OPRA Report

Oil Price Risk Assessment

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The Better Policy Project

1. Summary view: Moderation of oil prices followed by a persistent increase

Key Drivers of the Outlook

Over the next two years, elevated oil inventories will build as OPEC+ production increases, pushing global supply above consumption. At the same time, emerging market demand continues to grow rapidly, while new production growth slows due to years of underinvestment and accelerating decline rates in existing wells.

The oil market is about to be in a bizarre place over the next 2 years. In the near term, extraordinarily high inventory levels will exert strong downward pressure on prices. Yet this supply glut could quickly give way to a prolonged period of scarcity once consumption overtakes production. The result is likely to be a volatile, rollercoaster-like path for oil prices.

Oil prices are expected to remain in a moderate range of $50–70 over the next year as OPEC+ restores several million barrels per day of supply that had been withheld since November 2023. This additional output will almost certainly push global inventories higher in the near term, with production temporarily exceeding consumption.

Beyond this short-run surplus, however, underlying forces point toward tightening conditions. Limited spare capacity and slowing growth in new production mean that once consumption catches up, supply constraints could trigger a persistent rise in prices.

To assess the plausibility of this outlook, we developed four scenarios extending the EIA's September 2025 STEO projections through 2030. These include:

- **High consumption + high production**
- **High consumption + low production**
- **Low consumption + low production**
- **Low consumption + high production**

Each scenario offers a distinct perspective on how global demand and supply imbalances could shape the trajectory of oil prices.

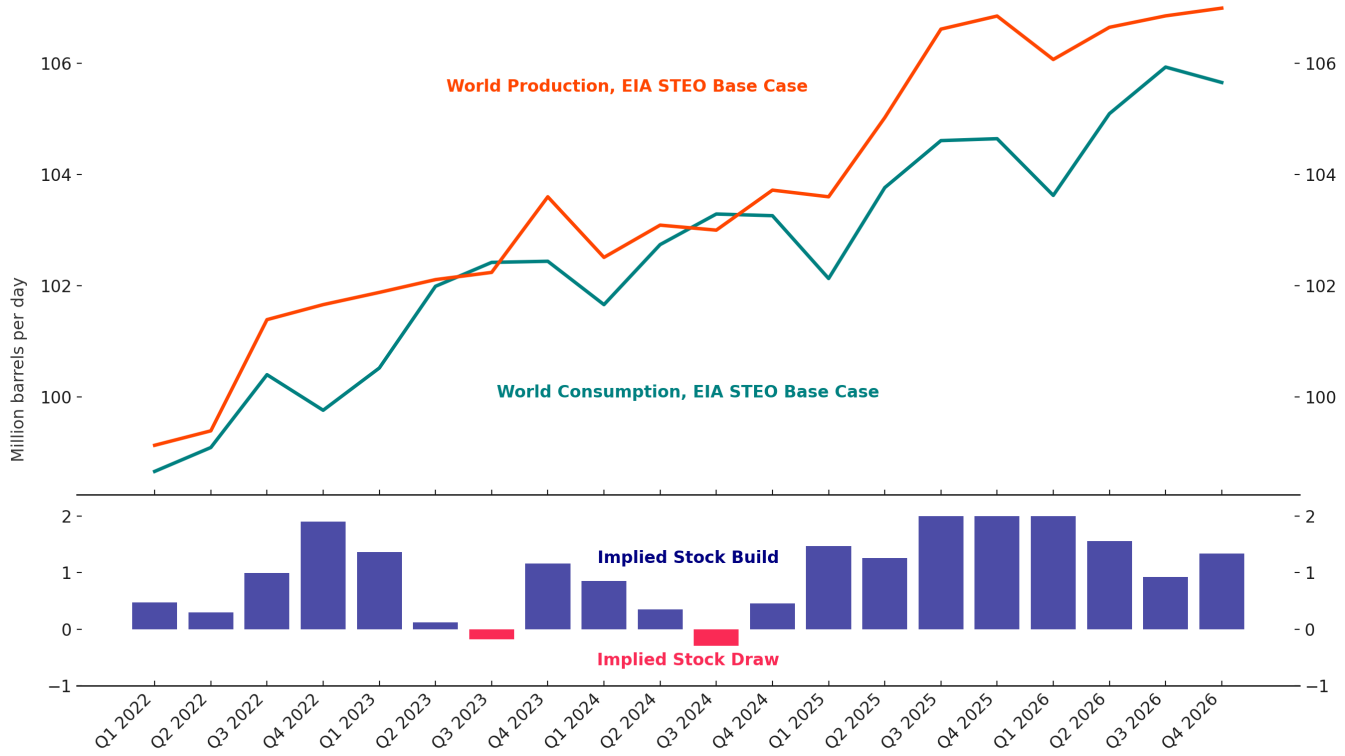
In three of the four scenarios, global consumption overtakes production by late 2027 or early 2028, driven by rapid growth and rising oil intensity in emerging markets such as India and sub-Saharan Africa. The fourth scenario projects continued excess production, but only if electric vehicle adoption in advanced economies proceeds rapidly enough to curb demand.

The analysis highlights that once consumption clearly moves ahead of production, supply constraints will quickly become binding. By then, OPEC's spare capacity will be too limited to meet excess demand. With both demand and supply exhibiting very low short-run elasticities, even small imbalances would generate sharp and sustained upward pressure on prices.

2. Short-term Outlook: Next 2 Years

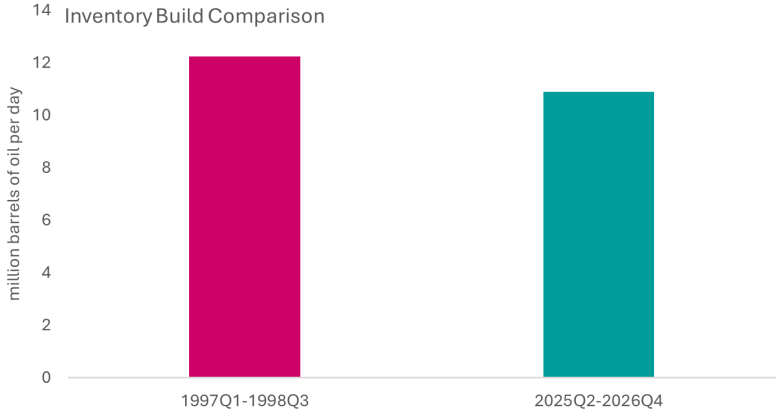
Normally, we identify key divergences from the EIA's Short-term Energy Outlook (STEO). However, the September 2025 forecast leaves little room for disagreement. Production is projected to exceed consumption by a wide margin, resulting in a substantial inventory build. This outcome largely reflects OPEC's decision to unwind its 2023 production cuts earlier than expected.

Figure 1. A sizeable supply glut is expected in the coming quarters as OPEC rolls back its production cuts



Source: EIA STEO, September 2025

Figure 2. The inventory build expected in 2025 and 2026 is large but not unprecedented



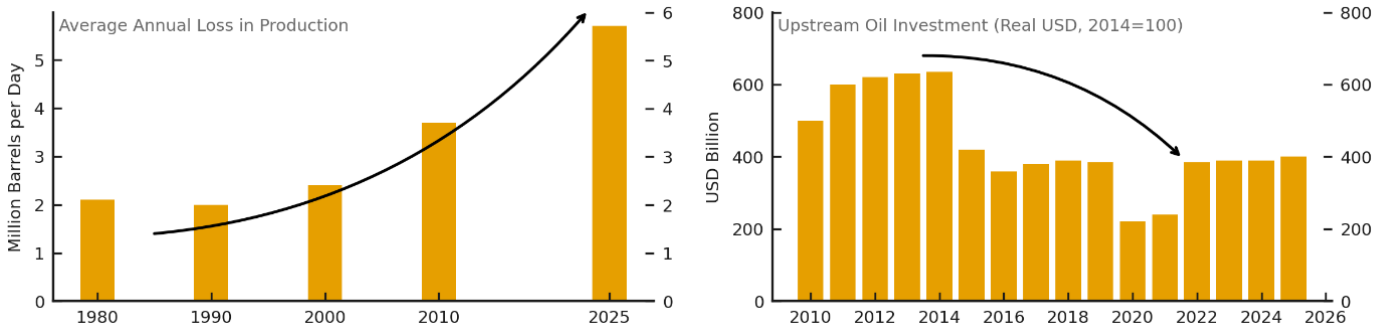
Source: EIA STEO, September 2025

The expected inventory build is large but not unprecedented. Between 1997Q1-2001Q3, a similar type of inventory build occurred as compared to the expected build between 2022Q2-2026Q4. However, the early 2000's supply glut was followed up by a period persistent scarcity that drove oil prices higher. While not exactly analogous, similar characteristics are forming that could turn the expected supply glut in the next 2 years into a persistent supply scarcity..

3. Medium-term Outlook: Next 5 Years

The medium-term risk of supply scarcity stems from rising decline rates in existing oil wells and a decade of underinvestment. According to a recent IEA report, natural decline rates have accelerated, meaning greater investment is now required just to sustain current production levels. This "treadmill effect" reflects the structural challenge of peak oil. Since 2010, decline rates have risen by more than two million barrels per day, yet real investment in upstream production has remained subdued in the aftermath of the U.S. shale boom. The shale revolution delivered a positive supply shock and prolonged period of low prices, discouraging new investment. As a result, much of recent capital spending has merely maintained output rather than expanded it. Together, higher decline rates and weak investment set the stage for acute scarcity once global consumption overtakes production.

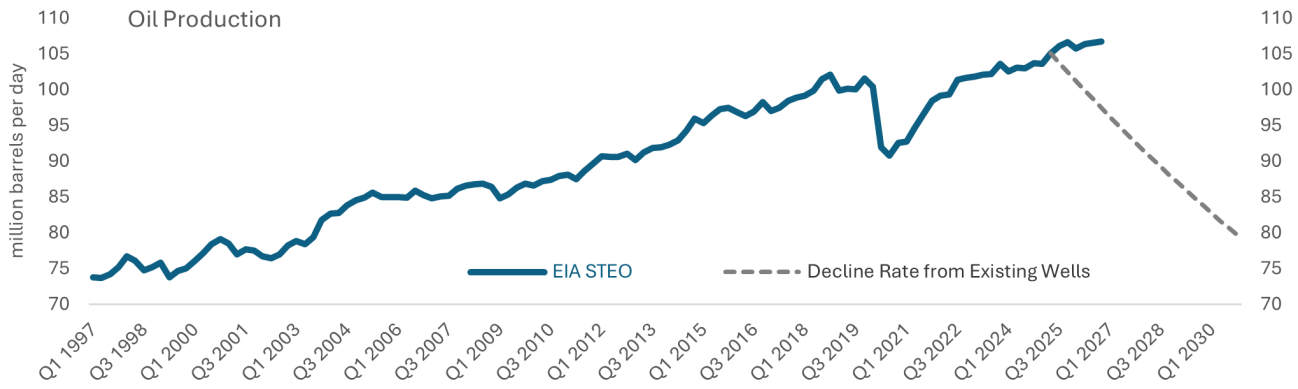
Figure 3. Decline rates among existing oil wells versus upstream oil investment



Source: EIA, IEF

There is large uncertainty around decline rates. Aramco routinely mentions concerns about a much higher decline rate among existing oil wells, stating recently they believe it is around 7%. In Figure, we plotted what a 5% underlying decline rate looks like. This is roughly equivalent to a loss of about a Saudi Arabia's worth of oil every two years. Given the short run outlook of a buildup of inventory and subdued oil prices, it is hard to see why investment would rise from here. In any case, new oil production today is a function of investment decisions made several years ago given the lag time.

Figure 4. Decline rates among existing oil wells versus upstream oil investment



Source: EIA, IEA

4. Motivating Factors for the Future of Oil Production and Consumption

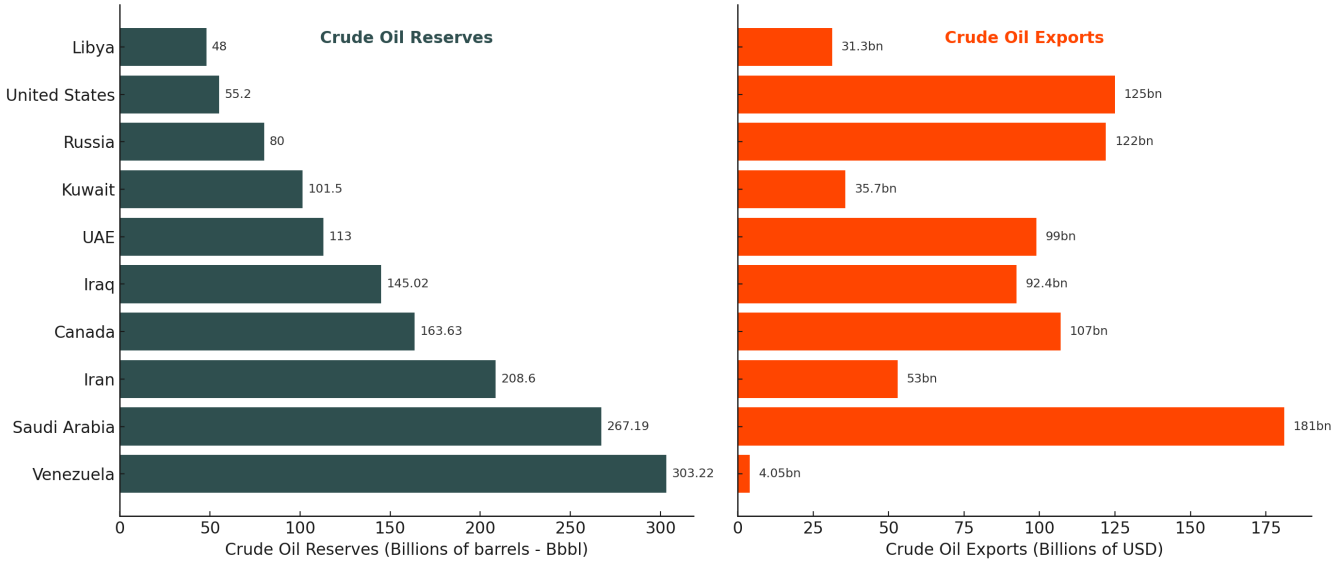
To construct the four scenarios, we first produce an outlook for oil production and consumption (2 each) irrespective of each other. Taking a major driver of production (i.e. peak US shale) and consumption (EV adoption, emerging markets demand) and applying an alternative assumption to create paths for each. All scenarios assume the same EIA STEO outlook until 2026. From 2027, we apply different assumptions to extend the scenarios to 2030.

High Oil Production Scenario

The high production scenario assumes that the U.S. and Saudi Arabia are able to sustain peak output levels, despite the tendency for such peaks to be followed by structural declines. It also relies on unlocking pockets of untapped potential in countries such as Venezuela, Iraq, and Argentina.

The key vulnerability of this scenario lies in investment. Persistently subdued oil prices have discouraged capital spending, making a major positive supply surprise—such as the U.S. shale boom—unlikely. Unlike shale, which emerged after years of high prices, today's environment does not appear conducive to a comparable supply shock.

Figure 5. Oil reserves compared to oil exports



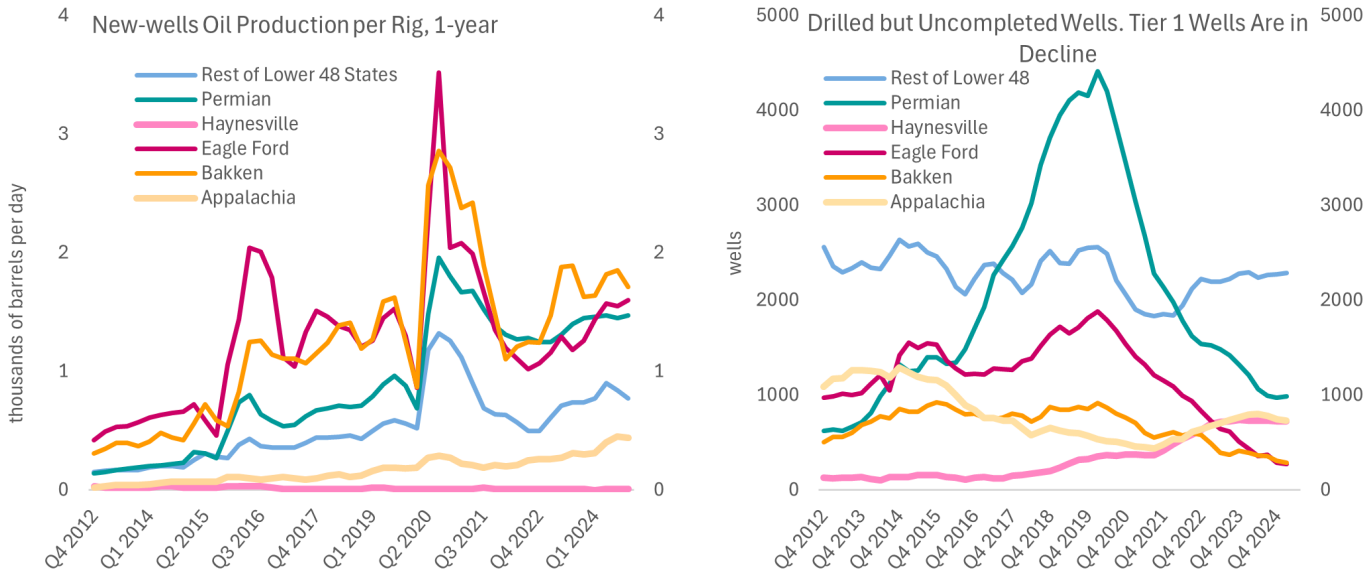
Source: Oil & Gas Journal

Low Oil Production Scenario

The low production scenario envisions peak output in both the U.S. and Saudi Arabia, followed by gradual but sustained declines. In the U.S., the drop is sharper due to the steep decline rates of unconventional oil (30%). The treadmill effect is particularly pronounced in shale, which requires constant drilling of high-quality wells to sustain production. However, drilling activity in the Permian Basin, the most productive U.S. field, has slowed, and the quality of new wells is deteriorating, accelerating the treadmill effect.

4. Motivating Factors for the Future of Oil Production and Consumption

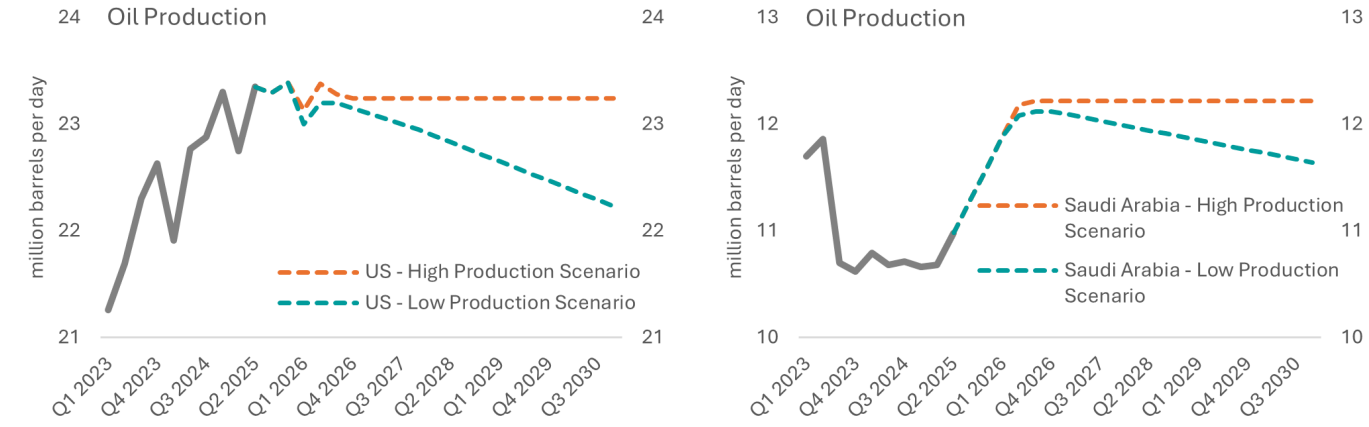
Figure 6. Lower drilling activity among the more productive regions is not hopeful for US oil production



Source: EIA

Ultimately, the high and low production scenarios hinge on whether the U.S. and Saudi Arabia can maintain peak production. In the high case, extended peak output and incremental gains elsewhere allow modest global growth. In the low case, both begin a terminal decline by 2027, curbing overall supply.

Figure 7. US and Saudi Arabia oil production scenarios



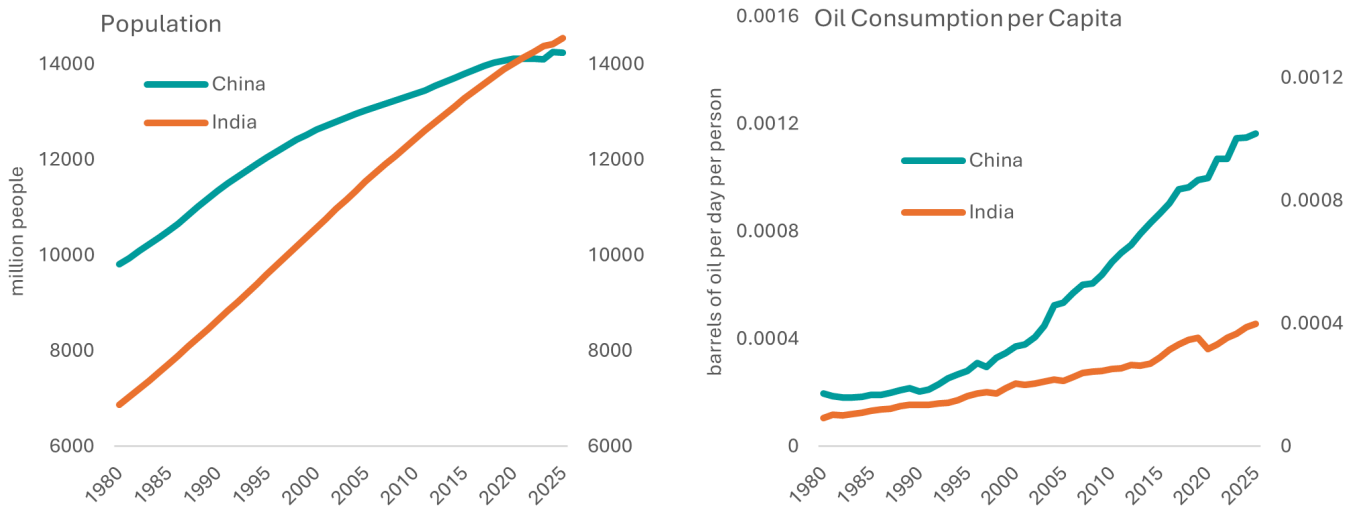
Source: EIA, BPP

4. Motivating Factors for the Future of Oil Production and Consumption

High Oil Consumption Scenario

The high consumption scenario is driven primarily by emerging markets, particularly India. These economies face both rapid population growth and low per capita oil use, leaving substantial room for demand expansion as incomes rise. For example, China and India have comparable populations, yet India consumes 10 million barrels per day less—highlighting the potential scale of future demand growth.

Figure 8. India population projection and oil consumption per capita



Source: UN, EIA

Under this scenario, oil demand in advanced economies and China stabilizes, while Africa and India experience rapid per capita increases alongside population growth. These forces more than offset declines elsewhere, pushing global consumption higher well beyond 2027.

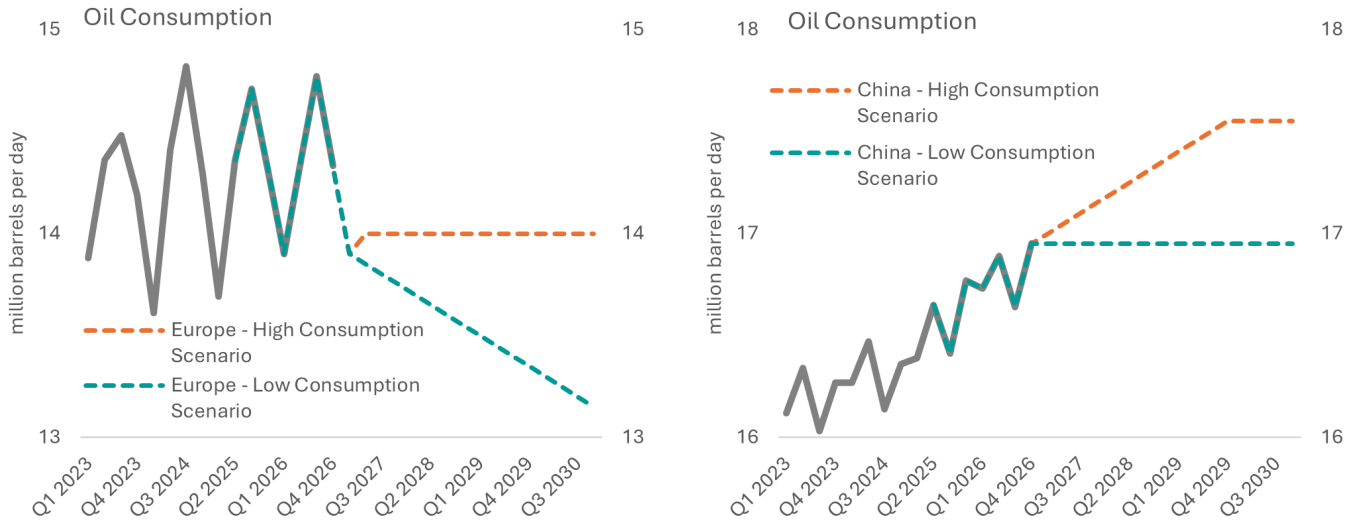
Low Oil Consumption Scenario

The low consumption scenario rests on accelerating adoption of electric vehicles (EVs), which would reduce oil use in transportation—the sector that dominates demand. EV penetration is concentrated in advanced economies and China, where oil demand is assumed to have peaked and is set to gradually decline.

Although emerging markets continue to drive modest gains in consumption, these are outweighed by declines in advanced economies and China. As a result, overall demand growth is substantially weaker than in the high consumption scenario.

4. Motivating Factors for the Future of Oil Production and Consumption

Figure 9. Europe and China oil consumption scenario



Source: EIA, BPP

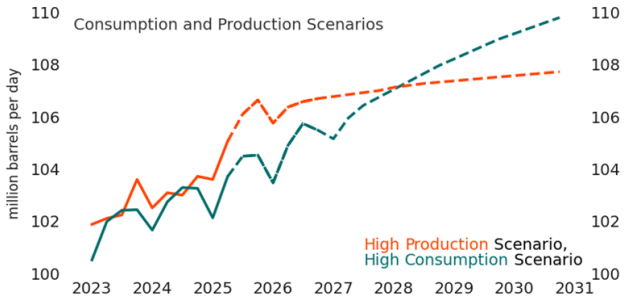
5. Four Scenarios for the Future

Combining the production and consumption paths yields four distinct scenarios, summarized in a matrix framework. This approach highlights the potential mismatches between global demand and supply, as well as their timing.

	High Production	**Low Production**
High Consumption	High Production, High Consumption = **Consumption Outstrips Production in 2028Q1**	Low Production, High Consumption = **Consumption Outstrips Production in 2027Q3**
Low Consumption	High Production, Low Consumption = **Consumption Never Outstrips Production**	Low Production, Low Consumption = **Consumption Outstrips Production in 2028Q3**

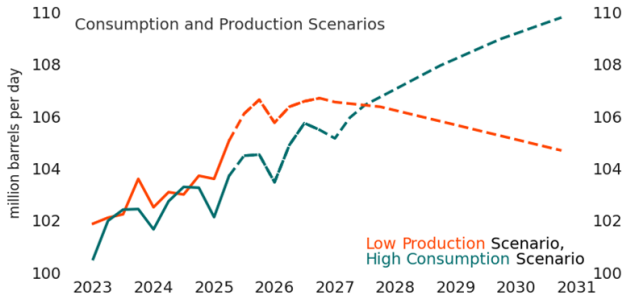
Note: All forecasts through 2026Q4 follow the EIA's STEO baseline, after which alternative assumptions are applied. These scenarios are not forecasts of oil prices but illustrations of possible supply-demand imbalances. For instance, in the high consumption / low production case, the gap between demand and supply would reach more than five million barrels per day by 2030. In practice, such an imbalance would never persist—higher prices would naturally curb demand and incentivize additional production, narrowing the gap.

Figure 10. High Consumption, High Producion: Demand Outstrips Supply in 2028Q1



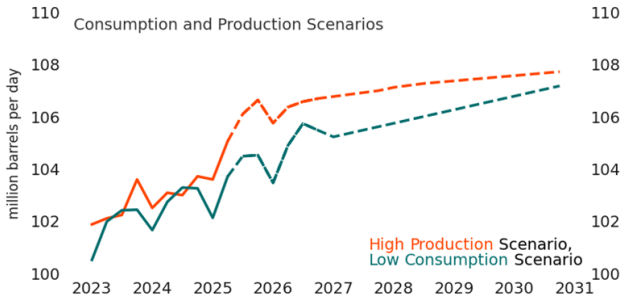
Source: EIA, BPP

Figure 11. High Consumption, Low Production: Demand Outstrips Supply in 2027Q3



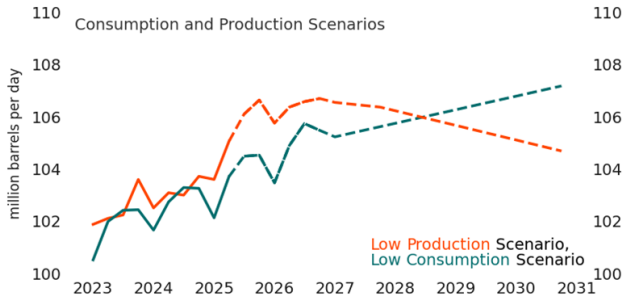
Source: EIA, BPP

Figure 12. Low Consumption, High Production: Demand Never Outstrips Supply



Source: EIA, BPP

Figure 13. Low Consumption, Low Production: Demand Outstrips Supply in 2028Q3



Source: EIA, BPP

6. Implications for Oil Prices

What stands out from the analysis is that all four scenarios are plausible, yet they can imply starkly different price dynamics. In three of the four cases, global consumption overtakes production soon after the EIA's 2026 forecast horizon. With OPEC's spare capacity projected to be minimal, the cartel would be unable to meet excess demand, placing sustained upward pressure on prices. A similar dynamic occurred during 2003–2008, when persistent scarcity fueled a prolonged oil price increase.

The exception is the high production / low consumption case. Here, excess supply drives large inventory builds, creating significant downward pressure on prices. In such a scenario, producers, most notably OPEC, would likely curtail output, as they did in 2023, to restore market balance.

Taken together, these scenarios provide a roadmap for interpreting future developments in oil markets. As new information emerges, the balance between consumption and production will help reveal which trajectory is materializing. What is clear is that even modest, plausible shifts in assumptions can lead to dramatically different price outcomes, underscoring the unusually high degree of uncertainty surrounding the outlook.

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