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Independence and transparency of EU expert bodies in the automobile sector – Ten years after Dieselgate, before the European e-car revolution, are emission measurements still hidden and unclear? **

ABSTRACT

The Dieselgate scandal led to the reconsideration of the automobile industry's testing procedures and scientific decision-making competencies. The new testing procedures and the apparent move towards on-road testing led to more realistic measures; however, there is still room for improvement. An even more complicated system of diverse actors and capacities at European and national levels has been built up. Evaluating their independence profiles and transparency as part of the EU composite administration is pivotal to decreasing overreliance on car manufacturers' testing results and providing reliable data for car buyers, as clear concerns were identified during Dieselgate.

Some centralisation steps have been taken towards creating more EU-level expert bodies, yet with diverse mandates – laboratory capacities vs. mediators between national actors vs. information providers. Even a decade after Dieselgate, too many diverse actors have these competencies, with necessarily diverse independence and transparency profiles. The EU must address these concerns, especially in light of the move towards technically even more complicated new hybrid and fully electric car powertrain systems, while striving to keep some of its former dominance over the global car market.

KEYWORDS: Dieselgate; expert bodies; independence; transparency; JRC; EU agencies; electric cars; Draghi Report

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I. INTRODUCTION

The Dieselgate scandal has brought to the forefront concerns about the independence decade. The 2015 Dieselgate, especially the relatively moderate post-scandal reforms, has been heavily criticised by stakeholders and NGOs in the transport and environmental sphere. These ongoing issues have underscored the clear need to strengthen the EU Single Market's (own) scientific capacity and expert bodies' policy choices so that they have strict and far-reaching implications. In the current era of constant economic, environmental, and societal challenges, the need for solid science is not just a necessity but a lifeline, not to mention the dilemma of the EU and its consumers concerning how to make grounded decisions at the end of the era of combustion engines, heading to the e-car revolution, which might lead to similar concerns.

This paper highlights the Single Market's current evolution, in which the independence and the transparency of the EU expert bodies are put under the limelight, yet often relying too much on Member States' *vis-à-vis* manufacturers' scientific capacity. Therefore, it addresses these market deficiencies by describing the independence- and transparency-related concerns of automobile industry-related expert bodies and scientific decision-making. Consequently, it starts with a brief history of Dieselgate, one of the most significant market failures of recent times, combined with a post-scandal examination of the EU institutional landscape that emphasises the role of the expert bodies. Considerations about the evolutionary and theoretical nature of these particular types of bodies will be followed by an examination of the patterns of independence of the reshaped or newly enacted expert bodies, focusing on their status and potential functioning in the post-Dieselgate era. The rest of this article addresses the transparency of such bodies with a view to supporting their accountability and increasing consumers' awareness. Finally, the paper evaluates the current tectonic changes in the automobile industry. Namely, there are clear challenges for the sector associated with entering the new era of hybrid cars, especially e-cars, which may have similar deficiencies in terms of the ability to identify the full spectrum of emissions.

In a broader sense, this paper analyses the EU's composite administration, in which diverse-level actors and experts must cooperate to provide a comprehensive picture of cars' emission performance. As a result, it also reflects the institutional landscape of the automobile sector, which has mainly remained Member-State-centred in its competencies alongside the nationally diverse capacities. As a result, the paper's approach combines an assessment of regulatory, institutional, organisational, and, to some extent, technical changes in the EU's crisis management-related evolution of the post-Dieselgate era. To explore these highly technical issues, the paper has applied desk research of related policy documents and scholarly secondary sources, combined with two interviews conducted with technical experts.

II. DIESELGATE AND THE POST-SCANDAL LANDSCAPE OF THE EU'S EXPERT BODIES

1. A brief overview of Dieselgate

The starting point of the so-called 'Dieselgate' was the United States Environmental Protection Agency's (USEPA's) notice issued in September 2015 to the car manufacturer Volkswagen (VW) Group. Several Volkswagen and Audi models had been launched in the U.S. market with 'clean' diesel engines lacking further selective catalytic reduction equipment (such as an AdBlue tank) to reduce their NO_x (nitrogen-oxide and nitrogen-dioxide) emissions and meet the U.S. requirements in this regard. However, a small group of graduate students from West Virginia University, supported by an NGO (the International Council for Clean Transportation – ICCT), began investigating the "clean diesel" introduced to the U.S. market by conducting real-world driving tests on various European car models. They revealed that the software of several diesel engine models could detect when the models were being tested under laboratory circumstances and accordingly adjust the cars' emissions to meet the minimum requirements ('defeat devices'). This was noticed by the U.S. EPA and the California Air Resources Board (CARB) for the European partners.¹ In the wake of the scandal, senior VW Group officials were forced to resign. The company faces fines that could reach billions of dollars and class action- and other lawsuits,² which have expanded to car suppliers like Bosch³ as the developer of such devices initially meant to avoid stability control malfunctions under laboratory testing cycles.⁴

What made the scandal even more interesting was the non-detection of significant issues with the EU's car type approval and in-service conformity system years before the 2015 Dieselgate scandal. The harmonised framework for approving motor vehicles covers their common registration, sale, and entry into service on the EU level. As for the share of competencies, Directive 2007/46 laid down that the car manufacturer is primarily responsible for the (national) approval process at the national regulatory authority, including all aspects of the approval process and ensuring production conformity. Later, several further provisions were added to this directive,

¹ L. Bovens, The Ethics of Dieselgate, (2016) 40 (1) *Midwest Studies in Philosophy*, 262. DOI: <https://doi.org/10.1111/misp.12060>

² T. Gardner, P. Lienert and D. Morgan, After year of stonewalling, VW stunned US regulators with confession, *Reuters*, (24 September 2015), <https://www.reuters.com/article/usa-volkswagen-deception/insight-after-year-of-stonewalling-vw-stunned-us-regulators-with-confession-idUSL1N11U1OB20150924> (last accessed: 31.12.2024.).

³ Bosch pays 90-million-euro fine over diesel scandal, *DeutscheWelle*, (23 May 2019), <https://www.dw.com/en/bosch-pays-90-million-euro-fine-over-diesel-scandal/a-48843405> (last accessed: 31.12.2024.).

⁴ Interview with MM car development specialist (Teams online platform, 6 January 2025).

including technical details, such as the Commission's technical requirements and the so-called Euro emission norms.⁵

As a result of the Dieselgate scandal, the European Parliament established a special committee that issued a report based on its inquiry (EP Dieselgate Report) in 2017.⁶ The primary deficiencies identified by the Dieselgate Report included failures in testing procedures and severe system-level concerns about the EU's type approval and in-service conformity provisions. This also refers to concerns about the independence of national expert bodies, the insufficient level of their own laboratory capacity, and the lack of EU-level actors in charge of car emissions. In practice, the Member States have relied heavily on tests performed in the car manufacturers' certified laboratories under the supervision of technical services. This has also included consultancy services that support car manufacturers to obtain type approvals – an apparent conflict of interest due to the additional financial link. At the same time, the national authorities were only responsible for validating the procedure.⁷ Additionally, the Commission neither undertook any further technical or legal research or investigation on its own nor by mandating its scientific body (Joint Research Centre – JRC), nor requested any information or further action from the Member States.⁸ Yet, some EU-level expert bodies had signalled the deficiencies associated with Dieselgate in due time, as the 2013 JRC report already mentioned the possible use of defeat devices, while JRC, the in-house expert body of the Commission, started its on-road testing cycles within its laboratories as early as 2007.⁹

2. The post-Dieselgate reforms of EU expert bodies and decision-making

The post-Dieselgate reforms remained relatively weak, especially concerning the identified fraudulent practices.¹⁰ The most ambitious, yet also delayed, part of the reform concerning scientific decision-making and testing procedures was introducing

⁵ M. Frigessi di Rattalma and G. Perotti, European Union Law, in M. Frigessi di Rattalma (ed.), *The Dieselgate. A Legal Perspective* (Springer, Cham, 2017) 179–217.; E. Mujkic and D. Klingner: "Dieselgate:" How Different Approaches to Decentralization, the Role of NGOs, Tort Law and the Regulatory Process Affected Comparative U.S. and European Union Outcomes in the Biggest Scandal in Automotive History, (2019) 43 (7) *International Journal of Public Administration*, 611–620. DOI: <https://doi.org/10.1080/01900692.2019.1644521>

⁶ European Parliament – EP 'Report on the Inquiry into Emission Measurements in the Automotive Sector'. 2016/2215(INI). 2017.

⁷ Ibid. 12.

⁸ Ibid. 10.

⁹ M. Weiss et al., *Analyzing On-Road Emissions of Light-Duty Vehicles with Portable Emission Measurement Systems* (JRC Scientific and Technical Reports, Publications Office of the European Union, Luxembourg, 2011) 31. DOI: <https://doi.org/10.2788/23820>

¹⁰ T. Skupniewicz, The vehicle type approval framework regulation (2018/858): A post-Dieselgate paradigm shift for EU vehicle regulations or a missed opportunity?, (2020) 34 *Studenckie Prace*

new (more realistic) testing requirements. The obsolete NEDC testing cycle¹¹ was replaced by real driving emission rules (RDE) and the ‘Worldwide Harmonised Light Vehicles Test Procedure’ (WLTP), as only mandated as of 2017.¹² This new testing cycle and methodological shift have also led to the broader use of portable measurement devices – a significant step in moving ‘outside laboratory premises’ and making more realistic measurements.¹³ Not to mention the more recent challenges of measuring the environmental footprints of products¹⁴ or, more generally, market participants’ sustainability performance.¹⁵

Further institutional reforms of emission measurement bodies remained mainly Member State-centred, in line with this policy area’s original allocation of competencies. The institutional set-up of the Single Market, partly due to the ECJ case law¹⁶ (Cassis case law), led to the increasing relevance of the first national entry point’s authorities and the mutual recognition clause. The reforms only led to some EU-centralisation of emission measurements. This restructuring also put the diverse level actors’ independence in the limelight, and not just on the applicant (manufacturer) side, which necessarily has interests in swift product authorisation, but also that of diverse Member States’ more substantial expert and laboratory capacities in specific policy sectors.¹⁷

The EU-level capacity of scientific expertise was initially built within the realm of the Commission, which could guarantee the administrative support and background for the functioning of such bodies (in-house expert bodies). The most relevant one is the Joint Research Centre (JRC), which operates as a separate Directorate-General

Prawnicze, Administratywistyczne i Ekonomiczne, 51–61. DOI: <https://doi.org/10.19195/1733-5779.34.4>

¹¹ Regulation No 83 of the Economic Commission for Europe of the United Nations (UN/ECE) – Uniform provisions concerning the approval of vehicles with regard to the emission of pollutants according to engine fuel requirements (OJ L 375 27.12.2006).

¹² European Parliament 5.

¹³ L. Szegedi, EU Expert Bodies in Light of the Glyphosate Saga and the Dieselgate Scandal – Cross-Sectoral Lessons to Be Learned in the Era of Emerging Risk Factors and Constant Crisis Management? (2022) 25 (3–4) *Európai Tükör*, 93–116. DOI: <https://doi.org/10.32559/et.2022.3-4.5>

¹⁴ Environmental Footprint methods are mainly built upon established international standards such as ISO 14000/44.

¹⁵ Sustainability performance indicators also vary across different disciplines and policy areas. Yet, the EU’s post-COVID legislative steps provide more precise measurement guidance on the environmental, social, and governance (ESG) performance of market participants. R. G. Eccles, L-E. Lee and J. C. Strohle, The Social Origins of ESG: An Analysis of Innovest and KLD, (2020) 33 (4) *Organization & Environment*, 575–596. DOI: <https://doi.org/10.1177/1086026619888994>

¹⁶ Case C-120/78, *Rewe-Zentral AG v Bundesmonopolverwaltung für Branntwein*, ECLI:EU:C:1979:42.

¹⁷ Szegedi L., *Az európai közigazgatás fejlődése és szabályozása* (Dialog Campus, Budapest, 2018) 42.

with priorities set by the Commission President while having its own resources and strategic work plan.¹⁸

In another step towards reform, market surveillance is now a shared responsibility, with national authorities conducting separate surveillance from type approval sources. The JRC VELA (Vehicle Emissions Laboratories), due to Dieselpgate, expanded its laboratory capacity as the Commission's in-house expert body, and has been made specifically responsible for the new type (RDE and WLTP-based) vehicle testing.¹⁹

In a further reform of the EU expert bodies, the decentralised agencies' institutional weight became substantial compared to the 'in-house' expert body, publicly seen as an integral part of 'an overly bureaucratic and politicised Commission'. Additionally, the CJEU also concluded that any task conferred upon the Commission that cannot be carried out due to the lack of technical expertise could be left to EU agencies, stressing the agencies' primary role in functioning as bodies of technical expertise.²⁰ These agencies may often have a broader mandate than merely functioning as expert bodies, functioning as collective decision-making forums between national representatives and networking points for sectoral representatives, while having 'classic' administrative functions related to the Single Market. For their internal structure, the management boards of agencies primarily consist of the representatives of Member States, with further involvement of representatives of the Commission, the European Parliament, and stakeholders.²¹ These agencies are non-Treaty bodies as they still lack the proper (sector-neutral) primary legal basis²² for their creation and functioning.²³ Due to their 'non-Treaty' status, some common rules on their establishment and functioning in the form of the soft law Joint Statement and Common Approach of the

¹⁸ D. Guéguen and V. Marissen, Science-Based and Evidence-Based Policy-Making in the European Union: Coexisting or Conflicting Concepts? (2022) (88) *Bruges Political Research Papers*, https://www.coleurope.eu/sites/default/files/research-paper/wp88%20Marisen_Guegen.pdf (last accessed: 31.12.2024.).

¹⁹ F. Rodriguez and J. Dornoff, Beyond NoX Emissions of Unregulated Pollutants From a Modern Gasoline Car, (2019.05.08.) *White Paper*, https://www.researchgate.net/publication/332935022_Beyond_NOx_Emissions_of_unregulated_pollutants_from_a_modern_gasoline_car (last accessed: 31.12.2024.).

²⁰ M. Everson and E. Vos, EU Agencies and the Politicized Administration, in J. Pollak and P. Slominski (eds), *The Role of EU Agencies in the Eurozone and Migration Crisis* (Palgrave Macmillan, Cham,) 35. DOI: http://dx.doi.org/10.1007/978-3-030-51383-2_2

²¹ Joint Statement and Common Approach of the European Parliament, the Council, and the European Commission on decentralised agencies (Common Approach) Point 10.

²² EEA has a sector-specific primary legal basis in the form of Art. 192 TFEU (EC-Treaty Art. 175). Art. 100(2) TFEU [EC-Treaty Art. 80(2)] applies in the case of EMSA and of EASA, and Art. 91(1) TFEU in the case of EUAR.

²³ Article 263.1 of the Treaty on the Functioning of the European Union is almost the only reference to agencies that guarantees judicial review of their acts related to third parties before the Court of Justice of the European Union.

European Parliament, the Council, and the European Commission on decentralised agencies (Common Approach) were enacted in 2012.

NGOs²⁴ would have preferred emissions testing to be carried out by (more) independent environmental authorities, such as in the United States, where the U.S. EPA conducts market surveillance and enforcement activities at the federal level. Yet no new EU road transport agency has been created, even if the EP and other automotive industry representatives have proposed this.²⁵ Especially in the transport, railways, maritime, and air traffic areas, subsectors already had this kind of (more independent) agency, each having inspection powers over the national authorities.²⁶ The lessons of Dieslegate concerning high-level technical needs and diverse national practices would have instead required ‘a single expert body for a Single Market’, yet the outcome of the reform maintained the segmented form of expert bodies and capacities.

Yet, in a broader sense, the environmental sector does have a specific EU agency with a decades-long history. The European Environmental Agency’s creation in 1994 was not necessarily a reaction to a transboundary crisis two decades before Dieslegate; however, it signalled the EU’s commitment to taking care of the environment in light of the substantial amount of EU legislation issued in this area.²⁷ The EEA’s main competencies clearly take the form of an information-agency focus on collecting, processing, and analysing data, providing information for further policy-making, and supporting and stimulating the exchange of information – yet it has not acquired inspection powers, even if these were proposed during its process of creation.²⁸ Sector-specifically, the EEA is responsible for data verifications, checks on new vehicle CO₂ emissions, and reporting missing values and inconsistencies.²⁹ As for its internal structure and scientific bodies, the EEA’s Management Board rules align with its requirements, even if established long before the Common Approach. At the same

²⁴ Lehren aus dem Abgasskandal: Typzulassung von Pkw reformieren und reale Emissionen messen, *VCD*, (17 Dec 2015), <https://www.vcd.org/service/presse/pressemitteilungen/lehren-aus-dem-abgasskandal-typzulassung-von-pkw-reformieren-und-reale-emissionen-messen> (last accessed: 31.12.2024.).

²⁵ MEPs Reject EU Road Agency in Vote for New Post-Dieslegate Car Approval Rules, *Euractiv*, (4 Apr 2017), <https://www.euractiv.com/section/eet/news/meps-reject-eu-road-agency-in-vote-for-new-post-dieslegate-car-approval-rules/> (last accessed: 31.12.2024.); Frigessi di Rattalma and Perotti, *European Union Law*, 209.; Skupniewicz, *The vehicle type approval framework regulation* (2018/858), 55.

²⁶ L. Szegedi, *The Crisis Management of the ‘Dieslegate’ – Transboundary (and) Crisis Driven Evolution of EU Executive Governance with or without Agencies*, (2018) (1) *Európai Tükör*, 92–100.

²⁷ S. Chatzopoulou, *The EU Agencies’ Role in Policy Diffusion Beyond the EU: EEA, EMA and EFSA*, (2018) (1) *TARN Working Papers*, DOI: <https://doi.org/10.2139/ssrn.3105894>

²⁸ M. Mertens, *Voice or Loyalty? The Evolution of the European Environment Agency*, (2010) 48 (4) *JCMS*, 8881–901. DOI: <https://doi.org/10.1111/j.1468-5965.2010.02078.x>

²⁹ European Court of Auditors, *Special report 01/2024: Reducing carbon dioxide emissions from passenger cars*, https://www.eca.europa.eu/ECAPublications/SR-2024-01/SR-2024-01_EN.pdf (last accessed: 31.12.2024.) 15.

time, the adaptation of the decisions typically requires a two-thirds majority. Draft versions of the multiannual and annual work programs will be consulted with the Commission and its scientific committee.³⁰ The committee is to be designated by the Management Board for four years, renewable once, to guarantee some independence.³¹

As a sign of automobile sectoral segmentation, a further body, the Implementation Forum, has been set up to address the diverse interpretation concerns associated with Dieselgate. This Forum, without a real mandate on technical expertise, has been created with representatives of national authorities and a wider circle of interested parties (economic operators, safety, and environmental stakeholders) to facilitate the uniform interpretation and implementation of the related Single Market rules. Within its advisory capacity, the Forum may issue (through consensus or simple majority as a second option) soft law opinions and recommendations.³²

The Union legislator favoured maintaining the segmented form of EU-level expert bodies and capacities after Dieselgate, with expert testing laboratories (JRC VELA as the Commission's in-house body), common interpretation and mediator functions (the Implementation Forum), and reporting mandates (EEA) for different actors in the EU institutional landscape.

III. INDEPENDENCE OF THE EU'S EXPERT BODIES ASSOCIATED WITH THE AUTOMOBILE INDUSTRY

1. Theoretical basis of EU expert bodies' Independence

Primary and secondary EU legislation refers to independence based on particular aspects, often making reference to this requirement.³³ The Treaties of the EU mention the independence of several EU institutions, such as the European Commission, the Court of Justice of the EU, and the European Central Bank.³⁴ The EU Charter of

³⁰ Regulation (EC) No 401/2009 of the European Parliament and of the Council of 23 April 2009 on the European Environment Agency and the European Environment Information and Observation Network (EEA Regulation) [2021] OJ L 243, art 8.

³¹ EEA Regulation art 11.

³² Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC, [2018] OJ L151, art 11.

³³ E. Vos, A. Volpato and G. Bellenghi, *Independence and Transparency Policies of the European Food Safety Authority (EFSA)*, Study Requested by the European Parliament ENVI Committee (2023), 13, [https://www.europarl.europa.eu/RegData/etudes/STUD/2023/740080/IPOL_STU\(2023\)740080_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2023/740080/IPOL_STU(2023)740080_EN.pdf) (last accessed: 31.12.2024.).

³⁴ Art. 17 TEU (Commission); Art. 252–254 TFEU (CJEU); Art. 130 and 282 TFEU (ECB).

Fundamental Rights also clearly refers to the right to good administration,³⁵ especially impartiality. Using the general terms of scholars, the independence of a public body 'can be defined as a status which ensures that a body concerned can act completely freely without taking any instructions or being put under pressure'.³⁶

EU expert bodies are associated with two further reference categories based on their institutional (organisational, budgetary, staffing, and financial side) and functional (being shielded from external actors influencing the entity's activities in performing their tasks) independence.³⁷ Their independence may strongly depend on their status within the EU's institutional landscape, namely the in-house body status of the abovementioned actors and the 'inbetweener' status of EU agencies. Namely, the more independent agencies called 'inbetweeners' function inside a triangle consisting of EU institutions, national authorities, and market participants.³⁸ Functional independence and threats to it can also vary due to various influences.

The institutional independence of in-house expert bodies *vis-à-vis* EU agencies is different due to their direct relationship with the Commission, which has the primary executive authority within the EU. The Commission and single commissioners have a decisive role in the case of the in-house expert bodies, yet do not function as a centralised ministerial administration concerning agencies. The EU agencies refer to certain DGs as 'partners' in their reports.³⁹ Yet, the Commission can substantially impact the expert body's work (even that of more independent agencies) by influencing its staffing policy by initiating the related budget proposals.

A further dilemma arises regarding the EU expert bodies' internal structure and decision-making. The management of in-house bodies refers to the preferences of the Commission (JRC's direct appointment). As the main decision-making body, the independence of management boards of agencies differs within the abovementioned triangle, as is also reflected by the boards' composition, including various interested parties. Even if the national representatives must conform to various integrity-related requirements related to their tasks based on the Treaties, EU Staff Regulations, and the

³⁵ Art. 41 EU CFR refers to every person's right to have their affairs handled impartially, fairly, and within a reasonable time by the institutions, bodies, offices, and agencies of the Union.

³⁶ E. Vos, N. Athanassiadou and L. Dohmen, *EU Agencies and Conflicts of Interests*, Study Requested by the European Parliament Petitions Committee, (2020), 14, [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/621934/IPOL_STU\(2020\)621934_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/621934/IPOL_STU(2020)621934_EN.pdf) (last accessed: 31.12.2024.).

³⁷ Vos, Volpato and Bellenghi, *Independence and Transparency Policies of the European Food Safety Authority (EFSA)*, 14.; Vos, Athanassiadou and Dohmen, *EU Agencies and Conflicts of Interests*, 14.

³⁸ M. Everson, C. Monda and E. Vos, European Agencies in between Institutions and Member States, in M. Everson, C. Monda and E. Vos (eds), *European Agencies in between Institutions and Member States* (Wolters Kluwer International BV, 2014) 4.

³⁹ M. Egeberg, J. Trondal and N. M. Vestlund, The quest for order: unravelling the relationship between European Commission and European Union agencies, (2015) 22 (5) *Journal of European Public Policy*, 620. DOI: <https://doi.org/10.1080/13501763.2014.976587>

sector-specific laws that mandate prioritising EU interests, in practice, national interests might overrule those of the Union ('double hattedness'). As a result, the lowest common denominator solutions may be easier to agree upon, preventing the effective representation of EU interests in Union acts.⁴⁰

As for the functional independence of in-house expert bodies *vis-à-vis* EU agencies, this involves even a broader range of requirements. In the case of the expert bodies, whether they theoretically act independently of external influences depends on their having appropriate resources and being impartial in their scientific decision-making. On the level of individual scientific personnel, these requirements are connected to the abovementioned double-hattedness concerns in a case- or product-specific way, focusing on the scientific personnel's impartiality and conflict of interest policies. This influence may also be relevant from a dual perspective, as EU personnel selection (especially in the case of highly qualified experts) relies on national candidates and, often, on former employees of manufacturers (revolving door practices).⁴¹

Referring specifically to agencies, some scholars already pointed out a decade ago that the independence and impartiality of the scientific internal bodies are core elements of agency independence, rather than concerns about national representatives' double-hattedness.⁴² The functional side also involves policy-specific issues like the given actor's laboratory capacity, enabling in-house bodies and EU agencies to identify potential emission-related concerns regardless of the Member States or manufacturers' laboratory results.

2. Institutional independence – still within the realm of the Commission?

The post-crisis reforms have left the allocation of related competencies relatively Member States-centred, potentially contributing to the heterogeneity of independence on the national level and further independence-related issues on the EU level. As the European Court of Auditors noted after the crisis, only a few Member States (Spain, the Netherlands) have separated market surveillance and type approval authorities and functions, even if NGOs have demanded clear steps be taken towards having more independent national authorities.⁴³

⁴⁰ E. Vos, European Agencies and the Composite EU Executive, in M. Everson, C. Monda and E. Vos (eds), *European Agencies in between Institutions and Member States* (Wolters Kluwer International BV, 2014) 26.

⁴¹ A. Schout and F. Pereyra, The institutionalization of EU agencies: agencies as "mini commissions", (2011) 89 (2) *Public Administration*, 418–432. DOI: <https://doi.org/10.1111/j.1467-9299.2010.01821.x>

⁴² Common Approach Point 20.

⁴³ European Court of Auditors, *The EU's Response to the "Dieselgate" Scandal. Briefing Paper 2019*, 30, https://www.eca.europa.eu/lists/ecadocuments/brp_vehicle_emissions/brp_vehicle_emissions_en.pdf (last accessed: 31.12.2024.).

The newly established EU-level bodies function mainly in ‘the realm of the Commission’. JRC VELA, the Commission’s in-house expert body with laboratory and testing capacities, is a cornerstone of the new institutional setup. Whether new laboratory testing measurements are considered in further policy-making may also be relevant. A recent report pointed out that JRC VELA’s data has not been used to provide feedback on the correctness of cars’ CO₂ emission values, which undermines the overall outcome of the reforms – regardless of the expert bodies’ status regarding independence.⁴⁴

The Implementation Forum also functions within the ‘realm’ of the Commission (competent DG), providing technical, secretarial support and infrastructure for its functioning. At the same time, its membership instead reflects the intergovernmental dynamics of decision-making of the representatives of each Member State, yet peer pressure may also be present.⁴⁵ The European Court of Auditors concluded that the Commission used the Forum as a substitute for networking with national counterparties instead of ensuring the uniform application of CO₂ framework rules and carrying out required assessments.⁴⁶

The work of the two bodies and the new institutional set-up has created inter-reliance as the JRC’s planning of testing cycles partly relies on the inputs of the Forum. Eighty per cent of the JRC’s testing capacity applies to a proactive selection of vehicles (based on risk assessment gathered and shared in the new Forum). The remaining 20% has been based on a reactive (suspicious cars, vehicles with the latest technologies, etc.) approach.⁴⁷ Therefore, the Forum’s rather intergovernmental-influenced decision-making might also impact JRC’s testing activities.

Even if no new EU road transport agency was created after Dieselgate, the history of the EEA may be highly relevant regarding institutional independence. Martens has summarised the first decade of EEA’s history (1994–2003) as the era of inter-institutional tensions due to the political vision of its first director, Mr. Jiménez-Beltrán. He emphasised that policy analyses should be produced by the EEA rather than merely gathering facts.⁴⁸ The EEA also analysed the institutional performance of DG Environment and national authorities, which led to the budget freeze proposals

⁴⁴ European Court of Auditors, *Special report 01/2024*. 20.

⁴⁵ Szegei, *The Crisis Management of the ‘Dieselgate’*, 85–100.

⁴⁶ European Court of Auditors, *Special report 01/2024*. 19.

⁴⁷ P. Bonnel et al., *European Market Surveillance of Motor Vehicles*, (JRC Science for Policy Report, Publications Office of the European Union, 2022), 6. DOI: <https://doi.org/10.2760/59856>; C. Gruening et al., *European market surveillance of motor vehicles – Results of the 2022 European Commission vehicle emissions testing programme*, (Publications Office of the European Union, 2023) DOI: <https://data.europa.eu/doi/10.2760/452119>; V. Valverde Morales et al., *European market surveillance of pollutant emissions from internal combustion engine vehicles*, (Publications Office of the European Union, 2024) DOI: <https://data.europa.eu/doi/10.2760/191638>

⁴⁸ Mertens, *Voice or Loyalty?*, 888–889.

and staffing cuts on the side of the Commission. According to the Commission, the EEA should have focused on its core data-gathering tasks, while it also criticised the EEA for emphasising general analyses without providing complex data for further policy-making.⁴⁹ The later period of inter-institutional partnership (from 2004) led to the reprioritisation of DG Environment's preferences by the EEA, while the EP positioned itself as an ally of the EEA in the budget proposal process.⁵⁰ Additionally, it seems the EEA has tended to maintain its less confrontative attitude, as its 2016 report already revealed the shortcomings of diesel cars' defeat devices without using the term 'exploitation' and instead described the car manufacturers' behaviour as optimising testing procedures.⁵¹

3. Functional independence – split into pieces?

Regarding functional independence, a broader circle of potential influence could be considered, yet further emphasis should be given to the internal rules of impartiality and capacity deficiencies (potential outsourcing). Independence-related heterogeneity regarding the functional aspect of national authorities and expert bodies similarly applies due to their diverse status. Regarding capacity differences, the ECA's recent study revealed that national authorities make highly different numbers of data checks on manufacturers' CO₂ data and apply diverse policies with regard to testing and in-service conformity checks. In contrast, CO₂ testing obligations have often been outsourced by national authorities to private contractors due to a lack of capacity.⁵²

The JRC VELA, a newly enacted actor, accepted its rules on 'Independence, Impartiality of Testing, and Inspection Activities'. Even if these internal rules are much less detailed than those of the agencies described below, they refer to their accreditation details, the JRC's (general) Integrated Management policy, and the 2015 Scientific Integrity Statement. Explicitly referring to the impartiality of the Inspection Body (JRC VELA), it is also stated that inspection services are only provided to European Commission Directorates. No private customers can ask JRC VELA for accredited inspections or tests.⁵³ In practice, this does not necessarily mean the

⁴⁹ Mertens, *Voice or Loyalty?*, 888.

⁵⁰ Mertens, *Voice or Loyalty?*, 890–892.

⁵¹ J.-P. Huteau Skeete, *Examining the role of policy design and policy interaction in EU automotive emissions performance gaps*, (2017) 104 *Energy Policy*, 373. DOI: <https://doi.org/10.1016/j.enpol.2017.02.018>

⁵² European Court of Auditors, *Special report 01/2024*. 20–23.

⁵³ JRC VELA, *Independence and Impartiality of Testing and Inspection Activities*, (2024) https://joint-research-centre.ec.europa.eu/laboratories-z/vehicle-emissions-laboratories_en#statements-for-accreditation-and-independenceimpartiality-of-testing-and-inspection-activities (last accessed: 31.12.2024.).

exclusion of third parties. The JRC's 2020–21 in-service conformity testing also involved a consortium of private laboratories that performed the tests for neither the manufacturers nor the type-approval-granting authorities as a general requirement.⁵⁴ From a broader perspective of outsourcing partnerships, national authorities and EU bodies should also expand their IT and interoperability capacities, as on-board fuel consumption meters (OBFCM) and CO₂ reporting obligations will be enacted in the upcoming years.⁵⁵ The latest article on JRC's integrity framework also highlights some issues: leadership roles don't always prioritize scientific expertise, risking biased policy research, while clear communication to non-experts also remains a challenge.⁵⁶

Although the new Implementation Forum for automobile policy cannot be labelled a 'true' expert body, functional independence might be highly relevant due to its networking point status, channelling diverse national and stakeholder interests. This has been proven in the broader context of automobile emissions by the pre-crisis period's commercial double-hattedness (see the RDE-LDV working group manufacturer-centred representation model) or the more recent revolving door issues⁵⁷ (see postponing stricter Euro7 emission rules). The Forum has its own rules of procedure detailing, to some extent, a publicly available conflict of interest (internal) policy. This refers to the Commission (competent DG) as the main actor and manager of the Forum's conflicts of interest decision-making (reporting and assessing conflicts; taking adequate measures).⁵⁸

As a more decentralised agency, the EEA has the relatively most detailed conflict of interest policy covering EEA staff, following the EU Staff Regulations, the Common Approach's main rules.⁵⁹ Yet, the European Parliament refused to give a budgetary discharge to agencies like the EEA due to concerns about the independence of their experts and staff.⁶⁰ Therefore, the Common Approach has also been amended to include a broader circle of potentially influential personnel,⁶¹ as 'the independence of

⁵⁴ Bonnel et al., *European Market Surveillance of Motor Vehicles*, 23.

⁵⁵ European Court of Auditors, *Special report 01/2024: Reducing carbon dioxide emissions from passenger cars*, 31–32.

⁵⁶ N.E.G. Loevestam, S. Bremer-Hoffmann, K. Jonkers and P. Van Nes, Fostering scientific integrity and research ethics in a science-for-policy research organisation, (2025) 21 (1) *Research Ethics*, 56–75. DOI: <https://doi.org/10.1177/17470161241243001>

⁵⁷ S. Wheaton, Politico Driving through the revolving door before emissions vote, *Politico*, (5 Oct 2023), <https://www.politico.eu/newsletter/politico-eu-influence/driving-through-the-revolving-door-before-emissions-vote-2/> (last accessed: 31.12.2024.).

⁵⁸ Rules of Procedure of the Implementation Forum, Point 14.

⁵⁹ Staff regulations and Obligations of EEA Officials and other servants under the Staff Regulations and Conditions of Employment, articles 11a, 12b, 13 and 16.

⁶⁰ European Parliament, Committee on Budgetary Control A7-0103/2012, 'Report on discharge in respect of the implementation of the budget of the European Union Agencies for the financial year 2010: performance, financial management and control of European Union Agencies' 2011/2232(DEC).

⁶¹ Vos, European Agencies and the Composite EU Executive, 37.

the scientific experts should be fully ensured, inter alia by promoting the highest standards, setting sound selection criteria and promoting best practices'.⁶² As EEA work shifts towards more reliance on IT-network tools in CO₂ reporting systems,⁶³ the dilemma arises whether and how this reliance should later be managed.

IV. TRANSPARENCY OF THE EU'S EXPERT BODIES RELATED TO THE AUTOMOBILE INDUSTRY

1. The EU's general regulatory framework on transparency

Transparency has become the cornerstone of the requirement envisaged by Lisbon's primary law, namely the TEU of open decision-making, which is due to be conducted as closely as possible to citizens. However, EU Regulation No 1049/2001-related (the primary legislative act in this area) long-awaited reform has been pending since 2008, shifting responsibility from the EU legislator to the CJEU and the European Ombudsman, leading to a patchwork-like mixture of diverse EU-level transparency rules.⁶⁴ COVID and other sector-specific turbulences have led to some changes in the EU agencies (new transparency rules for the European Food Safety Authority and European Medicines Agency),⁶⁵ having expert mandates related to the Single Market. Yet, the EU's transparency and openness have remained somewhat blurred sectorally, while digitalisation-related new EU legislation also poses a threat to prioritising explainability (mediated and potentially manipulated information narratives) over true transparency.⁶⁶

2. Technical transparency but far from consumer-friendliness?

In light of the Dieselgate scandal, there has been a clear demand for enhanced accountability and transparency. Therefore, even expert bodies' procedural and methodological processes must be made publicly available and explainable.

⁶² Common Approach, para 20.

⁶³ European Court of Auditors, *Special report 01/2024*. 31–32.

⁶⁴ D. Curtin and A. Rubio, *Regulation 1049/2001 on the right of access to documents, including the digital context*, (Policy Department for Citizens' Rights and Constitutional Affairs, European Parliament, 2024) 9.

⁶⁵ Regulation (EU) 2019/1381 of the European Parliament and of the Council of 20 June 2019 on the transparency and sustainability of the EU risk assessment in the food chain [2019] OJ L231/1.; D. Curtin, *Opening Executive Technocratic Bubbles: Gusts of Transparency in a Turbulent Europe*, in F. de Abreu Duarte and F. Palmiotto Ettore (eds), *Sovereignty, Technology and Governance after COVID19: Legal Challenges in a Post-Pandemic Europe* (Hart Publishing, 2022), 7.

⁶⁶ Ibid. 5.

Furthermore, sector-specific and explainable transparency can influence car buyers' (even resellers') preferences by communicating accurate emission outputs and more comprehensive data on the sustainability performance of diverse automobiles and brands, the latter which has also been enacted as an obligation under the CO₂ Regulation (mainly addressed to the Commission, yet also referring to other actors as well).⁶⁷

The JRC's (and the expanded VELA's) transparency framework is also influenced by its status as the Commission's in-house body, yet some steps have already been taken towards openness. As a result, it only makes available its exhaustive Policy on Integrity, Impartiality, and Independence to customers internal to the European Commission upon request. At the same time, accredited test and inspection results are to be communicated via the Official EU Electronic Platform, while further transparency rules are to be followed in conformity with the 2001 Transparency Regulation and upon individual request.⁶⁸

As for defeat devices, the JRC's first post-Dieselgate 2020–21 in-service conformity testing report could be seen as, to some extent, representative of its transparency performance.

The report tends to reflect JRC's in-house status, as it has been mainly targeted towards the bodies involved in EU market surveillance while remaining rather technical, along with its formulations and three-part structure (requirements and methodologies, the test results, and an overview of the main findings), prioritising accuracy instead of consumer-friendliness.⁶⁹ Yet, an executive summary has softened this approach, increasing the report's potential to impact non-professional consumer preferences. The report clarified that non-compliance under the new emission rules (RDE and WLTP) could still be detected in less than 10% of tested models – interestingly, in gasoline engines that applied Auxiliary Emission Strategies (AES). Moreover, the JRC concluded that their environmental impact might still be significant; therefore, the manufacturers' justification for protecting these engines with fuel enrichment techniques must be approved with extreme care (even if the national approval authorities have approved these AES).⁷⁰ Transparency regarding the gasoline engine-related use of AES could also be necessary for consumers in a

⁶⁷ Commission Implementing Regulation (EU) 2021/392 of 4 March 2021 on the monitoring and reporting of data relating to CO₂ emissions from passenger cars and light commercial vehicles pursuant to Regulation (EU) 2019/631 of the European Parliament and of the Council and repealing Commission Implementing Regulations (EU) No 1014/2010, (EU) No 293/2012, (EU) 2017/1152 and (EU) 2017/1153 [2021] OJ L 77; European Court of Auditors, *Special report 01/2024*, 21.

⁶⁸ European Commission (JRC VELA), *Statements for Accreditation and Independence/Impartiality of Testing and Inspection Activities*, https://joint-research-centre.ec.europa.eu/laboratories-z/vehicle-emissions-laboratories_en (last accessed: 31.12.2024.).

⁶⁹ Bonnel et al., *European Market Surveillance of Motor Vehicles*, 23.

⁷⁰ Bonnel et al., *European Market Surveillance of Motor Vehicles*, 4.

market era that is leaning towards gas and hybrid cars instead of diesel models. Especially in light of recent reports explicitly highlighting the challenges posed by AESs used in petrol engines.⁷¹

The Implementation Forum is a body that mediates between the Member States, the Commission, the JRC, and other stakeholders. Therefore, its transparency profile falls under the horizontal⁷² and sector-specific Commission expert group rules which refer to general accountability rather than consumer-friendliness. Due to the abovementioned proactive selection protocol, this informal accountability might significantly impact other bodies, especially the JRC's work.

Taking the post-Dieselgate regulations and enforcement concerning defeat devices as an example, the Forum dealt with these devices and practices many times from the beginning of its establishment in March 2019. The reference point of the Forum's work was the CJEU's rulings on limiting manufacturers' right to apply such devices in thermal windows to protect car engines.⁷³ The Forum's post-CJEU ruling minutes demonstrated the patchwork of diverse national enforcement practices: identifying no serious risk (thermal windows) (by Germany), referring to still ongoing evaluations (by France and Romania), justifying thermal windows for safe operation (by Italy), and updating testing programs (by Sweden).⁷⁴ The obvious regulatory step from the Commission led to the development of an EU-level notice identifying these devices, which dedicated a specific part to anti-tempering protection and non-acceptable AES.⁷⁵ Recent minutes of the Forum also revealed suspicion of the devices, yet the still-ongoing status of the evaluation has not led to conclusive results.⁷⁶ These publicly available minutes of meetings were not meant to have substantial potential to influence consumer decisions. Yet, it has been revealed that defeat devices remain present, posing a market regulatory and enforcement deficiency almost a decade after Dieselgate.

⁷¹ Gruening et al., *European market surveillance of motor vehicles – Results of the 2022 European Commission vehicle emissions testing programme*; Valverde Morales et al., *European market surveillance of pollutant emissions from internal combustion engine vehicles*.

⁷² Commission, Decision of 30.5.2016 establishing horizontal rules on the creation and operation of Commission expert groups.

⁷³ C-128/20 *GSMB Invest*, ECLI:EU:C:2022:570; C-134/20 *Volkswagen*, ECLI:EU:C:2022:571; M-E. Arbour, *The Volkswagen Scandal at the CJEU: Defeat Devices between the Conformity Guarantee and Environmental Law*, (2022) 13 (4) *European Journal of Risk Regulation*, 670. DOI: <https://doi.org/10.1017/err.2022.32>

⁷⁴ Commission, Minutes on 14th meeting of the Forum for Exchange of Information and Enforcement.

⁷⁵ Commission, Notice Guidance on the identification of the presence of Defeat Devices with regards to emissions of light-duty vehicles approved with Real Driving Emissions (RDE), heavy-duty vehicles and on anti-tampering protection 2023/C 68/01.

⁷⁶ Commission, *Minutes on 18th meeting of the Forum for Exchange of Information and Enforcement*, <https://ec.europa.eu/transparency/expert-groups-register/screen/meetings/consult?lang=en&meetingId=50770> (last accessed: 31.12.2024.).

The EEA's primary mandate is to disseminate information on environmental and sustainability issues. It regularly publishes reports, briefings, datasets, and analyses. In its 2016 report, the EEA revealed the shortcomings of diesel car defeat devices, describing manufacturers' behaviour as optimising testing procedures. Later, the EEA obtained a pivotal role in new vehicles' CO₂ emission reporting, as the agency has been responsible for carrying out semi-automatic data checks and communicating any potential inconsistencies or missing values to reporting countries. The EEA also publishes provisional data on new cars' CO₂ emissions by communicating with national authorities and manufacturers, creating the basis for specifying excessive emission premiums (to be paid by car manufacturers).⁷⁷ Similar to the Forum's information mediator mandate, this reporting system involved publicly available datasets, prioritising accuracy.⁷⁸ Yet, the EEA's latest publications referred to emission decrease trends in a relatively informative manner.⁷⁹ A recent study has identified clear concerns about the overly tight timeframe for the EEA to double-check errors with manufacturers in relation to the reporting system's functioning for 2020. Data optimisation led to a specific IT tool (Reportnet3) for automating the reporting of national authorities and manufacturers. The national authorities' practices might also differ in terms of whether they have formalised electronic type-approval certificates, which could contribute to further delays or swifter inputs in reporting cycles.⁸⁰

The automobile sector's post-Dieselgate transparency landscape takes a step towards technical transparency, with the involvement of EU-level expert bodies and actors introducing more standardised reporting systems and mediatory functions. Yet, in light of the experience of the first decade, especially that of the first year, this constellation of many diverse actors has remained rather segmented and far from transparent in a consumer-friendly way.⁸¹

⁷⁷ European Court of Auditors, *Special report 01/2024*. 15.

⁷⁸ European Environmental Agency, *CO₂ emissions from new passenger cars*, <https://tinyurl.com/3ar55zrf> (last accessed: 31.12.2024.).

⁷⁹ European Environmental Agency, *CO₂ emissions from new cars and vans further decrease as electric vehicle sales grow in Europe*, (2024) <https://www.eea.europa.eu/en/newsroom/news/new-data-co2-emissions-of-new-cars-and-vans> (last accessed: 31.12.2024.).

⁸⁰ European Court of Auditors, *Special report 01/2024*. 23–27.

⁸¹ European Court of Auditors, *Special report 01/2024*.; Commission reply to Special Report 2024/1 – Point III (b).

V. AT THE BEGINNING OF A NEW ERA?

1. The erosion of the EU's leadership of the car industry

As the 2024 Draghi Competitiveness Report outlines, the 2020s mark a new era for the European car industry, while the EU's traditional leadership in the automotive industry has been eroded.⁸² A clear move towards green mobility characterises these profound changes, as the transport sector is among the most significant contributors to EU greenhouse gas emissions. Reducing transport emissions is vital to achieving the EU's 2050 climate neutrality objective.⁸³ Next to competitiveness and sustainability considerations, this new era has led to commercial policy turbulence in the global market. The EU applied tariffs on Chinese EVs using the newly enacted Foreign Subsidies Regulation⁸⁴ to protect the Single Market's manufacturers, a debated measure that polarises diverse Member States⁸⁵ based on their technological and commercial preferences. Hungary, celebrating the 20th anniversary of its EU accession and the Presidency of the Council of the EU in 2024, has positioned itself in favour of the EV revolution by inviting Chinese representatives of the EV industry (battery and car manufacturers) to its territory in recent years, while also opposing the introduced EU tariffs.⁸⁶

Even the internal combustion engine (ICE) era led to challenges concerning compliance with technical requirements, including emission requirements. In those cycles, even relatively minor changes in technical recalibration required close cooperation between component developers, car manufacturers, and policymakers.⁸⁷ *One of the apparent challenges of the automobile industry entering this new era of EVs and software-based cars includes* similar deficiencies in identifying the full spectrum of emissions. Therefore, there is a clear dilemma for EU policy-makers and legislation: how to renew the testing cycles beyond the previous reform's new approach (applied in

⁸² Commission, *The future of European competitiveness* (2024), (Draghi Report) 140, https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en#paragraph_47059 (last accessed: 31.12.2024.).

⁸³ European Environmental Agency, *New registrations of electronic vehicles in Europe* (2024), <https://www.eea.europa.eu/en/analysis/indicators/new-registrations-of-electric-vehicles> (last accessed: 31.12.2024.).

⁸⁴ Commission, *Foreign Subsidies Regulation* (2023), https://competition-policy.ec.europa.eu/foreign-subsidies-regulation_en (last accessed: 31.12.2024.).

⁸⁵ European Council on Foreign Relations, *Divided we stand: The EU votes on Chinese electric vehicle tariffs* (2024), <https://ecfr.eu/article/divided-we-stand-the-eu-votes-on-chinese-electric-vehicle-tariffs/> (last accessed: 31.12.2024.).

⁸⁶ International Institute for Strategic Studies, *The EU's approach to tariffs on Chinese electric vehicles* (2024), <https://www.iiss.org/publications/strategic-comments/2024/10/the-eus-approach-to-tariffs-on-chinese-electric-vehicles/> (last accessed: 31.12.2024.).

⁸⁷ Interview with MM car development specialist (Teams online platform, 6 January 2025).

RDE/WLTP cycles), as the ambitious target of zero emissions by 2035 was mainly based on tailpipe measurements.

The International Energy Agency has concluded that the carbon footprint of EVs (emissions associated with the production of vehicles and their components) is generally higher than that of ICE vehicles at the production stage due to the energy intensity and carbon footprint associated with battery manufacturing using current technologies (including raw material mining and processing).⁸⁸ In contrast, Bloomberg has reported that EVs are associated with potentially lower lifecycle emissions than ICE cars, stressing the initial battery manufacturing period, later followed by a reduced footprint depending on the region-specific grid where EVs are charged.⁸⁹

New methodologies and measurement cycles are required to consider a more comprehensive mix of different emissions (beyond decarbonisation limits) and an extended life-cycle approach (ultimately, not always justifying the cleaner status of EVs), as also concluded by the Draghi Report. Following these modification-related necessities, the Commission is already working on a methodology (to be completed by 2025) for those manufacturers who may want to report voluntarily data on CO₂ emissions throughout the complete life cycle of cars and vans sold in the EU market.⁹⁰ Our expert interview also referred to the highly complex nature of e-car emissions, comprising a wide range of outputs not necessarily related to the powertrains but also the comfort specifications applied in new car models. Moreover, these outputs also interfere with each other within a single model, causing various regulatory and technical challenges.⁹¹

There is an ongoing debate about the future of powertrain regulation, as the Commission seems to be deprioritising its green ambitions to foster the EU's competitiveness. Referring back to the influence of lobbyists, it appears that the automotive industry may successfully fight back against EU CO₂ penalties and even overturn the 2035 ban on combustion engines.⁹²

⁸⁸ International Energy Agency, *Comparative life cycle greenhouse gas emissions of mid-size BEV and ICE vehicle* (2024), <https://www.iea.org/data-and-statistics/charts/comparative-life-cycle-greenhouse-gas-emissions-of-a-mid-size-bev-and-ice-vehicle> (last accessed: 31.12.2024.); Draghi Report, 147.

⁸⁹ No Doubt About It: EVs Really Are Cleaner than Gas Cars, *BloombergNEF*, (21 March 2024), <https://tinyurl.com/48k7j2we> (last accessed: 31.12.2024.).

⁹⁰ Draghi Report, 147.

⁹¹ Interview with BGG car development specialist (Teams online platform, 2 April 2025).

⁹² C. Randall, EU considers new plug-in hybrid regulation after 2035, *Electrive*, (5 Febr 2025), <https://www.electrive.com/2025/02/05/eu-examines-new-plug-in-hybrid-registrations-after-2035/> (last accessed: 31.12.2024.).

2. New Powertrains, Same Measurement Problems?

As the automobile sector enters this new era, new challenges and needs for reform have emerged for the EU expert bodies.

The JRC VELA could acquire new testing facilities specified for electric and hybrid vehicles (VELA 8), electromagnetic testing (VELA 9), and smart grid interoperability. Furthermore, these new facilities will create a transatlantic bridge with JRC's partner facility at the U.S. Department of Energy's Argonne National Laboratory.⁹³ Similar to the case of the global-level WLTP, these collaborations could also contribute to the EU market's swifter integration into leading technological standardisation procedures. Moreover, this could also support JRC's and VELA's functional independence by involving transatlantic peers, ensuring the further harmonisation of testing procedures and technology validation, and facilitating e-mobility through interoperability.

The Implementation Forum's recent minutes demonstrate that further issues regarding EVs and ICEs' emission measurements and testing divergences have emerged. These also refer to Member State delays in submitting market surveillance verification reports to EU actors and the diverse national practices involved in making the national testing results publicly available.⁹⁴

The EEA and Commission's preliminary analysis (along with other studies) of plug-in hybrids (PHEVs), which ought to play a leading role in the coming years, recently revealed a substantial gap (3.5 times higher CO₂ emissions) between their laboratory and real-world testing results.⁹⁵ PHEVs have theoretically been considered low-emission vehicles, assuming that they are driven more frequently electrically. Yet, much more frequent combustion engine use of PHEVs has been observed, especially in the case of company-owned PHEVs, since employers usually pay for fuel without providing further incentives for employees to recharge the PHEV batteries.⁹⁶ This dilemma also makes it obvious how many factors (including financial and consumer preferences) must be considered when analysing real-world emissions.

Interestingly, one actor has already taken steps towards whole life-cycle measurements – even if only at the pilot project stage. Green EuroNCAP is hosted and supported by the private consortium of the European New Car Assessment Programme. It has designed the new methodology adhering to the international consensus that the

⁹³ European Commission (JRC VELA), *EU Interoperability Centre for Electric Vehicles and Smart Grids*, https://joint-research-centre.ec.europa.eu/laboratories-z/eu-interoperability-centre-electric-vehicles-and-smart-grids_en (last accessed: 31.12.2024.).

⁹⁴ Commission, Minutes on 18th meeting of the Forum for Exchange of Information and Enforcement.

⁹⁵ European Court of Auditors, *Special report 01/2024*. 33.

⁹⁶ ICCT, *Real World Usage of PHEVs in Europe*, <https://theicct.org/wp-content/uploads/2022/06/fs-real-world-phev-use-jun22.pdf> (last accessed: 31.12.2024.).

environmental effects of transportation systems can only be genuinely analysed based on Life Cycle Assessment (LCA), including the various facilities' production, operation, and end-of-life treatment,⁹⁷ even if LCA data does not allow for the integration of greenhouse gases originating from vehicle production and recycling into the rating system because the values differ from case to case, and the information used for the analysis is on available a generic, statistical level, which does not allow for differentiation between the production emissions of different cars.⁹⁸ However, it might be advantageous to use more comprehensive LCA methodologies. Moreover, its current results and factsheet data, made publicly available on its webpage, tend to be the most consumer-friendly of all the other tools presented earlier.⁹⁹

VI. CONCLUSIONS

Ten years after Dieselgate, before the European E-Car revolution, car emission measurements still need to be clearer. Yet, the post-Dieselgate era led to several positive changes in emission measurement.

RDE and WLTP have proven to be more realistic than the NEDC. However, the most recent analyses have demonstrated that precise emission measurement would also require the inclusion of several factors and diverse market and consumer/user scenarios. It was identified in 2016 that new WLTP rules inherently involve flexibilities that car manufacturers can exploit further.¹⁰⁰ Moreover, concerning the JRC VELA's electromobility-specific devices, the latest testing facilities have only started operating to monitor e-cars' broader (including electromagnetic) emissions spectra, requiring further adjustments for measuring this new type of emissions. On the regulatory and user scenario side, PHEV powertrains' mixed (and as described, to some extent distorted) electric vs ICE usage has also had to be addressed, which seemingly led to readjustments¹⁰¹ by the Commission. Not to mention the demand for a shift towards a more sophisticated life-cycle approach, especially with new powertrain technologies.

Considering the future challenges of Union legislators, the EU must meet diverse expectations, including legal certainty for market participants as product developers (applicants), with well-detailed criteria to be fulfilled prior to their products entering the Single Market, while guaranteeing protection for Union citizens. Despite

⁹⁷ Win-win-win: Cleaner Cars through Better Environmental Impact Assessment, *EUObserver*, (14 Sep 2023) <https://euobserver.com/stakeholders/157424> (last accessed: 31.12.2024.).

⁹⁸ Euro Green NCAP, *Scope*, <https://www.greenncap.com/scope/> (last accessed: 31.12.2024.).

⁹⁹ Euro Green NCAP, *Life Cycle Assessment Results*, <https://www.greenncap.com/european-lca-results/> (last accessed: 31.12.2024.).

¹⁰⁰ TNO, NEDC/WLTP comparative testing, <https://publications.tno.nl/publication/34622355/ZCzWY2/TNO-2016-R11285.pdf> (last accessed: 31.12.2024.).

¹⁰¹ Revision of the Utility Factor calculation described in Annexe XIV of Regulation (EU) 2023/443.

this, the inevitable flexibilities of such a highly complex policy area of transportation have led to significant inconsistencies: during Dieselgate, market participants' exploitative activities undermined the abovementioned protective goals, resulting in only formal-level conformity. There is a clear need for a better simulation of consumers' circumstances within the EU's testing procedures. This justifies the broader involvement of the relevant data sources combined with the analysis of further user and market scenarios (including typical vs realistic usage). This supports the strengthening of disciplinary pluralism, which could be an integral part of this policy framework associated with potentially more comprehensive data sets and methodological plurality.

The attempts at institutional and organisational reform regarding the EU expert bodies and the allocation of competencies create a rather vague picture. As the automobile industry policy area has maintained its Member States-centred competencies, EU legislators have also taken steps towards better coordination between the Member States with the new Implementation Forum (yet without this being a true expert body) and strengthening EU-level laboratory capacities by creating the vehicle sector-specific JRC's VELA (yet without making a new Road Transport Agency). Regardless of the post-Dieselgate reforms, the role of the EEA has also been strengthened as a reporting body for CO₂ emissions recently. The independence profiles and mandates of these new or reformed actors have remained formally diverse and segmented in their functions, demonstrating the need for enhanced mediation and clear communication between them in search of precise emission data on the European car market. The openness of their functioning could be labelled rather technical due to their interrelated status and the segmented share of competencies of related type-approval and in-service conformity procedures. Yet, consumer-friendly transparency is to be promoted by the Commission, which can be demonstrated through the communication practice associated with the Euro GreenNCAP (even if formally independent from the EU composite administration). The increased use of IT tools could shed light on the intrabody communication between actors at different levels and with varying mandates, while this could also streamline the EU composite administration's functioning by introducing common procedures, even having a 'best practice effect' on national actors in their reporting cycles.

The EU agency cannot be labelled an 'always-true solution' as it is a more formally independent expert body. Yet, its institutional weight may be substantial compared to an 'in-house' expert body publicly seen as an integral part of 'an overly bureaucratic and politicised' Commission. The creation of (more) independent expert bodies, even such as a new EU road transport agency, has been proposed by the EP and other representatives of the automotive industry.¹⁰² This could potentially have a more proactive attitude, with greater motivation to strengthen its self-profile and act as a

¹⁰² Frigessi di Rattalma and Perotti, *European Union Law*, 209.

sector-specific counterbalance against global market players.¹⁰³ Considering the highly diverse U.S. administration, especially CARB's activity during Dieselgate, the potential for a sectorally more independent agency seems proven. This kind of independence, already evaluated from an institutional and functional perspective, could be substantial if it is associated with a more independent communication-related profile that could contribute to a sector-specific expert body's credibility. In recent years, the evolution of other EU agencies has also demonstrated that cross-sectoral learning might be of added value, especially in moving from fragmented to cross-sectoral transparency and openness.¹⁰⁴

In an era of the contested credibility of sound scientific decision-making, the EU's credibility relies on the added value of EU-level experts (and expert bodies), the smooth operation of communication systems, and an openness to the broader European public. EU-level expert bodies, therefore, might have a pivotal role in ensuring further integration of the EU (Single Market) into global standardisation processes and the EU car industry regaining a competitive edge with their shift towards precise (realistic) emission measurement and more credible communication.

¹⁰³ Szegedi, The Crisis Management of the 'Dieselgate', 90–100.

¹⁰⁴ A. de Boer, M. Morvillo and S. Röttger-Wiertz, Fragmented Transparency: The Visibility of Agency Science in European Union Risk Regulation, (2023) 14 (2) *European Journal of Risk Regulation*, 1. DOI: <https://doi.org/10.1017/err.2022.47>