

THE END OF THE ICE AGE

European E-mobility Policies and Trends

April 2022



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1. INTRODUCTION

Electromobility in Europe has enjoyed unprecedented growth momentum in 2020 and 2021. From a share of 3% of newly sold vehicles having a plug in the EU in 2019, 2020 saw the sales share of EVs and hybrids skyrocket to 10.5%, which was then easily surpassed by an aggregated 17.8% sales share in 2021, according to the European Alternative Fuels Observatory (EAFO).¹

While the **COVID-19 pandemic may have acted as a catalyst for this development, it has been long coming:** electric vehicles are growing in range and variety of models offered, increasing charging infrastructure is becoming more widely available, and, while already competitive on a total cost of ownership (TCO) basis, EVs are expected to reach purchase cost parity with internal combustion vehicles across all segments by the year 2027.²

Beyond economic reasons and an improved user experience, the **acceleration and increasing visibility of climate change** - from devastating floods in Germany and Belgium to raging wildfires in Greece - necessitate cleaning up European transport, whose emissions have continued to increase in recent years.

Against this background, the **“Fit for 55” package presented by the European Commission in July 2021** presented a variety of key measures to phase out the internal combustion engine for passenger cars in Europe - from revised emissions standards for cars and vans, to an ambitious Alternative Fuels Infrastructure Regulation (AFIR), ensuring the roll-out of sufficient recharging infrastructure.

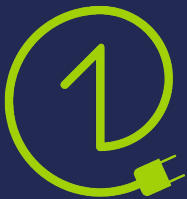
In the past, proposals with this degree of ambition may have provoked a scathing response by industry and national governments from car-dependent Member States - exemplified by the last-minute intervention of the German government in the 2013 revision of car CO2 standards, which resulted in a significantly watered down legislative outcome.³ However, no such backlash was observed in 2021, with the German government and parts of the industry explicitly backing the Commission’s ambition. In fact, many manufacturers are driving an aggressive electrification strategy, and have thus announced targets that precede the legislative timeline proposed by the Commission.

¹ European Alternative Fuels Observatory

² transportenvironment.org : EVs will be cheaper than petrol cars in all segments by 2027

³ Carrington, D. (The Guardian): [Angela Merkel 'blocks' EU plan on limiting emissions from new cars](#)

These developments raise the question whether policy is really still the main driver of electrification on European roads, or if Europe is entering a market-driven dynamic where industry announcements are setting the pace of electrification. A variety of recent reports seems to indicate that this is indeed the direction the market may be moving. For example, McKinsey predicted recently that “in the most likely accelerated scenario, consumer adoption will exceed regulatory targets and Europe will reach around 75 percent EV market share by 2030.”⁴ From this follows our first assumption:



Industry ambition is outpacing policy change at ever-increasing rates - we are potentially seeing the start of a development from a regulation-driven process to a market-driven “race to the top”, for which policy will have to create the right enabling conditions.

At the same time, recent months have exposed vulnerabilities in the growth of the EV ecosystem. An ongoing shortage of semiconductors has thwarted production of passenger cars. Meanwhile, battery production in Europe will necessitate an increasing amount of raw materials. If dependencies on third countries are to be avoided, EU supply will need to be diversified, domestic production supported and as many materials as possible will have to be recycled - a need acknowledged by the Commission, which has inter alia presented a Raw Materials Strategy and brought forward dedicated provisions in its proposed new Battery Regulation. From this follows our second assumption:



As industry targets are increasingly brought forward, important growth limiting factors are in the supporting value chain - e.g. the supply of raw materials, of key components such as microchips, and of related manufacturing capacities.

⁴ McKinsey & Company: [Why the automotive future is electric](#)

2. E-MOBILITY IN THE EU 2022: Assumptions and Baseline Data



In preparation of the qualitative interviews, a first check of the assumptions based on publicly available data was conducted in autumn 2021. The outcomes of this initial analysis are summarised below:



Industry vs. Policy Timeline

In its proposed revision of CO₂ emission standards for cars and vans, which have been the main driver of electrification of the European fleet in recent years, the European Commission proposed in July 2021 to phase out the sale of non-zero-emissions vehicles by 2035, amounting to a de facto end of the internal combustion engine in new cars. Emissions would have to be cut by 55% in 2030 compared to today, which would likely require around a 60% share of EV sales.⁵

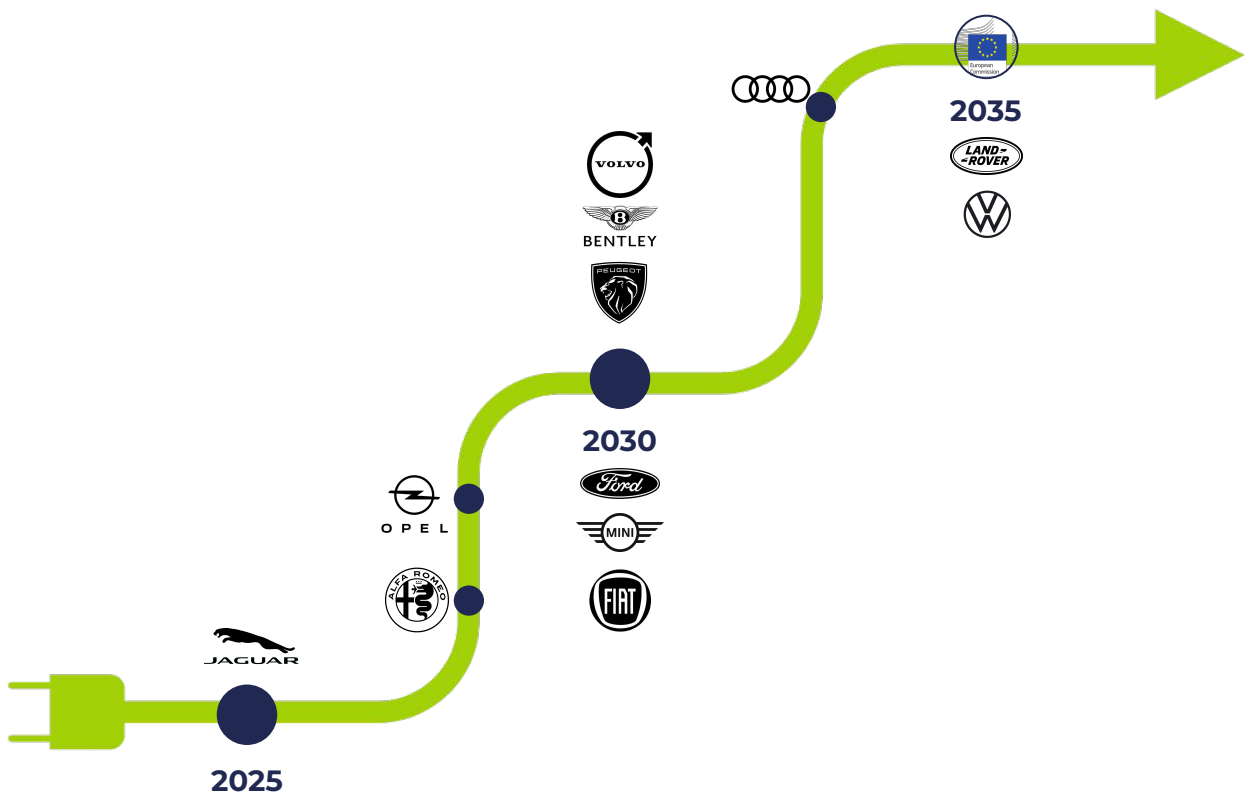
This clear timeline provides a baseline against which to compare the most recent carmaker (also known as Original Equipment Manufacturer/OEM) announcements in regards to EV sales or even phase-out targets. If a majority of OEMs would precede the Commission timeline, the assumption of an industry-driven timeline would be confirmed. Conversely, if most OEMs' announcements lagged behind the Commission's plans, this would indicate policy remained the main driver of road transport electrification in Europe at this stage.



⁵McKinsey & Company: [Why the automotive future is electric](#)

In a first step, we compared European or (if not available for the EU specifically) global phase-out dates set by major manufacturers to the Commission’s 2035 phase-out target, including both indicative/conditional targets and fixed phase-out dates, but not announcements of “fully electrified” line-ups including hybrid vehicles.

This analysis delivered the following timeline of announced phase-out dates (A full overview of the included announcements can be found in Annex I):



It is clear from the above timeline that where carmakers have set targets, these usually precede the Commission’s chosen 2035 date. Therefore, at least in parts of the industry, ambition and pace seem to have outgrown those of European policymakers. However, phase-out targets only constitute part of the picture – after all, some carmakers like Renault, whilst driving a clear electrification strategy, are not the list of officially confirmed phase-outs, despite ambitious medium-term production targets.

We therefore went beyond the timeline of phase-out announcements and conducted a deeper qualitative analysis, evaluating if the announcements made by a manufacturer were either in line with the phase-out date of 2035, or with reaching the EU’s interim target of a shorter-term 55% emissions reductions/60% EV sales by 2030. The results are listed below:

OEM phase-out targets (as of December 2021)

●	Alfa Romeo	Phase-out 2027
●	Audi	Phase-out 2030
●	Bentley	Phase-out 2030
●	DS	Only selling EVs and hybrids from 2025, only launching new full Evs from 2024
●	Fiat	Phase-out 2030
●	Ford	Full electrification by 2030
●	GM	Phase-out 2035
●	Jaguar	Full electrification by 2025
●	Land Rover	60% all-electric by 2030, phase-out 2035
●	Maserati	Whole range to be electrified (hybrid or EV) by 2025
●	Mini Cooper	Phase-out 2030
●	Peugeot	Full EV brand in Europe by 2030
●	Porsche	80% "partially or fully electric" by 2030
●	Tesla	Fully electrified
●	VW	70% EV sales in Europe by 2030, phase-out in Europe before 2025
●	Volvo	Phase-out 2030
●	Opel	Phase-out 2028
○	Daimler	Full electrification of sales in 2030 "where market conditions allow"
○	Renault	"Up to 90% battery electric vehicles mix in 2030"
○	Skoda	50-70% electric by 2030
✗	BMW	2 million EVs globally by 2025; 50% of global sales to electrified by 2030
✗	Dacia	No targets
✗	Dodge	No targets
✗	Honda	Will only sell BEVs and hybrids from 2022, only ZEVs in 2040
✗	Hyundai	Aims for full electrification in 2040
✗	Jeep	No targets
✗	Lancia	No targets
✗	Mazda	25% of global sales electric by 2030
✗	Mitsubishi	Aiming for 50% electrified in 2030, focus on PHEVs
✗	Nissan	Only newly launching electrified models including hybrids by 2030 - no phase-out date or sales targets
✗	Seat	No targets
✗	Suzuki	No targets
✗	Toyota	5.5 m. electrified vehicles each year globally by around 2030, phase-out 2040
✗	Citroën	No targets
—	Kia	Around 500k EV sales targeted globally for 2025
—	Subaru	At least 40% electrified (BEV and hybrid) by 2030, 100% by early 2030s

- Fully in line with EU targets
- Likely in line with EU targets
- ✗ Not in line with EU targets
- Unclear

The analysis of all major European car brands yields an interesting result: 15 were coded as “fully in line”, three as “likely in line”, and 15 as “not in line” with EU targets, with two manufacturers classed as “unclear” based on announcements in autumn 2021. This may indicate a split in the industry, with half the carmakers aiming to electrify ahead of the policy timeline, and about another half of OEMs in tendency still sticking to their established, ICE-based business model for now, or at least not keeping up in pace with announced policies.

Particularly interesting in this context: major automotive corporations which are in control of multiple brands, at the time of data collection, tended to split their electrification strategies. This takes varying forms - the Volkswagen group, for example, set an overall ambitious pace, although it differentiates slightly between ambitious targets for premium brands and a more cautious approach for less premium brands. The BMW Group is very cautious about electrifying its main brand, but drives an aggressive electrification strategy with the Mini brand. A particularly striking example at the time of data analysis was Stellantis: while the group-wide target of 70% for 2030 was more than in line with EU targets, the ambition by manufacturer, at least in terms of concretely announced targets, varied widely.⁶

Stellantis phase-out targets (as of December 2021)

○	Stellantis	70% of worldwide sales to be EVs by 2030. Offering electrified versions of all models from 2025 across the group
●	Alfa Romeo	Phase-out 2027
●	Fiat	Phase-out 2030
●	DS	Only selling EVs and hybrids from 2025, only launching new full EVs from 2024
●	Opel	Phase-out 2028
●	Maserati	Whole range to be electrified (hybrid or EV) by 2025
✗	Citroën	No targets
✗	Dodge	No targets
✗	Jeep	No targets
✗	Lancia	No targets
✗	Peugeot	Whole line-up to be offered as “electrified” version by 2023, but no phaseout

⁶ Note: According to a [corporate announcement](#) in March 2022, Stellantis has a new target to sell 100% ZEV in Europe by 2030. Globally, the strategy stays more split, for example through an overall sales target of 50% by 2030 in the US.

This may be explained by carmakers “hedging their bets”: with some uncertainty about market development still remaining, they may choose to aggressively electrify some of their brands while continuing to run others under the established ICE-based business model, in order to have one or multiple “winning horses” in the race, no matter whether the current legislative ambition is achieved or not. However, further up the value chain, more specialised suppliers may not always be in the position to do so, being more unequivocally for or against rapid electrification depending on their product portfolio.

Based on the above observations, we expected industry interviewees to be split in their assessment of the current pace of e-mobility deployment, with some players calling for more ambition and some finding the proposed Commission timeline ambitious in its current form already.



Potential Obstacles

Beyond ambitions and announcements, the second assumption postulates that the supporting value chain would pose the primary obstacle to translating ambition into practice.

An ongoing semiconductors shortage has seriously constrained the output of passenger cars. October 2021 saw a decline in vehicle sales of 30% compared to the previous year, attributed by car manufacturer lobby ACEA mainly to the ongoing semiconductors shortage.⁷ McKinsey states that the crisis “*highlights the fragility of those (i.e., automotive) supply chains, which largely rely on Asia as a hub of semiconductor manufacturing.*”⁸ The European Commission has woken up to the issue, presenting a “European Chips Act” in February 2022 in order to stimulate production.⁹

Similarly salient in EU policy debates, although currently less of an acute bottleneck, is the supply of critical raw materials, notably for the production of batteries. The global demand for so-called critical raw materials is expected to skyrocket from 7.1 Mt in 2020 to 42.3 Mt in 2023¹⁰, whilst the EU at present produces only 1% of all battery raw materials.

¹⁰ IEA: Net zero by 2050. [A roadmap for the global energy sector](#)

⁷ ACEA: [Passenger car registrations: +2.2% ten months into 2021; -30.3% in October](#)

⁸ McKinsey & Company: [Coping with the auto-semiconductor shortage: Strategies for success](#)

⁹ European Commission: [Digital sovereignty: Commission proposes Chips Act to confront semiconductor shortages and strengthen Europe's technological leadership](#)

To name just some examples, the EU is expected to need 7-18 times more lithium and 2-5 times more cobalt in 2030, and 16-57 times more lithium and 3-15 times more cobalt in 2050.¹¹

At the same time, some more traditional concerns are starting to recede into the background of public debate in Europe:

- The strong uptake of EVs shows that users are increasingly willing to make the switch to electromobility
- Vehicle prices are coming down rapidly, with purchase parity established still in this decade¹²
- Battery ranges are ever-increasing and frequently exceed 400 km
- A strong uptake of charging infrastructure helps ease users' charging anxiety, with the amount of public chargers deployed having doubled since 2017, according to the European Alternative Fuels observatory.¹³ Going forward, fleet-based targets for charging infrastructure under the revised AFIR should ensure infrastructure growth stays in line with vehicle uptake

We would thus expect the supply of raw materials and semiconductors to be named most frequently by industry as an obstacle to EV uptake.



¹¹ European Commission: [Commission staff working document. Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery](#)

¹² [transportenvironment.org : EVs will be cheaper than petrol cars in all segments by 2027](#)

¹³ [European Alternative Fuels Observatory](#)

3. THE INDUSTRY PERSPECTIVE:

Qualitative Insights



Methodology

Over the summer of 2021, BOLDT and AVERE contacted 85 companies along the e-mobility value chain such as energy providers, automotive suppliers, battery manufacturers and charge point operators (CPOs). In November 2021, thirteen qualitative interviews were conducted. The companies of the participating interviewees have their headquarters in Germany, France, the Netherlands, Spain and the U.S. (with European headquarters). Company size ranged from SMEs with less than 50 employees to multinational companies with more than 100.000 employees.

The questionnaire comprised seven questions divided in two thematic blocks: In a first step, interviewees were asked about their assessment of the pace of market transition and how they assessed the EU's legislative ambition to promote e-mobility in Europe and the respective member states. In a second step, they were asked about stumbling blocks within the e-mobility value chain and supply chain readiness.

Pace of market transition / industry vs. policy timeline (assumption 1)

As you are probably aware, the EU is seeking to phase out combustion engine vehicles as part of the Fit for 55 package of the Green Deal.

1. With a view to current EU legislation: When do you expect electric vehicles to make up more than 50% of the automobile market?
2. When do you expect combustion engine vehicles to be largely irrelevant (less than 20%) in the automobile market?
3. What is your own assessment about the EU legislation regarding the pace and ambition in ending combustion engine technology and promoting EVs?
4. Do you think that your country is doing enough for the promotion of e-mobility?

Stumbling blocks and supply chain readiness (assumption 2)

Let me ask you a few questions about the major challenges and opportunities in the development of the EV market.

5. With a view to your own position in the supply chain, what are the main stumbling blocks or bottlenecks for the development of e-mobility in Europe?
6. In your eyes, what could the EU have done better to support the development of the e-mobility market?
7. If you had one wish for your national government to promote e-mobility, what would that be?

Interviews were conducted through video conferencing or phone calls. The interviews lasted between 30 and 90 minutes each.



Industry vs. Policy Timeline

In order to assess whether the market transition is rather policy or industry driven, the first two questions aimed at identifying the industry's estimation of the pace of the market transition. To this end, we first asked the interviewees about the first milestone, namely when the industry is expected to sell more EVs than ICE cars:

When do you expect electric vehicles to make up more than 50% of the automobile market (new cars up to 3.5t)?

While most participants indicated that they see major differences between the situation in different EU member states, looking at the EU market as a whole, **the dominant answers here were between 2027 and 2030**. The respondents partially did this quoting analyses of international market researchers, such as IHS Markit or Yole, but also based on their own information, in particular incoming long-term business contracts and daily exchanges with OEMs and other industry players about their plans for the coming five to ten years. While the EU has not yet decided a future ban on ICEs and set a date for that to come, the industry itself is already in full swing towards electrification and therefore has a clear five-year target. It seems that nobody wants to be lagging behind, both in the eyes of investors but also for their own strategy.

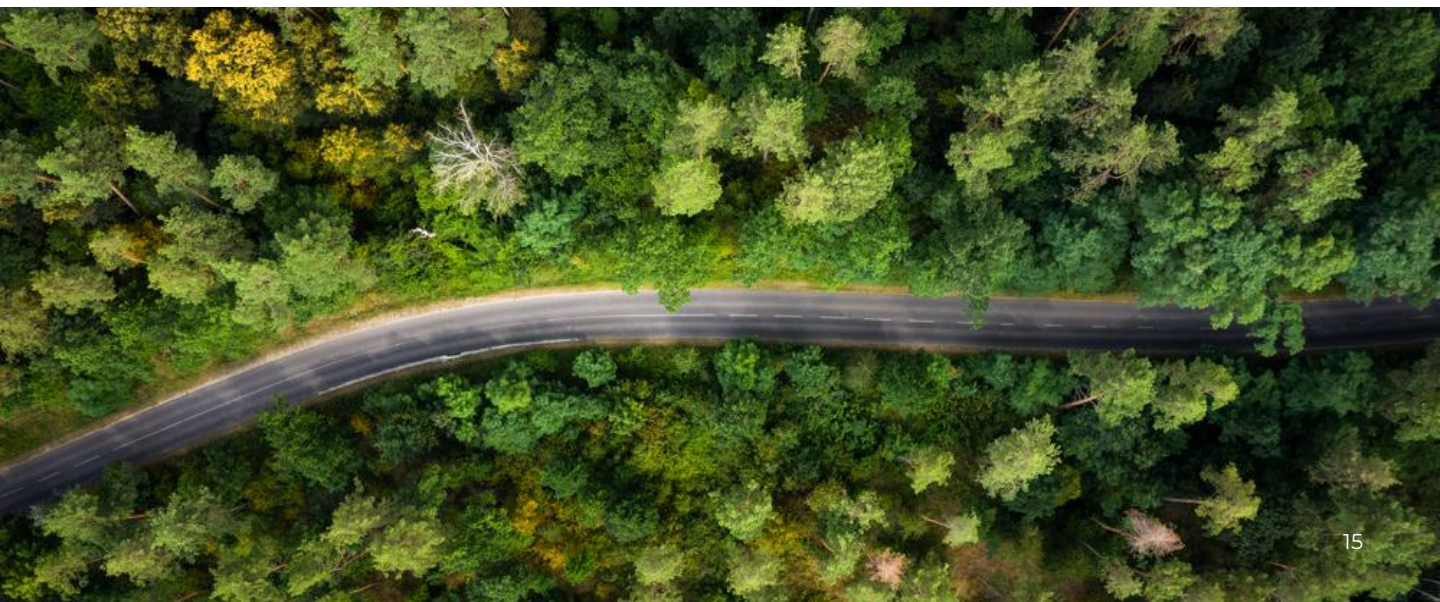
However, the milestone of completing a market shift from majoritarian ICE based vehicles to more than 50% EVs could still mean a slow and long following transition for the remaining 50% of ICE cars. To shed light upon this question, we then went on to ask about the second milestone:

When do you expect combustion engines to be largely irrelevant (less than 20%) in the automobile market?

While few respondents see this coming around 2040, **the dominant answer to this question was 2035**. One key reason for this was repeatedly underlined by the respondents: it does not seem economically viable for OEMs to continue producing ICE cars, when this becomes a dying niche product. This also means that no later than at that time, most industry players expect the transition to be industry driven – unless the EU passes a law prohibiting ICE cars altogether at 2035. Some respondents said that they expect that move. Others said that it could be counterproductive, as there will be very few niche applications that cannot be easily covered by ICE vehicles and that at least for these uses, ICE cars should remain an option.

Participants recognised that consumer demand has already leaped in recent years, while expecting that the growth rates would slow down towards 2035, simply because most of the transition will have happened already by then.

To conclude, the industry already today sees a dramatic market shift unfolding, most likely within the coming ten to twelve years. This is partially explained by the low CO₂ emission limits for OEMs, the governmental subsidy systems for EVs and other existing disincentives for ICE vehicles and incentives for EVs. The industry feels that there is a clear goal of all market players to make the shift towards electrification happen, and most players want to be among the first who make it happen fast, expecting disadvantages if they would fail to do so. And that latter aspect seems to be a key industry driver towards electrification.



To assess in comparison how strong the driving influence on the process originates from the policy makers on EU and national level, the next question focused on the push factor by the EU to promote e-mobility:

What is your own assessment about the EU legislation regarding the pace and ambition in ending combustion engine technology and promoting EVs?

Again, the views on the EU's pace and ambition somewhat depended on the position in the value chain. Most respondents acknowledged that the EU had to balance between pushing for ambitious targets and not over-burdening the industry. The EU mainly managed to achieve this balance, according to the vast majority of respondents. The larger and more established corporations tend to feel that the set targets are highly ambitious, while the smaller and newer players would have wished for more ambition. Setting a clear course was perceived as very important for market clarity by several respondents.

Some participants, depending on their position in the value chain, perceived the EU's pace and ambition in phasing out ICEs and promoting EVs as too slow to reduce CO2 emissions sufficiently and in time. Those were mainly the companies that are fairly new on the market or do not have large operations tied to the ICE technology. The latter more often put the stress on the transition challenges and even showed surprise: *"The pace of developments exceeds our expectations"*.

While some assessed the EU's agenda as *"just about right"* or *"ambitious and realistic at the same time"*, others criticised that the EU has not yet set a phase-out date for ICEs that have already been purchased:

"The EU's approach to force OEMs to build only EVs is right, but without strong incentives, cars purchased before 2035 will stay on the road for a long time. This calls for strong leadership and hard decisions."

One participant mentioned that, although the EU was right on time with its proposals, incentives for the whole e-mobility ecosystem were still missing: *"Incentives in terms of the ecosystem are key, such as taxes, tolls, electricity pricing. In that dimension, things are moving way too slow. There is no long-term framework in place."*

On a similar note, the e-mobility transformation challenges parts of the industry due to the required changes in production, training workforce and infrastructure build-up.

“Imagine the EU had set the targets for the phase-out even earlier: The industry would have been completely overwhelmed. Employees could not have been retrained in time, which would have led to layoffs. It is already now difficult to find the required trained specialists to change our operations. So with even more ambitious targets, the workforce would lag behind, both in production and in development.”

Such viewpoints underline that some changes simply require time, and the key slow-down factor is the human being itself. This does not only count for employees. Increasing public support for the e-mobility transition among sceptical parts of the population was also perceived as a key challenge. One interviewee complained: *“There are no initiatives to collectively bring the benefits of e-mobility to the table”*.

One representative of a company in charging infrastructure said *“The EU push for EVs is generally slow and behind technological possibilities. But this is in line with the slow pace of other legislation and much better than other continents.”* Another respondent noted that *“all the forecasts are constantly updated to EARLIER”*, indicating a certain dynamic.

Overall, most participants showed their appreciation for the constraints under which the EU decided its policies and that there was a visible attempt to be as ambitious as possible while causing only as many transition disruptions as necessary.

We then started looking at the national level:

Do you think your country is doing enough for the promotion of e-mobility?

The answers to this question naturally deferred depending on the country in question. In a qualitative study such as this one, the aim is to spot recurring themes on the national level, but also reveal striking examples from individual countries.

Most respondents did recognise strong national incentives for the electrification of the market. But several interview partners criticised that there was no comprehensive plan for the e-mobility transformation in their country. Instead, many individual measures were created but those would not result in a bigger picture:

“Looking at Western Europe, we see that the Netherlands are doing a lot, Belgium is moving, and so are France and Germany. Policymakers no longer doubt e-mobility, but we are missing a comprehensive, long-term plan, taking into account all factors – budget, grid and vehicles – for the next ten to fifteen years.”

Besides, several interviewees criticised the slow expansion pace of the charging infrastructure in their respective countries, in particular France and Germany. Others did not want to see it that way. Some respondents expect a stronger push towards electrification by the new government in Berlin. That may be needed, as Germany stands out in complaints about overregulation and bureaucracy. However, the issue was also experienced in other countries, or as one interviewee phrased it: “There is lots of bureaucracy in place which keeps end-users from switching to EVs.”

One participant pointed out that national governments tend to ask ordinary citizens to invest in EVs, but have forgotten to make a major push to transform the massive pool of governmental vehicles from the municipal to the top level. This is more than a missed opportunity for the market and the infrastructure that would have been connected to such a move, it is also a weakening signal to the public or worse, it could cause a feeling of injustice by private consumers who experience challenges in switching to EVs.

Just like on EU-level, industry representatives believe that more national subsidies and other supporting measures are needed for key transformations.

Conclusion Assumption 1

While industry is in full swing in the transformation towards EVs and some players are at their limits, **this process still depends on the set political goals and on governmental support on EU and national level.**

However, most industry players believe that **we have passed a point of no return** and that the industry has engaged in a **strong competition about electrification.**

While for some players this means that they are trying to be the first, **there is nobody left who does not care to be among the last:** everybody seems to have understood that this would be costly and that the shift towards EVs is now inevitable.



Potential Obstacles

In order to assess where policymakers could become more of a driving force, possibly accelerating the e-mobility transformation, we asked the interview partners to assess from their position in the value chain where they see the main current challenges and (missed) opportunities.

With a view to your own position in the value chain, what are the main stumbling blocks or bottlenecks for the development of e-mobility in Europe?

While we received a wide array of answers, ranging from very specific to more global issues, **a dominantly recurring answer to this question was the current chip shortage**, which continues to pose a significant problem. Many of the companies interviewed view the increasingly unmet demand for raw materials, such as lithium and cobalt, but also a lack of key human resources is a major issue. One respondent summarised the expectation:

“We need an entire ecosystem, securing chip supply, raw materials and refining the supply chain, components of the batteries and recycling.” That respondent hailed the European Battery Alliance as one important step in the right direction.

Another respondent complained about lead times in general: *“We have long lead times for chips, for EVs, for the infrastructure. And all this in an environment of inconsistent regulation and burdening regulatory requirements.”*

The **lack of key human resources apparently affects various parts of the supply chain**, with charging infrastructure suppliers complaining about missing installation capacity and key EV component suppliers underlining the lack of trained specialists in their production.

As profits were lower than expected in Europe due to COVID-19 and the lack of resources curtailed growth, some interviewees stated that it would be increasingly difficult to invest capital into research and development and therefore, government financing was needed. The supply interruptions and COVID-19 problems coincide with a run of all companies for the same supplies:

“We face COVID-19 and supply interruption problems. Companies need to finance the adaptations out of their earnings, but these have been reduced. At the same time, all companies worldwide are seeking the same materials and parts at the same time, which increases prices.”

Besides, there is also the human factor of doing business the way it has been done for decades. One supplier described the culture in the EU as significantly less adapted than that in the USA:

“European OEMs need to understand that chips are being purchased in a different way than steel. They want companies to pre-produce without paying in advance, then place an order at short notice and expect an immediate delivery [...] In the meantime, US companies are striking multi-annual supply deals with down payments. Besides, some large automotive developers demand that chips remain exactly the same for several years. The more advanced OEMs include shorter innovation cycles in their thinking.”

As electricity consumption will increase in the coming years and current market trends already show a noticeable energy uptake through EVs, the majority of participants agreed that a smart planning and optimisation of electricity grids is key. In particular, participants criticised the lengthy procedures and construction times for electricity infrastructure as well as a lack of standardization and inconsistent regulations in EU member states:

“There is a lack of standardisation, for example in grids and IT. We have national IT standards but they keep changing. At least roaming now is now looking to become easier.”

Participants also stated that more standardisation was required within the charging ecosystem:

“The EU framework conditions are not unified, subsidies and other programmes are not embedded. You basically need to design a new product for each country. Products, gauging, roaming... different EU and national programmes promote these differences even more”.

Apart from standardisation, some respondents suggested the charging infrastructure also needs to be reinforced to avoid future bottlenecks: *“Due to the lack of EV penetration, the roll-out of the charging infrastructure remains slow”*. One participant pointed out that the upcoming AFIR revision was a chance for policy makers to set a clear signal for investors to invest in charging networks.

Respondents do not only see stumbling blocks, but also key promoters of EVs, such as targeted subsidies, the expansion of the charging grid, and progressively lower prices for increasingly attractive cars. One key political driver that was mentioned several times are the EU’s ambitious CO2 targets for OEM fleets, which effectively are only achievable by integrating EVs. This was perceived as an indirect push for EVs. The overall tone was that these promoting factors did make a difference but naturally, when looking at the future, respondents focussed more on the work that is still needed.

Some of the major stumbling blocks are outside the scope of the legislator. However, the recurring criticism of lacking standardisation and the disconnection of EU and national programmes promoting e-mobility could be addressed by the institutions.

We then looked more precisely at what policymakers could have done better, first at EU level.

What could the EU have done better?

The interviewees answered this question from their varying positions in the value chain, with different focus points. As one large supplier put it:

“There is not that one single measure that could have done the trick. More coordination and a more pan-European approach would have helped. Above all, deciding the goal of 2035 earlier would have helped.”¹⁴

¹⁴ The European Commission is contemplating a prohibition of new ICE cars for private use by 2035.



While the latter sentiment on setting the trajectory earlier was widely shared, some interviewees expressed that promoting e-mobility more strongly did “*not have enough political momentum*” or was “*not politically feasible*” in the past. EU policy is “*work in progress*” and industry representatives believe that some outcomes remain to be seen. Today, the EU’s e-mobility policy is embedded in large programmes such as the Green Deal, which coincides with views from several respondents that the moment to act and set more ambitious goals is now.

The AFIR regulation, which intends to set mandatory targets for the deployment of charging infrastructure in EU countries, was an opportunity to do this, but participants criticised the draft as not being ambitious enough. Some respondents closer to automotive producers criticised that the EU put too much CO2 reduction burden onto cars and not enough on the EU’s heavy industry, where they perceive savings would have been easier, faster and less costly.

While respondents agreed additional EU regulatory harmonisation in the past would have been helpful, their **ideas on exactly where harmonisation should take place, depending on their position in the value chain, differed widely**. Whereas some wished for more harmonisation and streamlining in the area of charging (permits, roaming, pricing), others had hoped for a more harmonised distribution of networks or in regards to the regulatory framework on batteries.

One participant analysed that this was the chance to focus more strongly on the end-user, rather than on governments and companies. More EU subsidies and financing programmes could trigger more purchases of EVs and private EV charging infrastructure.

Several respondents wondered whether the EU could be better prepared for shortages of critical supplies, such as semiconductors and key raw materials. This question refers a bit more to today and the future than to the past. As one respondent pointed out: “*I wonder whether even today’s subsidies in the semiconductor production in the EU are targeting the right categories. There seems to be too much focus on the category THINK, which are required in notebooks and mobile phones, but these are almost not produced inside the EU. Most likely our automotive industry will need more chips in the categories of ACT and SENSE.*”

To summarise, **the interviewees would have wished for stronger and earlier harmonisation and a better long-term focus of the EU’s strategies**. We then asked participants about their respective member states.

What could member states have done better?

Looking at member states, many respondents wished there had been **better national programmes to support charging infrastructure**. These could be directed towards consumers directly, so that they can easily and quickly receive the necessary infrastructure in their home proximity. But there is apparently also a **lack of public fast charging stations and little or no incentives to install smart charging stations**. As one participant phrased it:

“The state should make it possible for citizens to receive a charger with one click – and the municipality and local installation companies should organise the rest.”

Another recurring theme is the administrative burden in the process of installing charging infrastructure – both public and private. Respondents demanded to *“make more land available”* and that *“there should be more subsidies for charging stations and EVs.”*

Bureaucracy was criticised most strongly in Germany, with one respondent summarising *“We need less bureaucracy, faster approvals and more renewable electricity here.”* Several interviewees expect the new German government to progress on this. One German respondent provided a striking example:

“Wall boxes need to be produced especially for the German market, to comply with the various specific rules here – many of which make the boxes unnecessarily expensive. For example, Germany has a specific law on gauging, which requires regular testing and a more complex technology. The law also requires certain display functions and a credit card reader as a payment method, even though today people can interact with such devices on their mobile phones and use smarter payment methods that do not require hardware in the box.”

A French participant referred to the problem mentioned earlier, that companies need to finance large transition investments out of their own earnings, which are troubled by COVID-19 and the shortages of key supplies. He suggested that investments should be financed by the national government: *“The existing financing tools and rules are not adapted to our needs. We should be treated like infrastructure: financed by future turnover. But unfortunately, our industry is more about first creating the market and demand.”*

Education of the public and advertising for how to switch to EVs was another point where national governments could make a difference. This also applies to subsidies for the (re-)training of workforce. One participant explained:

“We all know that thousands of people currently working in traditional jobs in the OEMs and the suppliers have qualifications that will no longer be needed in 2030 or 2035, when most of the automotive industry will have shifted to EVs. At the same time, those same OEMs and suppliers, but also the many new companies active in charging infrastructure and other EV-related services badly need newly trained staff members. This is an accident waiting to happen - the state needs to push for training measures, before the market runs into that problem.”

Overall, the strongest demand of industry representatives focus on more action targeted to the consumers, above all more subsidies, and a reduction in bureaucratic obstacles. Companies at all levels also informed us that they are advocating, by themselves and through industry associations, on these issues. They are targeting both national and the EU level. While the overall trend of policy making apparently does go in the right direction, the industry representatives are still complaining about too many small initiatives and a lack of oversight or coherency.

Conclusion Assumption 2

Looking at the evaluation of the EU's and the national policies to drive the e-mobility transformation, it seems that **the overall process still requires a push from the governmental side**. The study participants acknowledge that the automotive industry and the supply chain are in full swing towards electrification, but the demands towards the EU and national governments are strong and clearly point to a process that could not thrive if purely driven by market forces.

Relying purely on market forces is further complicated by the fact that **all market participants are undergoing their transformation at the same time, demanding the same materials, supplies and specialised staff**, which leads to more shortages and higher prices.

To avoid slowing down the transition, the **EU is being asked to provide a level playing field**, a truly harmonised common market and an end to national differences in standards and incentive systems.

The **national governments, on the other hand, should reduce bureaucracy and invest in charging infrastructure, work-force training and incentives** for the consumers. If these governmental instruments work hand in hand and the industry continues to push its transition, the ambitious transition targets announced by policy makers and the industry seem realistic.

4. OVERALL CONCLUSION

Overall, the picture emerging from this study shows that the **EU is at a crossover point in making E-mobility the norm** on its roads.

While what was formerly a mainly policy-driven process has not yet fully transitioned into an industry-driven dynamic, **the private sector has started embracing the inevitability of electrification**. The role of electric models offered on the market and the growing possibilities to install home charging facilities are key drivers. Carmakers' ambitious announcements throughout the last months show that they are now in the middle of a "race to the top", aiming to secure technology leadership and sales shares in the market of the future - and this race is picking up the pace.

Our data collection in late 2021 already showed that half of the investigated carmakers were actually preceding the legislative timeline, but new announcements - beyond those captured in this study - are made every week. To name a recent example, Stellantis stated its aim to electrify all its sales in Europe by 2030. **For the first time, industry and policymakers are moving hand in hand towards a shared goal of ensuring fully electrified sales over the coming decade.**

This mutually reinforcing hand-in-hand dynamic must be maintained over the coming years if the transition to e-mobility is to succeed. Both the industry and policymakers have a strong and shared interest in this, which is encouraging. Policy should continue to set ambitious targets, but must crucially also enable manufacturers to achieve the ambitions laid out in their public announcements – from reskilling the workforce to ensuring a steady supply of raw materials for batteries and removing regulatory and permission barriers.

Policymakers and the industry, from large OEMs to smaller supply start-ups, depend on each other. **The targets are clear. But if now either side was to slow down in ambition or implementation, both would suffer.** EU and national politicians have often been caught up by past CO2 reduction targets and how they failed or managed to achieve them.

Besides, consumers increasingly demand EVs and will perceive their government as failing if that is made difficult or impossible. Voters will judge their politicians according to such personal experiences in this transition. They largely want to live in a modern country, not in one that is lagging behind.

Similar considerations apply to the industry. Those players that do not transform fast enough will simply be left behind in the new market. The many innovative start-up driven suppliers and infrastructure providers battle for a growing market. Those that are best positioned today will find it much easier to retain a larger share of that future market.

It is that shared interest that leaves us with one overall conclusion: **no matter what other challenges, crises or political goals will surface along the way, the path that political institutions and the industry have embarked upon needs to be walked to the end.** Everybody who does their homework will profit from the transition, whilst everyone who lags behind will suffer.

INTERESTED IN LEARNING MORE?


Get in touch!

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Annex I: announced phase-out dates

Manufacturer	Full electrification	Scope / qualifications
Alfa Romeo	<u>2025</u>	Brand-wide global phase-out
Audi	<u>2033</u>	Brand-wide global phase-out
Bentley	<u>2030</u>	Brand-wide global phase-out
Daimler	<u>2030</u>	Brand-wide phase-out "where market conditions allow"
Fiat	<u>2030</u>	Brand-wide global phase-out
Ford	<u>2030</u>	Phase-out in Europe
GM	<u>2035</u>	Brand-wide global phase-out
Honda	<u>2040</u>	Brand-wide global phase-out
Hyundai	<u>2040</u>	Full electrification in "key markets" by 2040
Jaguar	<u>2025</u>	Brand-wide global phase-out
Land Rover	<u>2035</u>	Brand-wide global phase-out
Mini Cooper	<u>2030</u>	Brand-wide global phase-out
Opel	<u>2028</u>	Brand-wide global phase-out
Volvo	<u>2030</u>	Brand-wide global phase-out