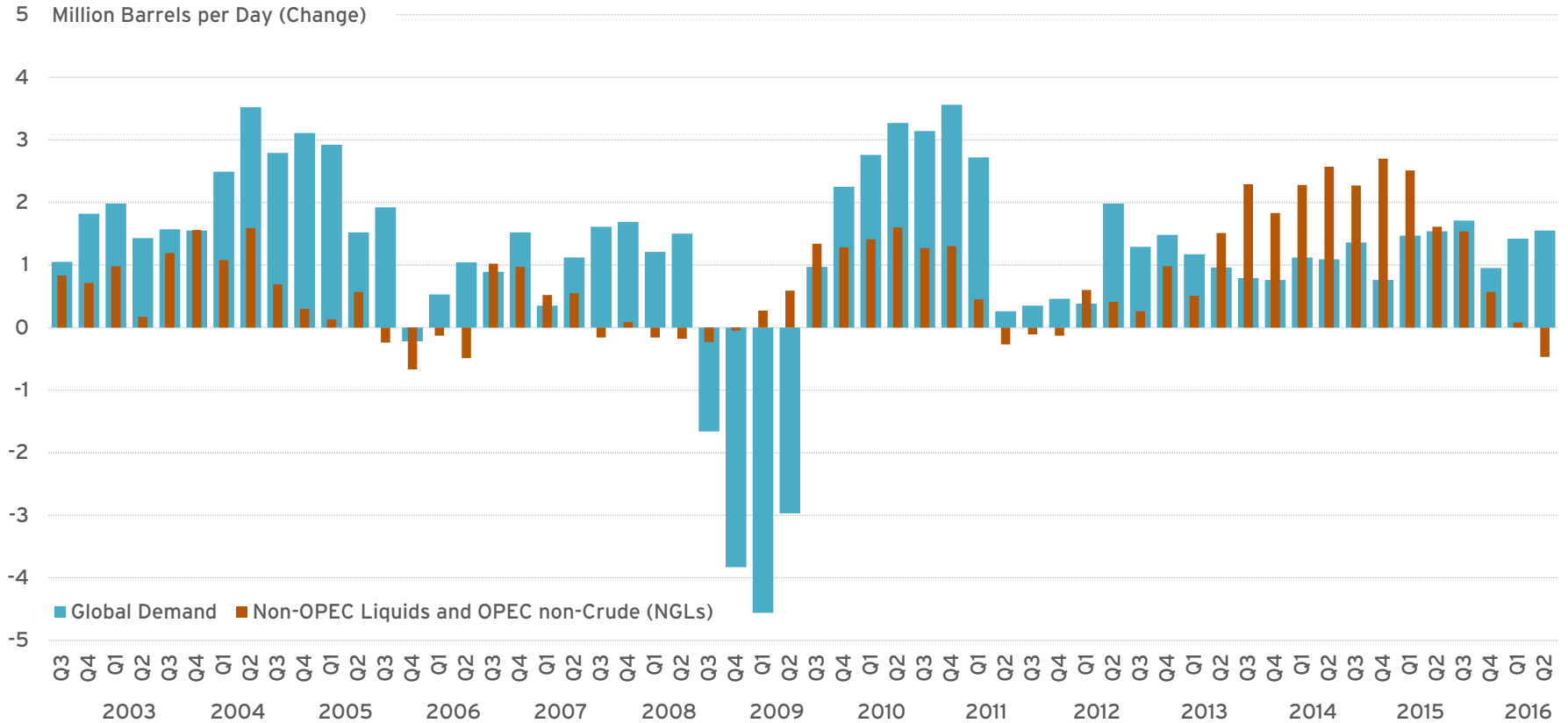


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Non-OPEC Supply Growth Turns Negative

Non-OPEC supply contracted 0.5 mbd y-o-y in Q2, the first decline in seventeen quarters. Global oil demand growth has exceeded non-OPEC liquids supply growth for the past four quarters, a pattern last seen in 2012.

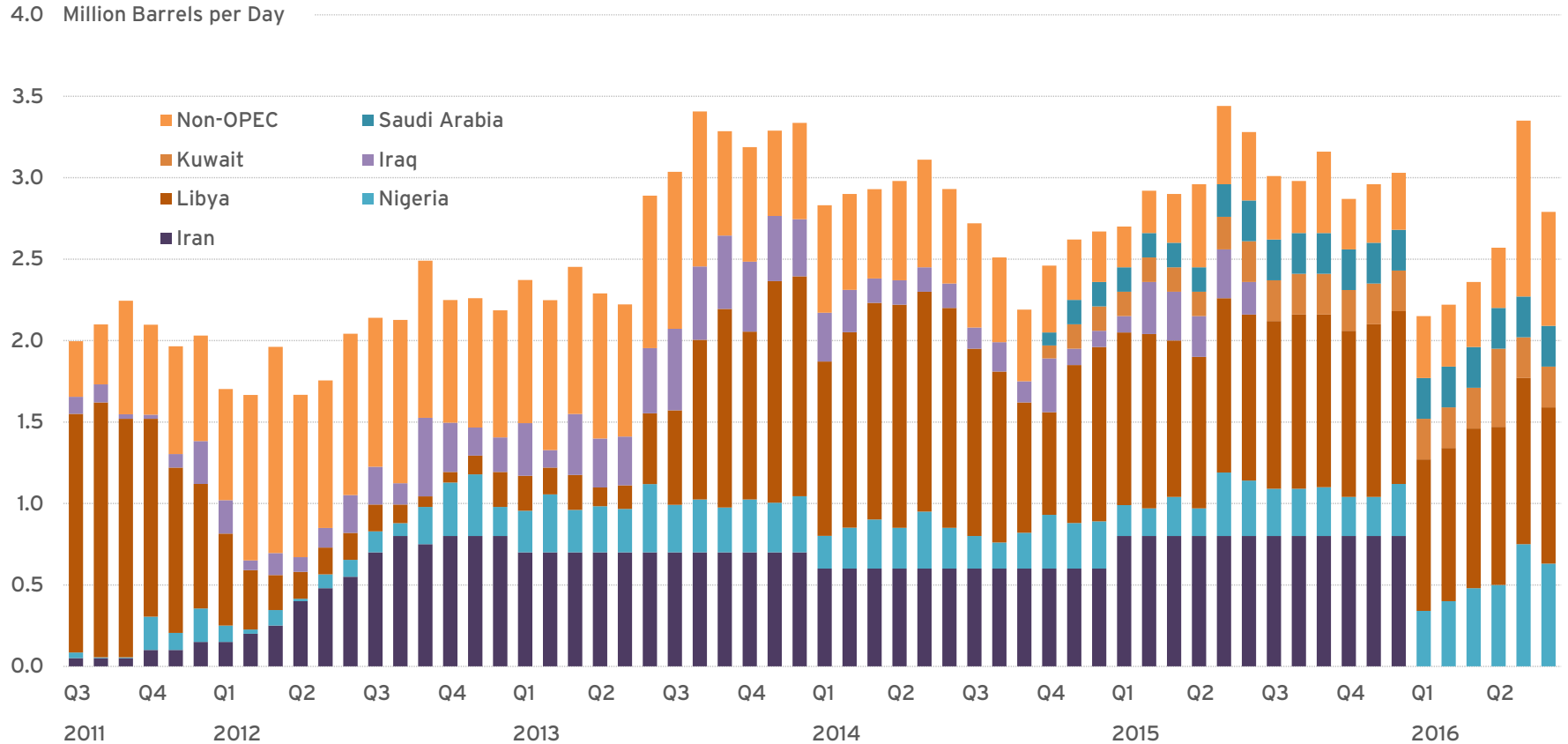


Source: SAFE analysis based on data from EIA



Unplanned Crude Oil Outages Remain Substantial

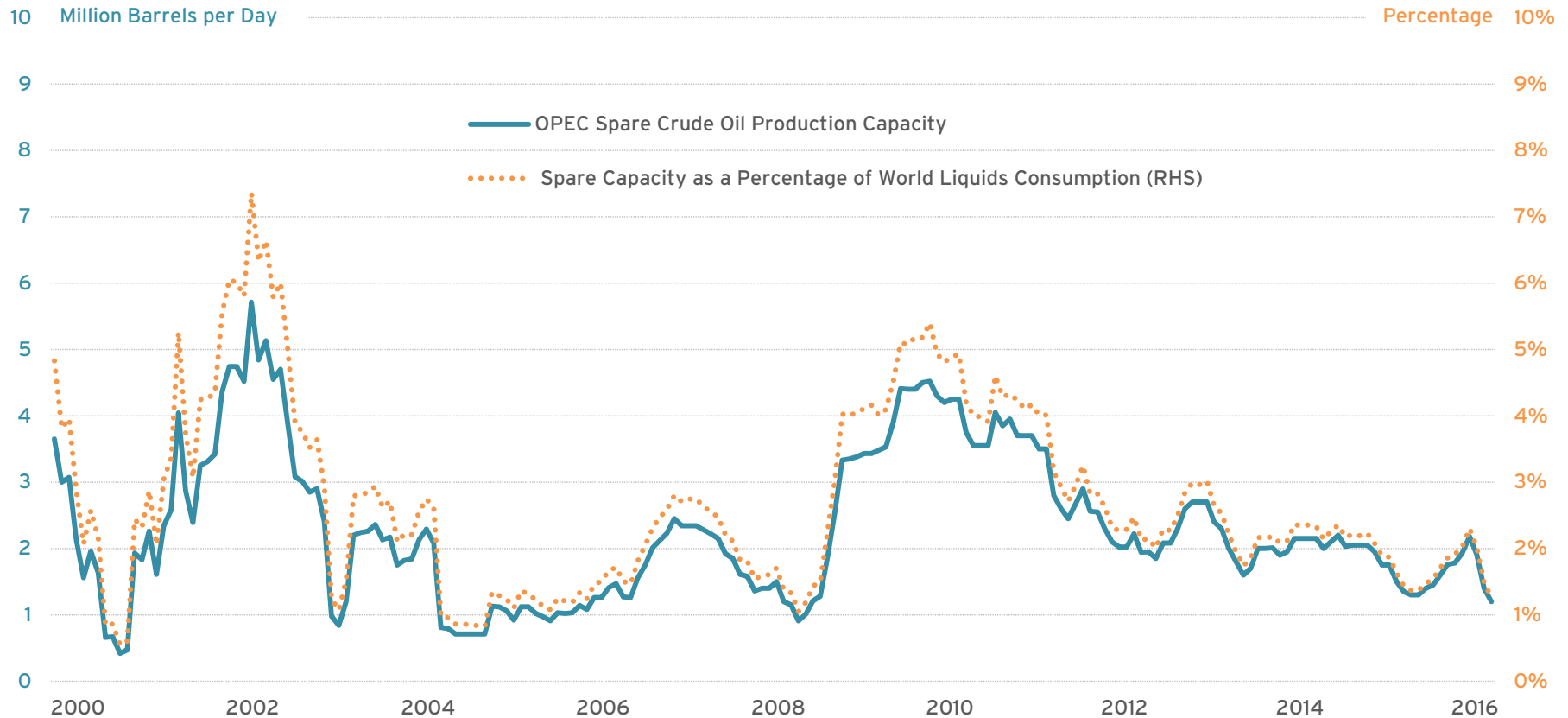
Global unplanned outages increased in Q2 (+0.7 mbd q-o-q) supported by shut downs in Canada due to wildfires. Among OPEC countries, Iran brought additional supplies online; however, political instability in Nigeria and Libya continues to extend output disruptions.



Source: SAFE analysis based on data from EIA

OPEC Spare Crude Oil Production Capacity Decreases

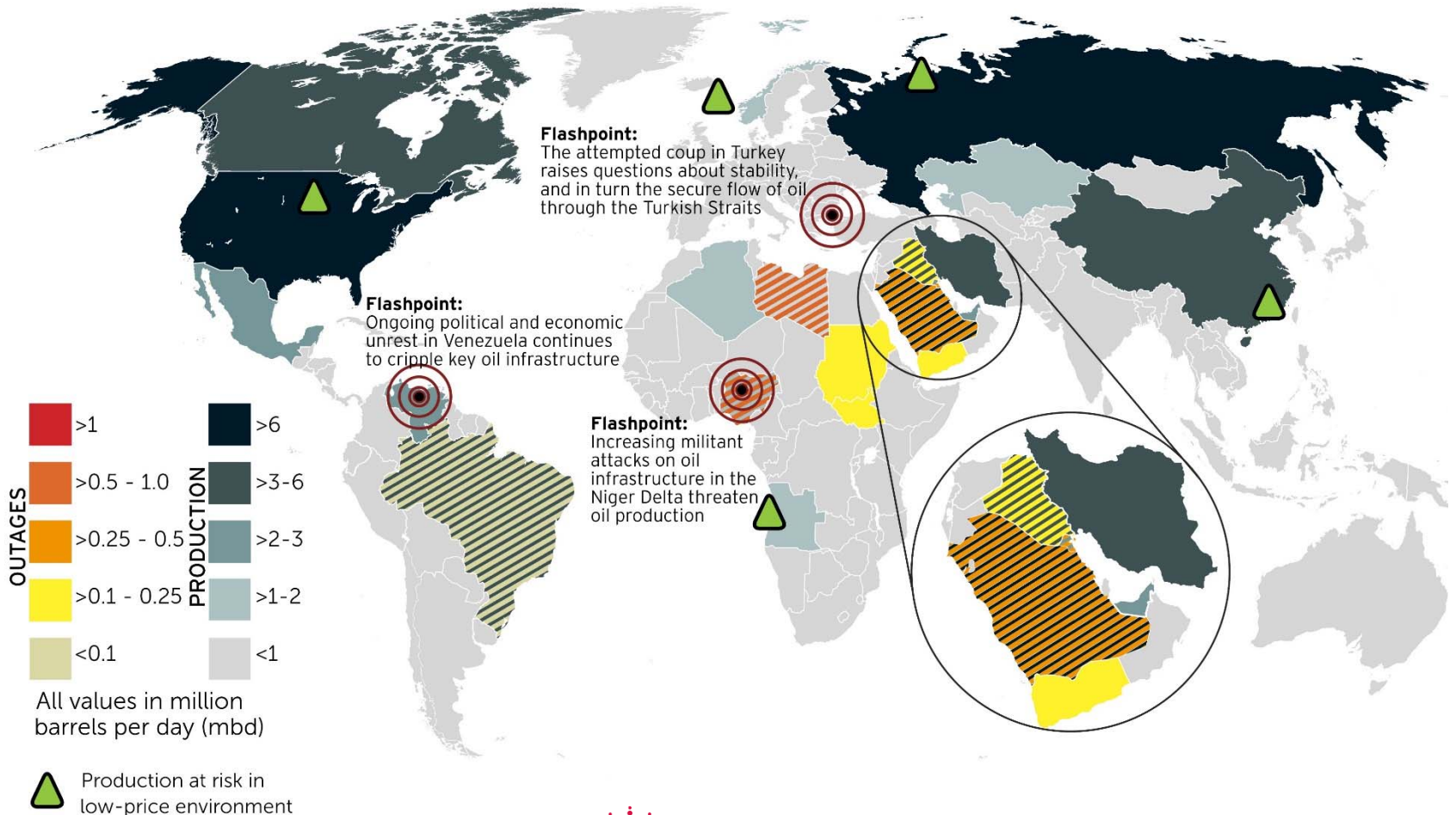
OPEC spare crude oil production capacity fell to just 1.2 mbd at the end of Q2. This is equivalent to approximately 1.3% of global consumption. The majority of OPEC's spare production capacity is held by Saudi Arabia.



Source: SAFE analysis based on data from EIA

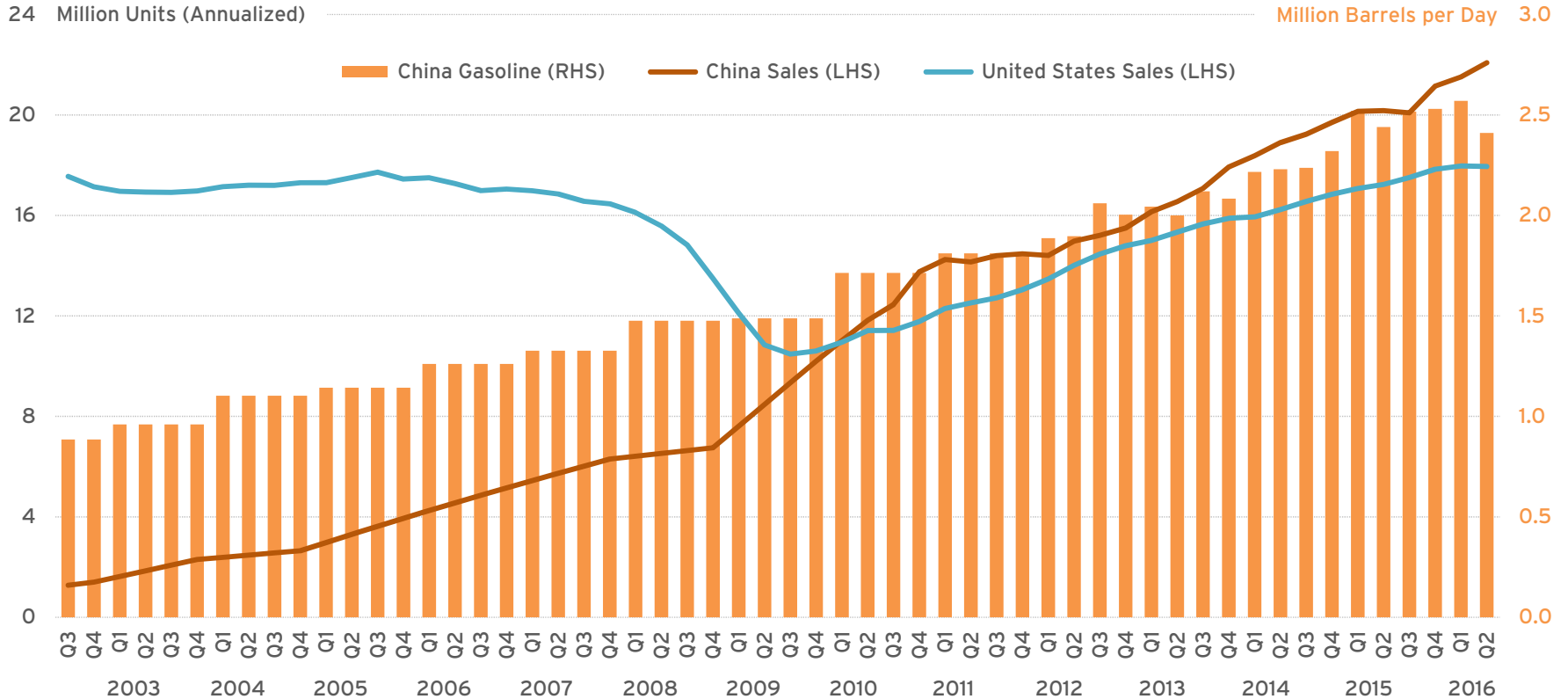
Barrels at Risk Map

Total oil supply outages averaged 2.7 mbd in Q2. Attacks on oil infrastructure increased outages in Nigeria's main oil-producing region, the Niger Delta, while tensions elsewhere threaten to further increase disruptions.



China Vehicle Sales Rise While Gasoline Demand Stays Flat

China's light-duty passenger vehicle sales increased by approximately 2 million units y-o-y in Q2 to 22 million units. Meanwhile, China's gasoline demand remained roughly flat y-o-y through Q1 and Q2 at 2.6 mbd and 2.4 mbd respectively.



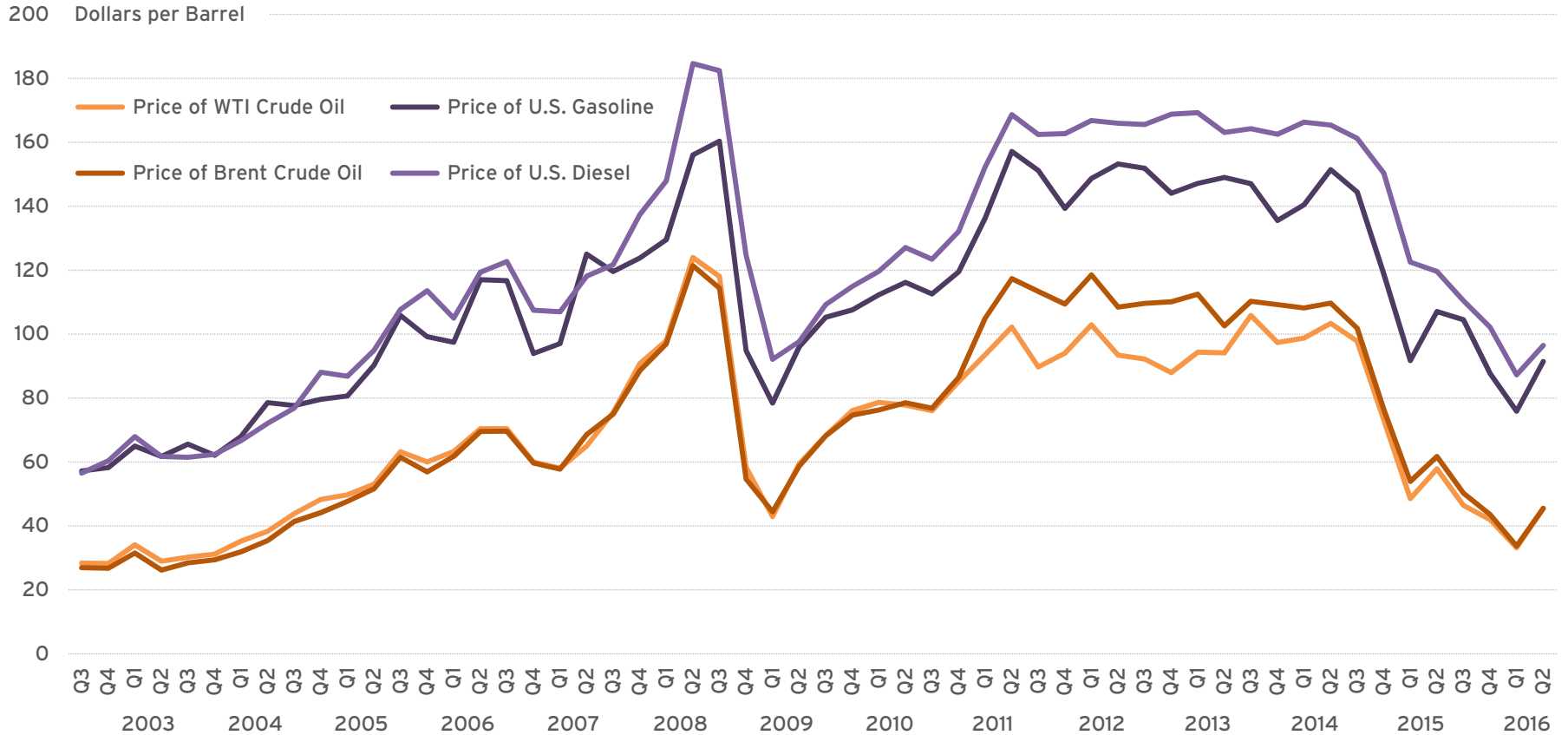
Note: Four-quarter rolling averages presented for China's vehicle sales before 2010 and annual averages presented for China's gasoline demand before 2012.
 Source: SAFE analysis based on data from BEA, IEA, and China Association of Automobile Manufacturers

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Brent and WTI Prices Increase

Domestic petroleum product prices like gasoline and diesel correlate closely with prevailing global crude oil benchmarks. Oil and gasoline prices ticked upward q-o-q in H1 2016. June average Brent = \$45.52/bbl, WTI = \$45.41/bbl, U.S. gasoline = \$2.18/gal.

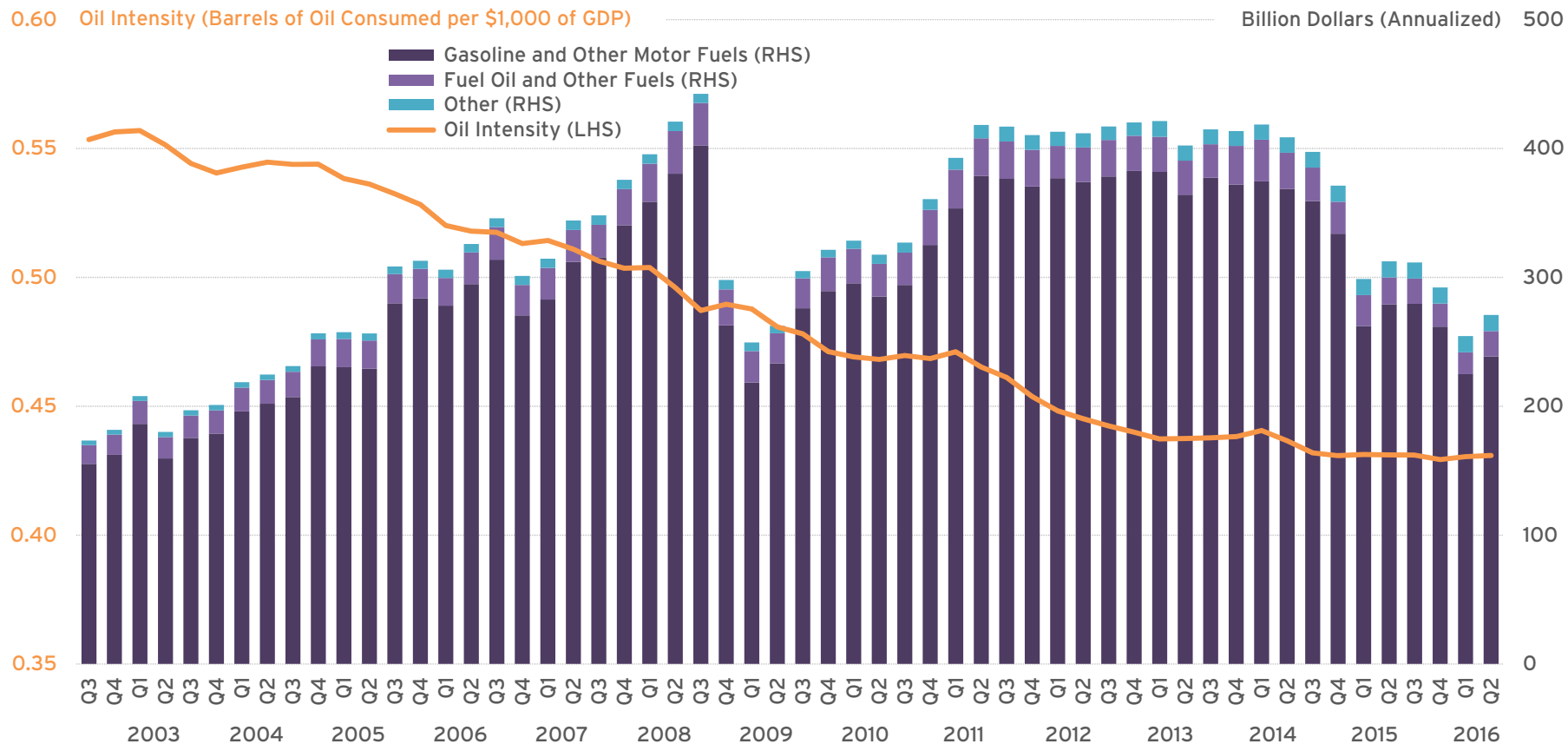


Source: SAFE analysis based on data from EIA



Oil Intensity Flat While Household Expenditures Grow

U.S. oil intensity remained unchanged in Q2 at 0.43 barrels per \$1,000 of GDP. However, household spending on petroleum fuels is down approximately 13% y-o-y, at an annualized level of \$270 billion, due to lower oil and petroleum product prices.

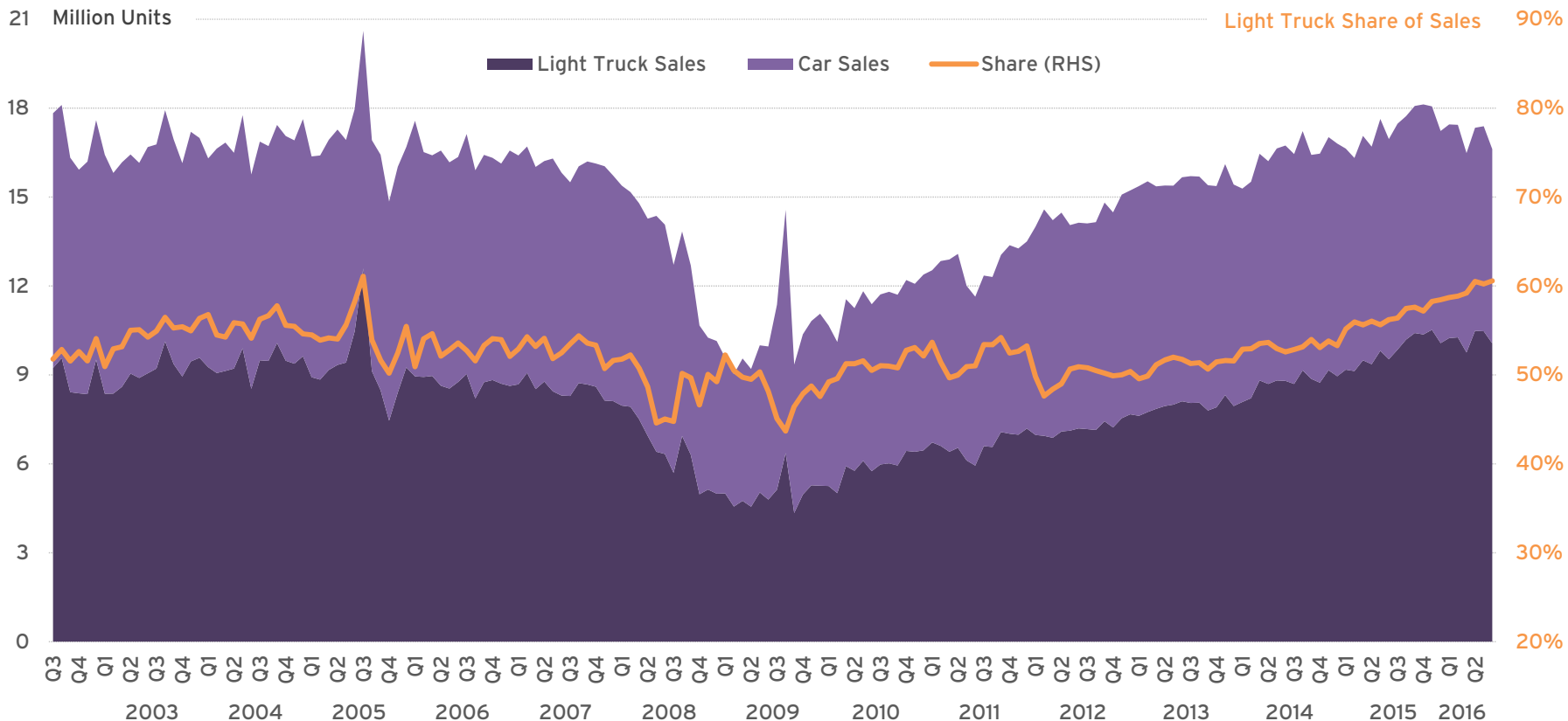


Source: SAFE analysis based on data from EIA and BEA



Light Truck Sales Near Record Highs

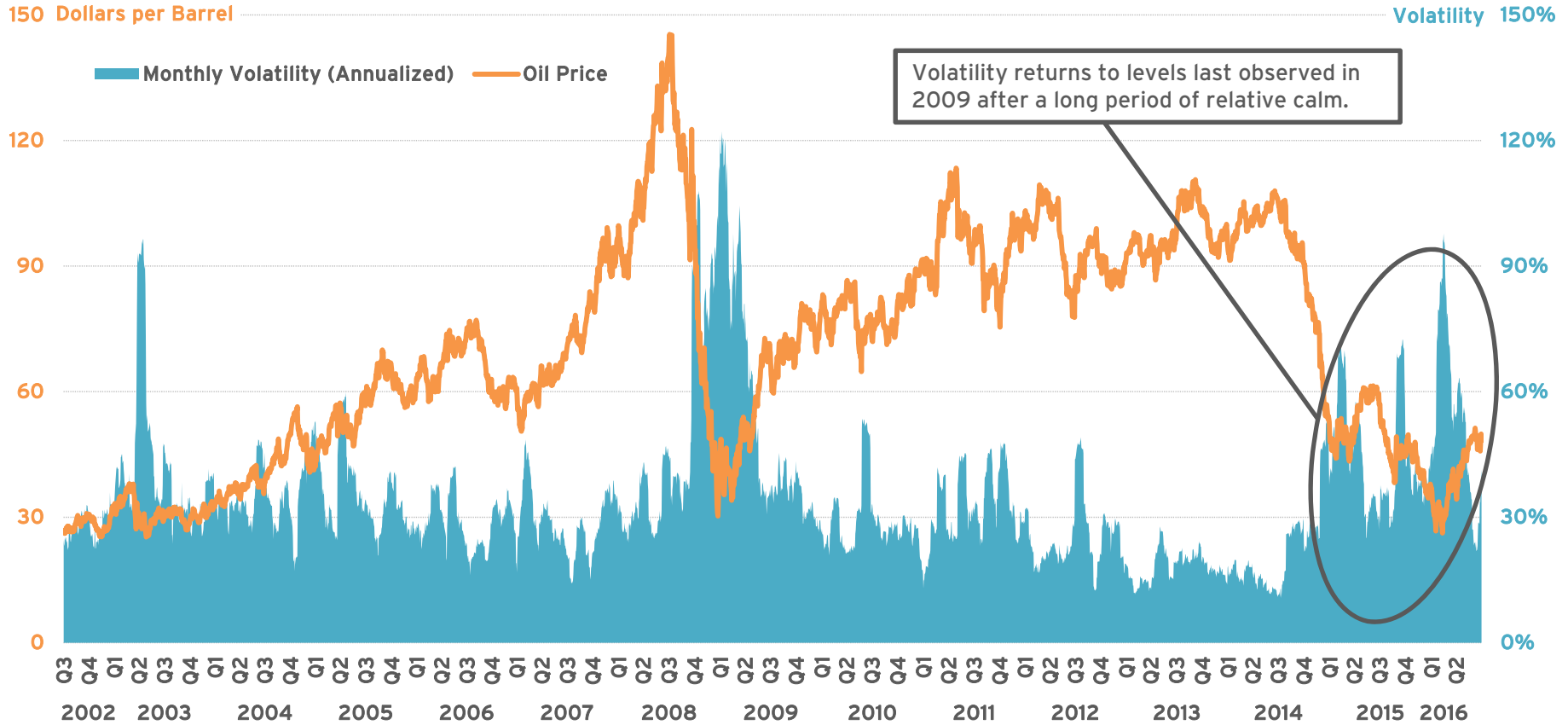
New light-truck sales climbed to roughly 10.3 million units in Q2 2016, accounting for approximately 60% of total new light-duty vehicle sales. Total seasonally adjusted light-duty vehicle sales in Q2 were roughly 77% higher than 2009 levels, at 17.5 million units.



Source: SAFE analysis based on data from BEA

Oil Price Volatility Remains Elevated

Global oil prices have been volatile since they began their initial slide during the summer of 2014. Volatility averaged 55% in H1 2016 versus 15% in H1 2014. Although down from 69% in Q1, 30-day volatility averaged 29% in Q2, similar to the same period last year (33%).



Source: SAFE analysis based on data from EIA

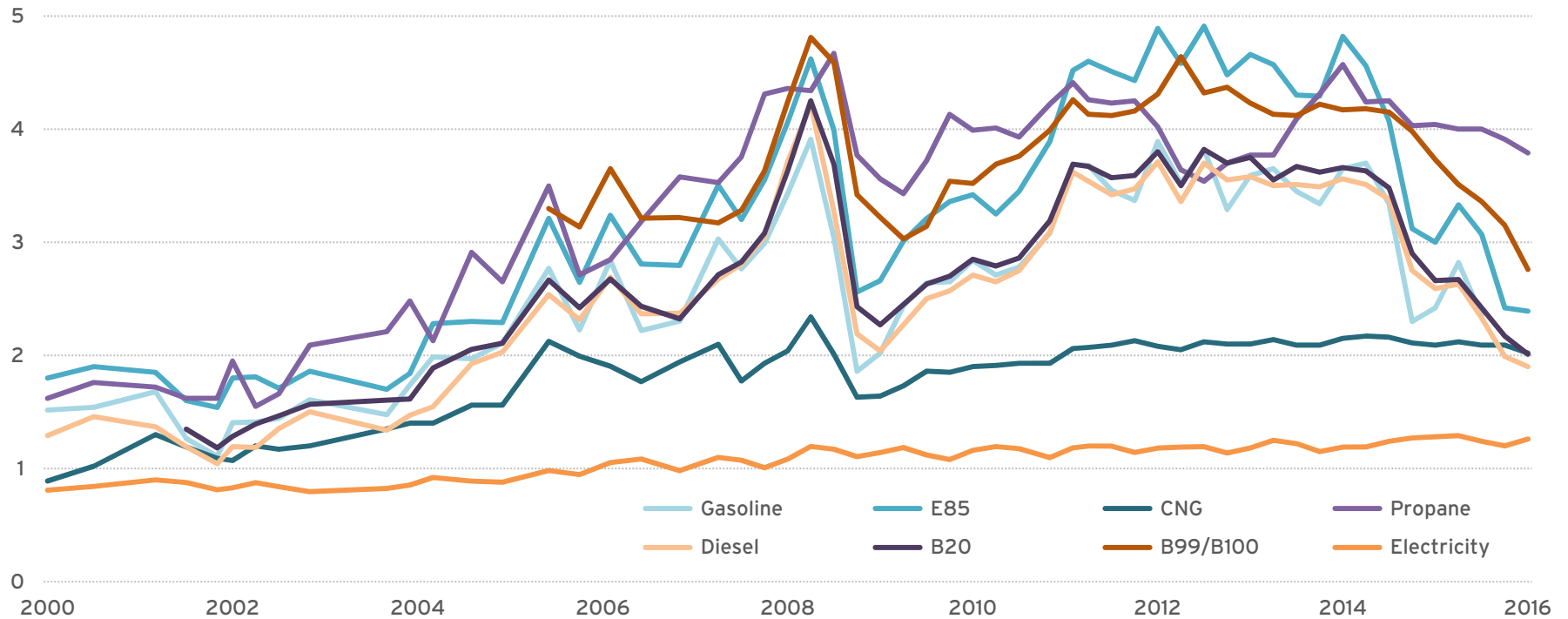
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Retail Liquid Fuel Prices Decline

Liquid fuel prices have experienced substantial volatility since 2000. Over the past two years, they have fallen to multi-year lows. Meanwhile, the prices of compressed natural gas (CNG) and electricity have remained relatively stable during the same time period.

6 Dollars per Gasoline Gallon Equivalent (GGE)

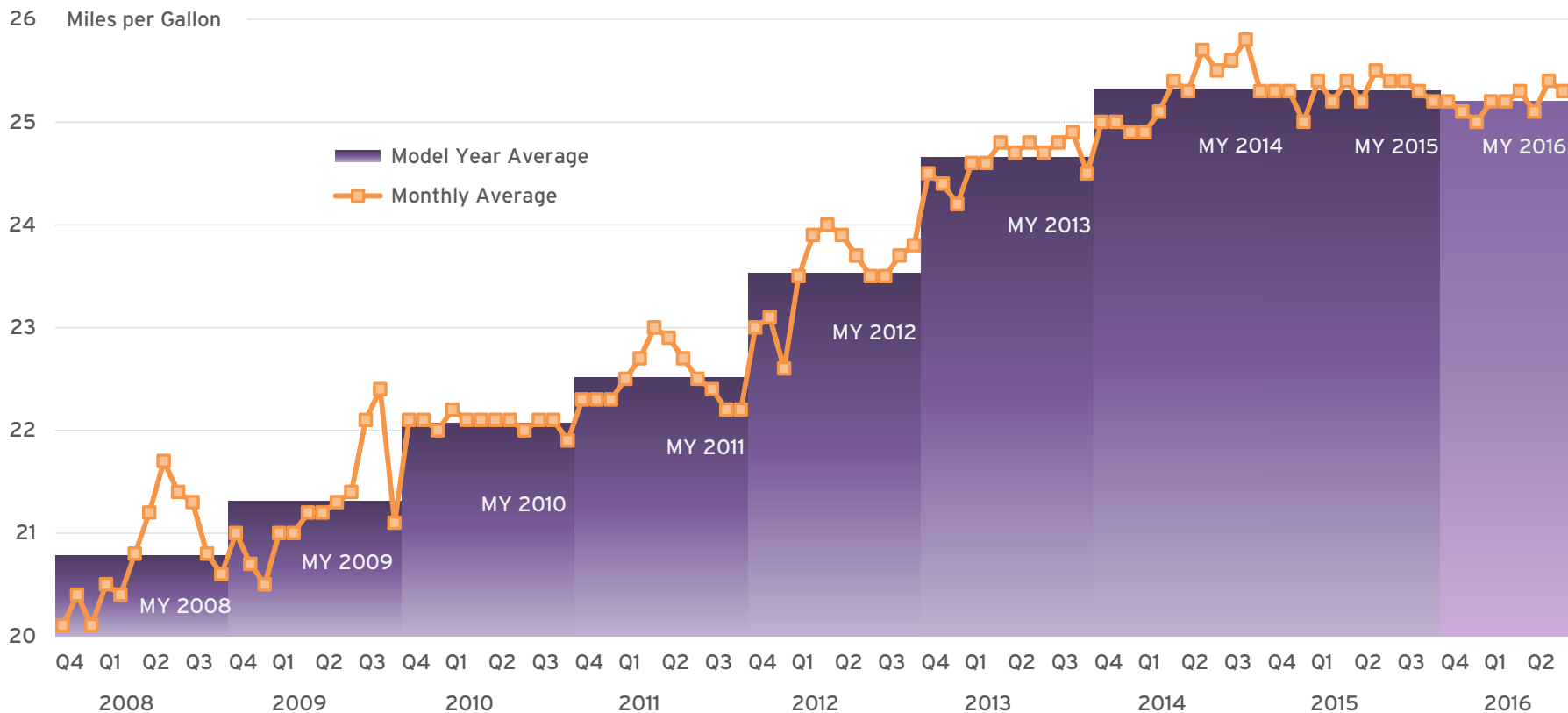


Source: SAFE analysis based on data from Clean Cities Alternative Fuel Price Reports



New Light-Duty Vehicle Fuel Economy Ratings Steady

The average fuel economy rating of new light-duty vehicle sales remained steady y-o-y in Q2 at 25.3 miles per gallon, a marked change versus MY 2008 to 2015 when it consistently increased. MY 2016 fuel economy is currently 25.2 mpg, approximately 18% higher than 2009 levels.



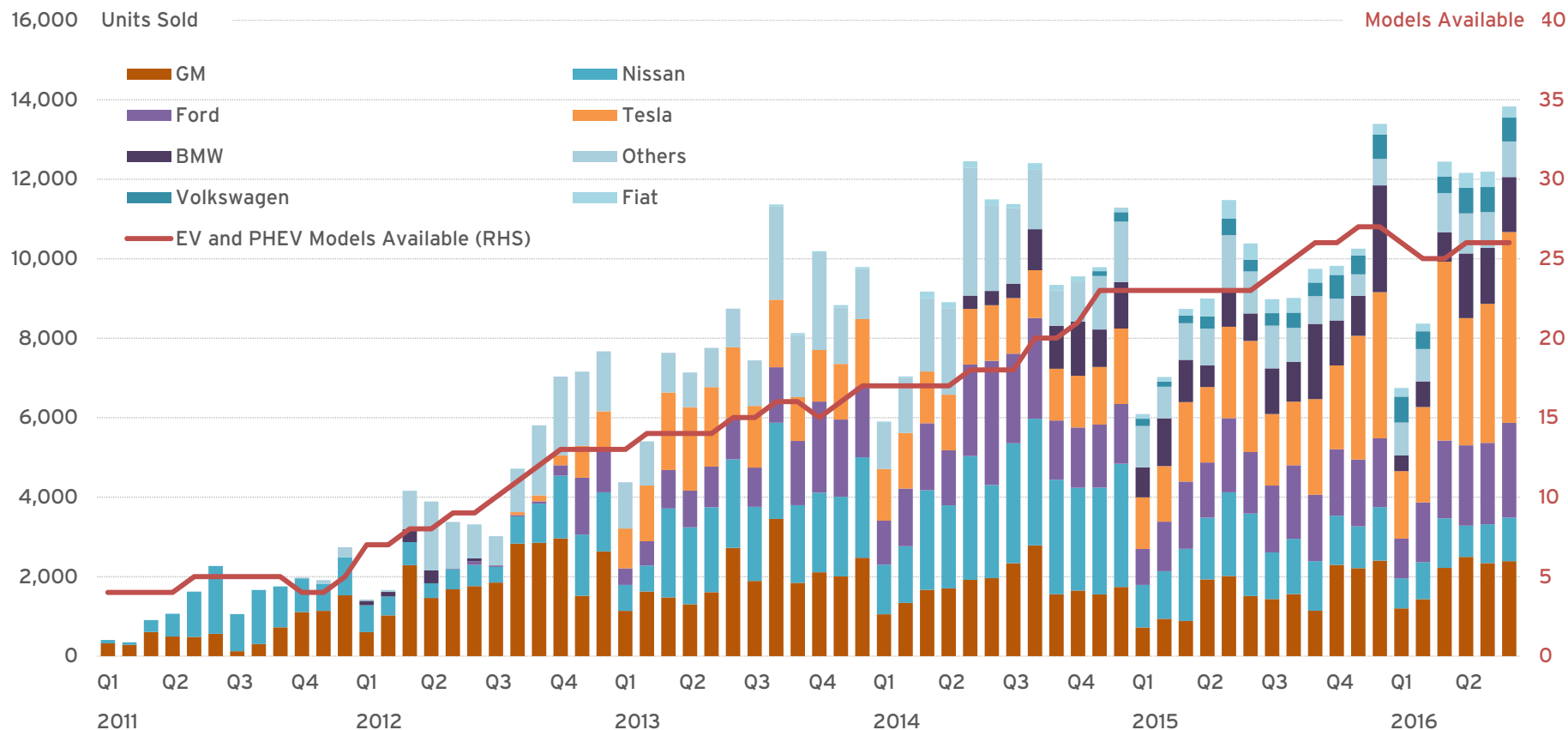
Note: Average sales-weighted fuel-economy rating of purchased new light-duty vehicles.

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



Plug-in Electric Vehicle Sales Set New Record

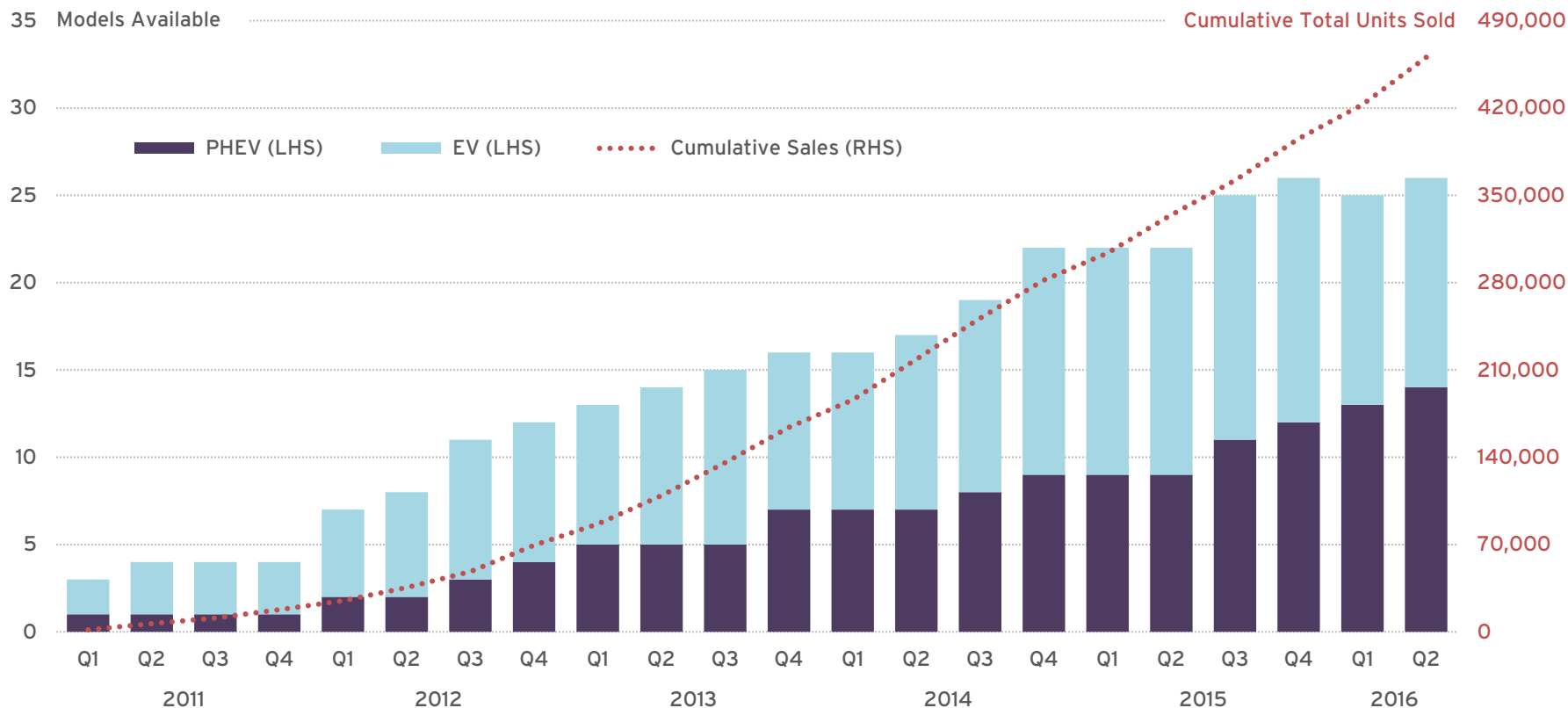
Approximately 38,000 plug-in electric vehicles (PEVs) were sold in Q2 (+23% y-o-y), the best quarter on record. Popular models included Tesla’s Model S and Model X, as well as the Chevrolet Volt. The six best-selling vehicles accounted for approximately 70% of total sales.



Source: SAFE analysis based on data from HybridCars.com

More PHEV Models Available, but EVs Majority of Sales

The number of PHEV models available increased from nine to 14 y-o-y through the end of Q2. However, EVs still account for the majority of plug-in electric vehicle sales (roughly 55% in Q2). More than 460,000 PHEVs and EVs have been sold in the United States.

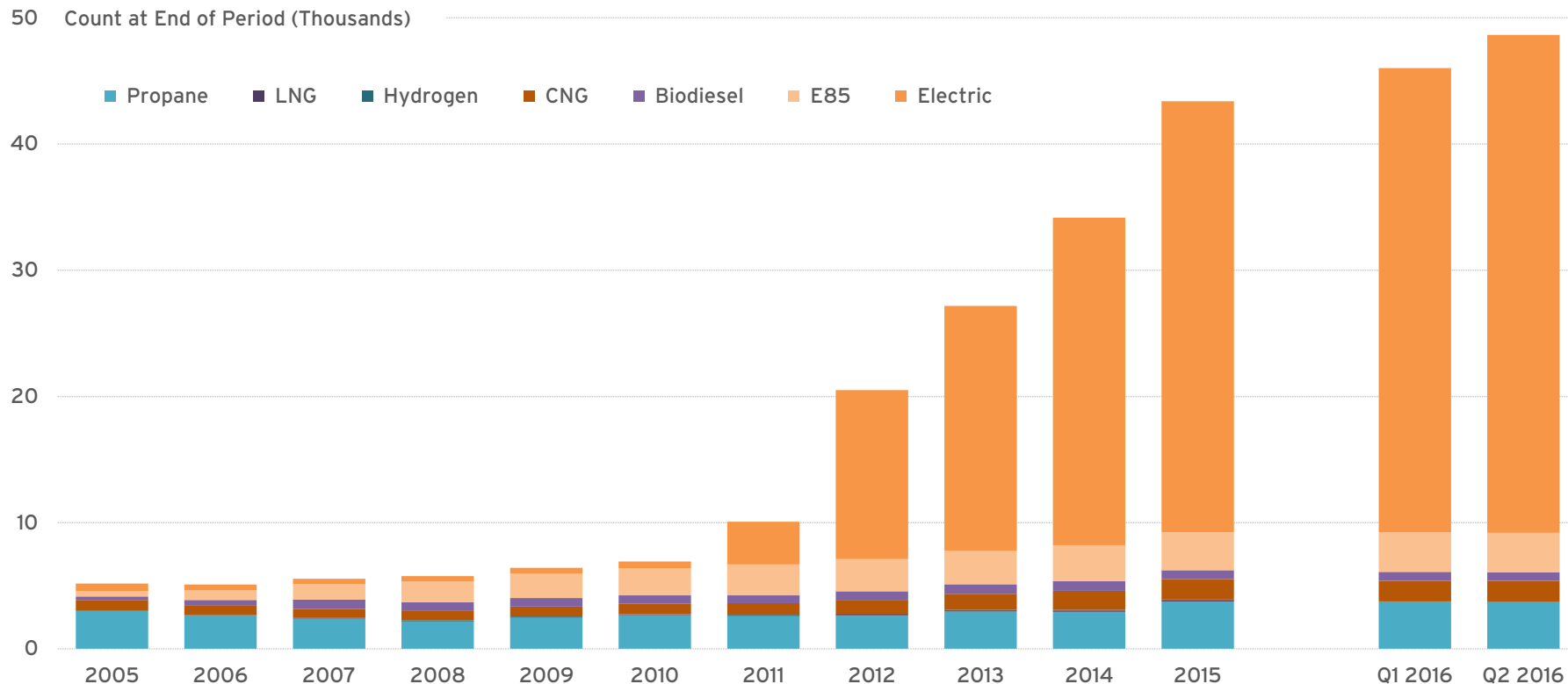


Note: Some previously available models are not included in cumulative sales.

Source: SAFE analysis based on data from HybridCars.com

Alternative Fueling Stations Continue to Climb

The number of alternative fueling stations nationwide increased 80% through Q2 2016 versus the end of 2013, a net addition of approximately 21,600 stations. The vast majority of these new additions (92%) 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 station regardless of how many dispensers or nozzles are on site.

Source: 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, launched in 2014, 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.

WEB LINKS

SAFE: www.secureenergy.org

Electrification Coalition: www.electrificationcoalition.org

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