



# Shift in U.S. Upstream Business Models

Publics moderating growth to focus on shareholder returns, Privates may backfill supply

## Public Strategy Pre-2018

- Growth focused business models predicated on well-level economics
- Investors willing to finance development through heavy equity and debt issuance
- Outspending cash flow to drive net asset value (NAV) was the name of the game
- Management teams extremely comfortable with elevated leverage metrics predicated on high commodity prices
- Highly fragmented market in both the public and private sides of the industry

## Public Strategy in 2021+

- Shift towards moderate growth and free cash flow generation
- Commitment to limit reinvestment of capex to 70-80% of cash flow (or lower)
- Commitment to capping growth in the mid-single digits for most public operators as the industry has begun to realize the impacts of U.S. production on broader macro trends
- Limited access to equity funding and a shift towards a business model that materially increases shareholder returns via common & variable dividends and buybacks
- Significant consolidation in the public and private space, with more likely on the horizon

# Private E&P summary

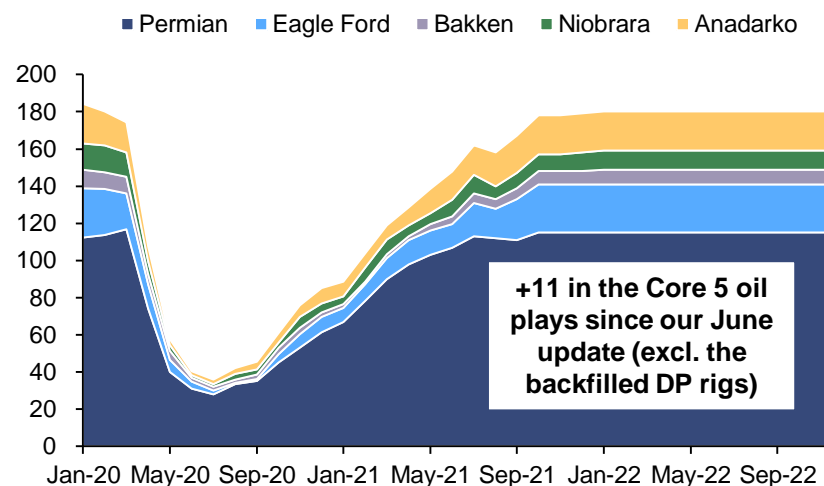
Continued (modest) above forecast rig profile and type curve upside pushes our estimates slightly higher

**Summary takeaway: still healthy growth, with some puts and takes.** In keeping with our approach of modeling private activity and volumes alongside our assessment of the outlook for public E&Ps and integrations, we've refreshed our outlook for 2022 with private rigs through September and PDP and type curves updated through mid-year. Overall, our revised outlook still envisions a healthy level of growth in 2022 in the ~400mbpd range, up from 340mbpd previously, as upside to both activity and improved well results in the Permian, Eagle Ford, and Bakken lift our outlook, offset to some extent by reduced outlooks in the DJ/Niobrara and Anadarko.

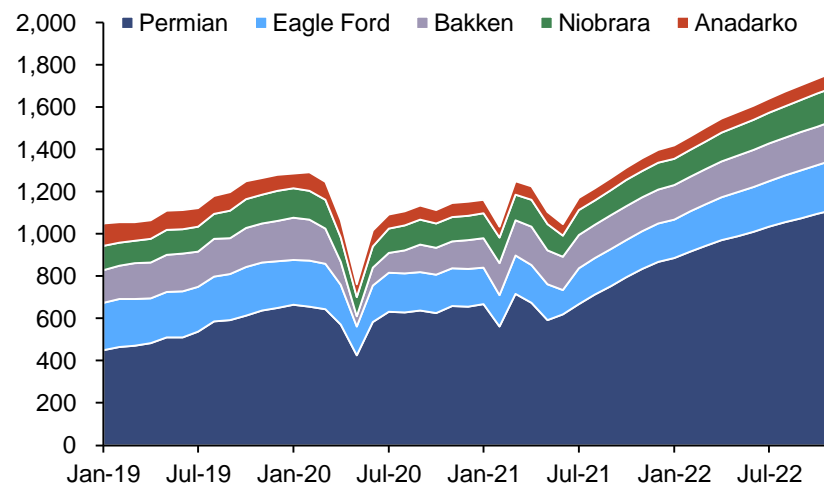
**Moving pieces in our revised rig outlook.** Since our June update, the various basins have added five rigs, with the primary additions coming in the Eagle Ford, Bakken, and Anadarko, the Permian largely in-line, and negative trends vs. our forecasts in the DJ/Niobrara. Our prior modeling had envisioned 162 rigs on average in Q4'21 and 166 rigs to kick off 2022, with our updated estimates baking in additions to date revising our Q4'21 estimate to ~180 rigs and our 2022 forecast at 180 rigs.

**Moving pieces in our revised production outlook.** Whereas our prior update had focused more on changes in rig additions vs. our prior outlook, as we've gotten a better indication on productivity trends in 2021 our updated outlook for volumes also features shifts in results across various basins. Notably, improved 6-month oil cumuls. in the Bakken (130mbbls vs. 120mbbls in our prior modeling) and the DJ/Niobrara (54mbbls vs. 42mbbls) accelerated our forecasts, while weaker results YTD in the Anadarko (19mbbls 5-month oil cumul. vs. 34mbbls). Overall, our forecasts for 2022 growth are revised slightly higher to ~400mbpd e/e growth from ~340mbpd previously, primarily driven by higher estimates in the Eagle Ford and Bakken, despite lower base production levels as a result of the Double Point acquisition.

**Private Horizontal Rig Count**



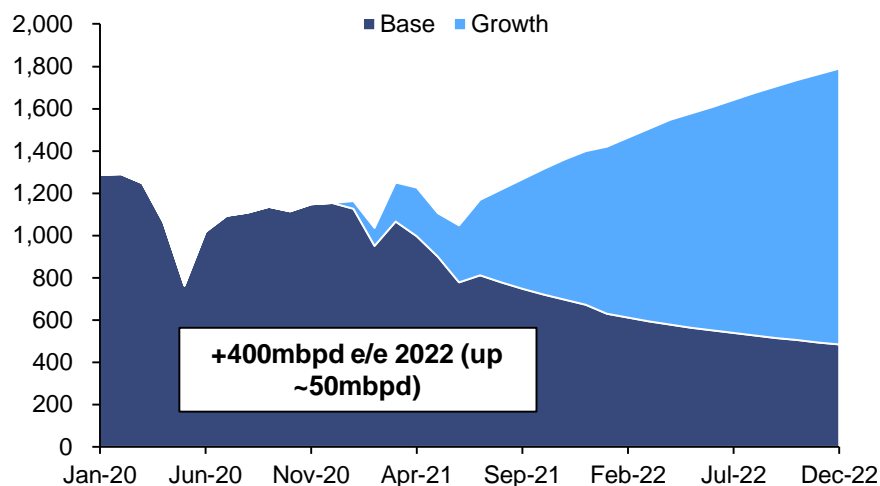
**Historical Production from Private Operators\* (mbpd)**



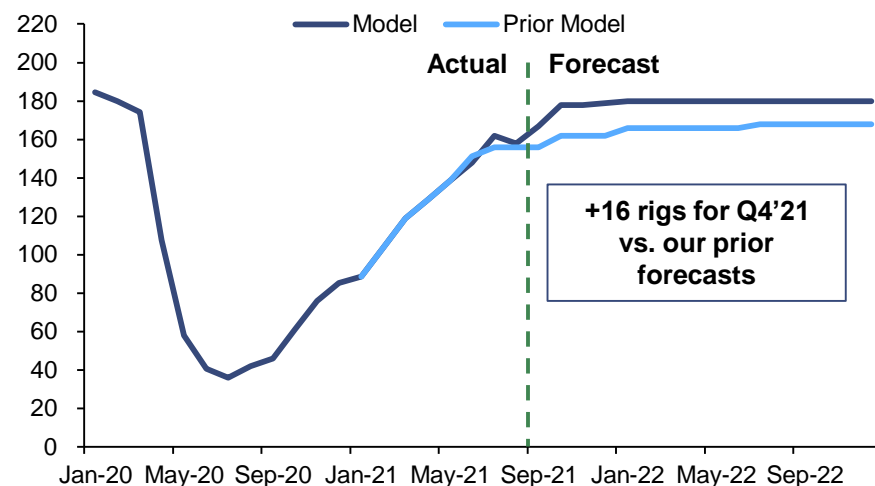
# Summary outlook

Continuing to forecast a healthy amount of growth in 2022

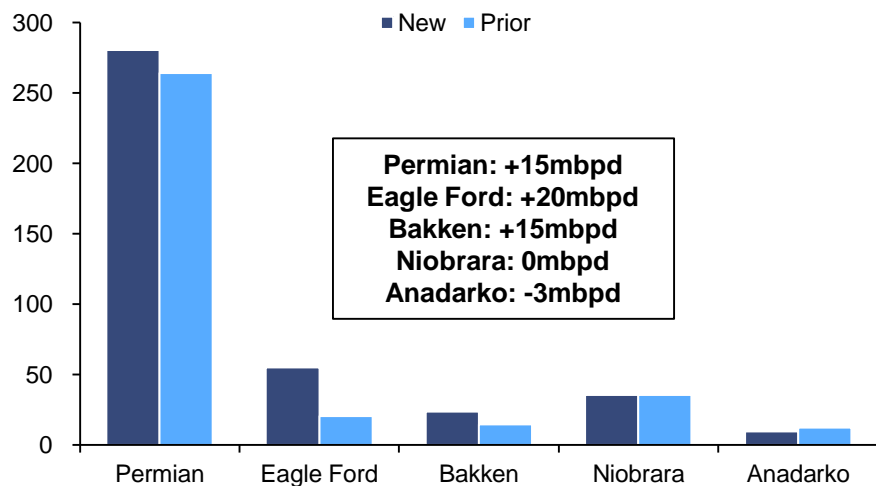
### Historical and Forecast Shale Oil Production (mbpd)



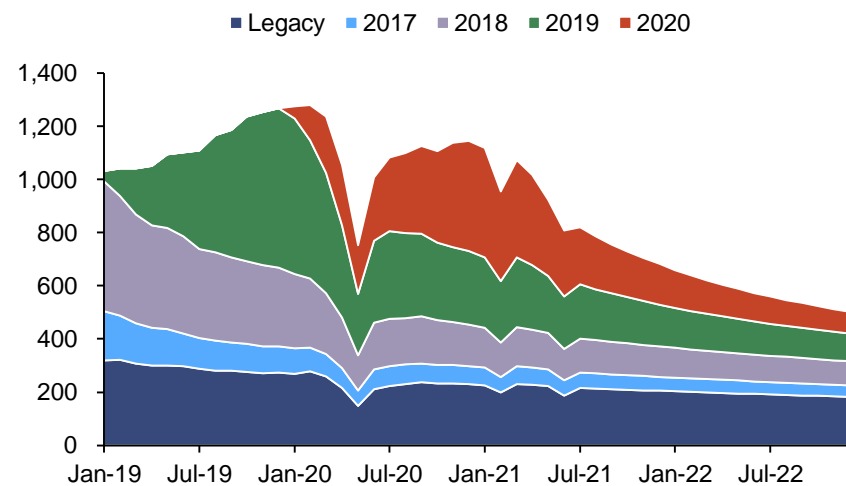
### Historical and Forecast Rig Counts



### Changes from Prior Forecast (2022 e/e growth, mbpd)



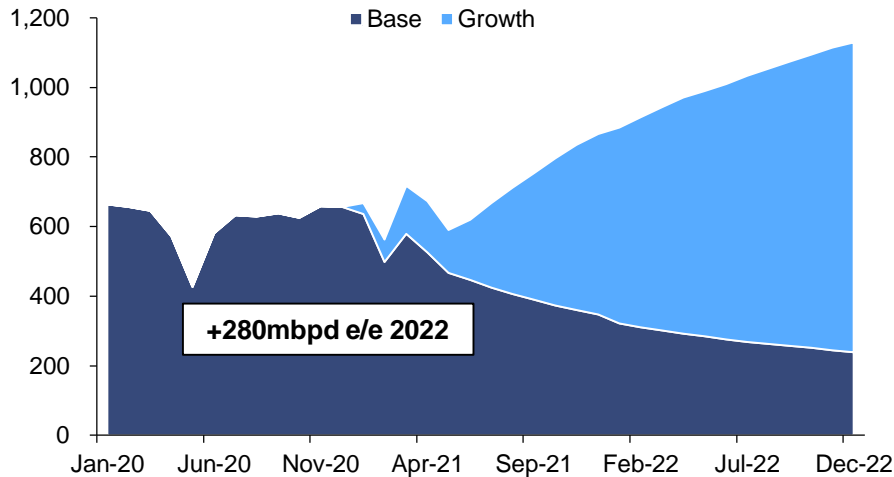
### Aggregate PDP Decline (mbpd)



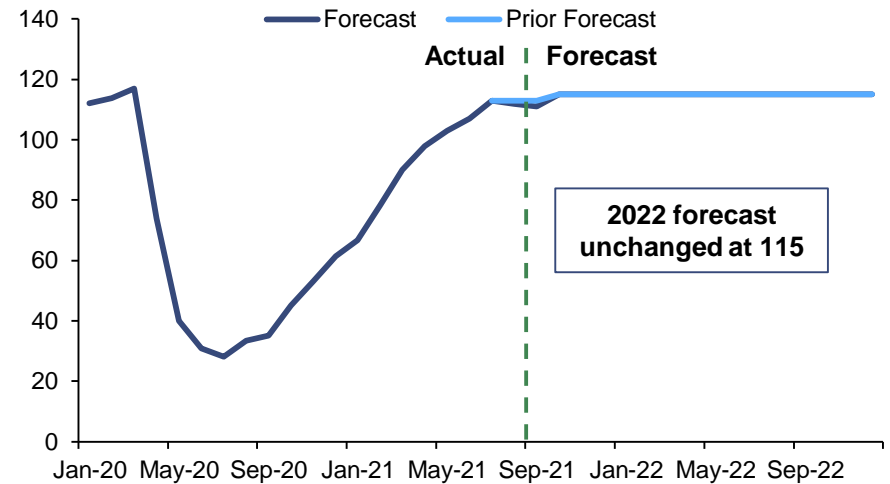
# Permian summary

Little change to our forecasts of significant growth in 2022

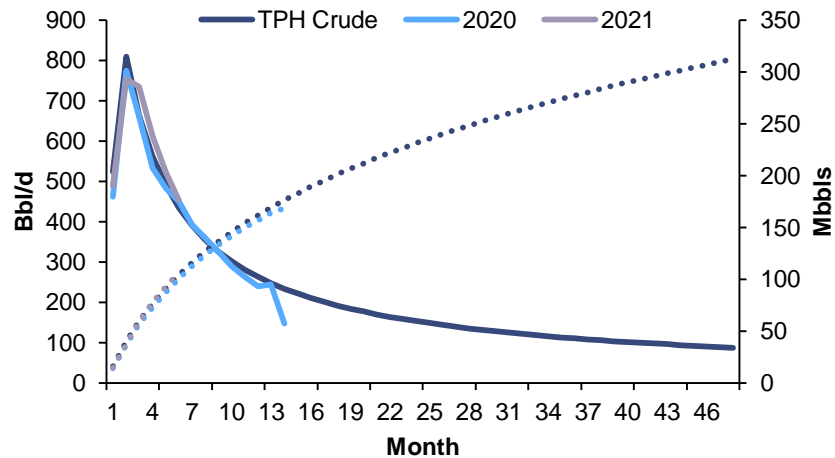
**Production (mbpd)**



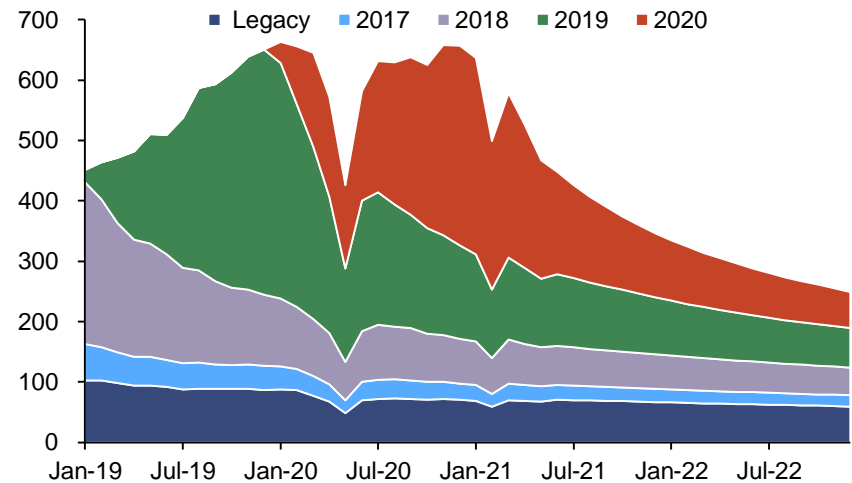
**Horizontal Rig Count**



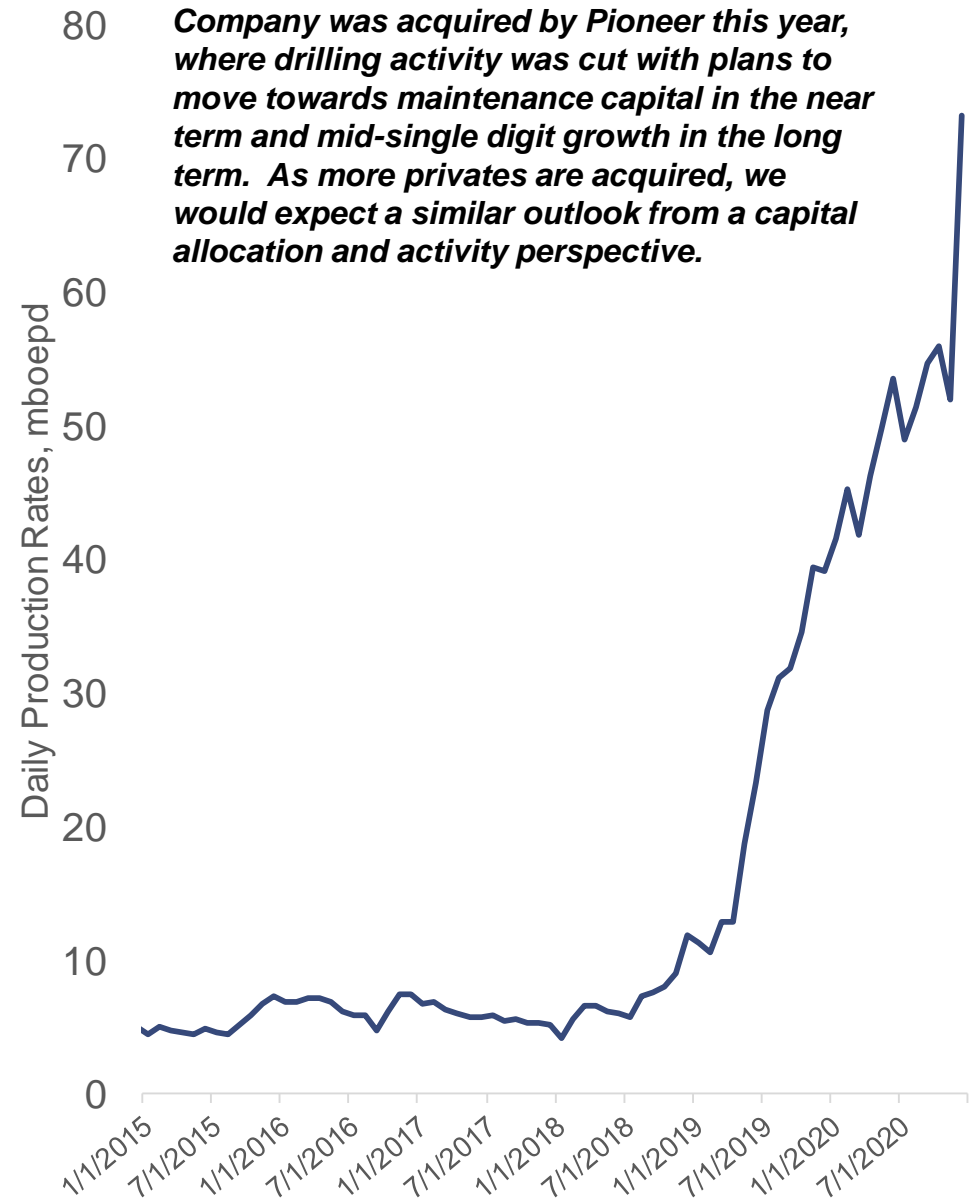
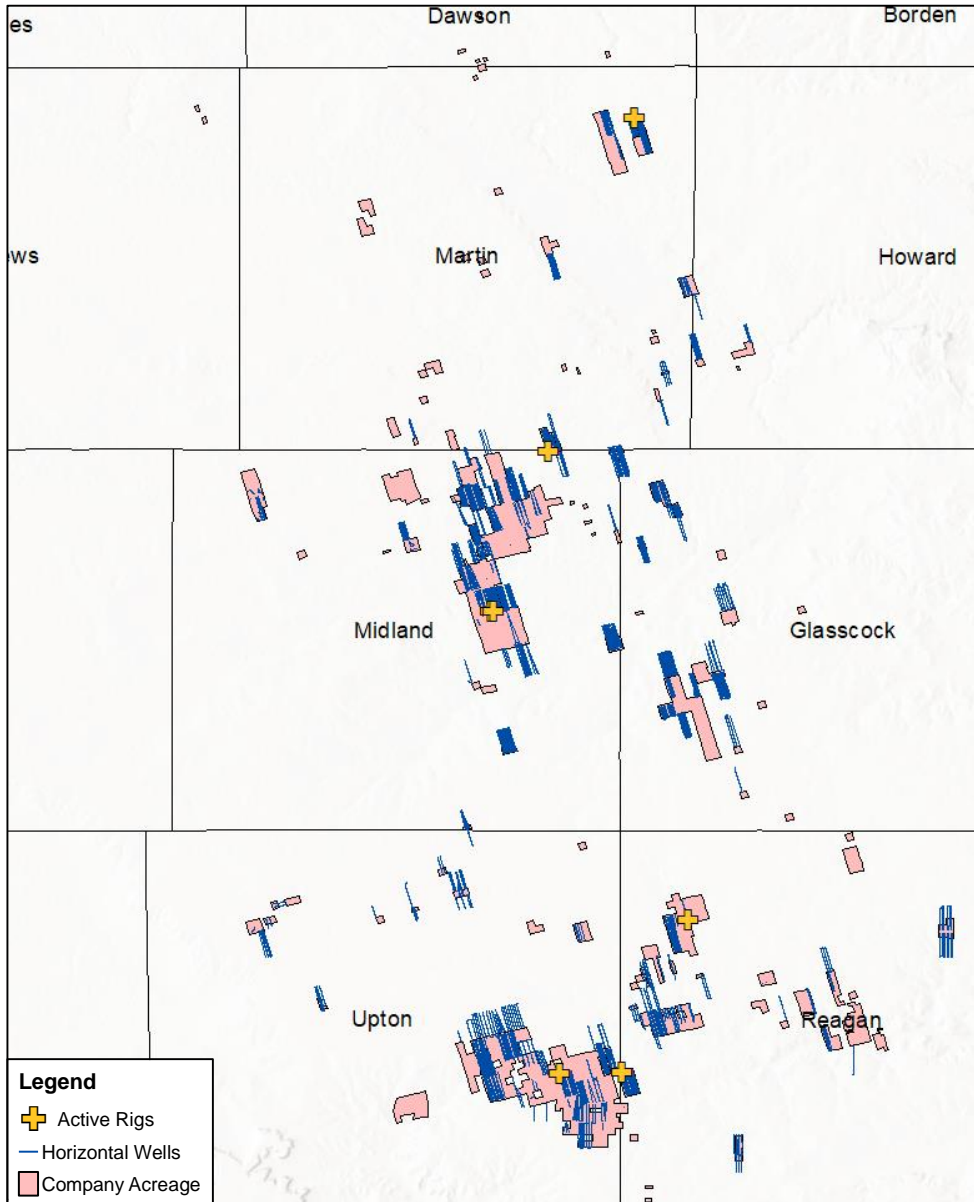
**Historical Results vs. TPH Modeled Curve**



**PDP Decline (mbpd)**



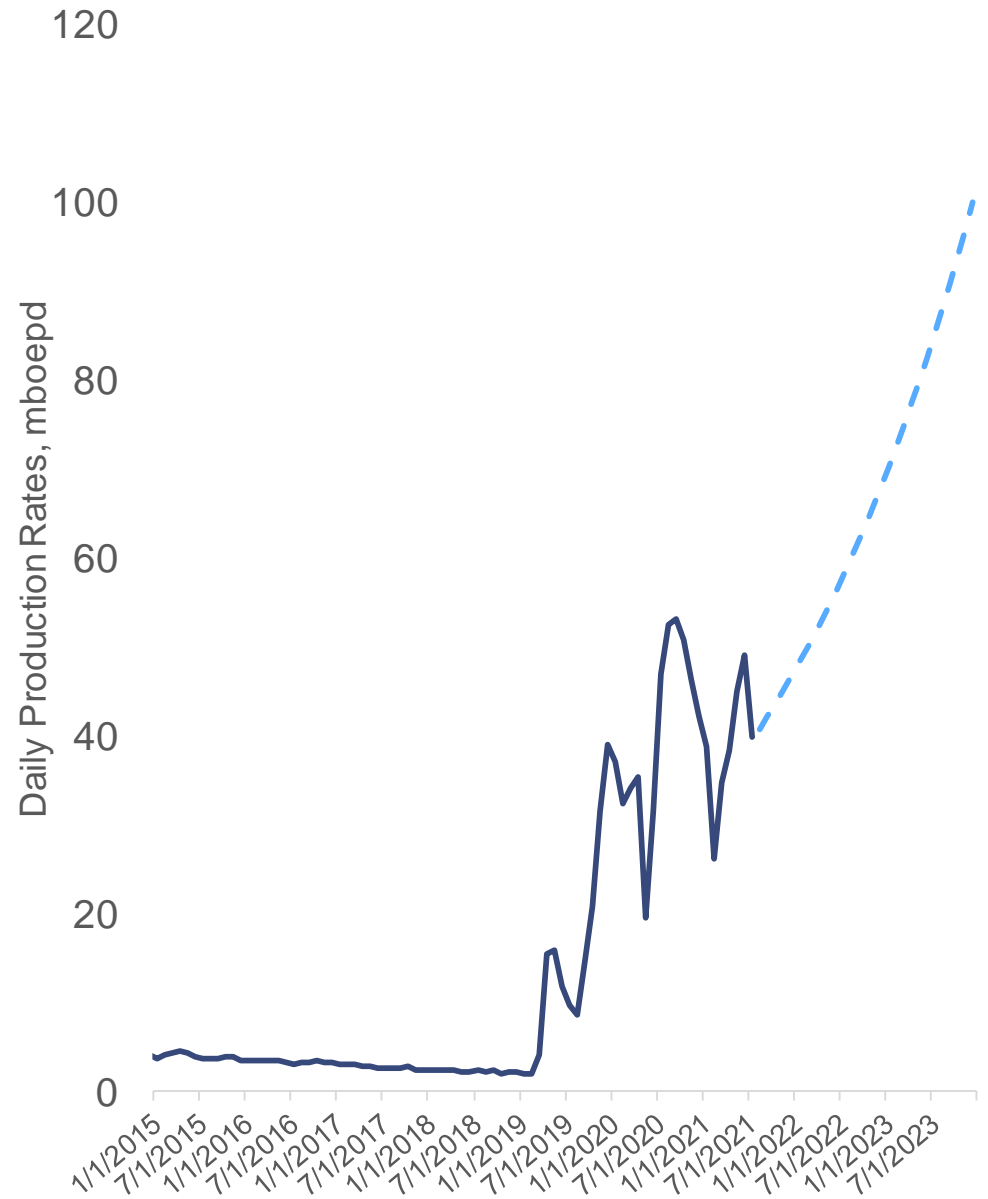
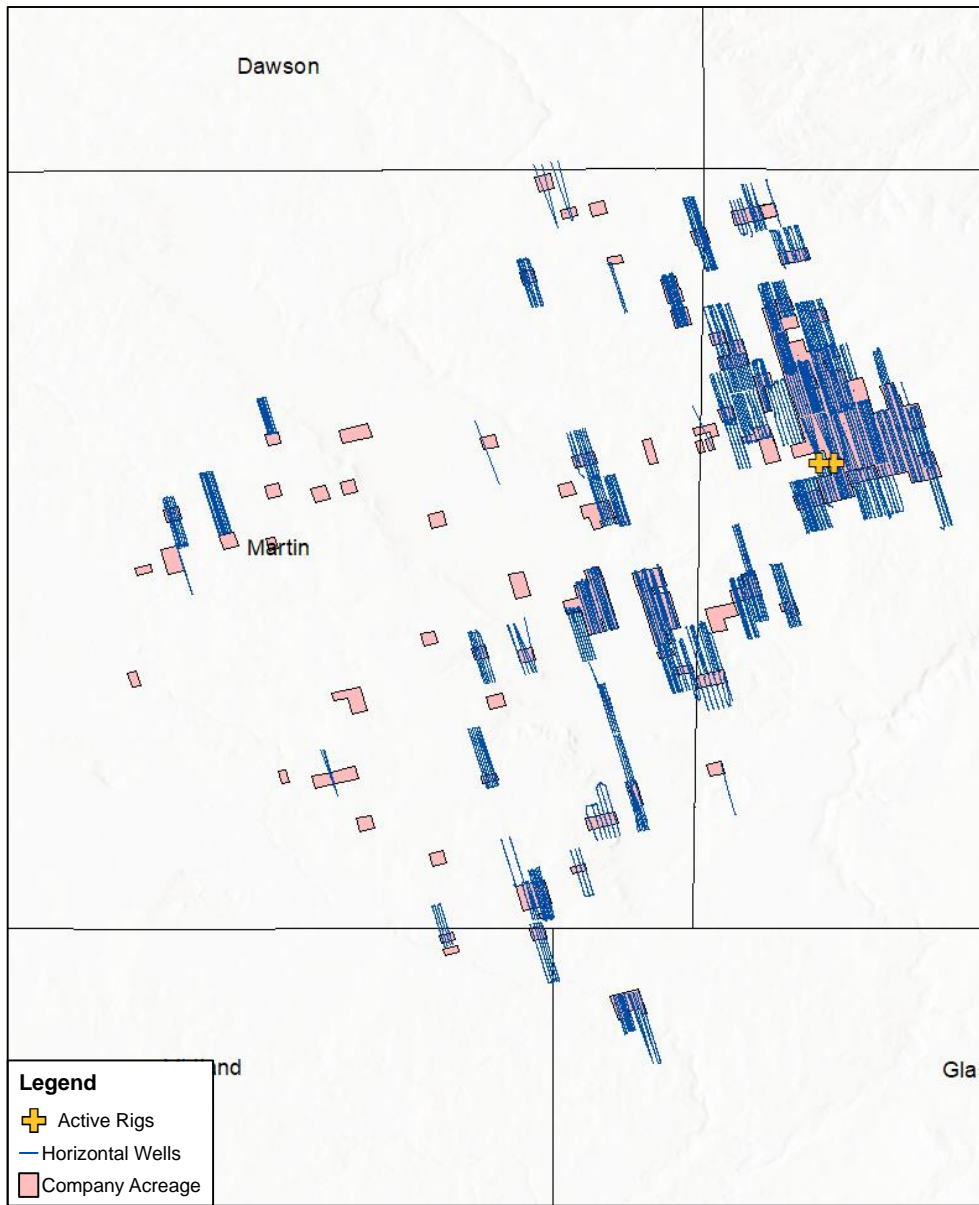
# As Private Assets Trade Hands to Public Market, Expecting Lower Growth



*Company was acquired by Pioneer this year, where drilling activity was cut with plans to move towards maintenance capital in the near term and mid-single digit growth in the long term. As more privates are acquired, we would expect a similar outlook from a capital allocation and activity perspective.*

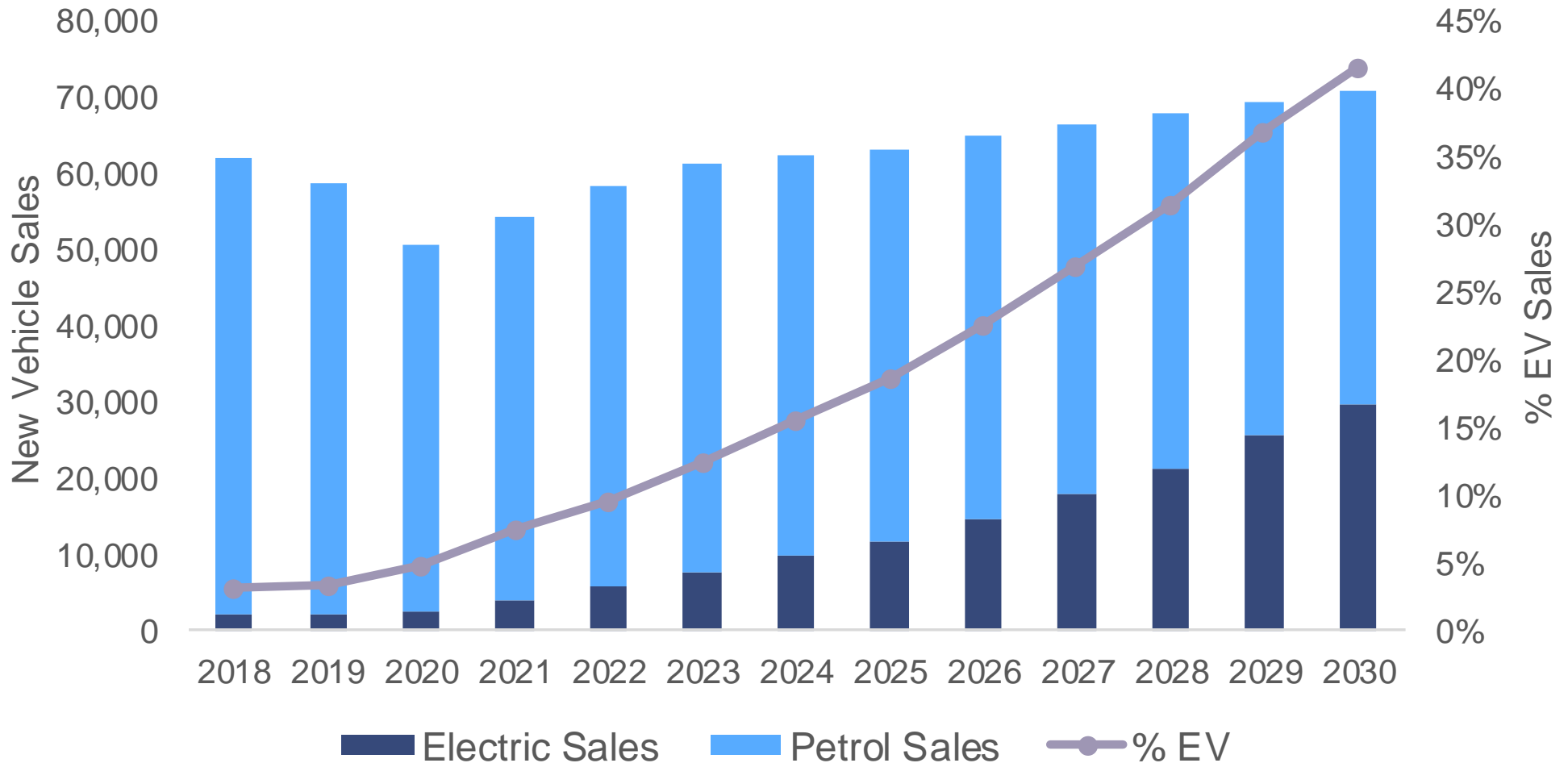
# Private Operator Example 2

Exceedingly strong growth leads to full inventory depletion



# Electric Vehicle Set for Robust Growth Through 2030

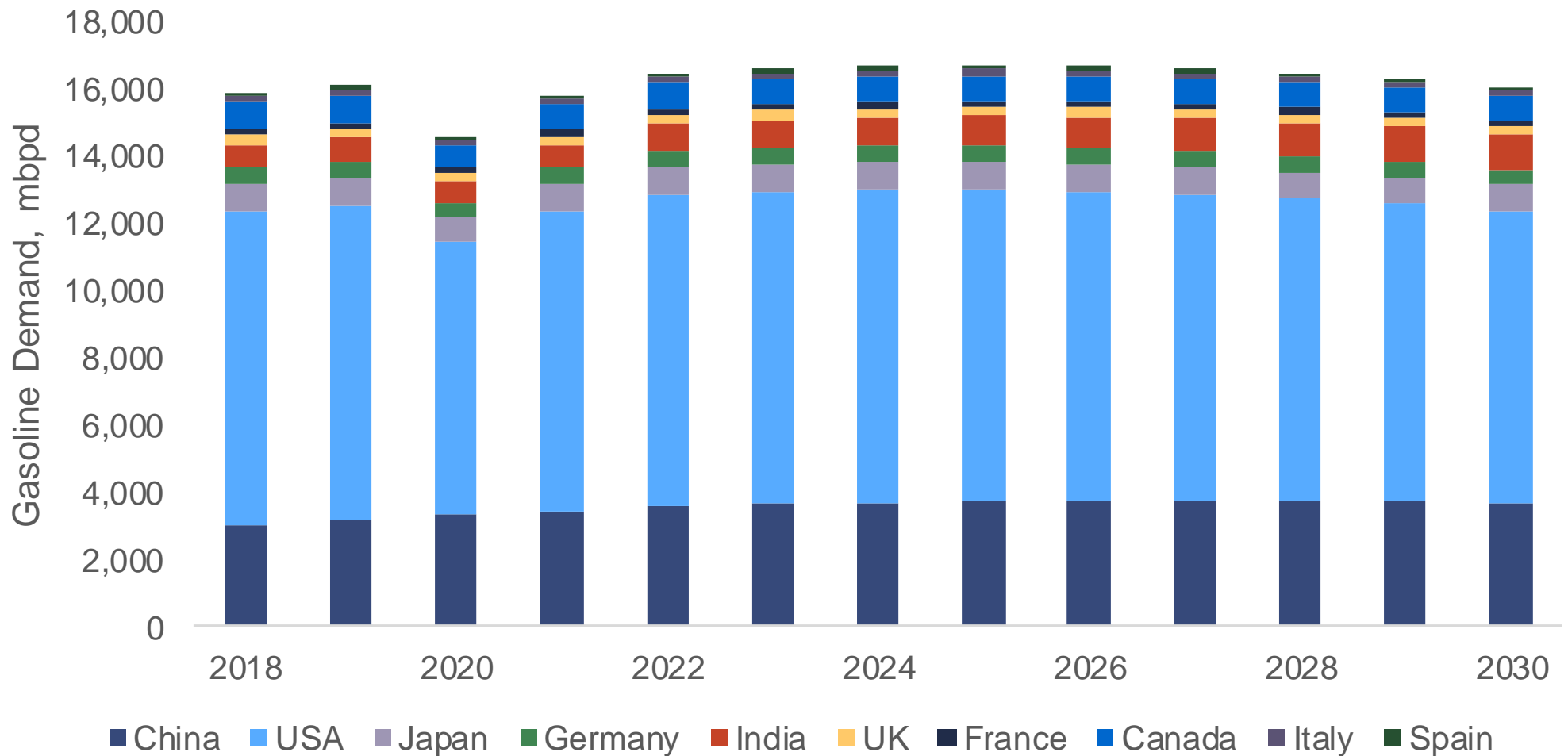
Top ten countries we model reach >40% of sales being electric by end of this decade





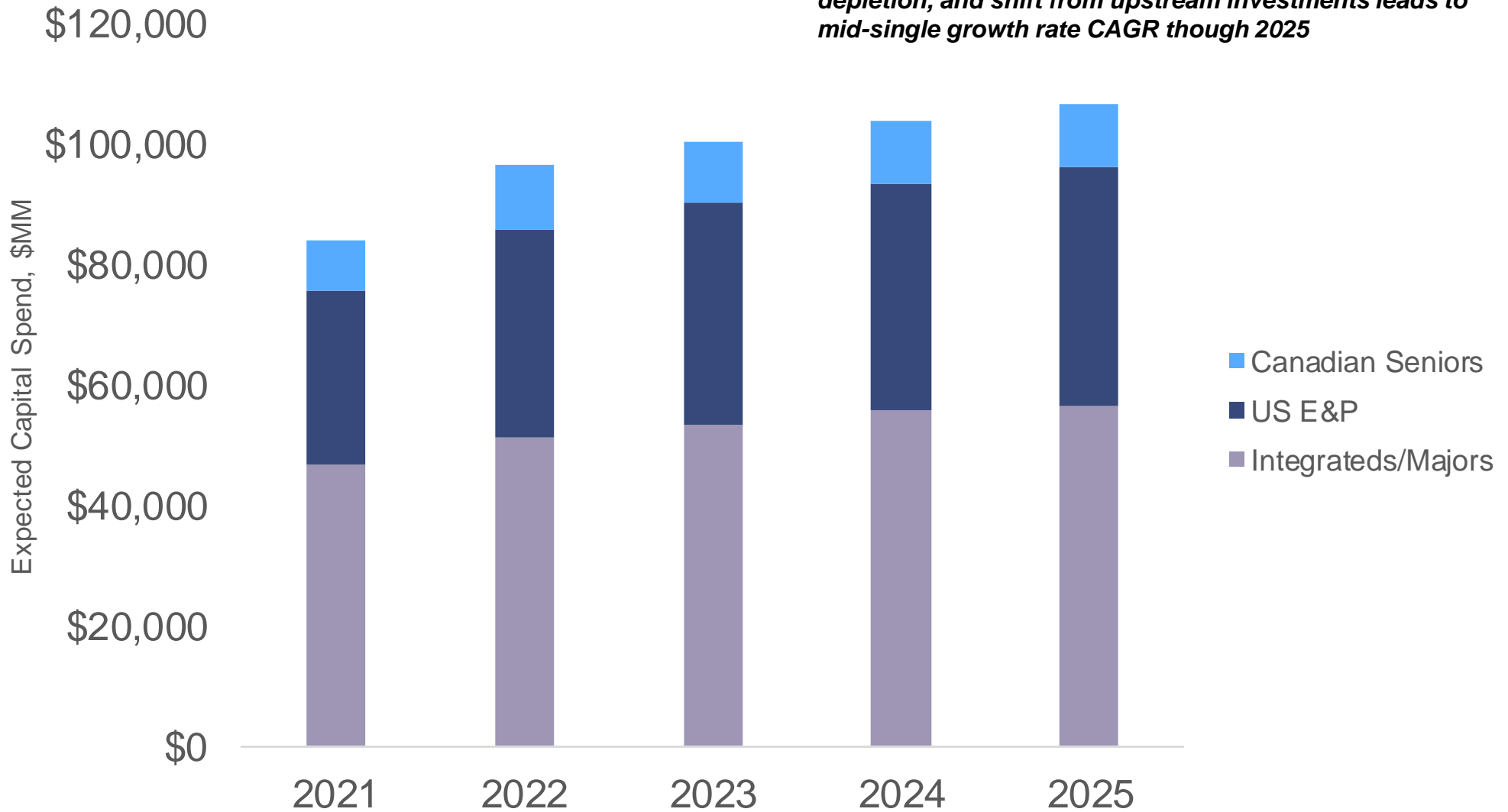
# Peak Gasoline Demand Still A Ways Off

Even with rising EV sales, slow fleet turnover mitigates near term demand risk



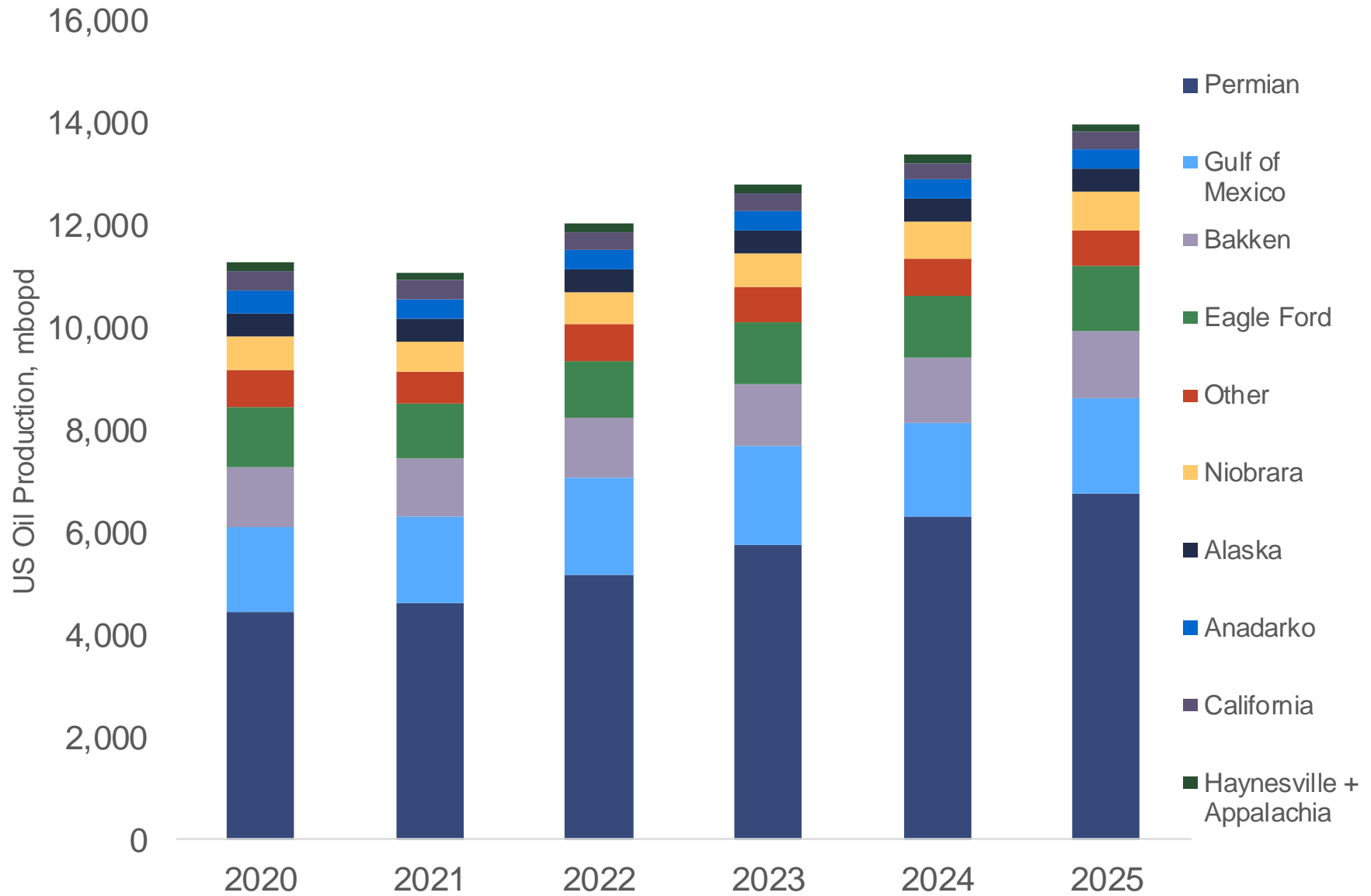
# Higher Prices Unlikely to Lead to Material Capex Expansion This Cycle

*Capital discipline, return of capital, shale inventory depletion, and shift from upstream investments leads to mid-single growth rate CAGR through 2025*



# Pulling it All Together

US production growth set to ramp in 2022 and 2023, but materially decelerates by 2025



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