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

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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.

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

Source: EIA, Annual Energy Outlook 2014, IEO2014 draft

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New DPR region starting 8/2014: Utica
Utica natural gas outpacing oil production

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


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/