# Outlook for shale gas and tight oil development in the U.S.

*For*

*Bank of America/Merrill Lynch*

*Global Emerging Markets Spring Investor Conference*

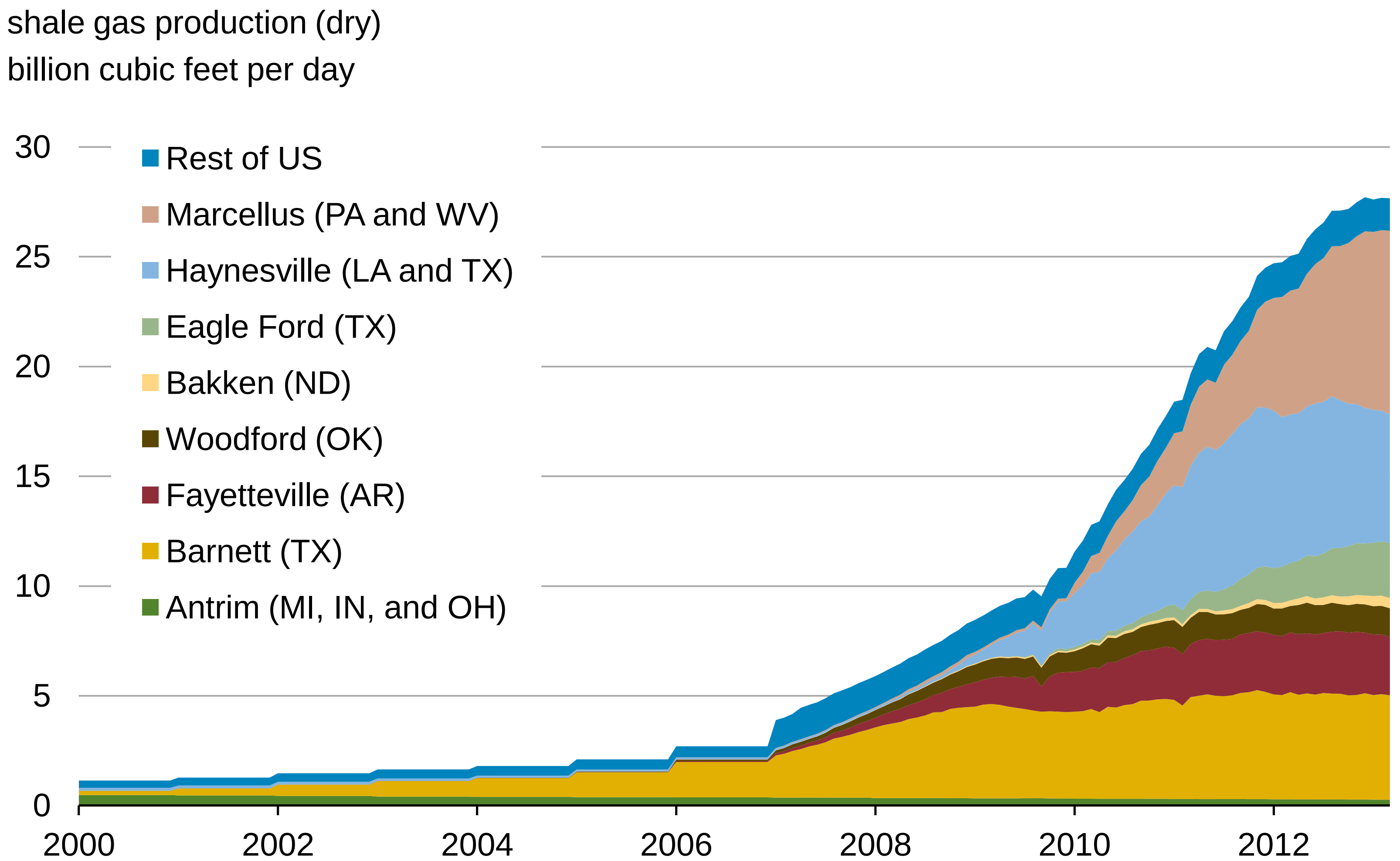
*April 20, 2013 | Washington, DC*

*By*

*Adam Sieminski, Administrator*

# U.S. Shale Gas

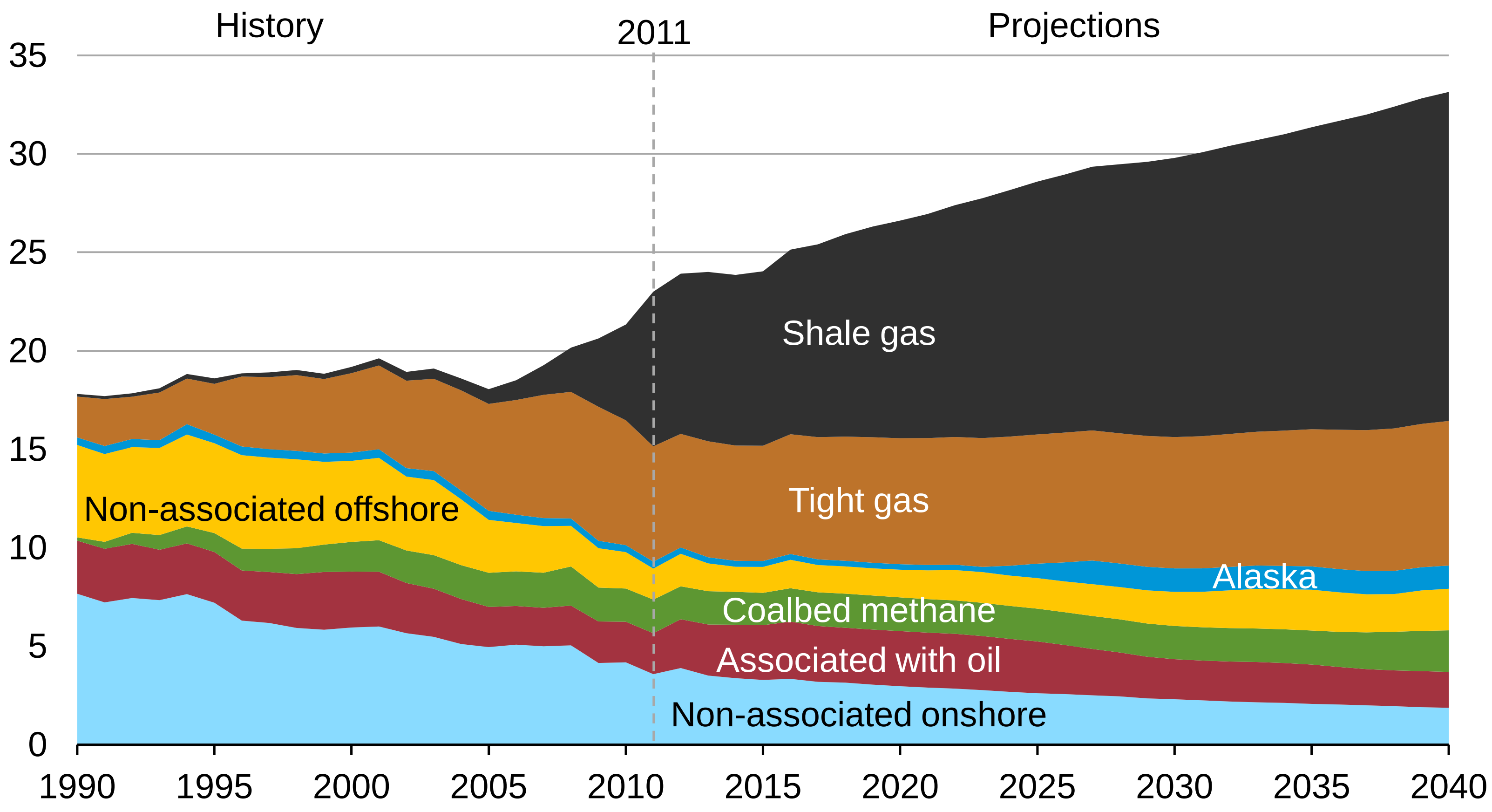
# Domestic production of shale gas has grown dramatically over the past few years




*Sources: LCI Energy Insight gross withdrawal estimates as of March 2013 and converted to dry production estimates with EIA-calculated average gross-to-dry shrinkage factors by state and/or shale play.*

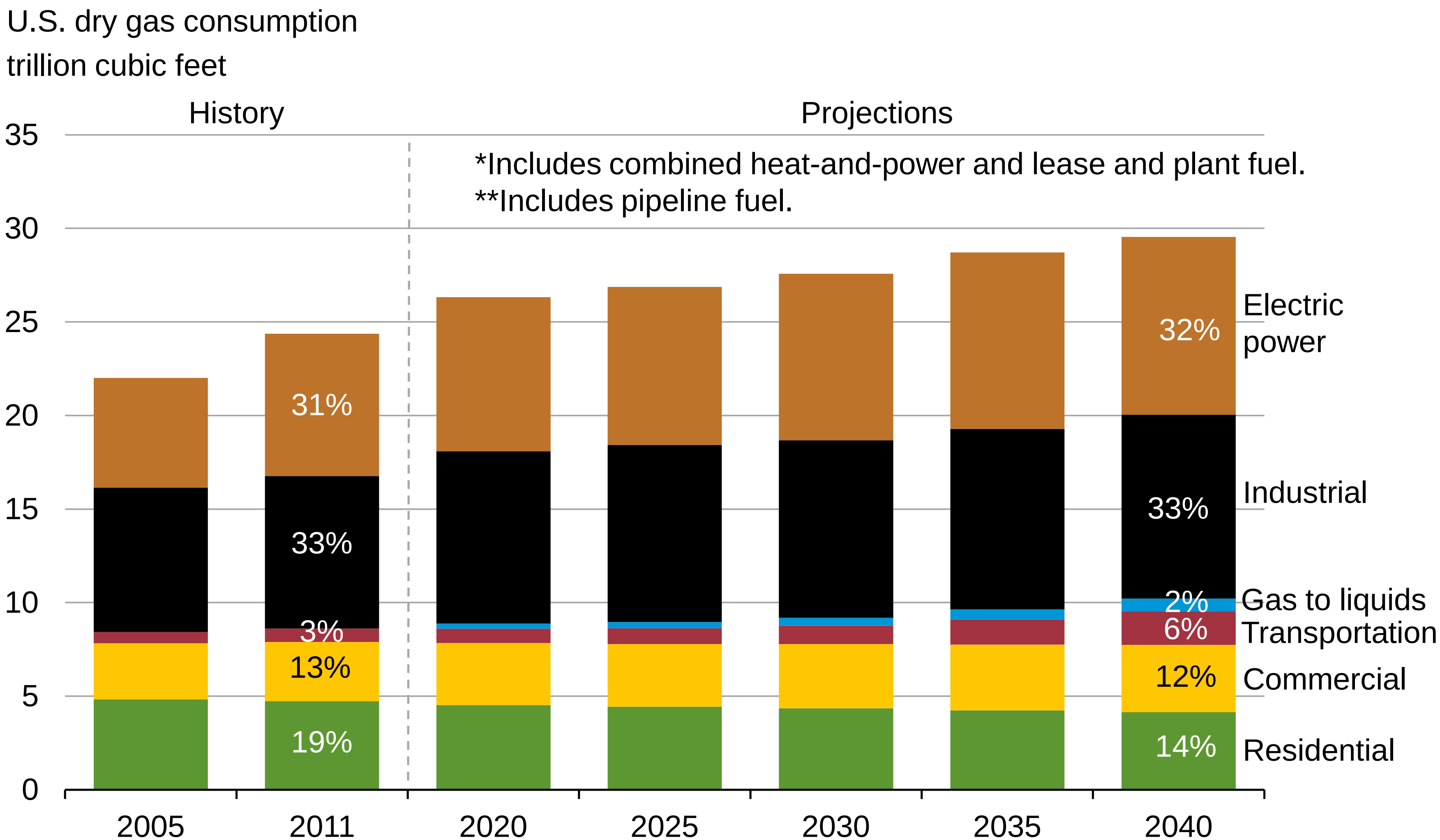
# Shale gas leads growth in total gas production through 2040 to reach half of U.S. output

U.S. dry natural gas production
trillion cubic feet



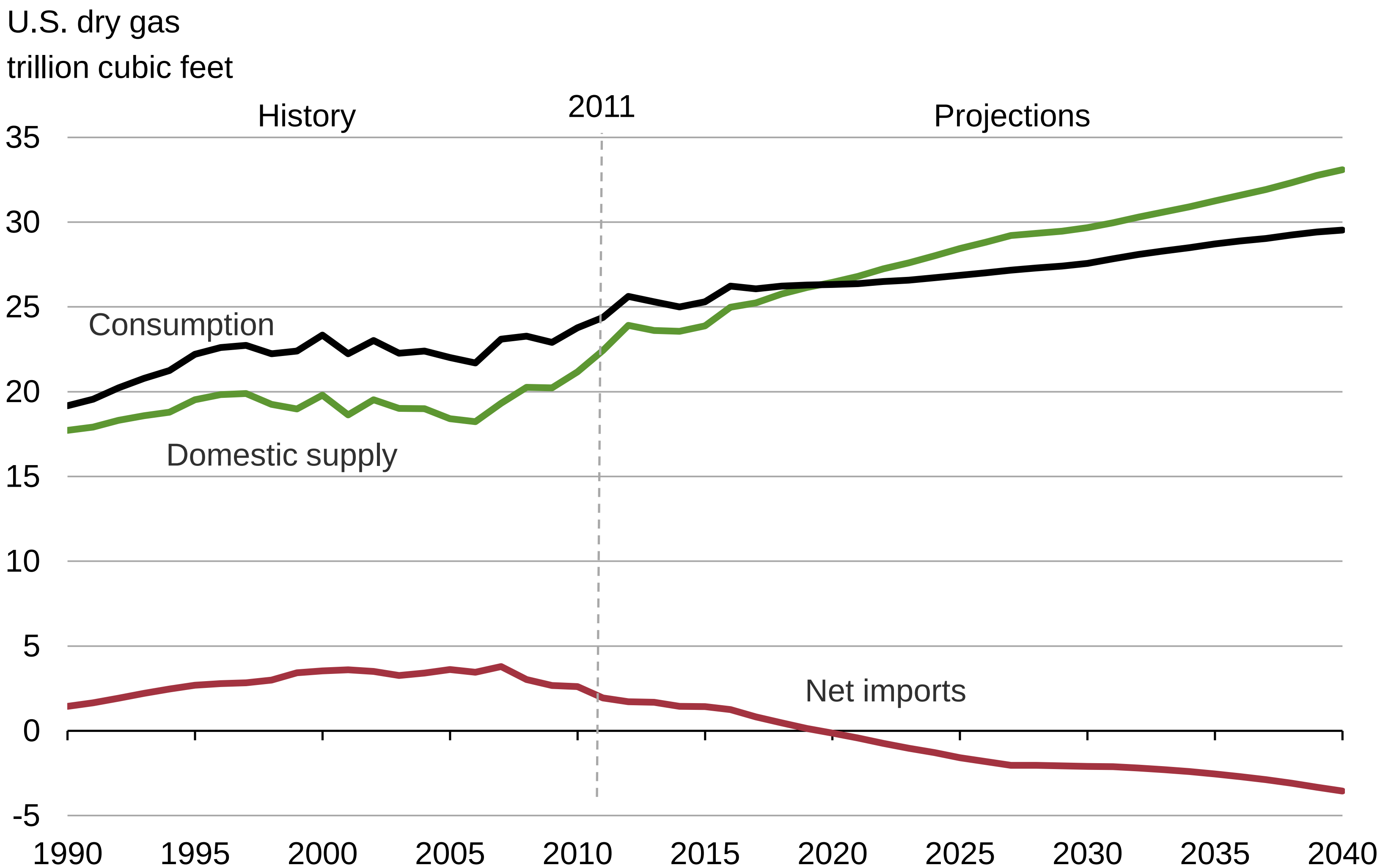

*Source: EIA, Annual Energy Outlook 2013*

# Natural gas consumption is quite dispersed with electric power, industrial, and transportation use driving future demand growth



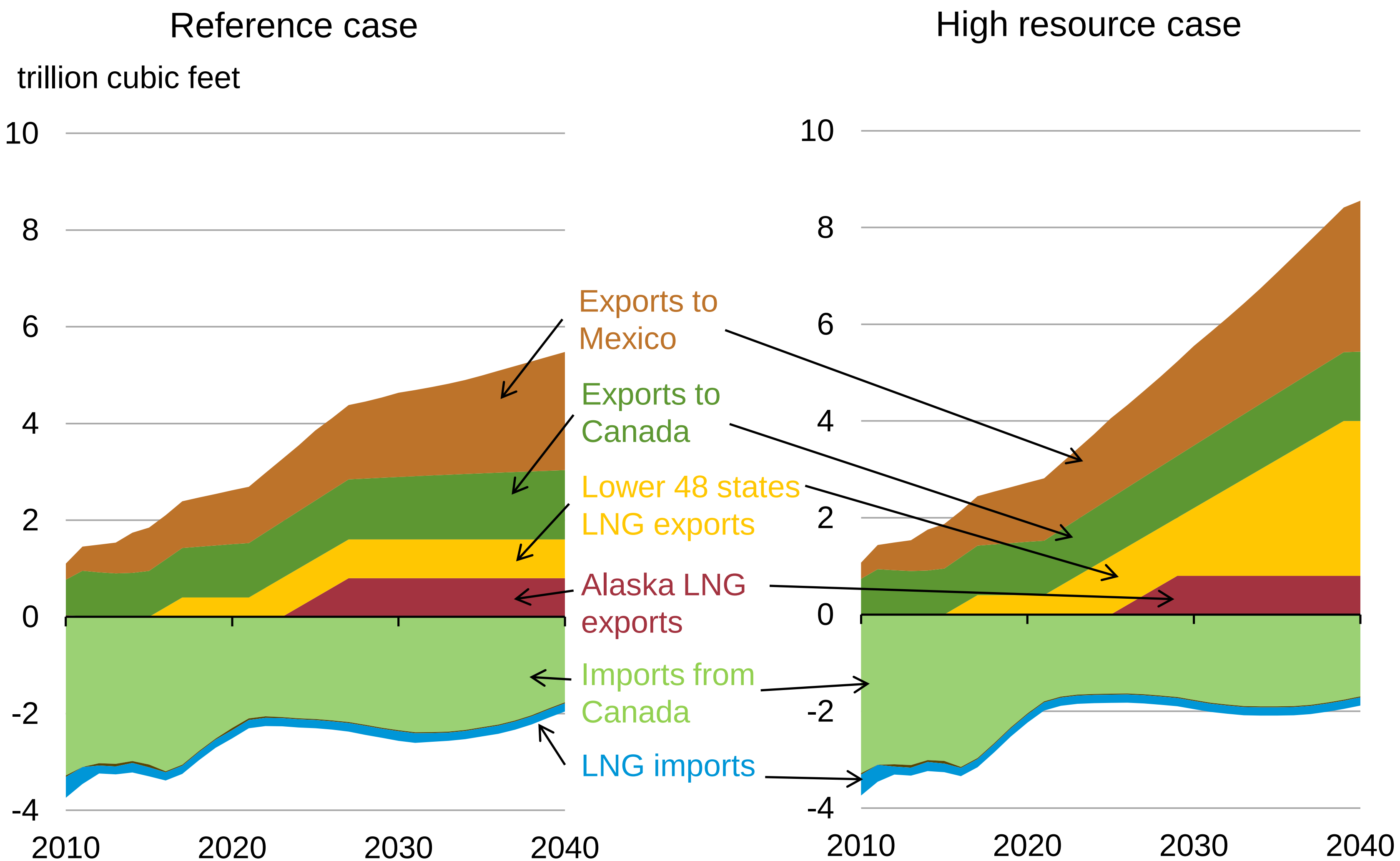

*Source: EIA, Annual Energy Outlook 2013*

# Domestic natural gas production grows faster than consumption and the U.S. becomes a net exporter of natural gas around 2020




*Source: EIA, Annual Energy Outlook 2013*

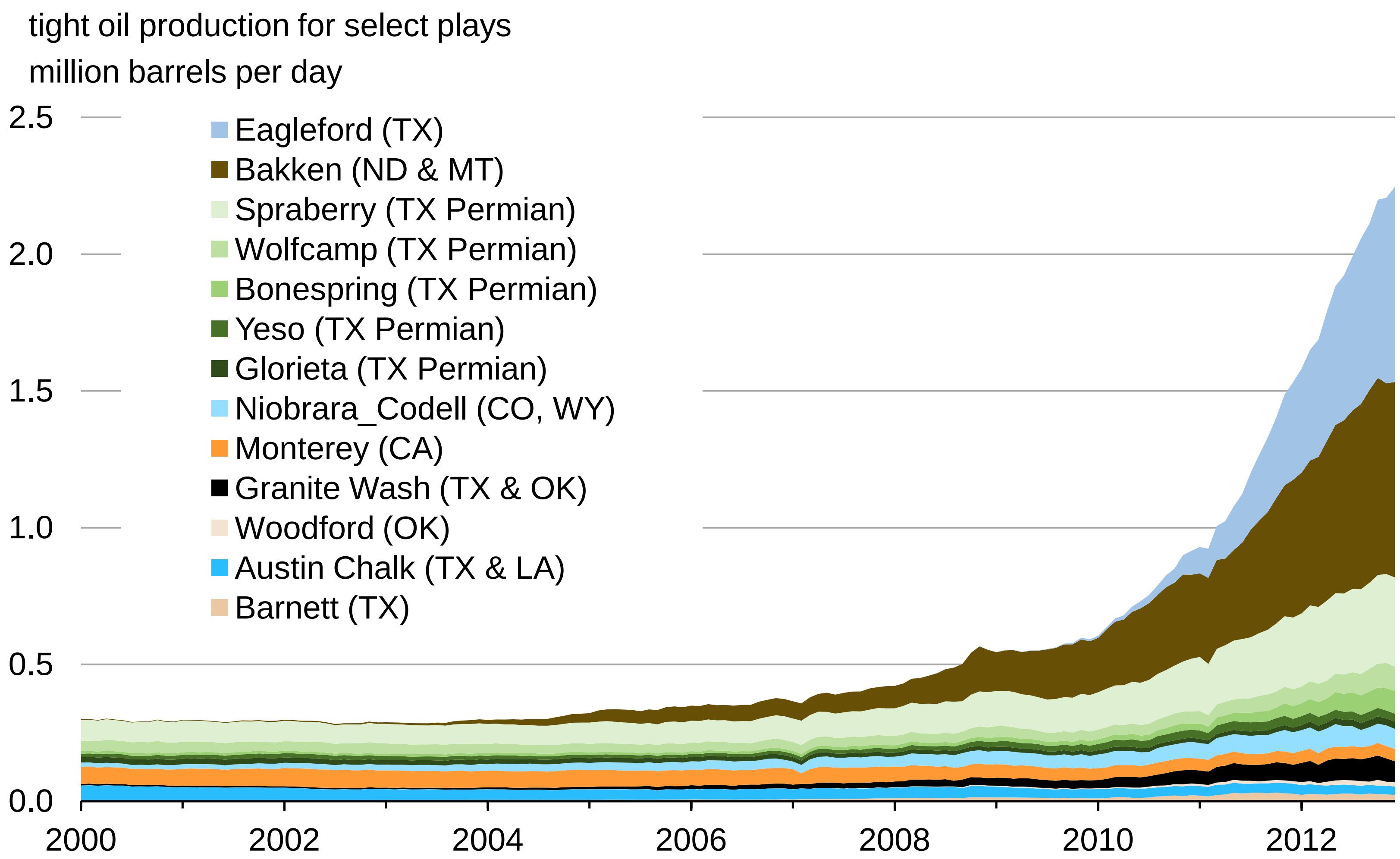
# U.S. natural gas imports and exports




*Source: EIA, Annual Energy Outlook 2013*

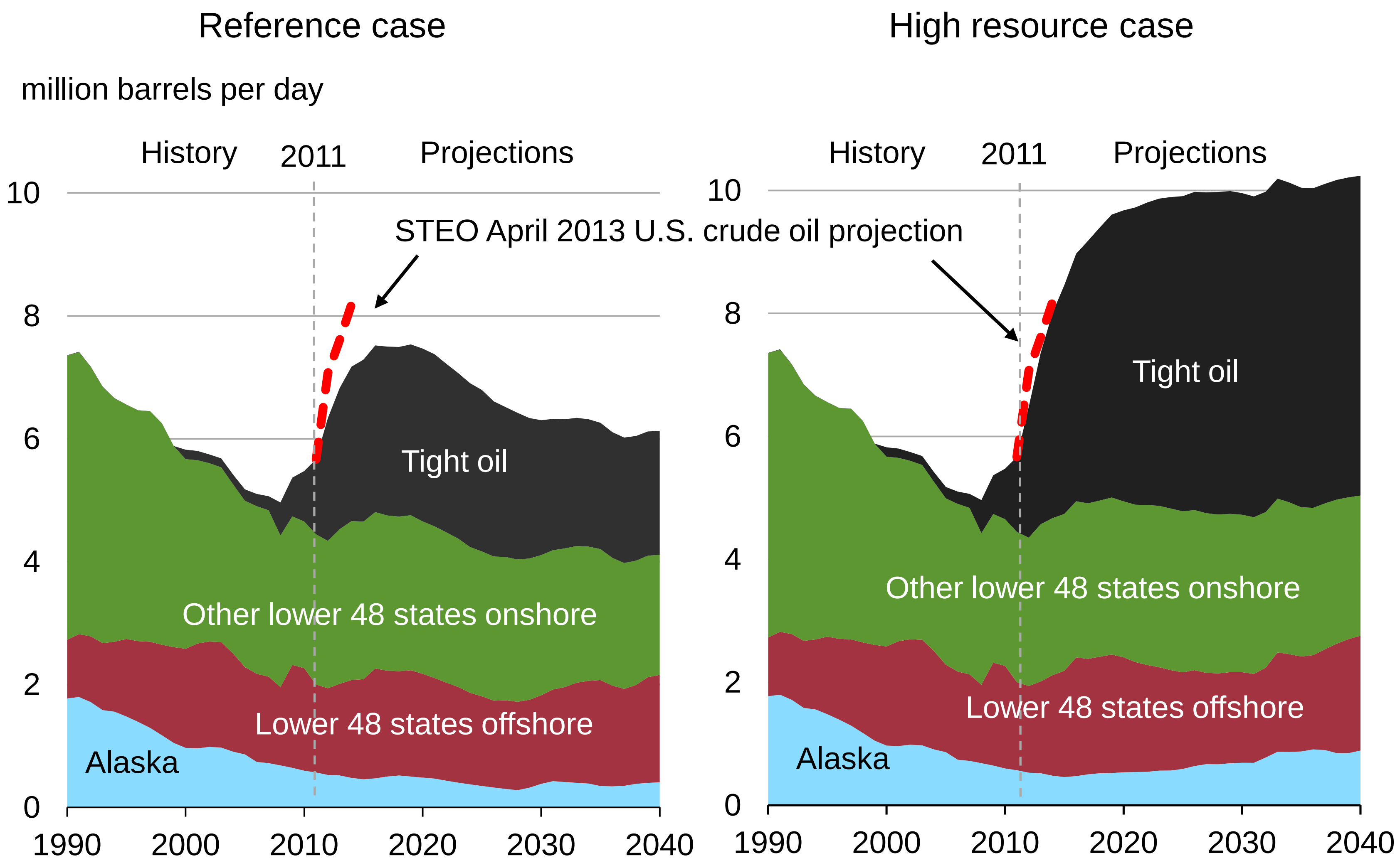
# U.S. Tight Oil

# Domestic production of tight oil has grown dramatically over the past few years




*Source: Drilling Info (formerly HPDI), Texas RRC, North Dakota department of mineral resources, and EIA, through December 2012*

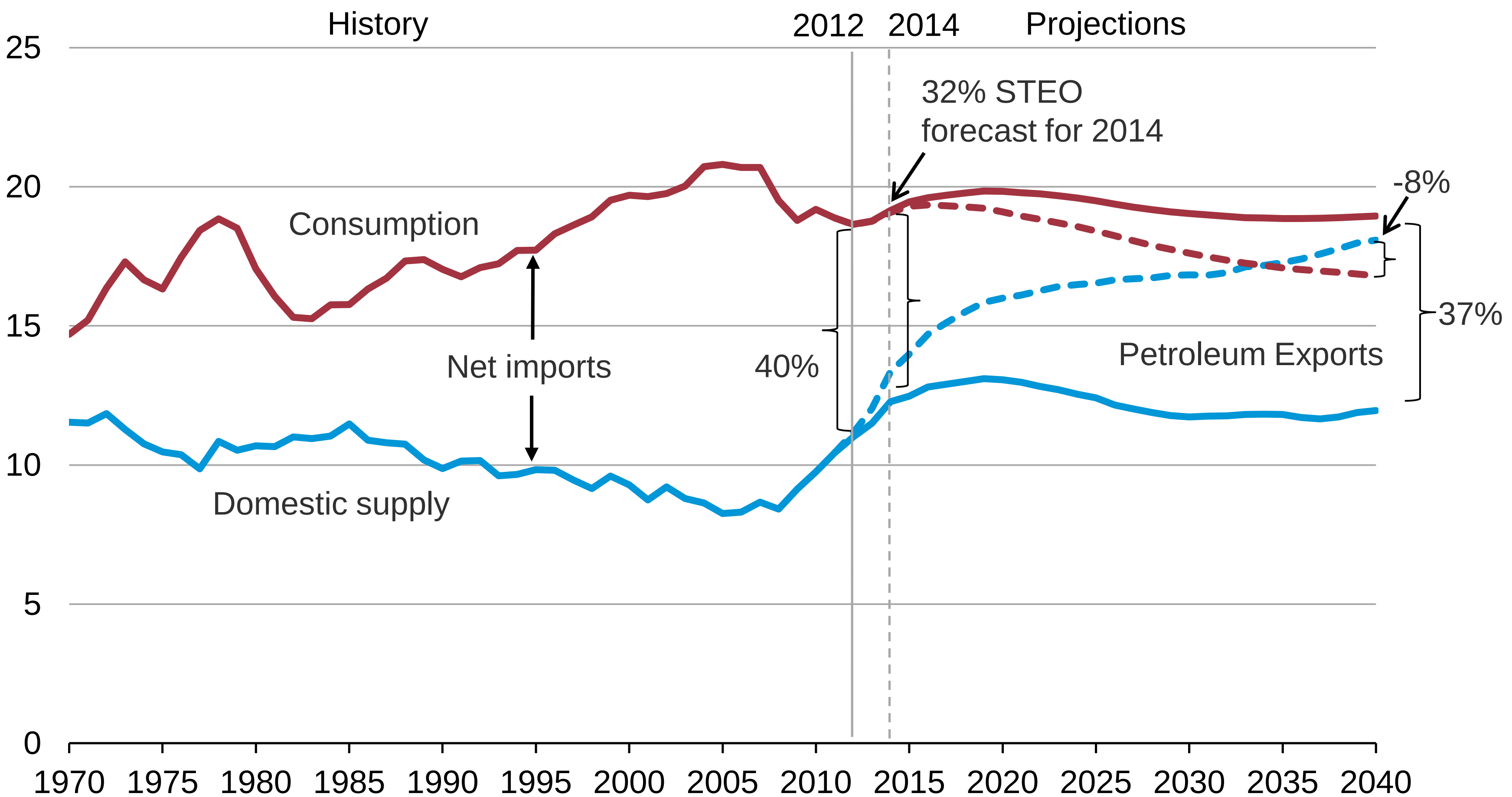
# U.S. tight oil production leads growth in domestic production




*Source: EIA, Annual Energy Outlook 2013 and Short-Term Energy Outlook, April 2013*

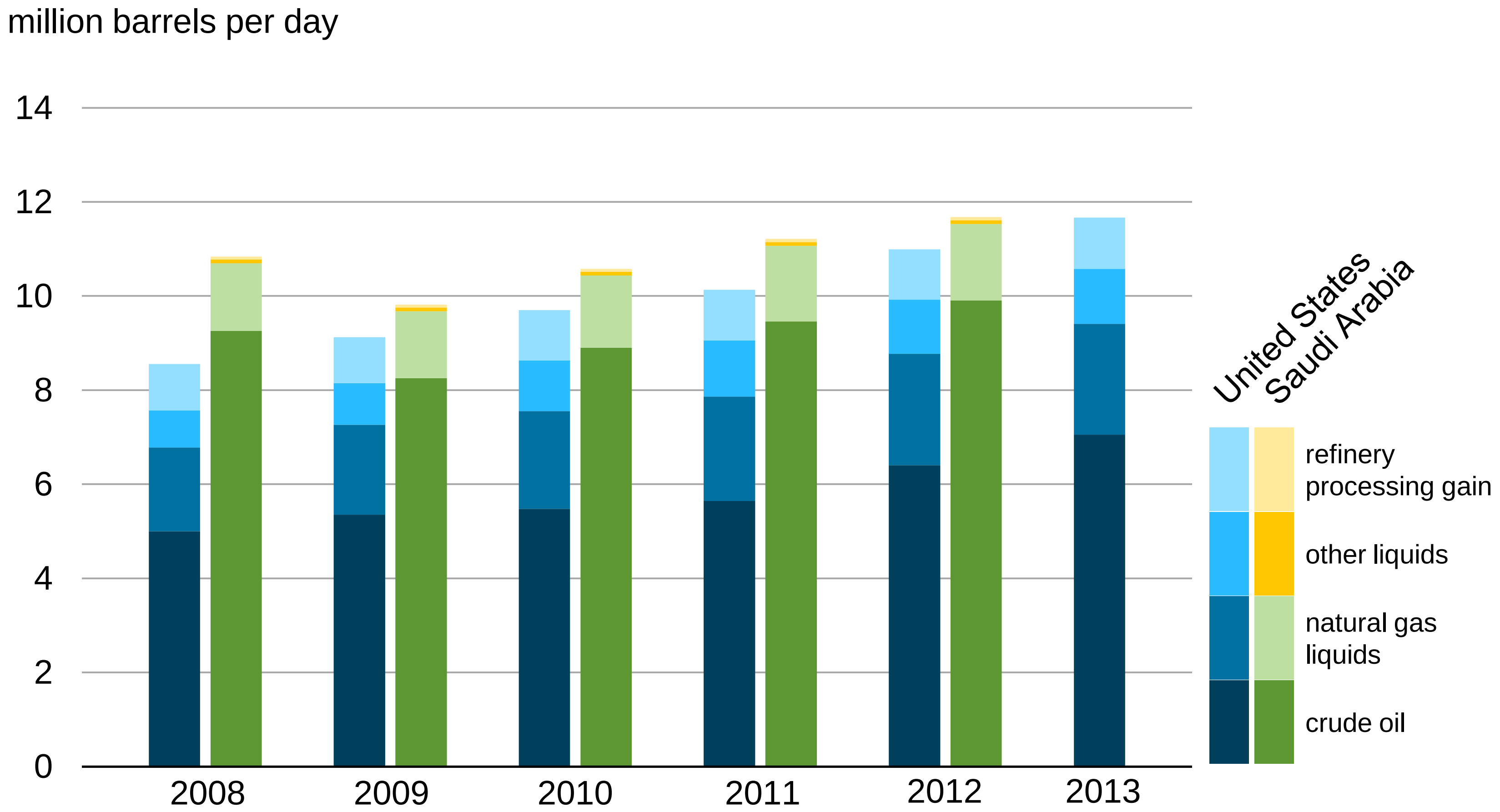
# U.S. dependence on imported liquids depends on both supply and demand

U.S. liquid fuel supply
million barrels per day




*Source: EIA, Annual Energy Outlook 2013 and Short-Term Energy Outlook, April 2013*

# U.S. and Saudi Arabian crude oil and petroleum liquids production




Note: Volumes for 2012 and 2013 are projected. Refinery gain for Saudi Arabia is estimated as one half of U.S. refinery gain on a percentage basis

*Source: EIA, This Week in Petroleum, Dec 19, 2012*

# Uncertainties that could slow global growth of shale gas and tight oil

- Resource quantities and distribution
- Surface vs. mineral rights
- Risk appetite of industry participants
- Infrastructure and technology
- Environmental constraints

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