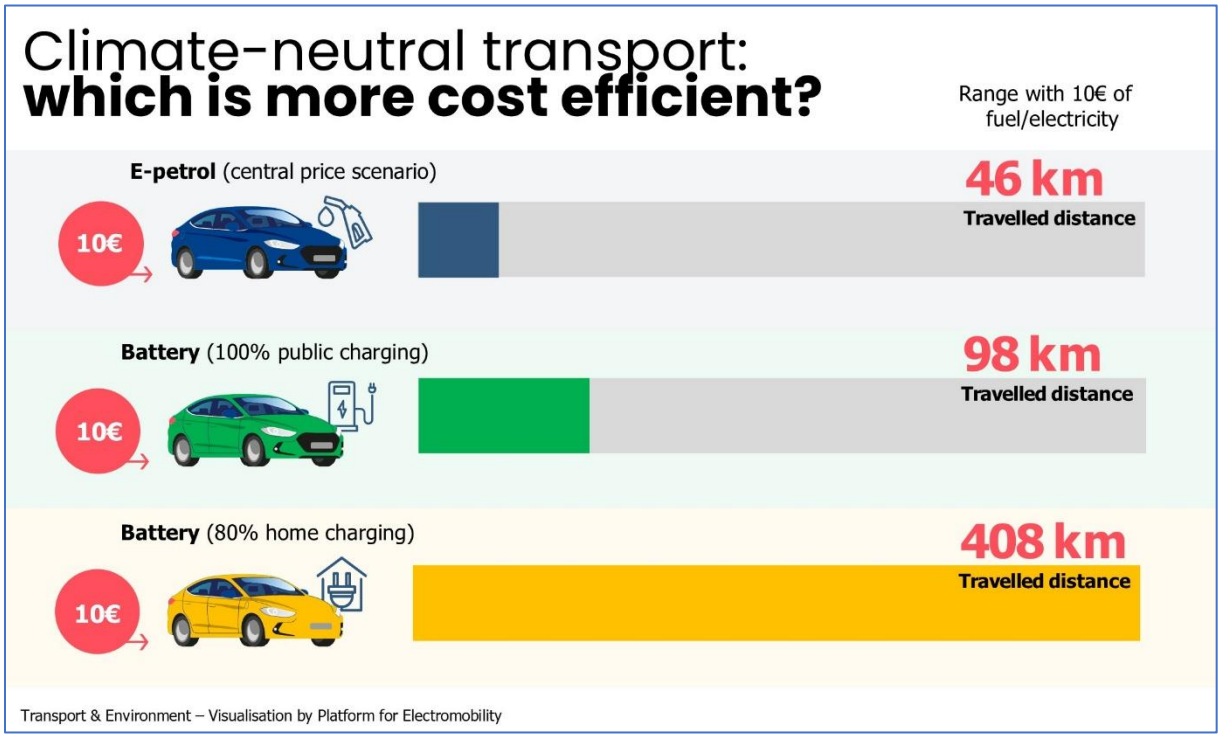
E-fuels: a costly Pandora's box for European drivers

February 2025

The Platform for Electromobility calls on Members of the European Parliament (MEPs) to consider carefully the impact of integrating e-fuels into Europe's decarbonisation strategy, most notably into the post-2035 regulatory landscape. We advocate for policies that will prioritise energy efficiency, affordability and transparency for consumers; the proposal to expand e-fuel use risks undermining this. As the EU seeks to revise its CO2 standards for cars and vans, MEPs should evaluate how adopting e-fuels will affect Europe's consumers in terms of increasing costs, creating regulatory ambiguity and ultimately impacting public health and air quality.

Graph 1: Comparison of cost-efficiency of different powertrains[1]



[1] Clean solutions for all: T&E's car decarbonisation roadmap - Transport & Environment

1. High costs of e-fuels for consumers

E-fuels are likely to be prohibitively expensive for everyday consumers, increasing the overall cost of mobility in Europe. By 2030, e-fuels are projected to cost consumers 2.5 - 3 times more per kilometre than battery electric vehicles (BEVs).[2] While fossil fuel-industry advocates argue that large-scale production will reduce these costs, BEV technologies are also progressing, with prices expected to fall. The comparative cost burden on consumers - particularly low-income families and rural populations who need to cover the greatest distance - would hinder the EU's ambition of affordable clean mobility accessible for all.

Without strong regulatory guardrails to support and incentivise the transition to electric mobility, drivers may face increased costs for synthetic fuels for internal combustion vehicles. Such a cost will disproportionately impact the most economically vulnerable consumers. These individuals rely on affordable mobility options; advancing high-cost technologies such as e-fuels threaten to exacerbate existing inequalities in accessing transportation. Producing a truly climate-neutral e-fuel will make the cost per kilometre driven significantly higher than any other modes of transports.[3]

2. Regulatory instability: impacts on consumer decisions to shift to clean mobility

Inconsistent regulations and enabling conditions delays create uncertainty for consumers, leading to delayed decision-making in purchasing clean vehicles. This in turn is lowering the demand for the clean vehicles that European manufacturers urgently need to reach their decarbonisation targets. If e-fuels are introduced alongside BEVs, it may result in a complex and fragmented regulatory environment, one that is confusing for fleet managers. For example, approximately one-third of new cars in Europe are company vehicles, reflecting corporate fleet purchasing decisions. Companies seeking to decarbonise their fleets are encountering uncertainty over which technologies will ultimately be compliant with EU CO2 emissions standards. As a result, fleet buyers are delaying their decisions to switch to zero-emission vehicles, leading to a detrimental slowdown in clean vehicles market conditions.

Technology-neutral policies that increase regulatory ambiguity risk jeopardising Europe's decarbonisation targets and lead to delays in adopting proven low-emission vehicles. In committing to a unified and energy-efficient path forward, the EU can provide consumers and companies alike with the certainty needed to make sustainable choices.

3. The Pandora's box of fraud and ambiguity

Given that transport fuels derived from fossil or renewable energy are chemically identical, the process of monitoring and verifying the environmental benefits of e-fuels is loaded with logistical challenges.

In order to be fully transparent to consumers, fossil and e-fuels should not be blended, and their price should be clearly indicated at petrol stations. Otherwise, consumers committed to choosing clean energy sources for their vehicles may unwittingly purchase fuel that does not deliver the promised environmental benefits.

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[2] E-Fuels in Cars: A Briefing - Transport & Environment
[3] E-Fuels and Their Role in the Transport Sector - Transport & Environment

While control mechanisms are possible, introducing e-fuels alongside existent fossil-fuel pumps would require additional infrastructure investments. Such measures include dedicated e-fuel nozzles, adding additive to e-fuels to tell them apart from fossil fuels, while car makers would have to retrofit vehicles with new onboard sensors to ensure that the vehicle does not drive on fossil fuel. This burden would likely fall on consumers, who may face higher prices and additional maintenance costs. It would be better to invest these resources in more mature and energy-efficient technologies such as battery-electric vehicles. In contrast, BEVs offer transparency, with the energy source directly linked to an increasingly green electric grid, which is increasingly being decarbonised. Allowing e-fuels onto the market without robust consumer protection policies risks misleading consumers and potentially undermining public trust in the EU's environmental objectives.

4. Impact on air quality and public health

E-fuels produce comparable levels of pollutants - such as nitrogen oxides (NOx) and particulate matter - as traditional fossil fuels. These impact air quality and public health, particularly in urban areas.[4] Europe's cities already face air quality challenges; introducing e-fuels could further compromise efforts to reduce pollution in densely populated areas. By simply maintaining levels of harmful emissions, e-fuels undermine the EU's objective of improving public health outcomes through cleaner transportation.

Policy recommendations for protecting consumers' interest in the clean mobility transition

1. Limit e-fuel use post-2035

Minimise the role of e-fuels in post-2035 vehicle sales, ensuring that only renewable-based e-fuels qualify. This measure will help direct investments to technologies with clear and measurable environmental benefits. We therefore reiterate our full support for both the 2035 zero-emission targets for cars and vans and the inter-institutional agreement set out in a European Commission statement[5] and confirmed by recital 11 of the CO2 Standards Regulation[6] on the introduction of synthetic fuels beyond this date. If there were to be any role for alternative fuels, it should be minimal, and limited to vehicles running exclusively on 100% climate neutral RFNBOs.[7]

2. Introduce consumer protections against high costs and misrepresentation

Develop consumer protection policies to mitigate against the high cost of e-fuels, provide transparency around their pricing and use and to prevent misleading claims on their benefits. For example, establishing clear labelling standards and specific nozzles for e-fuels could reduce confusion and help consumers avoid paying premiums for fuels that fail to meet expected

[4] E-Fuels: Current Status and Projections - PIK Potsdam Institute for Climate Impact Research

[5] Commission Statement on CO_2 Standards for Light Commercial Vehicles - European Commission

[6] Recital 11 of Regulation (EU) 2023/851 states: *"(11) Following consultation with stakeholders, the Commission will make a proposal for registering after 2035 vehicles running exclusively on CO2 neutral fuels in conformity with Union law, outside the scope of the fleet standards, and in conformity with the Union's climate-neutrality objective."* See Regulation (EU) 2023/851 of the European Parliament and of the Council of 29 March 2023 amending Regulation (EU) 2019/631 as regards strengthening the CO_2 emission performance standards for new passenger cars and new light commercial vehicles in line with the Union's increased climate ambition, OJ L 110, 3.5.2023, p. 1–14.

[7] Renewable liquid and gaseous fuels of non-biological origin

environmental standards. In addition, supporting demand for energy-efficient transports (such as BEVs) will create more affordable mobility options.

3. Prioritise energy efficiency in mobility investments

Encourage energy efficiency as a guiding principle for all public and private transport investments. By supporting the deployment of proven energy-efficient solutions such as BEVs, the EU can build a more affordable and accessible pathway to clean mobility.

Conclusion

The Platform for Electromobility calls on MEPs to consider the risks posed by e-fuels. While potentially valuable in hard-to-abate sectors, e-fuels threaten to introduce higher costs, regulatory uncertainty and health risks in the transport sector. By maintaining its focus on energy efficiency and consumer protection, the EU can safeguard the interests of its citizens and ensure a smoother, more-affordable transition to clean mobility.

Going beyond

This document outlines the risks posed by the potential introduction of e-fuels in road transport post-2035, from the perspective of European industries and transport manufacturers. The perspective of consumers and energy security are outlined in the following papers:

- **"Prioritising energy efficiency in the European transport ecosystem of tomorrow"**
- **"Stop diverging priorities, stop disrupting investments" (to be published soon)**

More about the Platform for Electromobility

The Platform for Electromobility is a unique alliance of Europe-based producers, infrastructure managers, operators, transport users, cities and environmental civil society organisations from across industries and transport modes. Our overarching goal is to reach a sustainable, multimodal transport system in which people and goods are moved across land, inland waterways, sea and air in Europe using exclusively fossil-free electricity. To reach its vision, the Platform unites all sectors constituting the electromobility ecosystem to pragmatically ensure the conditions for the full electrification of new light-duty vehicles by 2035 and build a sustainable European zero-emission transport system by collectively sharing their expertise, challenges and solutions.

For more information about the platform and its members, please visit:

https://www.platformelectromobility.eu/

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