# The electric vehicle repair gap

What 1.3 million vehicle-years of exposure reveal about the cost insurers aren't pricing for.

Axxion Insurance Services | February 2026 | Based on actuarial claims data covering 1,257,717 vehicle-years of exposure and 315,712 claims across UAE-licensed motor insurers

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# The gap in the data

Electric vehicles account for roughly 1.5% of insured exposure in the UAE. That number is growing quickly, driven by government incentives, manufacturer push, and consumer curiosity. Insurers are being told, from every direction, to prepare for the EV transition: build the product, price the policy, capture the growth.

The advice is correct. The pricing assumptions behind it are not.

An analysis of claims cost data across approximately 1.26 million vehicle-years of exposure in the UAE, covering both agency (authorised dealer workshop) and non-agency (independent workshop) repair channels, reveals a consistent and significant gap between what EVs cost to repair and what equivalent internal combustion engine (ICE) vehicles cost to repair. The gap is not marginal. For some vehicle categories, the pure-risk cost of insuring an EV runs at more than double the equivalent ICE model in the same price bracket.

This paper presents the data, identifies where the gap is statistically robust, and flags where it is not yet conclusive. The intention is not to argue that EVs are uninsurable, but that pricing them using assumptions inherited from ICE vehicles introduces a systematic error that will compound as the fleet grows.

### A NOTE ON METHODOLOGY

The dataset covers 1,257,717 vehicle-years of earned exposure and 315,712 claims across UAE-licensed motor insurers, representing one of the most comprehensive actuarial views of the UAE motor market available today. The data is separated into agency and non-agency business across two files — one for non-Chinese manufacturers, one for Chinese manufacturers. In the UAE motor market, "agency" refers to repairs carried out at the vehicle brand's authorised importer workshop (dealer network), while "non-agency" refers to repairs carried out at independent workshops. This distinction is fundamental to claims cost analysis because the repair channel determines parts sourcing, labour rates, and cost control mechanisms.

Each file contains make-model level data with annual exposure, severity, frequency, vehicle count, claim count, and burning cost. All analysis in this paper uses annual earned exposure (vehicle-years) as the base metric, not raw vehicle counts, because exposure reflects the actual risk period and produces the correct frequency calculation. Metrics used throughout are: severity (average incurred claim cost, including allocated loss adjustment expenses, when a loss occurs), frequency (claim count per vehicle-year of exposure), and burning cost (the pure risk cost per vehicle-year, representing the combined effect of severity and frequency). All figures are in AED.

Burning cost figures in all tables are calculated as weighted averages from the underlying make-model data, not as the arithmetic product of the segment-level severity and frequency averages shown alongside them. This distinction matters: the weighted average of individual burning costs ($\text{severity}_i \times \text{frequency}_i$, weighted by exposure) will not equal the product of separately weighted severity and frequency averages, because the weighting denominators differ. Both representations are actuarially correct; the burning cost figure is the one relevant for pricing. Where comparisons are made, actuarial credibility is stated using the limited fluctuation method: credibility = $\min(1.0, \sqrt{(n / 1{,}082)})$, where n is the claim count. Full credibility (100%) requires 1,082 or more claims, corresponding to 95% confidence at 5% accuracy under standard actuarial assumptions.

# The headline numbers

Across the full non-Chinese dataset, EV and hybrid vehicles show markedly different claims behaviour from the ICE fleet. The EV segment (19,217 vehicle-years of exposure, 7,182 claims) carries full actuarial credibility at the aggregate level.

| Metric | EV / hybrid fleet | ICE Fleet | Difference |
|---|---|---|---|
| Exposure (Vehicle-Years) | 19,217 | 1,202,283 | |
| Claims | 7,182 | 297,712 | |
| Severity (AED) | 10,059 | 6,209 | +62% |
| Frequency | 0.374 | 0.248 | +51% |
| Burning cost (AED) | 4,073 | 1,666 | +145% |

A burning cost of AED4,073 per vehicle-year, compared to AED1,666 for the ICE fleet, represents a 145% premium. But this aggregate view masks an important compositional effect that the data requires addressing honestly before the number can be used for anything.

# The Lexus problem

The single largest contributor to the EV/hybrid segment by claims volume is the Lexus ES300H, a hybrid sedan that functions as the de facto taxi and ride-hail vehicle across much of the UAE fleet. With 2,668 vehicle-years of exposure generating 2,839 claims, it dominates the hybrid bucket, and its claims profile reflects its usage pattern: a frequency of 1.064 (more than one claim per vehicle-year) driven entirely by high-mileage commercial use, not by anything related to the hybrid powertrain.

Including the ES300H in an EV analysis would be like including London black cabs in a study of sedan repair costs. The variable being measured is usage intensity, not vehicle technology.

With Lexus hybrids removed, the EV segment still shows a clear cost premium, but the shape changes:

| Metric | EV (excl. Lexus hybrid) | ICE Fleet | Difference |
|---|---|---|---|
| Exposure (Vehicle-Years) | 15,435 | 1,202,283 | |
| Claims | 4,128 | 297,712 | |
| Severity (AED) | 13,109 | 6,209 | +111% |
| Frequency | 0.267 | 0.248 | +8% |
| Burning cost (AED) | 3,798 | 1,666 | +128% |

The story shifts from "EVs crash more and cost more" to something more precise: EVs crash at roughly similar rates to ICE vehicles, but each claim costs substantially more to resolve. The severity premium of 111% is the driver, not the frequency premium of 8%. That distinction matters for pricing because it points to repair cost structure, not driving behaviour, as the source of the gap.

# The comparison that holds up: Tesla vs German premium

The most statistically robust comparison in the dataset is between Tesla and the equivalent-price German premium segment (BMW 3 Series/X3, Mercedes-Benz C-Class/GLC, Audi A4/A5/Q5). Both sides of this comparison carry full actuarial credibility: Tesla with 6,361 vehicle-years of exposure and 2,163 claims, the German premium comparators with 22,206 vehicle-years and 4,666 claims.

| Metric | Tesla | German Premium (BMW 3/X3, Merc C/GLC, Audi A4/A5/Q5) | Difference |
|---|---|---|---|
| Exposure (Vehicle-Years) | 6,361 | 22,206 | |
| Claims | 2,163 | 4,666 | |
| Credibility | 100% | 100% | |
| Severity (AED) | 13,005 | 9,432 | +38% |
| Frequency | 0.340 | 0.210 | +62% |
| Burning Cost (AED) | 4,790 | 2,147 | +123% |

A Tesla costs 2.2 times as much to insure on a pure-risk basis as a comparably priced BMW, Mercedes, or Audi. The severity premium (38%) is compounded by a frequency premium (62%), producing a burning cost gap of 123%. Both components of the gap are statistically significant.

Within the Tesla range, the Model 3 carries a burning cost of AED4,829 and the Model Y sits at AED4,562. The Model X runs the highest at AED5,246 — comparable to a Cadillac Escalade or BMW X7, vehicles that occupy a very different insurance pricing tier.

# Beyond Tesla: what the thinner data suggests

Outside Tesla, individual EV brands in the UAE do not yet have sufficient claims volume for standalone actuarial conclusions. Mercedes-Benz EV models, BMW i-series, and Porsche Taycan all show fewer than 200 claims each. These numbers are directionally interesting but not yet defensible on their own.

What can be said is that the severity premium is consistent across every EV sub-segment with material data, not just Tesla. Mercedes-Benz EV models show severity above their fleet-wide average; BMW EV models do the same. These directional signals all point the same way, even where the sample sizes prevent firm conclusions.

> **A PATTERN WORTH WATCHING:**
>
> BYD, the fastest-growing EV brand in the UAE, shows a frequency above 1.0 on its small but growing fleet (94 vehicle-years of exposure, 101 claims). If that frequency persists as the fleet scales, BYD's burning cost trajectory could exceed Tesla's within two to three years. The sample is too small for certainty, but it is large enough for insurers writing BYD policies to treat this as an active monitoring item.

# Why EVs cost more to repair

The severity patterns in the data align closely with what Axxion observes in its motor claims operations across the UAE. The cost drivers are structural, and they compound in ways that a standard ICE-calibrated pricing model does not capture.

The first factor is parts cost and availability. EV-specific components — battery modules, electric drive units, high-voltage wiring harnesses, thermal management systems — are expensive and often available only through manufacturer-controlled supply chains. A damaged battery module on a Tesla Model 3 can cost more than the entire repair bill on a comparable ICE fender collision. Parts availability timelines also tend to be longer, increasing storage and rental costs that inflate the total claim. Managing these supply chain dynamics is a core competency in modern motor claims operations.

The second factor is repair complexity. EVs require specialist-trained technicians and high-voltage safety protocols that most general workshops in the UAE are not equipped to handle. The pool of approved EV repair facilities is smaller, reducing competitive pressure on repair pricing and extending cycle times. A TPA with direct oversight of workshop performance, repair quality, and cost containment is materially better positioned to manage EV claim costs than one relying on arms-length adjuster relationships.

The third factor is vehicle value concentration. EVs in the UAE skew toward the premium end of the price spectrum. Higher insured values mean higher absolute repair costs, and this interacts with the parts and complexity factors to amplify the severity gap. As the EV fleet diversifies toward mid-market price points, this component of the severity premium may moderate — but the structural repair cost factors will persist.

The fourth factor, relevant to frequency, is vehicle weight. EVs are heavier than equivalent ICE models due to battery mass. A Tesla Model 3 weighs approximately 1,760 kg against a BMW 320i at around 1,520 kg. Higher kerb weight increases collision energy and can worsen damage severity in low-speed impacts.

# The agency channel: where the gap compounds

The dataset is split into agency (authorised dealer workshop) and non-agency (independent workshop) repair channels, and the cost difference between them is one of the most consistent findings in the entire dataset. Across all vehicles:

| Metric | Agency | Non-Agency | Difference |
|---|---|---|---|
| Exposure (Vehicle-Years) | 269,285 | 988,432 | |
| Claims | 80,362 | 235,350 | |
| Frequency | 0.298 | 0.238 | +25% |
| Severity (AED) | 9,809 | 5,083 | +93% |
| Burning Cost (AED) | 3,171 | 1,311 | +142% |

Agency repairs cost 142% more on a pure-risk basis than non-agency repairs. The gap is driven overwhelmingly by severity (+93%), with a consistent but smaller frequency contribution (+25%). This pattern reflects the economics of the two repair channels: authorised dealer workshops use OEM parts exclusively, charge higher labour rates, and operate with less pricing competition than the independent workshop market. The severity gap is, at its core, a workshop cost gap — and it is the single largest controllable variable in motor claims management.

This matters for EV pricing because the EV fleet in the UAE is disproportionately routed through agency repair channels. EVs are new, expensive, and typically under manufacturer warranty or service agreements that mandate authorised workshop repairs. Within the EV segment specifically, the agency/non-agency split is equally dramatic: agency EV business runs a burning cost of AED5,479 against AED2,364 for non-agency EV, a 132% premium.

An insurer growing its EV book through agency repair channels is therefore accumulating cost on two compounding dimensions simultaneously: the EV premium over ICE, and the agency workshop premium over independent workshops. Neither factor is a surprise on its own. The compound effect is the part that bears watching — and the part where active claims management, through workshop governance and repair cost negotiation, can make a measurable difference to loss ratios.

# What this means for pricing — and for claims management

The practical implication is straightforward. Insurers pricing EV motor policies using factors calibrated to their ICE portfolio are systematically underestimating the pure risk cost. For a Tesla, that underestimation is in the range of 100-125% based on fully credible data. For other EV brands, the pattern is consistent but the exact magnitude will sharpen as claims volume builds.

Four actions follow from the data:

### EV-Specific Rating Factors.

Vehicle make and model already appear in most rating algorithms, but the EV/ICE distinction needs to be treated as a structural variable, not just a model code. The claims behaviour is different enough to warrant separate treatment in the technical pricing model, not just a loading applied after the fact.

### Severity Trend Monitoring.

EV repair costs are changing faster than ICE repair costs as the repair network matures, parts supply chains develop, and new EV models enter the fleet. Insurers with EV exposure need a monitoring mechanism that flags severity trends at the make-model level, not just at the portfolio level where EV signals get diluted by the larger ICE book. Axxion's vehicle data platform tracks these trends at the make-model level across the UAE market, providing the granularity that portfolio-level reporting obscures.

### Repair-Channel-Aware EV Pricing.

The agency workshop channel amplifies the EV cost premium. Insurers should model the EV loading separately for agency and non-agency repair channels rather than applying a single factor across both. A blended EV loading understates the risk on the agency-repair book and overstates it on the independent-repair book.

### Claims-Side Cost Containment.

Better pricing addresses the rate adequacy problem. But the severity premium on EVs is ultimately a repair cost problem, and repair cost is managed at the claims level, not at the point of sale. A dedicated motor TPA with direct workshop governance, parts cost control, and EV-specific repair protocols can compress the severity gap in ways that a standard adjuster model cannot. The insurers who manage EV profitability best will be the ones who address both sides of the equation: pricing the risk correctly, and managing the claim efficiently.

# From aggregate to actionable: A sample of what make-model data reveals

The analysis above establishes the pattern at the segment level: EVs cost more to repair than ICE vehicles, and the gap is large enough to distort loss ratios if pricing does not account for it. But segment-level data, while useful for understanding the direction of the problem, is not precise enough to price individual policies or identify which parts of the portfolio are bleeding margin.

That requires make-model granularity — the ability to see how a Tesla Model 3 compares to a Tesla Model Y, how a BMW iX differs from a BMW i4, and whether the severity premium on a specific EV variant is driven by parts cost, repair complexity, or both. The dataset behind this paper contains exactly that level of detail, and a sample illustrates the difference between knowing that EVs are expensive and knowing which EVs are expensive, by how much, and through which repair channel.

| Make & Model | Burning Cost (AED) | Vs. German Premium ICE Benchmark (AED2,147) |
|---|---|---|
| Tesla Model 3 | 4,829 | +125% |
| Tesla Model Y | 4,562 | +112% |
| Tesla Model X | 5,246 | +144% |
| EV / Hybrid Fleet (Aggregate, Excl. Lexus) | 3,798 | +77% |

Full dataset continues: 40+ EV and hybrid make-model combinations across agency and non-agency channels, with severity, frequency, and exposure detail per variant. Sample extract from Axxion's burning cost dataset. The full dataset provides make-model-variant level data across both repair channels for every EV and hybrid in the UAE insured fleet.

The practical difference between segment-level and make-model-level data becomes clear when applied to an actual portfolio. Consider an insurer with 600 Tesla policies split roughly evenly between Model 3 and Model Y, priced using the German premium ICE benchmark of AED2,147 burning cost. The pure-risk undercharge on that book is approximately AED1.5 million per year — the gap between what the pricing assumes (AED2,147 per vehicle-year) and what the claims experience delivers (AED4,700 weighted average). That gap does not appear in a quarterly loss ratio review until it has already compounded across several reporting periods, because the Tesla book is small relative to the total portfolio. By the time the signal emerges from the noise, the underwriting loss is already locked in.

Make-model data catches the problem before the loss ratio does. It identifies exactly which vehicle variants are mispriced, by how much, and through which repair channel — allowing the insurer to adjust technical pricing factors at renewal rather than discovering the gap retrospectively.

## What the full dataset includes

The sample above is drawn from Axxion's vehicle data platform, which covers approximately 1.26 million vehicle-years of UAE motor claims exposure at the make-model-variant level. The platform provides three tiers of data product depending on the use case: vehicle specification (VS), specification with valuation (VS+VV), and specification with valuation and import status verification (VS+VV+VI). Every output is confidence-scored using a Red/Amber/Green framework that rates data certainty on a 0-100 scale, with mandatory reason codes that make every data point auditable. Green outputs flow automatically; Amber outputs route with controls; Red outputs are flagged and contained.

For insurers looking to validate what this data means for their own portfolio, two standing assessments are available. The first is a Missing Premium Leakage Assessment: Axxion analyzes the insurer's own policy data against the burning cost dataset to identify where current pricing assumptions diverge from observed claims experience, delivered within 10 business days. The second is a Shadow Mode Control Pilot: the insurer's existing data feed runs in parallel with Axxion's vehicle data output for two to four weeks, with zero disruption to live operations, producing a side-by-side comparison of data accuracy and confidence coverage. Both are designed to demonstrate measurable value before any commercial commitment.

## The road ahead

The EV fleet in the UAE is growing, and the claims experience will evolve with it. As repair networks mature, parts supply chains localise, and mid-market EV models enter the fleet in volume, the severity and frequency profiles documented here will shift. The direction of that shift — and the speed — will differ by brand, by model, and by channel.

Axxion will continue to track these patterns at the make-model level. This paper represents the first in a series of data-led analyses drawing on the UAE's most comprehensive motor claims dataset, and it will be updated as the EV fleet reaches new credibility thresholds. Insurers looking to stay ahead of the curve on EV pricing and claims management are welcome to engage directly with the Axxion team.

### ABOUT THE DATA

This analysis is based on actuarial claims cost data aggregated across UAE-licensed motor insurers. The dataset includes approximately 1.26 million vehicle-years of earned exposure and 315,712 claims, segmented by manufacturer origin, distribution channel (agency and non-agency), and make-model. Metrics follow standard actuarial definitions: severity (average incurred claim cost), frequency (claims per vehicle-year of exposure), and burning cost (weighted-average pure risk cost per vehicle-year). Credibility is assessed using the limited fluctuation method at 95% confidence and 5% accuracy, requiring approximately 1,082 claims for full credibility. All analysis focuses on the claims cost side of the motor equation — the dimension that pricing models most frequently underestimate.

## ABOUT US

Axxion Claims Settlement Services is a Dubai-based end-to-end motor claims management company and the UAE's first dedicated motor TPA. Axxion manages the full claims lifecycle for insurance partners, from first notification of loss through repair coordination, quality control, and settlement, operating on a six layer claims architecture designed around regulatory compliance, data integrity, and AI-augmented decision-making. Axxion is part of Skelmore group, a diversified automotive and insurance services group founded in Toronto in 1994. The group operates across North America and the Middle East with approximately $650 million in revenue and 4,000 employees, spanning multi-brand automotive aftermarket services, retail and wholesale distribution, and luxury automotive.

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**Axxion is a motor claims and data services company operating as the UAE's first dedicated motor TPA. For more information, contact the team at info@axxion.ae**