

Review of EIA oil production outlooks



For

2014 EIA Energy Conference

July 15, 2014 | Washington, DC

By

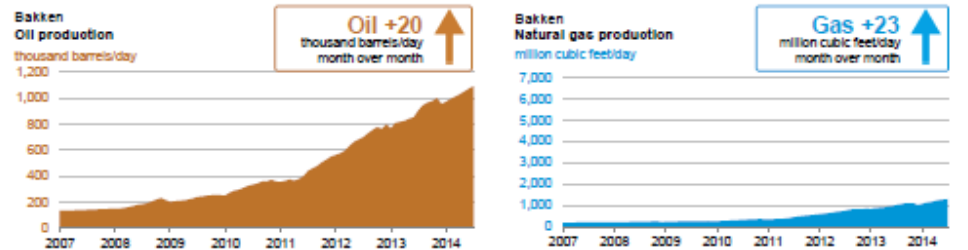
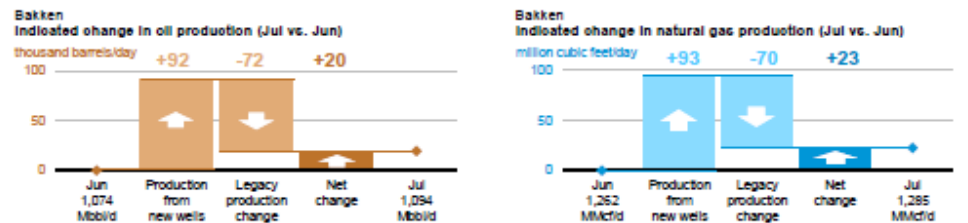
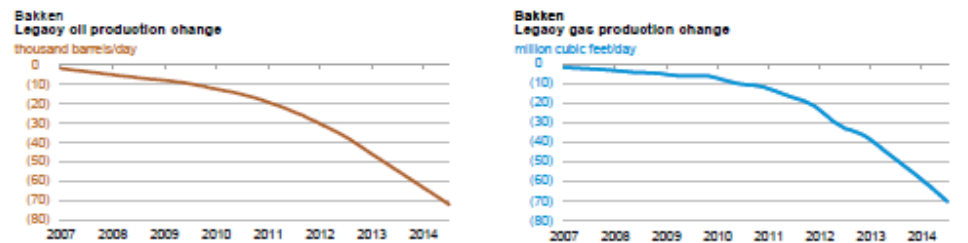
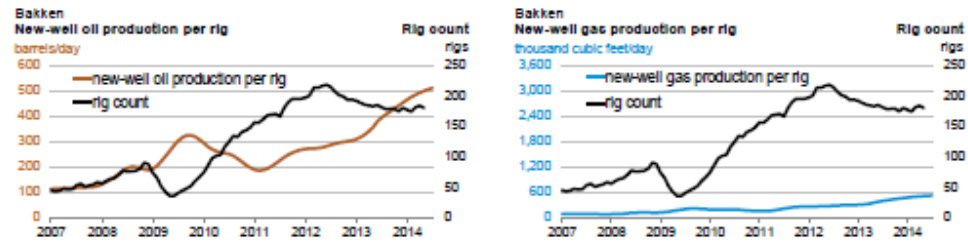
Samuel Gorgen, Upstream Analyst

Overview

- Drilling Productivity Report performance review
 - Permian
 - Eagle Ford
 - Bakken
- Crude oil production projections
 - Short-Term Energy Outlook
 - Annual Energy Outlook
 - International tight oil outlook
- New DPR region highlights: Utica

Drilling Productivity Report review – major tight oil plays

DPR covers production trends in key U.S. regions

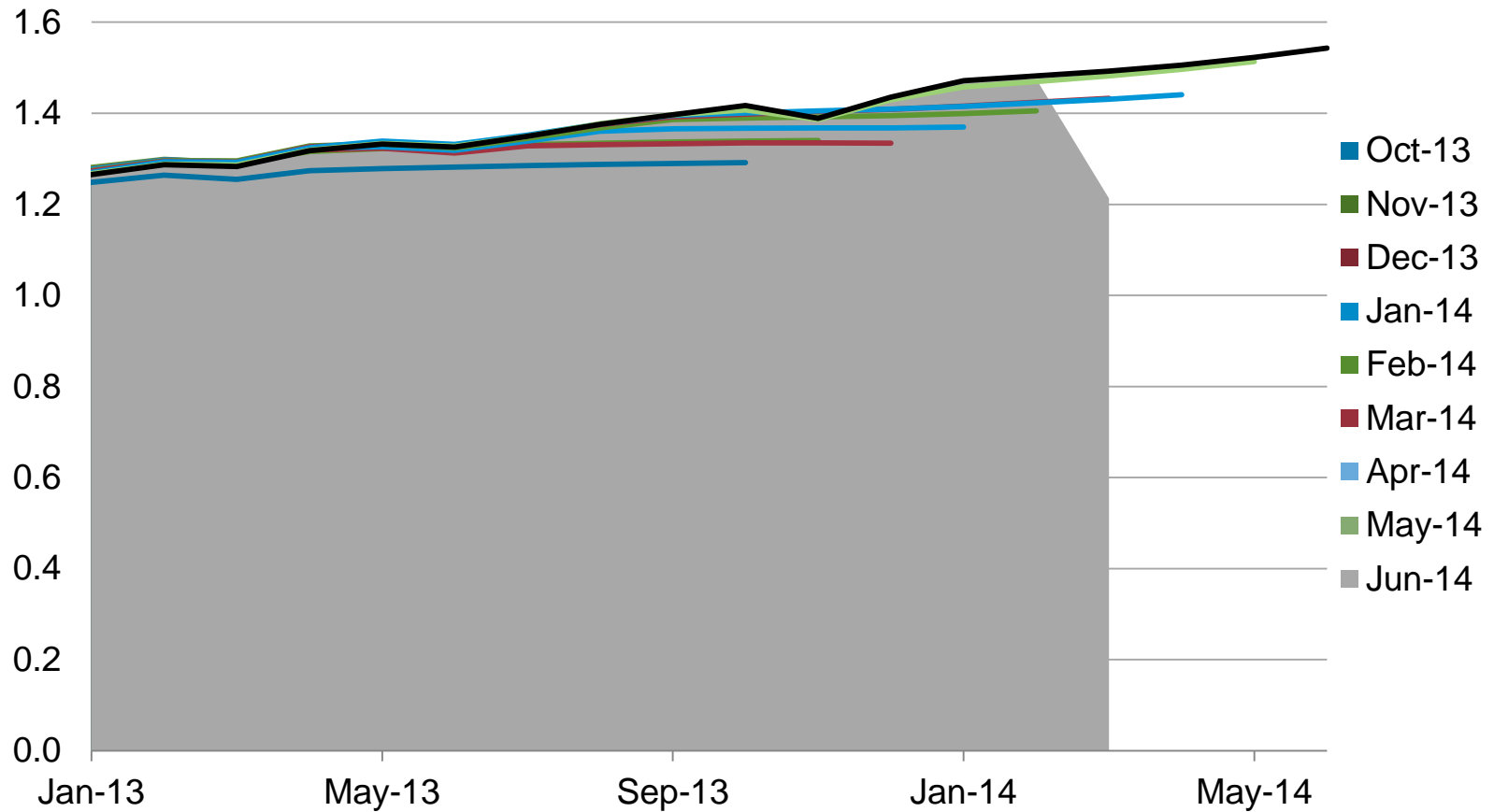


Challenges of measuring forecast performance

- Most well-level production data still incomplete for 2013Q4
 - Changing state data lags
 - Corrections impacting historical data
- Redefining geographic DPR regions (counties)
- ‘Event forecasting’ outside scope of DPR methodology

Data lags caused Permian drilling productivity to appear flat

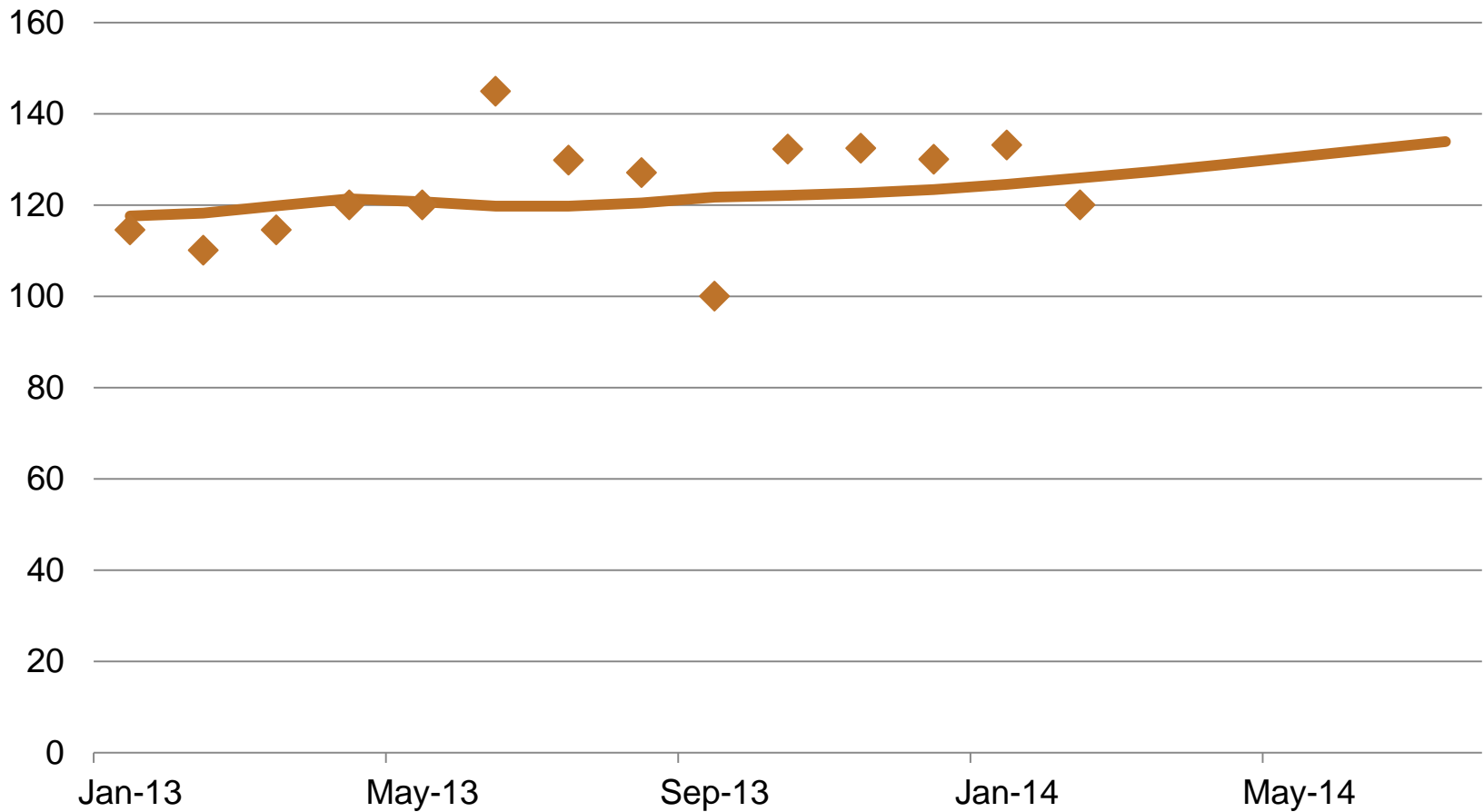
Permian region
million barrels per day



Source: EIA Drilling Productivity Report

Underestimation - slow productivity growth compared to Bakken, Eagle Ford

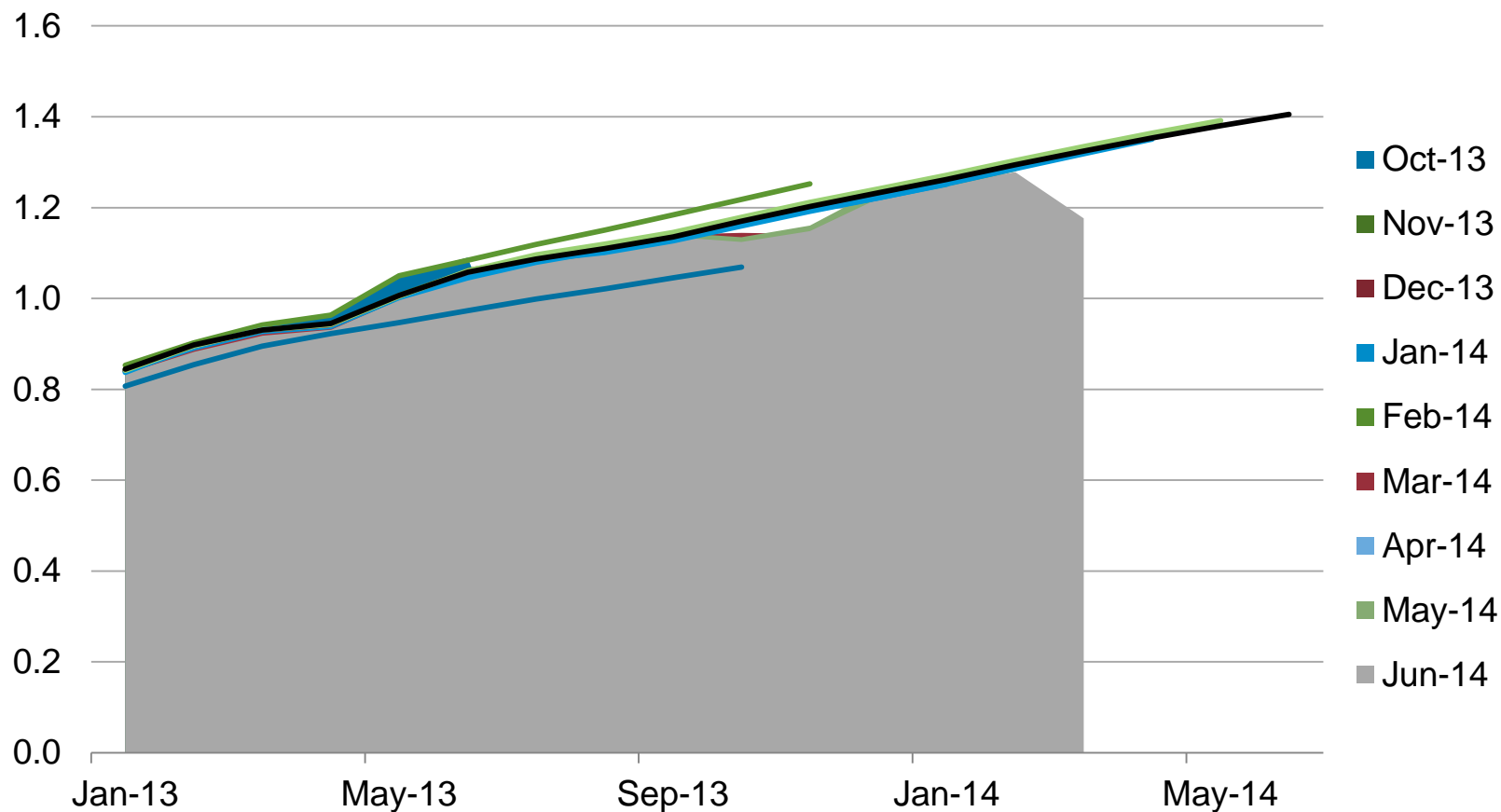
Permian new-well oil production per rig
barrels per day



Source: EIA Drilling Productivity Report, June 2014

Eagle Ford – Early changes to regional boundary caused errors, forecasts stabilized with steady drilling activity, incr. productivity

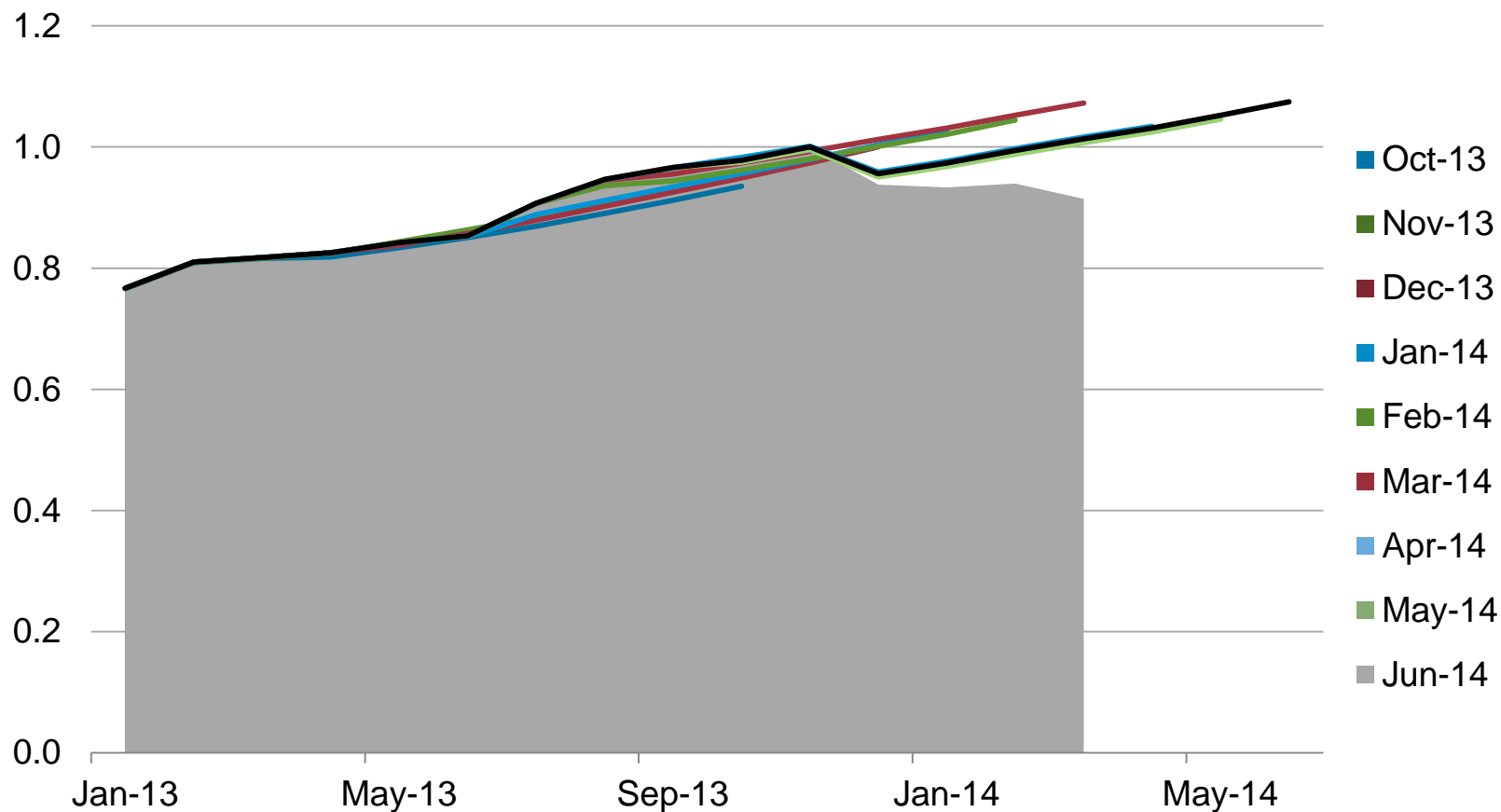
Eagle Ford region
million barrels per day



Source: EIA Drilling Productivity Report

Bakken – Changing completion techniques lead to mid-2013 growth, ‘event’ related decline in Dec. 2013, trends intact

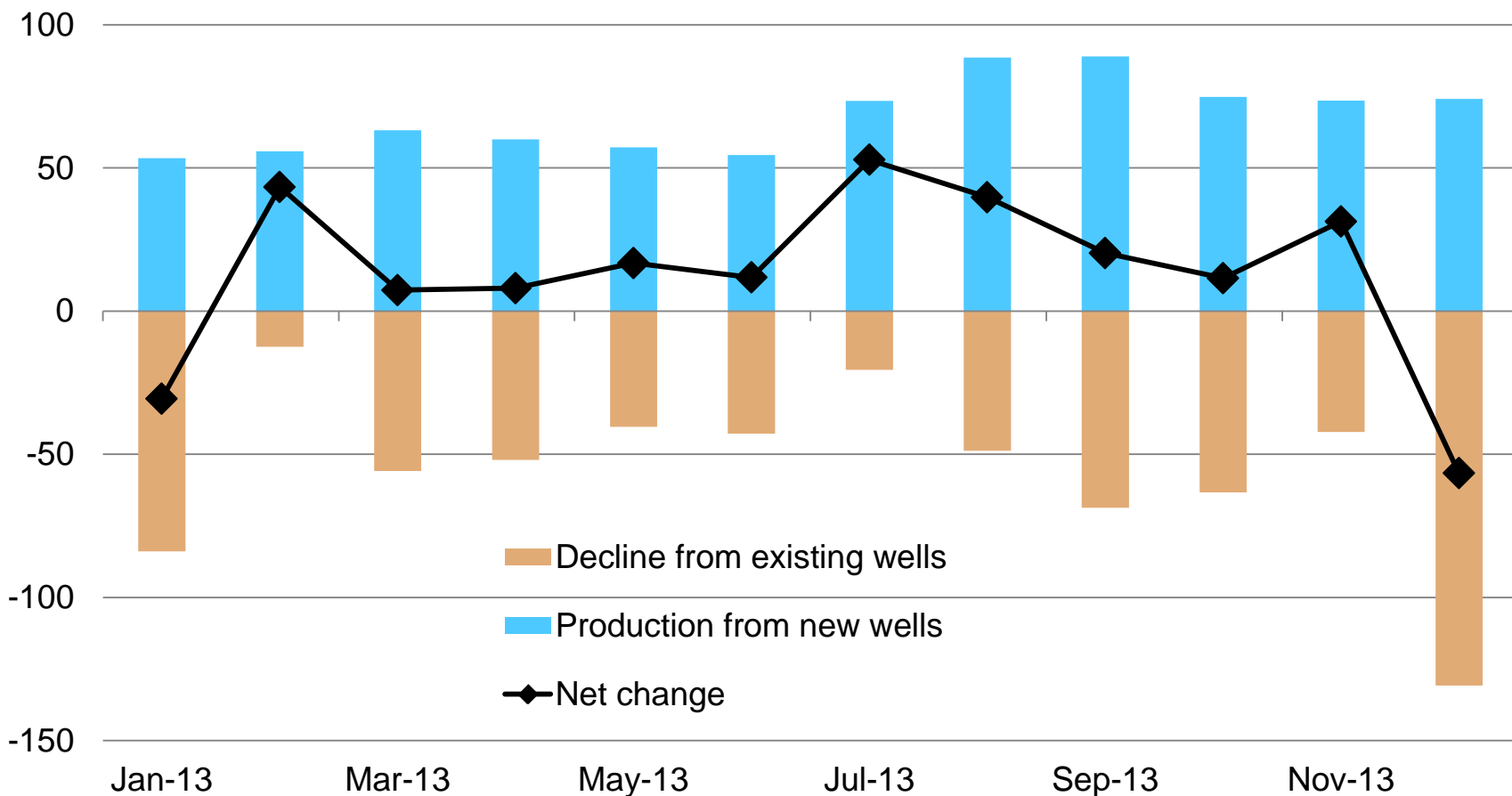
Bakken region
million barrels per day



Source: EIA Drilling Productivity Report

Production from new completions not unusually low in Dec. 2013, decline driven by shut-ins

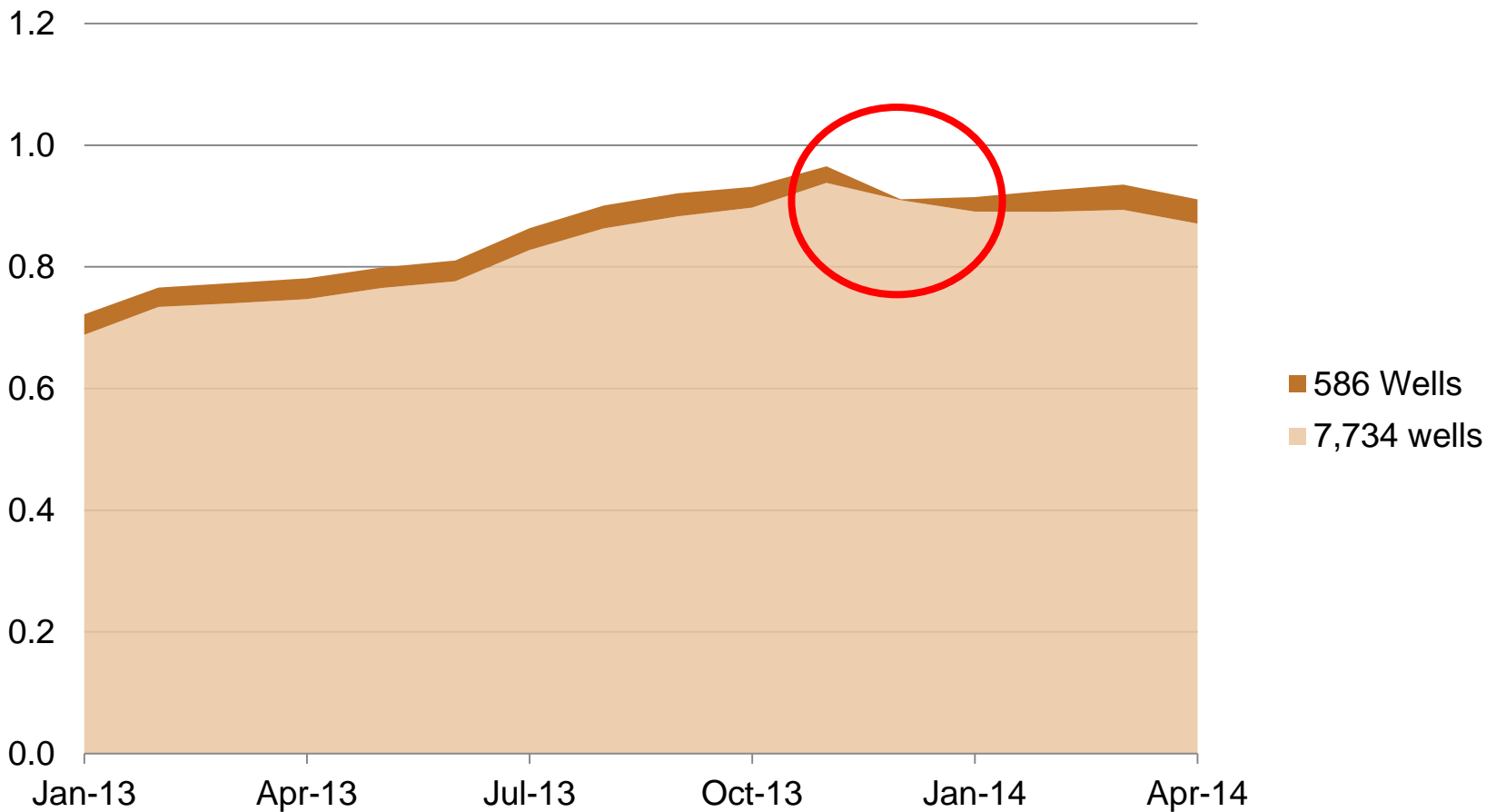
Bakken month-to-month change
thousand barrels per day



Source: EIA Drilling Productivity Report

December 2013: 30 mb/d of decline caused by shutting-in existing wells (Tioga gas plant expansion and weather-related)

Bakken crude oil production
million barrels per day



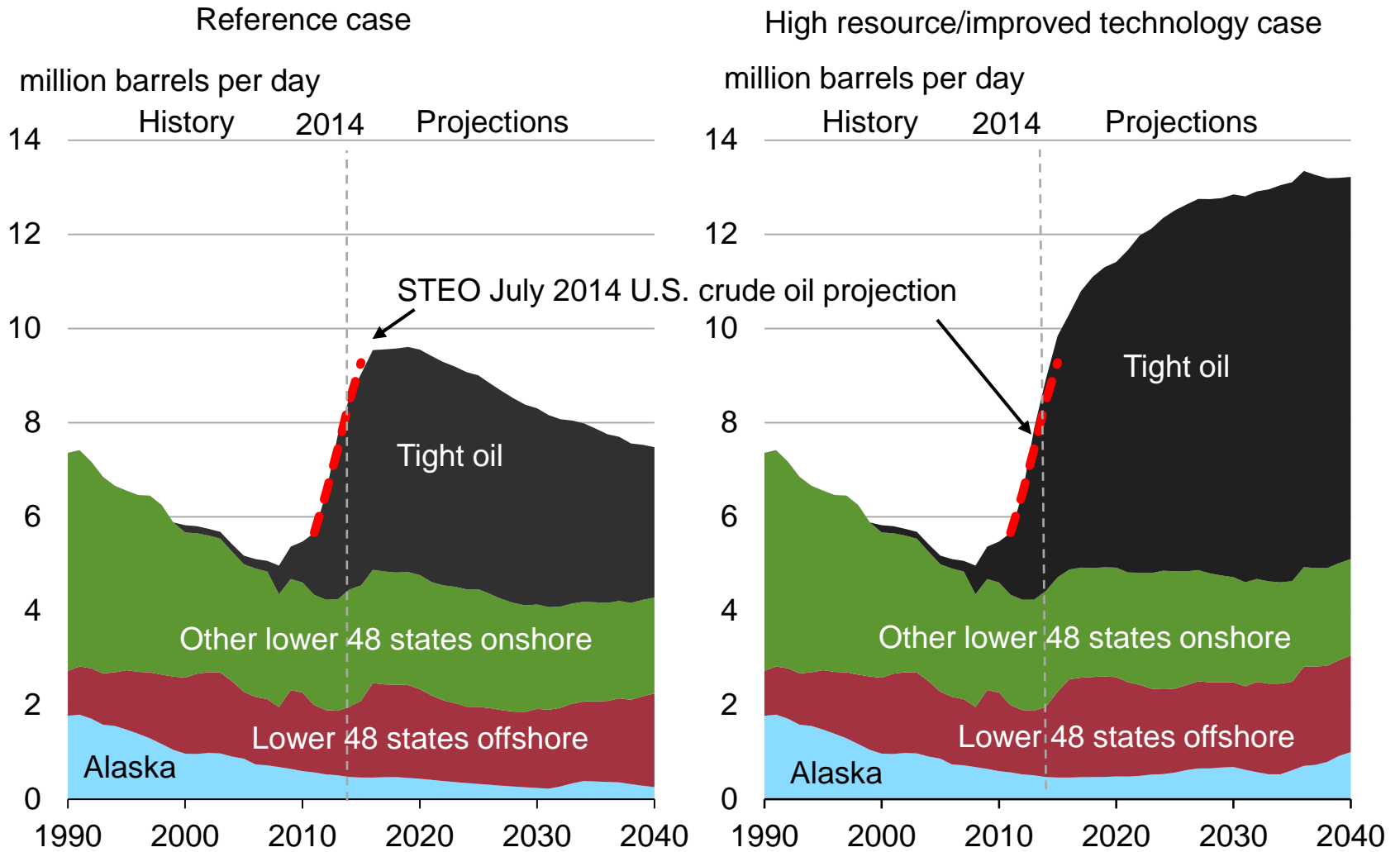
Source: EIA, DrillingInfo

Potential ‘events’ which limit ability to forecast the near future

- Regulations (eg. ND flaring limits)
- Infrastructure maintenance/upgrades
- Winter weather
- Hurricanes
- Well spacing
- New sweet spots or drilling in non-core acreage

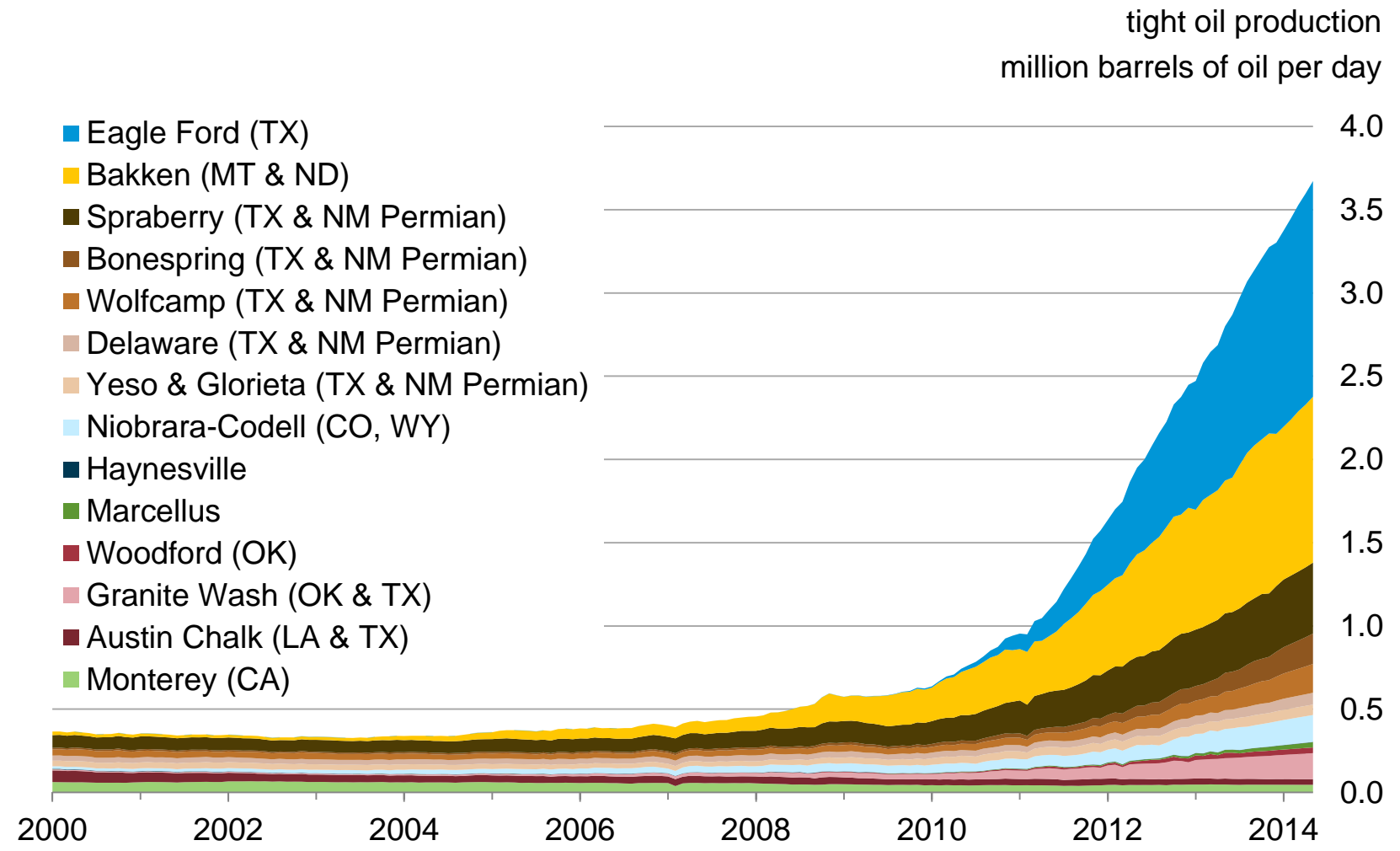
EIA U.S. crude oil production outlook

Changes in resource assumptions between the reference and high resource case lead to a 76% increase in oil production rates



Source: EIA, Annual Energy Outlook 2014 and July 2014 Short-Term Energy Outlook

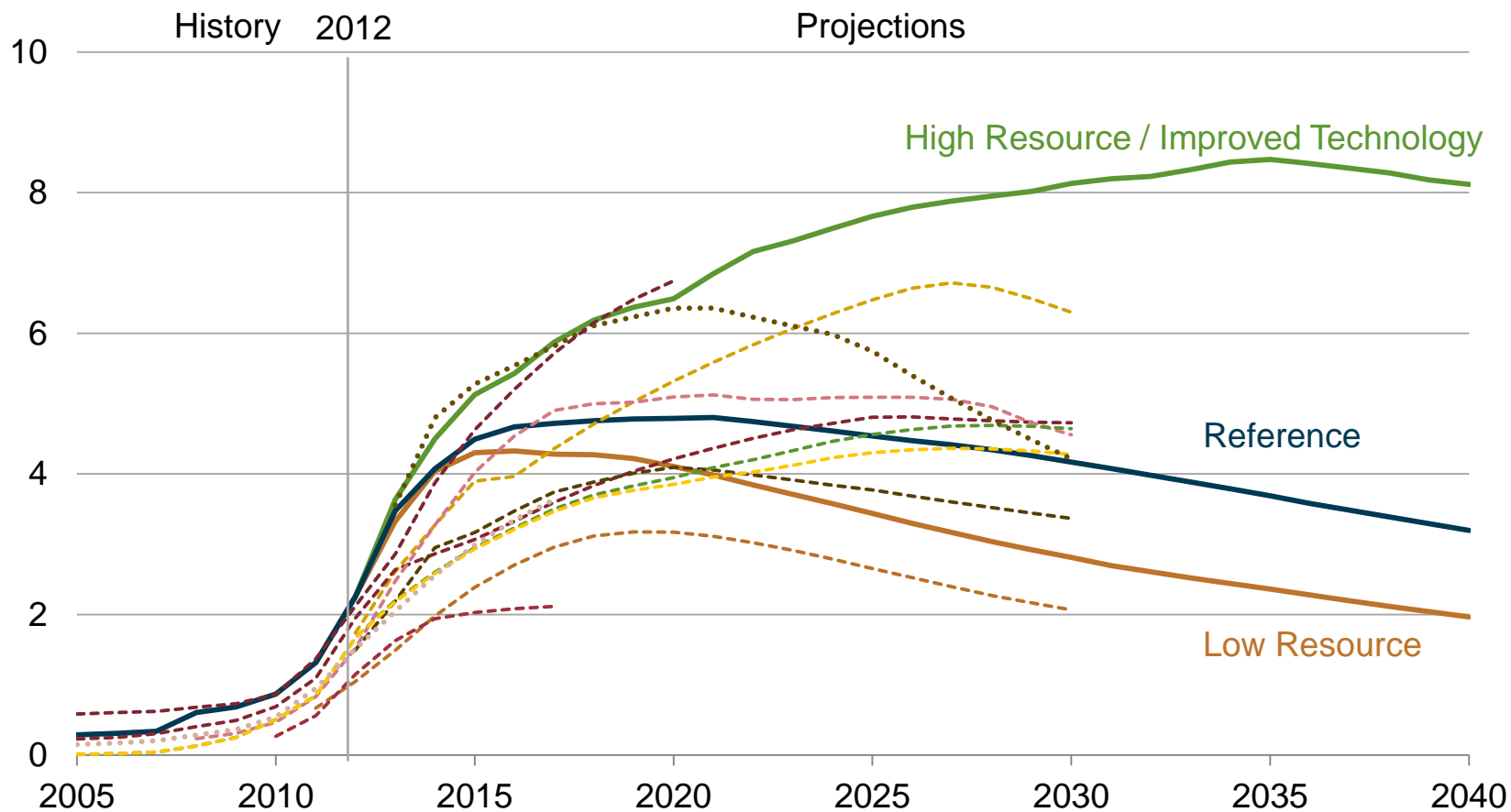
U.S. tight oil production – selected plays



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

Projected tight oil production in EIA's three AEO2014 resource cases span the range of most other estimates

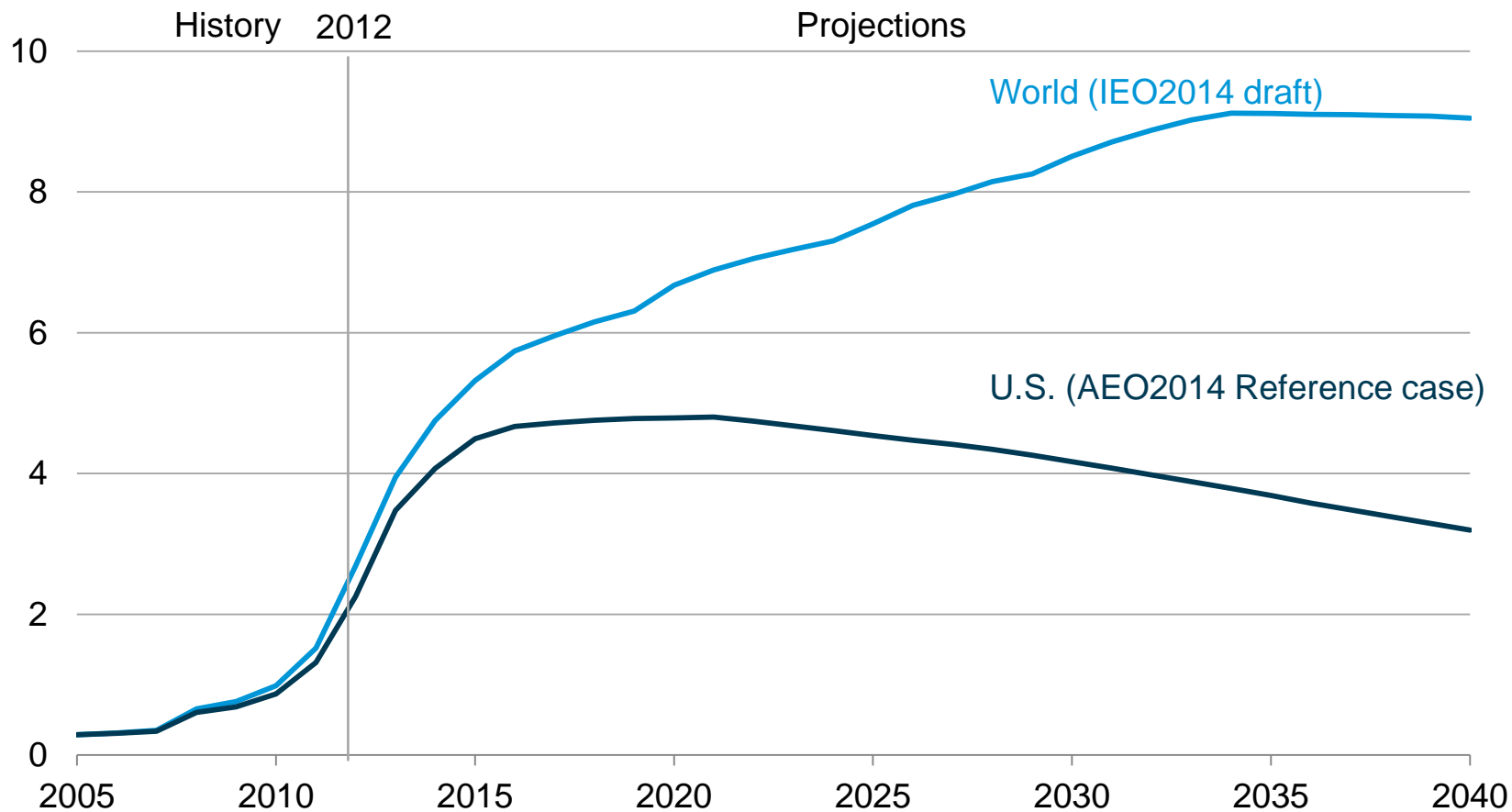
tight oil production
million barrels per day



Source: EIA, Annual Energy Outlook 2014, and external forecasts

EIA Reference scenario shows international tight oil production increasing to 3 million b/d in 2025

tight oil production
million barrels per day

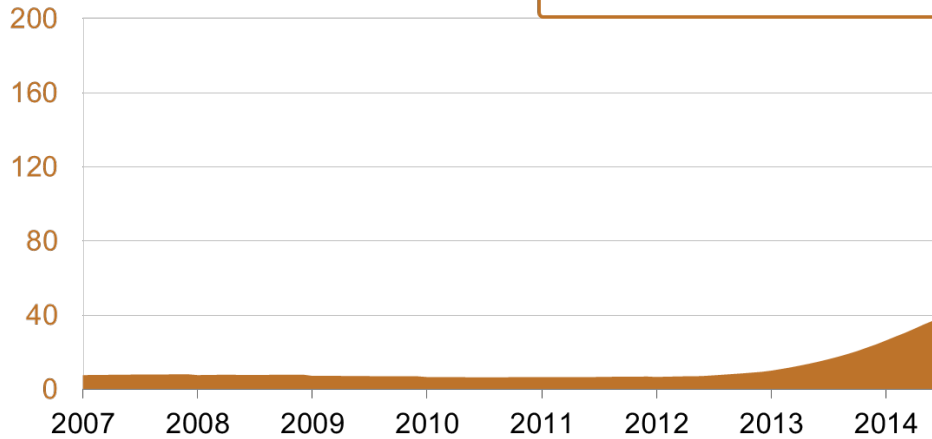


Source: EIA, Annual Energy Outlook 2014, IEO2014 draft

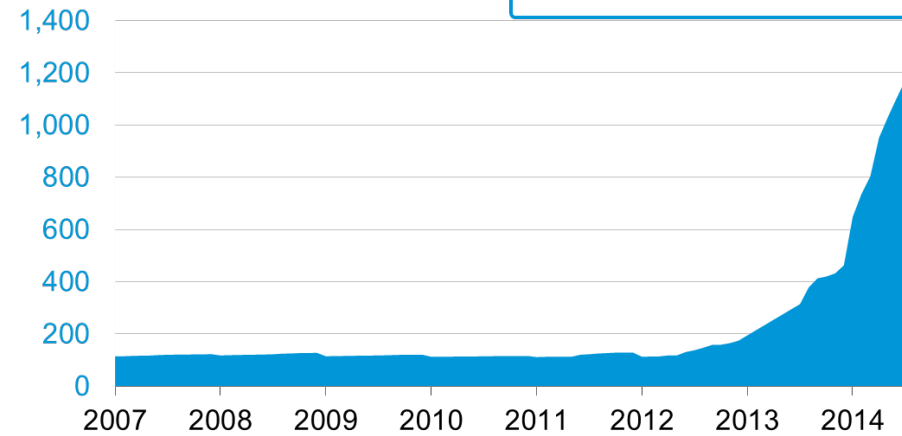
New DPR region starting 8/2014: Utica

Utica natural gas outpacing oil production

Utica
Oil production
thousand barrels/day



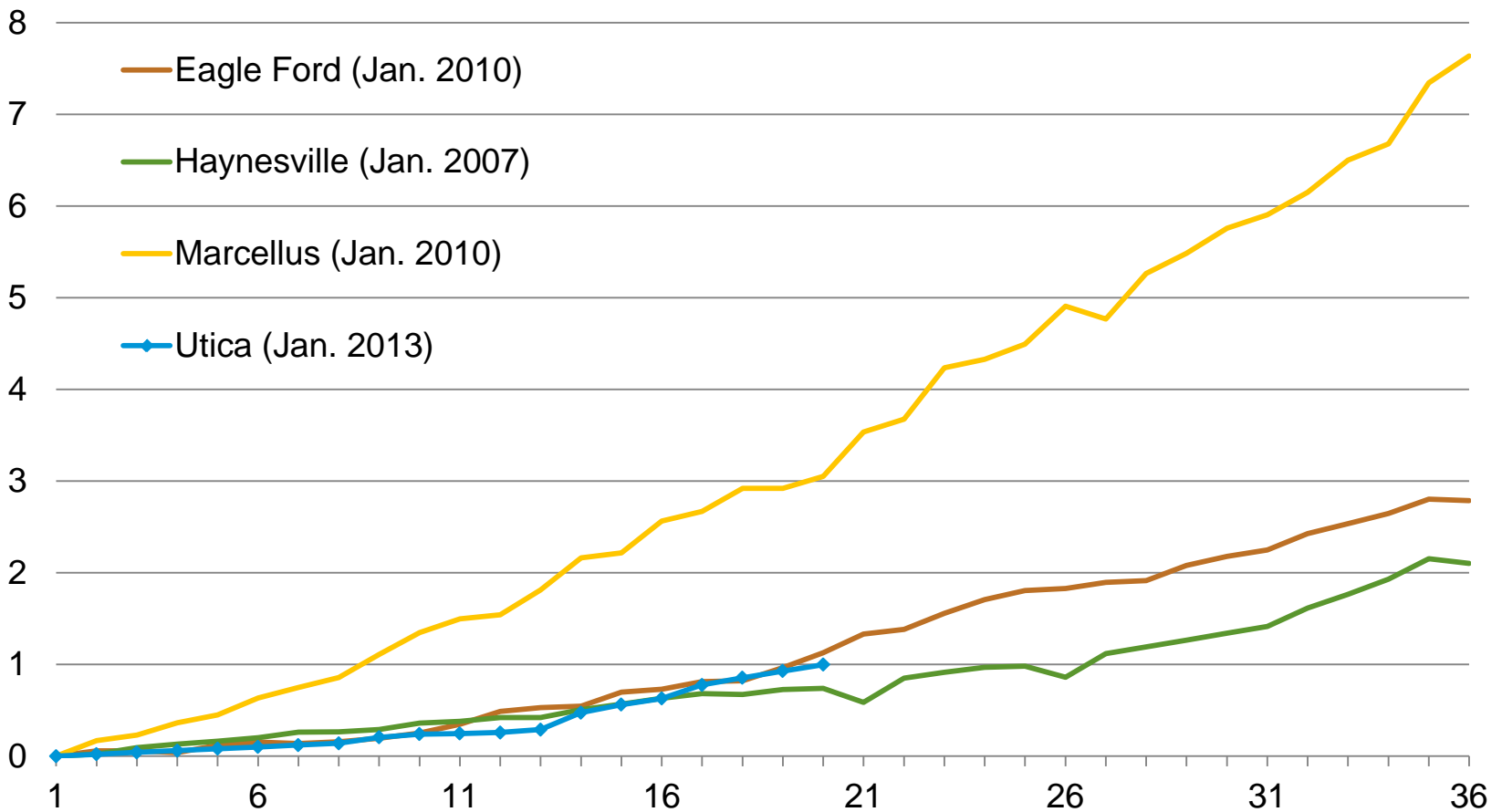
Utica
Natural gas production
million cubic feet/day



Source: EIA Drilling Productivity Report

Utica natural gas production growth on par with Eagle Ford

production growth, first 36 months since 'start'
billion cubic feet per day

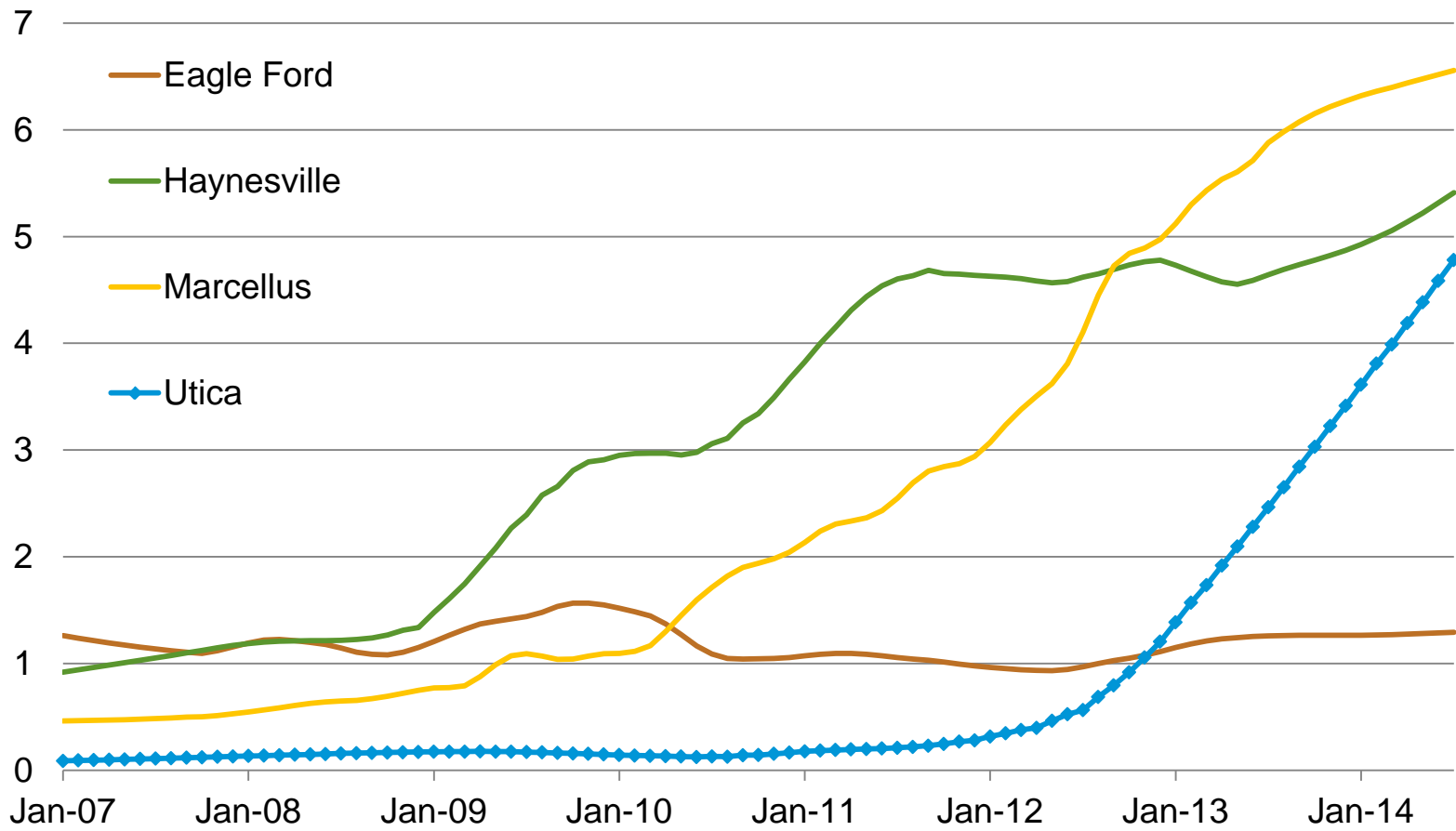


Source: EIA Drilling Productivity Report

Productivity per rig increasing faster than earlier plays

production per rig growth, first 36 months since 'start'

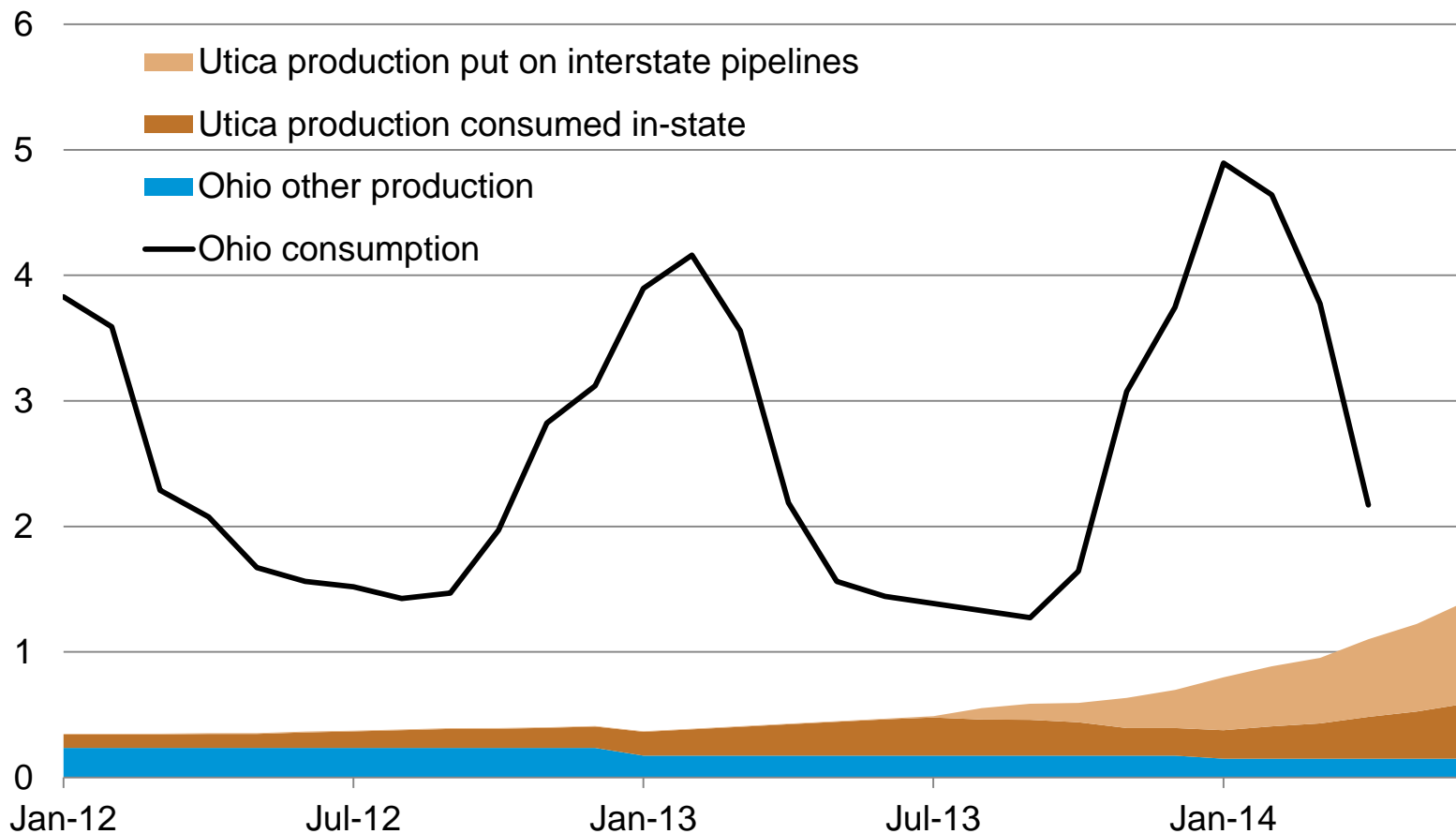
thousand cubic feet per day



Source: EIA Drilling Productivity Report

Most Utica production growth moving on interstate pipeline rather than supplying intrastate demand

Ohio natural gas
billion cubic feet per day



Source: EIA, DrillingInfo, Ventyx Energy Velocity

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 Profiles | <http://www.eia.gov/state>

Drilling Productivity Report | <http://www.eia.gov/petroleum/drilling/>