

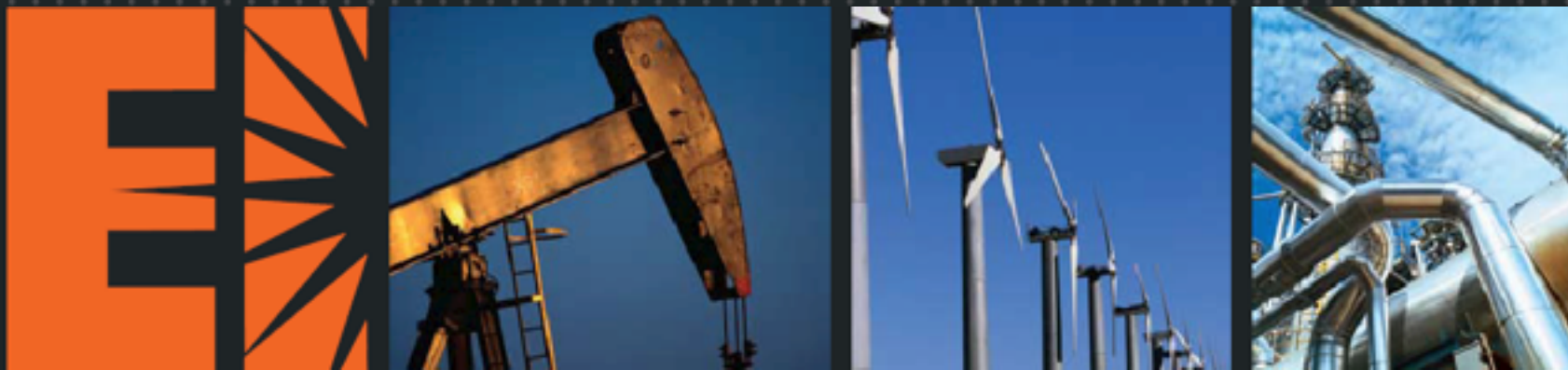
Tenth Arab Energy Conference

The Impact of US Shale Gas and Tight Oil On Global Markets

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Delivered by Alex Schindelar, Dubai Bureau Chief
Abu Dhabi, December 22, 2014

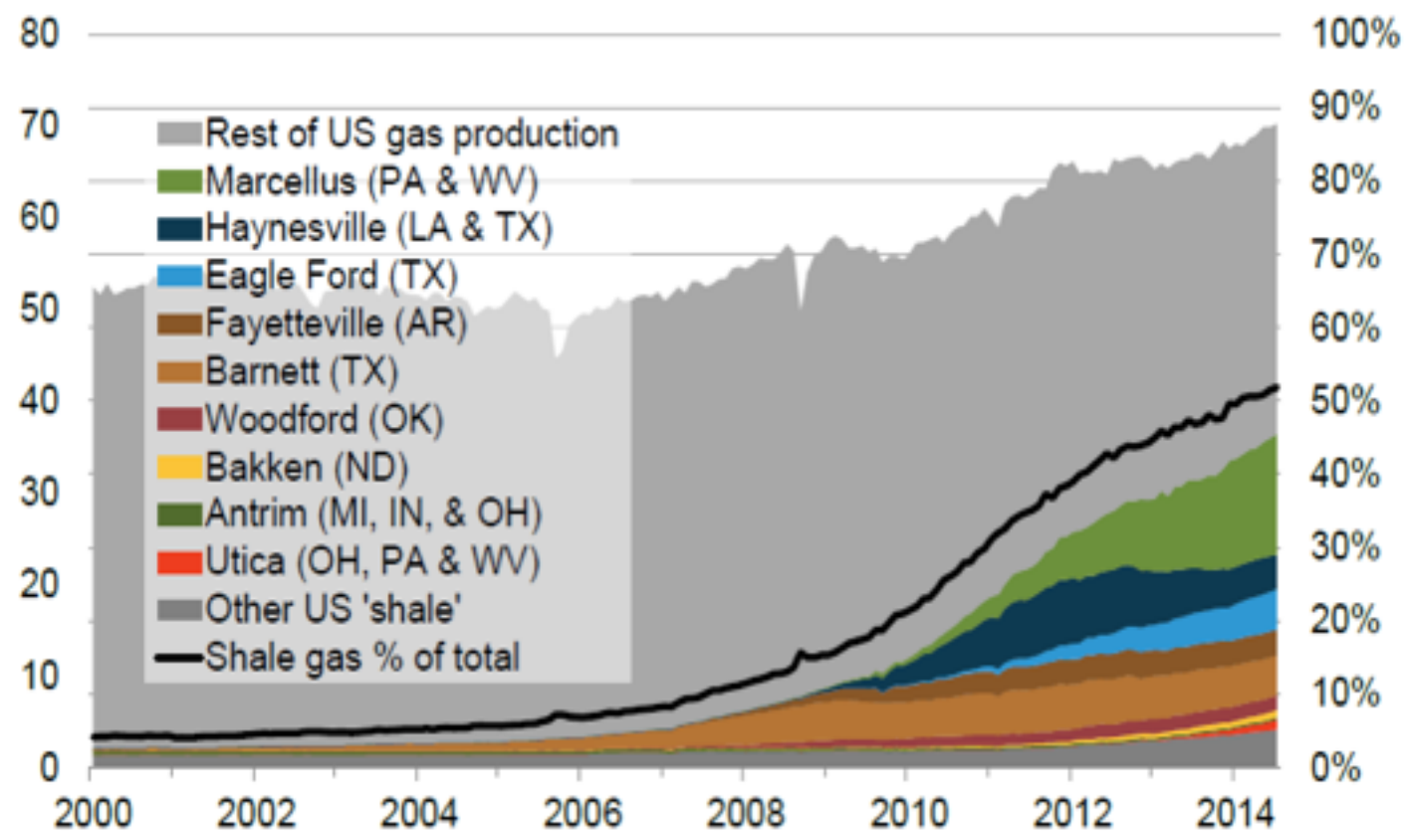


Powerful Thinking
for the global energy industry

US shale gas production is some 38 Bcf/d Around 50% of total US dry production

*Shale gas production (dry)
Billion cubic feet per day*

*Dry shale gas production as a
percent of total dry natural gas production*

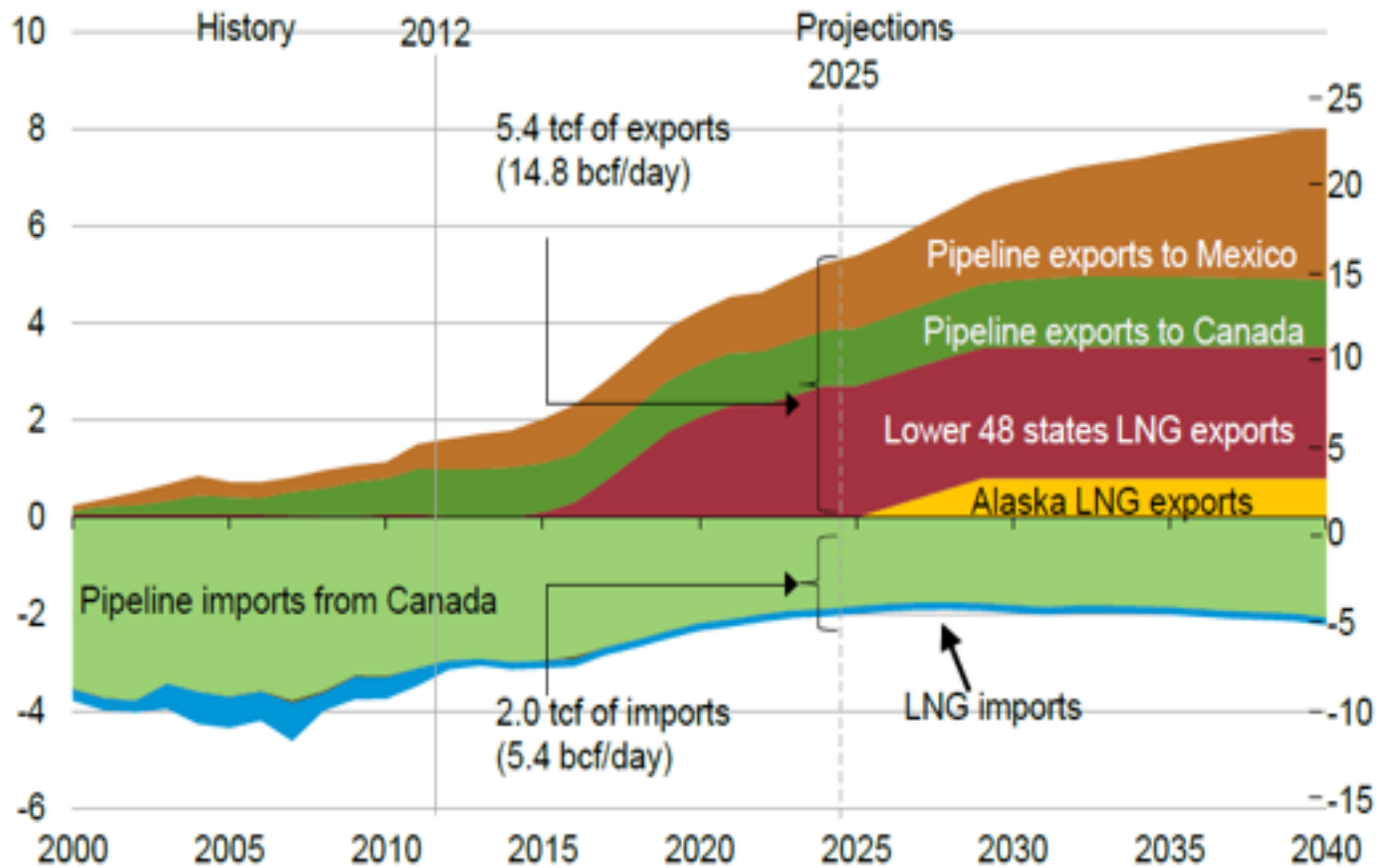


Sources: EIA Natural Gas Monthly data through November, STEO through July 2014 and drilling info

US natural gas trade projected to increase

*US natural gas imports and exports
trillion cubic feet*

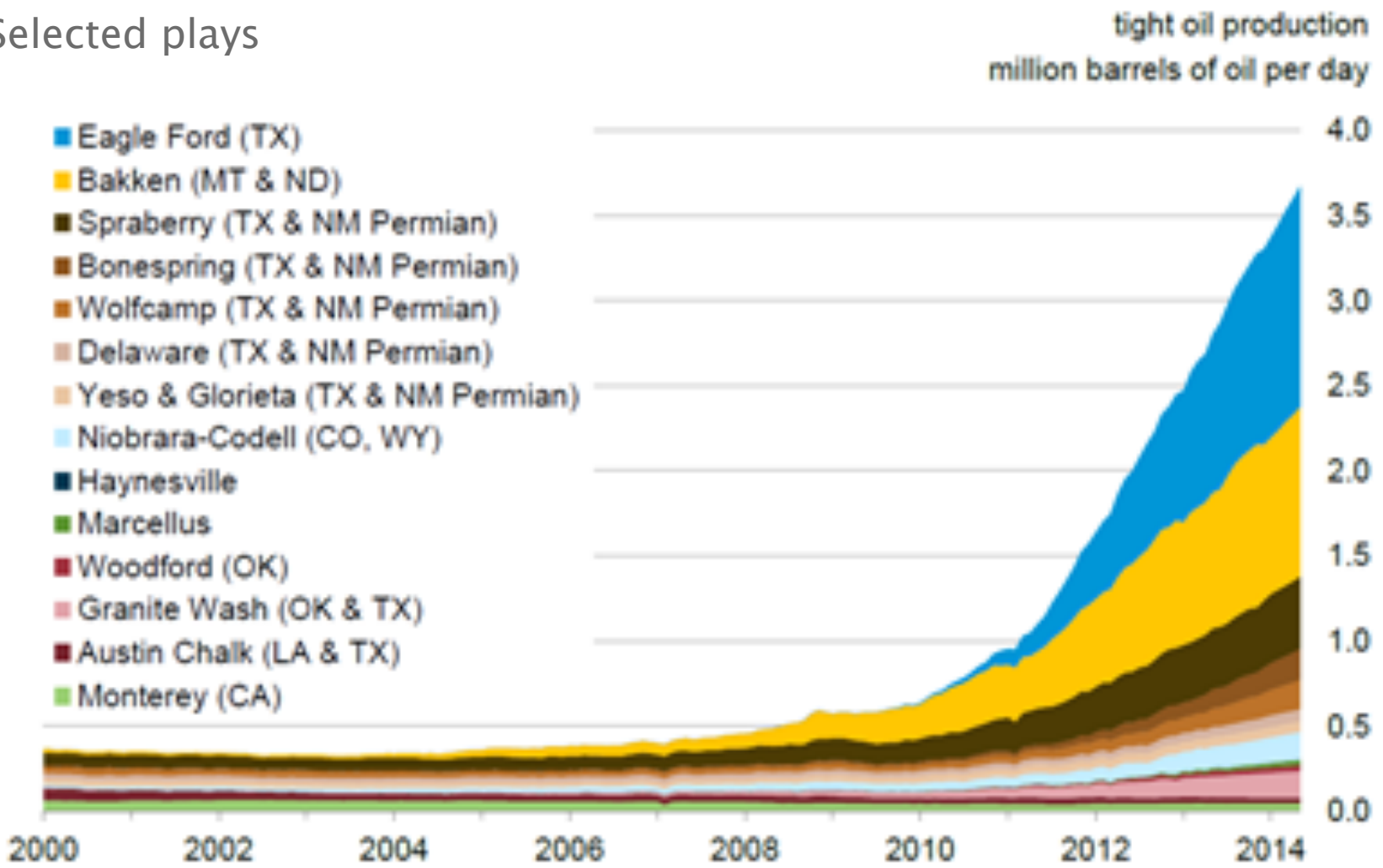
billion cubic feet per day



Source: EIA, Annual Energy Outlook 2014

US Tight Oil Production

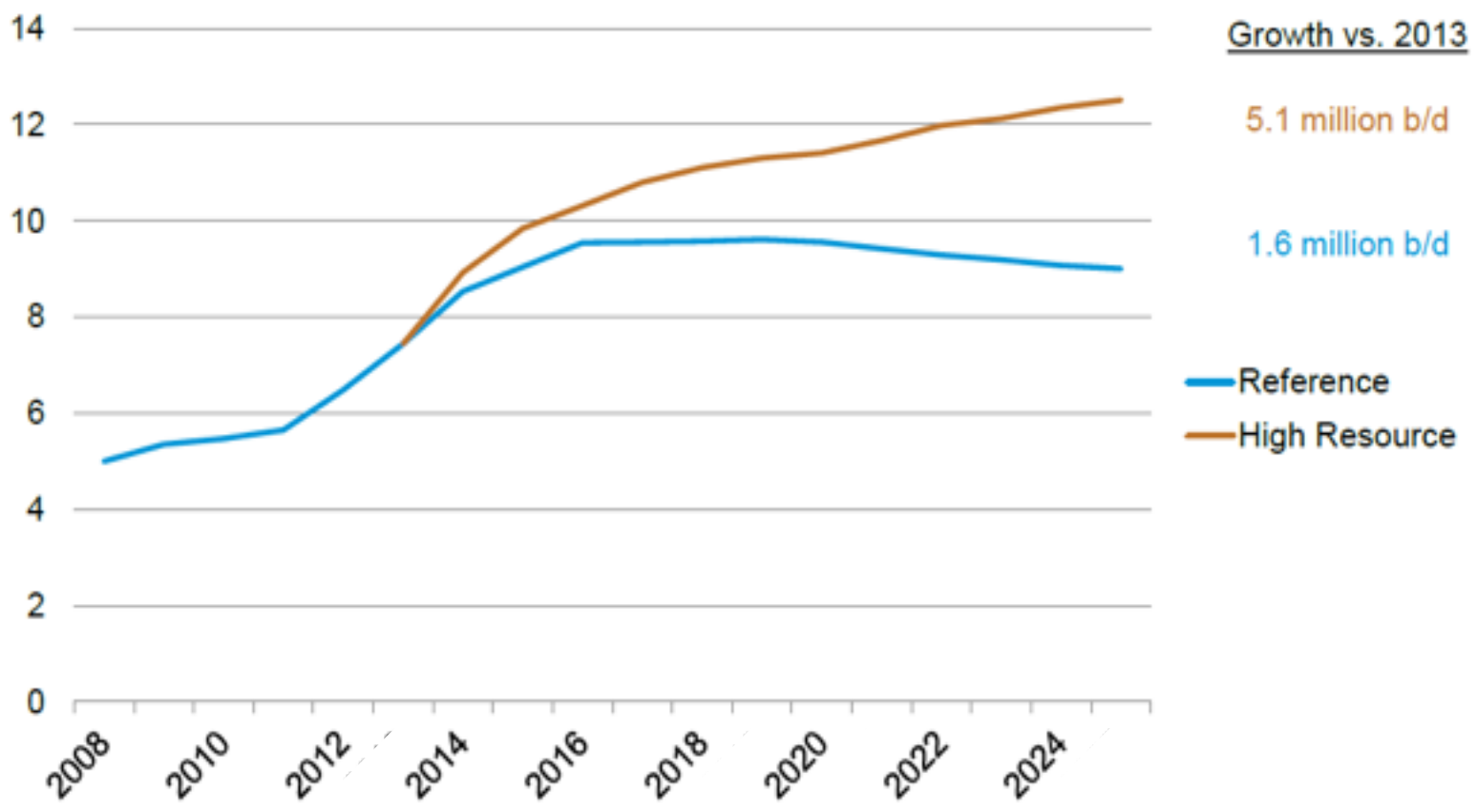
Selected plays



Sources: EIA derived from state administration 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).

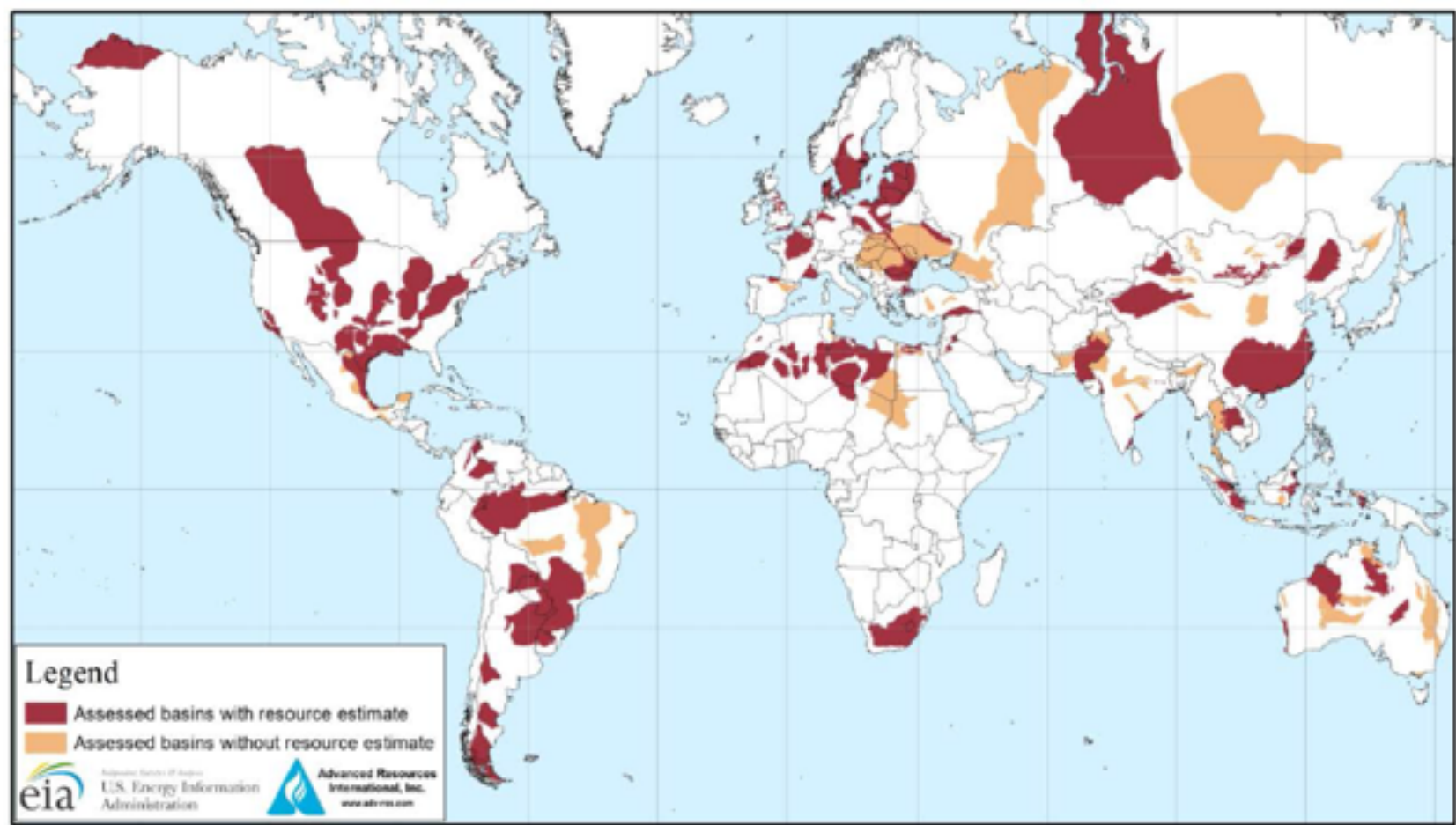
EIA projects continued US crude production growth in two different scenarios

US crude oil production million barrels oil per day



Source: US Energy Information Administration

137 shale formations within 95 basins in 42 countries assessed for shale oil and shale resources



Source: United States basins from US Energy Information Administration and United States Geological Survey, other basins from ARI based on data from various studies

Key drivers of the US unconventional boom

Property rights, competition, capacity and market

Land rights regime encourages development

Highly competitive E&P landscape led by independents

Attractive fiscal and tax regime, positive regulatory climate

Open access to data provides full geologic picture

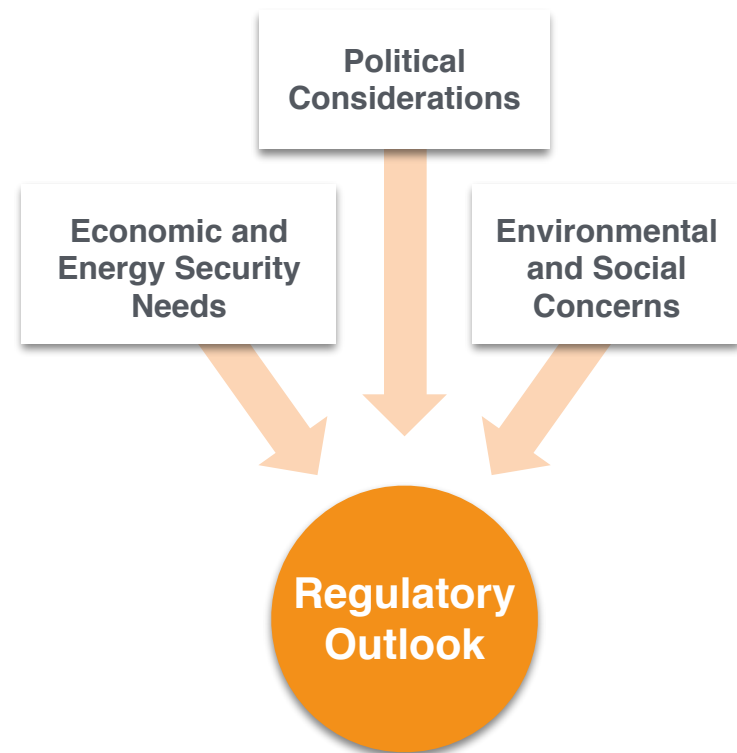
Large and burgeoning service sector capacity

Extensive and liberalized pipeline access

Deep and easily-accessed capital markets for funding

Global Unconventionals: Regulation

Three broad sets of factors shape the investment climate



Economic and Energy Security Needs

- Economic benefits: government revenues, balance of payments, employment, development of related industries.
- Energy security and stability: Key for countries highly dependent on external energy sources.

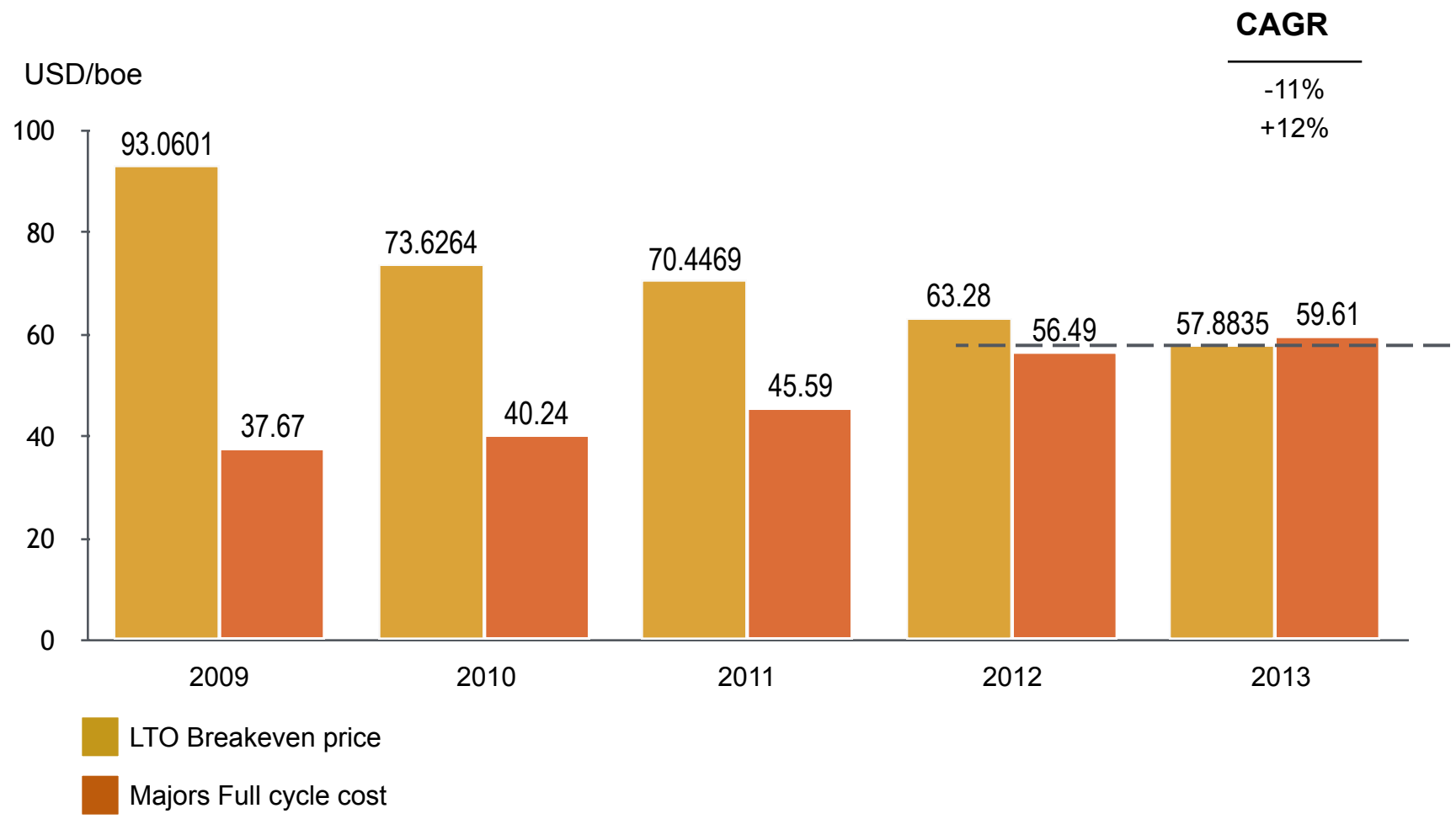
Political Considerations

- Supporting an industry poised to significantly affect the status quo can be either an asset or a liability for elected officials and state institutions.
- Development of unconventional gas can crowd out the use of other energy sources, such as coal, oil, nuclear and renewables, threatening the interests of their respective lobbies.

Environmental and Social Concerns

- Local and global concerns over the footprint of unconventionals, especially land use, traffic, living costs, air pollution, and importantly, water use and disposal.
- These concerns have developed into a global anti-fracking movement, prompting responses from the industry, regulators, interest groups and policymakers.

LTO breakeven price¹ and majors full cycle cost²



1 F&D + Lifting costs. Pure unconventional NAM players (Source: Rystad, IHS)
 2 S&GA + F&D + Total Production + WACC. Majors (Source: Evaluate Energy; Goldman Sachs)

Implications for oil markets

Uncharted Waters

- No past experience with how unconventional production responds
- The oil demand response in 2015 will be slow and will depend on global economic activity
- Demand impact is expected to start to be felt in second half of 2015
- The supply impacts will come earlier but hard to say where or how
- Some tight oil production will be hit, first signs in North Dakota's Bakken
- Other high cost production also at risk of near term shut in – enhanced oil recovery, marginal “stripper” wells
- Oil market likely to be significantly over supplied at least in first half 2015
- With large inventory surpluses in next six months, this means a year or more of oil prices below \$70 a barrel is quite likely under current trends
- Clearly both OPEC and non-OPEC producers face a painful period of adjustment and it is hard to say how long it may last

Thank you for your attention

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