

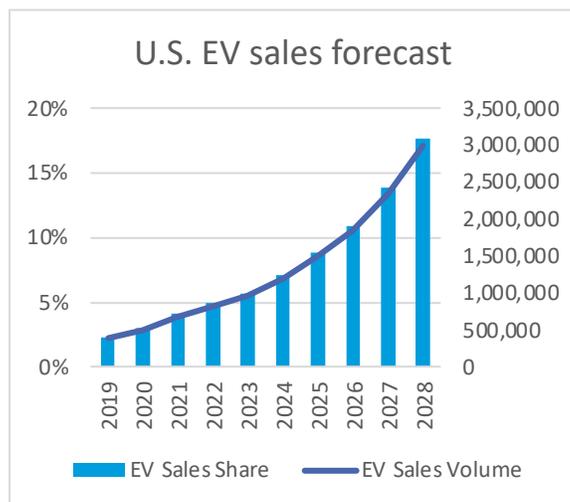
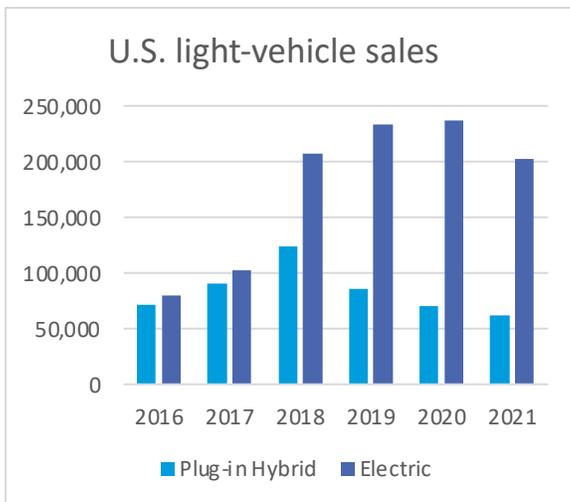
## **COMMENTARY ARTICLE**

### **Electric vehicle claims:**

Understanding the unique exposures and specialized handling requirements for mitigating claims arising out of the operation of electric vehicles

By: Chris Frechette,  
vice president, liability practice, Sedgwick

Advances in battery technologies and environmental concerns continue to bolster a growing interest in the adoption of electric vehicles (EVs). While the U.S. lags Europe in adoption, multiple indicators suggest a shift away from many hybrids to more full electrics. There is also an acceleration in projected sales trending toward mass adoption in the U.S. well within the current decade.



With the proliferation of EVs come new challenges for insurers. Traditional models for underwriting internal combustion engine (ICE) vehicles do not translate. Values, depreciation rates, repair costs and both first and third-party exposures present new and unique distinctions. Consequently, the processes, resources, and expertise requisite to administering claims with EVs must be re-examined and enhanced to provide appropriate expert adjudication and mitigation.

A comprehensive understanding of the range of exposures differentiating EV claims is foundational to effective claims handling and mitigation. A range of emerging EV-related exposures should be considered as EV adoption rates increase, including:

- Exposures to owners, drivers, and passengers
- Exposures related to damage and repair requirements
- Exposures related to third party liability

Recognizing the additional and unique risks inherent to EVs, processes can be expanded and added to address them. The most effective approach requires constant monitoring and calibration to evolving regulatory and statutory developments and the addition of internal subject matter experts (SMEs) and networks of attorneys, repair facilities and other vendor partners specifically versed in the unique aspects of EV claims.

# Owner/driver/passenger exposures



Debate continues related to the overall relative crash safety of EVs. Interestingly, a recent study by the Insurance Institute for Highway Safety - Highway Loss Data Institute found injuries to drivers and passengers of EVs to be more than 40% lower than identical ICE models, thereby corroborating some earlier study findings by others.

It should be noted that those findings are predicated to a large extent on the relative weight of the vehicles compared.

EVs tend to outweigh their ICE like-model counterparts despite the incorporation of lighter materials where possible to maximize efficiency. Notwithstanding the goal of reducing curb weight, current battery packs and the added weight necessary to support and protect them tend to make EVs heavier than their ICE model and size equivalents.

In a crash, occupants of heavier vehicles are subject to less forces than occupants of lighter vehicles. So, while favorable to occupants of a heavier vehicle, the other side of the same coin is the potentially increased injury to occupants struck by a heavier vehicle. From a wholistic insurance exposure standpoint, potentially reduced first-party losses may be offset by potentially increased third-party losses.

The battery pack is typically located low in an EV, thereby lowering the vehicle's center of gravity significantly. As a result, the possibility of rollover is reduced in many cases to the point that traditional testing methods often don't even induce rollovers. The absence of the mass of an engine block that typically could transfer relatively unabsorbed energy to the position immediately behind it in a crash, further enhances the safety advantages. Also, the elimination of highly combustible fluids like gasoline and oil that could potentially cause a fire due to crash damage provides another safety benefit.

In addition to crash injuries, occupants of electric vehicles are subject to increased electromagnetic field (EMF) radiation. Extended exposure to sufficient EMF radiation can cause cell damage, infertility, DNA degradation and health and behavioral problems. Extremely low frequency (ELF) radiation is emitted by all electrical devices including batteries. Both proximity to and duration of exposure to ELF radiation increase the potential adverse health risks.

Arguably claims of injury from ELF exposure may be directed more at manufacturer liability policies but claims challenging definitions of "accident" in auto policies that often include "...repeated exposure to the same conditions resulting in bodily injury..." may also be foreseen.

Additionally, increased connectivity and reliance on component manufacturing in EVs creates security vulnerabilities. Exposures range from theft of personal and payment information to the outright takeover of one or more vehicles for malicious acts or criminal gain. And an infected vehicle could potentially extend the risk through its interfaces to an entire fleet or even ostensibly a power grid.

## Damage and repair-related exposures

Electronic vehicles systems, while generally composed of fewer moving parts, are also more complex and comprised of integrated components, non-owner serviceable components, and components that may be more likely to require replacement in the event of a crash.

## Costs and considerations

According to CCC Intelligent Solutions data, the average cost to repair a small EV is about 3% higher than a comparable ICE vehicle and supplements account for 14% of the repair costs for the EVs as opposed to 11% in the ICEs.

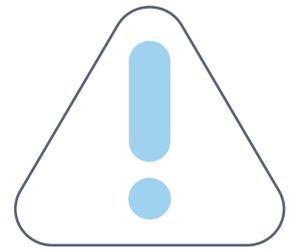
The lighter materials used to maximize efficiency in EVs are generally more expensive and more prone to a greater amount of damage. Although efficient at absorbing energy in crashes translating to increased passenger safety, the materials are somewhat less amenable to traditional dent and deformation repair techniques and often require more surface area repair or complete component/panel replacement.

The incorporation of more complex and integrated components adds a layer of complexity to the repair process. Further, more components may be in areas highly subject to damage in even modest impacts. For example, 40.2% of repairs to EVs relate to replacement parts compared to 37.5% in comparable ICE vehicles in the CCC study.

While average repair hours for EVs tend to be slightly lower in similar crashes than for ICE vehicle counterparts, overall time of repairs trend longer due to time spent coordinating and subletting repairs and supplements, a difference that can be mitigated with proper knowledge and resources in place. The battery packs powering EVs are by far one of the most expensive individual components, often approaching or exceeding \$30K in cost.

# Liability exposures

---



In addressing the overall liability exposure, the relative weight of vehicles involved in crashes has correlating influence on the potential extent of first and third-party injuries. Increased exposure for those sensitive to ELF may result in third-party claims against owners as well as manufactures, in addition to the exposure to owners themselves.

A somewhat new and unique risk, and one that is the subject of some debate, relates to the almost silent aspect of operation of EVs and hybrid-electric vehicles when operating in full electric mode. The U.S. National Highway Traffic Safety Administration (NHTSA) found in a recent study that pedestrian accidents are 37% more common with EVs compared to traditional vehicles and found them to pose as much as 50% more risk for pedestrian accidents in low speed situations, including starting and backing. While the findings are being challenged, it seems intuitive that a silent vehicle could ostensibly be more susceptible to not alerting pedestrians when switching on or moving at slower speeds. And while this would not seem to increase the likelihood of liability on the part of drivers of EVs, exposure to third-party damages and claims is inarguably increased to some extent.

Another related array of risks arises out of the inherent connectivity creating opportunities for hacking and cyber-attacks. The consequences of such attacks could easily extend to unprecedented third-party damage and business disruption exposures and consequent claims complexities.

Other exposures include the handling, including discharge, freezing and destruction, of damaged batteries as part of both repair and salvage processes, complications in determining cause and origin of damages and defects, the identification of all correct parties in liability and subrogation actions, and of course, the myriad of exposures to both OEM and component part suppliers that are also insured by carriers.

## Conclusion

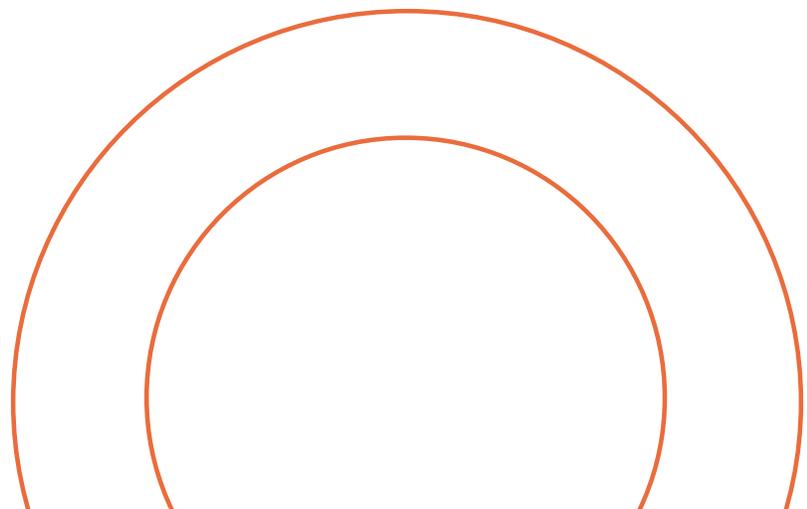
While EVs still comprise a relatively smaller portion of the market today, they will reach mass adoption and be all but ubiquitous within the decade. With EVs come new risks for insurers to understand and address as well as table stake needs for enhanced resources and processes to evaluate and administer claims accurately and appropriately.

Emerging statutory and regulatory changes regarding EVs must be monitored closely as well as the court decisions evolving applicable current and new areas of law.

Identification and partnerships with repair facilities with certifications in EV repair, OEM certification, and the knowledge and equipment necessary to work with lightweight materials will be essential. This includes EV lithium-ion battery handling and removal necessity. Knowledge of other safety practices necessary for repairs and equipment needed to restore and re-calibrate components and systems will reduce total repair time and vehicle down time as well as the costs of subcontracting aspects of the repairs.

Similarly, the identification of defense counsel who are well-versed in the current and emerging legal and technical issues and their nuances, as well as the identification of other vendor partner and internal SMEs can help to further assure efficient and effective handling of both first and third-party claims.

Some existing resources and processes can continue to be leveraged. However, a deliberate and well-executed plan for supplementing and refining resources and processes can enable insurers to adapt quickly and create a competitive advantage.





*caring counts* | [sedgwick.com](https://www.sedgwick.com)