Global oil outlook and Alaska

Rowena Gunn, March 2022

Agenda

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   - Production
   - Capital Spend
   - Exploration

2. **Global Oil Outlook**
   - Short term price / supply & demand
   - Long term supply /demand

3. **Global Upstream Investment**
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4. **Advantaged Resources**
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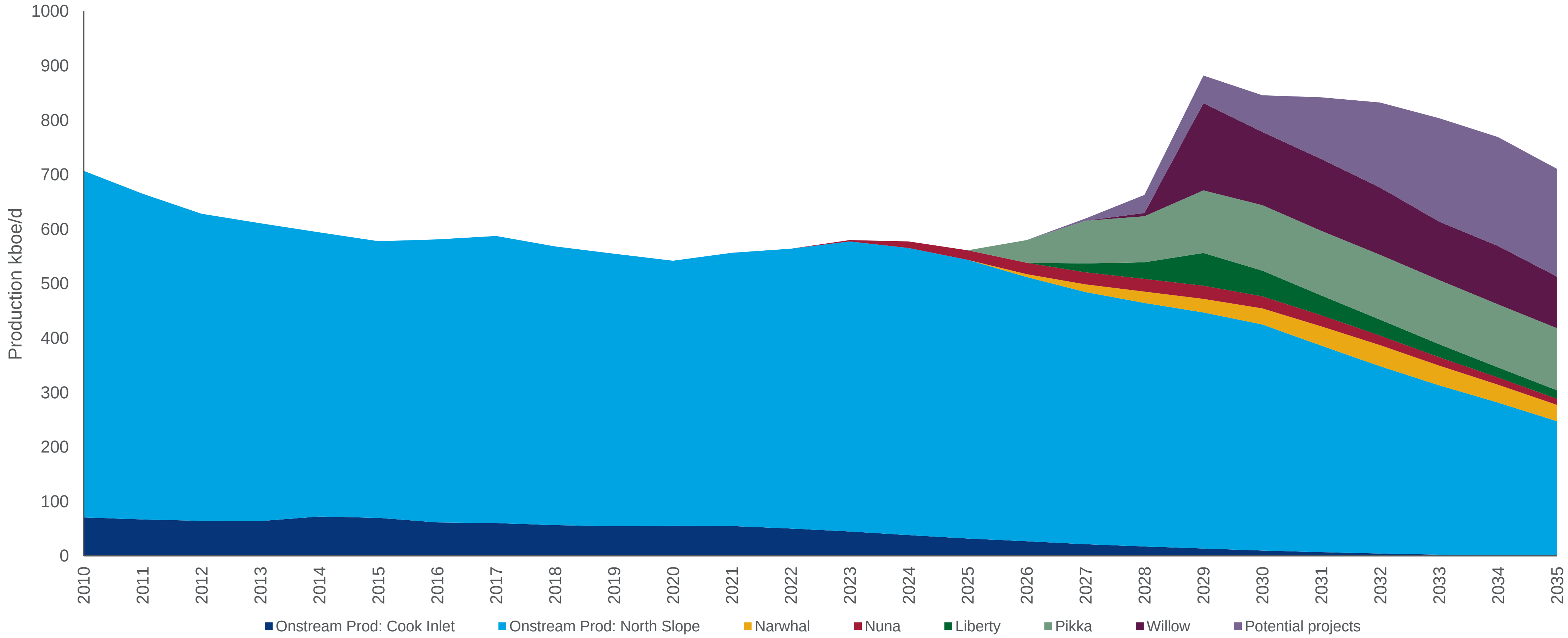
   - Where does Alaska sit

Alaska Overview

The western North Slope will support growth in the next decade

2020 North Slope production declined to 486kbd with shut ins at Kuparuk and Alpine. Future production is set to increase on back of pre-FID projects including Pikka and Willow but both are facing challenges.

Alaska’s total production by development status

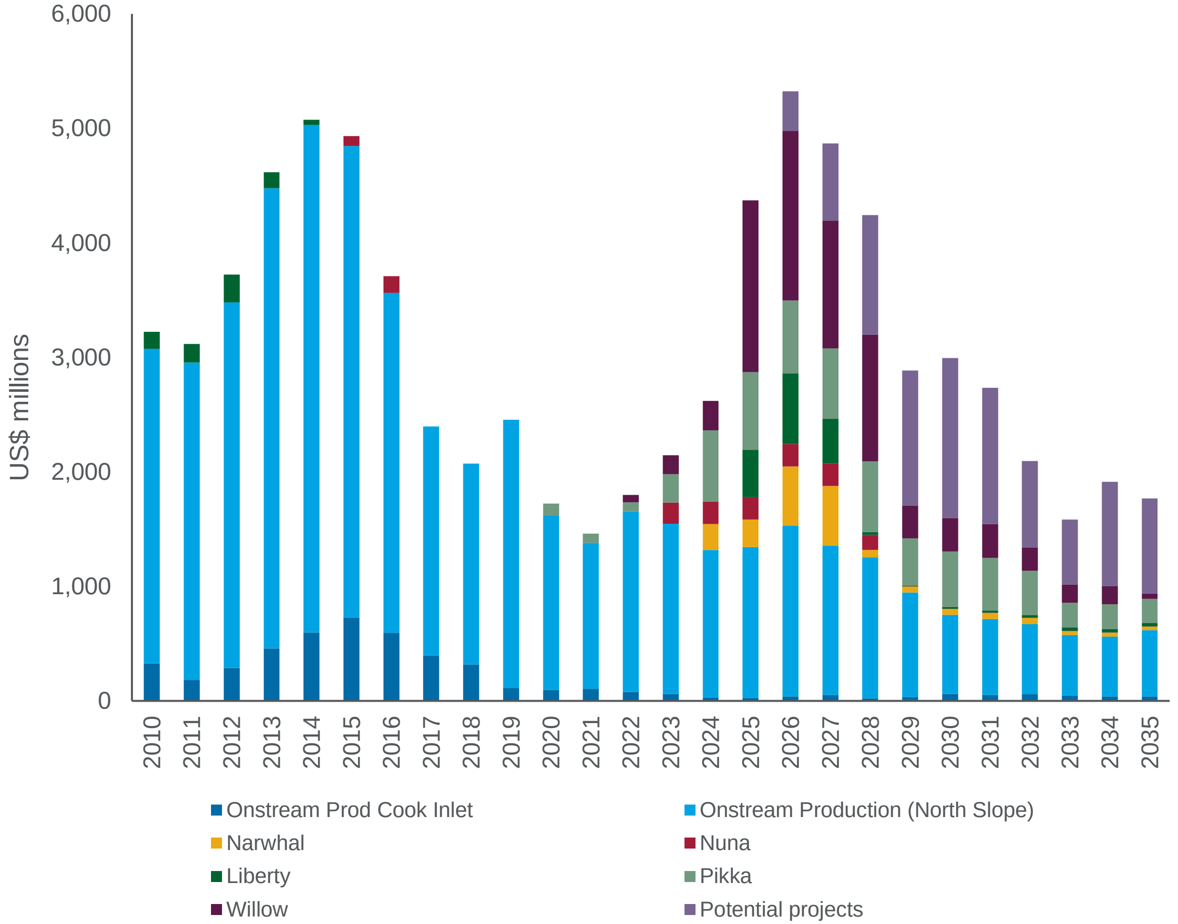


Source: Wood Mackenzie Lens Upstream

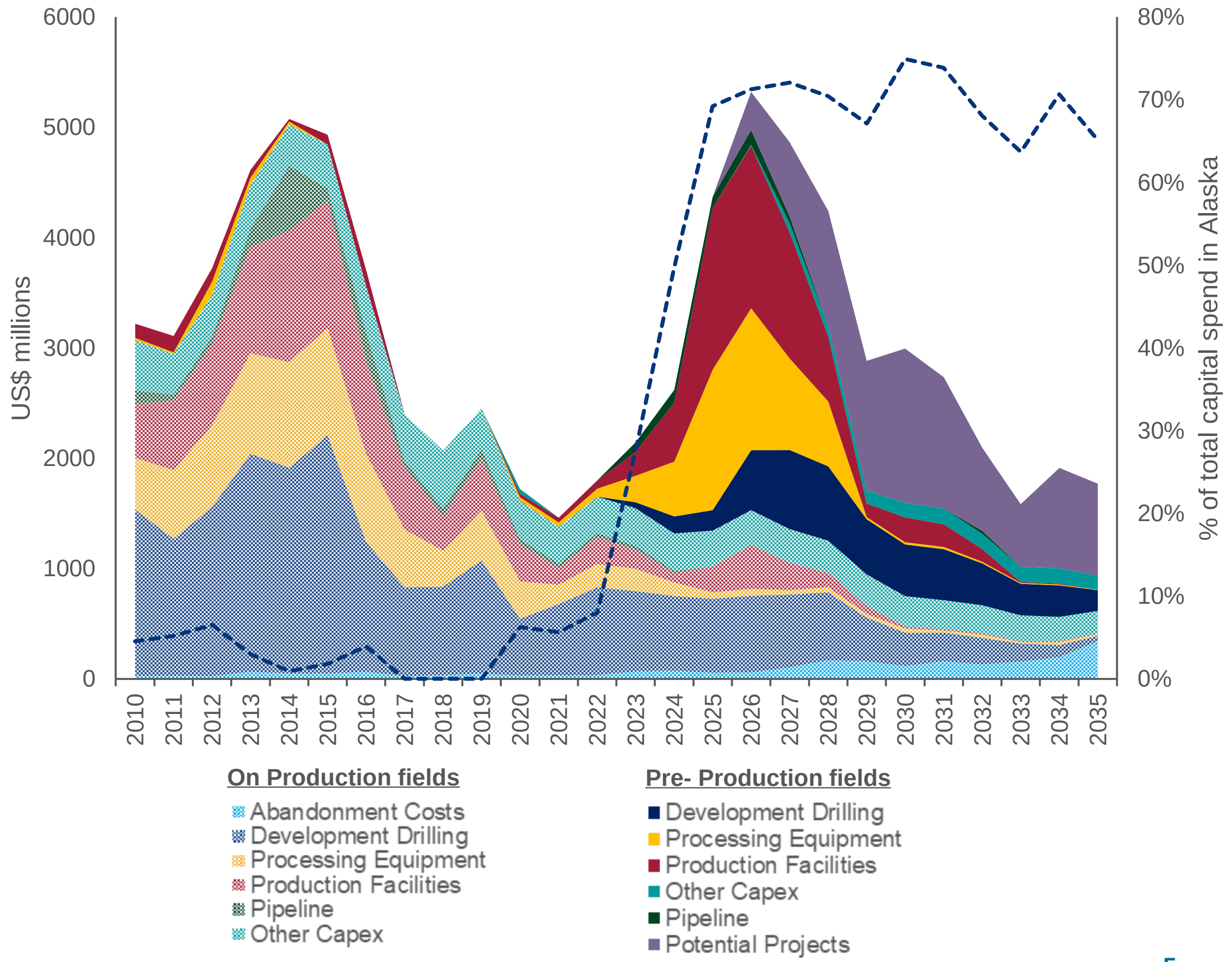
Capex hits low in 2020 but must ramp up to support growth

2020-2021 capital spend falls out as companies cut spending amid oil price crash and coronavirus risk. Liberty, Pikka, Narwhal and Willow fuel a mid 2020's capex surge

Alaska's capital spend by development status



Alaska's new development spend by category

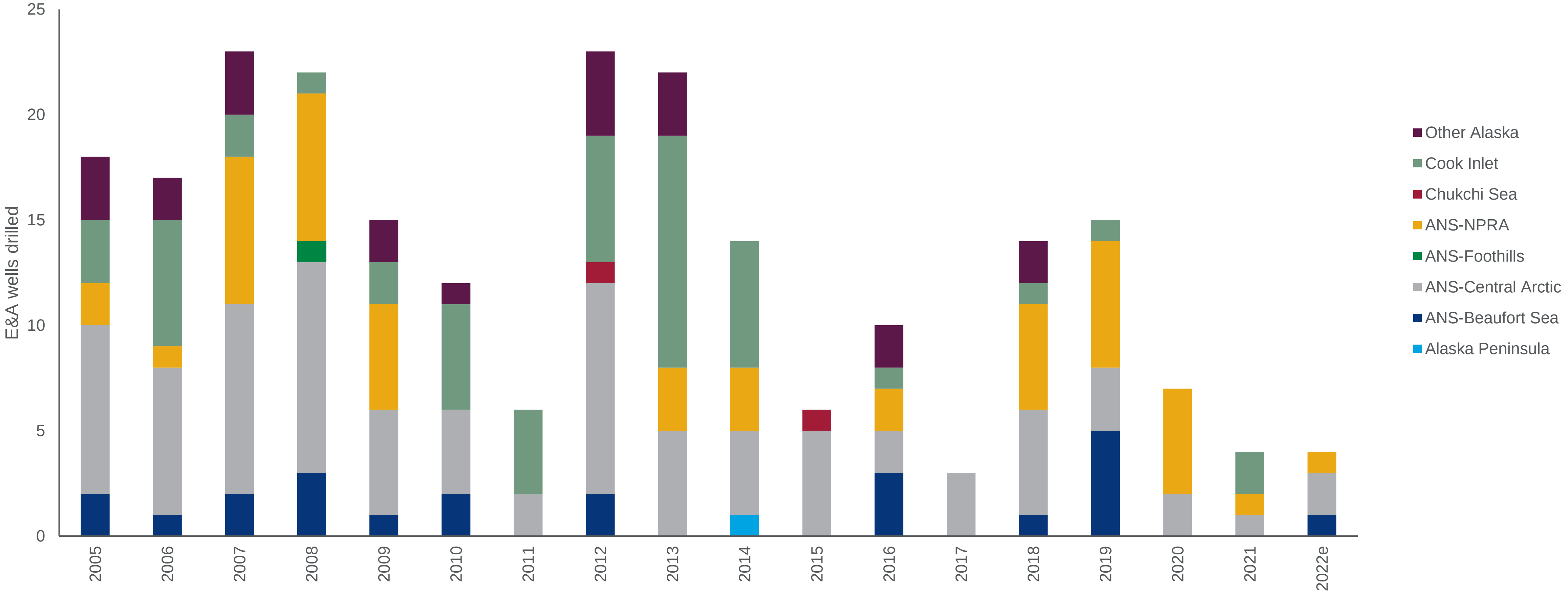


Source: Wood Mackenzie Lens Upstream

Exploration drilling starting to recover

National Petroleum Reserve (NPR-A) and Nanushuk discoveries had re-invigorated North Slope exploration. 2020 exploration season was terminated early due to coronavirus risk with only 50% of planned E&A wells completed, exploration drilling has been limited since.

Exploration wells drilled



Source: Wood Mackenzie Lens Upstream

Global Outlook

Russia: downside risk to oil production as impact of sanctions is felt

Limited buyers of crude exports, shipping, people logistics and equipment shortages could affect supply

Exports: we do not think Russia will cut off its exports due to its reliance on revenues – but that remains a risk. The Druzhba pipeline is operating, although payments are delayed while buyers sort out logistics.

“**Self-sanctioning**” could limit buyers; Russia has struggled to sell oil cargoes due to heightened risk and uncertainty on credit and logistic complications when dealing with Russian origin cargoes. This is also affecting CPC volumes, the majority of which originate in Kazakhstan. Limited storage in the region could result in production shut-ins.

Shipping: heightened tension could affect exports via the Baltic or Black Sea.

People: inability to get paid/pay wages may cause short-term cuts in production. Airspace restrictions will impact the movement of people in and out of Russia so international service companies may not be able to bring in staff from overseas.

Technology and equipment: sanctions may prevent equipment and spare part imports from the US and EU (particularly dual use) for the oil sector, that could affect scheduled maintenance and new project delivery.

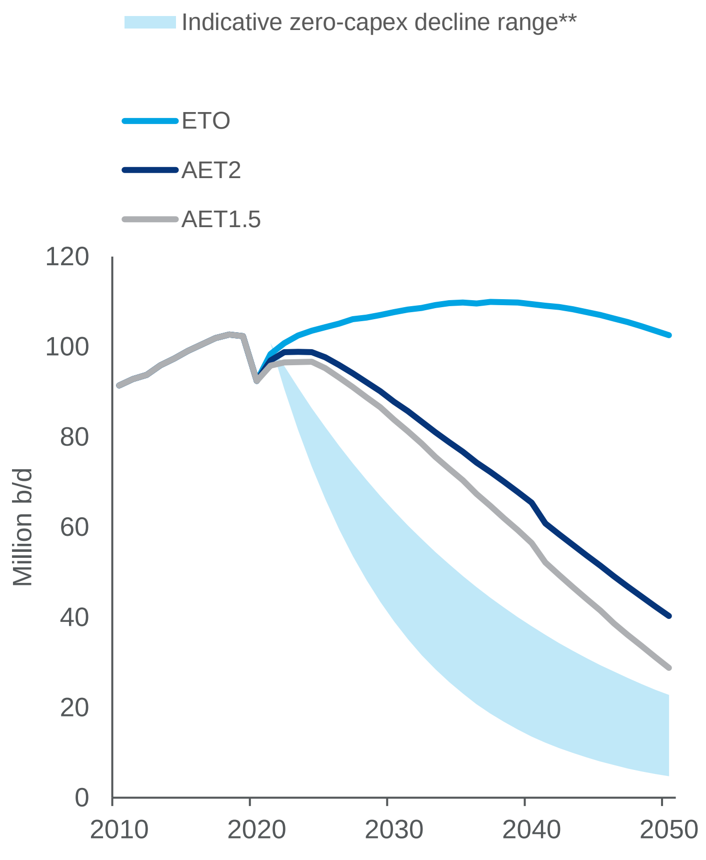
Economic impact: the rouble collapsed by around 30%, and the Central Bank of Russia was forced to more than double interest rates from 9.5% to 20% and impose a first round of capital controls. The rouble depreciation may reduce imports, increase inflation and thus impact living standards in oil-producing regions.

Source: Wood Mackenzie

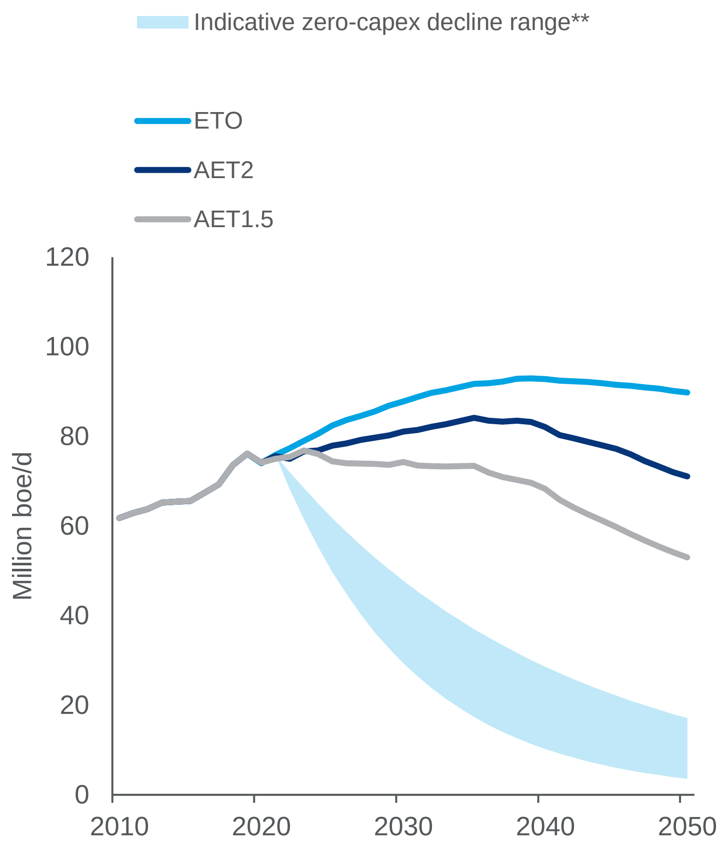
Accelerated Energy Transition (AET) scenarios highlight potential downsides for oil

Global oil demand falls below gas demand within 20 years under our accelerated energy transition scenarios

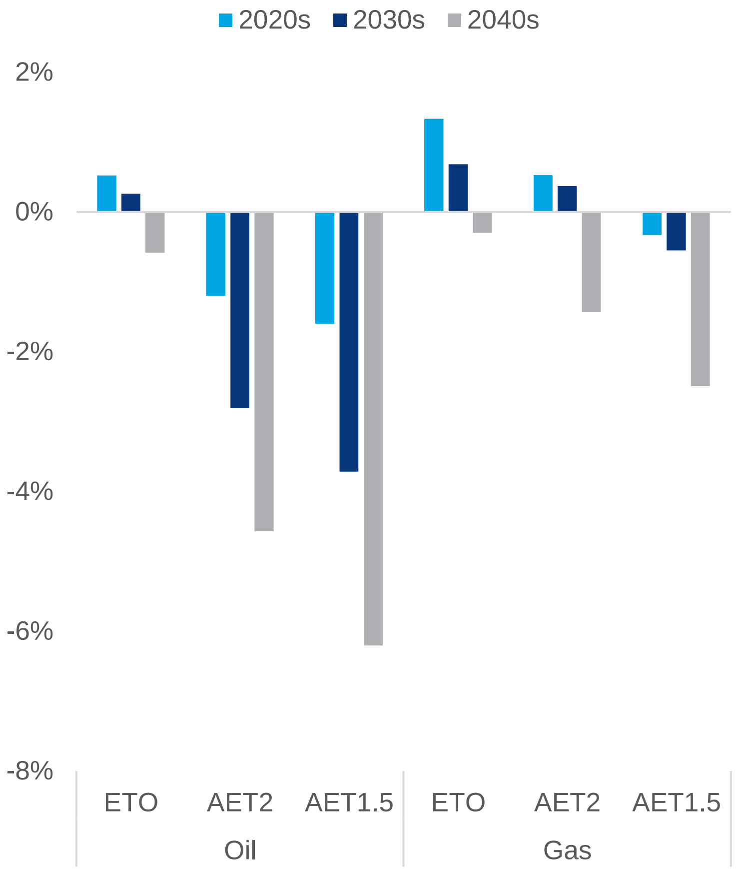
Oil demand scenarios*



Gas demand scenarios



Growth rate trends



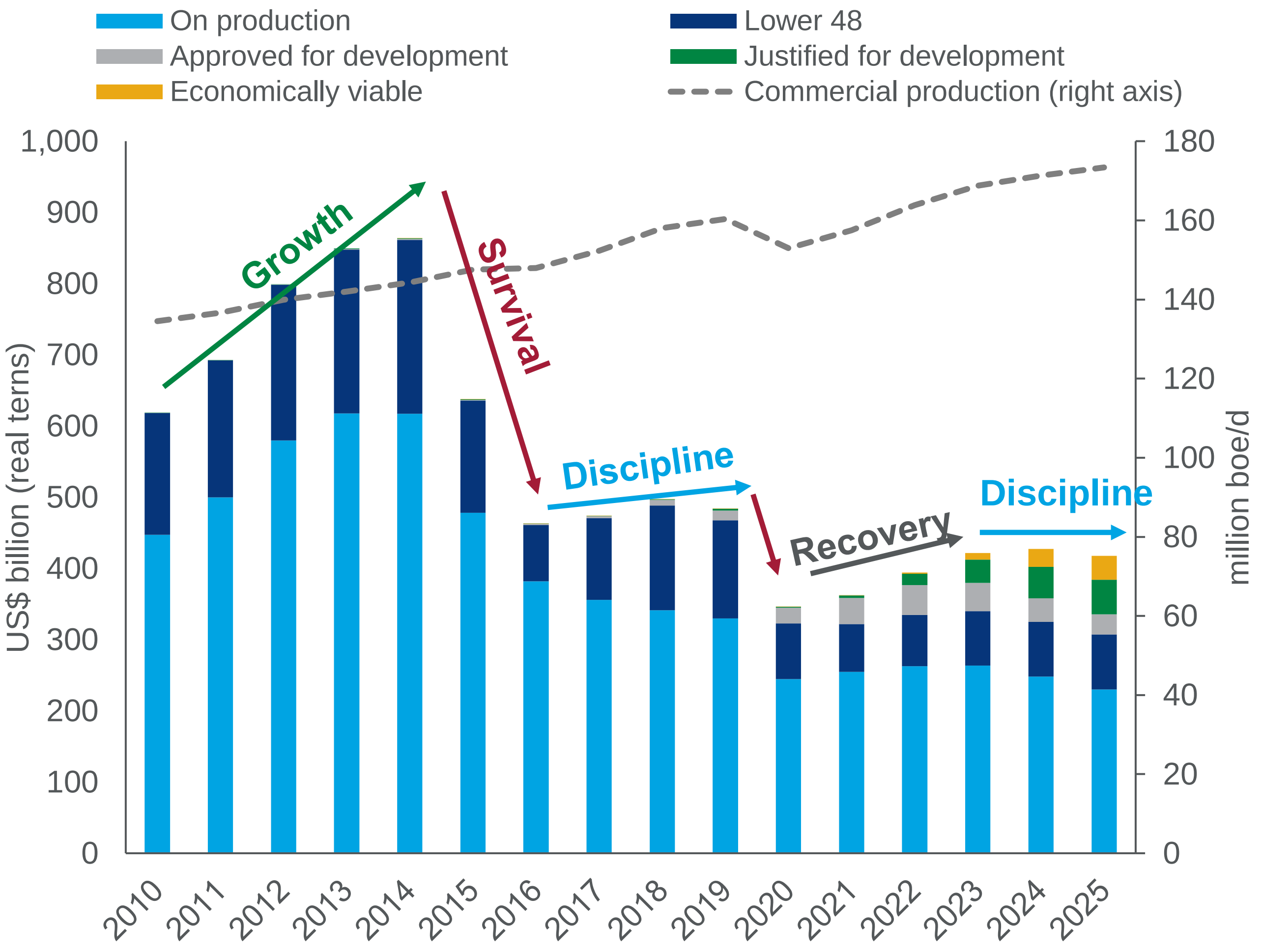
Source: Wood Mackenzie. *the Energy Transition Outlook (ETO) is our bottom-up base-case outlook. Our Accelerated Energy Transition scenarios (AET2 and AET1.5) are top-down deterministic scenarios demonstrating what we believe is required to hit those global warming trajectories. ** Myriad different decline scenarios are possible, depending on assumptions, all of which will undershoot our AET scenarios.

Upstream Investment & Alaska

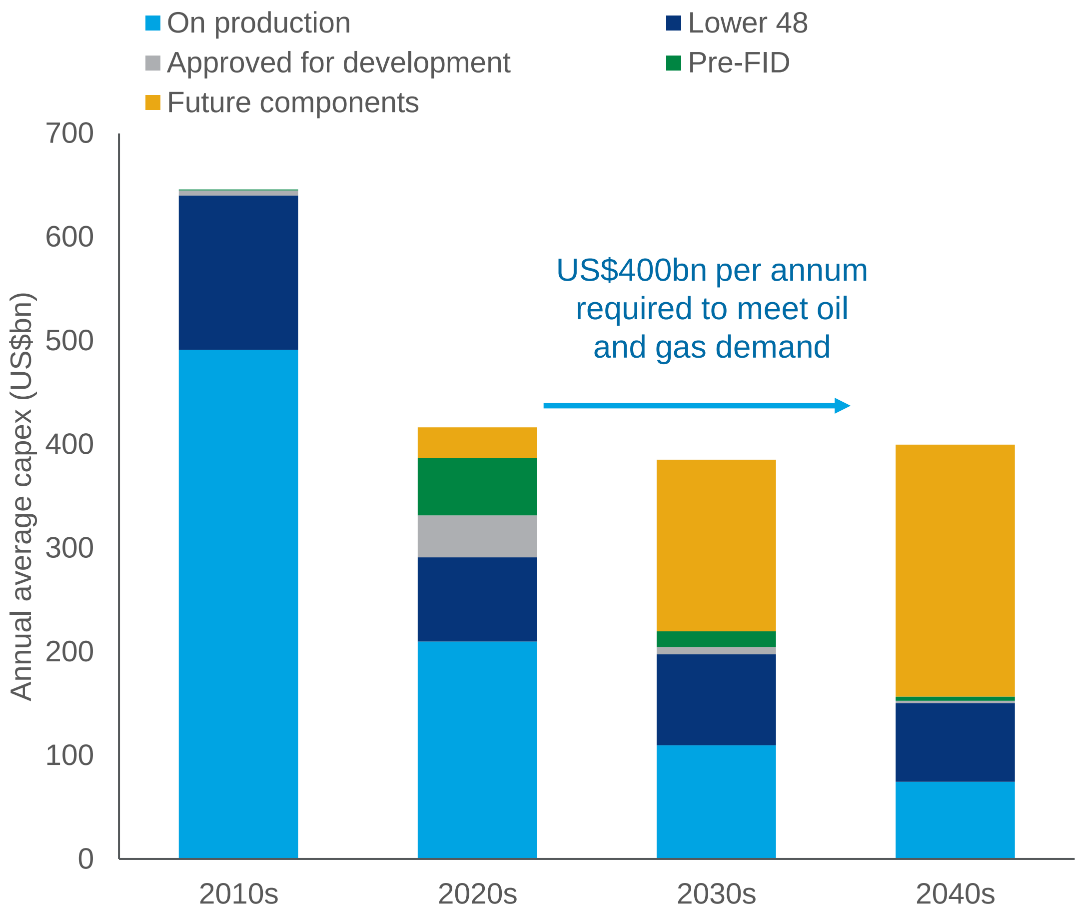
Annual capex of US$400 billion is required to meet our base case demand outlook

The oil and gas industry is adding ~2.5 million boe/d per year; capital discipline is working

Upstream capex and production



Capex by development status

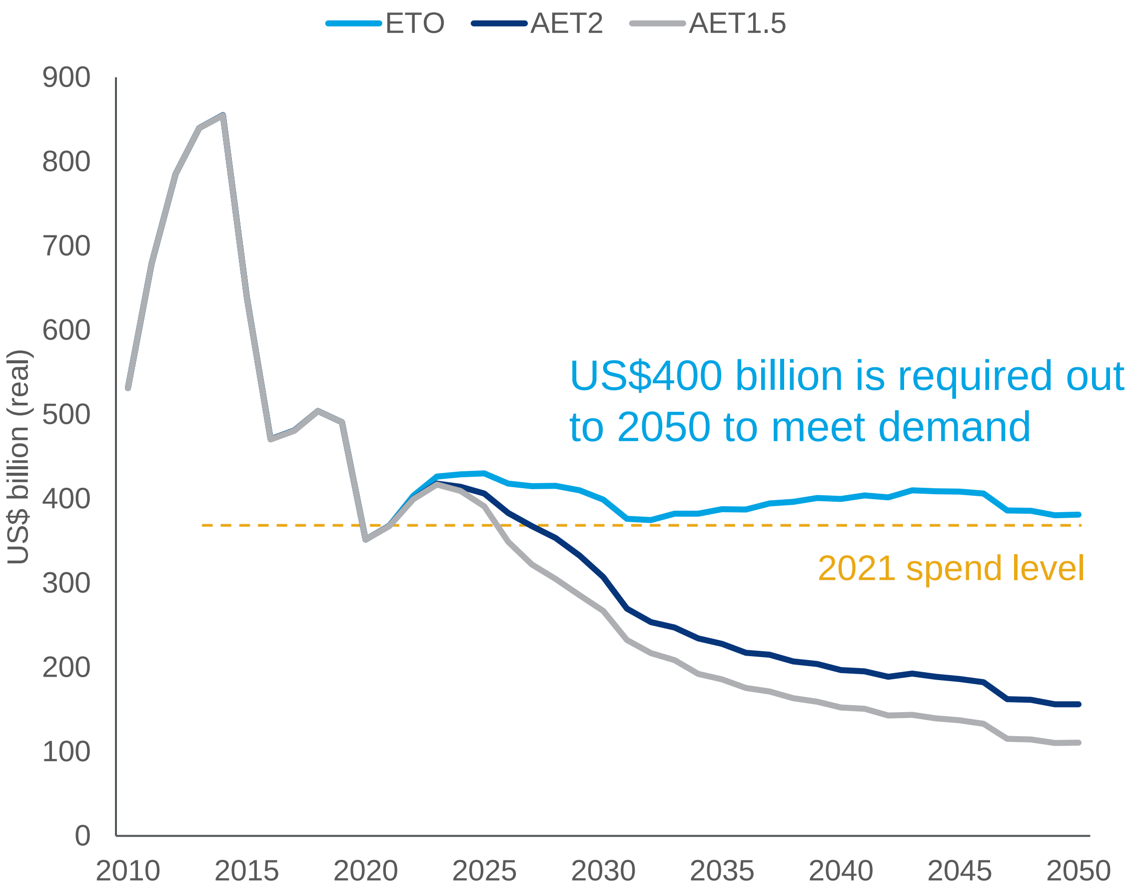


Source: Wood Mackenzie Lens Upstream

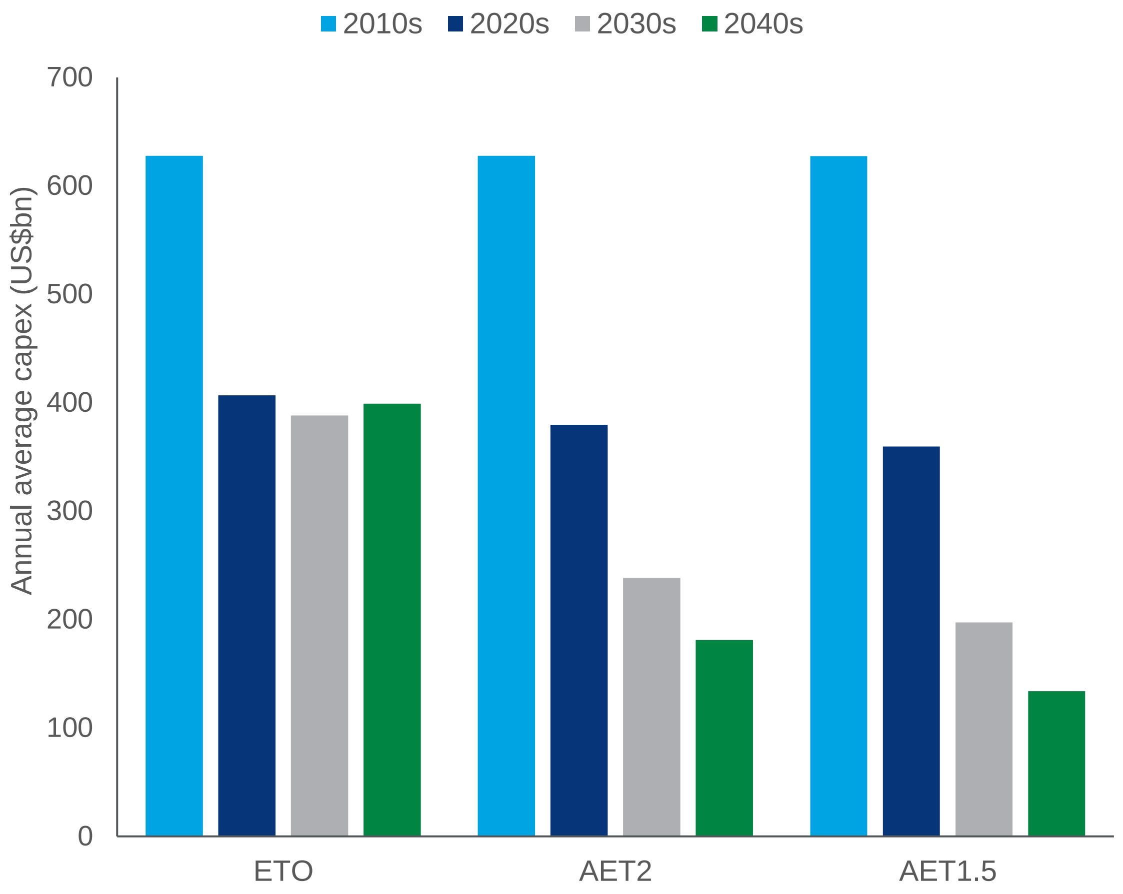
Upstream spend needs to increase to meet our base case demand outlook

But not by as much as you might think – a 16% increase over two years is enough

Upstream investment** required to meet demand scenarios



Upstream development capex

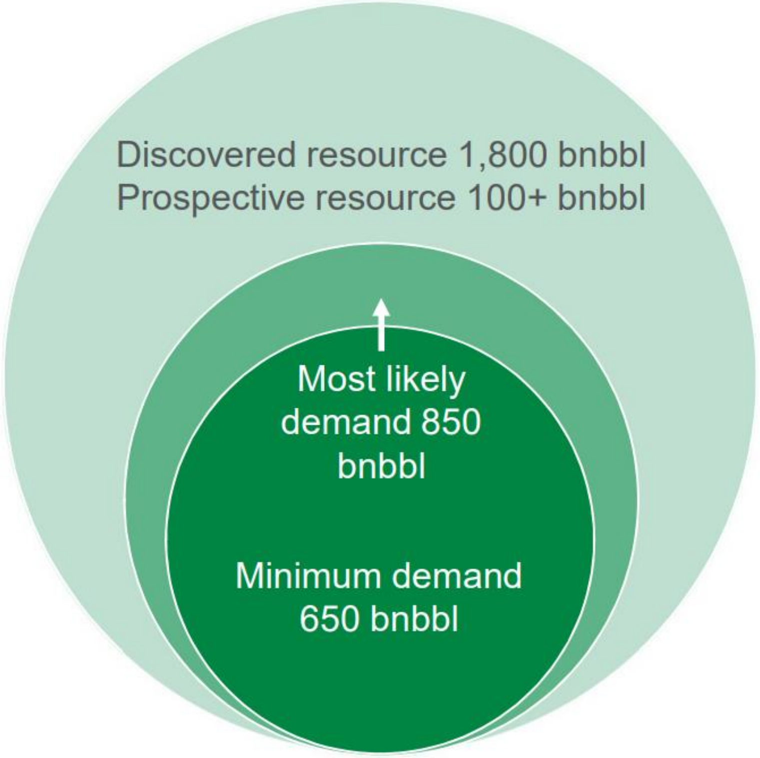


Source: Wood Mackenzie Energy Transition Tool. * ETO – Energy Transition Outlook (base-case), AET2 – Accelerated Energy Transition 2 degrees, AET1.5 – Accelerated Energy Transition 1.5 degrees. **Upstream development spend excluding abandonment costs

Why advantage resources matter

Total available resources hugely exceed demand until well beyond 2040
Companies must target only the best oil and gas among the world's plentiful resources

Oil demand scenarios to 2040 vs resources



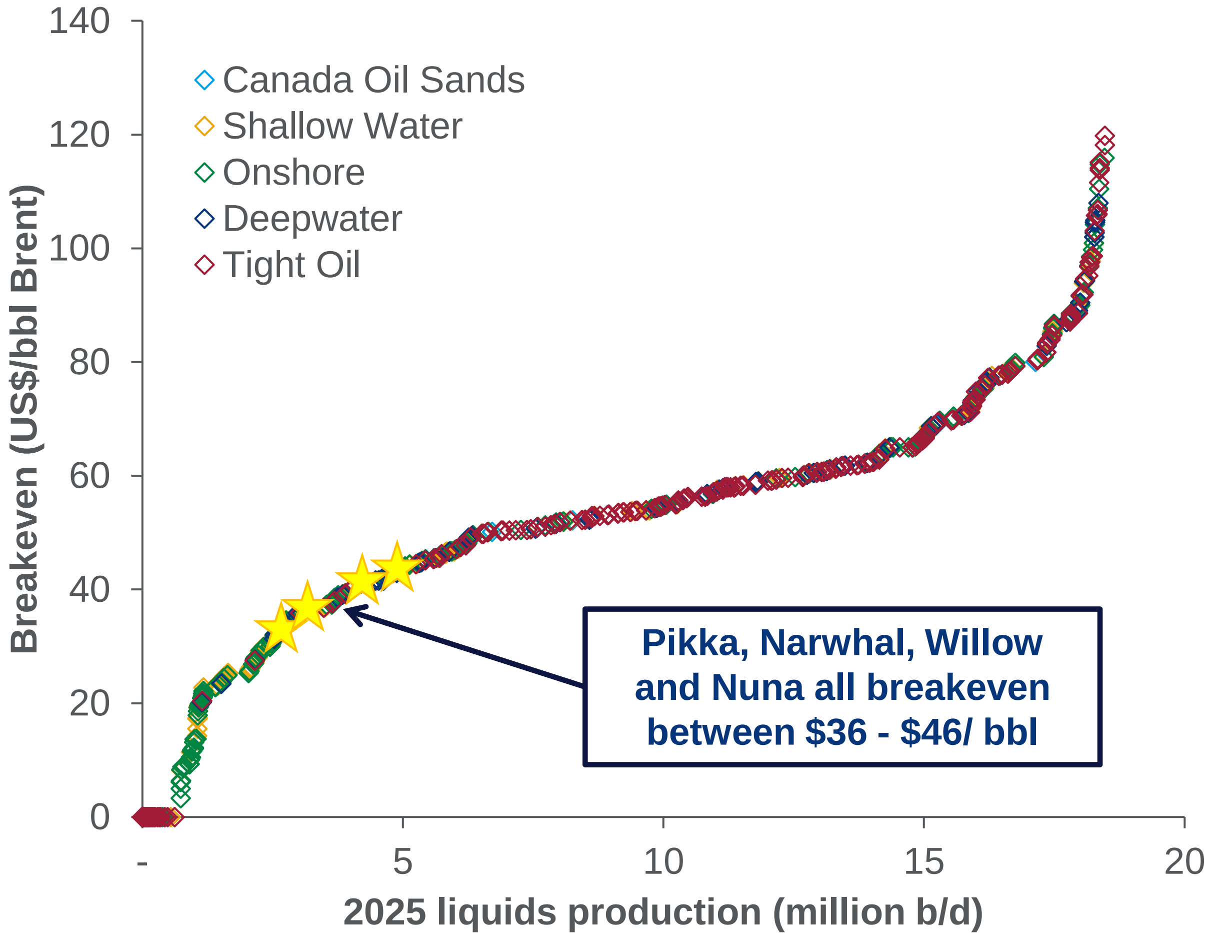
What are advantaged resources

Source: Wood Mackenzie Lens. Most likely demand based on Energy Transition scenario; minimum demand based on Accelerated Transition 2C scenario

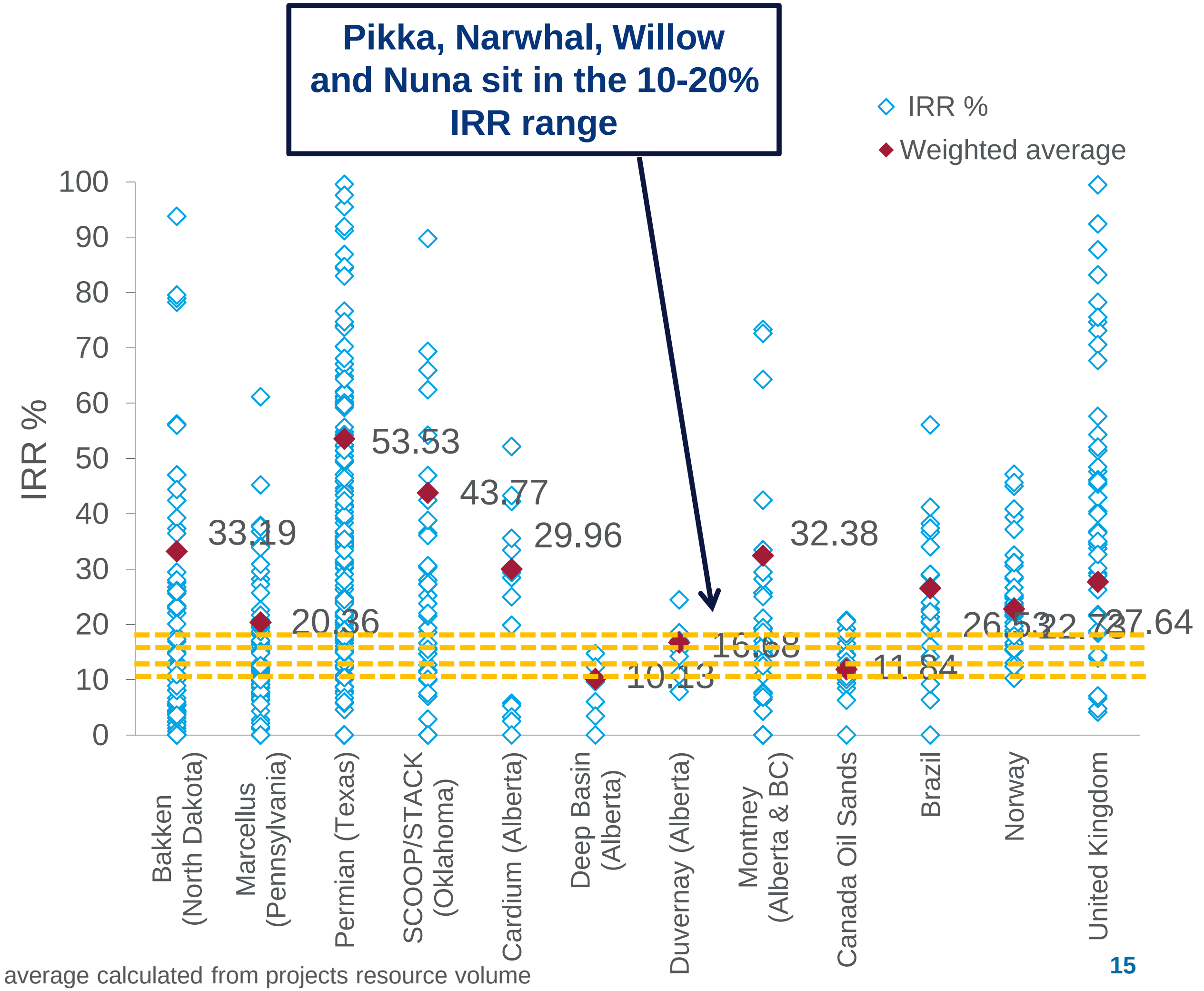
Where do Alaska's resources sit globally

Alaska's top opportunities are economically competitive with comparable development cycle breakevens to many US resource plays – but they must compete within company portfolios

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



Half cycle internal rate of return (IRR) ranking

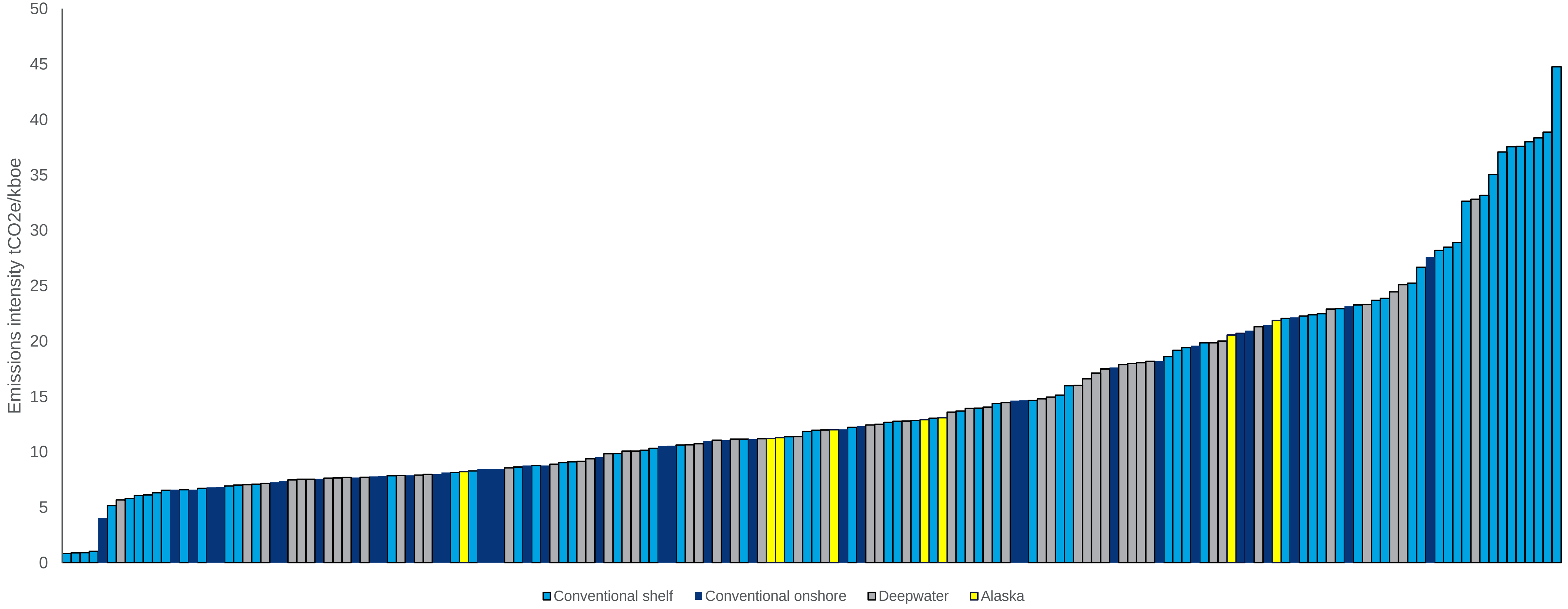


Source: Wood Mackenzie oil supply tool –Onshore breakevens at 10% discount rate, offshore at 15% - weighted average calculated from projects resource volume

Where do Alaska's resources sit globally

Alaska's is an environmentally sensitive area with a lot of attention paid to environmental impact.

Pre-production oil fields emission intensity 2020 - 2040

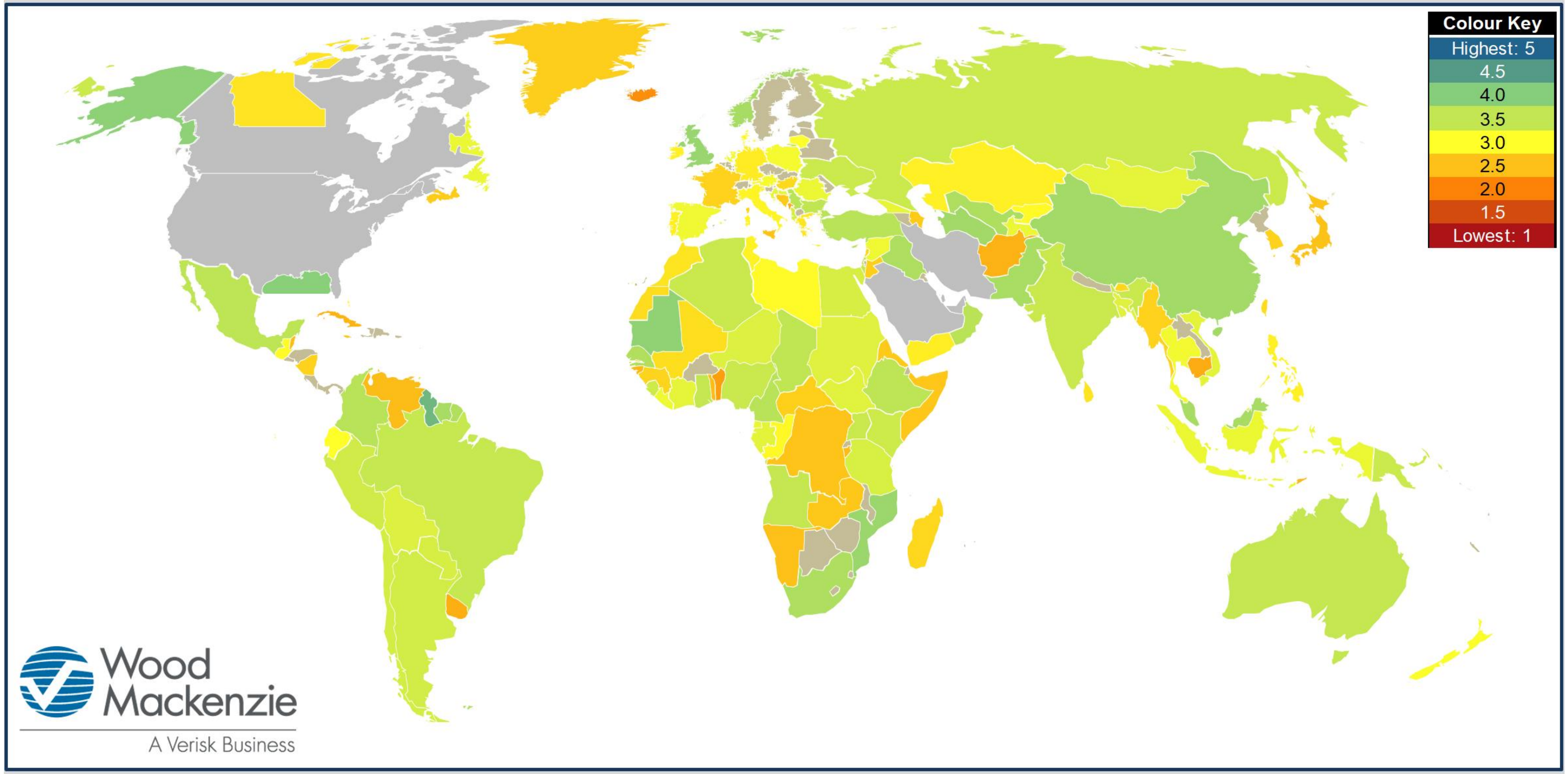


Source: Wood Mackenzie oil supply tool –Onshore breakevens at 10% discount rate, offshore at 15% - weighted average calculated from projects resource volume

Other advantaged resources factors

Other factors that feed into advantaged resources are the speed in which developments materialize and the fiscal regime terms.

Fiscal competitive Index



OVERALL REGIME RATING	
35%	Fiscal Attractiveness
15%	Fiscal Stability
50%	Prospectivity

Onshore Metrics	Rating (1 of 5)	Ranking (of 122 country regimes)
Fiscal Attractiveness	3.8	39
Fiscal Stability	2.2	116
Prospectivity	4.7	2

Source: Wood Mackenzie

Summary

- **Alaska Production set to grow in mid-late 2020's.** Pre-FID fields key to development of area and providing facilities base for tie back of subsequent satellites. Capital spent is set to balloon with these developments

- **Short-term there is large uncertainty on oil price and supply demand outlooks** due to Russia/Ukraine conflict and rising prices

- **Longer term liquids demand peaks in 2030's and goes into decline.** However, current production decline can not meet demand and much new production is needed.

- In a base case scenario, we see **US$400 billion/yr of capital required.** This will be focused on advantaged resources which are low breakeven and low carbon. Alaska fairs fairly well in this term.

- **Large uncertainty remains on the pace of the energy transition** and its impact to the demand scenarios. However, even in an accelearated scenario trillions are dollars investment are still required.

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