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Cos. Must Consider Electric Vehicles' Unique Risk Profile

By **Jason McCarter and Elizabeth Marquardt** (June 23, 2021, 5:22 PM EDT)

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Like Bob Dylan at the Newport Folk Festival, the automotive world is going electric — or so it seems from the daily headlines.

The announcements from General Motors Co., Ford Motor Co., Volkswagen AG and others of electric-heavy production goals, coupled with the Biden administration's call for an all-electric federal fleet and other alternative fuel incentives,[1] have set the tone for numerous new electric vehicle model rollouts, corporate deals, public offerings and charging station expansions.

This is almost universally a positive development for both the automotive industry and for the environment. The maintenance and torque advantages of EVs will soon be realized by consumers, too.

In the meantime, federal and state incentives make the financial disparity between electric and internal combustion engine, or ICE, vehicles tolerable — and that gap should only continue to narrow as the EV supply chain expands and battery technology improves.

So, all good, right? Well, yeah, mostly. Like everything else in life, there will be a few tradeoffs, foreseeable and otherwise.

It's not that EVs have more inherent risk than gas-powered ICE cars; it's that their risk profile will be somewhat different. ICE vehicles are a known quantity, with decades of development, testing, consumer experience, insurance pricing and litigation. EVs — on the coming scale — are an unknown quantity.

Failing to anticipate and adjust to these new risks can take the unprepared company by surprise. Acknowledging the murkiness of our EV crystal ball, what follows are some of the differences companies in the automotive industry might see in their risk profile as the worldwide vehicle fleet becomes more electric.

Conceptually, they might be viewed through the lenses of reputational risk, liability concerns and insurance needs. The changes will be more a matter of degree and focus than earth-shattering — but the speed bumps will be more obstructive than necessary if companies fail to scan the road ahead.

Safety and Reliability

EVs promise fewer accidents and repairs. But when they do happen, they can be more severe, and significantly more complicated and expensive.[2]

EV batteries will require complex onboard software and specialized technician training. And the race for cheaper, lighter and more powerful batteries may lead some manufacturers to compromise safety at the margins.

Battery damage and replacement will be costly. At present, EV battery replacement costs are

somewhat opaque and vary by capacity, but estimates range from $5,000 to $16,000, depending on, among other things, the model, whether the battery is new or refurbished, and labor costs.[3]

Fires

EV batteries are generally safe and well-encapsulated. But when they do catch fire, the temperatures can be much more intense, thermal runaway can occur and toxic gases can be released.

First responders often have less experience dealing with these types of fires. Some literature suggests the risks of battery fires unique to EVs are overblown as a factual matter, but the perception of fire risk leads to more media coverage, and affects consumer and regulatory confidence.

This, in turn, can lead to expensive recalls and investigations.[4] We have recently seen with Hyundai Corp. and BMW recalls, a National Highway Traffic Safety Administration inquiry to GM, and Ford production delays.[5]

Battery Life and Disposal

Like the engine of an ICE vehicle, the battery is the heart of an EV. And at present, those hearts have, on average, an eight- to 10-year lifespan.[6]

As noted above, EV batteries are not (yet) cheap to replace. The best practices of lithium-based battery disposal — and the climate effect of this disposal — and the best charging and maintenance strategies are, similarly, not yet well understood.

Certainly, long-term weather and charging habits affect battery life. But managing for those variables, especially at the consumer level, will take some time and practice. The good news is that various players in the industry are working to extend battery life, and repurpose the internal metals where possible.[7]

Environmental Impact

EVs will generally be better for the environment over their useful life compared to similar ICE vehicles. But the manufacturing of EVs presently appears to create more carbon emissions than does the production of ICE vehicles.[8]

While this carbon footprint rebalances once the EVs are on the road, the environmental impact of production is noteworthy. In addition to the significant burdens in terms of emissions, lithium-based battery production has a substantial impact on energy and water use in areas where the raw materials for the batteries are sourced and processed.

These impacts will no doubt lessen, on a per-car and per-battery basis, as the production process improves, but that will take time. And they may still scale up in total as the number of EVs produced grows rapidly.

Supply Chain Gaps

Rapid speed to market as the numbers of EV models, subparts and supply equipment grow will itself create risk. As new supply chains are set up quickly to produce an ever-larger number of novel parts and software to run EVs, there is likely to be quality pressure at assembly lines and in testing centers.

Outside defect and functionality standards will be evolving at the same time — which may take the form of new federal safety standards, original equipment manufacturer contractual standards and/or litigation defect rulings. Expensive recalls could follow, and the complexity of subcomponents and integration of software will make practical and legal responsibility for defects difficult to determine.

Given the environmental and social concerns, the traceability and transparency of component sourcing — particularly mined raw materials — will be a concern for various stakeholders.

Cyber Threats

The connectivity and sheer amount of software in EVs is predicted to triple — from 10% of a typical ICE vehicle makeup today to as much as 30% of an EV's makeup — creating openings for digital attacks, outages, bugs and glitches.[9]

The increased reliance on data, sensors and software will create a need for frequent updating, and for advance consideration of liability for failures to provide and/or implement software updates.

Insurance and Liability

With EVs having fewer but more integrated and connected parts — each on different life cycles than those in comparable ICE vehicles — the responsibility for defects and incidents may shift among suppliers, and become harder to determine.

As noted above, new software creation and updating demands, along with compressed production and testing opportunities, seem likely to change the types of claims, lawsuits and recalls the industry will face. Claims will become more factually and contractually complex, and may require more software and electrical expertise to resolve, compared to current mechanical expertise.

Actual and perceived fire concerns may also increase insurance coverage requirements. There is little doubt that the insurance and supply markets can make the necessary adjustments — but we can expect lurches and gaps as that occurs.

Litigation

While the types of litigation associated with EVs may not be fundamentally new to the automotive world, products liability claims are likely to focus more on battery functionality and overlapping software issues, requiring new expert witness credentials and focus. There will be misrepresentation claims at the corporate level, given the amount and speed of investment in the space, and false advertising claims at the model level, triggered by the competition on range.

Battery performance may be highly variable based on weather, charging practices and driving habits. Accordingly, consumers are likely to have unrealistic performance expectations.

Given the sheer number of federal and state incentives and tax breaks — and the significant investments in the EV market hoping to capitalize on those — we can also expect increased disputes with government counterparties about the extent of the availability of those incentives, and fights among private parties about ownership and allocation of those credits.

What to Do About It

Companies in the automotive industry — manufacturers, suppliers, dealers and insurers — should carefully think through the life cycles of relevant EV models, and their firm's particular role in them, to identify where risks like those described above are most likely to arise.

Those companies should then work with: (1) their engineering teams, to mitigate technical risks where possible; (2) their marketing teams, to ensure EV capabilities and benefits and environmental claims are not overstated; (3) their legal counsel, to allocate duties and liabilities carefully in relevant supply, sales and service contracts; and (4) their insurers and reinsurers, to make sure coverage is adequate for the remaining risks.

Conclusion

It's a brave new world, and EVs will be an important part of making it better for all of us. In the meantime, as we navigate the bumpy road to broad adoption, players in the EV space will need to think through the risk-related tradeoffs, and be prepared to deal with these new threats.

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[1] See Exec. Order No. 14008 (2021), 86 Fed. Reg. 7619.

[2] See Allianz Global Corporate & Specialty, The Electric Vehicles R-EV-olution: Future Risk and Insurance Implications (2020), at 8.

[3] Stef Schrader, It Costs Nearly $16,000 to Replace a Tesla Model 3 Battery Pack, The Drive (Jan. 25, 2021), https://www.thedrive.com/tech/38915/it-costs-nearly-16000-to-replace-a-tesla-model-3-battery-pack.

[4] Ben Foldy, Auto Makers Grapple With Battery-Fire Risks in Electric Vehicles, Wall St. J. (Oct. 19, 2020).

[5] Id.

[6] Allianz, supra note 2, at 9.

[7] For example, Renault, through a consortium with French waste management company Veolia and Belgian chemical firm Solvay, now recycles all of its electric car batteries. Emma Woollacott, Electric cars: What will happen to all the dead batteries? BBC News (April 27, 2021).

[8] Allianz, supra note 2, at 10.

[9] Allianz, supra note 2, at 10.