Agora Verkehrswende

Policy Paper

EU vehicle labelling reform

Aligning CO_2 and energy information with consumer needs in digital markets and amid the transition to electrified vehicles

ABOUT

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Inhalt

Executive Summary

The EU aims to reform the labelling of passenger cars and light commercial vehicles with regard to their energy consumption and CO_2 emissions. To this end, the European Commission presented a proposal in December 2025 as part of its broader automotive policy package. The proposal would replace the still applicable 1999 Directive with a directly applicable Regulation.

The reform elements would fundamentally modernise an outdated legal framework that no longer adequately reflects the reality of a digitalised and technologically diverse vehicle market. However, harmonisation and adaptation to technological developments alone do not ensure behaviourally effective consumer information.

What is already moving in the right direction

The proposal improves the information framework at several key points. By moving from a directive to a regulation and introducing a uniform EU-wide label, the currently divergent labelling practices across Member States will be harmonised, thereby reducing fragmentation within the internal market. Labelling obligations will be substantially extended for digital sales channels and online advertising, and a public online product database linked via QR codes will be introduced. This reflects the shift from showroom-based to increasingly digitally mediated purchase decisions.

The Commission proposal also takes into account the ongoing electrification of the vehicle fleet by systematically incorporating electric range and electricity consumption into the information requirements. Used vehicles are also included in the labelling requirements. For electric vehicles, this includes – where available – information on battery state of health (SoH), which increases transparency for consumers who are unable to afford new vehicles.

Where the proposal could be strengthened further

While the proposal updates both the label and the associated information infrastructure, it does not yet consistently ensure that consumers receive decision-relevant information at the right moment and in a format that is easily understandable and capable of supporting well-founded choices. Beyond the positive aspects mentioned above, Agora Verkehrswende sees six key areas for further improvement:

First, make digital vehicle searches easier by requiring filtering and sorting options for energy efficiency and CO_2 emissions.
Background: In today's vehicle market, purchase decisions are shaped less by labels in showrooms than by digital search filters, configurators, platform interfaces and ranking logics. While the proposal extends labelling obligations to digital environments, it does not require larger commercial platforms to provide filtering and sorting functions based on energy consumption, efficiency class or CO_2 emissions as standard features. This is problematic, as the relevant set of vehicles is often narrowed down before consumers reach the detailed product page where the label is displayed.

Recommendation: The Regulation should require larger online platforms – including manufacturer websites and intermediary marketplaces – to offer filtering and sorting functions based on CO_2

and energy-efficiency parameters, using harmonised EU data. In this context, the proposal's existing requirement to indicate efficiency changes resulting from configuration choices should be further specified to ensure that deteriorations in efficiency beyond defined thresholds are clearly and prominently highlighted.

Second, increase financial transparency by adding a digital cost module to the EU database.
Background: Monetised information often has a stronger behavioural impact than technical efficiency metrics alone, as shown by empirical evidence. While energy consumption and CO_2 emissions are relevant, financial implications tend to be more action-guiding, particularly when presented in a simple format, aggregated over longer time horizons, or compared against benchmarks.

Recommendation: The information framework should be complemented by a digital cost module integrated into the public database. While the structure of such a module should ideally be harmonised at the EU level, the underlying assumptions – for example on energy prices, taxation or subsidies – should be adapted to national circumstances. If a fully harmonised and mandatory EU-wide solution proves politically infeasible, Member States should at least be explicitly allowed to provide separate national cost information modules linked to the harmonised technical dataset.

Third, help consumers identify efficient electric vehicles by introducing new energy-efficiency indicators.
Background: Under the current proposal, the classification logic remains anchored in tailpipe CO_2 emissions, meaning that all battery electric vehicles (BEVs) fall into the highest efficiency class – regardless of their electricity consumption, which can vary significantly across models. The label provides only a numerical consumption value, without offering an intuitive visual differentiation within the growing BEV segment. As a result, consumers lack a clear and immediately recognisable signal to distinguish between more and less efficient electric vehicles.

Recommendation: In the short term, the EU database should therefore provide supplementary, easy-to-interpret efficiency indicators, such as colour-coded efficiency bands or percentile rankings based on electricity consumption. At the same time, the legislation should prepare the ground for a medium-term transition towards a cross-technology classification based on final energy consumption per vehicle kilometre. In this context, it should also be assessed whether the current A to G scale provides sufficient resolution to reflect the wide range of energy efficiency levels across propulsion technologies within a unified classification system.

Fourth, improve comparability across model years by flagging changes in test procedures and adding supplementary comparison values.
Background: Changes in test procedures and methodologies can make official consumption and emission values difficult to compare across vehicle cohorts. This is particularly relevant for plug-in hybrid electric vehicles (PHEVs), whose CO_2 values depend heavily on the utility factor (UF), i.e. the assumed share of electric driving. Adjustments to the UF methodology have already been implemented. Further changes are planned as the methodology is aligned with observed driving and charging behaviour. Older used vehicles certified under the NEDC procedure, obsolete since 2018, may also be affected, provided that consumption and emission values of these vehicles will be displayed at all. Yet, their treatment under the new framework calls for further clarification. Without appropriate contextualisation or adjustments to the values presented in the information

materials, there is a risk that consumers interpret purely methodological differences in type-approval consumption and CO_2 values as real performance differences.

Recommendation: To improve comparability, the EU database should therefore provide complementary values that address these distortions. For PHEVs, this could involve recalculating CO_2 and consumption values based on current UF assumptions; for older NEDC vehicles – to the extent that they are actually labelled – indicative conversions to WLTP-equivalent values could be provided.

Fifth, strengthen the value of vehicle labelling by providing more realistic energy consumption information.
Background: Even under the current WLTP procedure, official test-cycle values often diverge significantly from real-world consumption and CO_2 emissions, particularly for PHEVs. Incorporating more realistic performance information would help consumers make better purchase decisions; however, this is not provided for in the current Commission proposal.

Recommendation: A pragmatic short-term solution would be to include indicative real-world CO_2 and consumption values in the EU database, accompanied by clear disclaimers distinguishing them from official test values. A tiered approach could strike a balance between informational value on the one hand and data availability, practicality and legal robustness on the other. Where sufficient data are available – from on-board fuel consumption monitoring – model-specific real-world values could be provided, which is likely to be particularly relevant for used vehicles. Where such data are not yet available, adjustment factors at the manufacturer or fleet level could be applied. In the longer term, the Regulation could lay the groundwork for the development of a robust methodology for more realistic, consumer-oriented performance indicators, similar to those used in the United States.

Sixth, better reflect the everyday usability of electric vehicles for different usage needs by including clear charging information.
Background: Electric range alone does not adequately capture the everyday usability of electric vehicles for different user needs. Charging performance is a key determinant of practical usability, especially for regular longer trips or where no home charging option is available.

Recommendation: The label should therefore include a simple and intuitive indicator of fast-charging capability, such as the time required to charge from 10% to 80% under standardised conditions, complemented by an indication of the corresponding range gained. The database could provide additional relevant information, such as maximum AC charging power, charging times in standardised real-world situations, range under adverse conditions, usable battery capacity and warranty provisions.

Next steps

The options for improving the European framework for vehicle consumer information can be implemented through different legal instruments and on different timelines. As a general principle, key structural decisions – such as the core elements of the label, the central classification logic, and binding requirements for digital search functionalities – should be anchored in the basic act. By contrast, many technical details can be specified at a later stage through delegated or implementing acts, provided that the relevant empowerment provisions are sufficiently broad. A staged approach therefore appears advisable: establish key elements and legal bases now, refine technical details subsequently, and embed a clear review and implementation perspective for more far-reaching reforms.

Overall, the Commission proposal would establishe a modern and harmonised information infrastructure. To fully realise its potential, however, the reform of the EU vehicle labelling framework should go beyond harmonisation and the updating of existing disclosure requirements. It needs to adopt a behaviourally informed approach that reflects how vehicle choices are actually made in a digital and increasingly electrified market. The key question in the ongoing legislative process is therefore not only which additional information should be provided, but whether it is presented in a form, at a time, and in a context in which it can effectively support consumer decision-making. This is particularly important against the backdrop of Europe’s continued dependence on fossil energy imports, volatile oil prices, and ongoing debates about a potential weakening of CO_2 fleet standards. In a context of growing uncertainty, it is essential that consumers have easy access to clear, relevant and reliable information on the environmental and financial implications of their vehicle choices.

1 Why a reform of the labelling directive is urgently needed

In December 2025, the European Commission presented a comprehensive automotive policy package intended to align the transport sector more closely with the European Union's climate, industrial and consumer policy objectives. The package includes a revision of CO_2 emission performance standards for cars and vans, measures addressing the electrification of commercial fleets, and a proposal to fundamentally reform the EU framework for passenger car labelling.

The labelling proposal replaces Directive 1999/94/EC with a directly applicable Regulation. This institutional shift is not merely technical. Moving from a directive to a regulation reflects a deliberate choice in favour of stronger harmonisation, uniform obligations and a reduction of regulatory fragmentation across Member States. The reform aims to establish a single, standardised EU car label, accompanied by a digital product database and reinforced rules for online advertising and digital sales channels.

At its core, the proposal seeks to modernise an instrument originally designed in the late 1990s, when internal combustion vehicles dominated the market and vehicle purchases were overwhelmingly showroom-based. Directive 1999/94/EC was developed for a market in which fuel/energy consumption (litres per 100 km) and CO_2 emissions were largely interchangeable indicators of efficiency. Today, the technological landscape has changed fundamentally, with battery electric vehicles (BEVs) and plug-in hybrids (PHEVs) accounting for a rapidly growing share of new registrations.

Equally important is the transformation of the vehicle purchasing process. The consumer journey has shifted from the dealership to the digital sphere. Most consumers now use online tools to search, compare and pre-select vehicles before ever entering a showroom. Online marketplaces, manufacturer configurators and intermediary platforms increasingly shape the initial consideration set. In this context, a label designed primarily for physical display risks arriving too late in the decision process.

Moreover, the implementation of the directive has evolved heterogeneously across Member States, giving rise to internal market concerns and increasing calls for harmonisation. Divergent national label formats, classification schemes, advertising obligations and additional national requirements have created legal fragmentation and administrative complexity. This has increased compliance costs and hampered cross-border vehicle sales.

As a result of these developments, the existing information architecture no longer reflects the structure of today's vehicle market, and reform has become necessary. The Commission's proposal responds to both technological and behavioural transformation. It is important to underline that the proposal is currently at an early stage of the ordinary legislative procedure. The European Parliament and the Council retain the power to amend its substance. The present moment is therefore decisive, as choices made during trilogue negotiations will determine the extent to which the reform ultimately strengthens the label's behavioural effectiveness in a digital, multi-technology vehicle market.

2 What the Commission's reform proposal gets right

2.1 Harmonisation and legal clarity

One of the most significant strengths of the Commission's proposal is the shift of vehicle labelling from the directive-based framework of Directive 1999/94/EC to directly applicable rules within Regulation (EU) 2019/631. The labelling provisions would be newly inserted into that Regulation, while the proposal would also amend its CO_2 emission performance standards for new passenger cars and light commercial vehicles. This institutional redesign substantially reduces the scope for divergent national implementation and establishes a uniform legal framework across the internal market. Under the 1999 Directive, Member States retained considerable discretion in transposition, resulting in heterogeneous label formats, classification schemes and supplementary information requirements. This fragmentation has increased the complexity of compliance for manufacturers and intermediaries operating across borders, while also reducing the clarity of consumer information.

The proposed Regulation addresses this problem by introducing a single harmonised label format applicable throughout the Union. This enhances legal certainty, reduces fragmentation, simplifies cross-border sales and improves comparability across Member States. It ensures that consumers encounter a consistent visual and informational structure regardless of where a vehicle is marketed. In this respect, the proposal strengthens both consumer protection and internal market integration.

2.2 Recognition of the digital shift: The product database, QR integration, and explicit online obligations

The Commission's proposal explicitly recognises the shift in vehicle purchasing behaviour from showroom-based decision-making to digitally mediated channels, including online listings, manufacturer configurators and intermediary platforms. It acknowledges that purchasing decisions are increasingly preceded by online research and comparison.

To address this, the proposal clarifies and explicitly extends labelling obligations to online sales channels as well as digital advertising and promotional material. Updating the regulatory perimeter to reflect contemporary market practices marks a clear improvement over the existing framework.

A second major advancement lies in the establishment of a publicly accessible EU product database, accessible via QR code. Manufacturers will be required to upload specified vehicle data, and consumers will be able to search and compare models via a centralised platform. The inclusion of QR codes on the label creates a bridge between point-of-sale information and a broader digital information environment. The database has the potential to reduce information asymmetries by ensuring that official data are accessible in a standardised format; it can facilitate cross-model comparisons; and it creates a technical foundation for potential future extensions, such as additional consumer-relevant indicators or the integration into digital sales platforms via APIs.

While the effectiveness of the database will depend on its concrete implementation – including search functionality, multilingual access and usability – its inclusion represents a structural modernisation of the EU labelling regime.

2.3 Coverage of electric powertrains

The proposal makes progress in adapting the information framework to the realities of vehicle electrification. It mandatorily incorporates metrics relevant to electric powertrains, such as energy consumption (kWh per 100 km) and electric range. This is a necessary update in a market where zero-emission vehicles represent an increasing share of new registrations and where conventional fuel-based metrics alone no longer adequately capture performance.

2.4 Inclusion of used vehicles

The Regulation extends its scope beyond new vehicles to most vehicles offered for sale or lease in a commercial context, including used vehicles. This addresses a longstanding gap in the existing framework. While playing a crucial role in vehicle turnover and accessibility, the second-hand market has so far been characterised by substantial information asymmetries. Its exclusion from transparency requirements has undermined the objective of informed consumer choice and has also reduced manufacturer incentives to produce energy-efficient models.

The introduction of mandatory battery state-of-health (SoH) information for electric vehicles constitutes a particularly relevant improvement. Battery degradation is a central concern in the used EV market. Requiring disclosure of SoH — where such information is available under type-approval rules — enhances transparency and can increase consumer confidence in the secondary EV market.

2.5 Interim conclusion: Real progress, but significant scope for further improvement

Taken together, these elements demonstrate that the Commission's proposal is not merely a cosmetic update, but that it substantially modernises the infrastructure for vehicle information disclosure. It strengthens harmonisation, explicitly expands the regulatory scope to digital environments, incorporates electrification-specific metrics and extends transparency to used vehicles.

Nonetheless, questions remain as to whether this modernisation will sufficiently translate into effective consumer guidance. This concerns, first, whether the information most relevant to consumers is provided in a sufficiently clear and accessible manner. Second, it raises the question of whether – particularly in digital decision-making and purchasing processes – information tools are made available early enough to influence consumer choice. These questions go beyond the mere general availability of data.

3 Remaining gaps and recommendations for further improvement

Against the background of the questions raised at the end of the previous section, several areas for further improvement of the Commission proposal can be identified in the ongoing legislative process.

3.1 The digital funnel problem: The label still comes too late

Although the Commission's proposal better adjusts information requirements to the vehicle market's digital reality, it does not fully address the structural shifts in consumer decision-making, as the narrowing of the relevant set of vehicles largely takes place before the label is meaningfully encountered.

In digital vehicle markets, consumers typically begin with search filters such as price range, brand, vehicle segment, fuel type, or drivetrain. Online marketplaces and manufacturer configurators structure these filters prominently. Only after this initial pre-selection do consumers examine detailed product pages where full efficiency information becomes visible.

If energy efficiency or CO_2 performance is not integrated into early-stage filtering and ranking, the label may influence only final comparisons within a narrow subset of already selected vehicles. In behavioural terms, information that arrives after the consideration set has been restricted exerts limited steering power.

The current proposal requires the display of the harmonised label in online advertising and promotional material. It also introduces obligations for vehicle configurators to reflect how specific configurations affect the vehicle's efficiency class and related performance indicators. However, this requirement operates at a later stage of the decision process and is therefore significantly less impactful than mandating efficiency-based search and filtering functionalities at the outset of the consumer journey. The proposal further provides for a searchable EU product database. However, it does not require that multi-vehicle platforms – whether operated by manufacturers or intermediaries – offer filtering or sorting options based on specific energy consumption and/or CO_2 emissions as standard functionalities.

From a behavioural perspective, search filters are not neutral technical tools; they are core elements of choice architecture. They determine which vehicles are visible to consumers in the first place, and they shape which vehicle attributes are given greater weight in the decision-making process through their early salience. If efficiency is not embedded in this architecture, it remains a secondary attribute rather than a primary decision criterion.

Recommendation: Mandatory efficiency filters and sorting functions

To address this structural gap, the Regulation could require that online platforms offering multiple vehicle models – including manufacturer websites and intermediary marketplaces – provide:

- filtering options based on energy consumption (l/100 km and kWh/100 km);

- filtering options based on CO_2 class and/or CO_2 emissions; and
- sorting functionality according to these criteria.

The data underpinning these functions should be drawn from the EU product database to ensure consistency and validity. Where different configurations of a vehicle model result in materially different energy consumption or CO_2 performance figures, configurator interfaces should also provide a clear and prominent indication if a selected configuration exceeds predefined efficiency thresholds. This would build on the rule already foreseen in the proposal that configurators must transparently reflect how configuration changes affect the vehicle's CO_2 performance, including potential deteriorations in its efficiency class, and would help ensure that efficiency-relevant trade-offs remain visible throughout the configuration process.

Such an obligation would not dictate consumer choice. It would merely ensure that efficiency can be used as a primary search parameter, comparable to price or vehicle category. The administrative burden would be limited if supported by a well-designed API that allows platforms to integrate database information automatically.

If political consensus for an EU-level mandate proves unattainable, the Regulation should at least clarify that Member States may introduce complementary digital choice-architecture requirements, provided they rely on harmonised EU data and do not alter the label design or core information obligations.

3.2 Cost information and salience: A missed opportunity

While new technical information becomes mandatory, the proposal does not foresee the provision of cost information in the labelling framework. This omission is noteworthy given the substantial body of behavioural evidence indicating that monetised cost information play an important role in consumer decision-making.

Consumers are not indifferent to environmental performance; CO_2 emissions and energy consumption do enter, to some degree, in vehicle purchase decisions. However, financial implications often exert a stronger influence on consumer choice. Technical information on specific energy consumption allows consumers, in principle, to derive their energy-related operating costs. For internal combustion vehicles, CO_2 efficiency classes also indicate fuel cost efficiency, as emissions are closely correlated with fuel expenditure.

However, the behavioural impact of information depends on its denomination, explicitness, and the ease of cognitive processing. Technical metrics such as grams of CO_2 per kilometre or litres/kWh per 100 kilometres imply cost consequences, but consumers must mentally convert these values into expected expenditures, taking into account energy prices, driving patterns, and holding periods. In a complex, multi-attribute decision environment, such cognitive effort reduces the likelihood that efficiency information will meaningfully influence choice.

Experimental evidence indicates that readily available monetised running-cost information – such as annual or multi-year fuel cost estimates – reduces the cognitive burden and increases the decision weight consumers place on efficiency. The time horizon of presentation also matters: cost information expressed over longer periods (e.g. five years, the average holding period, or the vehicle's expected lifetime) tends to have a stronger behavioural impact than short-horizon metrics such as "cost per 100 km", as cumulative differences become more salient and easier to compare.

Comparative cost framing that introduces a reference point may further enhance salience and behavioural effectiveness. The U.S. vehicle label adopts this approach by displaying five-year fuel cost differences ("you save" vs. "you spend more") relative to the average new vehicle. While isolating the precise incremental effect of such wording in real-world markets is difficult, experimental research suggests that benchmark-based cost framing can increase the impact of efficiency information.

Recommendation: Digital cost module as part of the EU database

The Commission's proposal does not include harmonised running-cost information on the label itself, nor does it require a standardised cost module within the EU database. This design choice is understandable from an internal market perspective. Running costs depend on country-specific variables, including fuel and electricity prices, taxation, annual mileage, and average holding periods. A single EU-wide cost estimate might therefore risk being misleading or insufficiently tailored to national conditions.

Yet the absence of structured cost information leaves a significant behavioural lever unused. It also creates potential tensions in Member States that currently provide cost information in their national labelling systems (such as Germany). If the harmonised EU label replaces national formats without incorporating cost elements, consumers in those Member States could face a deterioration in decision-relevant information. The reform thus confronts a classic policy trade-off: preserving harmonisation and legal clarity while ensuring that information remains behaviourally effective.

A potential pathway to reconcile these objectives would be to introduce a cost-information module within the EU product database rather than displaying cost estimates on the label itself. Under this approach, cost information would be easily accessible via the database landing page linked through the QR code on the label.

Given the political and practical challenges of defining a single EU-wide cost scenario, the module should provide Member State-specific cost estimates. Users could initially be directed to a national cost module based on their location (e.g. via IP-based routing), while retaining the option to switch to other Member State scenarios.

Preferably, the overall structure and presentation of the cost module should be harmonised at the EU level, while allowing non-technical, cost-relevant parameter values to be adapted to national conditions. Beyond energy costs, the module could also include additional total-cost-of-ownership elements, such as vehicle taxes or available purchase subsidies, in order to provide a more comprehensive picture of the financial implications of vehicle choice. Where appropriate, the module could further allow for simplified personalised calculations based on user-defined assumptions.

If agreement on a structurally harmonised EU cost module proves unattainable, the Regulation should at least clarify that Member States may provide complementary cost information through clearly identified national modules, separate from the harmonised EU technical dataset. In all cases, transparency is essential: cost information must be accompanied by a clear explanation of underlying assumptions and parameters to ensure credibility and avoid misleading comparisons.

This “harmonised core + national digital cost layer” approach would preserve internal market coherence while preventing a deterioration in consumer-relevant information in Member States that already provide cost metrics. It maintains full harmonisation of the label and the technical dataset, while strengthening consumers’ ability to make financially informed decisions.

3.3 Enabling efficient choices among electric vehicles

The Commission’s proposal adapts the label to the electrified vehicle market by incorporating quantitative information on energy consumption (kWh per 100 km) and electric range. However, the classification logic remains anchored in tailpipe CO_2 emissions. As a consequence, all battery electric vehicles (BEVs), which have zero tailpipe emissions, generally receive the top CO_2 class “A”. While this reflects alignment with the metric underlying CO_2 fleet standards and preserves regulatory continuity, it creates a significant behavioural limitation.

Within the rapidly growing BEV segment, vehicles differ substantially in energy consumption. Differences of several kilowatt-hours per 100 kilometres can translate into meaningful variations in electricity costs, resource use, and indirect emissions. Yet consumers receive no immediate visual cue regarding these intra-segment differences. The available numeric energy-consumption value requires interpretation and active comparison to assess a vehicle’s relative efficiency within the BEV segment. A labelling and classification system that fails to differentiate within the fastest-growing vehicle category risks losing steering potential. As the BEV market matures and price differentials narrow, intra-segment efficiency differences are becoming increasingly relevant for both private cost considerations and broader sustainability objectives.

Recommendation: Supplementary energy-efficiency differentiation in the short term – transition towards energy consumption as key metric in the longer term

While pursuing the objective of enabling consumers to identify energy-efficient vehicles easily, a balance must be struck between improving informational relevance and preserving the clarity and simplicity of the label. Additional indicators to better distinguish efficiency differences among electric vehicles should therefore be designed carefully to avoid overburdening the label or confusing consumers. Excessive graphical elements could ultimately weaken the communicative effectiveness of the label.

Several proposals have suggested introducing an additional graphical efficiency ranking based on specific energy consumption alongside the existing CO_2-based classification.[1] Such a second (A–G)

[1] See, for instance:
https://www.oeko.de/fileadmin/oekodoc/WP-Considerations-further-development-EU-car-label.pdf
https://www.dena.de/fileadmin/dena/Publikationen/PDFs/2025/Endbericht_Weiterentwicklung_der_Pkw-EnVKV.pdf

scale could either apply to all vehicles or only to electric vehicles. Both approaches, however, raise relevant concerns.

If an additional energy-efficiency scale were applied only to BEVs, consumers could encounter situations in which the same vehicle simultaneously receives a top CO_2 rating (reflecting zero tailpipe emissions) but a relatively poor rating within the BEV segment due to comparatively higher electricity consumption. This parallel classification could create interpretational challenges and potentially lead to misleading conclusions – for instance, that an electric vehicle with a moderate efficiency score is environmentally inferior to an internal combustion vehicle with a comparatively favourable CO_2 class.

Applying a second graphical ranking based on specific energy consumption to all powertrains could partly mitigate this issue. However, it would introduce substantial informational overlap with the existing CO_2 classification and would – depending on the precise definition of efficiency classes – still provide only limited additional differentiation among BEVs. In both cases, adding a second graphical scale risks cluttering the label and reducing its overall intelligibility. For these reasons, the net benefit of introducing a second efficiency scale directly on the label remains uncertain.

An alternative approach to improving efficiency differentiation without introducing a second graphical scale would be to adapt the existing classification logic itself in order to incorporate both CO_2 performance and energy efficiency. Under such a dual-metric scheme, a vehicle would qualify for a given A–G class only if it meets both a class-specific CO_2 emission threshold and a corresponding threshold for final energy consumption. For combustion vehicles, this would largely preserve current outcomes, as CO_2 emissions and fuel consumption are closely correlated. For BEVs and PHEVs, however, differences in electricity consumption could directly affect class assignment, allowing less efficient models to be distinguished within a unified classification framework. The main advantage of this approach lies in its conceptual consistency and visual simplicity: it retains a single A–G scale applicable across all drivetrain technologies and avoids potentially confusing parallel ratings or EV-specific metrics on the label. At the same time, it raises important challenges. Beyond the need for careful calibration of dual thresholds to improve informational value while maintaining consistency, a key challenge would be to ensure consumer understanding and trust through clear and transparent communication. From a legal and political perspective, such a modification would affect the core classification methodology and may therefore exceed the scope for adjustment within the ongoing trilogue negotiations.

Given these considerations, a more incremental and politically feasible approach focusing on the digital layer may be preferable in the short term. Rather than adding a second graphical classification to the label or adopting a dual-metric approach, the EU vehicle database could provide supplementary efficiency differentiation within the EV segment. The database could prominently display a standardised graphical indicator showing how a given vehicle's electricity consumption compares with other electric vehicles on the market. This could take the form of a percentile ranking within the BEV (and PHEV) segment or a visual efficiency band based on ranges of specific electricity consumption (kWh/100 km). While such an indicator would not be displayed directly on the label or alter the core CO_2 classification logic, it would be easily accessible through the database via the label's QR code. This approach preserves the clarity of the label while leveraging the digital database to provide richer and more nuanced efficiency comparisons.

Over the longer term, however, a more fundamental structural adjustment of the label becomes appropriate. As the vehicle fleet increasingly electrifies, tailpipe CO_2 emissions will gradually lose relevance as the primary indicator of environmental – and energy-cost – performance. As a consequence, specific final energy consumption becomes the more meaningful metric for ranking vehicle efficiency. A well-designed energy-consumption-based classification would allow vehicles with different propulsion systems to be assessed using a common physical metric while still differentiating between efficient and inefficient vehicles within each technology group.

Given the ongoing technological transition, it may therefore be advisable to already prepare the legal basis for such a shift in the key efficiency metric during the current revision of the labelling regulation. While the immediate reform could maintain the CO_2-based classification in order to preserve continuity and policy stability, the legislation could provide for a future transition towards a central energy-consumption-based ranking as electric vehicles become the dominant technology – for example, in alignment with the next stage of EU CO_2 fleet standards in the 2030 timeframe.

Such a staged approach would combine short-term improvements in transparency with a forward-looking framework capable of adapting to the structural transformation of the vehicle market.

Info Box: Extending the A–G scale? Addressing structural heterogeneity in vehicle efficiency

The EU energy labelling framework traditionally relies on a standardised A–G classification scale that is applied across a wide range of product groups, including household appliances and consumer electronics. These products typically rely on a single, common energy carrier – electricity – and exhibit relatively comparable energy-conversion processes.

For passenger cars, however, the situation is structurally different. Vehicles rely on fundamentally different propulsion technologies and energy carriers, primarily liquid fuels and electricity. As a result, vehicle energy efficiency is determined along two key dimensions: the energy required to overcome driving resistances – largely determined by vehicle design – and, even more importantly, the efficiency with which primary energy is converted into useful motion. Differences in energy-conversion losses across drivetrain technologies alone can cause final energy consumption to vary by a factor of three or more.

As discussed in this paper, mapping this wide spectrum onto a classification scheme with a limited number of classes inevitably creates trade-offs – namely, between enabling meaningful comparisons within a given propulsion technology, on the one hand, and across different propulsion technologies, on the other. Against this background, it may be worth considering whether a modest extension of the existing classification scale – for example to A–H or A–I – could improve the resolution and, with it, the informational value of the label. A larger number of classes could help to better reflect the broad range of vehicle efficiencies across the fleet and reduce the clustering of vehicles with the same drivetrain within a small number of classes. This rationale applies in particular to a unified classification system based on final energy consumption or on a dual-metric approach that combines CO_2 emissions and energy consumption.

The potential benefits of increased granularity must, however, be weighed against the drawbacks associated with deviating from the established horizontal A-G design of EU energy labelling and possible reductions in consumer familiarity. Such an assessment is needed at the latest in the context of a future transition away from a classification system based primarily on tailpipe CO_2 emissions.

3.4 Addressing cross-year comparability

The proposal firmly anchors the vehicle label in official WLTP values. From a regulatory perspective, this approach ensures consistency and legal conformity with EU type-approval law. From a consumer-information perspective, however, evolving test procedures and underlying methodological assumptions can create a structural comparability problem across vehicle cohorts and model years.
This problem arises from two distinct sources.

Utility-factor changes for PHEVs
The first – and more structurally relevant – issue concerns plug-in hybrid electric vehicles. Under WLTP, the official CO_2 value depends heavily on the assumed share of electric driving, expressed through the utility factor (UF). Changes to the UF curve over time can therefore significantly affect the reported CO_2 and energy-consumption values.

As UF curves are being revised in 2025/2026 and again in 2027/2028 to better reflect observed driving and charging patterns, official values may change substantially even where the underlying vehicle hardware remains largely unchanged. A model approved under one UF regime may thus display a markedly different CO_2 value compared to a technically similar model approved under an updated UF assumption.

This creates a comparability problem that is not limited to used vehicles. It can also affect comparisons between newly approved vehicles across adjacent type-approval periods. In practice, newer vehicles may appear less efficient due to stricter UF assumptions. Consumers may interpret such differences as reflecting technological deteriorations, even when they are primarily driven by methodological adjustments.

NEDC–WLTP discontinuity
A second comparability problem affecting the labelling of used vehicles could arise from the transition from the New European Driving Cycle (NEDC) to the WLTP test procedure. New vehicle types have been required to be WLTP-certified since September 2017, and all new vehicle registrations since September 2018. Vehicles type-approved before these dates typically only have official CO_2 values based on the NEDC test procedure.

These values are systematically lower than WLTP-based values due to fundamental differences in test design and stringency, and they also exhibit a larger gap to real-world emissions. As a result, used vehicles approved under NEDC would – if labelled on the basis of these values – appear more efficient than comparable WLTP-certified vehicles, even where their real-world performance is similar or worse. While the significance of this issue would gradually decline as older vehicles leave the fleet, it would remain relevant in the coming years if NEDC-certified vehicles were to be labelled.

Info Box: Treatment of NEDC-certified used vehicles under the proposal

The Commission's proposal introduces a degree of ambiguity regarding the treatment of NEDC-type-approved vehicles. The explanatory memorandum suggests a broad scope of application, stating that the preferred option would "cover all second-hand vehicles in an equal manner" and referring to "the option covering the broadest range of second-hand vehicles". This indicates an intention to include used vehicles irrespective of the underlying test procedure.

However, the operative legal provisions point in a different direction. The amended Article 2 specifies that "Articles 15a and 15b of this Regulation shall apply to all vehicles … offered for sale or lease in the Union, that are type-approved in accordance with the Worldwide Harmonised Light Vehicles Test Procedure set out in Commission Regulation (EU) 2017/1151." This wording suggests a restriction of the Regulation's scope to WLTP-certified vehicles.

Against this background, it remains not entirely clear whether NEDC-certified vehicles fall outside the scope of the Regulation altogether or whether their inclusion is implicitly envisaged but not operationalised. In the latter case, the proposal does not specify how such vehicles should be treated within a framework that is otherwise anchored in WLTP-based metrics and a corresponding classification logic. In particular, it is not clarified whether NEDC-based Certificate of Conformity (CoC) values should be used directly, whether some form of adjustment or conversion should be applied, or how such vehicles are meant to be meaningfully integrated into the classification system.

Implications for consumer information

These two sources of time inconsistency share a common implication: differences in reported values may reflect changes in methodology rather than actual differences in vehicle performance. This risks undermining the informational function of the label and distorting consumer decision-making. At the same time, there is a sound rationale for anchoring the label in official type-approval values, as these provide a legally robust basis for a harmonised labelling framework.

Recommendation: Improved comparability through adjusted values in the digital database

Given this trade-off, a differentiated, two-tier approach could provide a workable compromise.

For PHEVs, comparability could be improved by recalculating combined CO_2 and energy-consumption values based on a common, currently applicable utility-factor curve. Since the underlying charge-depleting (CD) and charge-sustaining (CS) consumption values remain unchanged, such an adjustment would primarily involve a re-weighting of these components according to updated UF assumptions.

In principle, such adjusted values could be displayed either directly on the label or as a supplementary value in the database. However, to remain fully consistent with type-approval law and the CoC, it appears legally more robust to provide these adjusted values only in the EU database, clearly labelled as indicative and based on updated methodology.

While adjusted values would primarily be presented numerically in the database, the label itself should include a clear indication where values are based on older or outdated methodologies, together with an explicit reference to the availability of adjusted values via the QR-linked database. Such an approach would preserve the legal integrity of the label while significantly improving the comparability and interpretability of vehicle data across model years.

For the NEDC–WLTP discontinuity, the situation is more complex, as the NEDC procedure is no longer in use. As a first step, it would be desirable to provide explicit clarification as to whether NEDC-certified used vehicles are intended to fall within the scope of the labelling framework at all. It should be clarified whether such vehicles are to be excluded from labelling altogether, or whether some form of mandatory or voluntary labelling is envisaged.

Where NEDC-certified vehicles are to be labelled – whether on a mandatory or voluntary basis – it is essential to ensure that consumer decisions are not distorted by systematic differences in reported values resulting from the change in test procedures. This argues for complementing CoC values with adjusted figures that improve comparability with WLTP-based data, at least within the EU database and accompanied by a clear and prominent notice of the underlying methodological differences.

Two approaches could be considered for generating such indicative values. A technically more precise option would be to use established simulation tools such as CO_2MPAS, which have been applied within the EU type-approval framework. Alternatively, a more pragmatic and less burdensome approach would be to apply standardised conversion factors – for example, a uniform factor by drivetrain technology, potentially differentiated by vehicle segment. As a rough approximation, an upward adjustment of NEDC values by around 20% could be considered, provided that such factors are clearly communicated as indicative.[2]

Given the methodological limitations of such approximations, it may be appropriate to refrain from assigning used vehicles based on such adjusted values to the harmonised efficiency classes, in particular where simplified conversion factors are used.

3.5 Real-world performance and test-cycle anchoring

While the previous section addressed comparability issues arising from changes in test methodology over time, a second and distinct challenge concerns the gap between test-cycle values and real-world emissions and energy consumption. Although WLTP represents a significant

[2] Importantly, such a correction would only adjust for the difference between NEDC and WLTP values; it would not close the gap between type-approval values and observed real-world values (see next subsection).

improvement over earlier test cycles, real-world performance still frequently diverges from official figures. This applies across all powertrains, but the magnitude of the deviation is particularly pronounced for PHEVs due to optimistic assumptions regarding charging behaviour and usage patterns.

The Commission proposal does not incorporate any real-world performance indicators into the label or the database. This reflects a legally cautious approach: official compliance metrics are harmonised and legally defined, whereas real-world values are inherently variable and more difficult to standardise. Nevertheless, the absence of any contextual indicator may limit consumer understanding and practical usefulness, particularly in light of increasing public awareness of the gap between laboratory and in-use performance.

Recommendation: Indicative in-use metrics at the database level

Against this background, short- to medium-term improvements should focus on the digital layer rather than the physical label. A pragmatic approach would be to introduce an "indicative in-use performance" field within the EU database. Such an indicator would complement, but not replace, official WLTP values. A clear disclaimer should distinguish compliance-relevant figures from consumer-oriented, indicative real-world metrics.

Any such metric must be designed carefully to balance consumer relevance, statistical robustness, administrative feasibility, and legal defensibility. In particular, it should reflect available data sources – notably, OBFCM data – while avoiding false precision.

Several implementation options can be considered:

1) **Model-level deviation factor**

   A model-level correction factor would be the most intuitive and decision-relevant option, as it comes closest to the real-world performance of the specific vehicle under consideration. It also aligns with the model-level structure of the proposed EU database.

   Yet this approach also faces certain constraints and challenges. For newly launched models, no robust OBFCM history exists at market entry, making immediate publication impossible. The use of proxy values from similar models would raise concerns regarding transparency, comparability and legal certainty.

   In addition, model-level OBFCM data reflect not only vehicle characteristics but also usage patterns – such as driving behaviour, geography and user profiles. This does not necessarily pose a problem per se. However, systematic distortions may arise if certain models are disproportionately used under conditions associated with higher real-world deviations — for example, intensive motorway driving, higher average speeds, or specific regional factors such as topography or the absence of speed limits. In such cases, the observed deviation from test-cycle values reflects not only the technical performance of the vehicle, but also the typical usage context of its customer base. As a result, model-level indicators may conflate vehicle efficiency with user behaviour, potentially limiting their comparability across models.

A further practical limitation is that publicly available OBFCM data are not currently provided at the model level. Extracting such information would require additional processing of anonymised raw data and raises governance questions regarding sample size thresholds, update frequency, and institutional responsibility.

2) Manufacturer-level deviation factor (by powertrain)
This option is most closely aligned with current OBFCM reporting practice. Existing datasets and Commission reporting already provide aggregated information at the manufacturer level, differentiated by powertrain. It is therefore comparatively robust, administratively simple, and appears legally defensible. It also creates incentives for manufacturers to reduce the gap between real-world and test-cycle performance across their fleets.

Still, its relevance for individual consumer decisions may be somewhat limited. Variations between models within a brand may be substantial, and manufacturer-level averages may therefore be too coarse to provide very precise guidance for individual purchase decisions. In addition, the behavioural effects outlined above do not necessarily disappear at this level if a manufacturer’s vehicles are disproportionately used in specific contexts or regions.

3) Segment-level deviation factor
A segment-based and powertrain-differentiated approach offers another potential compromise between robustness and relevance. It would allow systematic differences between vehicle classes to be reflected while avoiding the volatility, small sample sizes, and data-availability lag associated with model-level data.

However, such an approach currently lacks an established empirical and institutional basis. The public OBFCM architecture does not provide a standardised segment-level gap output, and there is no Commission or EEA publication that presents statistically validated and consistently defined segment-level gap data. While available evidence suggests systematic variation – for example, across vehicle mass classes – this has not yet been translated into a stable and harmonised metric suitable for regulatory use. In addition, segment-level aggregation weakens manufacturer-specific incentives and may still mask substantial within-segment variation.

4) Fleet-wide deviation factor (by powertrain)
A fleet-wide correction differentiated only by powertrain represents the most conservative option. It is easy to explain, straightforward to maintain, and legally robust, particularly if framed explicitly as a general reference value rather than as an estimate for a specific vehicle. Because it aggregates across very large and heterogeneous usage patterns, it is less prone to systematic distortions arising from model- or brand-specific user behaviour.

At the same time, this aggregation constitutes a weakness in terms of consumer relevance. The indicator provides little insight into the real-world performance of any individual model and therefore has limited decision value for consumers. Moreover, it does not create meaningful incentives at the manufacturer or model level to reduce the real-world gap.

5) Real-world interval instead of point estimate
In contrast to the above options, which differ primarily in their level of data aggregation

(model, manufacturer, segment or fleet), this approach concerns how information is presented. Instead of providing a single adjusted point value, real-world performance could be expressed as an interval of expected values. Conceptually, this approach better reflects the inherent variability of real-world driving conditions and avoids false precision. OBFCM data capture cumulative in-use outcomes that depend strongly on driving behaviour, geography and usage patterns; presenting expected real-world energy consumption and CO_2 emissions as an interval can therefore provide a more realistic representation.

Such an interval-based indicator could, in principle, be applied across different levels of aggregation – for example, at the model level insofar as data availability allows, or otherwise at the manufacturer, segment or fleet levels. It would therefore operationalise the options outlined above, rather than replace them.

The main potential drawback is communicative complexity. Consumer information tools are generally most effective when they are simple and easily comparable, and an interval may be more difficult to interpret than a single value. However, the flexibility of the digital database should allow such information to be presented in a structured and comprehensible manner.

Recommended approach: Phased model-level system with fallback hierarchy

Taking these considerations together, the most balanced solution appears to be a phased model-level approach with a structured fallback hierarchy. Under such a system, model-level real-world indicators would be provided once sufficient data availability and statistical robustness are ensured. Until then, the system would rely on fallback values at higher aggregation levels – in particular manufacturer-by-powertrain or, where necessary, fleet-level reference values.

It is essential that the database clearly indicates the level of data aggregation, i.e. whether a value is model-specific or based on a fallback. To reflect uncertainty and behavioural variability, values could additionally be presented as intervals rather than precise point estimates, irrespective of the underlying aggregation level.

This approach balances consumer relevance with legal and statistical robustness and ensures that new models are not left without any real-world contextualisation. It also aligns well with the structure of the proposed Regulation, which establishes a model-level database while allowing for the addition of further consumer-relevant information through delegated acts.

Longer-term perspective: Real-world energy consumption as central metric

In the longer term, the co-legislators may consider establishing a legally robust methodology to determine adjusted, consumer-oriented performance indicators that better reflect real-world conditions, which could ultimately serve as the central metric for both labelling and other consumer information purposes. The U.S. fuel economy label provides a relevant point of reference: it presents adjusted values derived from standardised laboratory tests that are calibrated to better approximate real-world driving conditions, rather than relying directly on empirical in-use data.

A similar approach could be explored in the EU context, including the possibility of basing the efficiency ranking on such adjusted values. However, introducing and prominently displaying these metrics – particularly on the label – would likely require legislative amendment, as it would concern essential elements of the Regulation and therefore fall outside the scope of delegated acts.

As an intermediate step, it appears legally feasible for the Regulation to empower the Commission to develop a harmonised methodology for estimating real-world performance. Whether based on OBFCM data, adjusted test-cycle procedures or a hybrid approach, such a methodology would need to ensure transparency, statistical robustness and legal certainty.

Establishing such a framework would enable, in a subsequent step, a legally sound transition towards more realistic and decision-relevant consumer information, while preserving the integrity of the type-approval system. This transition could be combined with a broader structural reform of the labelling provisions, including a shift of the primary efficiency metric from tailpipe CO_2 emissions to final energy consumption.

3.6 Provide information on charging performance

Electric mobility introduces additional characteristics that strongly influence everyday usability beyond energy consumption. In particular, electric range, battery characteristics, and charging performance determine how conveniently a vehicle can be used for daily driving. Providing clear and comparable information on these aspects is therefore an important complement to enable need-based vehicle purchase decisions.

While information on electric range – and, for used vehicles, battery state-of-health (SoH) – is foreseen in the Commission proposal, no information on charging performance is included, neither on the label itself nor in the digital database. This gap should be addressed in the ongoing trilogue negotiations, as charging performance is a key determinant of vehicle usability, particularly for drivers who frequently undertake longer journeys.

Recommendation: Add DC fast-charging performance to the label and complementary information to the database

In principle, a wide range of metrics could be used to describe charging performance. However, to avoid overwhelming consumers, it is essential to focus on a limited number of indicators that are most relevant for practical vehicle use. Including numerous technical parameters would risk overloading consumers and undermining the communicative effectiveness of the label.

Given the need for simplicity, only one charging-related metric should be included on the label itself. A sensible design approach is therefore to combine one key indicator on the label with a small set of additional information in the digital dataset accessible via the QR code. This two-level information architecture would allow the label to remain concise while still providing transparency on technologically relevant vehicle characteristics.

For the label, the most meaningful indicator of charging performance is the fast-charging time from a 10% to 80% state of charge under standardised conditions. This metric reflects the charging window most relevant for real-world long-distance driving. It avoids the steep charging slowdown that typically occurs above an approximately 80% state of charge and captures overall charging behaviour rather than relying on peak charging power values. Peak charging power, often highlighted in marketing material, is typically achievable only under specific conditions and for short periods, and therefore provides a poor indication of real-world charging performance.

To improve interpretability, this charging-time metric could be complemented by a distance-equivalent indicator that shows the approximate driving range obtained from the energy added during the 10–80% charging window. The label could therefore present charging information in the following format:

DC fast charging (10–80%): 26 min (≈ 320 km range)
This approach translates a technical charging parameter into a practical mobility outcome and helps consumers understand how far a vehicle can typically travel after a standard fast-charging stop. To ensure comparability across vehicles, charging metrics must be based on clearly defined and standardised test conditions, as charging performance depends not only on vehicle design but also on temperature, state of charge, and charging infrastructure characteristics.

While the label itself should remain limited to one intuitive charging indicator, the QR-code-linked EU vehicle database could provide additional information for consumers who wish to explore vehicle characteristics in more detail. This could include maximum DC charging capability, as well as home-charging characteristics such as maximum AC charging power and the associated charging time required to reach a typical state of charge (e.g. 80% or 90%).

Beyond charging performance, additional EV-specific information could further improve consumer understanding and confidence. In particular, indicative electric range under less favourable conditions than type-approval tests – for example, under winter conditions – could help address concerns about real-world BEV performance. It may also be useful to include further battery-related information in the database, such as usable battery capacity and warranty conditions.

This approach – combining one concise charging indicator on the label with richer information in the digital dataset – would better reflect the technological realities of electric mobility. It would help consumers not only identify low-emission vehicles but also select models that combine efficiency with practical usability in everyday driving.

4 Legal perspective: What must be changed during negotiations and what can be delegated?

The above recommendations to adjust the Commission's proposal must take into account the legal architecture of EU lawmaking. The Regulation will be adopted under the ordinary legislative procedure, meaning that the European Parliament and the Council determine the essential elements of the instrument. At the same time, the proposal provides for delegated and implementing acts through which the Commission may supplement or operationalise certain aspects of the framework. This distinction is crucial for identifying which reforms must be addressed during legislative negotiations and which may be introduced at a later stage.

Under Article 290 TFEU, delegated acts may supplement or amend non-essential elements of a legislative act. Essential elements – that is, the core political choices defining the regulatory structure – must be determined by the co-legislators themselves.

- In the context of vehicle labelling, essential elements are likely to include in particular:
  - the overall structure and architecture of the label;
  - the key metric (e.g. tailpipe CO_2 emissions) and the classification logic (e.g. the A–G CO class system); and
  - the core mandatory information elements displayed on the label.

Accordingly, proposals such as introducing an alternative efficiency metric (e.g. final energy consumption), adding a second mandatory ranking scale on the label, fundamentally redesigning the class structure, or replacing WLTP values with alternative real-world metrics would require amendment of the basic act during the current legislative process.

By contrast, a range of complementary measures – particularly those implemented at the database level – may fall within the scope of delegated or implementing acts, provided that the empowerment provision in the Regulation is sufficiently broad. However, the boundary between essential and non-essential elements is not always clear-cut. Some of the recommendations outlined above may raise legal uncertainty if introduced solely via delegated acts, especially where they (indirectly) influence the interpretation or salience of core label elements.

Against this background, a cautious and structured reform strategy appears advisable to mitigate legal risks.

Recommended approach: A three-stage reform strategy

1) **Immediate priorities for the legislative process**
   During the current negotiations, the co-legislators should focus on embedding the elements that are likely to qualify as essential or that require a clear legal basis. In particular, the Regulation should:

   - introduce explicit provisions for digital filtering and sorting functionalities based on energy consumption and CO_2 performance;

- establish a clear legal basis for the provision of running-cost information at the database level, including the possibility of Member State-specific digital cost modules linked to the harmonised EU dataset;
- provide an explicit legal basis for the inclusion of indicative real-world (in-use) consumption and CO_2 metrics in the database; and
- provide for the inclusion of charging performance information on the label and additional EV-relevant metrics in the database.

  Anchoring these elements in the basic act will reduce legal uncertainty and avoid reliance on broad or potentially contested delegated powers.

2) **Subsequent refinement through delegated or implementing acts**
   Once the Regulation is adopted and practical experience with the database accumulates, delegated or implementing acts could be used to further specify and refine technical details. This may include:
   - methodologies for calculating and presenting cost information;
   - the design and calibration of efficiency indicators (e.g. percentile rankings or bands);
   - the methodology and presentation of indicative in-use performance metrics; and
   - the selection and presentation of charging, electric range and battery-related information.

     This staged approach allows for iterative improvement while maintaining the legal stability of the core framework.

3) **Longer-term structural development**
   Finally, the Regulation should already establish a forward-looking review and development mandate for more fundamental reforms. This concerns in particular:
   - the potential transition towards final energy consumption as the primary efficiency metric in a progressively electrified vehicle market; and
   - the development of legally robust and methodologically sound approaches to real-world consumption and emissions data.

     Providing such a mandate would ensure that the regulatory framework remains adaptable to technological change and methodological improvements while maintaining legal certainty.

     Taken together, this three-stage approach avoids unnecessarily delaying the legislative process, preserves legal robustness, and enables dynamic improvement of the digital information layer, which can evolve more flexibly than the label itself. At the same time, it prepares the framework for the structural transition towards an increasingly electrified vehicle fleet.

In short, the current legislative phase represents the critical window for embedding behavioural and digital considerations into the core Regulation. While certain refinements can follow at a later stage, structural choices – particularly those affecting search architecture and core information elements – must be addressed now.

5 Conclusion

The Commission's proposal marks a significant step towards modernising the EU vehicle labelling framework. By introducing a harmonised label, extending its scope to digital sales channels, and establishing a central EU database, it lays the foundation for a more coherent and future-oriented system of consumer information. In particular, the shift from a directive to a regulation strengthens legal clarity and internal market integration.

At the same time, this analysis shows that the effectiveness of vehicle information policies can no longer be assessed solely in terms of CO_2-centred and label-based information provision. In a digital and increasingly electrified vehicle market, consumer decisions are shaped upstream – through search filters, platform interfaces and the structure of digital choice environments. Information that is accurate but not encountered at the right moment, or not presented in a decision-relevant format, risks having only limited impact on actual purchasing behaviour.

The central challenge for the ongoing reform is therefore not only to modernise the content of the label, but to ensure that the overall information architecture – including the digital layer – is aligned with how consumers actually make decisions. This requires complementing the harmonised label with behaviourally informed tools: integrating efficiency into search and filtering functions, providing monetised cost information, improving comparability across technologies and over time, and expanding the information base to include real-world performance and charging characteristics.

From a legal perspective, this implies a careful distinction between elements that must be anchored in the basic act and those that can be developed through delegated or implementing acts. While the label's core structure and classification logic remain within the domain of the co-legislators, the EU database offers a flexible space for iterative improvements. A staged approach – combining immediate legislative adjustments, subsequent technical refinement and a forward-looking review mandate – allows the framework to evolve without undermining legal certainty.

Ultimately, the success of the reform will depend on whether it moves beyond a compliance-oriented disclosure regime towards a system that actively supports well-informed and efficient consumer choices. The current legislative process represents a critical window of opportunity to embed such a perspective into the Regulation. If this opportunity is seized, the EU vehicle label can become not only a harmonised information tool, but an effective instrument for guiding decisions in a digital and rapidly transforming mobility market. This is particularly important against the backdrop of Europe's continued dependence on fossil energy, surging and highly volatile oil prices, as well as ongoing debates around so-called technological neutrality and a potential weakening of CO_2 fleet standards, which risk contributing to consumer uncertainty and slowing down the necessary technological transition.