THE ELECTRIFICATION OF LIGHT VEHICLES

Boon or bane for the European aftermarket?

CLEPA
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Foreword

The automotive industry is experiencing rapid transformation. Coinciding technological trends, changes in customer behavior, supply chain shortages and recently adapted regulation are increasing pressure in the aftermarket. In particular, the electrification of light vehicles has been high on the agenda of automotive executives for several years now. With the European Parliament's adoption in June 2022 of the proposal to only allow new cars and vans with zero CO_2 emissions from 2035, the pace of change for the automotive industry is now clear.

The electrification of light vehicles is a challenge as portfolio and investment planning has become significantly more complex, given that aftermarket market players will need to serve both electric vehicles and internal combustion engine (ICE) vehicles even after 2035, with 57–68% ICEs in the car parc.[1] There are other challenges, too: Battery-electric vehicles (BEVs) generate an estimated 30 percent less gross traditional parts demand on the aftermarket than ICE vehicles[2] – the challenges for the aftermarket are manifold.

But is the rise of e-mobility a boon or a bane for aftermarket players? In this study, we assess the impact of electrification on the European aftermarket for light vehicles. We develop three scenarios for the speed of electrification: Regulatory Compliance, Ambitious Transformation and Radical Electrification (Chapter 2). We then calculate the potential impact on demand by product category, based on an analysis of 250 components along 53 systems in five vehicle domains (Chapter 3). Next, we examine the impact of electrification along the aftermarket value chain (Chapter 4) and identify arising opportunities (Chapter 5).

Our conclusion? The situation is perhaps not as bleak as it is often painted. In the first place, we forecast that BEVs and hydrogen-powered fuel-cell electric vehicles (FCEVs) will not overtake ICE vehicles in the European light vehicle parc before 2038. Moreover, electrification creates many new opportunities for players along the value chain. Parts manufacturers can transition their portfolios to include BEV-specific components and expand their business model to include remanufacturing, for instance. They can also partner with battery specialists, who often lack aftermarket capabilities. Wholesale distributors can assist with the management of end-of-life components or offer their logistics networks to new customer groups. Workshops can become BEV-focused, or remain ICE and BEV generalists and partner with such specialists. Overall, a balance of risks and opportunities exists in the market – but all players will need to engage in strategic thinking and take decisive, timely action.

1 In this study we limit our scope to passenger vehicles and light commercial vehicles below 3.5 tons in the EU-27, EFTA (Iceland, Liechtenstein, Norway, Switzerland) and the United Kingdom.
2 The focus of this study is the impact of electrification. For this reason we explicitly ignore other technical trends (such as ADAS) and developments at a macro level (inflation, expansion of the vehicle parc, vehicle miles traveled) in our calculations.

At a glance

53-82%

of new vehicle sales will be BEVs by 2030, depending on the electrification scenario

2038

is the first year we will see more BEVs than ICEs on Europe's roads

-30%

less gross demand for parts on the aftermarket for BEVs than for ICEs

-13% to -17%

impact on overall demand for traditional aftermarket components in Europe by 2040, with wide variations by product category

EUR 6-7 bn

market opportunity from BEV-specific parts in the European aftermarket

Contents

CHAPTER 1

Electrification and the European light vehicle aftermarket

Europe is set to see sharp growth in battery-electric vehicles (BEVs) over the coming years. The key factors driving this expansion of the market are changes in regulation, increased consumer interest and a shift in focus of vehicle manufacturers' lineups.

Many changes are underway on the regulatory side. Following the 2015 Paris Agreement, the European Union approved the European Green Deal in 2020, setting an overall reduction target of 55 percent of greenhouse gas (GHG) emissions by 2030 compared to 1990 levels. To achieve this target, the European Union has announced its Fit for 55 package, a set of proposals to update EU legislation, including the introduction of more robust penalties and fines, adopted by the European Parliament and confirmed by the EU environment ministers in June 2022. For the automotive sector, this means reducing fleet-wide CO_2 emissions from new passenger vehicles by 15 percent by 2025, 55 percent by 2030 and 100 percent by 2035 (compared to 2021 targets).

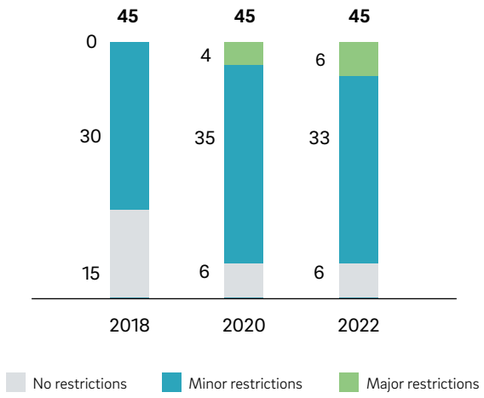
From 2035, only new cars and vans with zero CO_2 emissions will be permitted. In parallel, individual cities across Europe are implementing access restrictions on vehicles with internal combustion engines (ICEs) and low emission zones. Paris, for example, only allows vehicles meeting high emissions standards in its ZCR (low emission zone). The city currently plans to ban all petrol and diesel vehicles within the ZCR by 2030. Local restrictions such as these will actively disincentivize the use of ICE vehicles, impacting both sales of new vehicles and the local vehicle parc.

Consumers are also showing increased interest in BEVs, driven by growing environmental awareness, regulatory and financial support reducing the sticker-price disadvantage of BEVs, and the better total cost of ownership (TCO) provided by BEVs compared to traditional vehicles. As a result, the share of BEVs in new vehicle sales in Europe increased from around one percent in 2017 to nine percent in 2021. Moreover, the share of potential new vehicle buyers considering a BEV rose from 33 percent in January 2020 to 50 percent in July 2022 in selected European countries, according to data from the Roland Berger Automotive Disruption Radar.

As a result, some vehicle manufacturers have already made significant investments in developing a BEV product portfolio, with most unveiling electrification plans in line with or exceeding the Fit for 55 targets. Manufacturers such as Stellantis, Ford, Mercedes-Benz and Volvo, for instance, are aiming to sell 100 percent BEVs in Europe as early as 2030.

This combination of powerful drivers means that the question is no longer if but when electric vehicles will head the European sales rankings for light vehicles. With this in mind, we developed three scenarios for the future share of BEVs and FCEVs in new vehicle sales and the European vehicle parc, which we describe in the following chapter. → A

A Restriction of ICEs in urban areas for selected countries[3] in Europe [Number of cities]



3 Countries and number of cities that were analyzed – Belgium (3), France (3), Germany (14), Italy (6), Netherlands (3), Norway (1), Spain (6), Sweden (2), UK (7).
Source: CLEPA; Roland Berger

CHAPTER 2

Three scenarios for an electrified future

Many factors influence the progress of electric light vehicles in penetrating the market: raw material costs for batteries, battery-manufacturing capacities, charging infrastructure, vehicle prices, TCO, the future regulatory environment and so on. We therefore employ a scenario approach, starting with a forecast for sales of new light vehicles in Europe and then modeling the development of the overall structure of the vehicle parc – one of the key drivers in how the automotive aftermarket develops.

Scenario #1: Regulatory Compliance

In this scenario, a number of "headwinds" limit the penetration of BEVs and FCEVs in the market, including rising battery raw material costs, limited battery manufacturing capacity, slow expansion of the charging infrastructure and high prices for BEVs. This results in lower consumer demand for BEVs. Nevertheless, OEMs will still comply with CO_2 fleet emission targets by cutting the price of BEVs or reducing overall sales volumes if necessary. Sales of hybrid vehicles using synthetic fuel are low after 2035. Together, these factors lead to an increase in the share of BEVs and FCEVs in total sales from five percent in 2020 to 18 percent in 2025, 53 percent in 2030, 96 percent in 2035 and 99 percent in 2040. Total sales volumes remain five to ten percent lower from 2030 than in the other scenarios.

Scenario #2: Ambitious Transformation

Our middle scenario assumes that the market meets the stated policy goals. In addition, there are only moderate headwinds as battery raw material prices stabilize and adequate charging infrastructure is built. Suppliers and OEMs meet their targets for battery production and new BEV model launches. As a result, the share of BEVs and FCEVs in total sales grows to 31 percent in 2025, 68 percent in 2030 and is 100 percent from 2035 onwards.

Scenario #3: Radical Electrification

In this, our most bullish scenario, the market goes above and beyond the stated policy goals. There are no headwinds slowing down the progress of BEVs. Rather, it is ICE vehicles that face obstacles – in the shape of high gasoline prices, a high TCO, requirements for exhaust treatment measures from a potential new Euro 7 regulation, and additional regulatory bans on ICEs at city and country level. For their part, BEVs benefit from further breakthroughs in battery technology and technology deployment, such as lithium iron phosphate (LFP) batteries and manganese-rich cell chemistries and the rapid commercialization of solid-state battery technology, plus OEMs retiring ICE platforms earlier than planned to reduce product portfolio complexity. As a result, the share of BEVs and FCEVs in total sales rises to 82 percent in 2030 and is 100 percent from 2035 onwards.

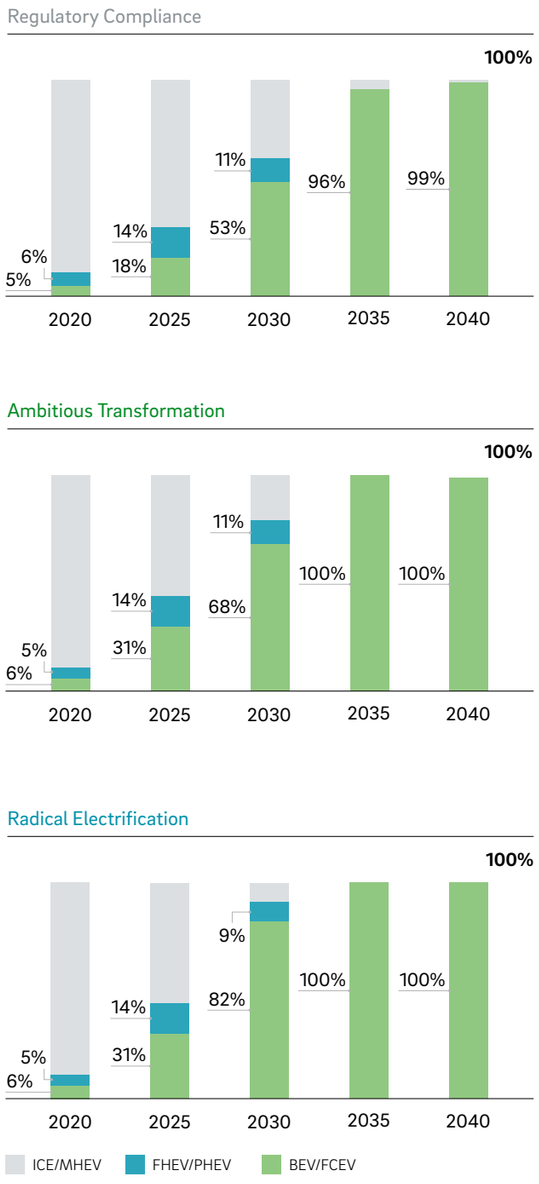
Using forecasts for new vehicle sales and vehicle parc exits, we can derive the share of BEVs and FCEVs in each of the scenarios. The European light vehicle parc[4] consisted of 321.7 million vehicles in 2021, of which 0.8 percent were BEVs and FCEVs. In the Regulatory Compliance scenario, the share of BEVs and FCEVs in the total vehicle parc is expected to reach 11 percent in 2030, 25 percent in 2035 and 42 percent by 2040. In the Ambitious Transformation scenario, the share of BEVs and FCEVs will reach 17 percent in 2030, 35 percent in 2035 and 52 percent by 2040. And in the Radical Electrification scenario, it will reach 19 percent in 2030, 38 percent in 2035 and 54 percent by 2040.

Based on our calculations, we forecast that BEVs and FCEVs will overtake ICEs in the European light vehicle parc in the 2040s in the first scenario, by 2039 in the second scenario and by 2038 in the third. It is worth noting that despite significant differences in sales between the three scenarios, the size of the impact on the vehicle parc – and hence the aftermarket – is comparable across scenarios. It would appear that the European Union's adoption of the Fit for 55 package has created a high degree of certainty for planning, and executives can now focus on developing an action plan for when electrification takes off, rather than modeling when this might happen.

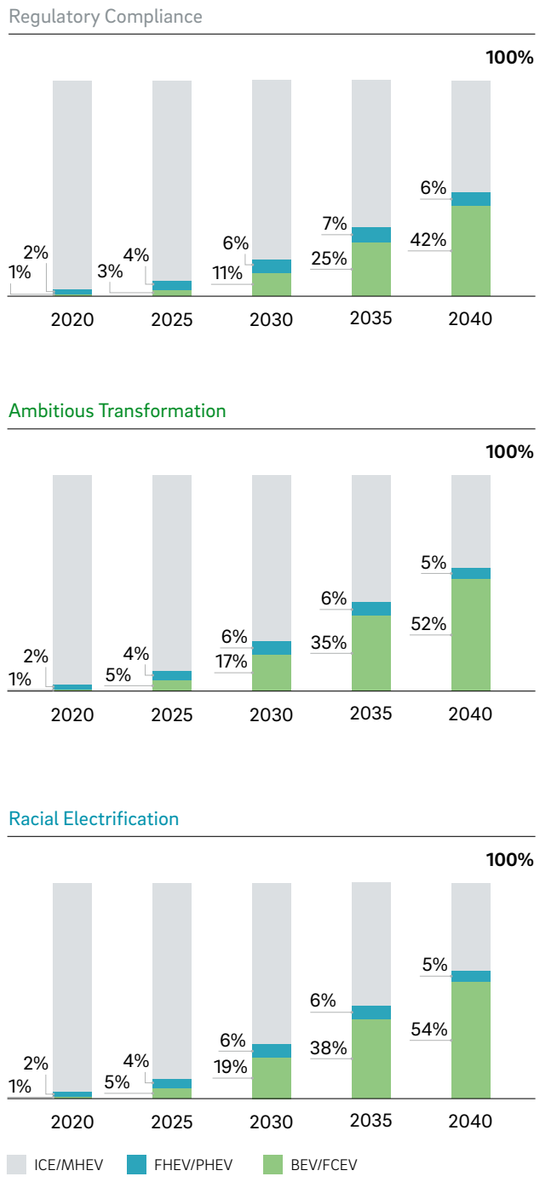
Despite the rapidly growing share of BEVs in new vehicle sales, the relatively slow replacement rate of the European light vehicle parc, in which the average age of vehicles is 11 to 12 years, means that the penetration rate of BEVs will be accordingly sluggish. However, the increasing penetration of BEVs in all scenarios means that many existing product groups will be impacted negatively, some more severely than others, while new product groups will become relevant for the market. In the following chapter we examine the impact of electrification on aftermarket demand by product category in detail. → B → C

4 In this study we limit our scope to passenger vehicles and light commercial vehicles below 3.5 tons in the EU-27, EFTA (Iceland, Liechtenstein, Norway, Switzerland) and the United Kingdom.

B Light vehicle sales by propulsion type, 2020-40 [%]



C Light vehicle parc by propulsion type, 2020-40 [%]



Source: CLEPA; Roland Berger

CHAPTER 3

Impact on demand by product category

Our analysis of the impact of electrification on aftermarket demand covers 250 components along 53 systems in the five core vehicle domains: chassis, drivetrain, engine, interior and exterior. For each of these components, we estimate the impact, both negative and positive, on "gross" demand on the aftermarket – that is to say, excluding additional demand for new components and services such as labor in workshops or software updates. In order to show the impact of electrification clearly, we also specifically exclude other macro factors such as the impact of the expected overall growth of the vehicle parc or inflation, and technical trends such as ADAS.

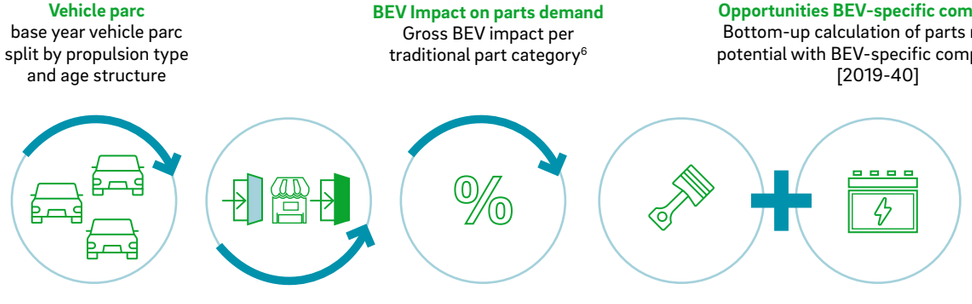
Overall, on a per vehicle basis, we calculate that **BEVs have around 30 percent lower aftermarket replacement part revenue potential than ICE vehicles** for traditional aftermarket components.[5] The reason for this lies mainly with the fact that BEVs have fewer components in total and cause less wear in the engine and drivetrain domains and in brake components.

As a result, the total revenue potential for traditional aftermarket components in the European aftermarket is expected to fall in the Regulatory Compliance scenario by three percent between 2019 and 2030, eight percent by 2035 and 13 percent by 2040. In the Ambitious Transformation scenario, we forecast a contraction of five percent (2030), 11 percent (2035) and 16 percent (2040). And in the Radical Electrification scenario, we forecast a contraction of six percent (2030), 12 percent (2035) and 17 percent (2040).

When it comes to overall demand for traditional aftermarket components, we expect to see demand in 2040 drop to 83-87 percent of its 2019 level, depending on the scenario. This decrease will be mainly driven by components in the drivetrain and engine domains, as most of the parts here will be either replaced by BEV-specific parts or will no longer be required. → D → E → F

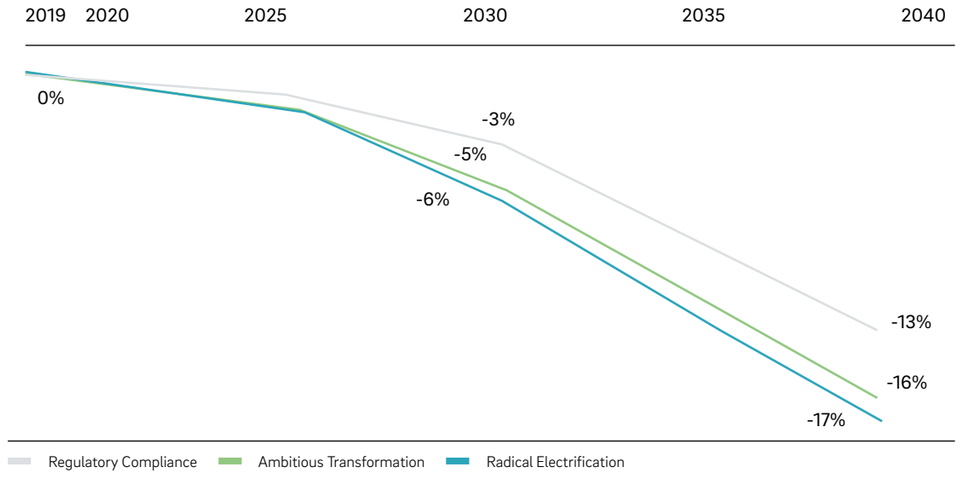
5 We use the phrase "traditional aftermarket components" to refer to parts that are used in traditional ICE vehicles and may also be used in BEVs. "ICE-specific components" refers to parts used only in ICEs and not in BEVs. "BEV-specific components" refers to parts used only in BEVs and not in ICEs.

D Part demand forecast methodology (illustrative)



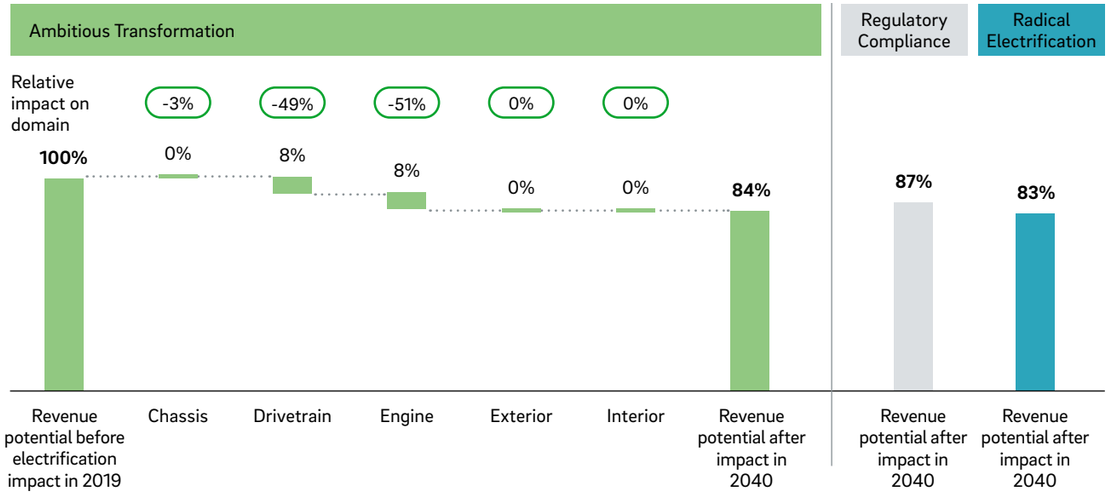
6 Parts that are used in traditional ICE vehicles and may also be used in BEVs;
7 Parts used only in BEVs and not in ICEs
Source: CLEPA; Roland Berger

E Impact of electrification on traditional aftermarket components by scenario, 2019-40 [%]



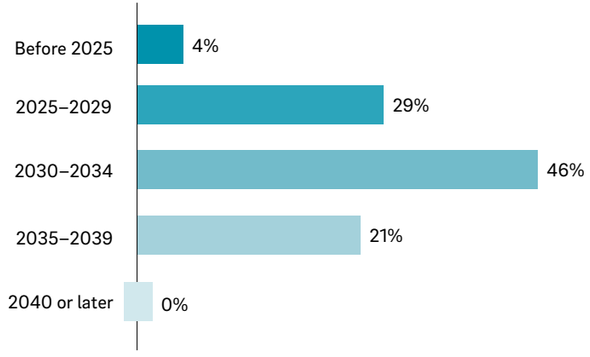
Note: Analysis only assesses the impact of electrification. Other technical trends (e.g., ADAS) and macro-trends (e.g., inflation, increasing vehicle parc) excluded
Source: CLEPA; Roland Berger

F Impact of electrification on market for traditional aftermarket components [%][8]



8 Calculation based on weighted average market size of domains.
Note: Analysis only assesses the impact of electrification. Other technical trends (e.g., ADAS) and macro-trends (e.g., inflation, increasing vehicle parc) excluded
Source: CLEPA; Roland Berger

G When will market demand peak for ICE-specific components? Survey results [% of respondents]



Question:
For ICE-specific components (engine components, transmission components, etc.), when do you expect market demand to peak?

Note: Number or respondents = 24
Source: Aftermarket executive online survey

To complement our analysis, we carried out an online survey of 28 executives working in the aftermarket. Our respondents corroborated the trend towards reduced demand for ICE-specific parts. One-third expect demand for ICE-specific components to peak before 2030, while almost 80 percent think this could happen before 2035. Around 40 percent thought that demand for ICE-specific components would completely evaporate by 2050, and 74 percent expect this to happen by 2060. Of course, this also implies the emergence of demand for BEV-specific parts, such as battery systems, electric motors, power electronics and thermal management as BEVs increasingly penetrate the vehicle parc. → G

The chassis domain comprises six systems in our classification: Advanced driver-assistance systems (ADAS), axle, braking, steering, suspension, and tires and wheels. We expect the impact of electrification on demand in the overall domain to be relatively moderate, at a drop of just one percent by 2030 and three percent by 2040 in our middle scenario (Ambitious Transformation). However, some individual systems and components will see a significant impact. Thus, braking components are expected to face the biggest negative impact, shrinking up to 40 percent by 2040 due to the use of recuperative braking in BEVs, which leads to less brake wear. In addition, drum brakes, which require less maintenance spend than disk brakes, will become increasingly common.

By contrast, we expect electrification to have a positive impact on aftermarket demand for systems such as suspension and tires, due to the increased weight of the overall vehicle. This extra weight will lead to a higher wear rate. It will also trigger higher repair prices due to changes in technology, such as the use of air suspension. ADAS, axle and steering will not be impacted by electrification.

The drivetrain domain includes five systems: drivetrain, exhaust, exhaust treatment, fuel delivery and transmission. We expect this domain to be one of the most negatively impacted, experiencing a demand reduction of 16 percent by 2030 and 49 percent by 2040 (Ambitious Transformation scenario). A key driver of this decline is the fact that BEVs have no exhaust, exhaust treatment, fuel delivery or ICE transmission components. In addition, demand for differentials, prop shafts and so on is expected to fall due to the simpler design of the BEV drivetrain, which will result in less wear and tear and overall maintenance.

The engine domain consists of 13 systems: air intake, auxiliaries, castings, charging system, control, coverage, crank assembly, exhaust gas recirculation (EGR), ignition, injection, piping, valve train and others. We expect to see the biggest negative impact across domains here, with a drop in demand of 17 percent by 2030 and 51 percent by 2040 (Ambitious Transformation scenario). Driving this will be the fact that only a few components, such as engine covers and thermal systems, are common to both ICE and BEV vehicles, while the remainder are not required in BEVs.

The exterior and interior domains comprise 29 domains, including body parts, lighting, windows, cockpit, airbags and HVAC. We expect these two domains to see almost no reduction in demand by 2040 as the parts are not impacted by electrification (although they may be affected by other trends beyond the scope of this study). For example, it is possible that there will be a reduction in demand for exterior parts due to increasing safety standards. We foresee a positive impact on demand for the HVAC system, which includes parts such as the AC compressor and auxiliary heater, due to the fact that BEVs use more sophisticated and less technologically mature systems in order to minimize energy consumption.

BEV-SPECIFIC COMPONENTS

Of course, BEVs feature a number of components not found in ICE vehicles, such as the battery system (including high-voltage battery, junction box and management system), electric motor, reduction gear box and power electronics (including DC/DC converter, power inverter and onboard charging system). These components are a potential opportunity for players in the aftermarket.

The greatest aftermarket potential stems from batteries. Due to continuous degradation of the battery cells over their lifetime, the average failure rate is expected to be 4.9 percent for the first 20 years of vehicle lifetime, with the majority of batteries failing at between eight and 12 years. As the EV parc will be relatively young, we expect the failure rate for batteries to remain very low until 2030, at just 1.3 percent, reaching 4.8 percent by 2040. The price of batteries is expected to remain high, at EUR 3,000-15,000, depending on the size and whether the battery is new or refurbished. We forecast that the total value of the aftermarket for batteries will reach EUR 3.5-4.0 billion by 2040 for BEVs and plug-in hybrid electric vehicles (PHEVs) in Europe, of which up to 50 percent could relate to refurbished batteries.

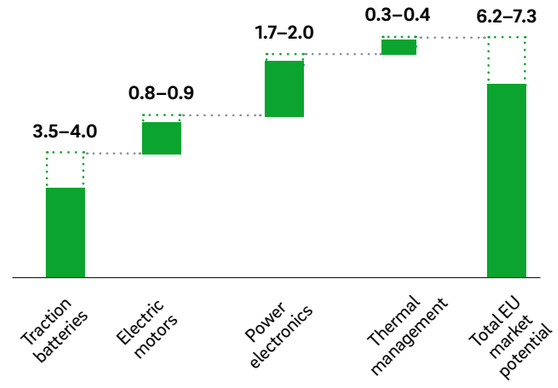
Electric motors have a high level of technical maturity, so their overall failure rate is very low. The average failure rate is expected to be around just two percent for the first 20 years of vehicle lifetime. Due to the relatively young age of the BEV vehicle parc, the failure rate will likely be low initially, reaching 0.6 percent by 2030 and 1.1 percent by 2040. In addition, the price of electric motors from OEMs is very high, at around EUR 750-1,250, which presents an opportunity for remanufactured motors, which currently cost around EUR 500-900. We expect this to lead to a significant electric motor aftermarket, worth up to EUR 0.9 billion by 2040 for BEVs and PHEVs in Europe, of which up to two-third could relate to remanufactured electric motors.

Power electronics have low failure rates, with the main reasons for failure being overheating and voltage surges. The average failure rate for BEV power electronics is expected to be around 2.1 percent for the first 20 years of vehicle lifetime. The failure rate is expected to be around one percent by 2030 and 1.4 percent by 2040. Prices for individual power electronics parts range from EUR 200-800, depending on the part in question and whether it is new or remanufactured. We expect this to create a total market opportunity of up to EUR 2 billion by 2040 for BEVs and PHEVs in Europe, of which 15 percent could relate to remanufactured parts.

New opportunities will also emerge for EV-specific thermal management components, such as coolant valve actuators, coolant chillers and heaters. Failure rates are expected to range from 0.3-1.7 percent, creating a market opportunity of around EUR 0.4 billion by 2040 for BEVs/PHEVs in Europe for the original equipment (OE) and independent aftermarket (IAM) channels combined.

We also expect to see a stronger focus on developing remanufacturing and repairing capabilities for battery systems, electric motors, e-axles and power electronics, driven by high prices, high material content and an emphasis on improved sustainability. In addition, a shift in aftermarket services from hardware to software (software updates, diagnostics and so on) is likely to take place, and preventive maintenance will gain market share. → H

H New opportunities relating to BEV-specific components, 2040 [EUR bn]



Note: Market potential for light vehicles (<3.5 tons) in Europe in 2040 at parts manufacturer prices, excl. VAT and inflation
Source: CLEPA; Roland Berger

CHAPTER 4

Challenges along the value chain

Typically, the automotive aftermarket value chain consists of three steps: workshops (services), wholesale distributors and parts manufacturers. In this chapter we examine the challenges that vehicle electrification creates for each of these three steps of the value chain, in terms of both changes in demand and technological aspects.[9]

In an online survey, executives in the aftermarket sector named failure diagnosis capabilities and component installation support as the greatest challenges for IAM players. This was followed by the readiness of workshops in terms of training. Other issues, such as customer trust, were not considered major challenges at present.

CHANNEL SHIFTS

Historically, we have seen how new technology and changes to the dynamics of the industry can lead to channel shifts in the aftermarket. In Europe, the IAM channel has gradually gained market share over time, reaching a 60 percent share in 2020 for passenger vehicles and a 40 percent share for light commercial vehicles. Driving this development are factors such as the aging vehicle parc, inflation, price transparency, TCO considerations, increasing consolidation and the professionalization of workshop networks, plus OEMs slimming down their dealer networks. → I → J

Many of these trends are likely to continue going forward – to the benefit of the IAM. For instance, OEMs continue to reduce the density of their dealer networks, in some cases even blurring the lines between OE and IAM channels, for example, by cooperating with IAM players. The European vehicle parc is also expected to grow and age, as vehicles become more durable and new car prices continue to increase.

But IAM players also face a number of challenges arising from the arrival of EVs in the vehicle parc. OEMs are planning to increase the warranty on BEV powertrain components to seven or eight years and 160,000–240,000 km, encouraging drivers to visit authorized OEM dealers even for general services during this period. However, the relatively young BEV parc is expected to require a relatively limited volume of repair and maintenance services in the first ten years, restricting the impact of extended OEM warranties – as is already the case for lithium-ion batteries. For consumers and fleets, the key BEV-specific components are likely to form the main component of their TCO concerns, potentially keeping them longer in the OEM-authorized workshop channel in the hope of mitigating risks. Furthermore, IAM workshops are facing new technological challenges for which they often still lack training and equipment, such as repairs to high-voltage powertrains and the need to manage more complex electronics and software platforms. In addition, OEMs are increasingly using their privileged access to connectivity interfaces in the new electronics platforms to interact with drivers and owners directly, and proactively steer them towards their own networks. They could also potentially use access to diagnostics and cybersecurity measures as a tool to limit access for IAM workshops.

Given these competing dynamics, we envisage two possible scenarios for future channel shifts. If legislation, such as the motor vehicle block exemption, continues to effectively protect IAM workshops and OEMs do not leverage their technologies to limit access, we estimate that the IAM channel share has the potential to grow to 65 percent by 2040. The main drivers here are the TCO considerations of vehicle owners and the increasing average age of the vehicle parc. On the other

9 Clearly, other factors will also impact the automotive aftermarket, but in line with our focus we limit our analysis here to challenges arising from vehicle electrification.

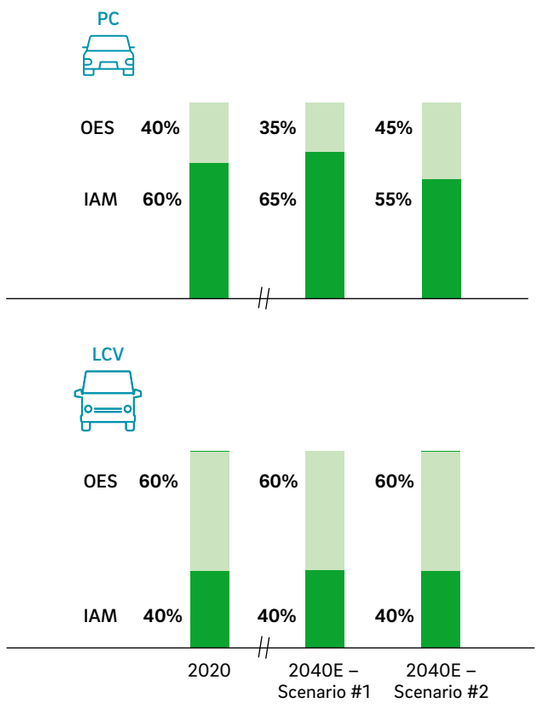
I The aftermarket value chain

Source: Thomas Andrae, Illustratoren

"The traditional value chain with its clear separation into an authorized and an independent aftermarket will no longer exist. The ability to collaborate and to be open for new business models will be key success factors."

Frank Schlehuber, Sen. Consultant CLEPA

J Channel shift, 2020-40E



Note: Channel shares from perspective of parts manufacturers; OEM aftermarket activities included in OES
Source: CLEPA; Roland Berger

hand, if no such legislation is enacted and OEMs leverage their technology, the IAM channel share could even fall to 55 percent by 2040.

WORKSHOPS

The biggest impact on workshops – the providers of repair and maintenance services in the aftermarket – will be their need to invest in adapting their facilities for servicing electric vehicles. This could cost up to EUR 200,000 in the case of OEM-authorized workshops, which will likely be required by OEMs to fully invest in tooling, training and workshop equipment prior to vehicles being sold, albeit with support from the OEM. On the plus side, they will also be the first to be ready to service new BEV models.

Specialized IAM workshops focused on areas such as glass repair, tires and the like, will not be majorly impacted by electrification. General IAM workshops, by contrast, will face significant investment, training and hiring challenges. This could result in increasing consolidation, or collaboration within repair networks that benefit from the support of parts suppliers or wholesalers.

For non-specialized IAM workshops, we expect two operating models to emerge with regard to BEV servicing. On the one hand, we will see BEV-focused workshops that have advanced in-house capabilities such as battery module replacement, e-motor/traction inverter calibration and so on, based on extensive training of a team of specialists and significant investment in BEV-specific tools and testing equipment. On the other hand, we will see ICE and BEV generalist workshops still servicing ICE vehicles but with basic high-voltage training for servicing and maintaining BEVs, such as brake repairs; these players will rely on BEV-focused workshops, wholesale distributors and parts suppliers for support with diagnosis, component repairs and more complex repairs. Overall, we expect to see more intense collaboration between workshops and across the entire aftermarket value chain, creating a one-stop shop solution at the customer interface, supported by a collaborative model at operational level.

"We envision an ecosystem where any workshop can provide customers with a one-stop solution, enabled by greater support between workshops and from wholesale distributors or parts suppliers."

Manager at a wholesale distributor

WHOLESALE DISTRIBUTORS

E-mobility creates a range of challenges for wholesale distributors. They will be expected to play a crucial role in supporting IAM workshops in the transition to servicing BEVs, which will require significant support. At the same time, they themselves are facing growing pressure to improve their economic efficiency and sustainability, for example by electrifying their delivery fleets and decreasing the environmental footprints of their warehouses. This is a challenge that probably only larger wholesale distributors with streamlined operations will be able to rise to, further accelerating the consolidation trend observed in the distribution landscape over at least the last decade.

BEVs have a lower parts demand, which negatively impacts revenue potential for wholesale distributors. At the same time, the size and complexity of the product portfolio will increase for wholesale distributors, who will now need to carry both BEV and ICE components. This complexity will only decrease once the majority of ICE vehicles have disappeared from the vehicle parc – which will be well beyond 2040 in all three scenarios. At the same time, wholesale distributors will be limited in their procurement options by the captive nature of spare parts for BEVs.

PARTS MANUFACTURERS

The challenges for aftermarket parts manufacturers will vary widely depending on their product portfolio, their level of vertical integration and their degree of investment in technology. Below, we identify five different types of players, or "archetypes." However, given the degree to which parts manufacturers will need to adapt their product portfolios and their need to invest in entering new markets, we expect to see further consolidation across all types of players.

- Vertically integrated parts suppliers have a broad product portfolio spanning various vehicle domains, typically a mix of commodities and new technologies, supported by a broad service offering and a close relationship with workshops that provides them with access to valuable data. They are well positioned with regard to electrification: They can manage the transition of their portfolio towards BEVs gradually and have the required financial strength to invest in new technologies and explore future opportunities on the aftermarket.

- Traditional domain specialists typically have a product portfolio spanning multiple product groups within one or two vehicle domains, and a strong position globally. In some cases, they offer additional services for workshops. For product groups impacted by electrification, they will need to engage in highly proactive product portfolio management, deciding as early as possible whether to exit the product group or pursue a "last man standing" strategy.

- Mono-product global leaders focus on one product group or technology, resulting in a global leadership position in this market, with no or very limited service offering. If the product group in question is affected by electrification, a "last man standing" strategy with a strong emphasis on maximizing free cashflow is their only choice – if they wish to continue in this field. They would be well advised to enter a new market in parallel. Ideally, this would be a market where limited investment is required, either because it is immature or because the parts manufacturers can use their existing technology.

- Aftermarket followers have a non-differentiated product portfolio spanning one or multiple vehicle

domains, with no or very limited service offering. If their product group is affected by electrification, they may consider exiting or combining their business with a competitor in order to maximize value, as a "last man standing" strategy may not prove successful. Depending on their financial strength, they may also consider entering a new market with limited investment requirement.

→ BEV innovators are often new players in the automotive industry. They drive innovation in new product groups, such as high-voltage batteries, and are typically focused on technology development, potentially together with OEMs. As they frequently lack experience in the aftermarket, they would be well advised to quickly develop a robust aftermarket strategy, potentially including partnerships with players that can provide aftermarket expertise and market access.

So far, we have focused on the potential challenges along the traditional aftermarket value chain. In our final chapter, we turn to the substantial new opportunities for both established players and new market entrants created by automotive electrification.

"While on the logistics side, dependency on wholesale distributors is decreasing, their customer access and the joint duty of wholesale distributors and parts suppliers will lead us to collaborate more closely in the future."

Executive at a parts manufacturer

CHAPTER 5

Opportunities along the value chain

Opportunities abound for players in the automotive aftermarket value chain, be they workshops, wholesale distributors, parts manufacturers or new market entrants. We cluster these fresh opportunities into five core areas: new products, new services, new customer groups, training and collaboration. → K

K Opportunities for players in the automotive aftermarket

	Opportunity	Parts manufacturers	Wholesale distributors	Workshops
New products	BEV-specific parts	Expand product portfolio for BEV-specific parts	Specialized distributor for BEV parts	BEV-focused workshops
	Refurbishment, remanufacturing	Set up refurbishment/ remanufacturing facilities for BEV-specific parts	Reverse logistics for refurbished/ remanufactured parts; recycling feedstock	
New services	Diagnostics & flashing	Specialized diagnostics and flashing services, incl. over-the-air	Improve supply chain by initiating parts logistics as soon as the service need arises	Full capability to conduct diagnosis and flashing services
	Workshop solutions	Provide repair kits and solutions	Develop workshop concept for BEV-specific repairs	
New customer groups	New EV OEMs		Logistics services for OEM service networks	
			Partner with new EV OEMs for service network	
Training	Training & qualification	Training and qualification services for IAM workshops		
Collaboration	High-voltage batteries	Collaborate with BEV parts manufacturers and aftermarket specialist		

Source: CLEPA; Roland Berger

WORKSHOPS

BEV-focused workshops (see Chapter 4) have two main options. They can either attract their own customers and offer services, such as visiting technicians for ICE and BEV generalist workshops in their area. Or they can offer their services directly to OEMs, who will be looking for IAM workshop partners to strengthen their service network, especially new EV OEMs with no existing service network. In either case, they will benefit from a robust BEV-specific workshop concept, with the right technology partners to support them in remanufacturing or refurbishing components, diagnosis and flashing solutions, reverse logistics, tools and training, and a strong brand signaling their expertise and high standards.

ICE and BEV generalist workshops will find that their biggest opportunity lies in forming partnerships with reliable BEV-focused workshops or external partners, such as remanufacturers, who can undertake complex BEV and component repairs on their behalf. This will allow them to continue covering non-BEV-specific repairs, while maintaining their existing customer relationships. → L

L Opportunities for workshops

Opportunity	Description	Collaboration	Relevance/attractiveness 2025 2030 2035 2040
BEV-focused workshops	Provide services around BEV-specific components to end customers and other workshops • Investments in training, tools and technology required • ICE & BEV generalist workshops that lack specialized capabilities for BEV components can be targeted		
New customer groups	Partner with new EV OEMs that are entering the market or lack workshop solutions • Investments in training, tools and technology required		
Diagnostics & flashing solutions	Offer diagnostics and flashing services through support from partners • No vehicles have to be sent away due to lack of diagnostics/flashing capabilities • Additional revenue potential from upgrades/ updates, etc. (if not done remotely)		
ICE & BEV generalist workshops	Become ICE & BEV generalists to limit necessary investments • Strong partner is required for complex BEV component repairs and services		

OEM · Parts manufacturer · Wholesale distributor · Workshop

Source: CLEPA; Roland Berger

WHOLESALE DISTRIBUTORS

Wholesale distributors enjoy opportunities in five main areas:

- They can play a crucial role in the reverse logistics for BEV components that are remanufactured or refurbished. This is particularly relevant for components that have a high frequency of remanufacturing or refurbishment or are challenging to transport, such as the high-voltage battery or drive units that combine electric motor, transfer case and part of the power electronics.
- They can assist in the logistics and management of end-of-life components for workshops, becoming providers of post-consumer, automotive-grade recycling feedstock. As component and material recycling becomes more crucial for BEV components (battery active materials, rare earths for e-motor magnets and so on), they can exploit their logistics capabilities, component know-how and management systems to collect and provide this recycling feedstock.
- They can offer their logistics networks and services to new customer groups, with the aim of improving efficiency for both. For example, they can provide services to new EV OEMs to facilitate logistics to OEM dealerships, as well as to IAM workshops.
- They can aim to integrate with over-the-air diagnostics enabled by the new electronics architectures first deployed in EVs, to improve the accuracy of diagnostics and thus reduce return shipments. This would also mean that the parts logistics could be triggered as soon as the service need arose, rather than post-diagnosis in the workshop, thereby increasing the efficiency of their logistics networks.
- They can offer a workshop concept that provides strong services to workshops and signals high standards to potential customers, with a focus on BEVs. This would involve leveraging a combination of the opportunities mentioned above and, at the same time, collaborating closely with parts manufacturers that can offer the required training, tools, and expertise in BEV-specific repairs. → M

"If you only consider the 'traditional' WD business, we see a massive threat from the current trends [electrification and beyond]. But equally, we see many new opportunities that play well with the WD's traditional strengths."

Executive at a wholesale distributor

M Opportunities for wholesale distributors

Opportunity	Description	Collaboration	Relevance/attractiveness 2025 2030 2035 2040
Reverse logistics of BEV-specific components for refurbishment/ remanufacturing	Provide reverse logistics services for BEV-specific refurbished/remanufactured components • Components with high frequency of refurbishment/ remanufacturing (high-voltage batteries, drive units, etc.) will be key		
Recycling feedstock	Provide post-consumer, automotive-grade recycling feedstock • Leverage existing capabilities to procure end-of-life components from workshops • BEV components with rare earths (e.g. batteries, e-motors) will be key		
New customer groups	Offer logistics services to new customer groups, including EV OEM dealerships and IAM workshops to improve efficiency		
Improved supply chain using OTA	Integrate with over-the-air diagnostics, improving diagnostic accuracy & supply chain efficiency • Reduce return shipments • Initiate parts logistics as soon as the service need arises		
Workshop solutions	Offer workshop concept with strong service and high standards • Collaborate with parts manufacturers for training, tools and capability development for BEV-specific components		

OEM | Parts manufacturer | Wholesale distributor | Workshop

Source: CLEPA; Roland Berger

PARTS MANUFACTURERS

The obvious opportunity for parts manufacturers is to expand their product portfolio to include BEV-specific components. Doing so will be particularly successful if they manage to use this transition to position themselves as trusted, long-term partners for workshops. Key levers for achieving this could include being the first to market with BEV-specific components or programs through proactive portfolio management, offering repair kits or repair solutions to support workshops with the installation and servicing of BEVs, and offering remanufactured parts as a solution.

Parts manufacturers also have the chance to capture the high-voltage battery market by partnering with battery specialists – players who will be at the forefront of new innovations in battery technology but may lack aftermarket capabilities. A further opportunity is to offer diagnostics and flashing solutions to support workshops, particularly with the challenging software and data management of BEVs with new, emerging data marketplaces. This may also involve over-the-air diagnostics or leveraging access through independent diagnostics data clouds – currently a hotly debated regulatory topic.

Workshops will require significant training to deal with BEVs. This creates a further commercial opportunity for parts manufacturers active in these vehicle domains. To ensure effective rollout of training, we recommend close collaboration with wholesale distributors so that access to workshops is guaranteed. Also, as mentioned above, some BEV-specific components will require refurbishing or remanufacture more frequently, and this could represent an ideal opportunity for manufacturers already active in this field (or for the "first-fit" manufacturers of these components) to expand their business. → N

N Opportunities for parts manufacturers

Opportunity	Description	Collaboration	Relevance/attractiveness 2025 2030 2035 2040
BEV-specific components	Expand the product portfolio to include BEV-specific component • Early mover advantage • Offer repair kits and solutions to workshops		
High-voltage battery aftermarket collaboration	Specialist battery suppliers who are at the forefront of innovation but lack aftermarket capabilities can partner with aftermarket suppliers to combine capabilities		
Diagnostics & flashing solutions	Offer diagnostics and flashing solutions to workshops • Challenging for workshops due to lack of capabilities • May involve over-the-air diagnostics		
Training & qualification for workshops	Provide workshops with training and qualification services for new, complex BEV parts • Closer collaboration between parts manufacturers and wholesale distributors recommended		
Refurbishment/ remanufacturing	Expand business to include refurbishment/remanufacturing of BEV-specific parts • Key levers are high costs of replacement parts and focus on circular economy		

OEM | Parts manufacturer | Wholesale distributor | Workshop

Source: CLEPA; Roland Berger

Conclusion

The electrification trend in the aftermarket may appear to be a bane due to dropping parts demand and rising technical challenges for the traditional IAM value chain, but it can be a boon for players that act in time and leverage the unique opportunities to upgrade their business model for the future.

Players would be well advised to respond with greater openness for collaboration models, both within individual stages of the value chain (for example, BEV-focused workshops partnering with ICE and BEV generalist workshops, BEV innovators partnering with aftermarket specialist manufacturers) and across different stages of the value chain (for example, parts manufacturers partnering with wholesale distributors to enable workshop networks to provide BEV services). Indeed, the pressure exerted by electrification may be just what is needed for players to finally overcome the traditional barriers in the market.

As we have seen, ICE vehicles will not disappear from our roads anytime soon. However, that does not mean that aftermarket players can rest on their laurels. Taking appropriate action early enough is crucial, not only for individual players but also for the independent aftermarket as a whole. Otherwise, the independents run the risk of losing the battle for the BEV aftermarket to the OEMs entirely.

"Over the last 50 years, the automotive industry has changed relatively slowly. The industry is not used to change anymore, and it is bound by its capital intensity. But now we see the need to change quickly. Not everyone will be able to change fast enough – and nobody knows the right timing."

Executive at an aftermarket association

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This study was written by Roland Berger in partnership with CLEPA, the European Association of Automotive Suppliers.

CLEPA, the European Association of Automotive Suppliers based in Brussels, represents over 3,000 companies, from multinationals to SMEs, supplying state-of-the-art components and innovative technology for safe, smart, and sustainable mobility, investing over €30 billion yearly in research and development. Automotive suppliers directly employ 1.7 million people in the EU.

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We welcome your questions, comments and suggestions

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