PHI CAPITAL INVESTMENTS

# The Global Oil Industry

## A First-Principles Analysis of the World's Most Consequential Commodity

Production · Geopolitics · Infrastructure · Refining · Outlook

**March 2026**

# CONTENTS

# EXECUTIVE OVERVIEW

Oil remains the lifeblood of the global economy in 2025–2026, with **~104 million barrels consumed daily** — an all-time record — across virtually every sector of human activity. Despite decades of energy transition rhetoric, petroleum still powers 30% of all primary energy, fuels 97% of transportation, and provides the molecular feedstock for over 6,000 everyday products from plastics to pharmaceuticals. The industry generates roughly **$2 trillion annually** in trade value, employs tens of millions directly and indirectly, and shapes the geopolitical calculus of every major power.

This report provides an exhaustive, data-driven analysis of the entire global oil system: who produces it, who consumes it, who controls it, what it becomes, how it moves, where the money goes, how it all came to be, and where it is heading.

# 1. PRODUCTION AND CONSUMPTION

***The world runs on 104 million barrels a day***

## Global Production Landscape

World oil production reached unprecedented levels in 2025, with the IEA reporting a record **108.7 mb/d** of total supply (including crude, condensates, NGLs, and biofuels). Crude oil and condensate alone averaged **76.5 mb/d** in 2024 according to the EIA, while total petroleum liquids hit approximately 106 mb/d by mid-2025. The United States sits firmly atop global production rankings at **21.7 mb/d** of total liquids (including 13.2 mb/d of crude and condensate), accounting for roughly 22% of world output. Saudi Arabia follows at approximately 11.1 mb/d total liquids (with crude held to ~9.0 mb/d under OPEC+ voluntary cuts), and Russia produces around 10.75 mb/d. Canada has emerged as the fourth-largest producer at **5.6 mb/d**, buoyed by oil sands output and the Trans Mountain Pipeline expansion completed in May 2024. Iraq (4.5 mb/d), China (4.1 mb/d), the UAE (4.0 mb/d), Iran (3.1–3.8 mb/d), and Brazil (3.1 mb/d) round out the top tier.

Regionally, **North America and the Middle East together produce nearly 60%** of global oil. North America contributes approximately 31.8 mb/d (29.9% of global output), while the Middle East accounts for ~31.0 mb/d (~29%). Russia and the CIS add ~13–14 mb/d, Latin America ~8–9 mb/d, Africa ~7 mb/d, Asia-Pacific ~8 mb/d, and Europe (excluding Russia) less than 4 mb/d. This concentration means that disruptions in just two regions can convulse the entire global economy — a reality vividly demonstrated by the March 2026 Strait of Hormuz crisis.

**US Shale Revolution:** The most transformative production story of the past 15 years. Tight oil now accounts for **67% of US crude production** (8.93 mb/d), with the Permian Basin alone producing roughly half of all US crude. From 2015 to 2024, the US accounted for **90% of the increase in global supply**, lifting its output by more than 8 mb/d. Canadian oil sands contribute approximately 3.6 mb/d (~65% of Canada's total), while Brazil's pre-salt deepwater fields — with remarkably low lifting costs of **$8.70–$15 per barrel** — form the backbone of Latin American growth. Venezuela holds the world's largest proven reserves at **303 billion barrels**, mostly extra-heavy crude, but sanctions and infrastructure decay have capped production at just 0.7–0.9 mb/d. Guyana has rocketed from zero production in 2019 to approximately **750,000 b/d** by 2025.

## Global Consumption Patterns

Global oil consumption hit an **all-time record of 103.8 mb/d** in 2024, with the IEA forecasting ~104.4 mb/d for 2025. The United States remains the single largest consumer at **19.0 mb/d** (18.7% of global demand), followed by China at **16.4 mb/d** (16.1%), and India at **5.6 mb/d** (5.5%). India has now overtaken China as the world's top source of oil demand growth, adding 220,000 b/d in 2024 and 330,000 b/d in 2025. The top 10 consumers account for **61% of global demand**; the top 20 for 80%.

By sector, **transportation dominates** at approximately 57–61% of global oil use, with road transport alone consuming ~47–49%. Petrochemical feedstocks account for **12–14%** and represent the fastest-growing segment — driving roughly 70% of demand volume growth in 2024. Industry absorbs ~15%, residential and commercial ~5–6%, and power generation ~4–5%.

> **Critical Structural Insight:** In 2024, non-feedstock uses of oil were virtually equal to 2019 levels despite 14% cumulative global GDP growth over those five years. The IEA attributes this to the combined impact of EVs, fuel efficiency improvements, and shifts in work patterns. Meanwhile, oil's share of total primary energy fell below 30% for the first time in 2024, half a century after peaking at 46%.

## Supply-Demand Balance

The oil market was **significantly oversupplied** throughout most of 2025. IEA data showed global supply consistently exceeding demand, with inventories building by **1.5 mb/d** in Q2 2025 and surging 77.7 million barrels in September 2025 alone — reaching the highest levels since July 2021. The IEA projected a **3.7 mb/d average surplus** from Q4 2025 through 2026. OPEC+ spare capacity reached approximately **5.3 mb/d**, with Saudi Arabia holding 3.1 mb/d, the UAE 1.1 mb/d, Iraq 0.6 mb/d, and Kuwait 0.4 mb/d. This comfortable supply cushion was abruptly disrupted in late February 2026 when US-Israeli military strikes on Iran effectively closed the Strait of Hormuz, threatening approximately **14 mb/d** of crude transit flows.

# 2. THE MAJOR PLAYERS

*Who controls the world's oil*

## OPEC and OPEC+: The Cartel and Its Expanded Alliance

OPEC currently has **12 member countries** following Angola's withdrawal in January 2024. The founding members — Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela — have been joined by the UAE, Algeria, Nigeria, Libya, Gabon, Equatorial Guinea, and Congo. OPEC members collectively hold approximately **1,241 billion barrels of proven reserves — 79.1% of the global total**.

OPEC+ expands this alliance to **22–23 nations** through the Declaration of Cooperation established in 2017. The group manages production through three layers of cuts: base group-wide cuts of **3.66 mb/d** extended to end of 2026, first voluntary cuts of **1.65 mb/d** through December 2026, and second voluntary cuts of **2.2 mb/d** that began unwinding in April 2025 at an accelerated pace — 411–548 kb/d per month rather than the originally planned 137 kb/d. Compliance remains a persistent challenge: as of April 2025, aggregate compliance stood at only **67%**, with Iraq (54%), Kazakhstan (61%), and Russia (65%) the worst offenders.

**Saudi Arabia's Dilemma:** Saudi Arabia functions as OPEC's de facto leader and the world's swing producer, holding the world's largest spare capacity and producing at a cost of approximately **$3 per barrel**. Yet Saudi Arabia faces a fundamental tension: its fiscal breakeven oil price is estimated at **~$98/barrel** (JPMorgan), well above recent market prices of $60–70/barrel, creating pressure between funding Vision 2030 ambitions and defending market share against rising non-OPEC supply.

## National Oil Companies: The True Titans

NOCs control over **85% of global proven oil reserves** and dominate global production. **Saudi Aramco** stands alone as the world's largest and most profitable oil company, with 2024 revenue of **$480.6 billion**, net income of **$106.2 billion** (roughly 3× ExxonMobil), and a market capitalization of approximately **$1.75 trillion**. Its production cost of ~$3/barrel and proven reserves of 247 billion barrels of oil equivalent give it unmatched competitive advantages.

Other significant NOCs include **ADNOC** (UAE), targeting 5 mb/d capacity by 2027; **Petrobras** (Brazil), the world leader in deepwater technology with ~2.68 mb/d and 11 new FPSO vessels planned through 2027; **Rosneft** (Russia), with revenue exceeding $100 billion; and the Chinese trio of **PetroChina/CNPC**, **Sinopec** (world's top oil company by revenue at ~$450 billion), and **CNOOC**. **Pemex** (Mexico) is the world's most indebted oil company at over $100 billion in financial debt, struggling with declining production from 3.4 mb/d in 2004 to ~1.5 mb/d today.

## International Oil Companies: Big Oil's Consolidation Wave

The six Western supermajors generated **combined revenue of ~$1.3 trillion** in 2024. **ExxonMobil** leads with ~$350 billion in revenue, $33.7 billion in net income, and a market cap of $475 billion — cemented by its **$64.5 billion acquisition of Pioneer Natural Resources** (completed May 2024), which more than doubled its Permian Basin production to ~1.3 mb/d. **Chevron** (~$200 billion revenue) completed its **$53 billion acquisition of Hess** in July 2025, securing a 30% stake in Guyana's prolific Stabroek block.

**Shell** posted $284 billion in revenue but is retreating from renewable power investments. **BP** underwent the most dramatic strategic reset: after pledging a 40% production cut by 2030, it reversed course in February 2025, increasing oil and gas spending 20% to $10 billion/year while cutting transition spending from >$5 billion to $1.5–2 billion.

**TotalEnergies** remains the most balanced, spending $5.88 billion on low-carbon capex in 2023 while growing oil and gas production 4% year-over-year.

The industry experienced its largest **consolidation wave since the late 1990s**: ExxonMobil-Pioneer ($64.5B), Chevron-Hess ($53B), Diamondback-Endeavor (~$26B), and ConocoPhillips-Marathon Oil (~$22.5B). The key driver is scarcity of premium drilling locations, particularly in the Permian Basin.

## Oilfield Services and Trading Houses

The “Big Three” oilfield service companies — **SLB** ($36.3 billion revenue), **Baker Hughes** ($25.5 billion), and **Halliburton** ($22.9 billion) — collectively generate over $80 billion in annual revenue and provide the technology backbone for global exploration and production.

The five major independent oil trading houses — **Vitol** ($331 billion revenue, 7.2 mb/d traded), **Trafigura** (~$244 billion), **Glencore** (~$200+ billion), **Gunvor** ($136 billion), and **Mercuria** (~$150+ billion) — serve as the logistical backbone of global oil. These predominantly private, employee-owned firms handle a massive share of global physical oil flows. Combined, the top four private traders earned **over $50 billion** in profits during 2022–2023.

# 3. DEPENDENCIES

*Who needs what from whom*

## Import and Export Vulnerabilities

**China** is the world's largest oil importer at **11.1 mb/d** (rising to 11.55 mb/d in 2025), sourcing ~73% of its consumption from abroad. Russia has become China's largest single supplier at 2.2 mb/d (20%), followed by Saudi Arabia (1.55 mb/d, 14%), and Iran via Malaysia transshipment (~1.2 mb/d, 11%). Crucially, **54% of China's crude imports originate from the Middle East and transit the Strait of Hormuz**, while ~80% of all Chinese oil imports pass through the Strait of Malacca.

**India** imports ~87% of its oil consumption (4.84 mb/d), with Russia vaulting to its top supplier at **36.3%** of imports. **Japan and South Korea** are each ~97% dependent on imports, overwhelmingly from the Middle East via the Hormuz and Malacca straits. The **EU** dramatically reduced Russian oil imports from 3.5 mb/d (2021) to just 0.4 mb/d (2024) — a **90% reduction**.

On the export side, the economies most dependent on oil include **Libya** (oil rents ~56% of GDP), **Iraq** (~43%), **Kuwait** (~28%, with oil constituting 95% of export revenue), and **Saudi Arabia** (~24%). A UNDP study identified **40 fossil-fuel-dependent economies** that would lose over 60% of oil rents — roughly $12–14 trillion in present value — under a net-zero 2050 scenario.

## Strategic Petroleum Reserves

The **US SPR** holds approximately **395 million barrels** (as of March 2025), far below its 727 million barrel peak in 2009. The Biden administration drew down 180 million barrels at an average of ~$95/barrel in 2022, subsequently repurchasing 59 million barrels at less than $76/barrel. **China's** total reserves are estimated at **1.2–1.5 billion barrels**, with stockpiling reaching a record rate of 2.67 mb/d in December 2025. **Japan** maintains ~583 million barrels (~224 days of consumption). **India** is conspicuously vulnerable with only 37.4 million barrels — just ~2 weeks of consumption.

## Chokepoints: Where the World's Oil Flows Through Narrow Passages

Approximately **92% of seaborne oil trade** (~73 mb/d of 79.8 mb/d) passes through one of eight critical chokepoints. The **Strait of Malacca** is the world's busiest at **23.2 mb/d** (29% of maritime trade), followed by the **Strait of Hormuz** at **20.9 mb/d** (26%). Hormuz is the single most strategically significant chokepoint: **20% of global petroleum consumption** transits its narrow waters, with 84% of that crude destined for Asia. Bypass capacity is severely limited — only ~2.6 mb/d of unused alternative routing.

The **Houthi crisis** that began in November 2023 halved flows through the Bab el-Mandeb Strait from 8.6 mb/d to **4.2 mb/d**, and cut Suez Canal transits by 57–75%. Over 190 attacks occurred by October 2024, forcing most shipping to reroute via the Cape of Good Hope, adding 10–14 days and ~$1 million in fuel per round trip.

## The Petrodollar System

Roughly **80% of global oil transactions** are still conducted in US dollars, a system rooted in the 1974–75 informal arrangement between the Nixon administration and Saudi Arabia. However, de-dollarization pressures are mounting. Most Russian-Chinese oil payments now settle in **yuan** since 2023. India and the UAE signed agreements for local-currency oil trade. Saudi Arabia joined BRICS and the Shanghai Cooperation Organisation. Yet a decisive pivot

remains unlikely: the dollar’s share of global reserves (~58%), the lack of yuan convertibility, and the depth of US financial markets continue to underpin the petrodollar architecture.

# 4. SOVEREIGN WEALTH FUNDS

### *The reinvestment of petrodollars*

Oil-producing nations have channeled petroleum revenues into sovereign wealth funds that collectively manage an estimated **$7–8 trillion** in assets, making them among the most powerful institutional investors on Earth.

**Norway's Government Pension Fund Global** is the world's largest SWF at approximately **$2.23 trillion**, holding stakes in ~8,763 companies across 71 countries (~1.5% of all listed companies globally). Funded entirely by North Sea oil revenues, the fund invests exclusively outside Norway to prevent Dutch Disease. Investment returns have now surpassed total petroleum revenues deposited — a testament to compound growth. The fund earned a record $222 billion in 2024.

**Abu Dhabi** hosts three major SWFs totaling approximately **$1.7 trillion**: ADIA (~$1.1 trillion), **Mubadala** (~$330 billion, the world's most active SWF investor in 2024), and **ADQ** (~$260 billion). Saudi Arabia's **Public Investment Fund** reached **$913 billion** by end of 2024 (+19% year-over-year), targeting $2 trillion by 2030. The PIF is the central vehicle for Vision 2030, with major holdings including an 8% stake in Aramco, $3.5 billion in Uber, Newcastle United, and LIV Golf (~$3.9 billion). Kuwait's **KIA** (~$1.03 trillion) is the world's oldest SWF, founded in 1953, while Qatar's **QIA** (~$475–557 billion) has pivoted away from new hydrocarbon investments toward technology.

> **Investment Theme — Artificial Intelligence:** Gulf SWFs have acquired stakes in OpenAI, Anthropic, and xAI; KIA joined BlackRock's $100 billion AI Infrastructure Partnership; and Mubadala-backed MGX participated in the $40 billion Aligned Data Centers acquisition. Sports investments serve as soft power instruments: PIF owns Newcastle United and funds LIV Golf; QSI owns Paris Saint-Germain; Abu Dhabi United Group controls Manchester City.

**Saudi Vision 2030** has achieved meaningful progress: non-oil revenues reached $137.3 billion (+113% from 2016), and the non-oil economy now constitutes 52% of GDP. But challenges persist — the fiscal breakeven oil price (~$98/barrel) exceeds market prices, NEOM has faced budget overruns (PIF took an $8 billion write-down in 2024), and FDI dropped to a 3-year low. Norway's model stands as the gold standard: disciplined savings, transparent governance, yielding $340,000+ per Norwegian citizen.

# 5. INFRASTRUCTURE

***Pipelines, tankers, and the physical sinews of oil***

## Major Pipelines

In North America, the **Colonial Pipeline** (3 mb/d capacity, 5,500 miles) supplies ~45% of US East Coast fuel, while the **Trans Mountain Pipeline** was recently expanded from 300,000 to **890,000 b/d** (operational May 2024 at a cost of C$34.2 billion), giving Canada its first Pacific export route. **DAPL** moves 750,000 b/d of Bakken crude, and **Keystone XL** was permanently cancelled in 2021.

In Europe, the **Druzhba Pipeline** (4,000+ km) once anchored Russian crude deliveries to Central and Eastern Europe but has been fractured by sanctions and Ukrainian drone attacks. The **Baku-Tbilisi-Ceyhan pipeline** (1.2 mb/d) delivers Caspian crude to the Mediterranean while bypassing Russia.

The **ESPO Pipeline** carries Russian crude to China and the Pacific coast with capacity of **1.0 mb/d** (planned expansion to 1.6 mb/d). China has also secured the **Kazakhstan-China pipeline** (200,000+ b/d) and the **Myanmar-China pipeline** (440,000 b/d), both designed to reduce Malacca Strait dependence. Saudi Arabia's **East-West Pipeline** (Petroline, **5 mb/d**) provides critical bypass capability around Hormuz.

## Tanker Fleets and Shipping

Oil tanker classifications range from **VLCCs** (200,000–320,000 DWT, carrying ~2 million barrels) used on long-haul routes, through **Suezmax** (~1 million barrels), to **Aframax** (~700,000 barrels) for regional trade. The VLCC fleet comprises ~897 vessels, but the orderbook stands at a historically low **2.3% of fleet** — creating potential future tightness. A "shadow fleet" of **~130 VLCCs aged 20+ years** now serves sanctioned Russian, Iranian, and Venezuelan trade. VLCC rates on the Middle East–China route exceeded **$100,000/day** in late 2025.

## Storage Hubs

**Cushing, Oklahoma** (~90 million barrels capacity) serves as the delivery point for WTI crude futures. **Fujairah** (UAE, ~78 million barrels above-ground plus 42 million barrels underground) provides critical bypass storage outside Hormuz. **Singapore** (~55 million barrels) is the world's top bunkering hub. **LOOP** (Louisiana, 80+ million barrels) is the only US deepwater port capable of fully loading VLCCs. **Saldanha Bay** (South Africa, 45 million barrels) sits on the Cape of Good Hope route, whose traffic surged 50% due to Red Sea disruptions.

# 6. REFINING

*Turning crude into the products the world uses*

## Global Capacity and the Shifting Center of Gravity

Global refining capacity stands at approximately **104 mb/d** (2024), with throughput averaging ~86 mb/d (an 83% utilization rate). **China overtook the United States** as the world's largest refiner in 2023, with capacity crossing 19 mb/d versus America's 18.4 mb/d. In 2000, the US, Western Europe, and Japan commanded 45% of global refining capacity. By 2023, their share had fallen to 34%, while the Middle East, China, and India rose to 34%. **$237 billion** of the $314 billion in planned 2025–2027 refinery spending targets Asia, the Middle East, and Africa.

## The World's Refining Complexes

**Reliance's Jamnagar** complex in Gujarat, India is the world's largest refinery at **1.24–1.4 mb/d**, boasting the highest **Nelson Complexity Index (NCI) at 21.1** — meaning it can process the cheapest, heaviest crudes into the highest-value products. US Gulf Coast refineries average an NCI above 13 (the highest regionally), while Europe averages just ~6.5, explaining why European refineries are steadily closing.

Other major complexes include South Korea's **Ulsan** (SK Energy, 840,000 b/d), the **Ruwais** complex (ADNOC, UAE, 922,000 b/d), and Nigeria's **Dangote refinery** (650,000 b/d, Africa's largest). The US Gulf Coast corridor accounts for **54% of US capacity** (~9.6 mb/d) and hosts Marathon Galveston Bay (631,000 b/d), Motiva Port Arthur (626,000 b/d), and ExxonMobil Beaumont (630,000 b/d).

## What a Barrel of Crude Becomes

A standard 42-gallon barrel of crude yields approximately **45 gallons** of refined products due to processing gain. In a typical US refinery, this breaks down to roughly **~45% gasoline**, **~27% diesel/gasoil**, **~9% jet fuel**, ~4% LPG, ~4% petrochemical feedstocks, ~3% asphalt, ~2% residual fuel oil, and ~7% other products. New Chinese mega-refineries are increasingly optimized for naphtha and petrochemical feedstocks rather than transportation fuels — reflecting the structural shift in demand.

## Margins Under Pressure

Refining margins spiked to historic highs in 2022, with 3-2-1 crack spreads exceeding **$60/barrel** amid post-COVID demand recovery. By late 2024, margins had normalized significantly — diesel cracks fell to ~$22/barrel (50% below 2023), and Northwest European margins slumped below $1/barrel. The structural outlook is bifurcated: high-complexity, low-cost refiners in the US Gulf Coast, Middle East, and India will thrive, while European refineries face an existential squeeze. Approximately **890,000 b/d** of refining capacity closed in 2025 alone.

# 7. DISTILLATES AND END USES

***Oil is everywhere***

## Transportation Fuels

**Diesel/gasoil** is the most consumed refined product globally at approximately **28–29 mb/d**, powering trucking, agriculture, shipping, rail, and industrial machinery. **Gasoline** follows at **26–27 mb/d**, with the United States consuming ~8.8–9.0 mb/d alone (nearly 3× China). **Jet fuel** demand runs at ~7–8 mb/d — still approximately 5% below pre-COVID 2019 levels — with sustainable aviation fuel (SAF) constituting only **~0.5% of total aviation fuel**.

## Petrochemicals: Oil's Indispensable Non-Fuel Role

This is the sector that makes peak oil demand a far more complex proposition than simple transportation electrification suggests. **Over 6,000 everyday products** are petroleum-derived, and petrochemicals underpin approximately 95% of all manufactured goods.

The chain begins with naphtha and ethane as primary feedstocks. **Ethylene** — the world's largest-volume organic chemical at **160+ million metric tonnes per year** — feeds into polyethylene (the world's most produced plastic at ~110 million MT). **Propylene** (~90–120 million MT) produces polypropylene (~65+ million MT). Global plastics production reached **413.8 million tonnes in 2024** — a 230× increase since 1950 — with China accounting for 33.3% of output.

> **Oil's Hidden Ubiquity: Synthetic fibers** (polyester, nylon, acrylic) now constitute **69% of all global fiber production** — roughly two-thirds of all clothing is petroleum-derived. Over **70% of rubber** is synthetic. Most pharmaceutical ingredients have petroleum origins. Medical supplies — IV bags, syringes, catheters, prosthetics — are petroleum products. Cosmetics contain up to 80% petroleum-derived ingredients. Asphalt for virtually all paved roads, detergents, adhesives, paints, and thousands of other products trace their molecular lineage to crude oil.

The IEA projects that by 2030, **18.4 mb/d of oil** will be required for polymers and synthetic fibers alone — more than **1 in every 6 barrels**. From 2026 onward, the petrochemical industry is set to become the **dominant source of global oil demand growth**, adding approximately 7 mb/d through 2050. Saudi Aramco is pursuing an "oil to chemicals" strategy targeting conversion of more than **70% of a barrel** directly into chemicals.

# 8. HISTORY

***From Drake's well to the shale revolution***

## Origins and the Standard Oil Era

The modern oil industry began on **August 27, 1859**, when Edwin Drake drilled a 69-foot well near Titusville, Pennsylvania, yielding 25 barrels per day. John D. Rockefeller entered refining in 1865 and incorporated **Standard Oil** in 1870. By 1879, Standard Oil controlled ~90% of America's refining capacity. The **1911 Supreme Court antitrust ruling** split Standard Oil into 34 successor companies, including the progenitors of ExxonMobil, Chevron, ConocoPhillips, Marathon, and Amoco (later BP).

Internationally, oil was discovered at Baku (Azerbaijan), Spindletop (Texas, 1901), and critically in Persia (1908), leading Winston Churchill to convert the Royal Navy from coal to oil in 1913–14 — arguably the first time oil became an instrument of national policy. The resulting cartel of **Seven Sisters** controlled **~85% of world reserves** outside the US and USSR through the mid-20th century.

## OPEC and the Oil Shocks

OPEC was founded on **September 10, 1960**, in Baghdad by five nations. The **1973 Arab Oil Embargo** saw prices quadruple from **~$3 to ~$12/barrel**, causing gas lines, rationing, and recession. The **1979 Iranian Revolution** triggered a second oil shock, with prices more than doubling to **$39.50/barrel** (~$120+ in today's dollars). These crises catalyzed energy conservation, fuel efficiency standards, and the development of non-OPEC sources including North Sea oil and Alaska's Prudhoe Bay. The resulting 1980s supply glut led Saudi Arabia to flood the market, crashing prices below **$10/barrel** in 1986.

## The Modern Era and Shale Revolution

The **US shale revolution** represents the most transformative development in oil markets since OPEC's rise. Tight oil production grew from near zero in 2008 to **~9 mb/d by 2024**. US production, which had declined to 4.4 mb/d in mid-2005, nearly tripled to 12.2 mb/d by 2019. The US became the world's top producer around 2018 and a net petroleum exporter for the first time since 1949.

The **COVID-19 pandemic** produced the most dramatic price event in oil history: on April 20, 2020, WTI futures fell to **negative $37.63/barrel** — the first negative price in NYMEX history. OPEC+ responded with the largest production cut in history at **9.7 mb/d**. Prices subsequently spiked to **$133–139/barrel** in March 2022 following Russia's invasion of Ukraine.

## The Evolution of Oil Pricing

Oil pricing evolved through three distinct eras. The **posted price system** (1920s–1970s) saw major companies administratively set prices. **OPEC administered prices** (1970s–1985) gave producing nations control. The modern **futures-based system** began in 1983 when NYMEX launched WTI crude futures. Today, **Brent prices approximately 75% of all internationally traded crude oil**, while WTI serves as the North American benchmark.

# 9. THE NEXT FIVE YEARS

*A plateau, a pivot, and profound uncertainty*

## Peak Demand: Plateau Rather Than Cliff

The great debate over peak oil demand is converging toward a **plateau in the late 2020s** for transport fuels, with total demand (including petrochemicals) potentially not peaking decisively until the 2030s. The IEA's Oil 2025 report projects demand will rise ~2.5 mb/d from 2024 to plateau at approximately **105.5 mb/d** by decade-end. Demand for combustible fossil fuels may peak as early as 2027. OPEC maintains the most bullish outlook, projecting 1.3 mb/d annual growth through 2026 and continued expansion to 2050. Carbon Tracker warns that a structural surplus of **8 mb/d** could emerge by 2030.

## EVs: The Accelerating Disruption

Global EV sales exceeded **17 million units in 2024**, with the total fleet reaching ~58 million (~4% of all passenger cars). China dominated with >11 million EVs sold (nearly 50% of domestic new car sales), and is expected to reach **60% EV share in 2025 and 80% by 2030**. EVs displaced **over 1.3 mb/d of oil** in 2024, and the IEA projects displacement of **over 5 mb/d by 2030**. However, the US trajectory was significantly downgraded: the IEA slashed its 2030 US EV penetration forecast from ~55% to **20%** following Trump administration rollbacks. China's road fuel demand has already entered structural decline, with gasoline consumption falling ~14% year-over-year in August 2024.

## Emerging Producers Reshape Supply

**Guyana** has become the breakout story, reaching ~900,000 b/d by end-2025 from zero in 2019. With **~11 billion barrels** of proven reserves and production costs below $40/barrel, analysts project **up to 1.7 mb/d by 2030**. **Namibia's Orange Basin** represents the next potential Guyana, with multiple discoveries potentially elevating Namibia into world-leading producer ranks by the mid-2030s. **Brazil** surged past 4.0 mb/d for the first time in October 2025, and **Argentina's Vaca Muerta** is growing rapidly toward 810,000 b/d.

## The Price Outlook

Pre-crisis consensus had Brent averaging **$56–$62/barrel** for 2026, with JPMorgan warning of potential tail risk into the $30s. The February 2026 Strait of Hormuz crisis radically repriced the market: Brent surged from ~$63 to $94 with an intraday spike to $119.50 — the **biggest weekly gain in futures history** (+35.6%). The EIA's March 2026 forecast projects Brent at $91 in Q2, $70 by Q4, and $64 in 2027. Long-term 2030 estimates range from $42 to $67.

## AI and Technology Are Transforming Operations

**44% of upstream organizations** currently use AI in exploration, with 45% more planning adoption within three years. AI is accelerating seismic interpretation (reducing research cycles by ~70%), enabling real-time drilling optimization, and powering predictive maintenance. Operators report **27% improvement in production uptime** and 26% improvement in asset utilization. Carbon capture and storage (CCS) is positioned as an enabler for continued fossil fuel use, with Saudi Arabia targeting 44 MMtpa of $CO_2$ captured by 2035.

# CONCLUSION

### *The oil age transforms but does not end*

The global oil industry in 2026 stands at a remarkable inflection point. On one hand, the structural forces of electrification, efficiency, and policy are demonstrably bending the demand curve — non-feedstock oil consumption has flatlined at 2019 levels despite 14% GDP growth, China's road fuel demand is declining, and EVs are displacing over a million barrels daily. On the other hand, total oil demand just set an all-time record, petrochemical consumption is growing inexorably (set to consume 1 in 6 barrels by 2030), and the developing world's urbanization and industrialization continue to add hundreds of thousands of barrels per day in new demand annually.

**First:** Oil's role is shifting from fuel to feedstock. The petroleum age is not ending, but it is transforming from one defined by combustion to one defined by molecular chemistry.

**Second:** Geopolitical risk has not been priced out. The March 2026 Hormuz crisis demonstrates that decades of spare capacity building and strategic reserves can be rendered moot by a single military escalation in the world's most oil-dense region.

**Third:** The transition is deeply uneven. China and Norway are years ahead, the United States and developing world are years behind, and the gap between climate pledges and energy reality remains the defining tension of our era. The industry that Edwin Drake launched with a 69-foot well in 1859 has become the most complex, consequential, and contested system in the global economy — and will remain so for decades to come.