

Alternative Power Report

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News on Alternative Power Sources



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Moving from ICE To Alternative Power

As manufacturers continue to shift their equipment production from ICE to alternative power sources, they need the latest information. That's why analysts at Power Systems Research continue to revise our global data and forecasts to provide the freshest picture available.

Can EV Enthusiasm Trigger Global Growth?

Production May Limit Growth

Consumer adoption of EVs has gathered momentum this year, spurred by higher global oil prices. The Russia-Ukraine war has made EVs suddenly more appealing to many car buyers, accelerating adoption globally. The higher oil prices are driving EVs closer to cost parity with internal combustion engine (ICE) vehicles. In Bloomberg New Energy Finance's most recent Electric Vehicles Outlook 2022 report, it projected EV sales to hit 20.6 million units by 2025.

On Tesla's most recent earnings call, Elon Musk admitted, "We do not have a demand problem but a production problem." Other car manufacturers such as Ford, for instance, says it can build its F150 Lightning and the Mustang Mach E fast enough to keep up with demand.

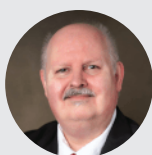
Source: *CleanTechnica* [Read The Article](#)

PSR Analysis: It would take a monumental effort to replace the approximately 1.3 billion ICE cars, but the efforts to do so, the huge investment in battery development and recharging structure means that while EVs may not be able to trigger economic growth on their own, they will definitely limit or partial reverse any negative downturn caused by falling ICE sales. **PSR**



Editor's Note: This material has been reproduced from the *Alternative Power Report*, written by Guy Youngs which appeared in the September 2022 issue of *PowerTALK News*. The monthly feature includes news and analysis about EV and power sources such as batteries and fuel cells.

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New power source installations vary across industry segments, contact PSR for data on your specific application needs.

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Lithium Spot Prices Climb Nearly 900% Since January 2020

Benchmark Mineral Intelligence reports that lithium market prices have grown by almost 900% since 2020. Currently, lithium demand and supply are growing at almost the same rate, but automotive needs continue to increase rapidly, and they continue to compete over a less-than-adequate lithium production pipeline.

However, the US Inflation Reduction Act of 2022 means that North American mineral demand is increasing quickly. So, will the EV battery and mineral market be able to get enough minerals out of the ground and processed for US demand without resulting in huge price increases? Benchmark is reporting that even without the effects of the IRA, lithium demand will exceed supply by 1 million to 1.2 million tons by 2030.

Source: *CleanTechnica* [Read The Article](#)

PSR Analysis: Automotive manufacturers are rushing to sign up lithium supplies (Tesla has purchased 10,000 acres of land in Nevada, where it plans to mine lithium) but mines take time to reach production, and without massive investment in lithium mining and recycling now, or a shift away from lithium-based batteries, lithium will be a huge supply constraint for the EV market. **PSR**

Cummins Jumps On New Energy Storage Iron Salt Formula

Cummins \$24 million stake in the startup VoltStorage gives them a foot in the door with new iron redox flow technology. There is nothing wrong with lithium-ion energy storage but global demand for energy storage has nowhere to go but up, and so are lithium prices. While lithium is relatively abundant in the ground, but current supply is falling behind demand. At the same time, lithium extraction is messy and has significant environmental impact, causing local opposition to new mines and other facilities which could stall development. Aside from accessing a recyclable supply chain that can avoid conflict issues, flow battery fans note a long list of advantages over lithium-ion technology including lower cost, longer duration, and ease of scalability.

Source: *CleanTechnica* [Read The Article](#)

PSR Analysis: Cummins has been making investments into EVs (such as the purchase of Brammo in 2017 and Meritor

in 2022) for some time and this low cost, long duration, grid scale energy storage battery is part of their plan. This diversifies their portfolio of alternative power systems and helps them in the grid scale storage market. One of the major advantages for flow batteries is that they aren't lithium-based and are therefore not subject to the same massive and sustained price increases that lithium material is seeing. **PSR**

EV Shipping Set To Blow IC Engines Out of the Water

Researchers from the University of California, Berkeley, and Lawrence Berkeley National Laboratory have released a study which examines “the technical outlook, economic feasibility, and environmental impact of battery-electric containerships.” By modelling 5 to 10 GWh electrified containerships, they found that 40% of routes today could be electrified in an economically viable manner, before considering environmental costs.

Using only technology available for purchase today, nearly all ships with routes shorter than 2,000 kilometres are economically advantageous, and ships with routes as long as 3,000km are economically viable.

Source: *PV Magazine* [Read The Article](#)

PSR Analysis: Ships transport more than 10 billion metric tons of cargo each year, including clothing, electronics, and oil, and almost all of these ships run on fossil fuels, so they emit a lot of carbon pollution. Maritime shipping causes about 3% of global greenhouse gas emissions. As the costs of large ICE containerships continue to rise electrified containerships become increasingly cost effective. Electrified containerships are 80% more efficient than their ICE counterparts, and use 30% less energy overall. **PSR**

Battery Electric Power Forecasts

With the exception of 2022 (+7.6%), Battery Electric as a power source is expected to grow between 10% and 17% throughout the forecast period, while ICE growth rates start the period at -2.3% and then grow at less than 1% for 2023 to 2025.

Battery Electric is expected to grow from 12.8% of the market in 2022 to 21.2% by 2027, while during the same period ICEs are expected to decline from 85% of the market to 75%. **PSR**



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About Power Systems Research

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