



**Wood Mackenzie**  
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## **IEF- KAPSARC Roundtable**

Session I

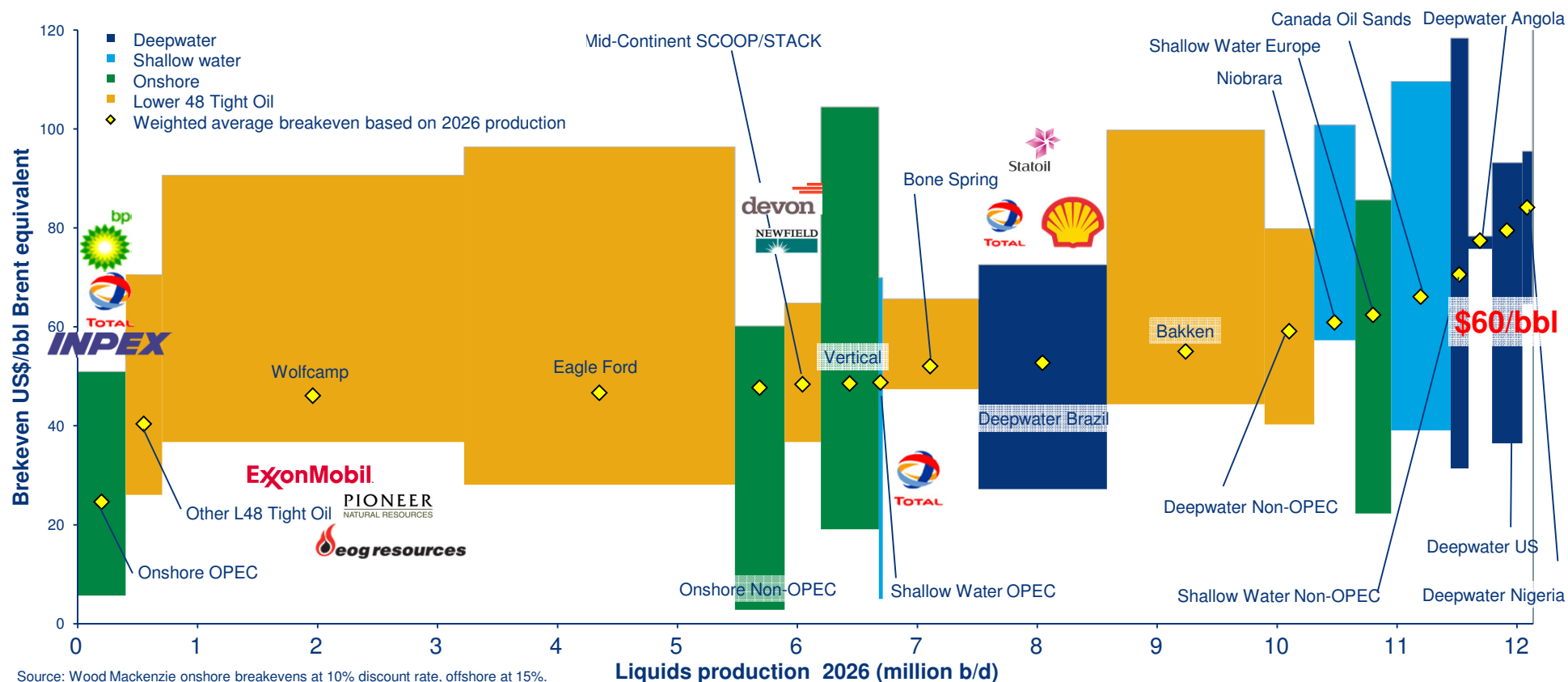
16 February 2017

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# Competitors repositioning at the low end of the oil cost curve

US tight oil, Brazil and low cost Middle East opportunities in demand

## Pre-FID and US L48 future drilling cumulative production by breakeven in 2025 – by resource theme

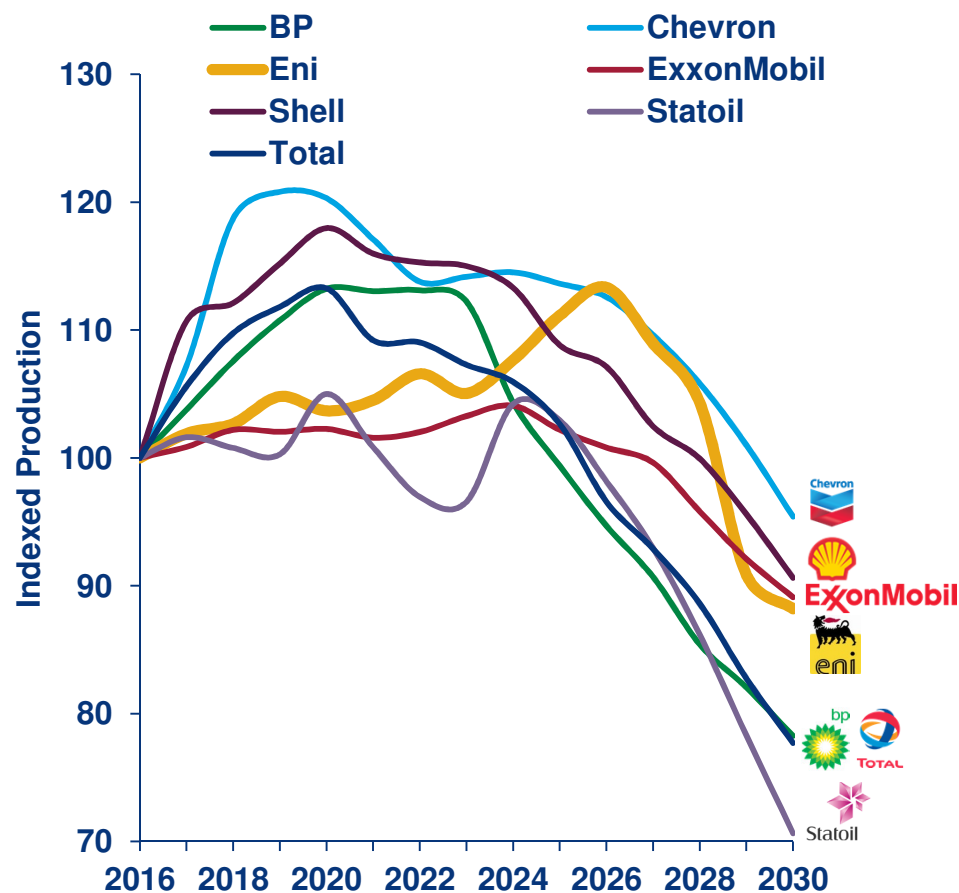


Source: Wood Mackenzie onshore breakevens at 10% discount rate, offshore at 15%

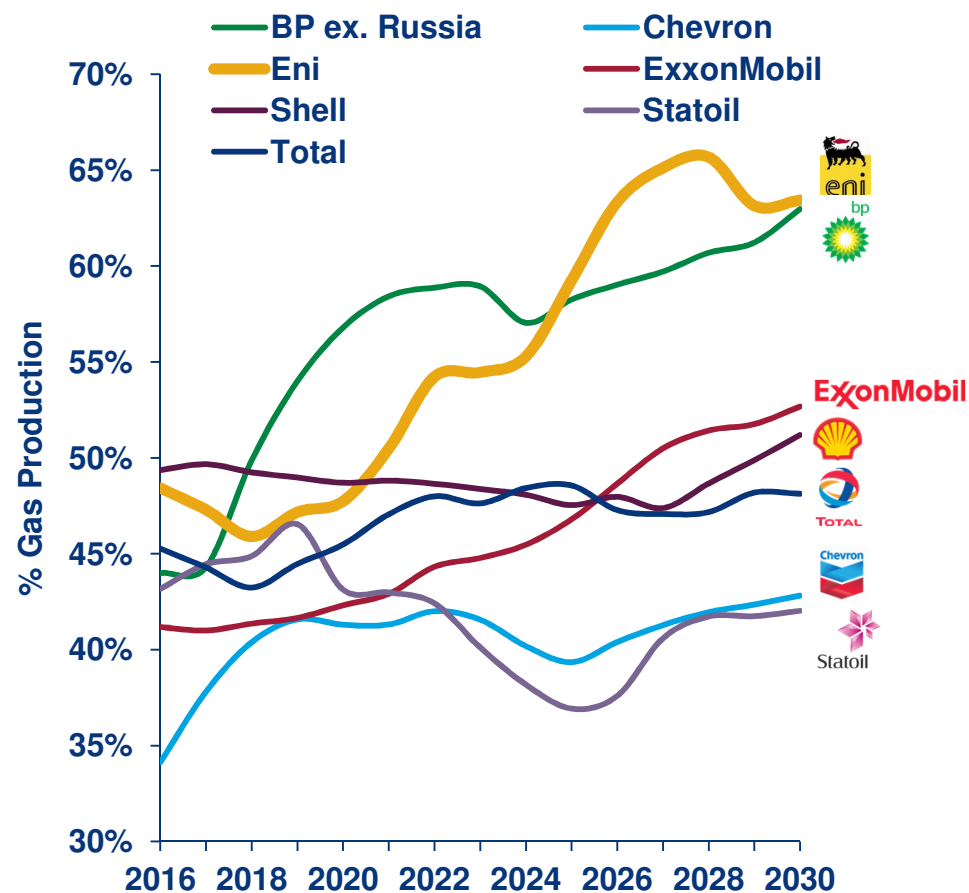
# Oil majors' growth to fall late next decade; Gas is a big differentiator

Some competitors starting to address the long-term sustainability challenge

Majors' WM base case production indexed to 2016



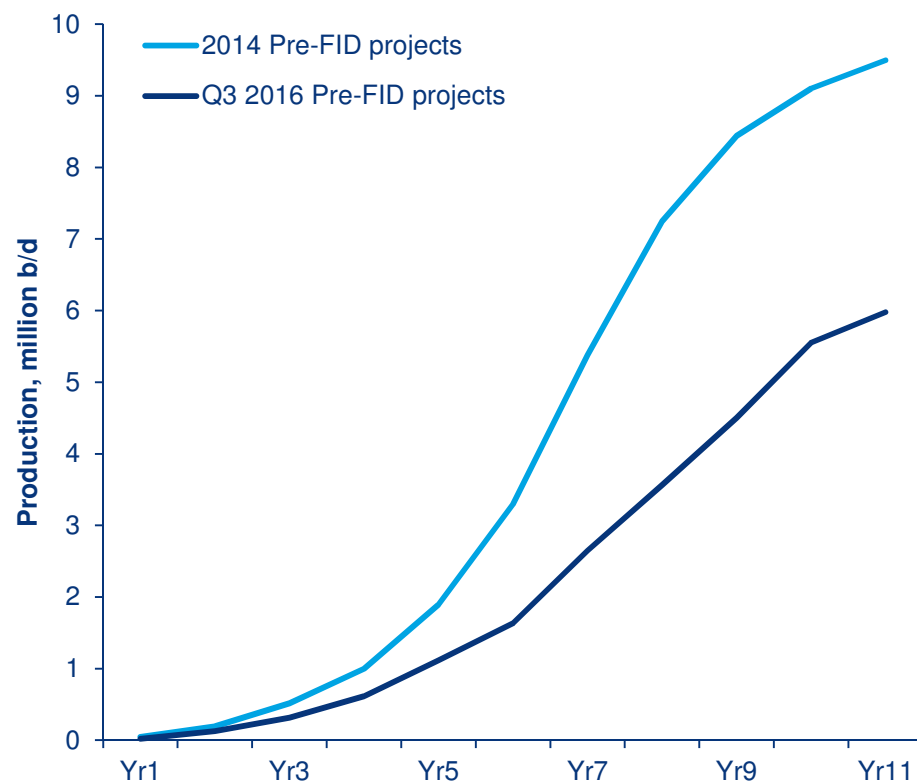
Evolution of % gas in the production mix



Source: Wood Mackenzie CBT Q4 2016

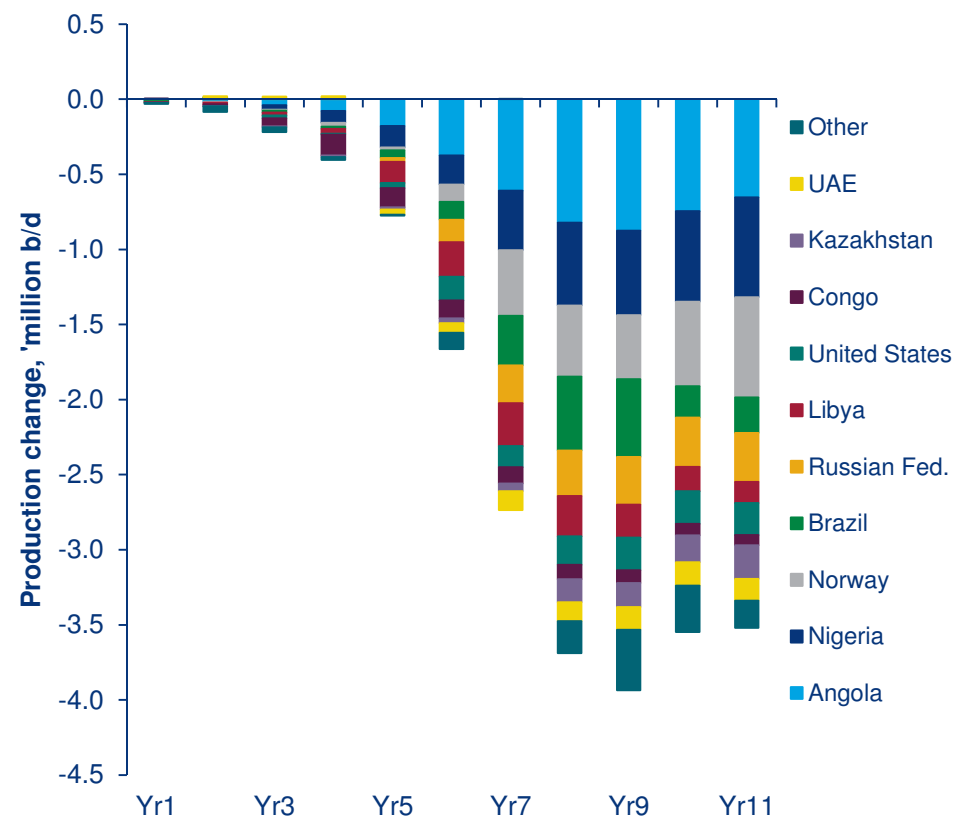
# In low oil price environment since late 2014, the 'hopper' of conventional pre-FID developments has diminished

## Production from pre-FID conventional projects



Source: Wood Mackenzie

## Change in production outlook since 2014



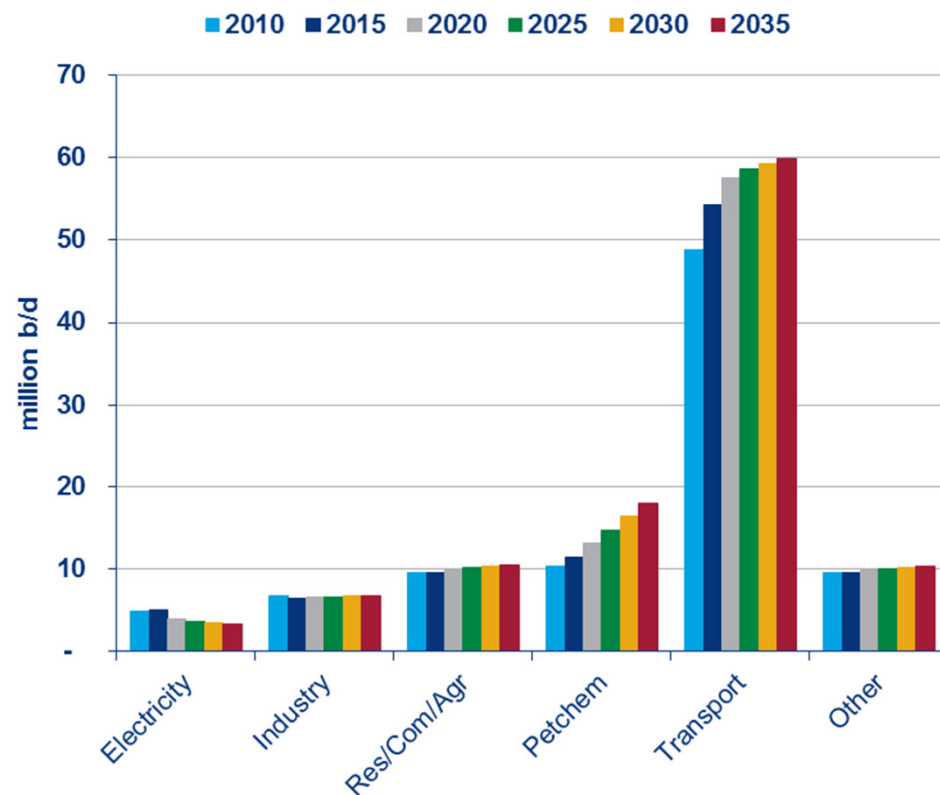
Source: Wood Mackenzie

Production volumes from 2014 and 2016 datasets rebased to same start year for comparison purposes

# Global oil demand: growth focused on transport and petchem

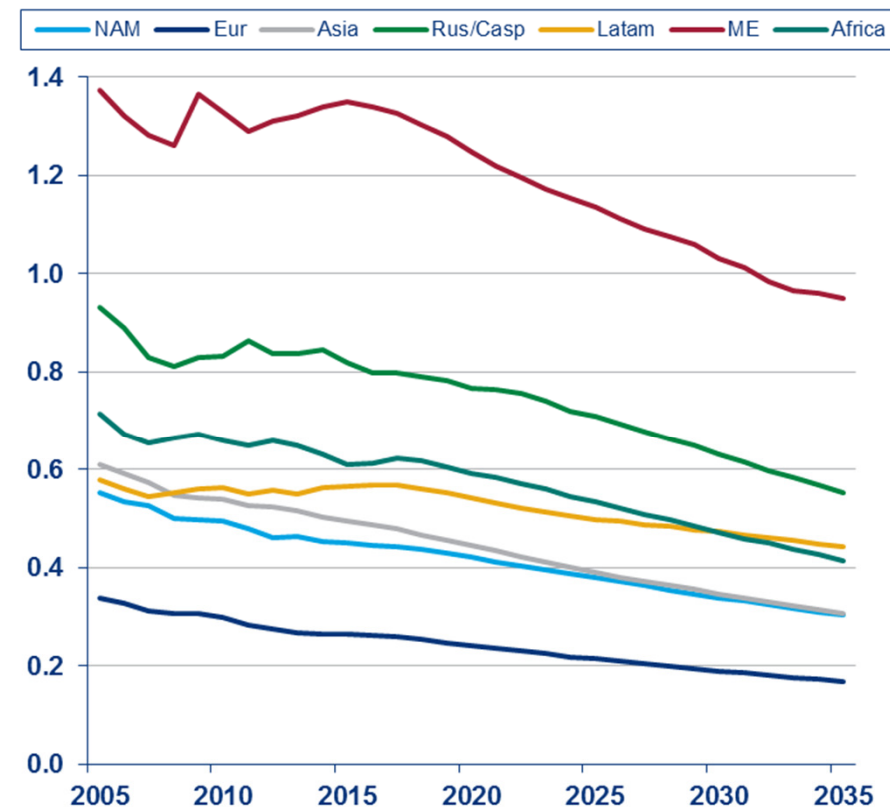
Oil intensity (amount of demand per unit of GDP) declines in all regions

## Global oil demand by sector



Source: IEA Energy Stats, EIA, JODI, Wood Mackenzie

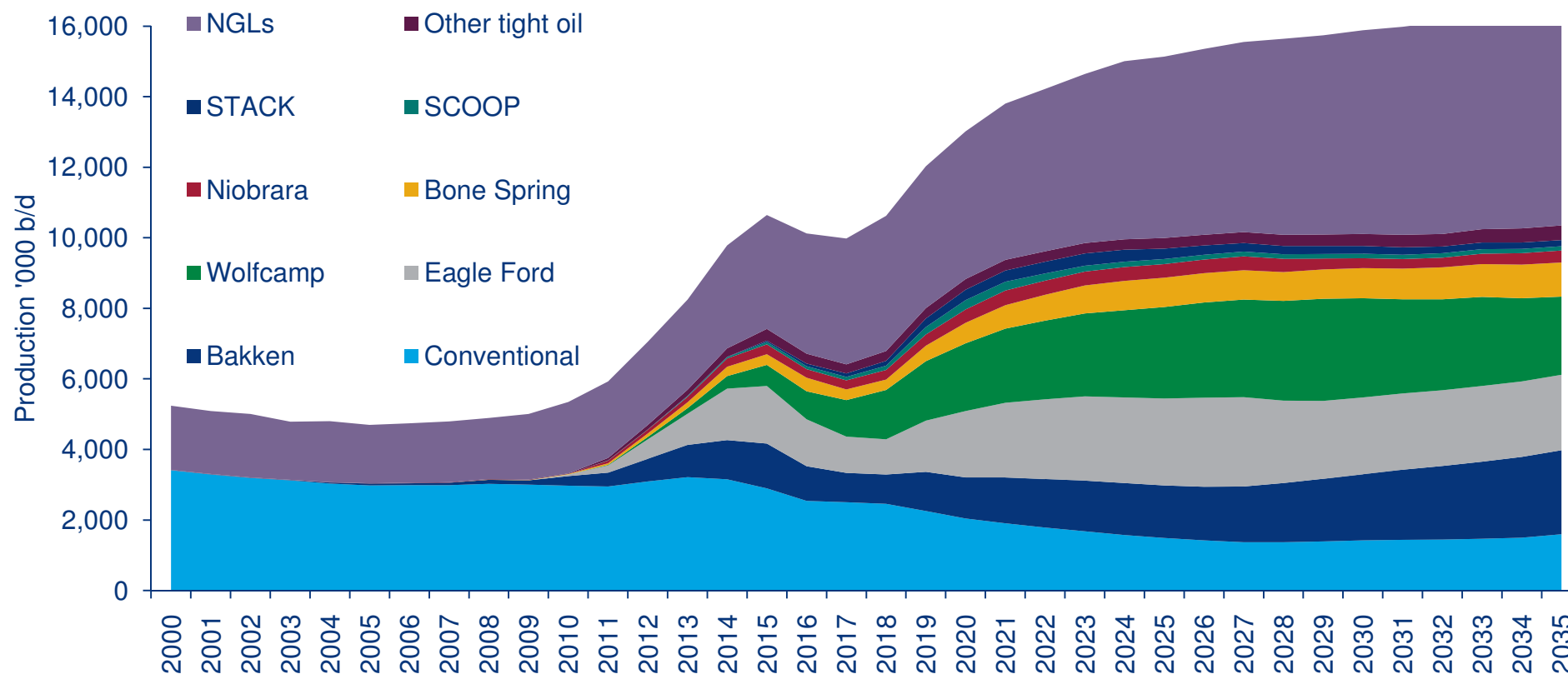
## Oil intensity (bbl per \$1000 GDP in 2010 prices)



Source: Wood Mackenzie

# US Lower 48: declines have now bottomed out and production is expected to respond strongly to recent higher oil prices

But how fast will operators move to ramp up activity and can production growth be sustained in the long term?



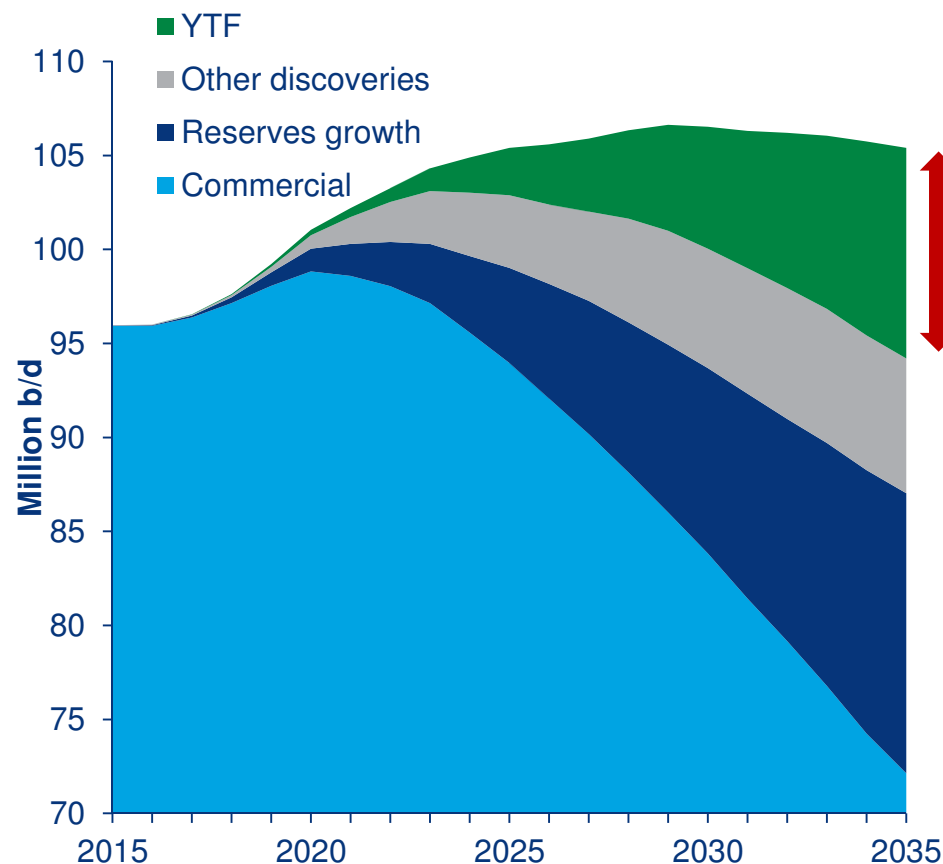
Source: Wood Mackenzie



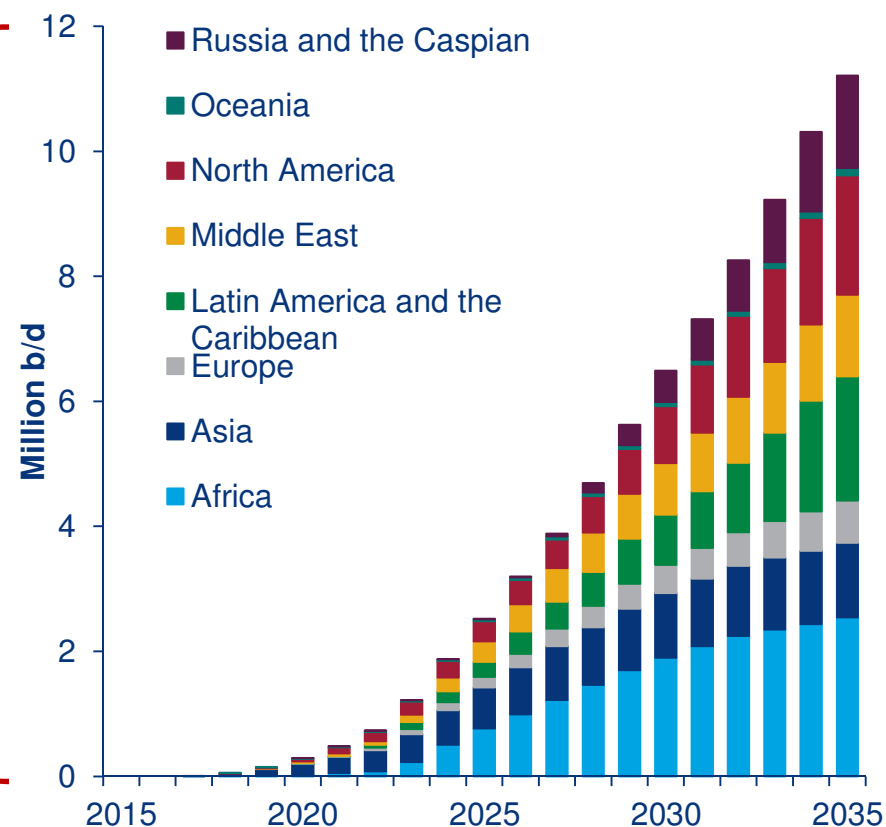
# Over 10% of global liquid supply by 2035 will be sourced from conventional volumes that are yet to be discovered

Africa, Latin America and North America account for around 60% of those volumes

## Global liquids capacity outlook



## Yet-to-find\* capacity outlook by region



\*Yet-to-find (YTF) production forecasts in the oil supply view are based on past success rates and include volumes from Frontier basins. Excludes Unconventionals (Biofuels, gas-to-liquids (GTL) & coal-to-liquid (CTL))

Source: Wood Mackenzie's Oil Supply Tool. Note, Macro Oils and Oil Supply Tool use the same analysis

## **COP21 world and low oil prices both pushing majors to focus on low cost production raising risk of supply shortfall by 2035**

- ◆ Post 2020, oil demand growth slows although continues to 2035 despite inroads by EVs and declines in oil intensity
- ◆ US tight oil drives non-OPEC growth; Permian Basin is the focus and current prices are high enough for operators
- ◆ Project-FIDs for conventionals declined in low oil price world of 2014-2016
- ◆ Incentive is against exploration but our 2035 supply outlook includes 10% from conventional volumes yet to be discovered
- ◆ If US tight oil does not deliver, there is risk for price spike due to low OPEC spare capacity and limited other non-OPEC investment.



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