

U.S. Energy Market Outlook



for

The Energy Forum

November 29, 2012 | New York City, NY

by

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My vision for the next four years at the Energy Information Administration

Basic principles:

- Better, faster, and cheaper data collection & analysis
- Adopt best practices
- More good people

EIA website: a wealth of data and analysis

Today in Energy articles highlight a wide range of energy related topics:

- Key findings from EIA reports
- Technological impacts
- Current events and trends

The screenshot shows the EIA website interface. At the top, the EIA logo is on the left, followed by the text "Independent Statistics & Analysis U.S. Energy Information Administration". To the right are navigation menus for "Sources & Uses", "Topics", and "Geography", along with a search bar and a "Tools" dropdown. Below the header is a large banner image of power lines at sunset. A dark blue box on the right side of the banner contains the text "Electric Power Monthly Data for September 2012 >".

What's New

- [Electric Power Monthly](#) > November 21
- [New York/New Jersey Intra Harbor Petroleum Supplies Following Hurricane Sandy: Summary Of Impacts Through November 13, 2012](#) > November 21
- [Electricity Monthly Update](#) > November 21

[More >](#)

Coming Up

- [Annual Energy Outlook \(Early Release\)](#) >

Today in Energy *Posted November 28, 2012*

Canada Week: Canada is the leading supplier of crude oil to the United States >

U.S. imports of Canadian crude oil rose to record levels during the first eight months of 2012, with Canada accounting for a growing share of total gross U.S. imports. The United States is importing more crude oil from Canada, even though the total amount of crude oil America buys from foreign suppliers is falling. [More](#).

U.S. imports of crude oil
million barrels per day

percent of U.S. crude imports from Canada

| Year | Total U.S. Crude Imports (million barrels per day) | Imports from Canada (million barrels per day) | Percent of U.S. Crude Imports from Canada |
|------|--|---|---|
| 2008 | ~8.5 | ~1.3 | ~15% |
| 2009 | ~8.5 | ~1.3 | ~15% |
| 2010 | ~9.0 | ~1.3 | ~15% |
| 2011 | ~8.5 | ~1.3 | ~15% |
| 2012 | ~9.0 | ~3.1 | 35% |

Data Highlights

- Crude oil futures price**
11/27/2012: **\$87.18/bbl**
↑ \$0.43 from week earlier
↓ \$11.03 from year earlier
- Natural gas futures price**
11/27/2012: **\$3.769/mmBtu**
↓ \$0.063 from week earlier
↑ \$0.405 from year earlier
- Retail heating oil price**
11/26/2012: **\$4.004/gal**
↑ \$0.029 from week earlier
↑ \$0.108 from year earlier
- Crude oil inventories**
11/23/2012: **374.1 mmbbl**
↓ 0.3 mmbbl from week earlier
↑ 39.4 mmbbl from year earlier

EIA updates state level datasets with mapping features and energy infrastructure datasets

Interactive map links to state level energy data

U.S. Overview

U.S. States
State Profile and Energy Estimates

U.S. Territories: American Samoa | Guam | Northern Mariana Islands | Puerto Rico | U.S. Virgin Islands

State Total Energy Rankings, 2010

| State | Production U.S. Share | Consumption per Capita Million Btu | Expenditures per Capita Dollars | Rank |
|----------------------|-----------------------|------------------------------------|---------------------------------|------|
| Alaska | 2.7% | 12 | 899 | 2 |
| Alabama | 1.9% | 13 | 410 | 32 |
| Arkansas | 1.7% | 14 | 395 | 37 |
| Arizona | 0.9% | 27 | 219 | 45 |
| California | 3.4% | 9 | 210 | 48 |
| Colorado | 3.4% | 7 | 301 | 32 |
| Connecticut | 0.2% | 40 | 211 | 47 |
| District of Columbia | 0.0% | 51 | 307 | 29 |
| Delaware | 0.0% | 49 | 295 | 34 |
| Florida | 0.7% | 31 | 233 | 43 |

PENNSYLVANIA
State Profile and Energy Estimates

U.S. Rankings

Profile Overview

Pennsylvania, U.S. Rankings

Consumption

- Total Energy per Capita: 33

Production

- Total Energy: 5
- Crude Oil: 19
- Natural Gas: 8
- Coal: 4
- Electricity: 2
- Carbon Dioxide Emissions: 3

Prices

- Natural Gas: 14
- Electricity: 16

Today In Energy

- Spot natural gas prices at Marcellus trading point reflect pipeline constraints Jul 23, 2012
- High airline jet fuel costs prompt...

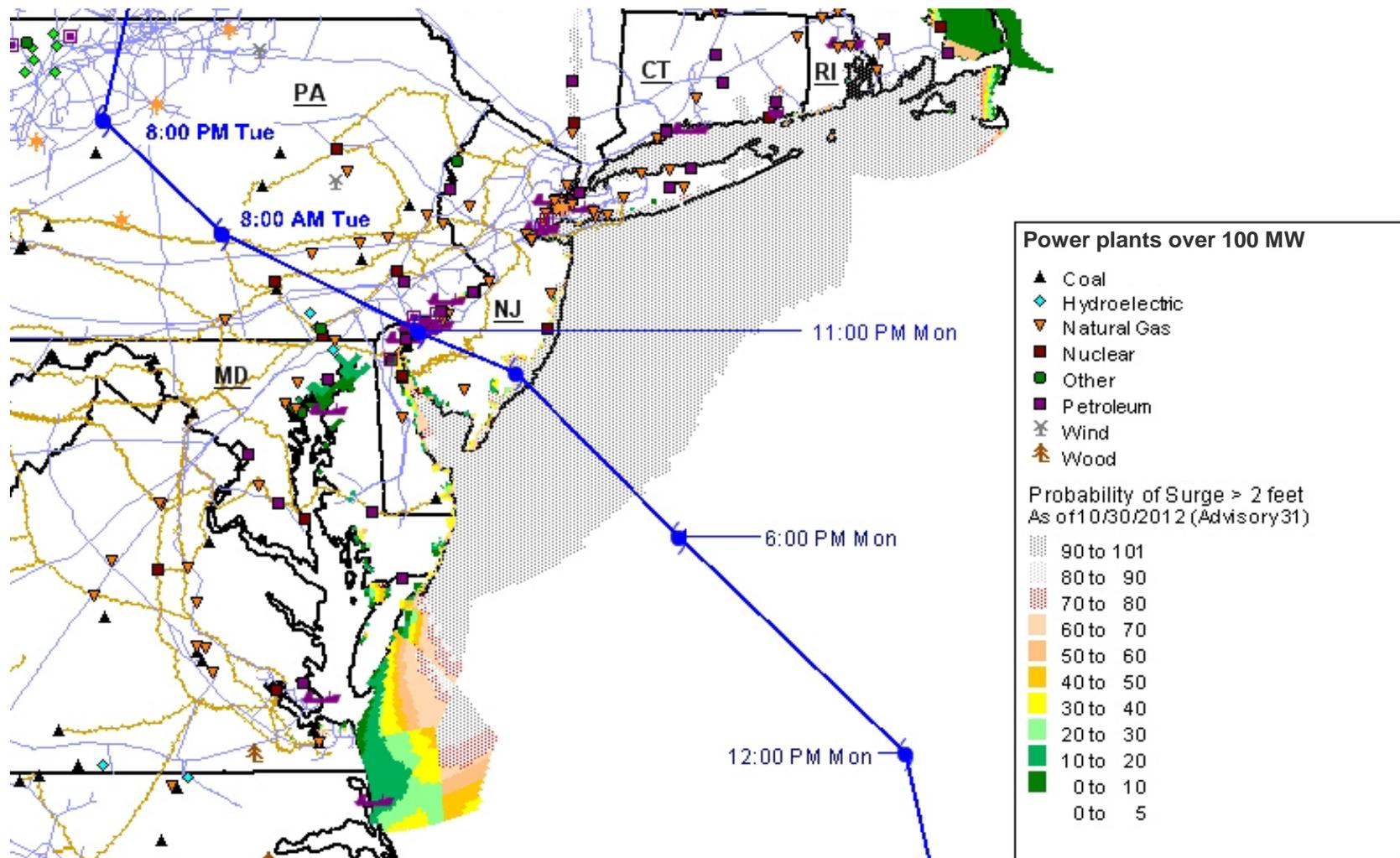
QUICK FACTS

- Pennsylvania was the fourth largest coal-producing State in the Nation in 2011, and the only State producing anthracite coal, which has a higher heat value than other kinds of coal.
- Annual cross-national gas production more than doubled in Pennsylvania in 2011, exceeding 1...

Source: EIA

EIA's Hurricane Sandy reporting

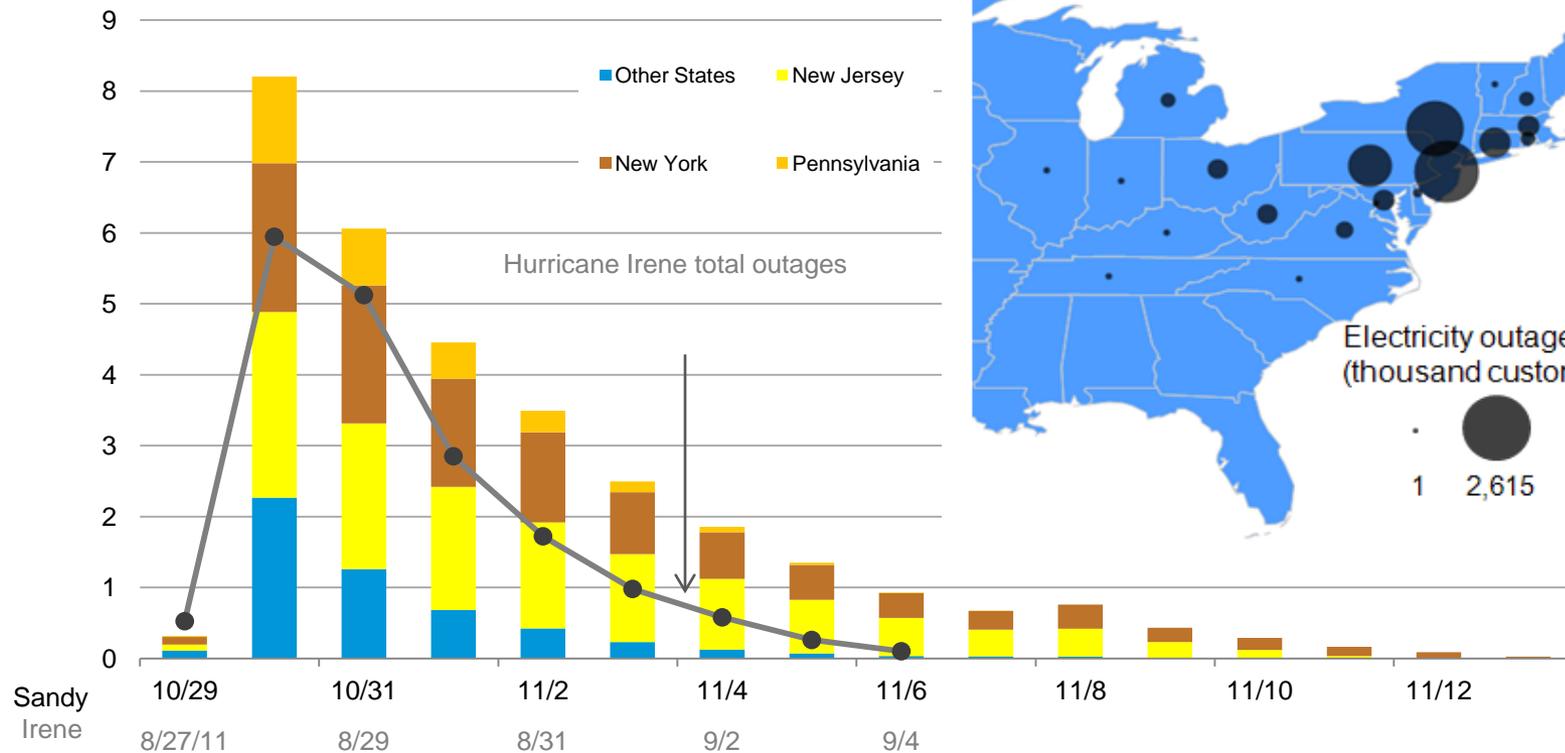
Significant energy infrastructure was threatened by the storm surge from Hurricane Sandy



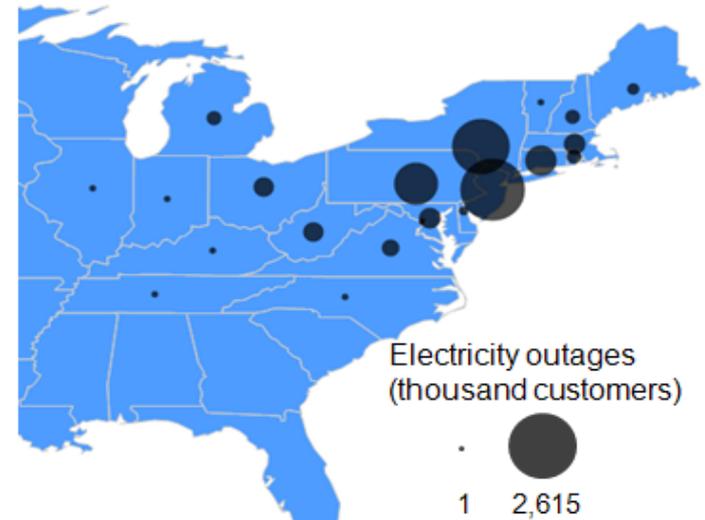
Source: EIA based on National Oceanic and Atmospheric Administration

Electric customer outages and restoration times from Hurricane Sandy

power outages
million customers



Peak customer outages from Hurricane Sandy
(total customer outages of 8.5 million)



Source: EIA based on U.S. Department of Energy, Office of Electricity Delivery and Reliability situation reports. Data reflects reports available through November 13.

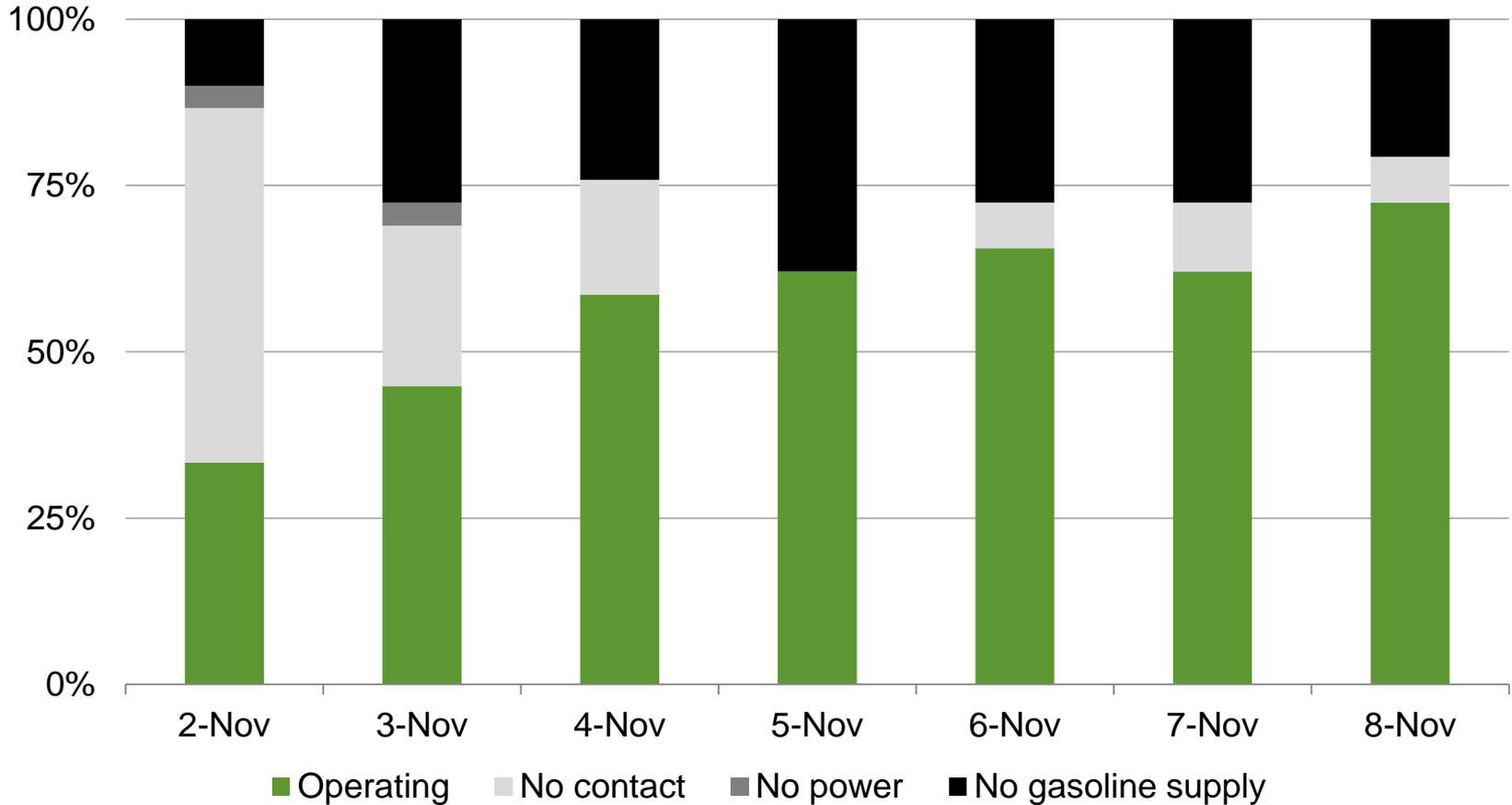
New York City metropolitan area covered by emergency survey



Source: EIA Emergency Gasoline Availability Survey

New York City metropolitan area gas station availability

percent of gas stations



Source: EIA Emergency Gasoline Availability Survey

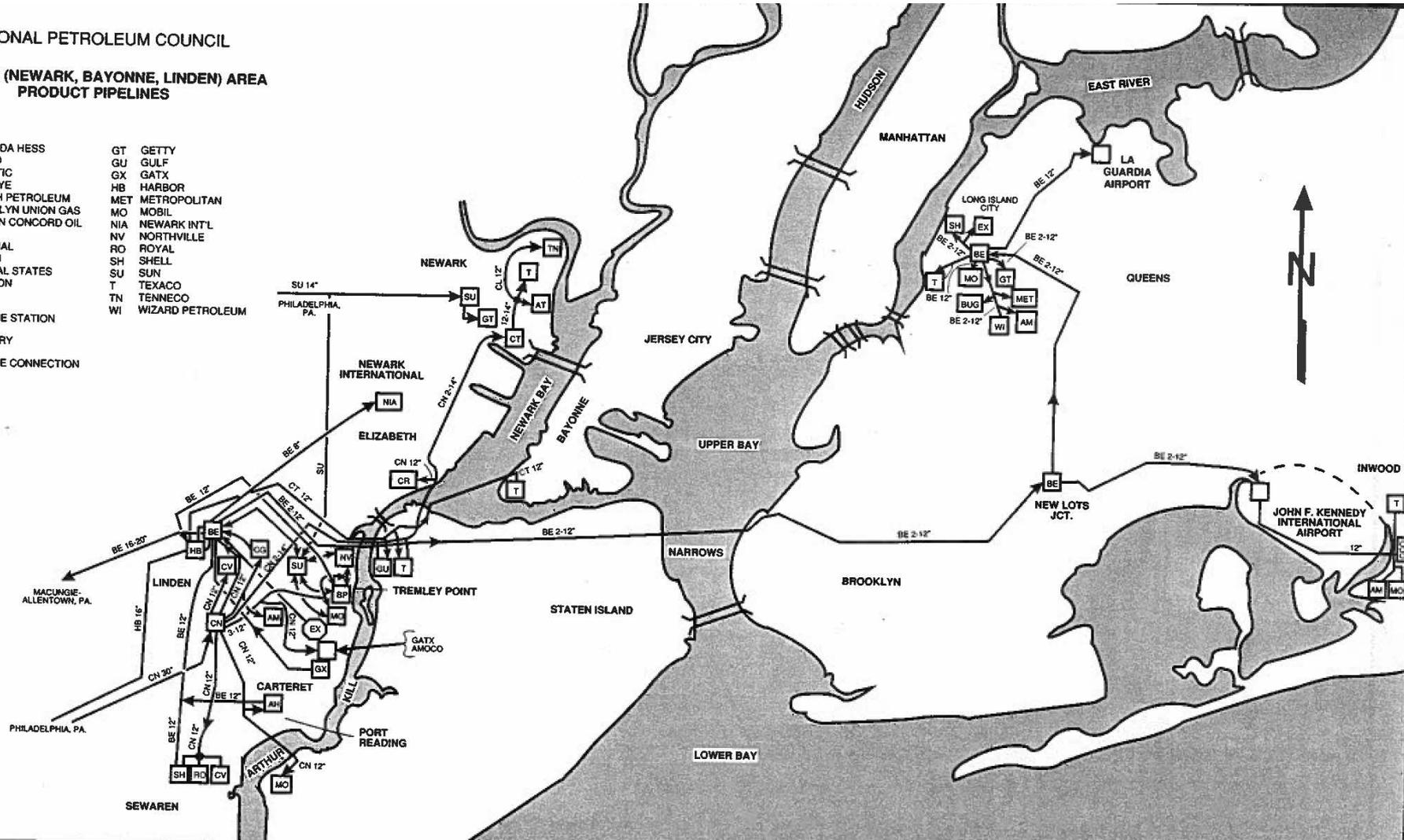
New York harbor pipelines and terminals

NATIONAL PETROLEUM COUNCIL

NEW YORK (NEWARK, BAYONNE, LINDEN) AREA PRODUCT PIPELINES

LEGEND

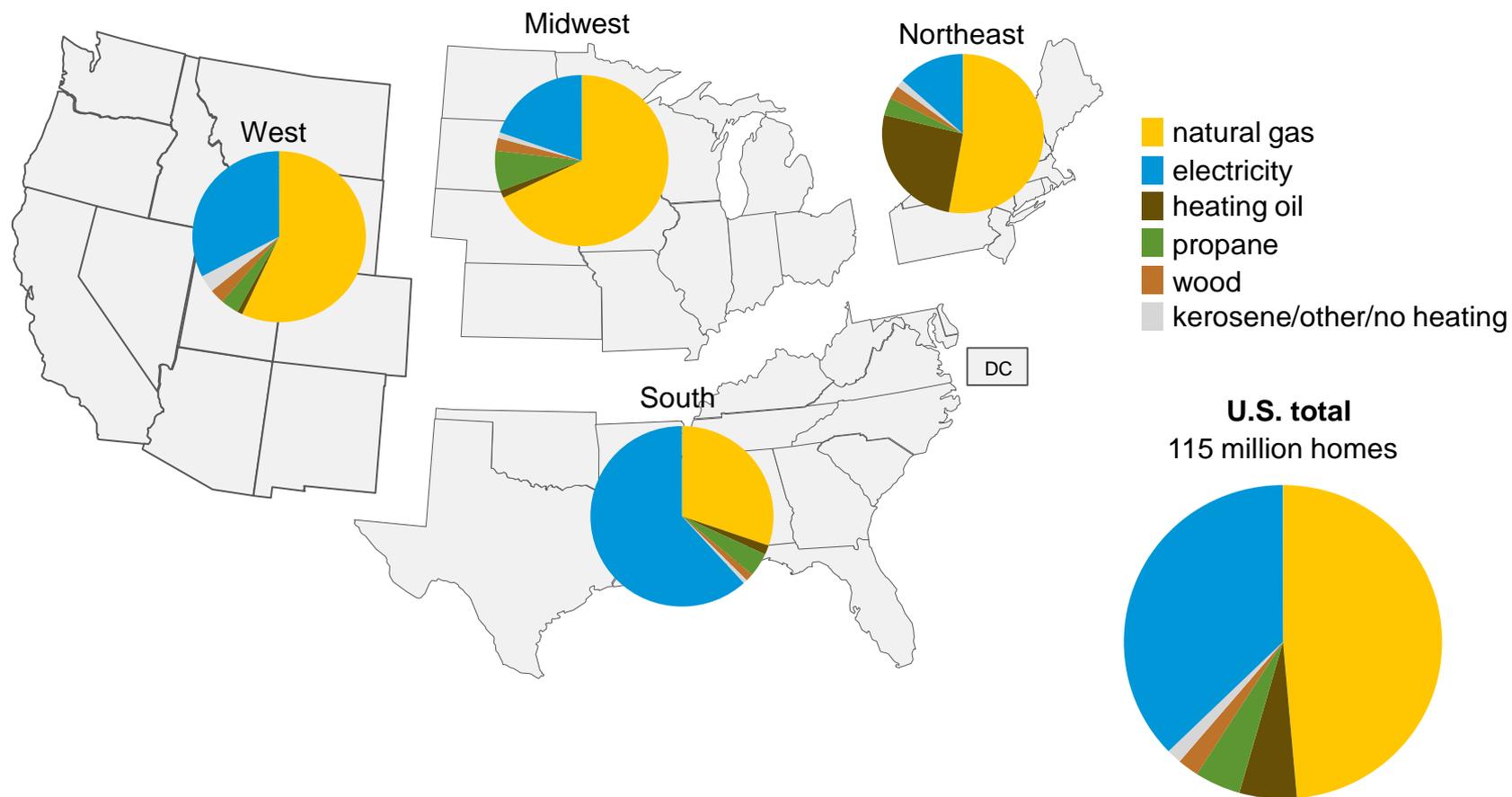
- | | |
|------------------------|---------------------|
| AH AMERADA HESS | GT GETTY |
| AM AMOCO | GU GULF |
| AT ATLANTIC | GX GATX |
| BE BUCKEYE | HB HARBOR |
| BP BRITISH PETROLEUM | MET METROPOLITAN |
| BUG BROOKLYN UNION GAS | MO MOBIL |
| CCO CARBON CONCORD OIL | NIA NEWARK INT'L |
| CG CITGO | NV NORTHVILLE |
| CN COLONIAL | RO ROYAL |
| CR CROWN | SH SHELL |
| CT COASTAL STATES | SU SUN |
| CV CHEVRON | T TEXACO |
| EX EXXON | TN TENNECO |
| | WI WIZARD PETROLEUM |
- PIPELINE STATION
 REFINERY
 PIPELINE CONNECTION



Recent changes in the heating oil market

Heating fuel market shares vary regionally

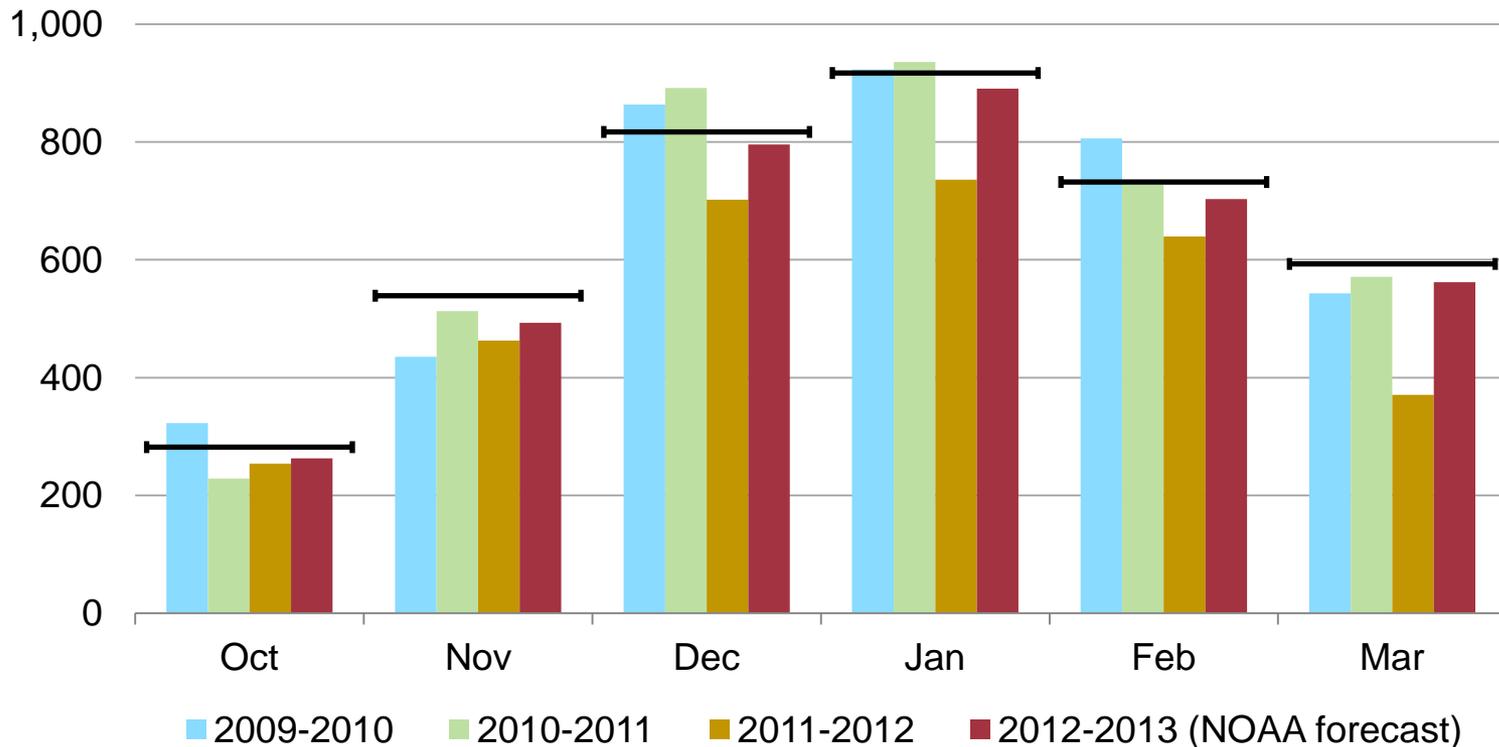
Number of homes by primary space heating fuel and Census Region, winter 2012-13



Source: EIA Short-Term Energy Outlook, October 2012

The U.S. winter 2012-13 heating season forecast is about 4% warmer than the 30-year average, but 17% colder than last winter

U.S. current population-weighted heating degree-days

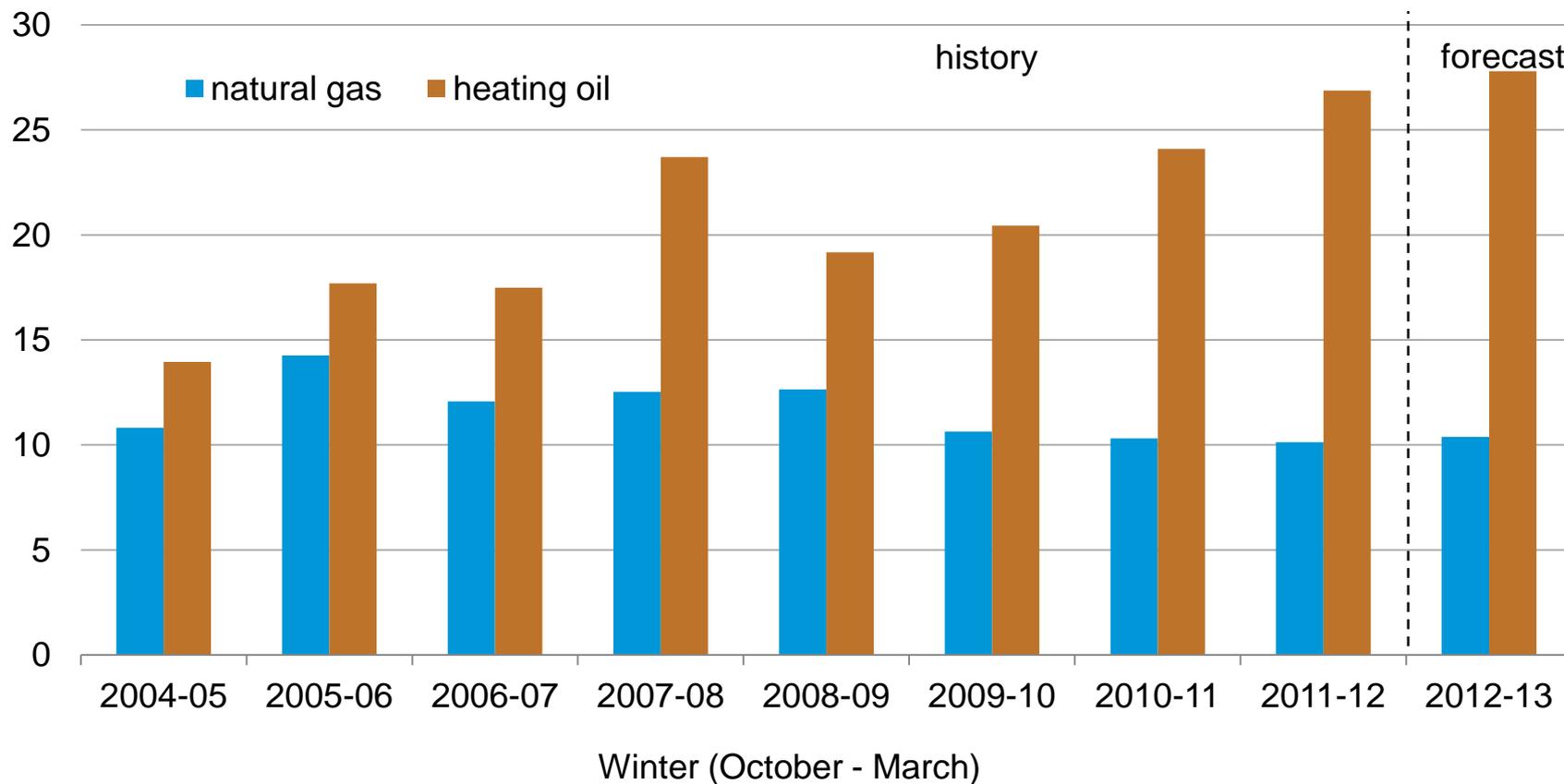


Note: Horizontal bars indicate monthly average degree days over the period 1981-2010.

Source: EIA calculations based on NOAA state history and forecasts (November 26, 2012) weighted by same-year populations.

Heating oil remains much more expensive than natural gas

U.S. average residential winter heating fuel prices
dollars per million Btu



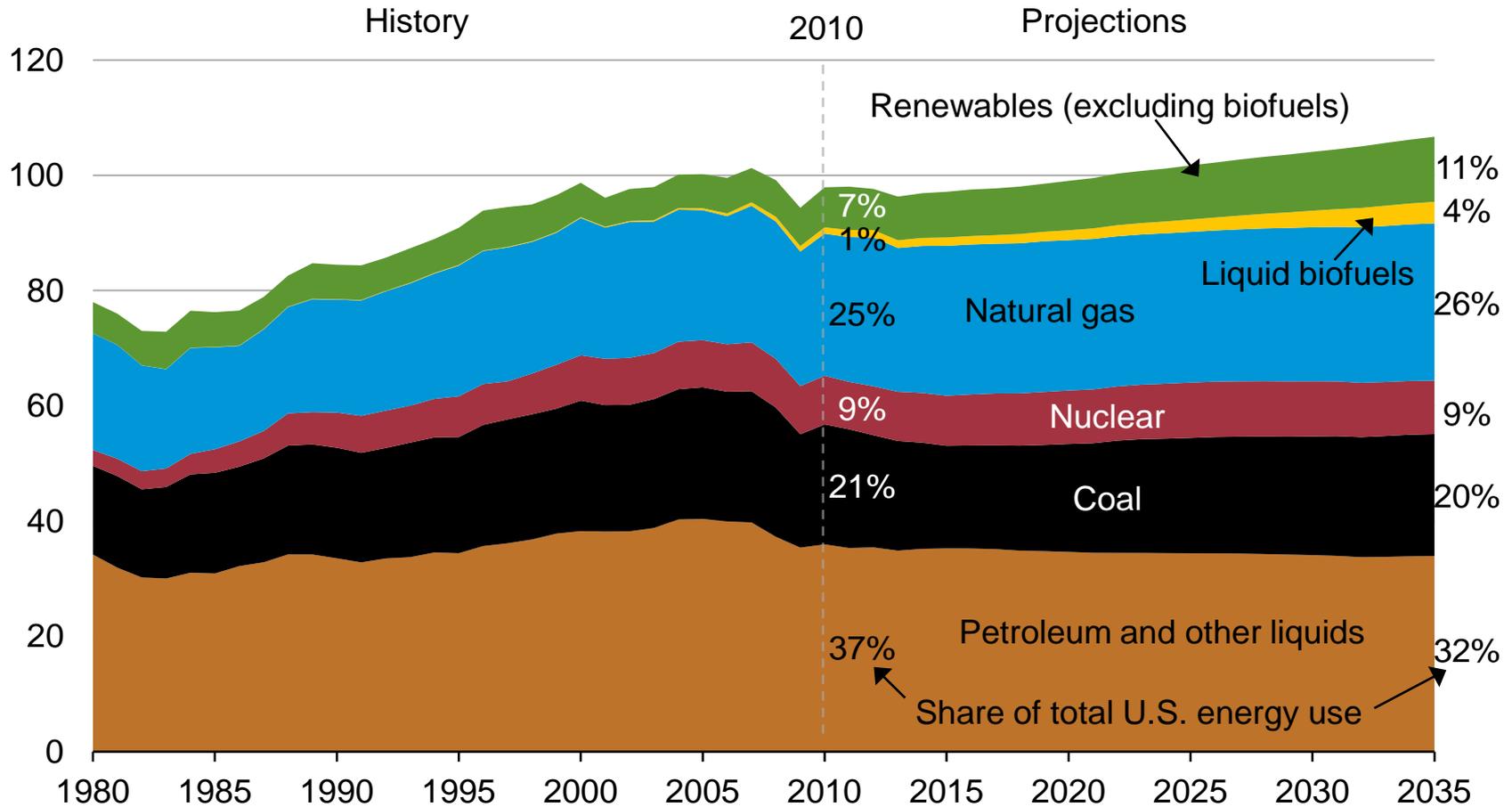
Source: EIA Short-Term Energy Outlook, November 2012

Key issues in the domestic fuel markets

Primary energy use by fuel, 1980-2035

...in absolute terms, all fuels grow except petroleum liquids

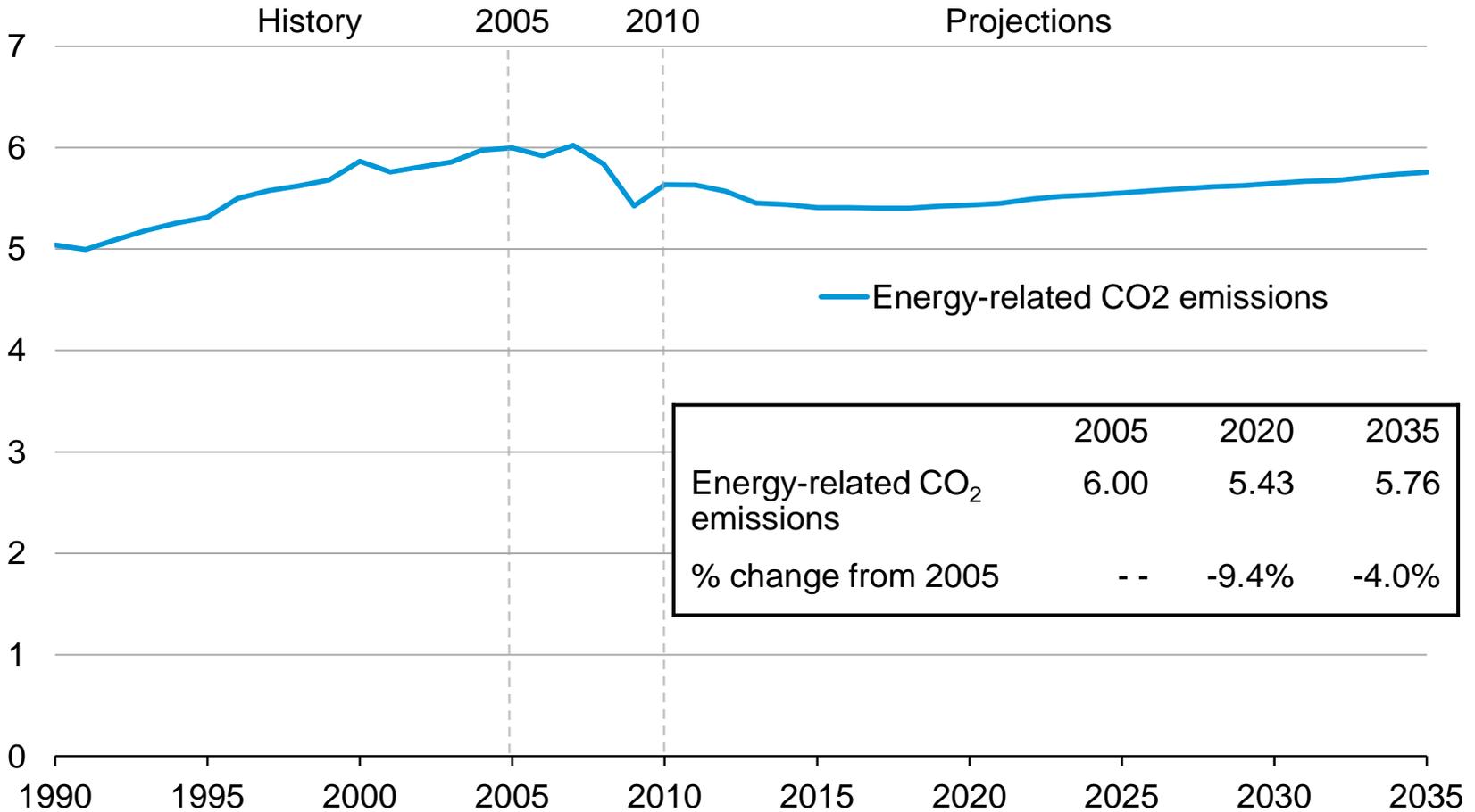
U.S. energy consumption
quadrillion Btu



Source: EIA, Annual Energy Outlook 2012

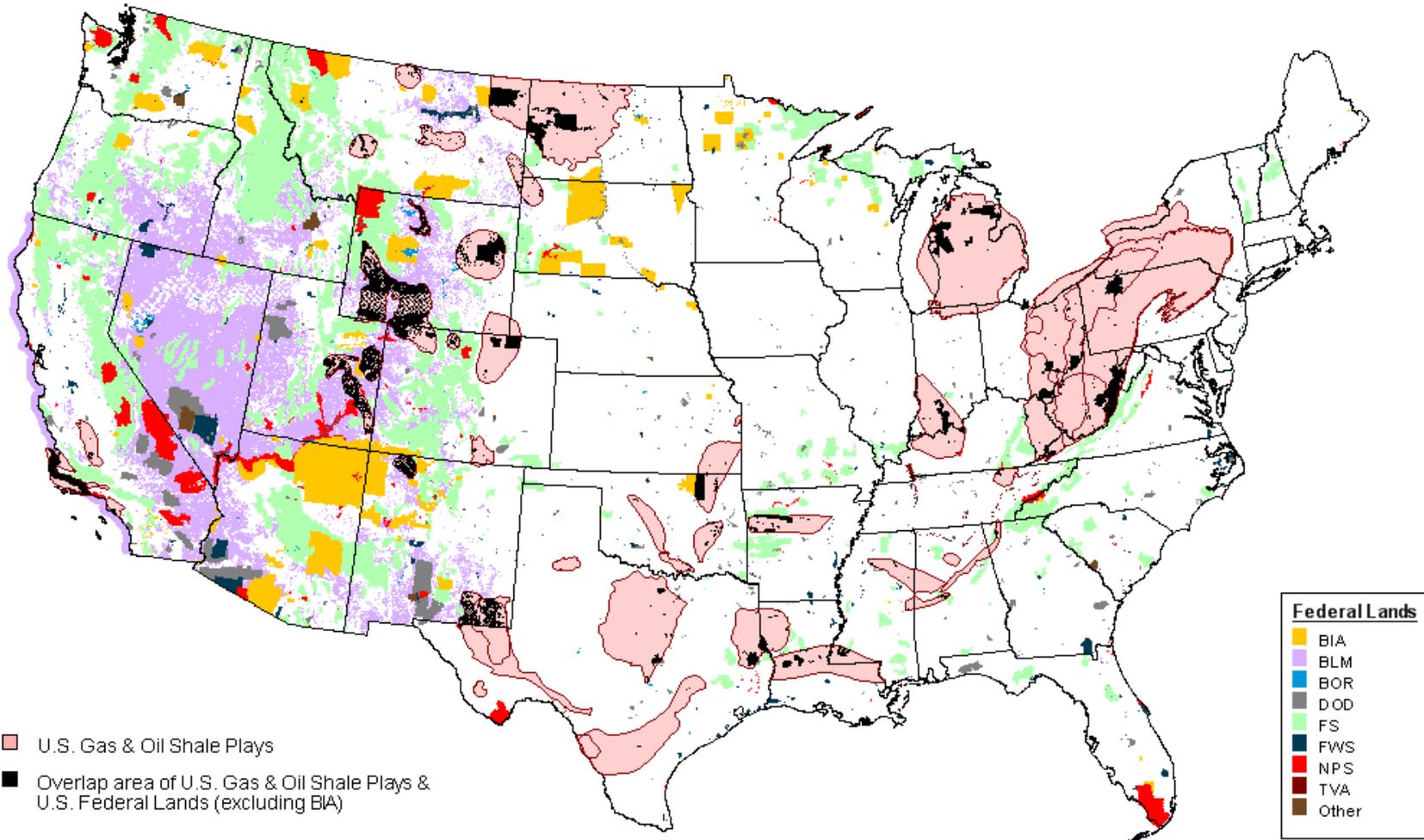
Energy-related CO₂ emissions never get back to pre-recession levels in the *AEO2012* Reference case

energy carbon dioxide emissions
billion metric tons



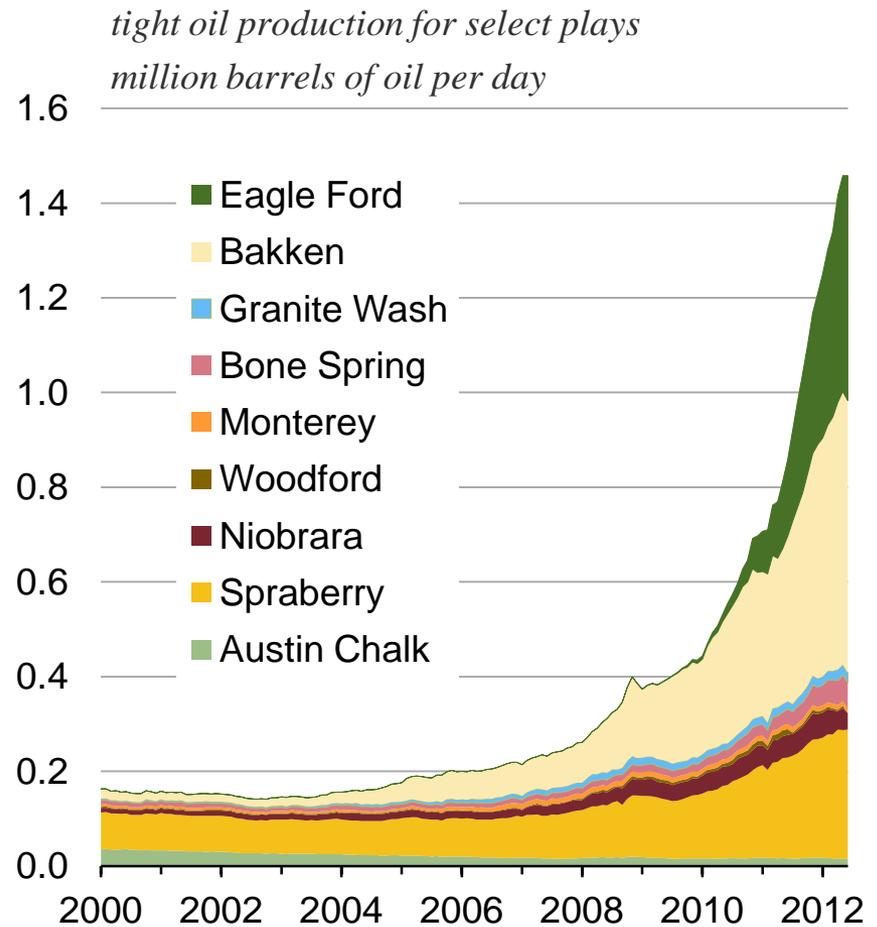
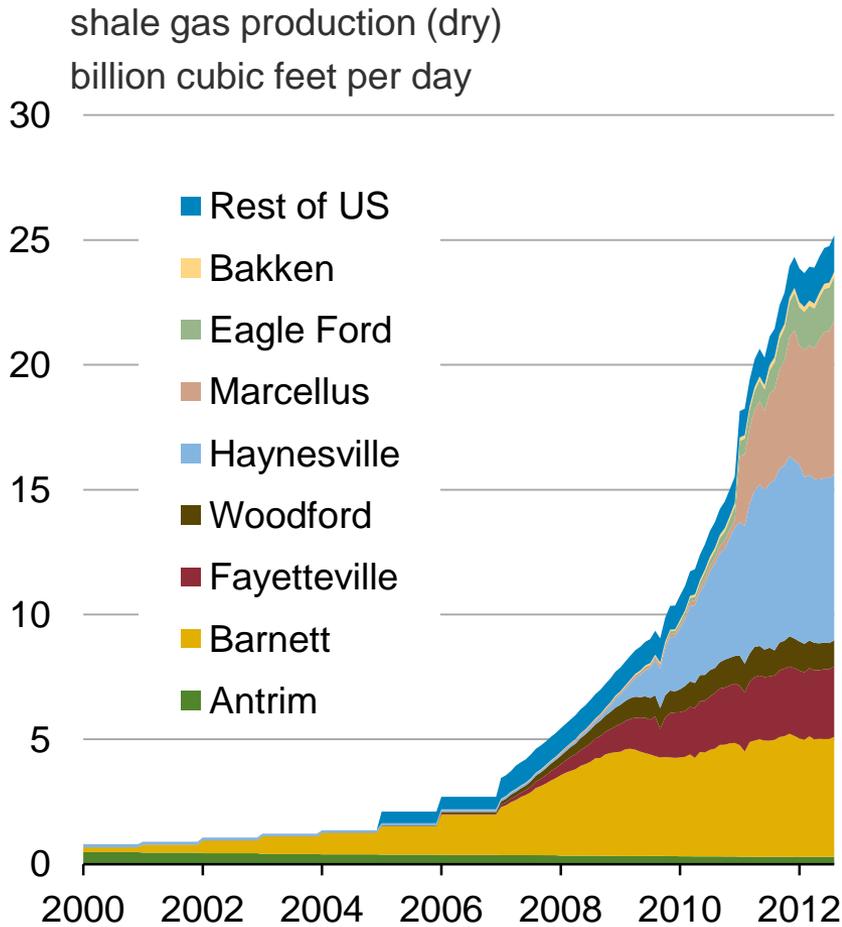
Source: EIA, Annual Energy Outlook 2012

Lower 48 oil and gas shale plays and federal lands



Source: U.S. Geological Survey, U.S. Department of the Interior 's National Atlas of the United States

Domestic production of shale gas and tight oil has grown dramatically over the past few years

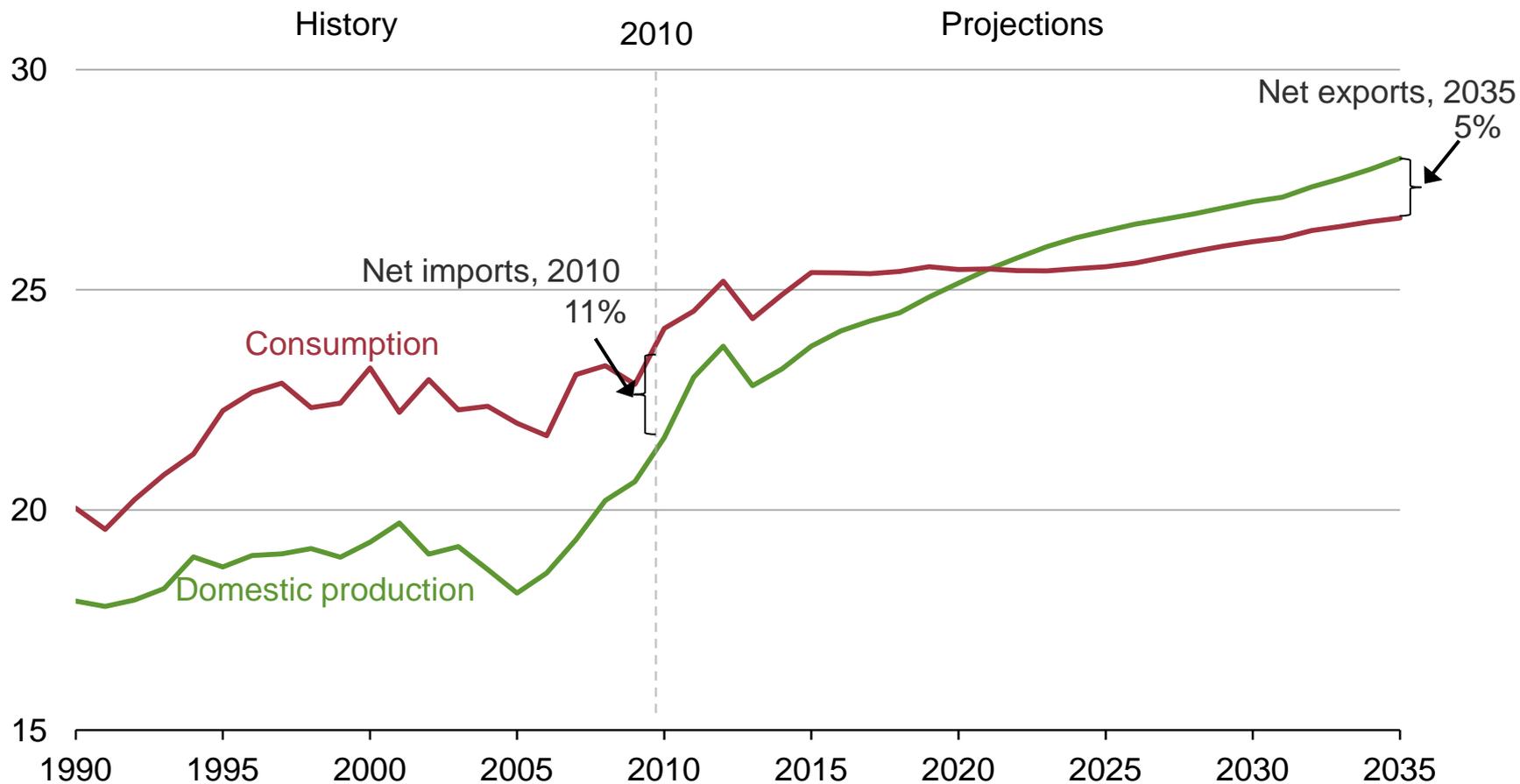


Sources shale gas: Lippman Consulting, Inc. gross withdrawal estimates as of August 2012 and converted to dry production estimates with EIA-calculated average gross-to-dry shrinkage factors by state and/or shale play.

Source tight oil: HPDI, Texas RRC, North Dakota department of mineral resources, and EIA, through June 2012.

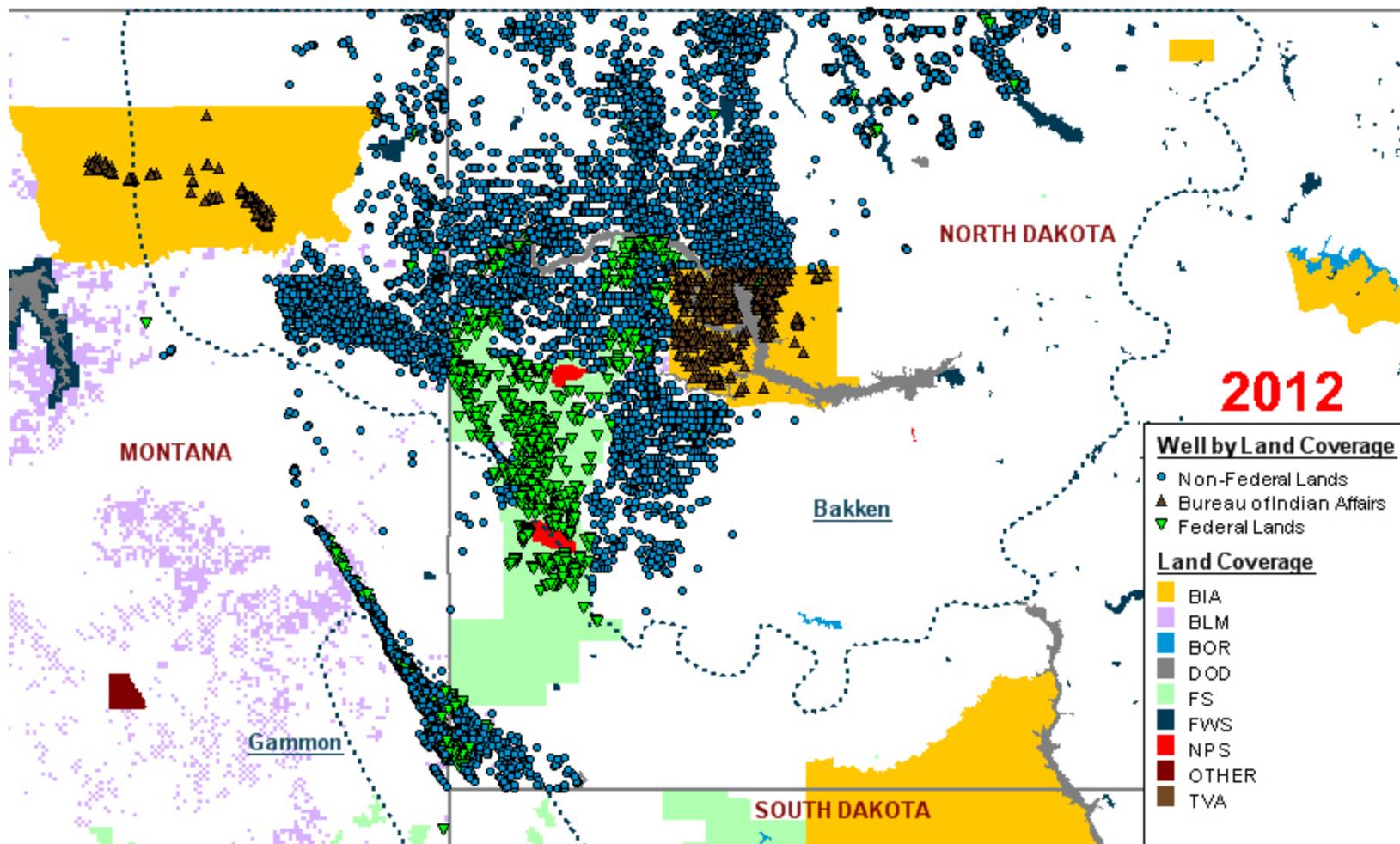
U.S. becomes a net natural gas exporter in 2022

U.S. dry natural gas
trillion cubic feet



Source: EIA, Annual Energy Outlook 2012

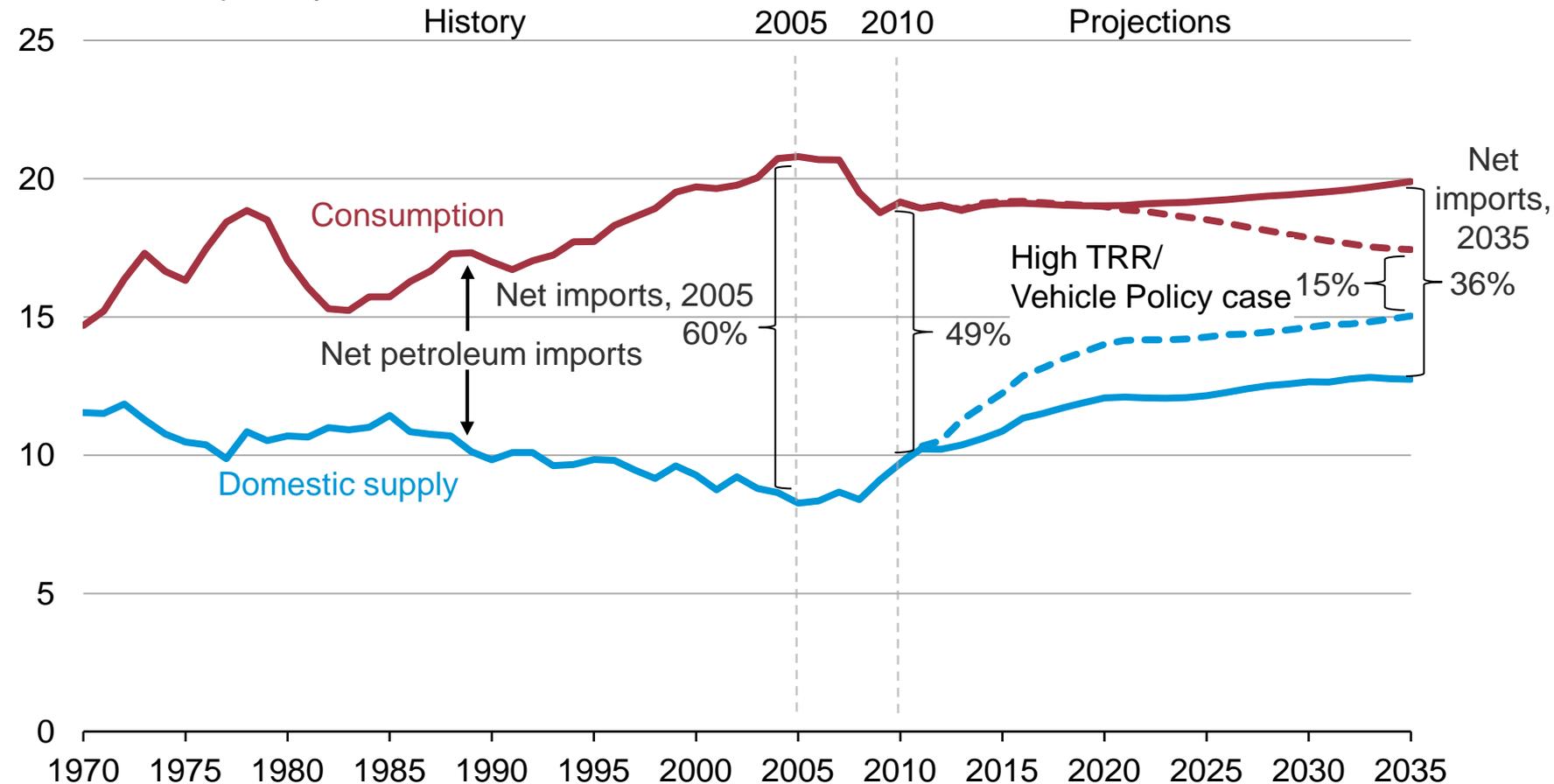
Bakken production on federal, non-federal and BIA lands



Source: EIA

U.S. dependence on imported petroleum declines ...moves even lower in various side case scenarios

U.S. liquid fuel supply
million barrels per day

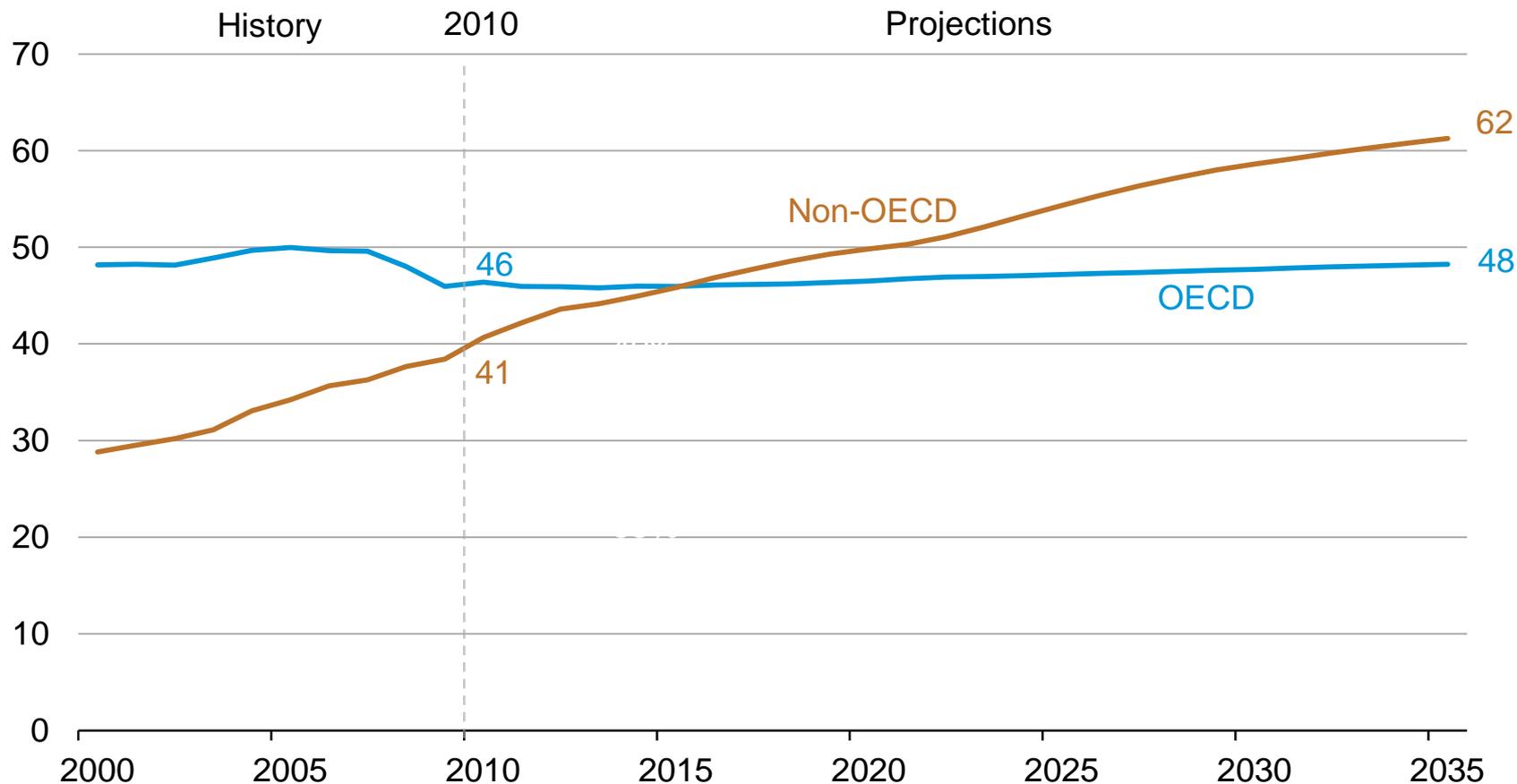


Source: EIA, Annual Energy Outlook 2012

Key issues in the global oil markets

Non-OECD liquid fuels use is expected to surpasses almost flat OECD liquid fuels use in the near future

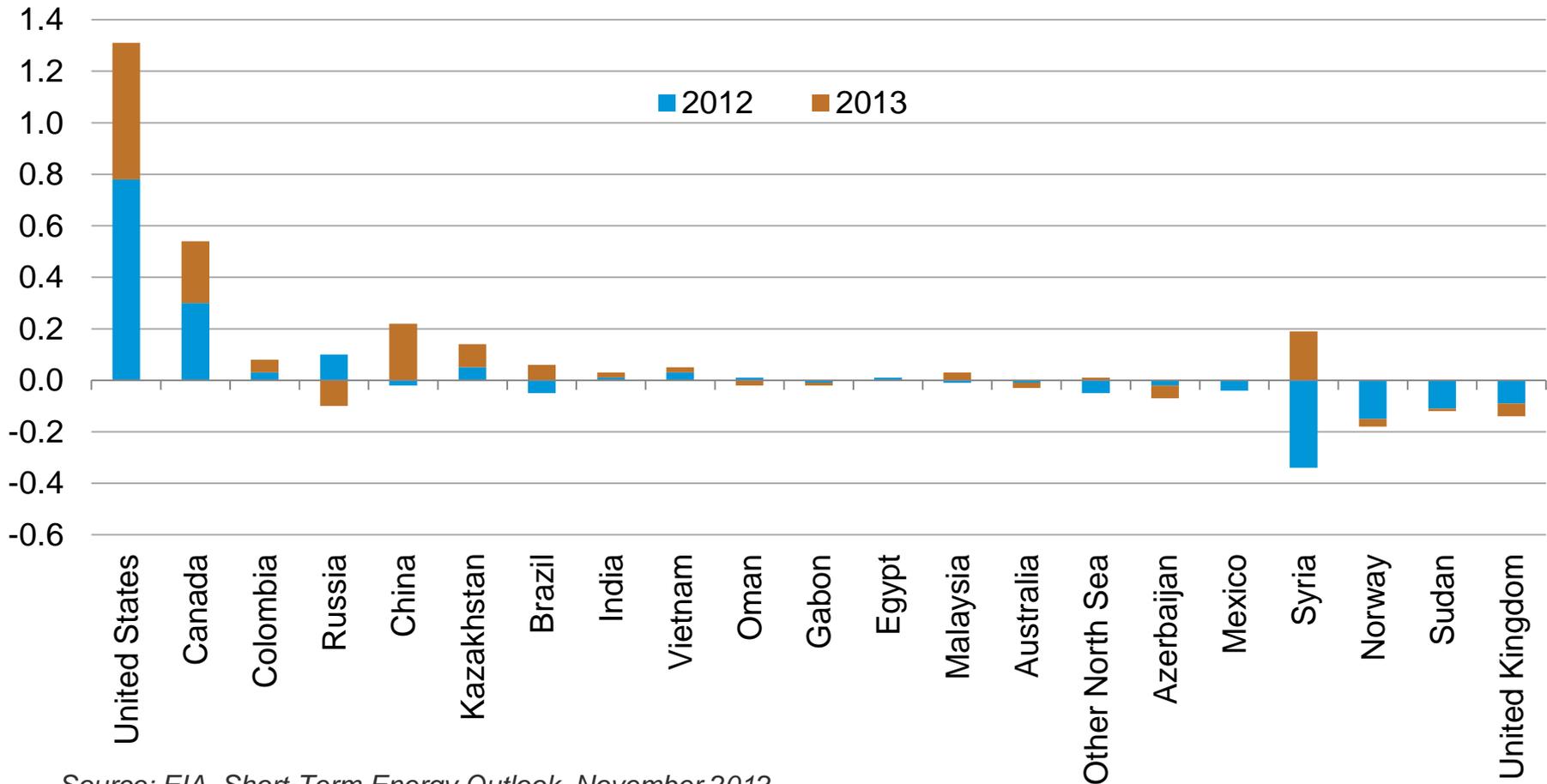
total liquids consumption
million barrels per day



Source: EIA, Annual Energy Outlook 2012

U.S. leads the league table for non-OPEC crude oil and liquid fuels growth over the next two years

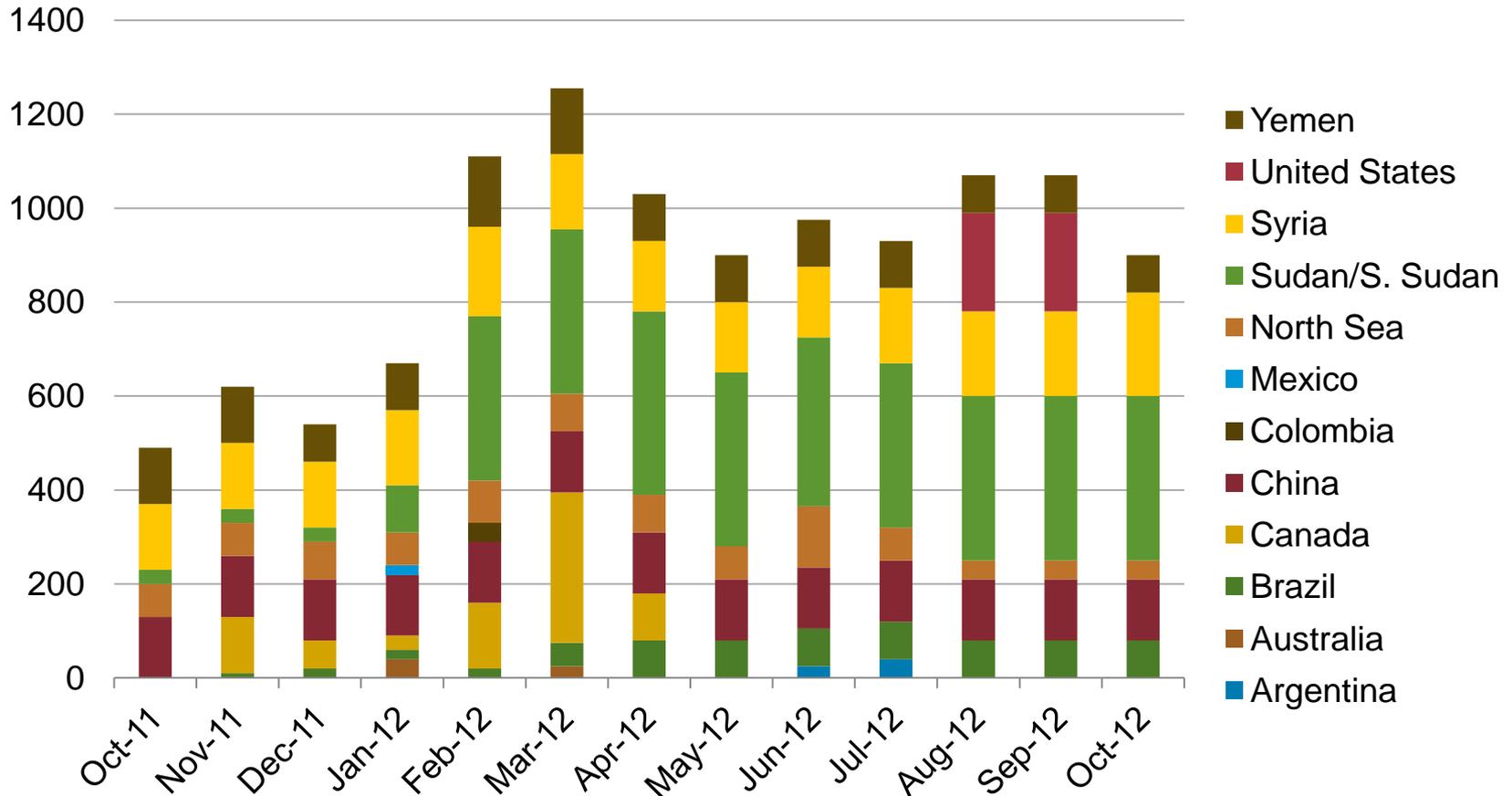
change in production from previous year
million barrels per day



Source: EIA, Short-Term Energy Outlook, November 2012

Estimated unplanned production disruptions among non-OPEC producers, through October 2012

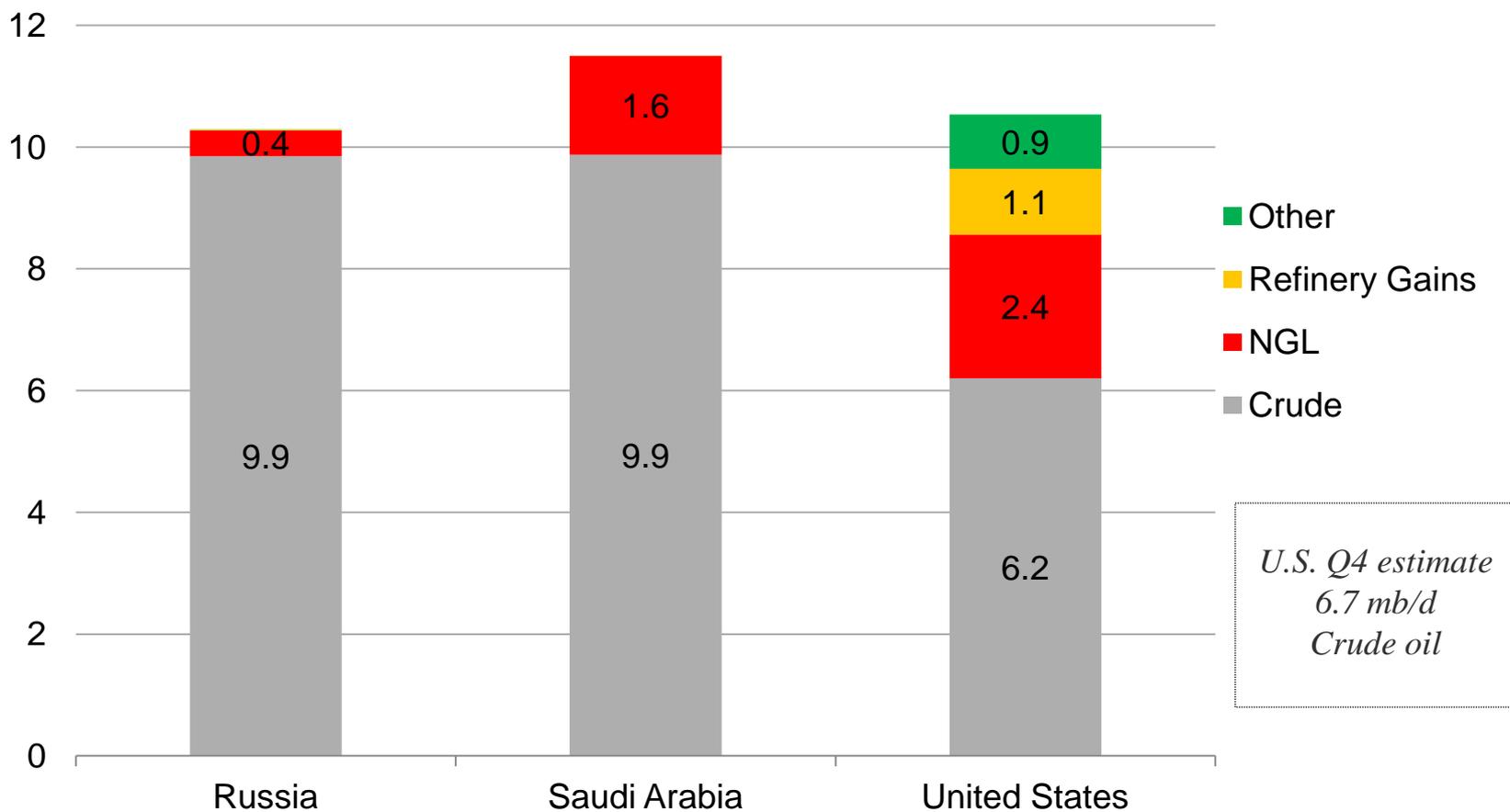
thousand barrels per day



Source: EIA Availability and Price of Petroleum and Petroleum Products Produced in Countries Other Than Iran Report, October 2012

2012 oil production

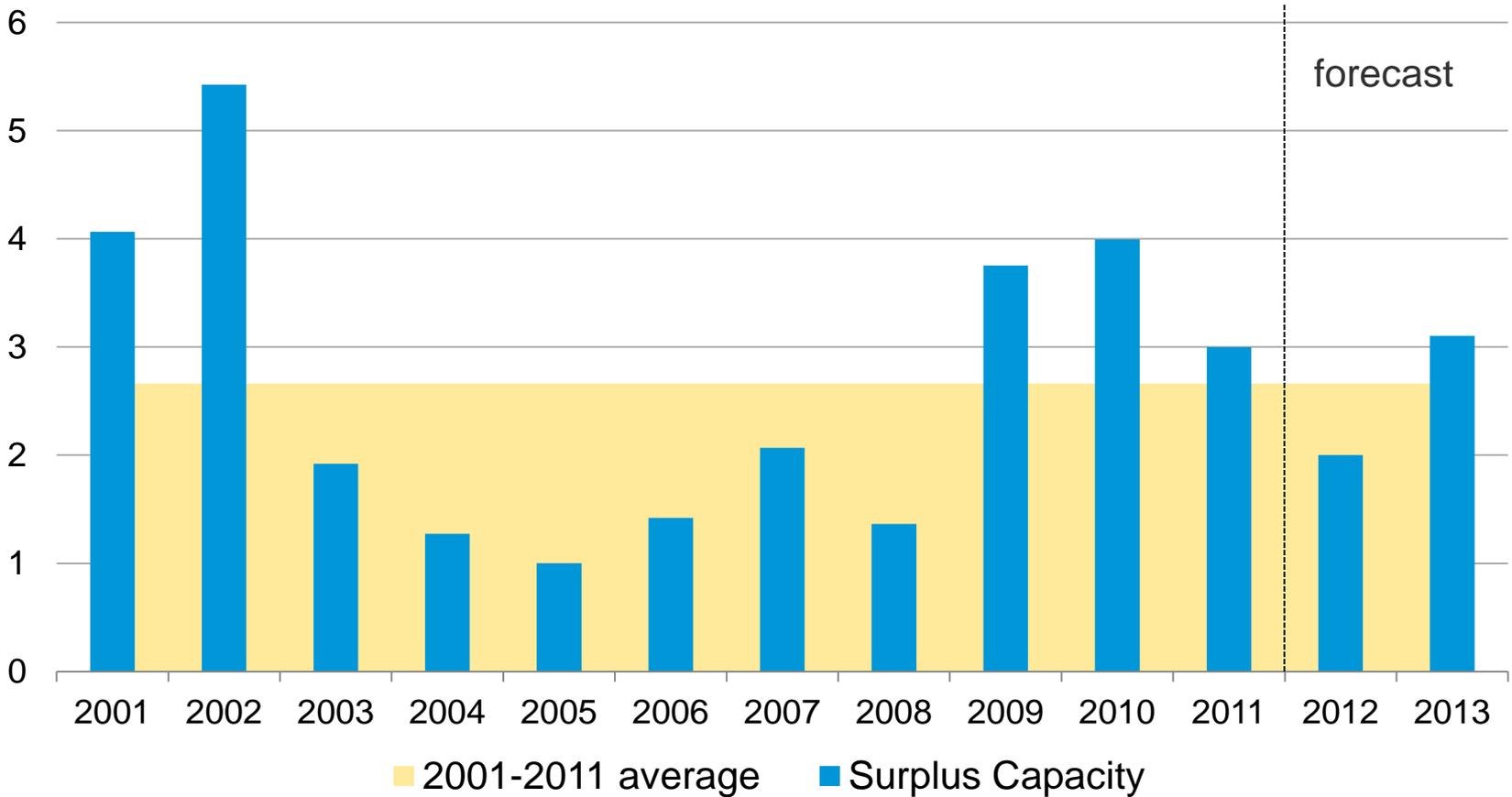
million barrels per day



Source: EIA, data through June 2012

OPEC surplus crude oil production capacity

million barrels per day



Source: EIA Short-Term Energy Outlook, November 2012

Systemic energy security risk issues

- Oil choke points
- Natural disasters
- Electric reliability concerns
- Refining capacity outages
- Other energy infrastructure issues

For more information

U.S. Energy Information Administration home page | www.eia.gov

Short-Term Energy Outlook | www.eia.gov/steo

Annual Energy Outlook | www.eia.gov/aeo

International Energy Outlook | www.eia.gov/ieo

Monthly Energy Review | www.eia.gov/mer

Today in Energy | www.eia.gov/todayinenergy

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