



**Wood Mackenzie**

A Verisk Analytics Business

## Global oil market

Stewart Williams

April 2017



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**Corporate response to a lower-for-longer world**



The economics of new supply

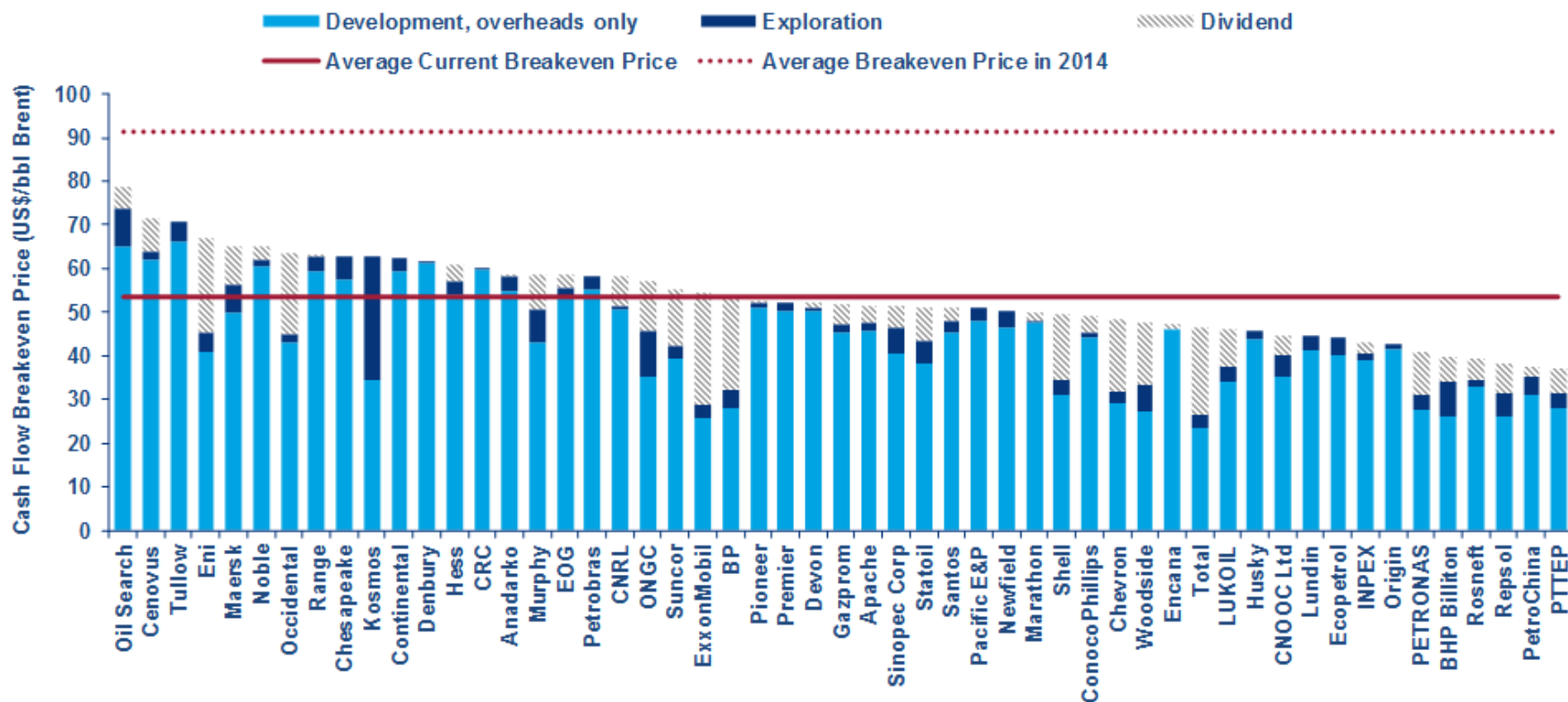


Impact of low prices on the offshore drilling sector

# Cash flow breakevens down by 40% since the crisis began

Price needed to achieve cash flow neutrality has fallen from US\$91/bbl to US\$54/bbl. Signs of the investment cycle turning; but dividends and spend still vulnerable to retreating prices

## Breakdown of the Brent price needed for cash flow neutrality between 2017 and 2019 (Q4 2016 data)

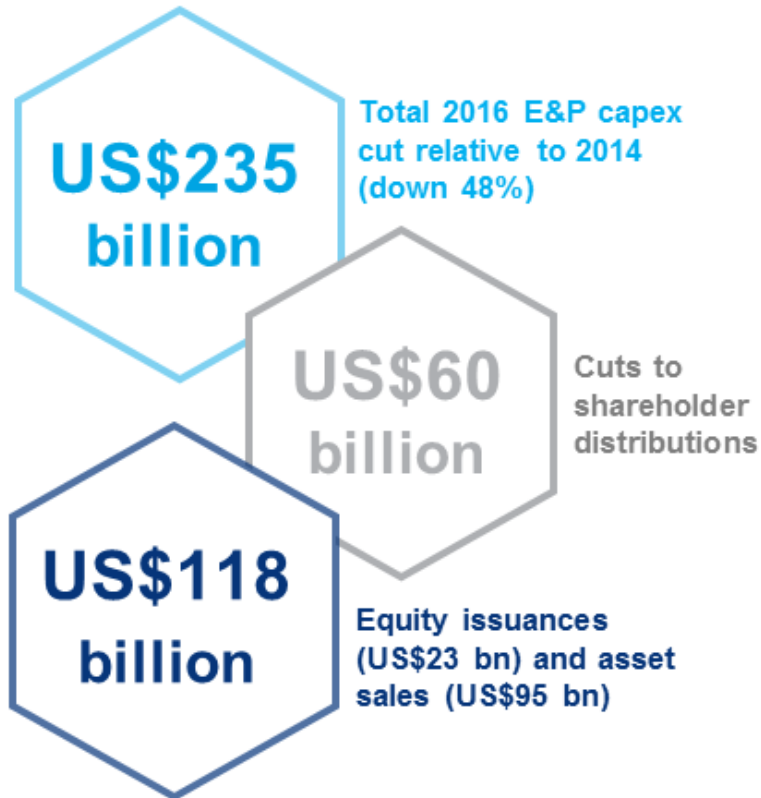


Source: Wood Mackenzie Corporate Benchmarking Tool Q4 2016. Base-case estimate of Brent price required to remain cash flow neutral (accumulate no additional debt) between 2017 and 2019. Includes full corporate costs and distributions and downstream cash flow for BP, Cenovus Energy, Chevron, Eni, ExxonMobil, Husky Energy, OMV, Petrobras, Repsol, Shell, Suncor Energy and Total. For all other companies we apportion announced dividend and buyback programmes to the upstream business on a pro-rata basis.

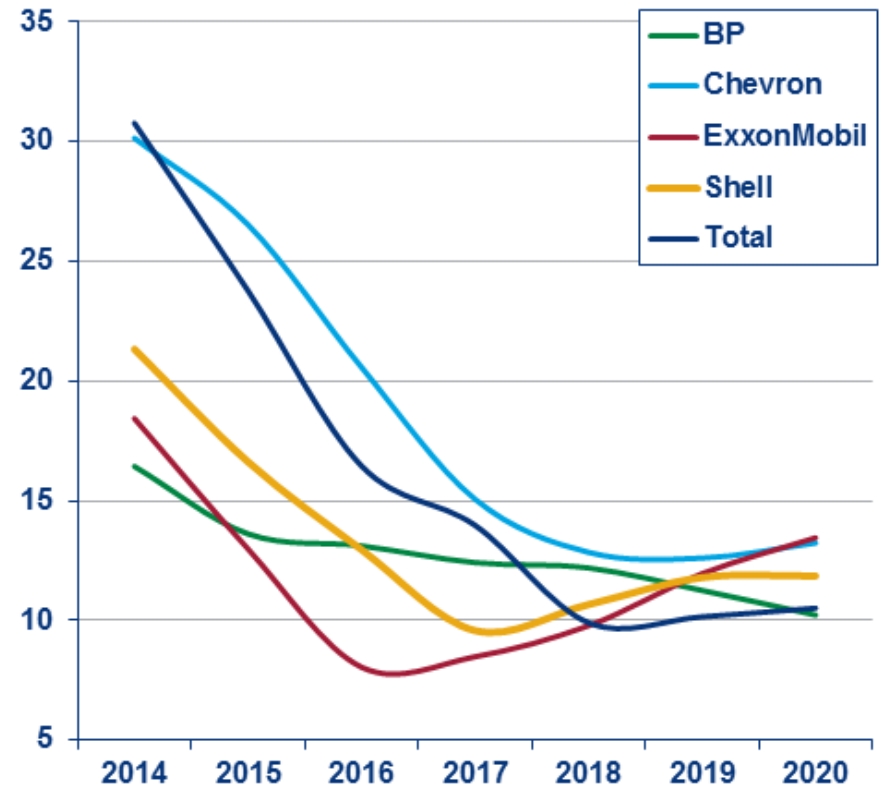
# The past few years have been about survival

The sector response to oil price slump was fast, broad and deep

## Levers pulled by Corporate Service companies\*



## Majors' development capex US\$/boe

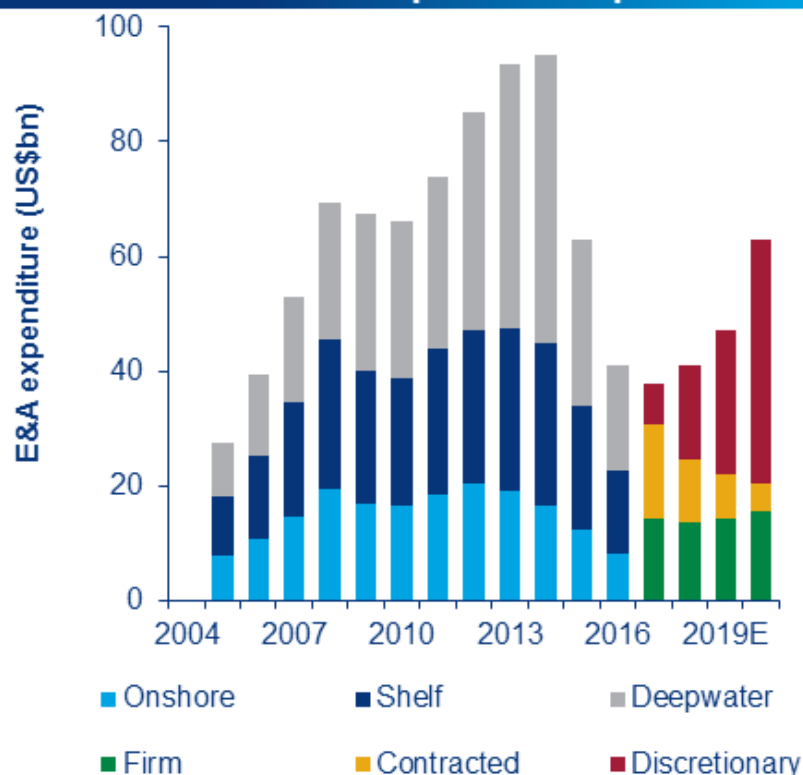


Source: Wood Mackenzie. \*The ~60 IOCs and NOCs covered in Wood Mackenzie's Corporate Service.

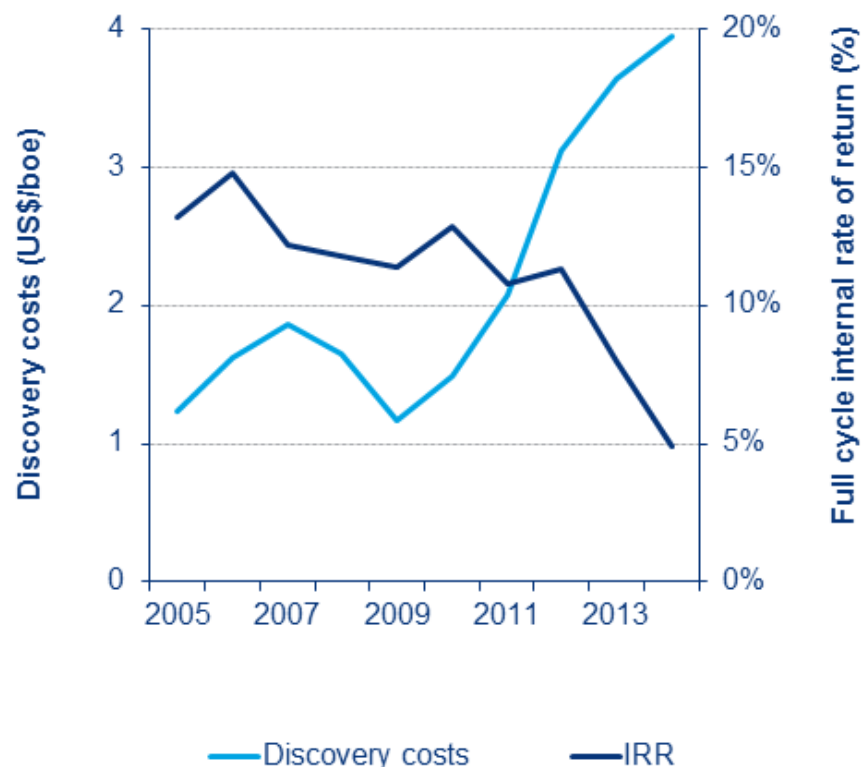
## Fixing exploration returns – reduced spend

The industry has slashed spend to less than half its 2014 peak. This forces a focus on quality, as companies can now only afford to drill their best prospects.

### Conventional exploration spend



### Exploration share of upstream capex



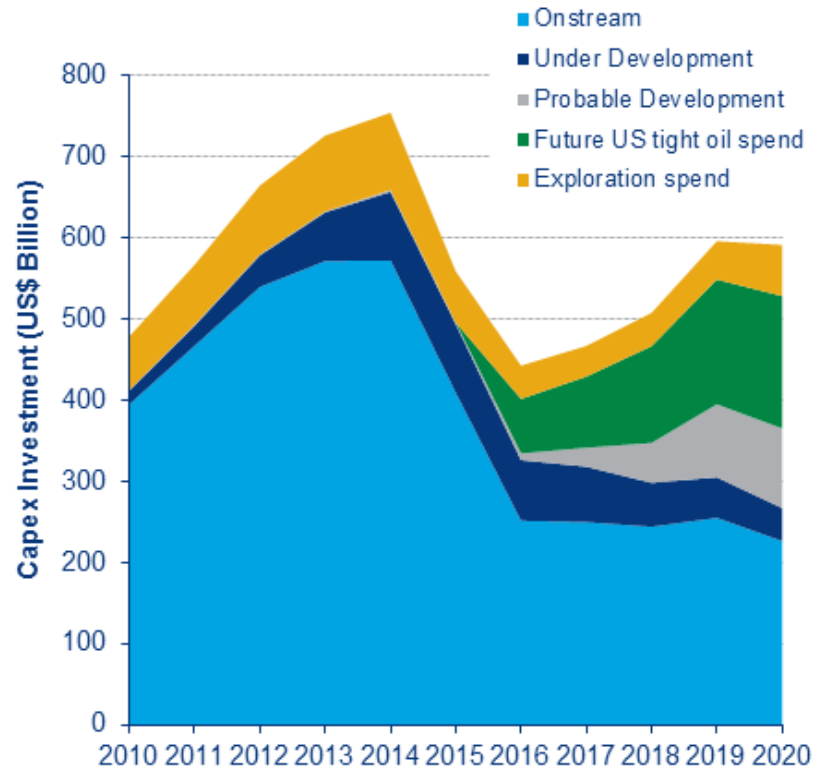
# Upstream - investment to fall by 45% from peak

## Global upstream spend (US\$ bn)

2014 spending proves unsustainable

Capital investment down to US\$440 bn compared to US\$755 bn in 2014

L48: uncons flexibility: recovers 2017 with firming oil price



Source: Wood Mackenzie

Conventional FIDs: 6 in 2015, similar in 2016

Exploration spend - halves to cUS\$40-45 bn 2016-18 – consequences?

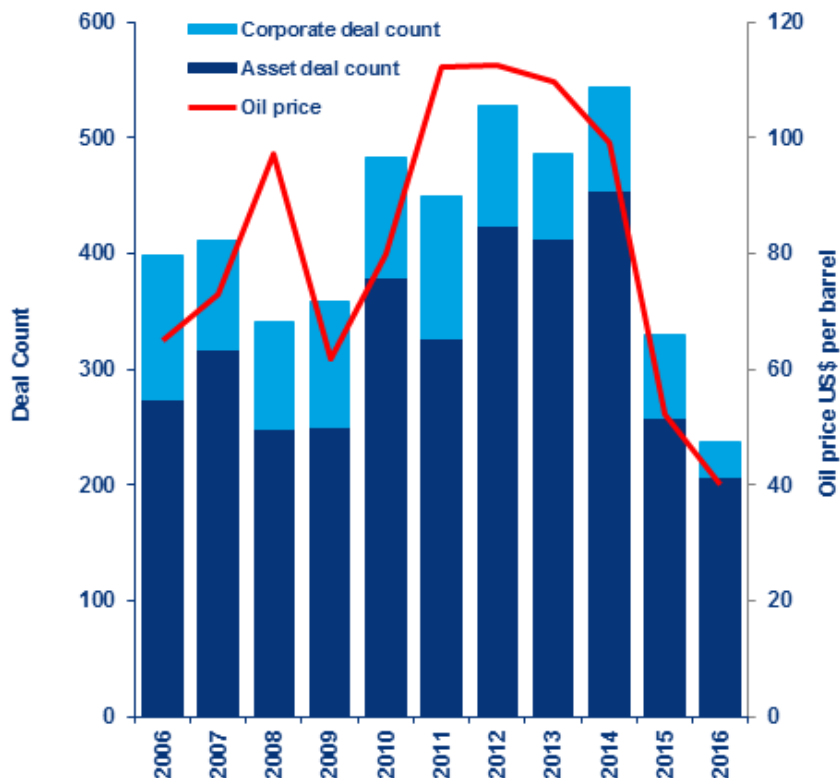
Exploration spend – picks up towards 2020



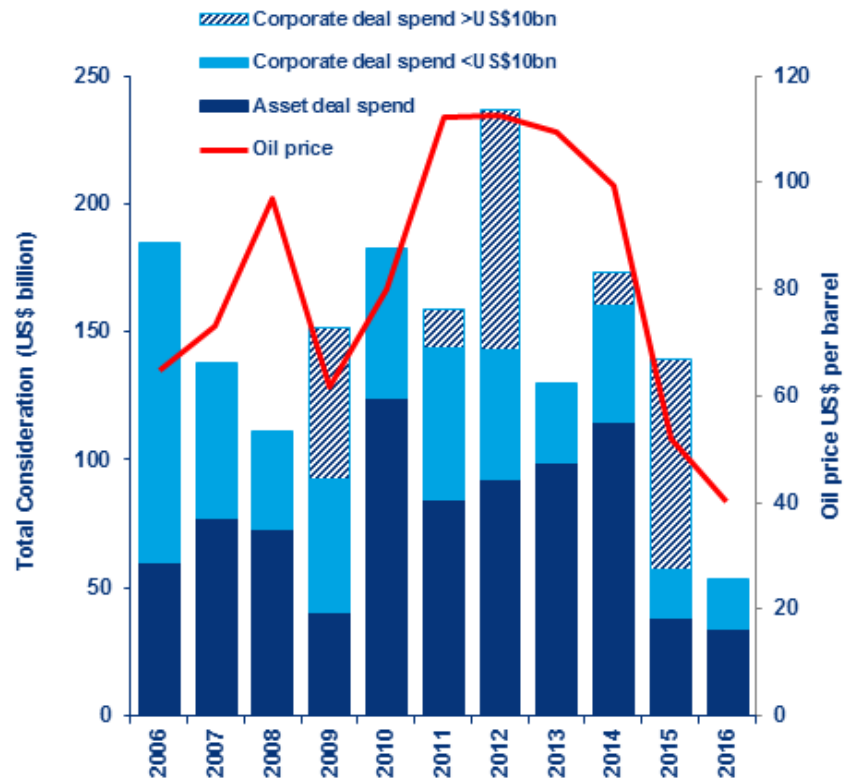
# What has the oil price collapse done for M&A?

Deal activity collapsed in 2015 and 2016. A wide bid-ask spread suppressed activity

## Annual deal count



## Annual deal spend



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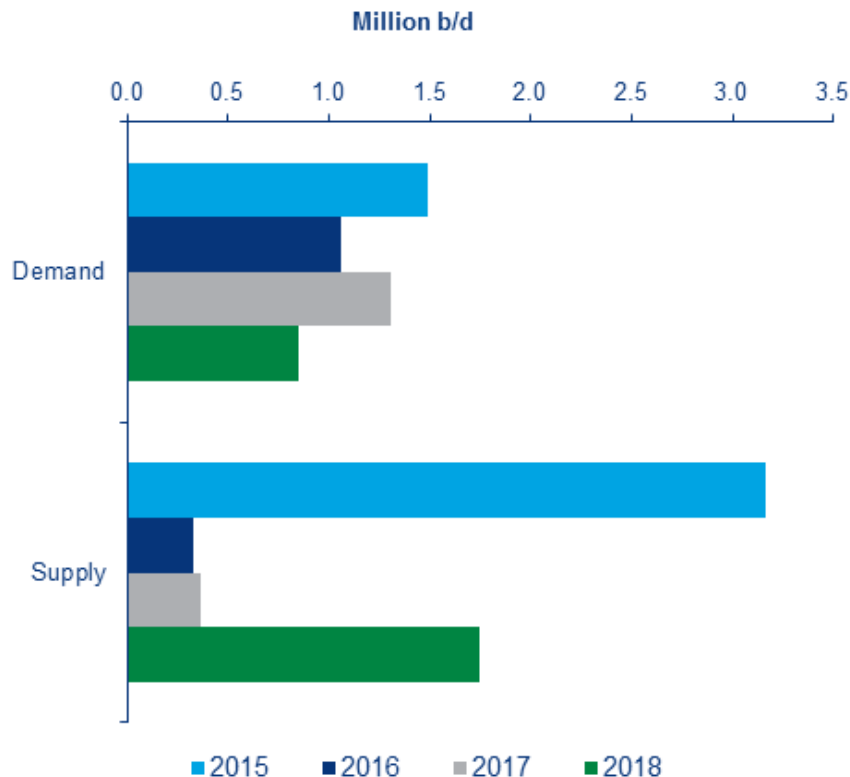


Impact of low prices on the offshore drilling sector



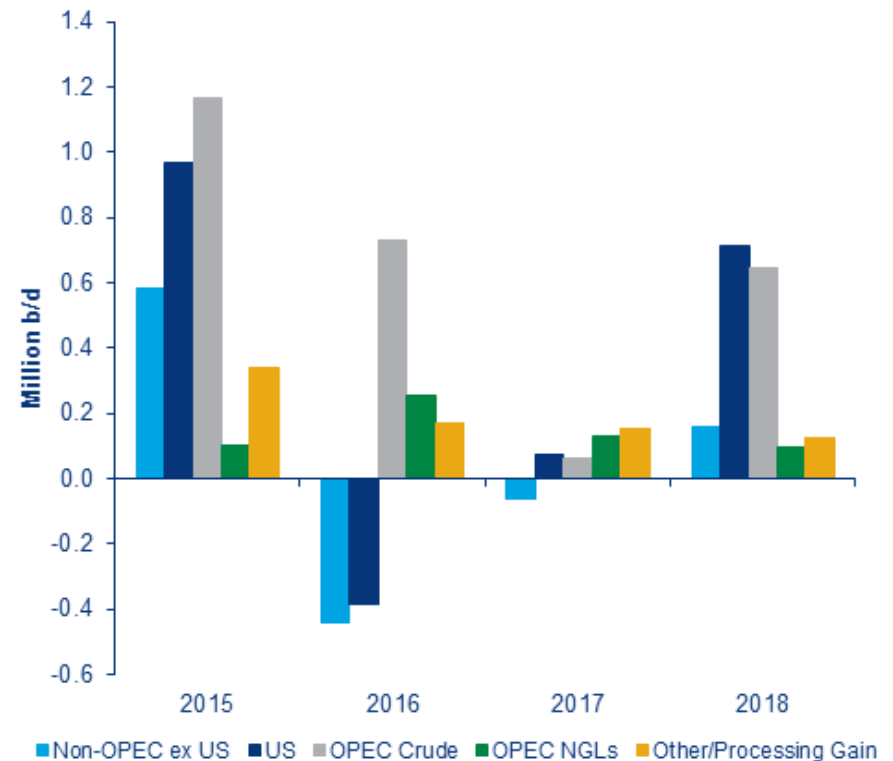
# Tightening of the fundamentals in 2017; but supply response in 2018 and slowing demand weakens price recovery

## Year-on-year change in global supply and demand



Source: Wood Mackenzie; assumes partial OPEC adherence in H1 2017

## Breakdown of supply growth through 2018



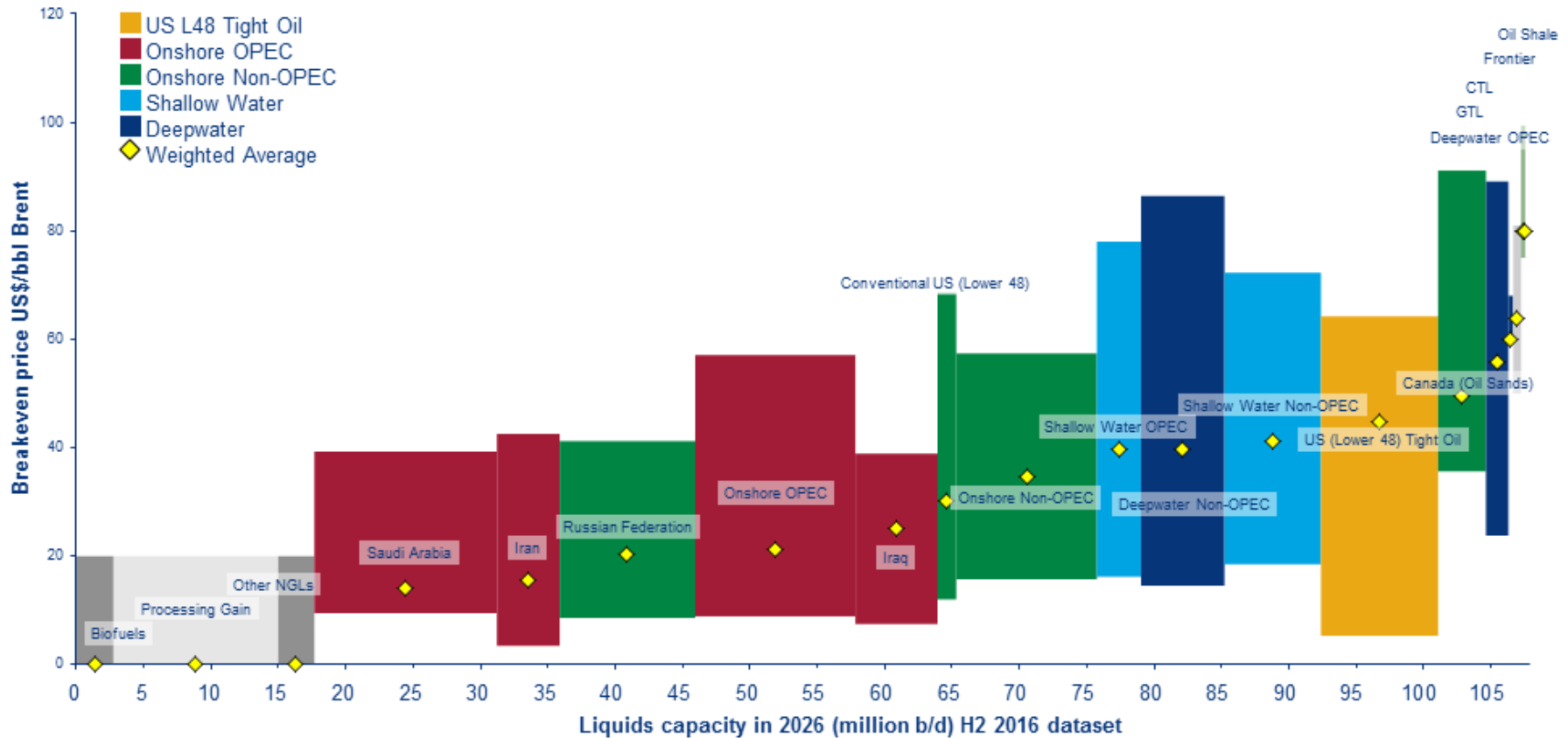
Source: Wood Mackenzie

Note: Indonesia included in non-OPEC for all years; Gabon in OPEC

# Moving to the low end of the cost curve is the dominant theme for IOCs

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

## The global cost curve by key resource themes in 2026

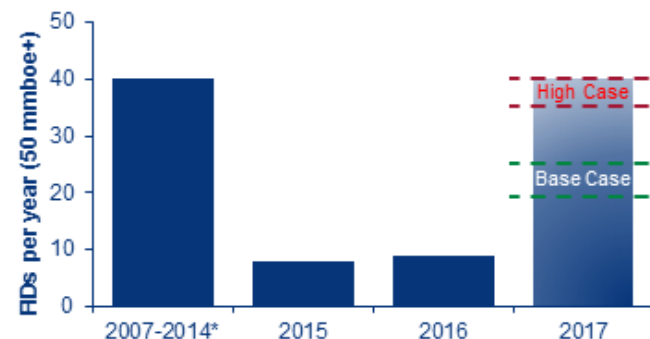
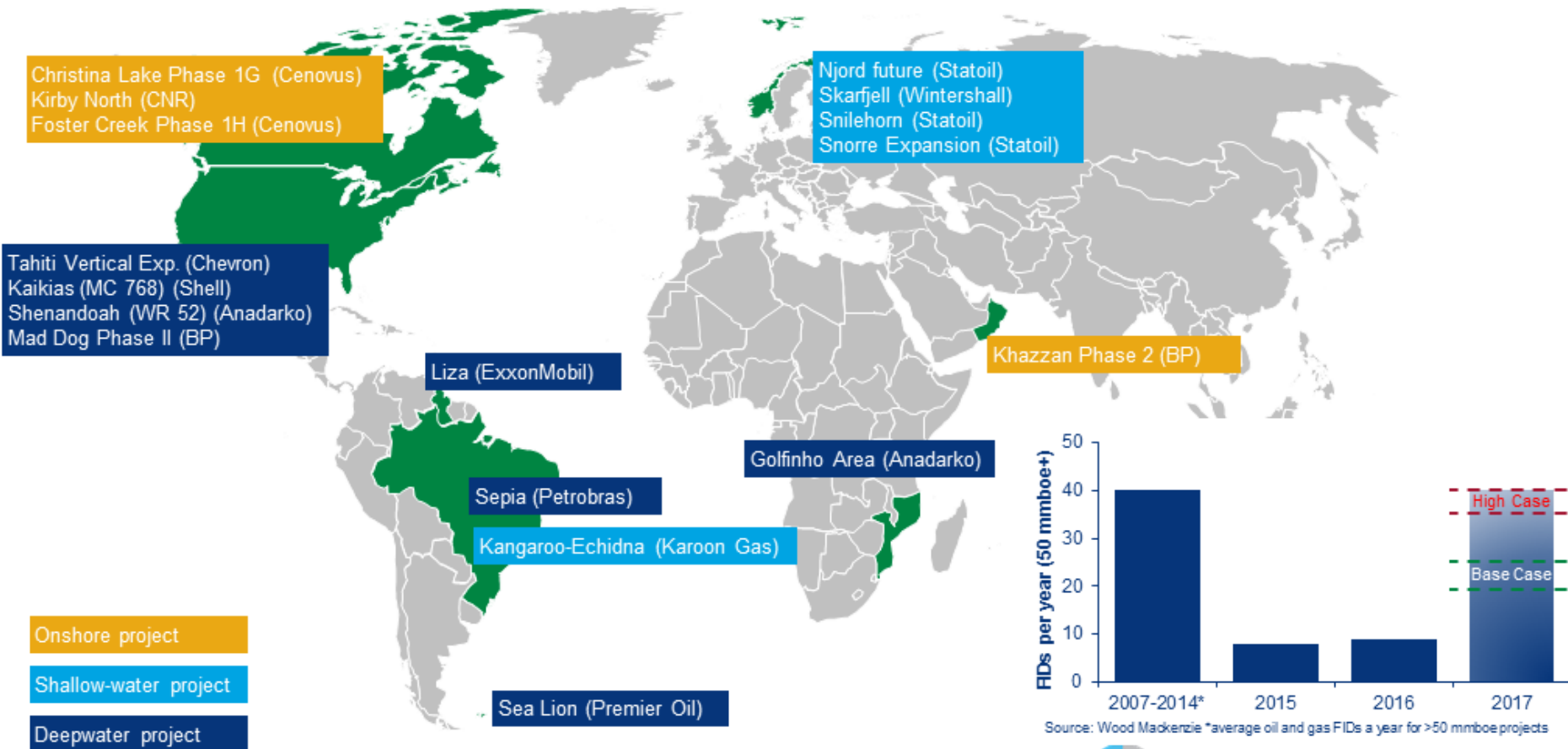


Source: Wood Mackenzie Oil Supply Tool, point forward breakevens, onshore at 10%, offshore at 15% discount rate. Blocks exclude upper 90% and lower 10% to exclude outliers. Biofuels, processing gains and other NGLs have zero value. For full explanation see methodology slide. Colour groupings are based on predominant water depth

# Non-OPEC conventional FIDs in 2017: 9 billion barrels of commercial recoverable reserves could be sanctioned

17 projects with liquids reserves >50 million barrels; deepwater FIDs on the rise

## Pre-FID liquids projects by country, theme and operator

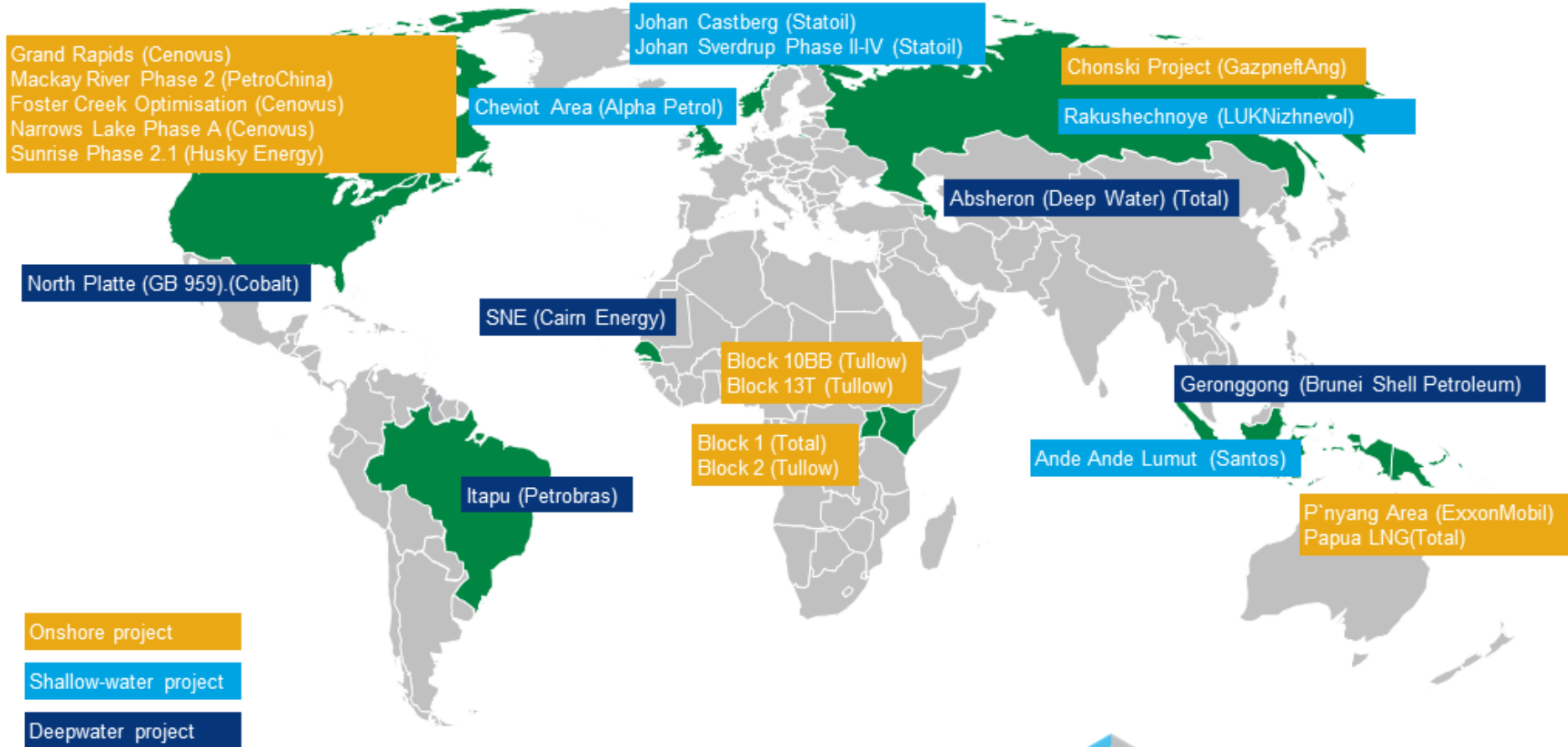


Source: Wood Mackenzie \*average oil and gas FIDs a year for >50 mmboc projects

# Strong pipeline of non-OPEC FIDs continues in 2018; 7 billion barrels of commercial volumes could be sanctioned

22 projects with liquids reserves >50 million barrels; onshore FIDs dominate

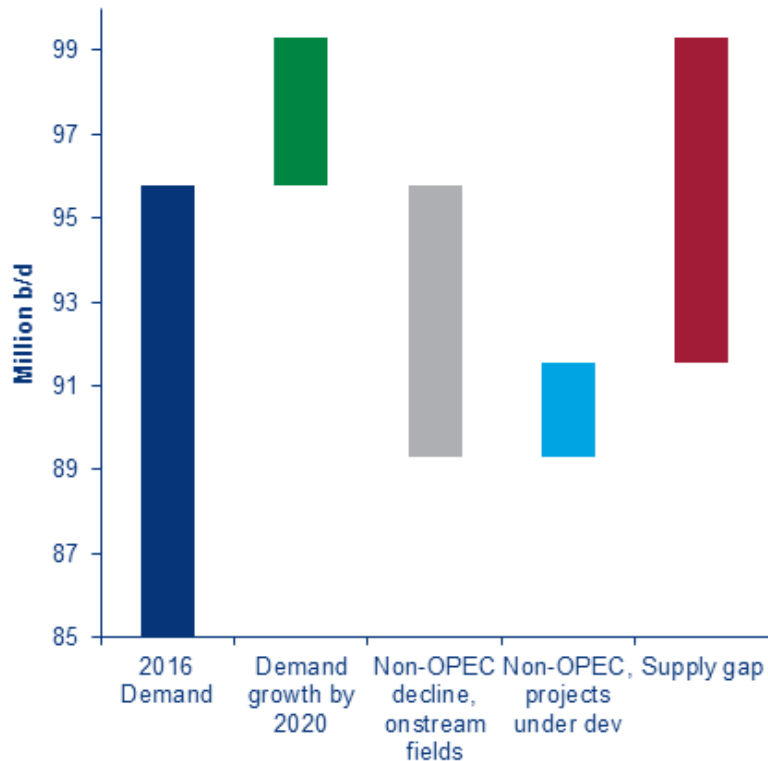
## Pre-FID liquids projects by country, theme and operator



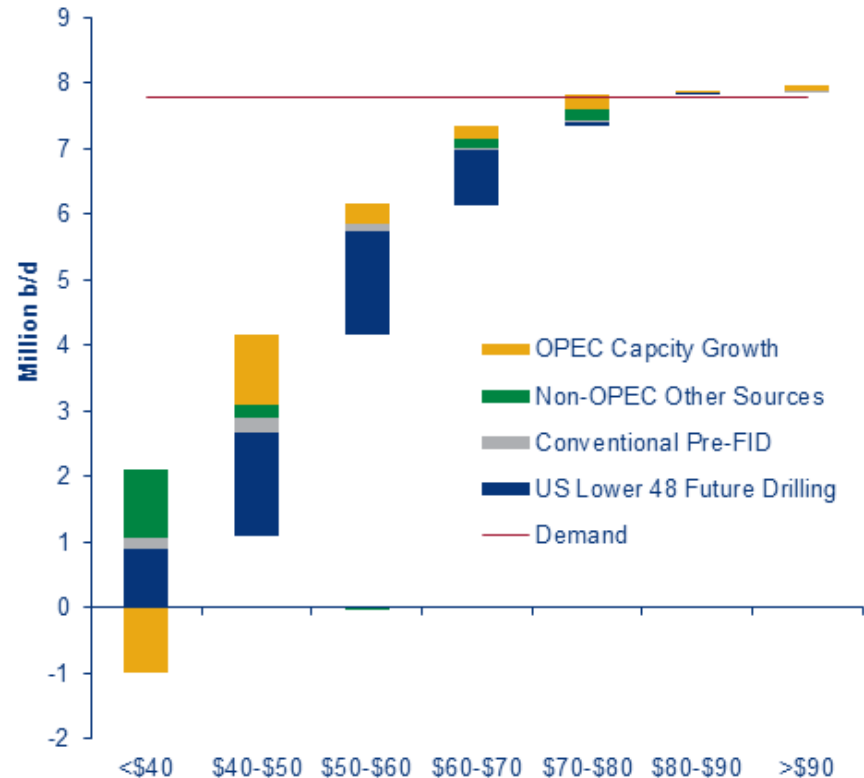
# Around 8 million b/d of new supply is required by 2020

The majority of new growth, needed to offset demand increases and non-OPEC declines of onstream fields, comes from US Lower 48

## Supply Gap to 2020



## Cost of new supply required

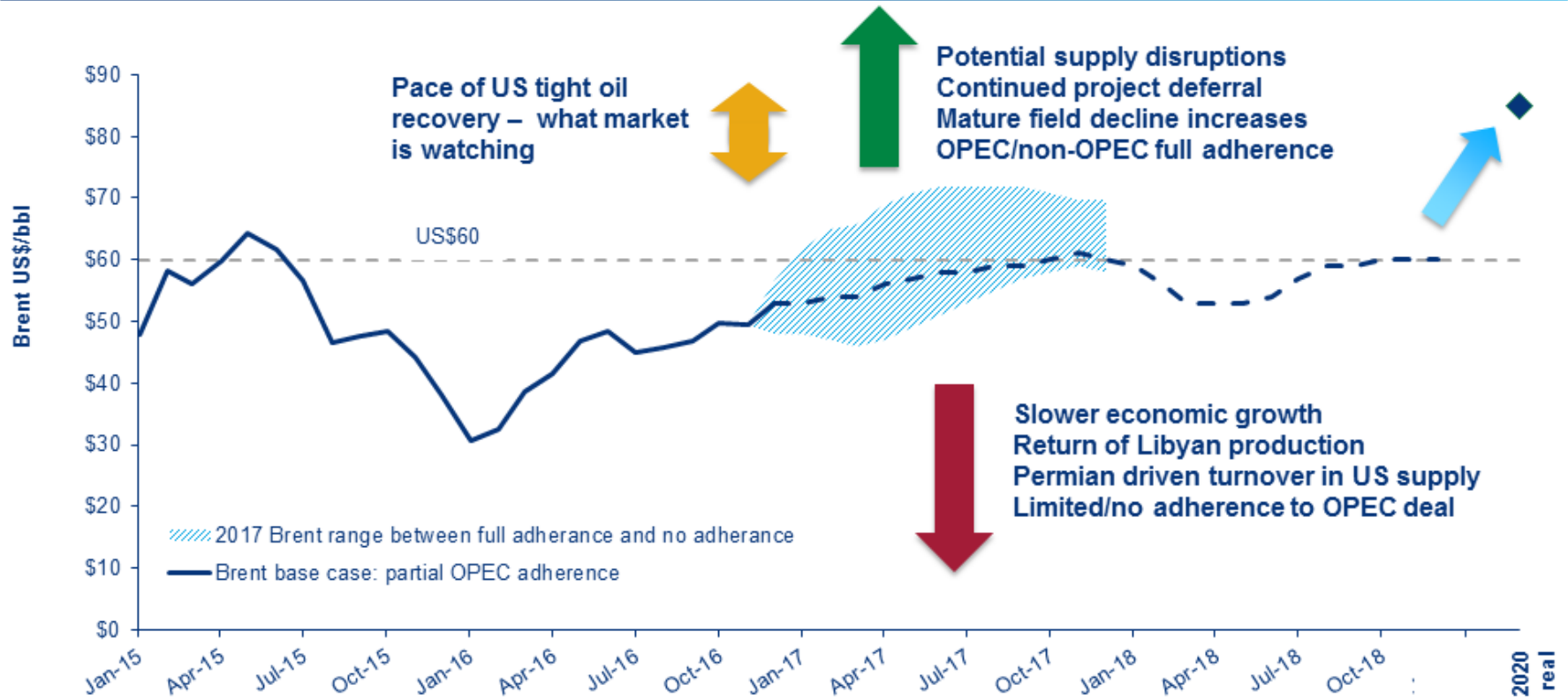


Source: Wood Mackenzie, Point forward Breakevens, Onshore at 10% discount rate offshore at 15%

# Weaker fundamentals in 2018 limit price upside

Brent averages US\$57 per barrel in 2017 and 2018; but higher prices still needed by 2020 to ensure conventional projects move forward

**Brent price history and forecast (nominal, US\$/bbl)**



Source: History - Argus; Forecast - Wood Mackenzie



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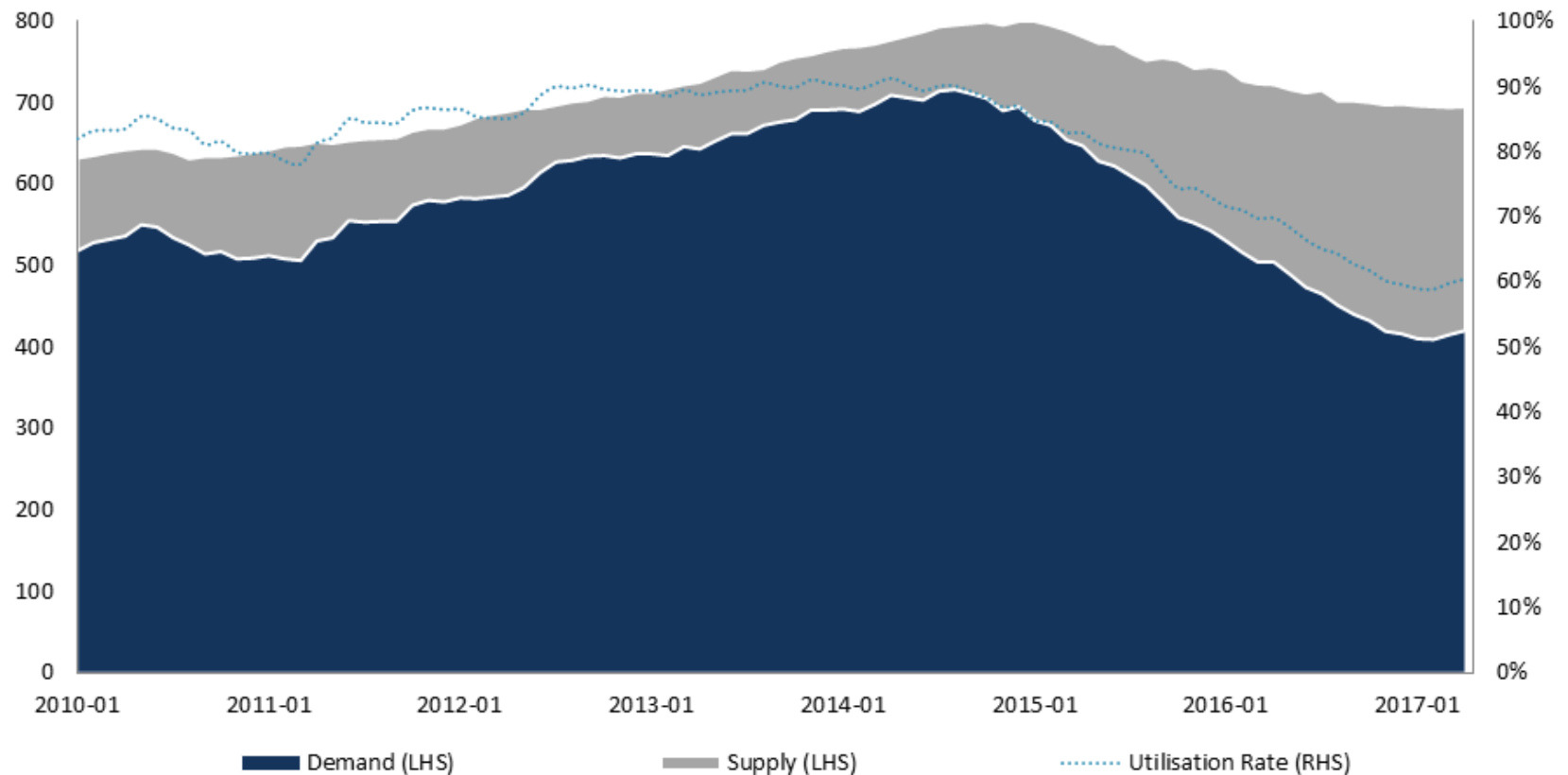
The economics of new supply



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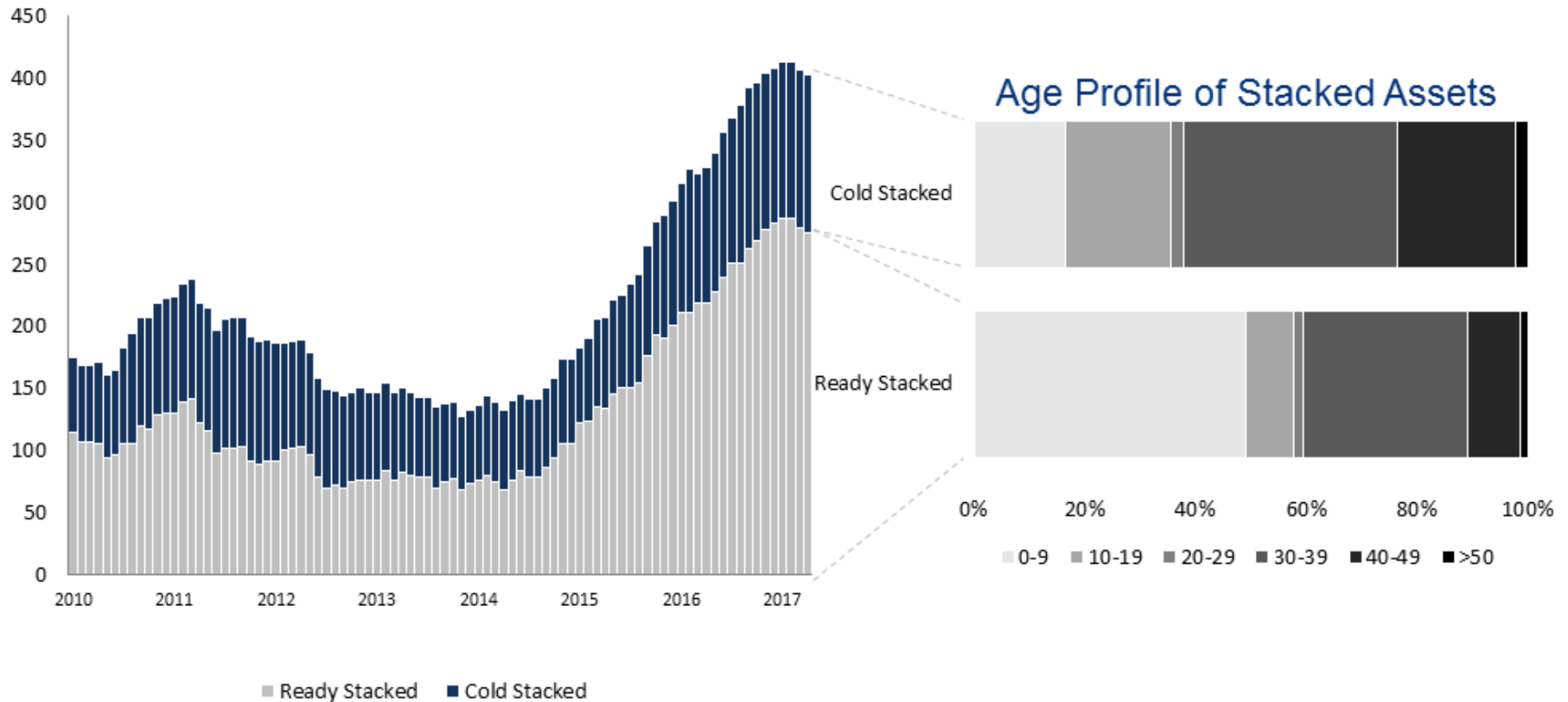
## Global Utilisation Rates – have we reached the bottom?

Global marketed rig utilisation dropped below 60% by year-end 2016. However, a recent uptick in tendering activity has stabilised the market and offered support to rig counts. Early signals suggest we may have reached the trough



# Rig Market Highlights - stacking activity

Early indications suggest the number of ready and cold stacked assets has peaked in recent months, driven both by recent scrapping activity and an marginal increase in the working rig count



Source: Wood Mackenzie Infield Systems

## Stacked rigs and oil tanker – Firth of Forth, east of Edinburgh





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- Stewart has 26 years oil industry experience in a variety of technical and commercial functions. Before joining Wood Mackenzie Stewart was a senior geophysicist with GETECH. Stewart started his career as a field engineer, spending two years exploring for oil and gas in Nigeria and Libya.
- Stewart graduated from Leeds University with a BEng (Honours) degree in Electrical and Electronic Engineering and holds an MSc in Exploration Geophysics, also from Leeds.

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