

Oil is ancient life converted into political power. Long before humans existed, microscopic organisms—mostly algae and plankton rather than dinosaurs—lived in seas and lakes, absorbed energy, died, and settled into oxygen-poor mud. Layers of sediment buried this organic material. Over millions of years, heat and pressure transformed it into hydrocarbons, molecules built mainly from hydrogen and carbon. If the temperature was suitable, the buried material entered the “oil window,” the underground temperature range in which liquid petroleum forms. Too little heat leaves the material immature; too much turns much of it into natural gas.

The oil rarely remains where it formed. It escapes from its source rock, moves through pores and fractures, and may collect inside a reservoir rock, which is not a vast underground cave but usually sandstone or limestone containing countless connected spaces. An impermeable cap rock can trap it from above. Geologists use seismic surveys—controlled sound waves whose echoes reveal buried structures—to locate possible traps, but only a drilled well can prove that a commercially useful accumulation exists. Finding oil is therefore a mixture of science, probability and expensive gambling.

Crude oil is not one uniform black substance. Some crude is light, meaning it flows easily and contains a large proportion of molecules that can become gasoline, diesel and jet fuel. Heavy crude is thicker and generally requires more processing. “Sweet” crude contains relatively little sulfur; “sour” crude contains more sulfur and needs additional treatment. Light, sweet oil normally commands a higher price because it is easier to refine, although the final value also depends on refinery equipment, transportation and regional demand. West Texas Intermediate, or WTI, is a light, sweet American benchmark delivered through the storage and pipeline center at Cushing, Oklahoma. Brent is a waterborne benchmark connected to North Sea production and is the principal reference for much of the international market. A benchmark is simply the standard price against which individual grades are valued; a heavy Venezuelan barrel and a light Nigerian barrel may trade at substantial discounts or premiums to it.

The industry is commonly divided into three worlds. Upstream covers exploration and production: locating deposits, drilling wells and bringing crude to the surface. Midstream covers pipelines, tankers, railroads, terminals and storage. Downstream covers refining, petrochemicals, wholesale distribution and fuel stations. The division matters because an oil-producing country can still lack pipelines or refining capacity, while a country with little crude of its own can become a powerful refining and trading center. Singapore, for example, possesses little petroleum underground but occupies an important position in Asian oil trade. Power follows infrastructure as well as geology.

Conventional oil can move through permeable rock toward a well. Tight oil is trapped in rock with such poor permeability that producers commonly drill horizontally and use hydraulic fracturing. In that process, water, sand and smaller quantities of chemicals are injected under pressure to create fractures; the sand, called a proppant, holds the fractures open. Canada’s oil sands contain bitumen, an extremely heavy form of

petroleum that may be mined near the surface or heated underground with steam so that it can flow. Offshore and deepwater fields require platforms, subsea equipment and immense investment. These methods explain why two barrels that sell at similar prices can have radically different production costs, environmental effects and financial risks.

A barrel contains 42 U.S. gallons, a measurement inherited from the nineteenth-century American industry. A refinery heats crude and separates its components according to boiling point. It then uses processes such as cracking, which breaks large hydrocarbon molecules into smaller ones, and reforming, which rearranges molecules into more useful forms. Desulfurization removes sulfur. In a typical American refinery, one barrel may yield roughly 19 or 20 gallons of gasoline, 11 to 13 gallons of diesel and heating oil, several gallons of jet fuel, and smaller quantities of propane, asphalt, lubricants and petrochemical feedstocks. The total product volume can exceed 42 gallons because processing creates less-dense products that occupy more space; volume expands, but matter has not appeared from nowhere.

That refinery is one reason oil is far more than gasoline. It becomes diesel for trucks and farm machinery, jet fuel for aviation, bunker fuel for ships, asphalt for roads, lubricants for machines and feedstock for plastics, synthetic fibers, paints, solvents, detergents, cosmetics, pharmaceuticals and fertilizers. Modern food systems depend on oil-powered machinery, trucking, refrigeration and packaging, although most nitrogen fertilizer is produced primarily from natural gas. Hospitals, militaries, construction sites and global shipping networks are embedded in petroleum systems. Oil became dominant not because it is magical, but because it is energy-dense, transportable, storable and capable of powering mobile engines without a permanent connection to an electric grid.

The world consumed about 105.15 million barrels of oil per day in 2025. That figure is larger than the roughly 74.85 million barrels of crude produced daily because “oil demand” generally includes natural-gas liquids, biofuels, refinery gains and other petroleum liquids. Mixing crude-only statistics with all-liquids statistics creates many misleading rankings. At the end of 2025, the world reportedly held about 1.572 trillion barrels of proved crude reserves, of which OPEC members reported about 1.243 trillion—nearly four-fifths. A proved reserve is oil judged technically and economically recoverable under existing conditions; it is not every hydrocarbon molecule underground. Price changes, new technology, discoveries, reclassification and political reporting can all change the number without a single new molecule being created. OPEC’s 2026 statistical bulletin provides these global figures.

Venezuela reports the largest national reserve base, around 304 billion barrels, but much of it is extra-heavy Orinoco Belt oil. Saudi Arabia follows with roughly 267 billion, and Iran with more than 200 billion. Canada enters near the top when its approximately 160-billion-barrel oil-sands reserve is included, followed by a powerful group containing Iraq, the United Arab Emirates, Kuwait and Russia. Libya possesses Africa’s largest proved reserve base, while Nigeria, the United States, Kazakhstan, China, Qatar, Brazil, Algeria, Guyana and others hold important quantities. Exact rankings differ because

some compilations count crude oil, condensates and unconventional resources differently. Canada is the clearest warning against treating a reserve table as unquestionable truth: a table excluding oil sands can make the country appear far less oil-rich than one including economically recoverable bitumen.

Reserves are not production. Venezuela can possess more oil underground than any other country while producing far less than the United States, Saudi Arabia or Russia. Production requires wells, workers, electricity, diluent for heavy crude, functioning pipelines, maintained refineries, access to capital, political stability and customers able to pay. Sanctions can obstruct equipment, insurance, finance and shipping. Corruption and years of underinvestment can damage capacity. A reserve is potential wealth; production is an operating system.

The United States is the largest producer when crude oil and other petroleum liquids are combined, followed by Saudi Arabia and Russia. Canada is another giant, while China, Iraq, Brazil, the United Arab Emirates, Iran and Kuwait form much of the next group. Even that ranking needs its label attached: American totals are enlarged by natural-gas liquids and biofuels, while crude-only comparisons produce different numbers. The United States is simultaneously a major producer, importer, exporter and consumer. That is not a contradiction. Gulf Coast refineries were often designed for heavier imported crude, while much American shale production is light. Geography also matters: it may be cheaper for one American region to import Canadian crude while another exports oil overseas. The petroleum market behaves more like a network of different grades and machines than a single national tank. [EIA's international comparison](#) demonstrates how much the ranking changes depending on what is counted.

Saudi Arabia's special influence comes not merely from the oil it pumps, but from low production costs, enormous fields, export infrastructure and spare capacity. Spare capacity means output that can be brought online relatively quickly and sustained. A country already operating every well at maximum output cannot easily respond to an emergency. A producer deliberately holding capacity in reserve can. This has made Saudi Arabia a "swing producer," able at times to cut output in a weak market or increase it during a disruption. Its power is substantial, but not unlimited: reservoirs have physical limits, political goals can conflict with market goals, and other producers respond when prices rise.

OPEC was created in Baghdad in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. It now has twelve members: Algeria, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the United Arab Emirates and Venezuela. In the blunt economic sense, OPEC is a producers' organization that coordinates supply to influence the market; "cartel" is the ordinary term for producers coordinating output or price. Its own language emphasizes market stability, reliable supply and fair returns. Those descriptions are not mutually exclusive: limiting production can stabilize a collapsing market while also protecting members' revenue. Since 2016, cooperation with Russia, Kazakhstan, Oman and other non-OPEC states has been called OPEC+. [OPEC's official](#)

history and current membership show both its founding purpose and its changing composition.

OPEC cannot simply announce any desired price and make it permanent. Members sometimes exceed their assigned quotas. Some need immediate revenue and resist cuts; others want higher prices or have spare capacity. American shale producers, Canadian oil sands, Brazilian offshore fields and new projects in Guyana can expand non-OPEC supply. High prices can destroy demand by slowing economies and encouraging efficiency, electric vehicles or alternative fuels. Low prices punish producers but can discourage investment, eventually creating a shortage. Oil power is therefore a strategic contest among producers, consumers, technology, finance and time.

A current oil price is a photograph, not a law of nature. At the August 24, 2026 close, WTI stood at \$86.34 per barrel and Brent at \$92.71. The average American retail price was \$4.10 for regular gasoline and \$5.62 for diesel. Those figures reflected an unusually tense market affected by severe constraints on Strait of Hormuz transit and shut-in Middle Eastern production. The U.S. Energy Information Administration's August forecast placed third-quarter Brent near \$85 and projected an average around \$69 in 2027 if regional production recovered and inventories rebuilt. Forecasts are conditional stories, not promises: change the assumptions and the price path changes. The daily price page records the market snapshot, while the short-term outlook explains the assumptions behind the forecast.

Price is created at the point where available supply meets desired demand. Both sides react slowly in the short run. Drivers cannot instantly replace their cars because crude rises by ten dollars, and an oil company cannot discover, permit and develop a major field by next Tuesday. Economists call this short-run inelasticity: the quantity bought or produced changes relatively little when price changes. As a result, a small shortage can produce a large price spike, while a small surplus can cause a steep fall. The "marginal barrel," meaning the last barrel needed to balance buyers and sellers, can determine the price received for millions of other barrels.

Inventories soften this violence. Refineries, traders and governments store crude and products so that consumption does not have to equal production every hour. Falling inventories warn that the market is consuming more than current supply; rising inventories suggest surplus. But storage has limits, as the world learned in 2020. Pandemic lockdowns suddenly destroyed fuel demand while production continued. Tanks filled, and traders holding expiring WTI futures faced the prospect of receiving physical oil at Cushing without anywhere to put it. On April 20, 2020, the May WTI futures contract settled below zero, around negative \$37.63 per barrel. Oil everywhere was not literally worthless. A specific contract, at a specific delivery location, for a specific month became a liability because immediate storage was scarce.

A spot price applies to physical oil for immediate or near-term delivery. A futures contract fixes a standardized transaction for a later date. An airline can hedge—reduce

its exposure to uncertainty—by locking in fuel-related prices, while a producer can protect future revenue by selling futures. Speculators take price risk in search of profit and add trading liquidity. They can accelerate market movements, especially when everyone rushes in the same direction, but financial traders cannot permanently invent missing diesel or make unwanted crude disappear. Physical supply, demand, storage and delivery eventually discipline the paper market.

The difference between crude and refined-product prices is often called a crack spread, an approximate measure of a refinery's gross processing margin. Gasoline at the pump adds more layers: crude cost, refinery operations, seasonal fuel specifications, pipeline and terminal charges, retail expenses, profit margins and taxes. A refinery outage can therefore raise gasoline prices even when crude prices are stable. Two neighboring states may have different pump prices because of taxes and environmental fuel rules. "Oil companies set the gasoline price" contains a piece of truth but conceals the mechanism: companies influence supply and margins, yet they operate inside a competitive, regulated and globally connected market whose price can move violently against them.

The history of oil prices is a history of shocks. The 1973–74 Arab oil embargo exposed the vulnerability of import-dependent economies and helped drive prices sharply upward. The Iranian Revolution and Iran–Iraq War contributed to another shock around 1979–80. Excess supply and internal OPEC strain helped produce the 1986 collapse. The Asian financial crisis weakened demand in the late 1990s. Rapid Chinese growth, restricted spare capacity and financial enthusiasm carried Brent and WTI toward record nominal levels in 2008 before the global financial crisis crushed demand. Prices surged again after Russia's 2022 invasion of Ukraine and the resulting sanctions, trade rearrangements and fears of lost supply. Oil rarely moves because of one cause; it moves when a cause strikes a market that was already tight or weak.

The fight for oil began when navies, armies and governments realized that petroleum could decide mobility. Britain's pre–First World War decision to move major naval forces from coal toward oil promised faster ships and easier refueling, but it also created dependence on foreign fields. Armored vehicles, aircraft and motorized logistics made oil indispensable to modern war. During the Second World War, access to fuel shaped German operations toward the Caucasus and Japan's move into Southeast Asia. Military machines do not merely need weapons. They need the energy to move those weapons, and a tank without fuel is an immobile piece of steel.

Early petroleum concessions often gave foreign companies extraordinary control over another country's resources. The large Anglo-American companies later nicknamed the "Seven Sisters" dominated much of international oil production, refining and marketing. Producing states received royalties and taxes, but many citizens believed the arrangements transferred too much wealth and sovereignty abroad. Nationalization—the transfer of private assets into state ownership—was therefore both an economic demand and a declaration of independence. Today, most of the world's easiest and largest

reserves are controlled by national oil companies such as Saudi Aramco, the National Iranian Oil Company, Kuwait Petroleum Corporation, ADNOC in the Emirates and Venezuela's PDVSA, not by ExxonMobil, Chevron, Shell, BP or TotalEnergies.

Iran shows how oil, nationalism and great-power politics became entangled. Prime Minister Mohammad Mossadegh nationalized the British-controlled Anglo-Iranian Oil Company in 1951 after years of anger over revenue and foreign influence. Britain resisted and imposed severe pressure on Iran's oil trade. In 1953, British and American intelligence supported the operation that overthrew Mossadegh and strengthened Shah Mohammad Reza Pahlavi. Cold War fears about Soviet influence were genuine, but so were British oil interests and the struggle over who would control Iranian petroleum. The oil explanation and the Cold War explanation belong in the same account; using either one to erase the other distorts the record. Declassified U.S. documents explicitly describe both the nationalization crisis and the covert operation that produced Mossadegh's overthrow. [The U.S. State Department's historical archive](#) makes that involvement a documented fact rather than a theory.

The 1973 embargo marked another transfer of power. Arab producers restricted exports to the United States and other countries supporting Israel during the Yom Kippur War. The result was not merely higher prices but inflation, fuel lines, recession and a permanent change in strategic thinking. The United States created the Strategic Petroleum Reserve in 1975, storing emergency crude in Gulf Coast salt caverns. A strategic reserve does not make a country independent of oil; it buys time during a disruption. The American reserve has an authorized capacity of roughly 714 million barrels, though actual inventory moves as governments release and refill oil. [The Department of Energy's history of the reserve](#) traces it directly to the embargo.

Oil influenced the Iran-Iraq War, including attacks on tankers and export infrastructure. Iraq's 1990 invasion of Kuwait involved disputed borders, war debts, political rivalry and arguments over oil production and pricing; reducing it to "oil alone" is too simple, but removing oil from the explanation would be absurd. The international coalition that expelled Iraq was defending a sovereign state and also preventing Saddam Hussein from controlling a dangerously large share of Persian Gulf reserves. Moral language and material interests frequently coexist. Governments rarely advertise the latter as clearly as the former.

The 2003 invasion of Iraq demands similar honesty. The public case centered on weapons of mass destruction, terrorism and security. The predicted stockpiles were not found. Oil was undeniably part of Iraq's strategic importance and part of the thinking surrounding the Persian Gulf, but "the United States invaded simply to steal the oil" is not a complete explanation. Iraqi reserves were not loaded onto American ships as conquered property; Iraq retained formal state ownership and later awarded contracts to companies from several countries. The harder truth is less cinematic: security ideology, faulty or manipulated intelligence, post-9/11 politics, regime-change ambitions, regional

power and oil's strategic value overlapped. Complex motives do not excuse disastrous decisions; they explain how those decisions became possible.

Russia reveals another kind of oil power. Petroleum exports supply government revenue and foreign currency, helping the state finance its institutions and military. Sanctions following the invasion of Ukraine sought to reduce that revenue without removing so much Russian oil that world prices exploded. The resulting price cap, insurance restrictions and trade shifts produced a shadow fleet of aging tankers, opaque ownership and longer voyages to Asian buyers. This is economic warfare conducted through banking rules, marine insurance, ports and shipping rather than direct seizure of oil fields.

The narrowest passages on the map can become as important as the largest fields. A chokepoint is a confined shipping route through which an enormous volume of trade must pass. The Strait of Hormuz, between Iran and Oman, carried about 20 million barrels of petroleum per day in 2024—roughly one-fifth of global liquids consumption and more than one-quarter of seaborne oil trade. Saudi Arabia and the Emirates have pipelines that can bypass part of the strait, but not enough to replace all of it. Other critical routes include the Strait of Malacca, the Suez Canal and SUMED pipeline, Bab el-Mandeb, the Turkish Straits and the Panama Canal. A threat to one of these routes raises not only the chance of physical shortage but also tanker rates, insurance costs and the amount of time each cargo spends at sea. [EIA's chokepoint analysis](#) shows why a few kilometers of water can move prices across the planet.

Oil also creates conflicts below the level of war. Communities in Nigeria's Niger Delta have lived beside spills, gas flaring, damaged fisheries, armed groups and immense petroleum wealth that often failed to become reliable public services. Sudan and South Sudan separated the location of producing fields from vital export pipelines and ports, making each side dependent on the other. Libya's rival authorities have used fields and terminals as bargaining tools. Guyana's offshore discoveries have transformed its economic prospects while sharpening the significance of Venezuela's claim to the Essequibo region. Oil does not manufacture every border dispute, ethnic division or political grievance, but it raises the reward for controlling territory and supplies money with which conflicts can continue.

The claim that wars are fought entirely to preserve the "petrodollar" also needs cleaning. Most internationally traded oil has traditionally been priced in U.S. dollars. This creates convenience because the dollar has deep financial markets, widely used payment systems and liquid futures and currency markets. Oil exporters often reinvest their revenue in American and other financial assets, a process called petrodollar recycling. The American-Saudi relationship of the 1970s reinforced this system, but there is no single magical rule forcing every barrel on Earth to be sold only in dollars. Countries can and do arrange trade in other currencies. The dollar's power rests on a network of trade, finance, Treasury securities, legal institutions and accumulated trust, not one secret switch that can be turned off by an oil producer.

Possessing oil can make a country rich, but it can also deform a country's economy. The resource curse describes the pattern in which abundant extractive wealth encourages corruption, political patronage, conflict and dependence instead of broad development. When the government can finance itself through oil royalties rather than taxing citizens, leaders may feel less accountable to the public. Contracts become prizes for political allies. A sudden rise in export income can strengthen the national currency and make manufacturing and agriculture less competitive, a process called Dutch disease. Then, when prices fall, the country discovers that its other industries have weakened.

The curse is not destiny. Norway taxed and saved much of its petroleum income in a sovereign wealth fund, a state-owned investment portfolio intended to spread resource wealth across generations. Kuwait and the United Arab Emirates also built large state investment funds, while Saudi Arabia is attempting to convert oil income into new industries through its Public Investment Fund. Success varies, and sovereign funds can themselves become instruments of political power. The central issue is whether institutions can prevent temporary underground wealth from becoming permanent elite privilege. Oil revenue can build schools, hospitals and infrastructure, or it can build palaces, surveillance systems and offshore bank accounts. The molecule does not decide.

Venezuela embodies both the promise and danger. It used oil income to finance public programs and subsidies, but the economy became extraordinarily dependent on petroleum revenue. Price collapses, politicized management, corruption, debt, sanctions and underinvestment damaged production and refining. None of those elements alone explains the collapse. Blaming everything on socialism erases sanctions and external pressure; blaming everything on sanctions erases years of internal mismanagement. Honest analysis keeps multiple causes in view, especially when they reinforce one another.

Consumers are not outside the oil system's politics. Cheap fuel encourages larger vehicles, longer commutes and low-density development. Governments often subsidize fuel because price increases can trigger unrest, but subsidies drain public budgets and disproportionately reward people who consume the most. Producing countries may keep domestic prices artificially low as an unwritten bargain: political obedience in exchange for inexpensive energy and public benefits. Importing governments may condemn foreign producers while resisting conservation at home. The public usually wants low prices, secure supply, high domestic wages, clean air, low taxes and rapid decarbonization simultaneously. Oil politics thrives in the collisions among those desires.

The environmental bill arrives at every stage. Drilling can disturb habitat and consume water. Pipelines and tankers spill. Refineries emit pollutants near communities that are often poorer and politically weaker. Gas flaring burns unwanted gas at the wellhead, while methane leaks release a powerful greenhouse gas. Burning petroleum products produces carbon dioxide that accumulates in the atmosphere and warms the climate.

Plastics preserve food and enable modern medicine, but disposable products create long-lived waste and microplastic pollution. An externality is a cost not fully included in the market price: a gallon of fuel is purchased by one person, while part of its pollution and climate damage is imposed on others.

The Deepwater Horizon disaster in 2010 demonstrated the risks of complex offshore production. An explosion killed eleven workers, and the resulting well blowout released enormous quantities of oil into the Gulf of Mexico. The lesson was not that offshore drilling always fails. It was that low-probability failures can have catastrophic consequences, while companies, regulators and contractors may underestimate connected risks. The same logic applies to aging pipelines, neglected wells and crowded tanker routes. Efficiency can lower ordinary costs while creating systems whose rare failures are immense.

The energy transition will not make oil vanish on a chosen date. Electric vehicles can reduce gasoline demand because electric motors use energy far more efficiently than combustion engines. Heat pumps, urban design, public transport and more efficient freight can reduce petroleum use further. Aviation, shipping, heavy machinery and petrochemicals are harder to replace. Developing economies also want mobility, infrastructure and affordable energy, and their choices will shape future demand more than declining fuel use in wealthy countries alone.

Forecasts disagree because they contain different assumptions about policy, technology and human behavior. In one International Energy Agency scenario based on stated policies, oil use levels off around 2030 near 102 million barrels per day and then slowly declines. In a scenario limited to policies already formally enacted, demand keeps growing, reaching about 113 million barrels per day by 2050. OPEC generally expects stronger long-term growth than the IEA's transition-oriented scenarios. These are not predictions from rival crystal balls. They are conditional maps: rapid electrification, stronger climate policy and cheaper batteries produce one future; slower adoption and rising petrochemical and aviation demand produce another. The IEA's 2025 outlook places those diverging paths side by side.

Even if global demand peaks, individual producers will continue fighting for market share. Low-cost fields may remain profitable while expensive projects become stranded assets—reserves, wells or refineries that lose economic value before their expected life ends. Producing countries therefore face a difficult choice. Restrict supply and prices may remain higher, but competitors gain room to expand. Produce rapidly and the country converts oil into cash before demand weakens, but it can depress the price and exhaust national wealth sooner. Climate policy turns the old contest for access to oil into a new contest over whose oil will be the last oil sold.

Oil's deepest power is not that it secretly explains everything. It is that it connects things usually discussed separately: geology, engines, shipping, banking, taxation, dictatorship, consumer habits, war, climate and national pride. Claims that oil has

nothing to do with geopolitics are naïve. Claims that every war, coup or foreign policy decision is solely about oil are equally misleading. Oil is often the prize, the weapon, the source of revenue, the vulnerability or the force that raises the stakes. Sometimes it is several of these at once.

Every oil story becomes clearer when its measurements are kept straight. Reserves are not production. Production is not export capacity. Crude is not gasoline. A futures price is not every physical transaction. “Oil” may mean crude alone or a larger family of liquids. A producing country is not automatically insulated from the world price, and a net exporter is not completely “energy independent.” The revealing questions are always embedded in the nouns: which oil, located where, recoverable at what cost, moving through which route, refined by which equipment, priced against which benchmark, owned by whom, and protected by whose power.