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MACROCOSM

Electric Vehicles Still Run on Oil

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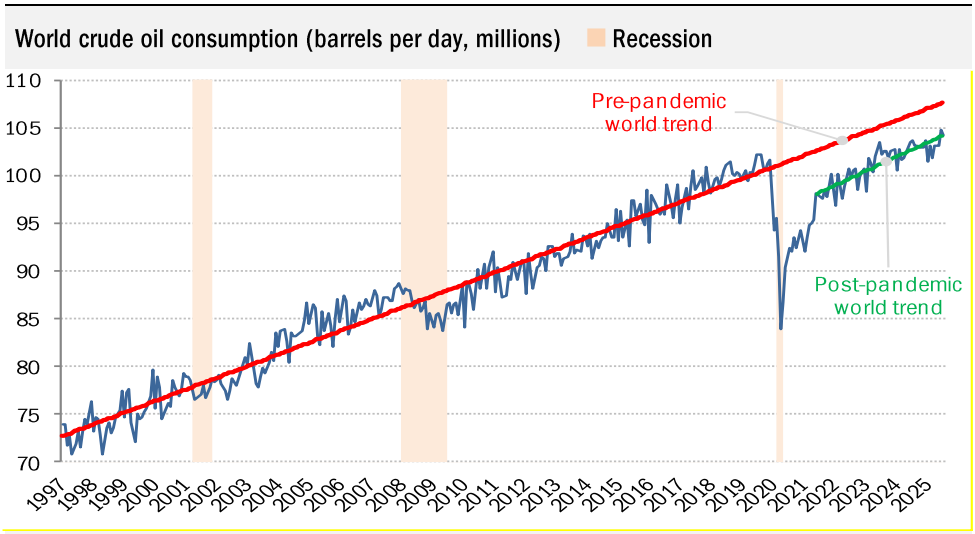
China's hottest EV sector: cars with internal combustion engines. Who knew?

Global oil demand reached an all-time high of almost 105 million barrels per day in June (please see the chart below, and "Data Insights: Oil" August 12, 2025). Despite constant chatter about a lackluster global economy, the trend rate of growth now, after the demand interruption of the pandemic, is even steeper than it was before.



Source: DOE EIA, TrendMacro calculations

So much for the conventional wisdom that growing battery electric vehicles (BEV) sales would cause crude demand to collapse. The reality is that in China, the nation that dominates both vehicle sales growth and oil demand growth, hybrid electric vehicles (HEV) and plug-in hybrid vehicles – both of which rely on onboard gasoline-powered internal combustion engines – have half-again the market share of BEVs, and that share grew by 50% last year (please see the chart on the following page).

Crude oil demand will continue to trend higher into the 2030's.

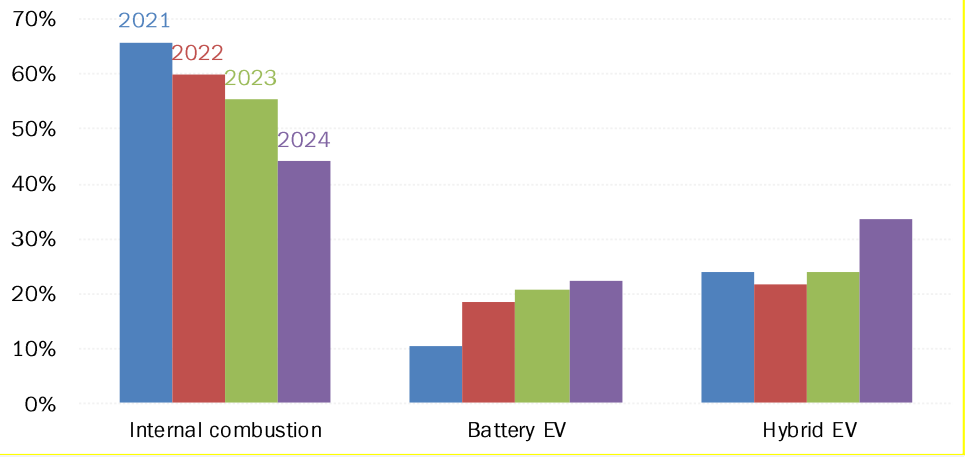
Of the three major global economic regions, only China increased government subsidies for electric vehicles last year. Beijing launched a trade-in scheme starting in April designed to obsolesce automobiles manufactured prior to model year 2018. A 20,000 yuan ($2,730) subsidy

Update to strategic view

OIL: Global oil demand is at all-time highs, and growing at a faster rate than pre-pandemic. This is despite major inroads by electric vehicles in China, the world's fastest-growing mobility market. China continues to subsidize all vehicles, including internal combustion. Growth in sales of pure battery electric vehicles is stalling. The fastest-growing sector is the extended-range electric vehicle, with an internal combustion engine that acts as a generator to recharge the battery that powers the electric drivetrain. Gasoline continues to be an essential partner in electric vehicle proliferation. Forecasters other than OPEC, and TrendMacro, are calling for oil demand lower than today's by 2030. We think demand will continue to grow. We reiterate our forecast for a price range of $60 to $80 Brent.

[Strategy dashboard]

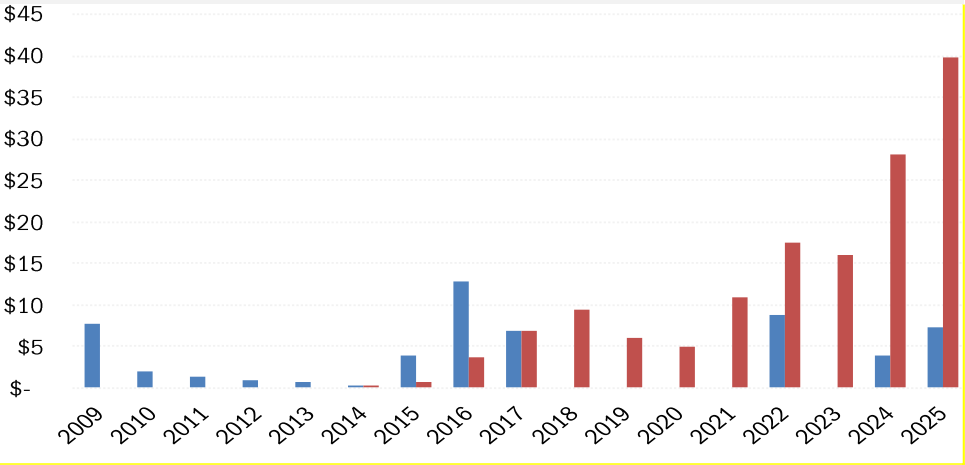
China vehicle sales share by powertrain



Source: Marklines, TrendMacro calculations

for BEVs or plug-in hybrids (PHEV), led to sales growth of more than three million units. RMB 290 billion ($40 billion) in EV subsidies are slated for 2025, on top of RMB 200 billion ($28 billion) in 2024 (please see the chart below).

China vehicle sales subsidies (USD billions) Internal combustion Electric



Source: Rhodium Group, TrendMacro calculations

China has built its massive automotive manufacturing complex with more than $230 billion in subsidies since 2009. When EV subsidies began, China originally favored BEVs. But this policy has changed multiple times as technology and consumer preferences have evolved. *Chinese authorities concluded by 2020 that a 100% battery-operated vehicle fleet was either impossible to obtain or ecologically less desirable than a multi-fuel approach* (see "The Electric Future is Driven by Oil" February 19, 2021).

The Chinese federal government has granted over $1 trillion RMB ($144 billion) to purchase so-called "new energy vehicles" (NEV) since 2015. But

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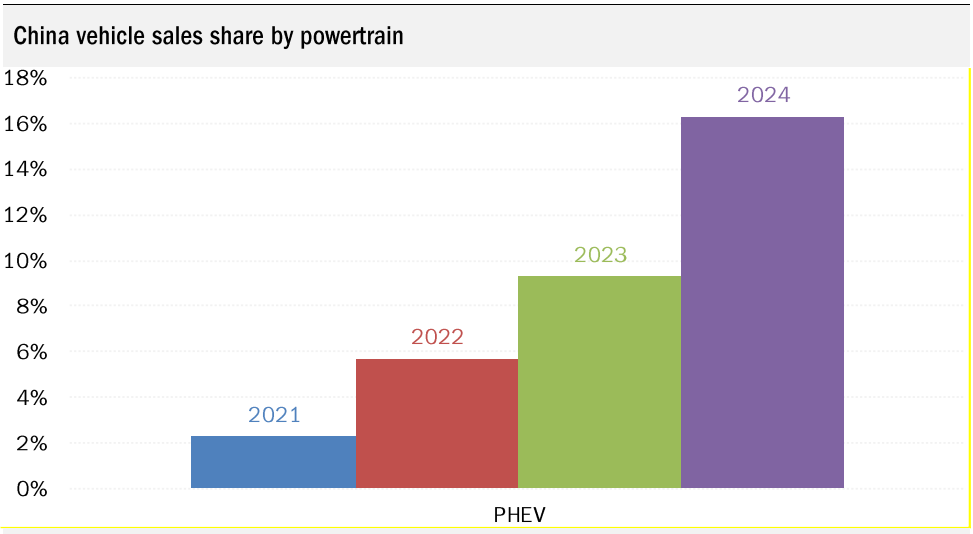
in three of the last four years, *internal combustion vehicles (ICV) have been subsidized too*, after a four-year hiatus (again, please see the chart on the previous page). In the latest round of subsidies, the government provided RMB 15,000 RMB ($2,068) to buyers of ICVs and non-plug-in hybrids (HEV) with less than 2.0 liters displacement. Sales of those HEVs rose 19% last year. It is the first time since 2017 that HEVs received federal subsidies (other than briefly during the pandemic) – *it demonstrates Beijing's willingness to compete in a category that it originally overlooked when tweaking their NEV policy back in 2015.*

Beijing also allowed an older hybrid vehicle technology (extended range energy vehicles – EREV) to receive subsidies in 2021. An EREV has an on-board gasoline motor that acts as a generator to recharge batteries while on the road, thereby quadrupling its range compared to a traditional PHEV. Traditional PHEVs could drive about 100 miles with battery power before the gasoline engine takes over, but the average EREV can drive over 400 miles when using the on-board gasoline motor to recharge the batteries. Fewer batteries and a light-weight motor designed for recharging rather than propulsion result in substantial weight reduction and cost savings not only on vehicle price, but on operations as well.

EREV sales are counted in official statistics among PHEVs, and explain much of the explosive growth in market share in that category, especially among larger sports utility vehicles (please see the chart below). This powertrain helped boost PHEV sales from 200,000 in 2021 to almost three million units last year, becoming the market's largest segment. PHEV sales have risen from only 2% in 2021 to 16% of the market in 2024 (with EREV powertrains contributing 1.2 million units of PHEV sales last year).



Source: Marklines, TrendMacro calculations

The EREV powertrain technology had existed for decades in Western automotive manufacturers, but contemporary global warming-obsessed regulatory agencies in the US and Europe did not score the technology favorably in terms of emission reductions, thereby unnecessarily trapping the West into a battery electric vehicle mindset (see "Europe's EV Miracle

Doesn't Live Up to the Hype" November 22, 2021). Additionally, EREV technology provides consumers with the flexibility to choose between gasoline and battery power, presenting challenges for regulatory agencies in terms of control and modeling – something they despise.

Looking specifically at the 2024 Chinese vehicle market of 31.4 million units, 88% of vehicles sold use gasoline in their powertrains (ICV, PHEV, EREV, and HEV) as a primary or secondary fuel.

And Chinese research suggests that personally owned PHEVs run on gasoline from 25% to 50% of the time. Business vehicles, contrary to widespread belief, run their PHEVs on batteries for only 14% to 26% of the time. Looking at China's entire 353 million vehicle fleet, gasoline and diesel-powered vehicles make up over 91% and battery electric vehicles account for only about 6%. *That's why while China has made great strides in pushing the electric vehicle technology that one might expect would reduce gasoline sales*, *crude oil demand continues to trend higher*.

We remain optimistic about global crude oil demand in the future as the sale of hybrids increases faster than BEVs in China and around the world, which we predicted years ago (again, see "The Electric Future is Driven by Oil" February 19, 2021). Yet, the mainstream media's focus on glorifying clean energy sometimes obfuscates the fact that pure BEV sales growth is much lower than advertised and hybrid sales (lumping together plug-in and non-plug-in) are taking over. ICV sales globally have fallen, but remain sizeable in every region, including China.

Remember in 2021 when the universally accepted narrative was that China was outlawing the sale of ICVs? We said at the time this wasn't true (again, see "The Electric Future is Driven by Oil" February 19, 2021). Stories about prohibiting the sale of gasoline engines continue to this day, despite the reality that subsidies are currently available for vehicles powered by gasoline as well as hybrids. In fact, Chinese authorities added language to their NEV policy in late 2023 that states unequivocally, "internal combustion engine (ICV) vehicles will remain an important development path for automobiles for a long time".

Chinese vehicle exports will easily surpass more than 7 million units in 2025. The breakdown of exports by powertrain tells a story supportive of the idea that oil isn't going to be obsolete any time soon.

- Battery Electric Vehicle (BEV) exports are projected to reach approximately 2 million units in 2025, accounting for 28% of the market, with the majority destined for Europe and Asia. BEV exports should still expand by this year from 17% to 22%.
- *PHEV exports should more than double*, reaching 850,000 units in 2025 – or 12% of the total (which include EREV powertrains).
- *Hybrid vehicle sales should also more than double*, reaching 386,000 this year – or 6% of total exports -- with Europe, Russia, and the Middle East being the primary markets.

- *ICVs will still account for 44% of 2025's exports*, but much depends on Russian imports which are down by 22% so far this year.

Yet the International Energy Agency still predicts crude oil consumption to reach only 105.5 million barrels per day by 2030 – a mark that it nearly reached last month. As demand makes new highs and exceeds the pre-pandemic trend rate, the IEA lowered its forecast of demand growth to 700,000 barrels per day in July 2025 compared to 1.05 million barrels per day in January. The most recent EIA long-term global forecast from our own Department of Energy's Energy Information Administration 2023 projects global demand to reach 105.5 by 2030, which is consistent with the IEA's projections (but that was made in 2023, during the Biden administration). We wonder what variables they are looking at – or are they just shilling for the wishful thinking of the EV industry or the global warming lobby?

OPEC's 2030 forecast has crude oil demand rising to 113.5 million barrels per day. The difference between 2030 OPEC and the EIA/IEA forecasts is 8 million barrels per day, a difference greater than any country's crude oil production except the US, Saudi, and Russia. We're going to side with OPEC on this one.

Bottom line

Global oil demand is at all-time highs, and growing at a faster rate than pre-pandemic. This is despite major inroads by electric vehicles in China, the world's fastest-growing mobility market. China continues to subsidize all vehicles, including internal combustion. Growth in sales of pure battery electric vehicles is stalling. The fastest-growing sector is the extended-range electric vehicle, with an internal combustion engine that acts as a generator to recharge the battery that powers the electric drivetrain. Gasoline continues to be an essential partner in electric vehicle proliferation. Forecasters other than OPEC, and TrendMacro, are calling for oil demand lower than today's by 2030. We think demand will continue to grow. We reiterate our forecast for a price range of $60 to $80 Brent.