

# Horizons

## **A hydrocarbon copy:**

The upstream industry's return to international shale exploration

April 2026

Authors

**Robert Clarke**  
Vice President,  
Upstream Research

**Josh Dixon**  
Senior Research Analyst,  
Upstream





## INTRODUCTION



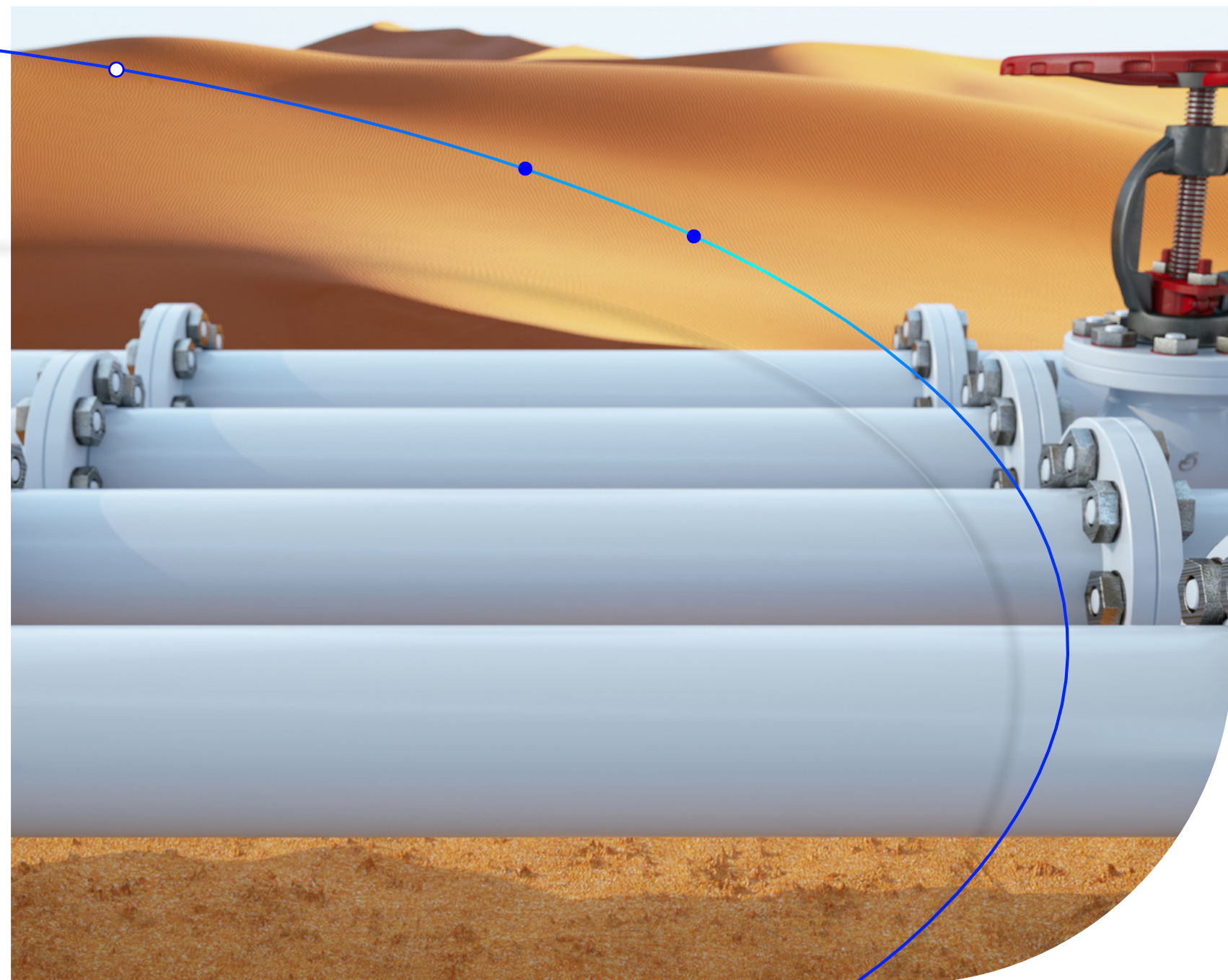
US shale has been a 20-year growth engine for global upstream, but the sector is now maturing. Shale specialists seeking more scale will need to look at new frontiers and greenfield opportunities. Moving North American shale expertise abroad could transform some oil and gas markets, and provide opportunities for exploration and production (E&P) firms to leverage differentiated technical advantages.

Operators already explored for international shale in the 2010s, with only two large-scale successes, in Argentina and Saudi Arabia. Their limited progress was not because of a lack of new play potential, but rather because better growth options became available. The top explorers retreated from unproven international prospects to focus on lower-risk, lower-cost acreage in the US Permian Basin.

The unfolding repeat of global shale exploration is very different – and better for it. Technology has pushed down

the cost of supply in all shale basins. Explorers have better data and are being more selective in their projects. And, unlike the last foray, there are no new mega-growth plays in the US to overshadow international endeavours.

With the [conflict in the Middle East](#) putting a spotlight on alternative sources of oil and gas supply, we think international shale is likely to come into increasing focus.



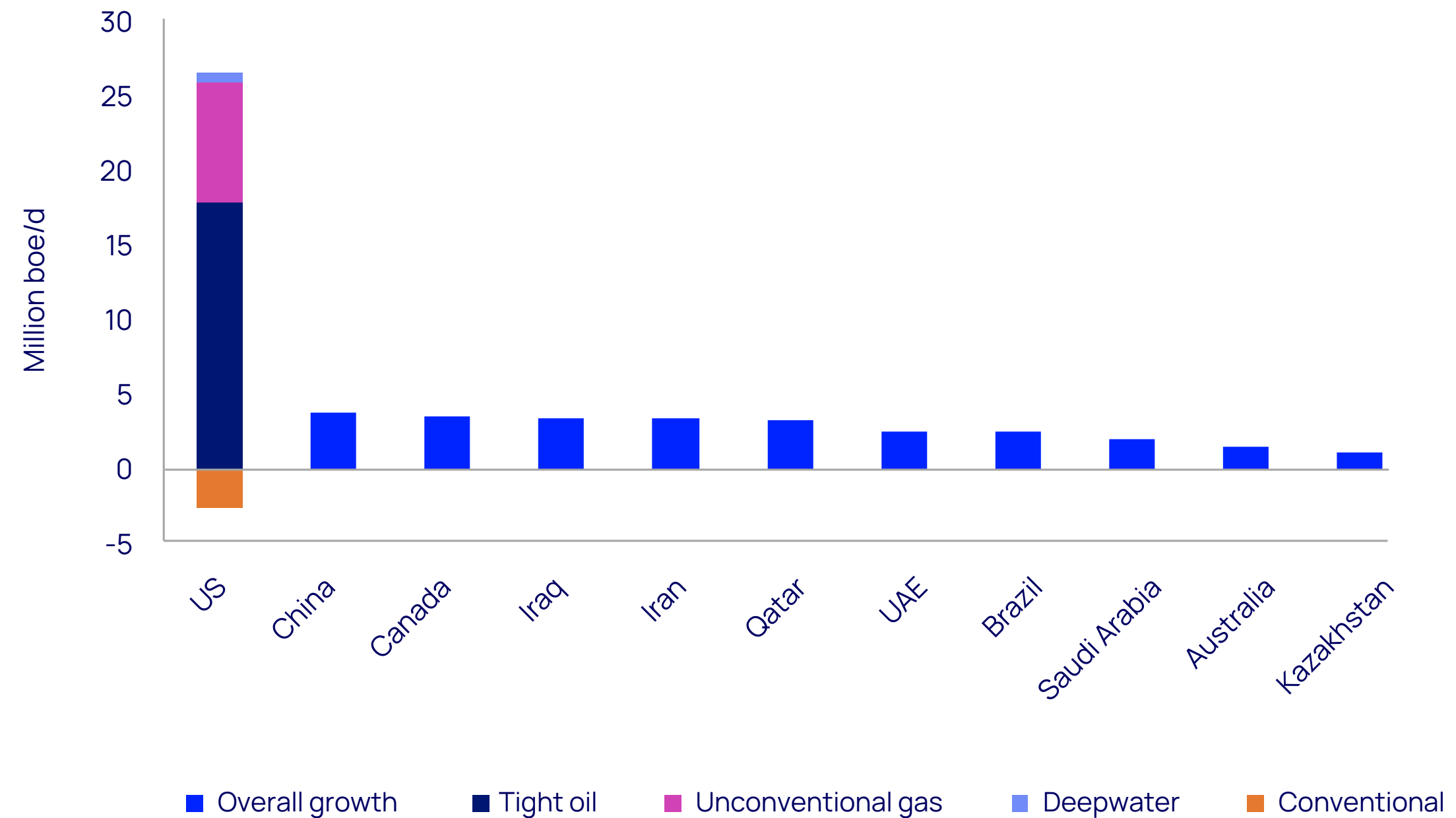
# Seeking shale at scale

Unconventional plays – shale and other extremely low-permeability reservoirs – have earned an irreplaceable position in the upstream sector because of their differentiated scale. Shale is the most common sedimentary rock in the world, present in virtually every petroleum system. Engineering producible reservoirs out of higher-volume source rocks where oil and gas are generated was the equivalent of E&P alchemy.

Shale has allowed the US and its domiciled E&Ps to drive roughly the same degree of growth over the past two decades as the next 10 countries combined. For perspective, Guyana – the industry’s largest conventional growth play – has increased production by just 0.7 million boe/d since 2019. US unconventional production has grown by more than four times that rate over the same period.

Energy-thirsty economies around the world remain envious of the US Lower 48’s shale success. Without it, the US would no longer be the world’s largest oil and gas producer; it would just squeeze into the top 10.

Supply growth by country and resource theme (2005-25)



Source: Wood Mackenzie; tight oil includes associated gas.

# Global shale 1.0: failure to launch

Exploration in the early 2010s – we refer to this as global shale 1.0 – was driven by the industry wanting to replicate US unconventional success. Greenfield frontier geographies close to end markets were the preference: hungry for production, with local prices high enough to support projected asset economics.

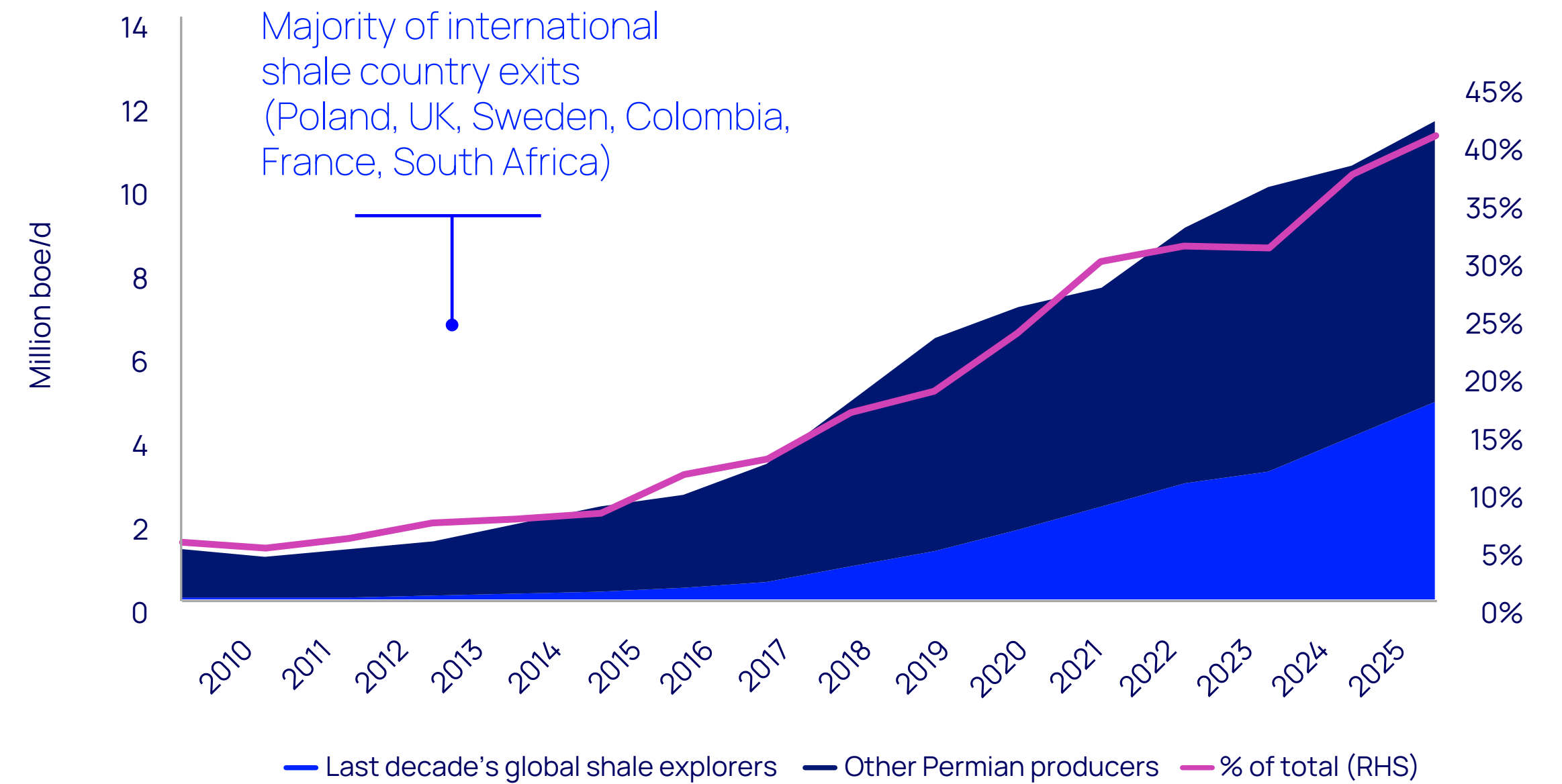
However, early attempts hit major hurdles in terms of costs and above-ground regulations. Dry holes were common and exploration wells took years to permit and drill, fatiguing management teams and stakeholders. On top of that, the brewing overperformance of US shale set the stage for the 2015 and 2016 oil-price downturn. Exploration spending was slashed and marginal global shale projects became uneconomic.

**Global shale 1.0 was driven by the industry wanting to replicate US unconventional success**

The nail in the coffin, though, was the evolving opportunity in West Texas. Leading global shale explorers, who had been chasing marquee exploration projects in Poland, Colombia, Germany and China, all chose the Permian Basin instead for short-cycle reserve growth. The Permian was cheaper to develop, easier to execute and faster to scale up. It contained better-quality resource, even if projects forfeited the price premium that production in other countries could fetch.

Having given up on their international forays, the largest global shale 1.0 participants pivoted to spend more than US\$100 billion on Permian acquisitions between 2012 and 2025. They also invested more than US\$130 billion developing these Permian positions. Breakevens were driven down by more efficient operations and dramatically improved well recoveries, positioning the Permian lower on the global cost curve.

**Permian production with leading global shale explorers retrenching**



Source: Wood Mackenzie Lens; companies include ExxonMobil, Chevron, Shell, BP, ConocoPhillips, Marathon, EOG and APA.

## Global shale 2.0: this time, it's different

Companies and investors are becoming more convinced that demand for oil and gas will remain stickier than many anticipated. Consequently, operators are dusting off global shale 1.0 concepts as a starting point for capturing undeveloped unconventional resource. Exploration is not just picking up where it left off, however. Critical screening changes include:

**A focus on controlling spending.** While still closely aligned with strong demand and regional price signals, just 20 high-grade plays are in the spotlight today, compared with more than 100 opportunities last decade. We estimate that over US\$1 billion was spent on Poland shale gas exploration alone between 2009 and 2015, for instance, with no commercial outcome.

**Regulation as a filter.** Explorers know the countries to avoid. Bans on hydraulic fracturing or unworkable fiscal terms will make certain projects impossible. Companies also have a better understanding of supply-chain risks, such as red tape that restricts the import of critical drilling and completion equipment.

**Stronger geopolitical considerations.** Russian tight oil in the Bazhenov and Domanik plays is a huge prize that is off limits to Western capital for the foreseeable future. US companies are unlikely to reengage with China's

Sichuan basin shale either, despite the country's national oil companies (NOCs) having some success in tight gas and coalbed methane in the neighbouring Ordos basin.

Two US shale leaders stepping into global shale 2.0 have stoked the fire considerably. Continental has moved into Argentina through multiple deals and will operate one of its Vaca Muerta assets. It also has a new unconventional joint venture with the Turkish Petroleum Corporation (TPAO). Before the Iran war, EOG had made unconventional entries into Bahrain and the United Arab Emirates.

Each of these companies has a strong exploration commitment, access to leading technical skillsets and a history of breaking open new plays. In fact, some of the global shale 2.0 plays being studied are assets that EOG evaluated in global shale 1.0.

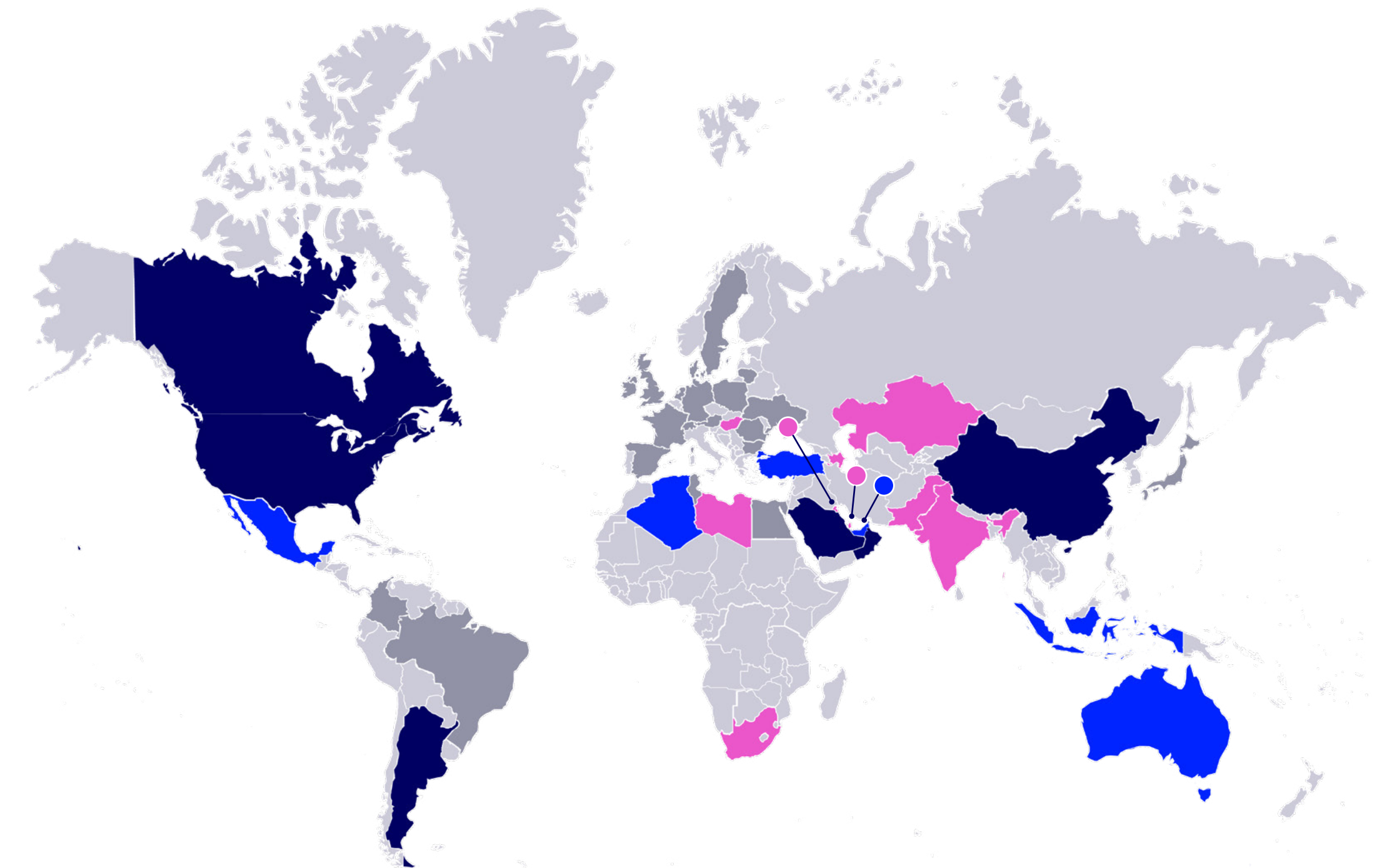
If other US shale specialists undertake similar moves abroad, momentum will accelerate and, with it, stakeholder acceptance for exploration. Fear of missing out will set in and even more US E&Ps will follow.

**Two US shale leaders stepping into global shale 2.0 have stoked the fire considerably**

### Unconventional target geographies – building on the last decade's learnings

#### Activity 2022 to present

- Unconventional assets on production
- High potential unconventional assets
- Unconventional assets under assessment
- Unsuccessful shale 1.0 activity



Source: Wood Mackenzie. Shale and tight oil and gas assets only. Excludes Russia

# The biggest difference: there's no 'new Permian' in the US

The greatest advantage for global shale 2.0 is that there is no new US play on the scale of the Permian Basin to contend with.

US exploration all but dried up after the horizontal Permian boom took off. Frontier drilling was already on a downward trend. The only tangible exploration successes have been new and smaller zones within developed basins, or greenfield play concepts that are a fraction of the Permian's size.

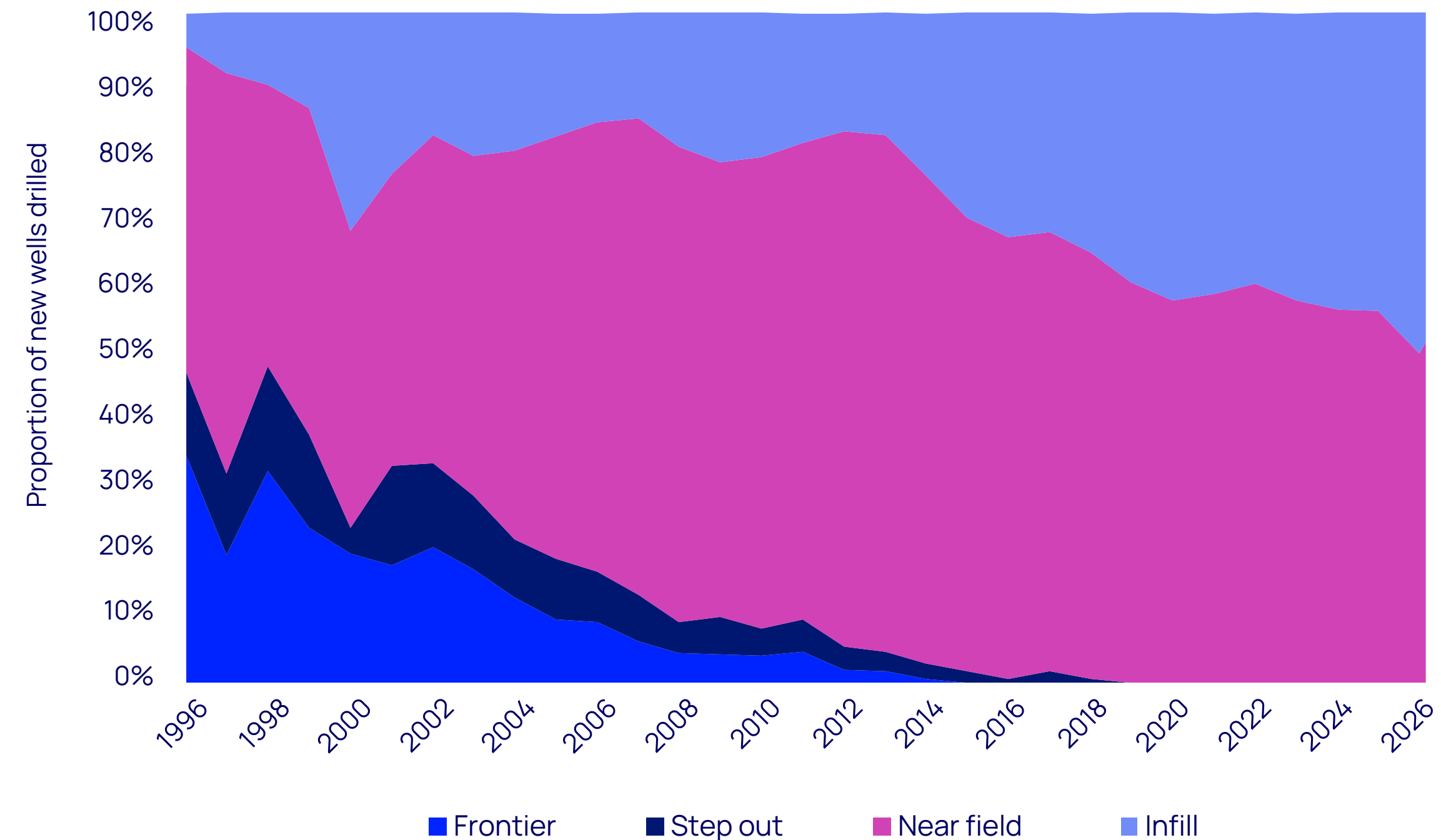
---

## There is no new US play on the scale of the Permian Basin to contend with

The reasons to try to discover another Permian in the US are compelling. The maturing Permian now holds more value than all other Lower 48 basins combined. It has become the dominant project in ExxonMobil and Chevron's global portfolios, and it offers cost-of-supply metrics on a par with top-tier conventional projects globally.

The prize would be great if it could be found, but nothing suggests that it will be.

The US Lower 48 exploration drought



Source: Wood Mackenzie and Novi Labs, Inc. Well categorisations based on density rules within a five-mile radius at first production date

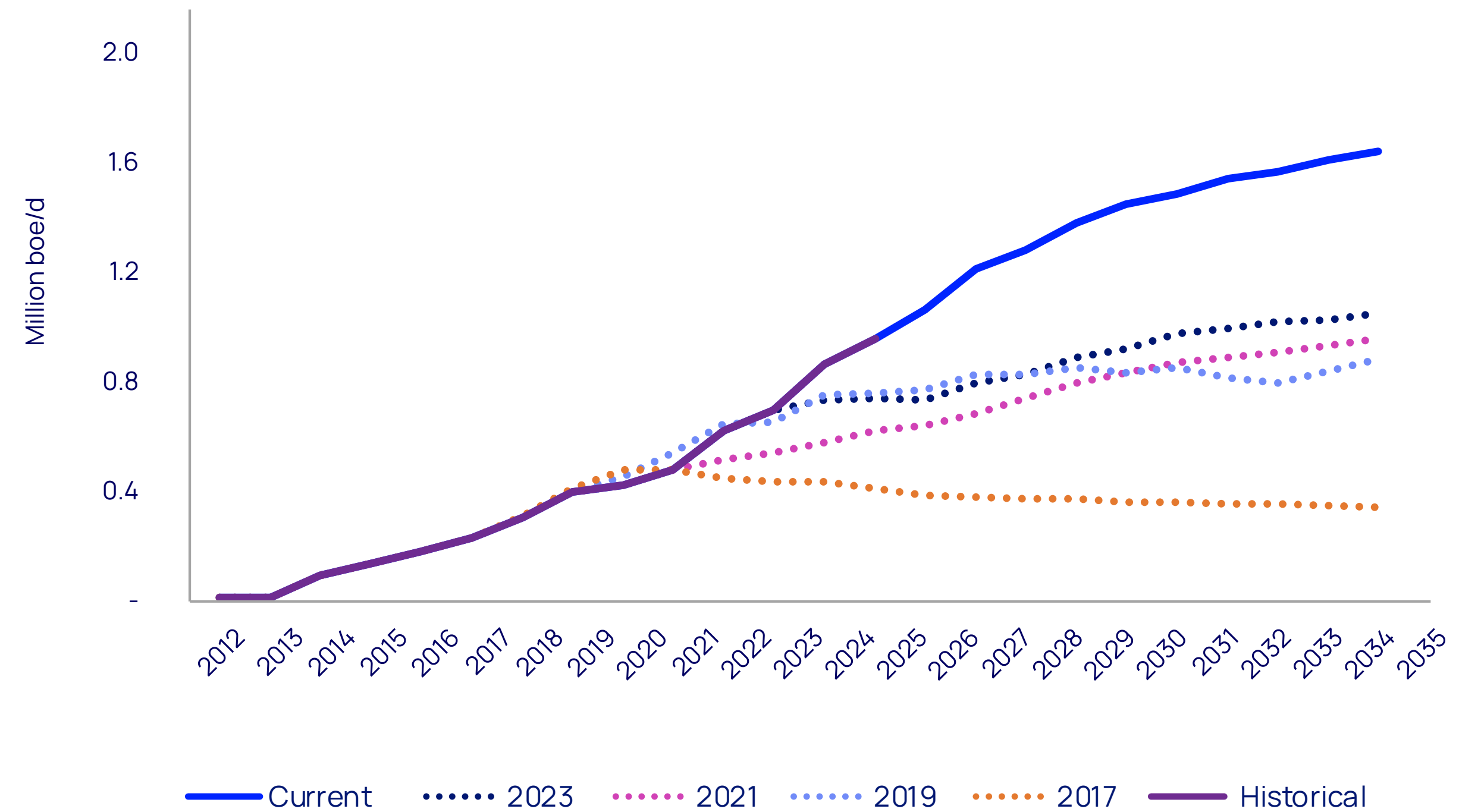
# Argentina and Saudia Arabia show the potential

Two major success cases from global shale 1.0 have proved that international scale is possible given the right commercial and technical factors. Combined, the Argentinian and Saudi Arabian projects will produce more than 2.5 million boe/d in the next decade. They are set to absorb a collective US\$250 billion of capex and could be as transformational to their own domestic markets as the Permian has been to the US.

The Jafurah liquids-rich shale gas project came online in early 2026. It produces from the Jurassic source rocks that feed Saudi Arabia's conventional behemoths. The rich gas play allows for greater oil exports, as the Kingdom can stop burning oil for power generation, particularly in its summer months. An electrifying economy needs more gas, and volumes from Aramco's conventional fields alone cannot meet growing demand. Peak production is estimated at 2 bcf/d of sales gas and over 600 kb/d of condensate.

The Vaca Muerta play, meanwhile, has been slow to build, but is now producing roughly 1 million boe/d. We think it can produce over 1.6 million boe/d at peak. Competition from 20 companies is driving progress and there is volume upside from better-developed oilfield service (OFS) support and even more mergers and acquisitions (M&A) to bring in new players with ideas and ambition. This growing ecosystem of technology, engineering and capital is opening up global waterborne export opportunities for both oil and gas that will strengthen the Argentinian economy.

Argentinian unconventional production forecasts growing steadily



Source: Wood Mackenzie

# Which global shale prospects are most attractive today?

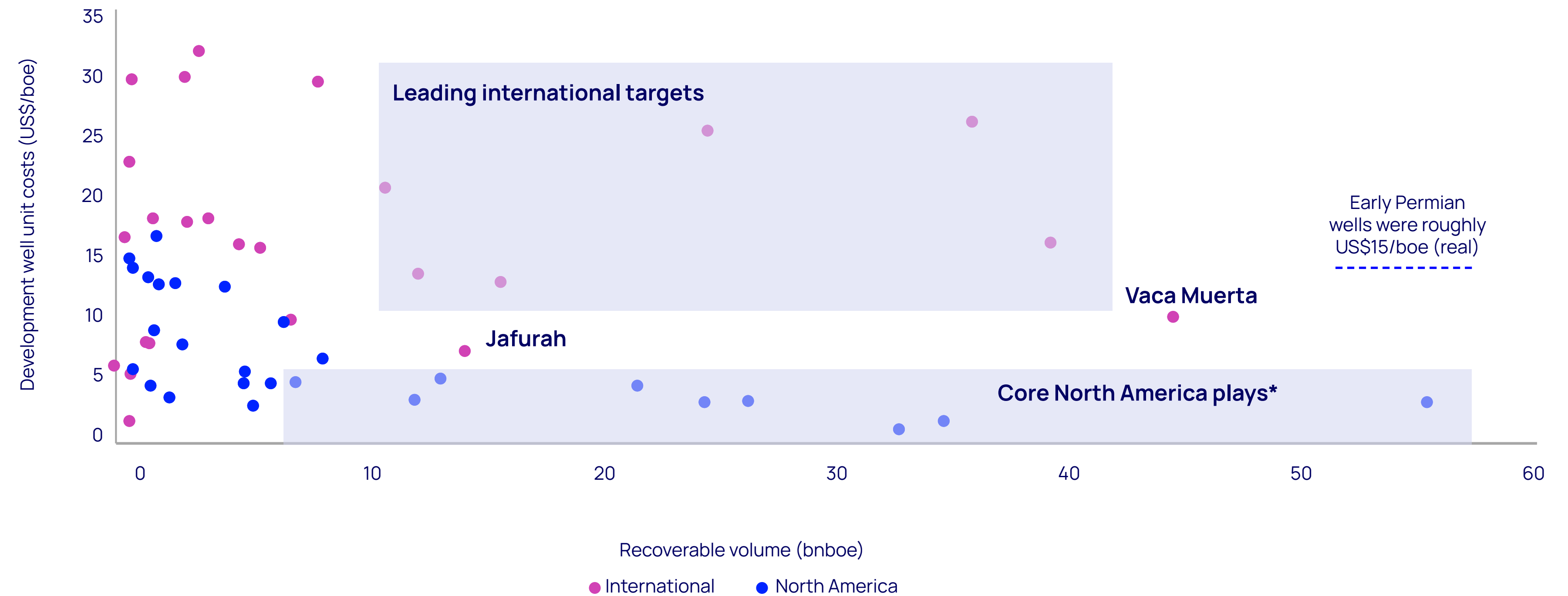
International plays must closely match top US projects on a host of geological analogue factors, including stratigraphy, mineralogy, geochemistry and structure. Pathways to infrastructure buildout and flexibility in project planning are also needed, particularly for dense well developments and high-frequency permitting. Partnerships must be incentivised to increase data sharing and collaboration.

Operators will also need to have confidence that the latest US shale technologies can be imported and deployed at scale. One or two high-spec horizontal rigs and pressure pumping fleets entering a country is not enough to meaningfully lower costs. Project execution in the field must also perform dramatically better than global shale 1.0.

## Project execution in the field must also perform dramatically better than global shale 1.0

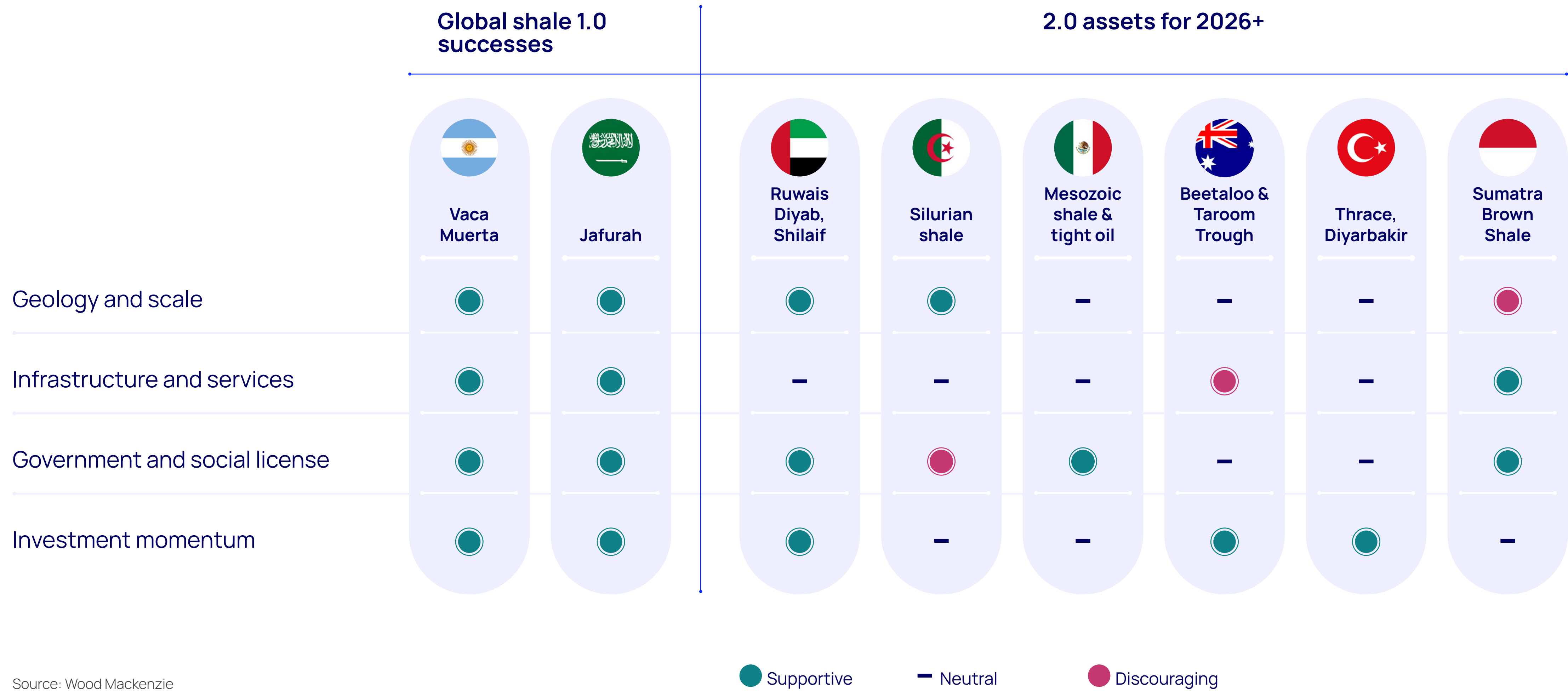
It is key that US operators ask harder and smarter questions about these challenges. The UAE, Algeria, Mexico, Australia, Türkiye and Indonesia are leading focal points, even if some of the plays were already studied for global shale 1.0.

Costs need to fall: US and global shale play comparison



Source: Wood Mackenzie. \*2026 cost structures for Permian (3), Eagle Ford, Marcellus, Haynesville, Bakken and Montney.

# Highest-focus targets in global shale 2.0



Source: Wood Mackenzie

# Ranking the shale prospects

We've applied a scorecard system to the above plays to rank growth potential, with a focus on scale and timelines.

-  **UAE:** the Abu Dhabi National Oil Company (ADNOC) is moving beyond the de-risking phase of its unconventional programme. Final investment decisions (FIDs) were expected in 2026 before the Iran war began. The company is prioritising unconventional gas to support a 2030 gas self-sufficiency target. There is a spotlight on fiscal, offered gas prices and regulatory flexibility to attract and retain global interest. Over 300 wells per year could be drilled.
-  **Algeria:** the Lower Silurian shale has exceptional subsurface potential and the market prize is piped exports that diversify Europe's gas supply. Algeria already has a tight gas sector, but additional OFS bottlenecks need to be fixed for ExxonMobil and Chevron to proceed with exploration partnerships.
-  **Mexico:** Pemex has aggressive but achievable shale gas and tight oil production targets for 2030 that have been prioritised because of US trade tensions. Targets span beyond the extension of the US Eagle Ford play. Equipment imports will be easier than in other countries, and US operators would be more comfortable with nearby geographies for operations.

-  **Australia:** gas exploration in the Beetaloo sub-basin is progressing with a unique blend of global upstream and OFS partnerships. However, other plays, including deep coals and tight oil and gas in the Cooper and Bowen basins, add upside. Liquefied natural gas (LNG) backfill and supply to the premium-priced east coast market are core drivers.
-  **Türkiye:** Continental is drilling exploration wells in the Diyarbakır and Thrace basins in a project moving at lightning speed compared with activity in the 2010s. Neighbouring countries' gas-market dynamics mark this strategic supply opportunity longer-term, but Türkiye's aspirations to be a regional gas hub require significant infrastructure investment.
-  **Indonesia:** regulators and domestic producers are actively seeking US participation in the Sumatra basin. Tight oil projects will benefit from new OFS technology partnerships, and the government has experience regulating high-density drilling campaigns. Targets include lacustrine (lake deposition) sediments, which are different from the geology of the largest US shale plays. Lacustrine shales were once thought too challenging to commercialise, but this has been disproven by the success of the Uinta basin in the US.





## The potential obstacles

Commercially successful outcomes are far from a sure thing. The scars of global shale 1.0 failures run deep. To create a competitive renaissance, countries serious about enabling shale must commit to bringing projects into existence.

Redefined commercial, procurement and fiscal frameworks are necessary. Production-sharing contracts were not designed for short-cycle capex developments, as high reinvestment rates quickly consume cost-recovery pools. Ring-fencing a resource play is complicated as well, because of ill-defined field boundaries. US players will favour the familiarity of fixed royalty concessions, provided rates are low enough.

Geopolitical uncertainty in some target plays remains high and investors may prefer to wait for stability. Elections, for instance, have upended global shale potential before; look no further than hydraulic fracturing bans in Colombia and the UK. Argentina, too, has a history of cyclical capital controls.

## CONCLUSION

# The keys to global shale 2.0 success

If global shale 1.0 was largely the right idea at the wrong time, 2.0 is an even better idea at a more opportune time, but costs must come down.

Shale-focused US E&Ps must approach the opportunity in a smarter way than they did last decade. A revived focus on exploration and appetite for growth is essential, too. M&A has been their primary portfolio renewal strategy, but that is finite.

Negotiating with foreign governments is a different endeavour to accumulating acreage through US land deals. Companies will need to enhance their commercial skillsets. Those will be just as important as subsurface interpretation and engineering expertise.

For their part, host countries must accept that unconventional timelines are fast, and regulators need to make decisions quickly. Governments often require extended work programmes when awarding licences, but international shale explorers have to have the flexibility to exit easily if results are disappointing.

Importing new and unique equipment, materials and personnel needs to be easier, too. An example is Argentina relaxing import tariffs through its new framework for large-scale investments.

Jafurah and the Vaca Muerta proved that with the right geology and host-government approach, international shale can progress at scale. They also prove that public companies, private investors and NOCs can all participate. Finding alignment among all parties might have seemed improbable five years ago, but the global energy landscape is radically different in 2026.

Where there is a will to recreate US shale as part of reprioritising upstream geographies and risks, there could be a way. By 2030, the next international successes should be evident. The opportunity is there for those companies and countries prepared take on the challenge of global shale 2.0.





Intelligence Connected

Wood Mackenzie™, is a trusted intelligence provider, empowering decision-makers with unique insight on the world's natural resources. We are a leading research and consultancy business for the global energy, power and renewables, subsurface, chemicals, and metals and mining industries.

For more information visit: [woodmac.com](http://woodmac.com)

WOOD MACKENZIE is a trademark of Wood Mackenzie Limited and is the subject of trademark registrations and/or applications in the European Community, the USA and other countries around the world.

Europe: +44 131 243 4400  
Americas: +1 713 470 1600  
Asia Pacific: +65 6518 0800  
Email: [contactus@woodmac.com](mailto:contactus@woodmac.com)  
Website: [www.woodmac.com](http://www.woodmac.com)

#### Disclaimer

These materials, including any updates to them, are published by and remain subject to the copyright of the Wood Mackenzie group ("Wood Mackenzie"), and are made available to clients of Wood Mackenzie under terms agreed between Wood Mackenzie and those clients. The use of these materials is governed by the terms and conditions of the agreement under which they were provided. The content and conclusions contained are confidential and may not be disclosed to any other person without Wood Mackenzie's prior written permission. Wood Mackenzie makes no warranty or representation about the accuracy or completeness of the information and data contained in these materials, which are provided 'as is'. The opinions expressed in these materials are those of Wood Mackenzie, and nothing contained in them constitutes an offer to buy or to sell securities, or investment advice. Wood Mackenzie's products do not provide a comprehensive analysis of the financial position or prospects of any company or entity and nothing in any such product should be taken as comment regarding the value of the securities of any entity. If, notwithstanding the foregoing, you or any other person relies upon these materials in any way, Wood Mackenzie does not accept, and hereby disclaims to the extent permitted by law, all liability for any loss and damage suffered arising in connection with such reliance.

Copyright © 2026, Wood Mackenzie Limited. All rights reserved.