

Alternative Power Report

October 14, 2024

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.

VW “Earthquake” Hits Germany

While Funding Cuts For New Battery Research Loom

By *Guy Youngs*, Forecast & Adoption Lead



Volkswagen Group has let it be known that it might need to shutter two factories in Germany. It also indicated it might need to end the “guaranteed employment” policy it has adhered to for decades that is designed to ensure workers there will

always be a job for them within the Volkswagen family. The news has rocked the company and has been described as an earthquake by some in the German media

Layoffs, which are common in the industry, are not the Volkswagen way, but now it appears that this promise is in danger as the company struggles to adapt to the current market situation

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

PSR Analysis: There is much criticism of VW’s failure to grasp the opportunities presented by the electric and hybrid car markets. There is also a lot of criticism about



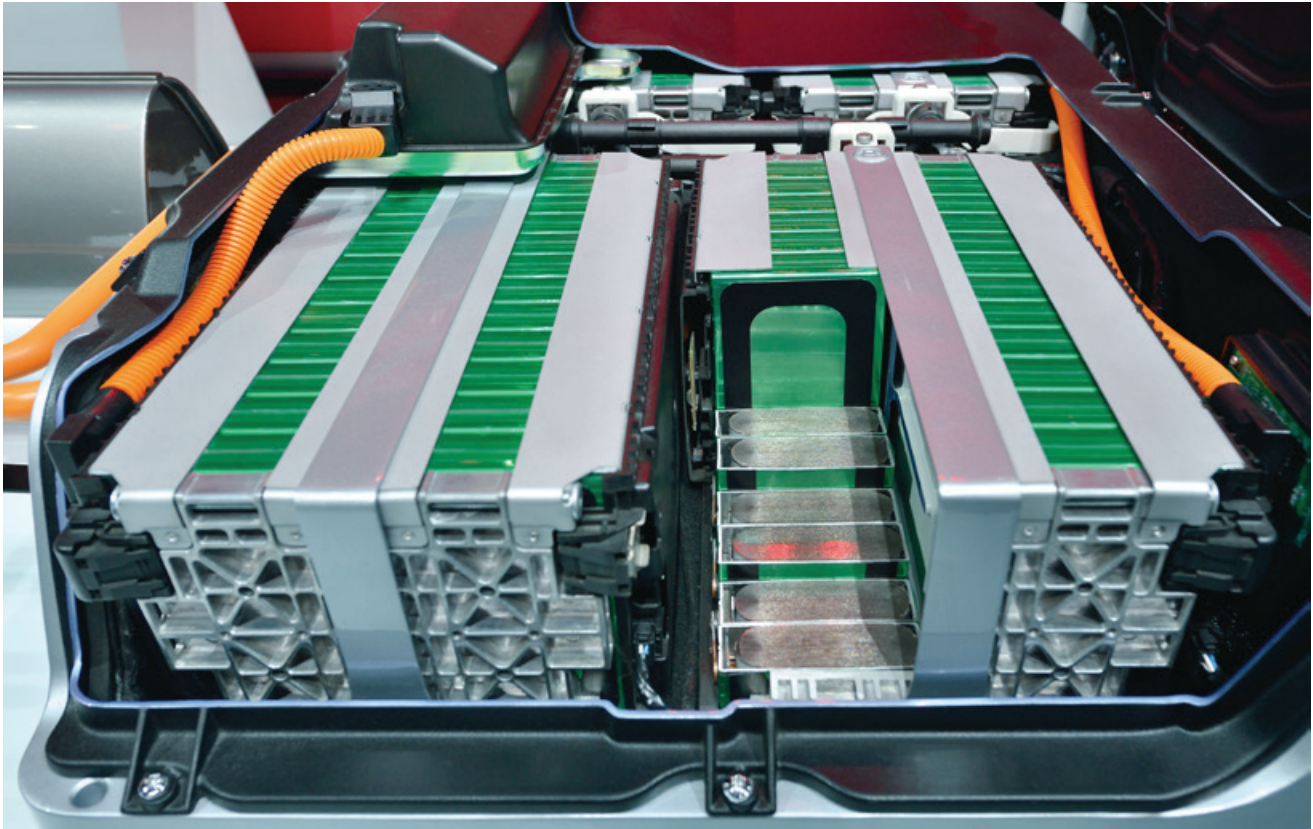
those EV models that VW does build. This coupled with the fact that every fifth electric vehicle sold in Europe today is produced in China, means that the German auto industry is now in crisis and what it does next may determine if it survives. **PSR**

Editor’s Note: This monthly report includes news and analysis about EV and alternative power sources such as batteries and fuel cells from analysts at Power Systems Research.

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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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Europeans Unveil Solid-state Battery with 1,070 Wh/L Energy Density

A European research consortium has produced a prototype solid-state battery using a new manufacturing process that reportedly achieves high energy densities and can be implemented on modern lithium-ion battery production lines

The “SOLiDIFY” consortium, composed of 14 European research institutes and partners, developed a battery with a pouch cell with an energy density of 1,070 Wh/L, compared to 800 Wh/L in standard lithium-ion batteries

The group estimates the cost of the batteries at €150 (\$166)/kWh, compared to Bloomberg Nef’s current estimates of €67/kWh for lithium iron phosphate batteries and €93/kWh for high-nickel NMC batteries

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

PSR Analysis: We see many innovations in battery technology which show a lot of promise – this one gives a 20% improvement in density and thus is said to provide increases in range or reductions in battery size/weight. The cost implications are a concern, but a lot of other solid state batteries are promising more significant results. **PSR**

Your EV May Fall Apart Before Its Battery Pack Does

Geotab, an automotive telematics company, is using its in-depth access to EV data to track battery health. And its new study of 10,000 electric cars shows that their battery packs could outlast the vehicles themselves

With five years of data, the company recently released a new study that shows the average degradation per year is actually 1.8%. The company believes that it could translate to EV batteries lasting 20 years.

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

PSR Analysis: When EVs first appeared, there was a lot of talk about needing to replace the batteries after five years. That soon became 10, 15 and now 20 years, and so proving many ICE doubter wrong. Battery replacement need not be a concern when buying an EV. **PSR**





Hydrogen Fuel Technology May Be Falling Behind

Ballard Power Systems, a large hydrogen fuel cell making company from Canada, has announced a massive overhaul that will slash its spending by 30%, including huge job cuts

According to Ballard CEO Randy MacEwen, there has been a notable slowing in both the development of clean hydrogen fuel production capacity, and the infrastructure used for the distribution of H2

Source: *Hydrogen Fuel News* [Read The Article](#)

PSR Analysis: Ballard has long been one of the leading Fuel Cell companies globally and the action of cutting costs by 30% and putting its entire China strategy at risk, will echo throughout the fuel cell industry. This is yet another body blow to this industry. **PSR**

Maybe Germany Should Just Revive Its EV Incentives

Every industry relies on having at least somewhat predictable rules and regulations, and that includes available incentives. Indeed, business needs stability. This is nothing new and is basically one of the ABCs of business and economic governance. So, when the federal government very suddenly and unexpectedly pulled the rug out from under EVs at the end of 2023, it was going to have an impact.

It was immediately clear that this was not something people or companies saw coming, and that it massively disrupted the EV market in the largest auto market in Europe.

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

PSR Analysis: The EV industry in Germany has been massively disrupted, and because of the large size of the market, it's put a stain on the EV growth of Europe and the world. This is now starting to hurt automakers, including VW (see article in this Alternative Power Report). This article suggests that this decision should be reversed. **PSR**

Altech's Sodium Chloride Battery Exceeds Expectations

Perth Australia-based Altech said a prototype 60 kWh sodium chloride solid-state battery energy storage system installed at joint venture partner Fraunhofer IKTS' test laboratory in Germany has passed all physical tests with "flying colors."

The ABS60 battery pack is composed of 240 Cerenergy cells, each rated at 2.58 V. Each cell is constructed with ceramic solid-state technology that relies on sodium ions found in common table salt.

These cells are organized in four rows, each comprising 12 cells, and stacked five modules high to provide a total capacity of 60 kWh. The battery pack is housed in an

IP65-rated unit that measures 2.6 m in height, 0.4 m in length, and 1 m in width.

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

PSR Analysis: A solid state battery made using salt is quite an eye opener and it shows the pace of battery innovation. However, this unit is quite large and not really geared towards mobile applications. **PSR**

LG Chem Material Capable of Suppressing Thermal Runaway in Batteries

LG Chem has announced that its Platform Technology research and development team has developed a temperature-responsive material that is described as capable of suppressing thermal runaway

Thermal runaway has plagued the lithium-ion battery industry since its inception. While measures to mitigate safety risks have been advanced along the way, reaching a very high point today, “thermal events” – which generate gas and can potentially escalate to full combustion – have not been rooted out for good. Now, LG Chem claims to have found a solution to this long-standing issue

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

PSR Analysis: Whilst some Lithium ion batteries are less prone to thermal runaway (and possible combustion), the most common type of Lithium Ion batteries (NMC) are at risk. And these batteries generally give the most energy density. To be clear its not a massive risk, no more than ICE engines are prone to combustion in an accident involving the fuel tank). So anything that reduces that risk is a definite plus. **PSR**

Shell Shuts Down Hydrogen Fuel Project in Norway

Shell has abandoned its plans to install and operate a low-carbon hydrogen fuel project on the west coast of Norway, because it has encountered a lack of demand for the H2 the facility would have produced, said the energy giant.

Hydrogen Fuel News recently reported on a similar decision Equinor made in cancelling its own project in Norway that would have used a pipeline to export H2 to Germany. That hydrogen fuel project also shut down due to a belief that the demand simply wasn't there.



Source: *Hydrogen Fuel News* [Read The Article](#)

PSR Analysis: This is another blow to the hydrogen industry which adds to concerns that it may not be an option for mobile machinery. With demand not being there, we are running into a chicken and egg scenario – no investment because of lack of demand vs no desire to purchase because of lack of infrastructure. **PSR**

A Final Note

How To “Grow” New Supply Of Nickel For EV Batteries, [Click Here](#)...Billions in fines predicted for European automakers as emissions target tightens, [Click Here](#)... Manganese Cathodes could boost lithium-ion batteries, [Click Here](#)...Lightning fast charger: Fortescue 6 MW DCFC for electric heavy equipment, [Click Here](#). **PSR**



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