

Extended Event Report with Recommendations

Sustainable Prosperity for Europe programme Climate and Energy Platform

22 June 2021

Towards zero-emission vehicles

Executive summary

Reducing greenhouse gas emissions from the road transport sector, which accounts for 20% of the European Union's total emissions, will be key to achieve the EU's climate targets. Zero-emission vehicles (ZEVs) will play an essential role in doing so. With the kind support of the UK Presidency of the UN Climate Change Conference 2021, the European Policy Centre (EPC) organised two multistakeholder discussions to discuss greening the road transport sector through the uptake of zero-emission vehicles.

Supporting policies (e.g. targets, regulation) combined with government investment are necessary to complement ZEVs' role in reducing emissions from road transport. The following recommendations for those policies were drawn from these discussions:

- **Set clear road transport targets based on an EU-wide discussion on climate and employment effects.** A discussion about the targets for road transport and their effect on climate and employment can help to clarify trade-offs to be made between the road transport sector and other sectors, and build greater consensus about the way forward.
- **Set up a cohesive policy and investment framework for zero-emission vehicles.** Several regulatory instruments which are under review (such as the Emissions standards for cars and vans, the Renewable Energy Directive, Energy Taxation Directive and the Alternative Fuels Infrastructure Directive) should be aligned with the objectives for ZEVs. In addition, most stakeholders agree that the lack of investment in charging infrastructure remains an important barrier. The National Recovery and Resilience Plans present a unique chance for such investments to accelerate the transition to sustainable mobility.
- **Deliver on the Green Deal's social promise in the road transport sector.** In order to do so, short-term impacts (e.g. changes in labour markets and supply chains) of the increased uptake of ZEVs must be managed. At the same time, the EU also needs to be ready for the medium- to long-term perspective of fast-paced growth in international ZEV demand (and international action to encourage their uptake). EU and national tools must be used to support the re- and upskilling of employees.

The European Policy Centre (EPC), with the kind support of the UK Presidency of the UN Climate Change Conference 2021, organised two multistakeholder discussions to reflect on the state of play and prospects for greening road transport. On 25 February 2021, a Policy Dialogue entitled "Fit for 2030: role for road transport?" took place, followed by an Online Workshop, entitled "The road to zero emission vehicles", on 17 March 2021.

These discussions considered the context and implications of increased climate ambition on road transport in Europe, the main elements of the European Commission's new Mobility Strategy, and the potential for EU policies and investment to support the market for zero-emission vehicles (ZEVs).¹

At the events, several aspects of the transition to ZEVs were considered, such as the role for regulation (i.e. emission standards) and financial instruments in encouraging their uptake, the barriers to be addressed and the elements for a just transition.

Towards a climate-neutral economy: The role of road transport

Bringing the EU in line with its 2030 goal of reducing greenhouse gas (GHG) emissions by at least -55% and the 2050 goal of obtaining climate neutrality will require a significant decarbonisation effort across society. Road transport represents a particular challenge, as it accounts for 20% of the EU's GHG emissions, of which almost 75% come from conventional cars and vans. Moreover, whereas emissions from certain sectors (e.g. industry, energy) have shown a gradual but constant decline, transport emissions have been oscillating around similar levels over the last decade.²

The European Commission's recent Sustainable and Smart Mobility Strategy, published in December 2020, recognises that ZEVs and the development of the required technologies (e.g. batteries, hydrogen) are necessary for the EU to reach its climate goals, including reducing the transport sector's emissions by -90% by 2050. Several European initiatives are under development to promote more sustainable mobility, including in road transport.³

The state of play: Zero-emission vehicle market developments

The momentum is rising globally for ZEVs like electric and hydrogen-powered vehicles, with Europe being one of the main, growing markets. In 2020, a year marked by an estimated -14% decrease in vehicle sales due to the COVID-19 crisis, the market for electric vehicles (EVs) rose by about +40% globally.⁴ In the EU, ZEV sales more than doubled. The EU can therefore be considered an important motor behind the growth of the ZEV market with EV sales outperforming China for the first time since 2015.⁵ Although market factors drive the sector's development globally, the higher penetration of ZEVs in the EU market can be attributed to regulatory and financial incentives at the EU and national levels.

¹ See Annex for the Policy Dialogue and Workshop programmes, including lists of speakers.

² *European Environment Agency*, "[Greenhouse gas emissions by aggregated sector](#)" (accessed 26 February 2021).

³ See Šipka, Stefan (2020), "[Towards road transport fit for a green and digital future](#)", Brussels: European Policy Centre.

⁴ Gorner, Marine and Leonardo Paoli (2021) "[How global electric car sales defied Covid-19 in 2020](#)", Paris: International Energy Agency.

⁵ Irle, Roland, "[Global Plug-in Vehicle Sales Reached over 3,2 Million in 2020](#)", *EV-volumes.com* (accessed 18 March 2021).

The EU ambition to make road transport more sustainable is reflected in the Commission's Mobility Strategy, which calls for policies that increase the development of innovative vehicle technologies and demand for ZEVs. The Strategy sets the objective of having at least 30 million EVs on roads by 2030.

In the keynote address during the Policy Dialogue, the need to irreversibly shift to zero-emission mobility was highlighted considering the Green Deal objective of reducing transport emissions by -90%. A representative of the manufacturing industry stressed that, from the vehicle offer perspective, manufacturers are ready for greener road transport, mentioning the increased offer of battery electric vehicles (BEVs) and plug-in hybrid electric vehicles. The panellists highlighted that the shift to ZEVs is not only happening for cars and vans but also heavy-duty vehicles.

However, **barriers to the ZEV market** remain. The main issues that were highlighted during the discussions are the development of charging infrastructure, investment in ZEV R&D, affordability and fleet renewal. Participants in the Policy Dialogue and Workshop agreed that supporting policies (e.g. targets, regulation) combined with government investment are necessary to complement ZEVs' role in decarbonising road transport.

What role for regulation and finance?

Speakers at both events recognised the importance of **clear targets**, which guide and direct regulation and finance. The Commission's objective of having 30 million EVs on European roads by 2030 is one example. However, several countries – including member states of the EU – have gone much further.⁶ Some countries decided, for example, to phase out internal combustion engine (ICE) vehicles by a set date or set targets for ZEV phase-in. The signalling function of targets can incentivise the uptake of ZEVs effectively, as it guides choices of policy makers and manufacturers alike. This creates a long-term perspective for citizens, investors and industry, which can also encourage a more constructive policy dialogue on greening road transport.

In terms of EU regulation, the potential role for the upcoming **carbon dioxide emission standards for cars and vans**⁷ – for which a Commission proposal is expected in July 2021 – was highlighted during both discussions. While emission standards are commonly recognised as being the main driving factor behind the increased uptake of ZEVs, there was a debate on whether their review should set more stringent, intermediate targets. Some argue that a more ambitious 2025 target is required to provide incentives for increased ZEV uptake in the coming decade. The industry, however, is concerned that such measures come too soon, putting the profitability of the EU car manufacturing sector – and the transition towards ZEVs – at risk.

The discussion about emission standards highlighted the challenge of transforming the car manufacturing industry while simultaneously reducing emissions as quickly as possible. This dilemma was referred to during the Policy Dialogue as the 'ambition loop': strong policy (e.g. emission standards regulation), necessary to combat climate change, drives ambition in the private sector. But in turn, it also raises

⁶ Wappelhorst, Sandra and Hongyang Cui, "Growing momentum: Global overview of government targets for phasing out sales of new internal combustion engine vehicles", *The International Council on Clean Energy*, 11 November 2020.

⁷ *European Commission*, "CO₂ emission performance standards for cars and vans" (accessed 29 March 2021).

expectations for further ambition and action among policymakers. He highlighted the possibility for industry to rise to the challenge, with transitional innovation outpacing policy quickly. He mentioned that the Smart and Sustainable Mobility Strategy will be rapidly (out)dated. Several examples of the momentum behind the transition were mentioned, such as the European Automobile Manufacturers' Association's (ACEA) promise to achieve fossil-free heavy-duty vehicles.⁸

Besides targets and regulation, **investment** will be necessary to create the market conditions for and remove barriers to the uptake of ZEVs. One of the main areas where some degree of government financing will be needed is the creation of an adequate EU network of EV charging points.

Speakers and participants of the Policy Dialogue were unanimous about this need to **develop charging infrastructure**. These thoughts echo the recent joint statement of vehicle manufacturers, green non-governmental organisations (NGOs) and consumer groups calling for a million public chargers in the EU by 2024⁹. The industry sees an important bottleneck in infrastructure, saying that consumers will not buy EVs if they do not know where to charge them. While the Commission's Mobility Strategy sees 3 million charging points publicly available by 2030, much work remains to be done, as there are still notable differences in the availability of charging points between member states.¹⁰

In addition to investment, the regulatory framework should also facilitate the rollout of charging infrastructure. The Commission could, for example, encourage member states to develop an essential charging network as part of the review of the alternative fuels infrastructure directive (AFID; 2014/94/EU).¹¹

Even though the concerns about the charging network are warranted, it must be noted that developing charging infrastructure also requires demand. In other words, increased uptake of ZEVs is required – several charging points are currently underused. An initial investment by governments can help speed up the availability of charging points even where it is not profitable for the private sector. Nevertheless, private investment will be the main driver as the demand for ZEVs and their chargers increases.

For industry to transition to ZEVs and remain competitive, investment will also be required for **innovation**. This includes developing not only battery technology and BEVs but also alternative technologies like hydrogen technologies. During the Policy Dialogue, the European Investment Bank's (EIB) role in supporting these efforts was presented. It has set itself objectives to drive down ZEV costs, support first-movers and create new markets for European companies. It also aims to increase its share of climate and sustainable investment to 50% by 2025. Some examples include €1 billion to support battery production via InnovFin, or recently announced plans to invest €700 million in sustainable transport.

In addition, the Next Generation EU recovery fund, particularly its **Recovery and Resilience Facility**, can play an important role in financing the supply and demand

⁸ European Automobile Manufacturers' Association, "[All new trucks sold must be fossil free by 2040, agree truck makers and climate researchers](#)", Brussels/Potsdam, 15 December 2021.

⁹ Transport & Environment, "[EU should target 1m EV public chargers by 2024, say carmakers, environmentalists and consumer groups](#)", Brussels, 10 February 2021.

¹⁰ European Automobile Manufacturers' Association, "[Interactive map: Correlation between electric car sales and availability of charging points \(update\)](#)" (accessed 22 March 2021).

¹¹ Hildermeier, Julia, "[The expansion of Europe's EV charging infrastructure: new rules and incentives needed](#)", *Energy Post*, 14 September 2021

of ZEVs.¹² These budgets represent an important element in the emissions reduction strategy for 2030.

Employment prospects and just transition considerations

The vehicle manufacturing sector is a major employer, representing (directly and indirectly) 6.1% of EU employment.¹³ The shift to more sustainable mobility (and possibly fewer cars), as well as from petrol and diesel cars to ZEVs, will impact the car industry, supply chains and thus workers. This applies to the labour skills required now and in the future, and to the workers' communities.¹⁴

Speakers and participants of the Workshop shared the view that understanding and addressing **impacts on employment** is an elementary part of the transition. A representative of trade unions expressed concerns about the pace of the transition to ZEVs and mentioned the need for a comprehensive strategy to support workers. Vehicle manufacturers also pointed out these issues. The challenge of a changing vehicle market is not a uniquely European one: the international market is also rapidly changing. The recent rise in climate ambitions (in e.g. the US, Japan, China) is also expected to raise scrutiny of emissions in the road transport sector internationally. For the EU car manufacturing industry to remain competitive and drive employment, it will have to develop into a frontrunner in ZEV production, regardless of its internal policies.

Still, supporting workers across the entire supply chain of vehicle manufacturing will be a particular challenge as the sector undergoes these changes. As jobs in the 'traditional' sector will inevitably change and even disappear as the demand for ZEVs grows, workers will need reskilling and up-skilling training. Battery production is a sector where we can expect job growth thanks to the transition, including in regions that struggle with high unemployment rates. The development of new technologies (e.g. hydrogen technologies) offer further opportunities for the sector to develop its competitiveness. As a result, the EU can offset job losses to the fullest extent by, for example, implementing policies that enable the extensive retraining of workers.

Another social dimension that should not be ignored for the transition to succeed is **the affordability of ZEVs** for low-income households. Whereas environmental NGOs point out that BEVs will be the most cost-effective ZEVs in the long run, the auto industry argued that the conditions are not yet there for them to be competitive in terms of price. The post-COVID-19 national Recovery and Resilience Plans (RRPs) can play an important role in supporting the demand for ZEVs. However, its affordability will also be affected by the EU dimension, for example, the upcoming review of the Renewable Energy Directive (RED II; 2018/2001), the Emissions Trading System or the Energy Taxation Directive (ETD; 2003/96/EC).¹⁵

POLICY RECOMMENDATIONS

Based on the two EPC events, the following recommendations can be made to EU policymakers.

¹² See Pilati, Marta (2021), "[National Recovery and Resilience Plans: Empowering the green and digital transitions?](#)", Brussels: European Policy Centre/Konrad-Adenauer-Stiftung EU.

¹³ *European Commission*, "[Automotive industry](#)" (accessed 31 March 2021).

¹⁴ See Bjerkem, Johan and Marta Pilati (2019), "[An Industry Action Plan for a more competitive, sustainable and strategic European Union](#)", Brussels: European Policy Centre. Dhéret, Claire; Simona Guagliardo; and Mihai Palimariciuc (2019), "[The future of work: Towards a progressive agenda for all](#)", Brussels: European Policy Centre.

¹⁵ See López Piqueres, Sofia and Sara Viitanen (2020), "[On the road to sustainable mobility: How to ensure a just transition?](#)", Brussels: European Policy Centre.

- **Set clear road transport targets based on an open discussion on climate and employment effects**

The EU must find the right balance between a fast transformation of vehicle manufacturing on the one hand, and a swift integration of ZEVs into the market to achieve climate ambitions on the other. Although cushioning policies can minimise the negative effects of the transition for the car manufacturing sector, the changes in the vehicle market will necessarily include trade-offs. Targets can guide choices of policy makers and manufacturers alike, and provoke an open societal discussion about such trade-offs: they can only be credible if they are aligned with the EU's broader climate and social ambitions.

Targets give an important signal to the market about the direction of travel (regardless of whether they are phase-in or phase-out targets). They function as a point of reference in policymaking, remove unclarity, and provide a basis for cooperative dialogue between governments, car manufacturers and other stakeholders about the measures needed to implement these targets.

If the European Union is to enter a new 'roaring twenties', its climate ambition must match. The road transport sector is a crucial area where the EU should show this ambition. By considering closely whether its current targets (e.g. 30 million ZEVs by 2030) are aligned with these ambitions – and whether trade-offs must be made in this sector or elsewhere –, the EU can create a more open discussion. Such an open discussion is a precondition for deciding how to reflect the targets in EU legislation.

- **Set up a cohesive policy and investment framework for zero-emission vehicles**

For road transport to help the EU meet its climate goals and reduce air pollution, a comprehensive EU policy and investment framework for ZEV development and deployment must be created.

The review of the emissions standards for cars and vans is often highlighted as the most important instrument for increasing ZEV uptake. Other upcoming reviews, such as of the RED II, ETD and AFID, can also contribute to these efforts. For road transport to carry its weight in emission reductions, ZEV uptake must increase significantly. When reviewing the relevant legislation, the EU should consider closely whether its legislative actions are charting the right path to its goal of reducing the transport sector's emissions by -90% by 2050.

Investment also has an important role to play and should target both the supply (i.e. innovation) and demand (i.e. incentivising uptake) necessary for ZEV development and deployment. The national RRP present a unique chance for investments that accelerate the transition to sustainable mobility. While charging infrastructure must be expanded quickly, government investment should be approached carefully to prevent private investment from being crowded out.

- **Deliver on the Green Deal's social promise in the road transport sector**

The Green Deal promises a transition where "no person and no place is left behind".¹⁶ In order to do so for road transport, short-term impacts (e.g. changes in labour markets and supply chains) must be managed. At the same time, the EU also needs to be ready for the medium- to long-term perspective of fast-paced growth in international ZEV demand (and international action to encourage their uptake). The European car industry's competitiveness and role as a source of employment will depend on its ability to provide attractive and sustainable products to the market. EU and national tools must be used to support the re- and upskilling of employees.

¹⁶ *European Commission, "A European Green Deal"* (accessed 27 April 2021).

Lessons can be learnt from other past and ongoing transitions (e.g. energy transition in coal regions) to set a course of action.

In order to leave no person behind, making ZEVs – and zero-emission transport, more broadly – available to all EU citizens will prove challenging. The EU and its member states can improve the framework (via e.g. fuel prices, vehicle rebates, tax incentives) to increase the affordability of ZEVs or other forms of sustainable mobility for low- and medium-income households. Investment should also be made in affordable, sustainable mobility (e.g. hydrogen or electric buses, cycling).

ANNEX: Programmes for the Policy Dialogue and Workshop

Friday 26 February 2021 ONLINE POLICY DIALOGUE

Fit for 2030: what role for road transport?

PROGRAMME

- 11.00 *Introductory remarks*
Annika Hedberg, Head of Programme, EPC
- 11.05 *Keynote speech*
Maja Bakran, Deputy Director-General, DG MOVE, European Commission
- 11.15 *Panel discussion*
Kris Peeters, Vice-President, European Investment Bank
Stephan Neugebauer, Chairman, European Green Vehicles Initiative Association
Julia Poliscanova, Senior Director for Vehicles and Emobility, Transport & Environment
Nigel Topping, High-Level Climate Action Champion for COP26
Maja Bakran, Deputy Director-General, DG MOVE, European Commission
- 12.00 *Discussion with participants*
- 12.30 *End*

Wednesday 17 March 2021, 16.30-18.00 ONLINE WORKSHOP

The road to zero emission vehicles

PROGRAMME

- 16.30 *Introductory remarks & opening questions*
Thijs Vandenbussche, Policy Analyst Climate & Energy, EPC
- 16.40 *Input statements (10 minutes per speaker)*
Axel Volkery, Deputy Head of Unit "Sustainable and Intelligent Transport", DG MOVE, European Commission
Petr Dolejsi, Mobility & Sustainable Transport Director, ACEA
Julia Poliscanova, Senior Director Vehicles & E-Mobility Transport & Environment
Tyson Eckerle, Deputy Director for Zero Emission Vehicle Market Development at California Governor's Office of Business and Economic Development
- 17.20 *Discussion with participants: Comments, questions, reflections*
- 18.00 *End*