

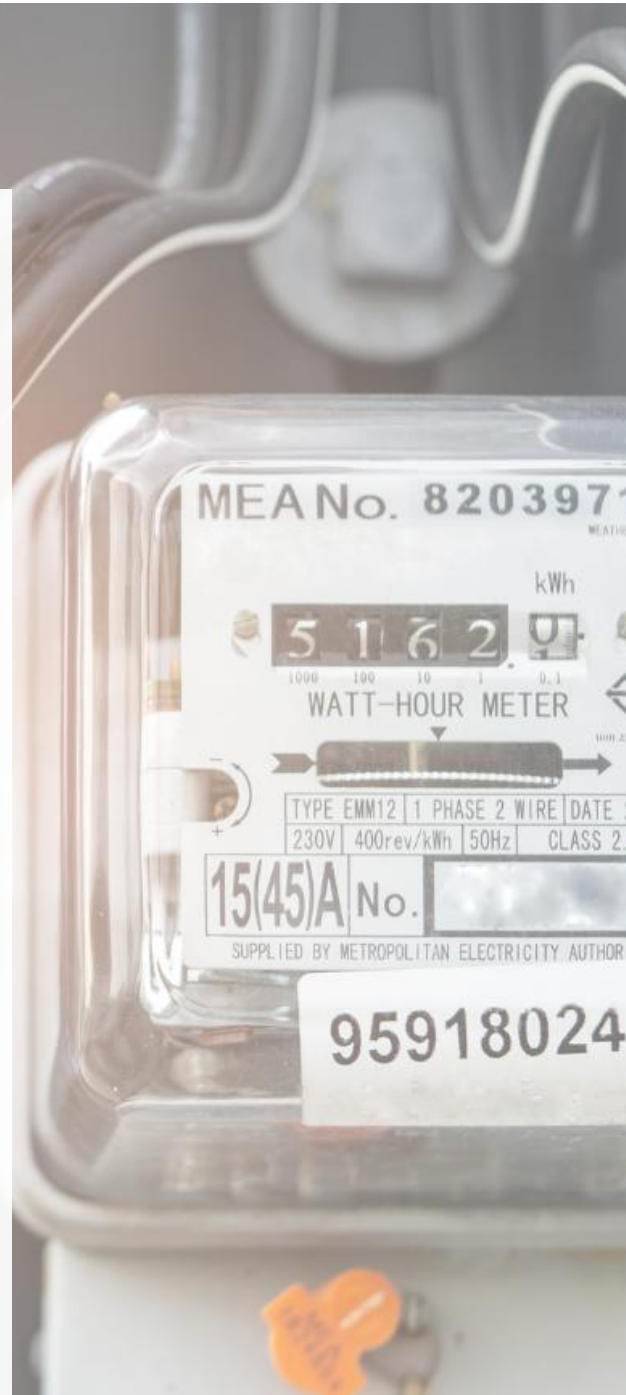
Three steps to protect Europe's drivers, its transport industries, and energy autonomy

Our contribution to
the carbon-neutral
fuels debate

MARCH 2025

Platform for Electromobility

Compilation of chosen pieces



Content

| | |
|--|----|
| Executive Summary | 4 |
| Stop diverging priorities, stop disrupting investments. | 6 |
| 1. Investment certainty for the electromobility ecosystem | 7 |
| 2. Strategic prioritisation of proven, sustainable technologies | 8 |
| 3. Enabling the transition to electromobility: skills and innovation | 9 |
| 4. Strategic autonomy and energy security | 10 |
| 5. The cost of energy and Europe's industrial competitiveness | 10 |
| Conclusion: synthetic fuels v. industrial development..... | 11 |
| Protecting EU drivers against the e-fuels Pandora's box | 12 |
| 1. High costs of e-fuels for consumers..... | 12 |
| 2. Regulatory instability: impacts on consumer decisions to shift | 13 |
| 3. The Pandora's box of fraud and ambiguity | 14 |
| 4. Impact on air quality and public health | 15 |
| 5. Policy recommendations for protecting consumers' interests | 15 |
| Conclusion: synthetic fuels v. consumers and drivers | 16 |
| Prioritising energy efficiency in the transport | 17 |
| 1. What is energy efficiency in transport? | 17 |
| 2. Why is energy efficiency crucial?..... | 17 |
| 3. Which transport modes are the most energy efficient? | 19 |
| 4. Why are there differences in energy efficiency? | 20 |
| 5. Which policies can promote most energy-efficient transport? | 21 |
| Conclusion: Increase electricity use to reduce energy consumption ... | 22 |
| More about the Platform for Electromobility | 23 |

« 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. »

Executive Summary

As the EU advances towards its 2035 zero-emission vehicle targets, the European Commission's intention to introduce e-fuels in the car CO2 regulation "through a targeted amendment of the regulation as part of the foreseen review" threatens to divert investments and delay the clean mobility transition. The members of the Platform for Electromobility strongly urge European lawmakers to reject the introduction of e-fuels in road transport due to their inefficiency, high costs, and negative impact on industrial competitiveness, consumer protection, and air quality.

1. A threat to investment certainty and European industrial leadership

European automakers have already committed €250 billion to electrification by 2030, and the EV industry is scaling up infrastructure and manufacturing. Increasing the role of not yet commercially available e-fuels would create regulatory uncertainty, discouraging investments (e.g. into battery factories) and delaying the transition to electromobility. While global competitors strengthen their EV supply chains, Europe risks seeing the gap widening with other industrial powerhouse if focus is split between electric mobility and inefficient alternatives like e-fuels.

2. E-fuels would an expensive, misleading burden for consumers

By 2030, driving on e-fuels is projected to be at least four times more expensive per kilometer than battery-electric vehicles (BEVs). Despite promises of cost reductions, e-fuels remain prohibitively expensive, disproportionately impacting low-income and rural families who rely on forced car ownership. The high production cost and inefficiency of e-fuels will lead to a surge in fuel prices, increasing the cost of living across Europe.

E-fuels introduce complex certification and compliance challenges since they are chemically identical to fossil fuels. Without clear safeguards, consumers may unknowingly purchase fossil-based fuels misrepresented as

"clean." This lack of transparency risks damaging public trust in Europe's decarbonization policies.

3. Poor energy efficiency leads to increased energy costs

E-fuels require five times more energy than direct electrification. Every kilowatt-hour used to produce e-fuels is one that cannot be used for more efficient applications, such as BEVs and public transports. This inefficiency will place further strain on Europe's energy system, driving up electricity prices and undermining efforts to secure affordable and sustainable energy for industry and households.

4. Air quality and public health at risk

Unlike BEVs, e-fuels still produce nitrogen oxides (NOx) and particulate matter, posing health risks, particularly in urban areas where air pollution is already a major concern. Their introduction would jeopardize Europe's clean air policies and undermine the health benefits of transitioning to zero-emission transport.

Policy Recommendations

To protect consumers, industry, and the climate, the Platform for Electromobility calls on the European lawmakers to:

- **Reject any regulatory inclusion of e-fuels in post-2035 road transport.** Instead, they should be incentivised in hard-to-abate sectors like aviation and shipping.
- **Prioritise direct electrification and energy efficient transport modes** to lower costs and secure Europe's industrial competitiveness.
- **Implement strong consumer protection measures** to prevent e-fuel-related cost burdens and potential fraud.
- **Maintain policy stability** by upholding the 2035 zero-emission target without exceptions for synthetic fuels.

Conclusion

E-fuels are an inefficient, costly, and polluting distraction from Europe's electromobility goals. The EU must stay the course on direct electrification to secure its industrial future, protect consumers, and achieve true zero-emission transport.

1

Stop diverging priorities, stop disrupting investments.

ELECTROMOBILITY AS A CLEAR PATH TOWARDS EUROPE'S CLEAN INDUSTRIAL COMPETITIVENESS.

Recent political debate has raised the risk that the EU's clear decision to phase out combustion engines in 2035 will once again be called into question. We believe this could prove fatal for the future of the European automotive industry.

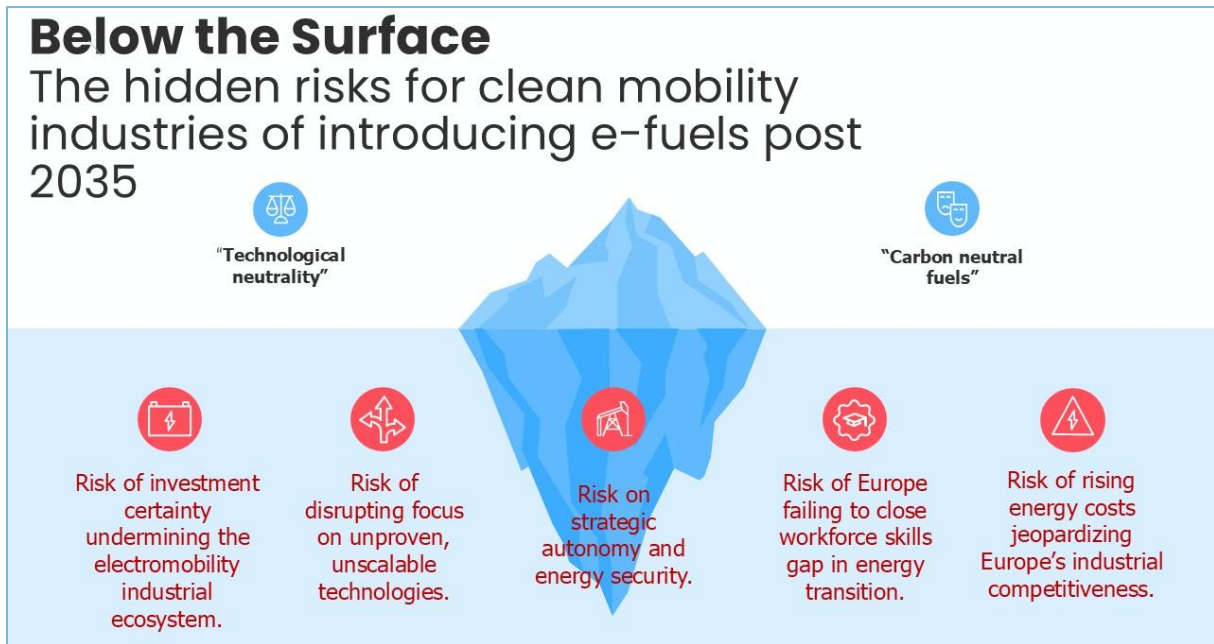
In opposing this dangerous instability, the Platform for Electromobility is highlighting the importance of creating the enabling conditions to allow clean tech industries to prosper, notably in the transport sectors. Ultimately, this will help achieve the EU's ambitious decarbonisation goals. As we advance towards zero-emission mobility, we are concerned by recent discussions surrounding the revision of the CO₂ standards for cars and vans, which foresee introducing CO₂-neutral fuels (such as e-fuels) into the post-2035 regulatory landscape.

This paper outlines the vital importance of supporting the ongoing progress towards the mass adoption of EVs and electromobility. It also highlights the risks of diverting the focus - and the vital investments required for electrification - towards the fictitious solution of e-fuels.

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 statement¹ and confirmed by recital 11 of the CO2 Standards Regulation² 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.³

Illustration 1: The Hidden risks for clean mobility industries



1. Investment certainty for the electromobility ecosystem

Investment in the net-zero industrial ecosystem requires a clear, consistent and properly implemented regulatory framework. European transport industries are committed to, and are building, this ecosystem. EU auto manufacturers have committed around €250 billion to electrification by 2030, while 86 new electric vehicle models will be launched between 2024-26 (58 in segments A, B and C).⁴ The EV charging industry is already

¹ [Commission Statement on CO₂ Standards for Light Commercial Vehicles - European Commission](#)

² 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 CO₂ 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.

³ Renewable liquid and gaseous fuels of non-biological origin

⁴ [Automotive Insights - Charging ahead: accelerating the rollout of EU electric vehicle charging infrastructure - ACEA - European Automobile Manufacturers' Association](#)

investing heavily in expanding both public and private charging infrastructure; and - with an average of €33 billion per year invested in our distribution grids over recent years – financing for utilities are continuing to grow to accompany the transition of the grid.⁵

However, adding e-fuels to this regulatory framework will create investment uncertainty. This will ultimately deter stakeholders from fully committing to electric vehicle manufacturing and infrastructure roll-out. Given the combination of increasing competition from non EU countries, rising energy prices and a shortage of qualified EU workers, it is ever-more crucial to focus EU investments on electric vehicles to reach critical mass and help the EU remain globally competitive. A stable regulatory environment remains essential for maintaining Europe's leadership in sustainable transport and ensuring that investments are directed towards proven, scalable technologies rather than nascent ones such as e-fuels.

2. Strategic prioritisation of proven, sustainable technologies

With limited resources, Europe must prioritise its investments in the technologies most capable of delivering effectively on sustainability and performance. Unlike e-fuels, EV technologies are already proven, energy-efficient and supported by an expanding infrastructure that continues to develop. Allocating resources to establish a separate, parallel infrastructure for e-fuels will only multiply the financial demands and divert away funds that could otherwise be used to enhance EV infrastructure and accelerate the adoption of electric transport.

Decarbonising transport will also necessitate the expansion of rail, public transport and active mobility modes; substantial investments will be essential for scaling up both services and infrastructure to meet these ambitions. The Letta report⁶ highlights that “the investment needs associated with realising the TEN-T core network by 2030 are estimated at around €500 billion, with a significant portion still lacking sufficient financial

⁵ [Grids for Speed: Accelerating the Transition to Clean Energy - Eurelectric - Power Summit 2024 Report](#)

⁶ [Much More Than a Market: Report by Enrico Letta - European Council](#)

resources”. The Draghi report⁷ estimates that completing TEN-T is projected to increase GDP by €467 billion by 2050. For active mobility, Europe would require approximately €40 billion per year to double the number of cycle trips within 10 years.⁸

Europe cannot afford to fragment its investment focus by pursuing less-efficient alternatives, particularly when electromobility is already delivering on its promises for cleaner transport and industrial competitiveness.

3. Enabling the transition to electromobility: skills and innovation

Europe’s transition to electromobility is generating demand for a skilled workforce capable of driving innovation and advancing Europe’s standing in the global clean tech market. Any delays to the transition to electromobility would in turn delay the urgently required shift of the workforce from the fossil fuel industries to the electromobility supply chain and the e-mobility infrastructure ecosystem. Given the current regulatory framework and CO2 standards, jobs in energy production and energy infrastructure in Europe are expected to increase by 128% and 543%, respectively⁹. E-fuels also do not offer the same potential for creating the quality, high-value and future-proof jobs in emerging sectors.

By investing in electromobility, Europe can build a workforce that is properly equipped for the green transition. It will bring skilled employment to local communities and ensure that the transition to clean mobility is supported through jobs with long-term prospects and benefits for European workers. A 2021 BCG study showed almost 80,000 extra operational production workers will be needed in the manufacture of batteries and accumulators, while OEMs will require 30,000 new software and system developers to manufacture electric motor vehicles.

⁷ [The Future of European Competitiveness: A Competitiveness Strategy for Europe – Draghi Report - European Commission](#)

⁸ [The State of National Cycling Strategies in Europe 2024 - European Cyclists' Federation \(ECF\)](#)

⁹ [BCG, “E-mobility: a green boost for European automotive jobs?” 2021](#)

4. Strategic autonomy and energy security

Given the growing need for energy security, electromobility offers Europe the opportunity to establish robust local supply chains based on locally recycled materials and locally produced renewable energy, thus reducing the need for imported fossil fuels. This is important, given that the vast majority of any future e-fuels used in Europe would be imported.¹⁰ As the global market for EVs continues to grow, Europe must concentrate its efforts on bridging the gap to other global leaders.

5. The cost of energy and Europe's industrial competitiveness

The rising cost of energy is a key factor in the recent difficulties facing Europe's industries. Developing a transport mode as energy intensive as e-fuels (e-fuels require five times the energy of direct electrification; hydrogen three times) would only drive energy costs higher across Europe.

The production of synthetic fuels is already highly energy intensive; each kilowatt-hour used to produce synthetic fuels is precious energy that cannot provide for other, more efficient, means¹¹. Synthetic fuels generated to store electricity during production peaks will be far from sufficient to match Europe's demand and should be directed to hard-to-abate sectors such as aviation, shipping and energy intensive industries, not road transport for which more energy efficient technologies exist.

With electricity demand continuing to escalate, using synthetic fuels for land transport risks further undermining Europe's industrial competitiveness by inflating operating costs for manufacturers, reducing the appeal of Europe as a hub for industrial investment. Prioritising energy-efficient, directly electrified transport modes is therefore essential for maintaining energy affordability, supporting industry and ensuring Europe's long-term economic resilience.

¹⁰ [E-Fuels in the Transport Sector: Challenges and Opportunities - Transport & Environment](#)

¹¹ [Prioritising Energy Efficiency in the European Transport Ecosystem of Tomorrow - Platform for Electromobility](#)

Conclusion: synthetic fuels v. industrial development

The Platform for Electromobility urges European lawmakers to prioritise investments in clean mobility, and to avoid policies that would instead divert the required critical resources towards inefficient and expensive alternatives. By focusing on electromobility, we can create a sustainable, competitive and resilient transport sector that serves Europe's citizens, economy and environment.

We consequently reiterate our full support for both the 2035 zero-emission targets for cars and vans and for the inter-institutional agreement - expressed in a European Commission statement¹ and confirmed by recital 11 of the CO2 Standards regulation² - on introducing synthetic fuels past this date. If any future role were to be given to alternative fuels, it should be minimal and restricted to vehicles running exclusively on 100% climate neutral RFNBOs (renewable liquid and gaseous fuels of non-biological origin).

2

Protecting European drivers against the e-fuels Pandora's box

SYNTHETIC FUELS OPEN THE DOOR TO SURGING COST FOR DRIVERS AND CLOSE IT TO TRANSPARENCY FOR CONSUMERS.

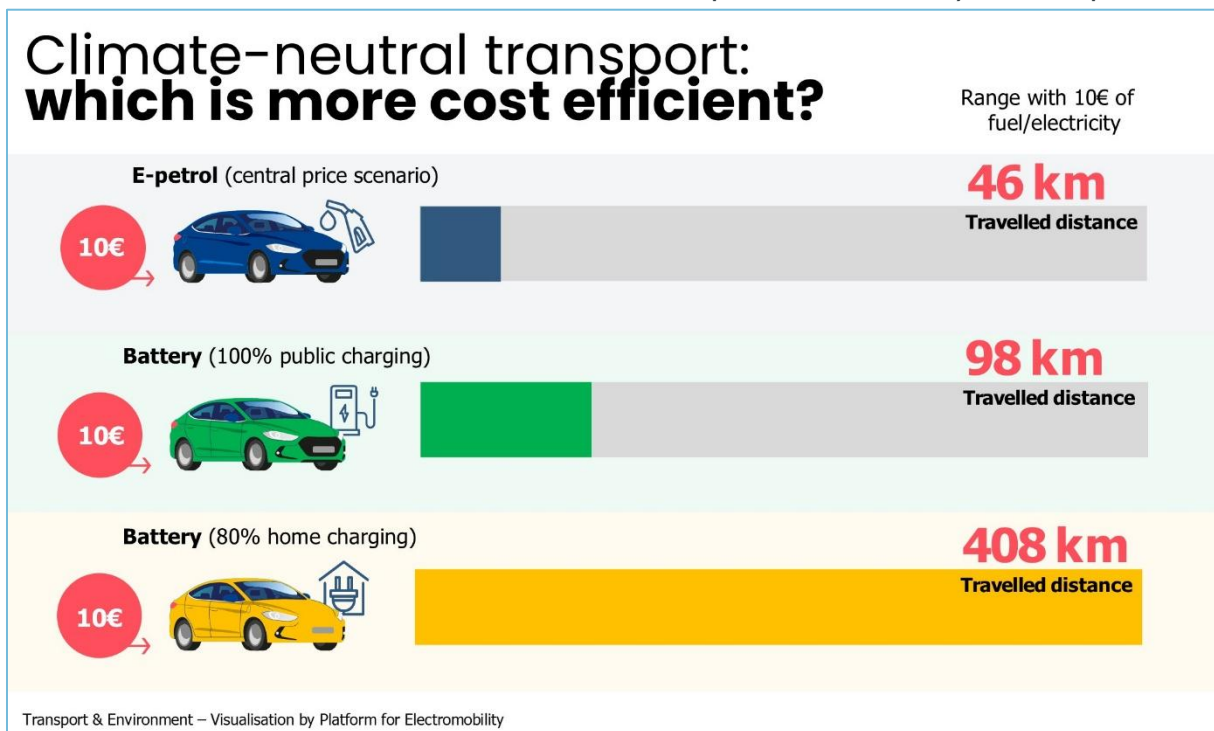
The Platform for Electromobility calls on Members of the European Parliament (MEPs) to consider carefully the impact of integrating e-fuels into Europe's decarbonisation strategy, most notably into the post-2035 regulatory landscape. We advocate for policies that will prioritise energy efficiency, affordability 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.

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 4 times more per kilometre than battery electric vehicles (BEVs).¹ 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.¹²

Illustration 2: Comparison of cost-efficiency of different powertrains



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

¹² [E-Fuels and Their Role in the Transport Sector - Transport & Environment](#)

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.

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.¹³ 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.

5. Policy recommendations for protecting consumers' interests

a. 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 statement¹⁴ and confirmed by recital 11 of the CO₂ Standards Regulation 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.¹⁵

¹³ [E-Fuels: Current Status and Projections - PIK Potsdam Institute for Climate Impact Research](#)

¹⁴ [Commission Statement on CO₂ Standards for Light Commercial Vehicles - European Commission](#)

¹⁵ Renewable liquid and gaseous fuels of non-biological origin

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

b. 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: synthetic fuels v. consumers and drivers

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.

3

Prioritising energy efficiency in the transport ecosystem of tomorrow

LACK OF ENERGY EFFICIENCY OF SYNTHETIC FUELS WOULD POSE RISKS TO EUROPE'S ENERGY TRANSITION IN TRANSPORT.

The Platform for Electromobility highlights the critical importance of maximising energy efficiency in achieving the EU's decarbonisation goals. We are collectively worried of the proposal to bring forward the revision of the CO₂ Standards for Cars and Vans and the proposal to expand the use of e-fuels, masquerade through a call for “technology-neutrality”. As the European law-makers prepare to review the upcoming amendment to the regulation on CO₂ emission performance, we highlight risk such amendment poses to overall energy consumption of the continent.

1. What is energy efficiency in transport?

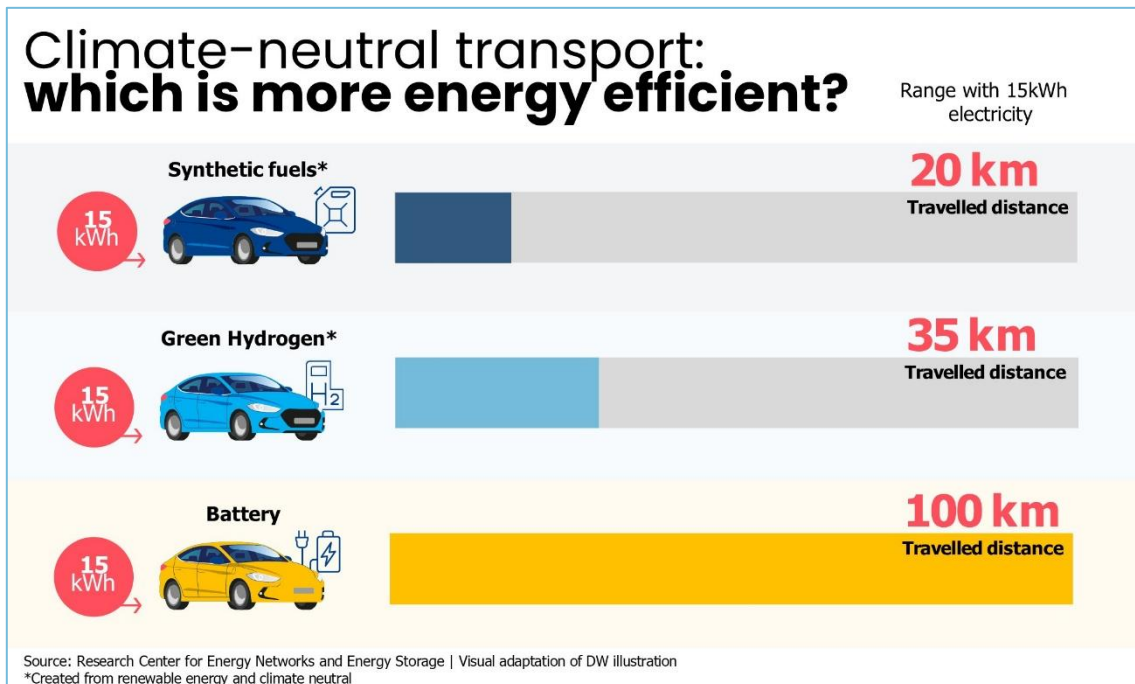
Energy efficiency refers to the amount of energy, measured in kilowatt-hours (kWh), required to travel a certain distance (kilometers) per passenger. The more energy-efficient a mode of transport is, the less primary energy is needed to be produced for the vehicle to travel the same distance, regardless of the energy's source—whether it comes from fossil fuels, nuclear energy, or renewable sources.

2. Why is energy efficiency crucial?

Energy efficiency should be a cornerstone of the EU's energy transition for transport. As transport remains one of the largest consumers of energy, improving energy efficiency directly supports European energy autonomy

and security by reducing Europe's reliance on imported fossil fuels, particularly from politically unstable regions. According to BloombergNEF, favoring energy-efficient transport could save up to 1.5 million barrels of oil per day, equivalent to over €40 billion annually in reduced imports¹⁶.

Illustration 3: Comparison of Energy Efficiency of different powertrains



In addition to strengthening energy security, energy efficiency has direct economic benefits. As energy costs may continue to rise, more efficient transport solutions can help reduce operational costs for businesses and drivers alike. This would make travel more affordable for citizens and improve the competitiveness of European industries.

Furthermore, a key objective of the EU is to increase the share of renewable energy in its energy mix. However, less energy-efficient transport modes would require a unnecessarily increase in renewable energy production to meet demand. It would increase the risk of “Not-In-My-BackYard” movement against such renewable energy plants, and ultimately Europeans’

¹⁶. [BloombergNEF, "Electric Cars Have Dented Fuel Demand—By 2040 They'll Slash It," BloombergNEF, November 29, 2023.](#)

resistance against energy transition. Prioritising energy efficiency helps maximize the utility of renewable energy and minimize the impact in Europe.

3. Which transport modes are the most energy efficient?

Among all transport modes, trains are by far the most energy-efficient for long distances¹⁷. Europe is already a global leader in rail transport, and a concerted push to increase modal shift from road to rail could unlock substantial efficiency gains. We thus support the call to further roll-out of TEN-T as well as plans for an ambitious European high-speed rail network, night train and rail freight. The ecological advantage is especially there for freight transport. On the local level, public passenger transport by metro, tram, bus and urban rail collectively moves large numbers of people, using less energy and emitting less CO₂ per passenger-kilometre than private vehicles.¹⁸

However, passenger cars remain the at the center of current political debate. They represent the most widespread form of personal transport and are undergoing major changes amid political debates and upcoming review of the CO₂ Standards for cars and vans. When it comes to energy efficiency, not all cars are equal. Energy efficiency among cars varies dramatically, depending on the type of propulsion used. For example, as illustrated by graph 1 above, on the same amount of energy of 62 kWh, contained in 10.5 liters of ethanol, similar passenger cars travel very different distances¹⁹:

- a traditional internal combustion engine (ICE) car, like the Toyota Corolla Flex, running on fossil or synthetic fuels, can travel 100 km.
- a hydrogen fuel cell vehicle, such as the Toyota Mirai, can travel a similar distance of 103 km using the same amount of energy.
- a battery electric vehicle (BEV), such as the Tesla Model 3, can travel 189 km on the same amount of energy, almost doubling the range of the ICE car.

¹⁷ [International Energy Agency \(IEA\), "Rail," IEA, accessed February 19, 2025](#)

¹⁸ In its Urban Mobility Framework (point 2.4), the Commission writes "Public transport such as urban rail, metros, trams, buses, water buses, ferries or cable cars represent the safest, most efficient and sustainable ways for large numbers of people to travel.". There is also a comparison of emissions per mode that includes buses (and coaches) in the EEA Transport and Environment Report 2021 (figure 4.3)

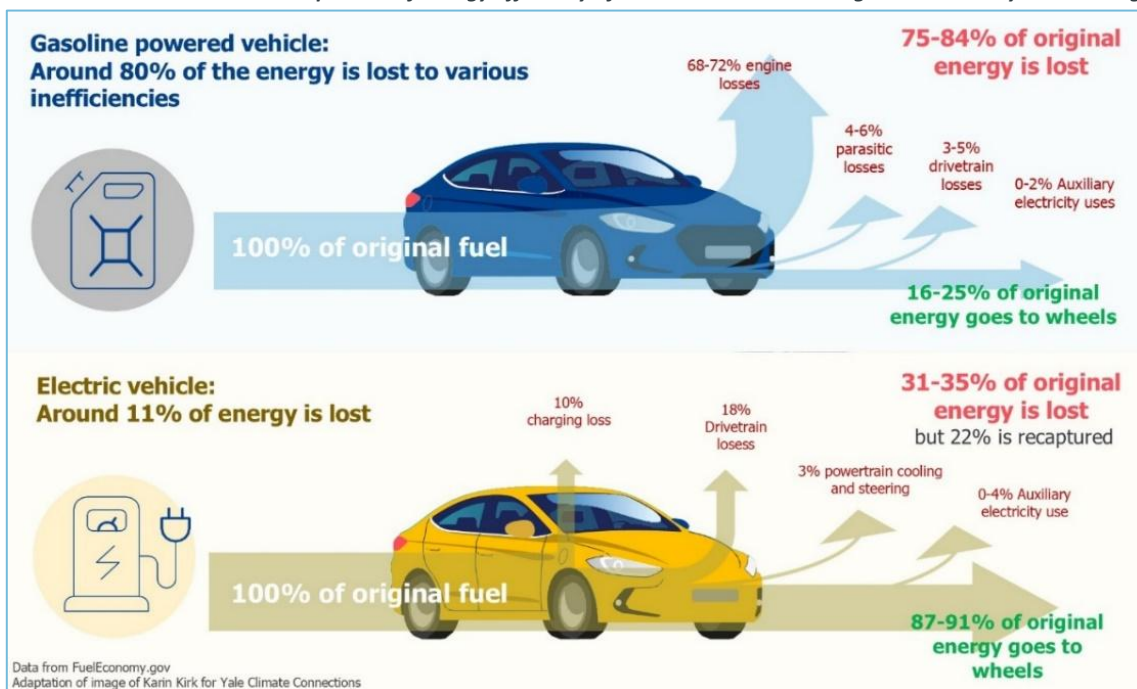
¹⁹ Data analysis by Michael Sura and Joao Caldas with data retrieved from www.spritmonitor.de

It is clear that BEVs significantly outperform vehicles powered by e-fuels in terms of energy efficiency.

4. Why are there differences in energy efficiency?

Producing e-fuels requires much more energy than producing fossil fuels or using direct electrification when looking at energy use from production to tank. The main issue with e-fuels is their low efficiency throughout the production process. In order for an e-fuel to truly be carbon-neutral, each step—making hydrogen, capturing carbon, and then synthesizing the fuel—needs to be renewable. However, each of these steps require energy and result in large energy losses. This makes e-fuels less efficient in areas where electrification use is possible, especially since electric motors are far more efficient than combustion engines²⁰.

Illustration 4: Detailed Comparison of Energy Efficiency of Internal Combustion Engine and Battery-Electric Engine¹



While a BEV uses 77% of the primary energy to move its wheels, a vehicle powered by e-fuels converts only 20% of the original energy input into

²⁰ S&P Global, *Pathways to Commercial Liftoff: Clean Hydrogen*, October 2023.

motion²¹. The latter would thus need about four times more primary energy than the former to travel same amount of kilometres. This large difference underscores the need to prioritise more efficient technologies. Energy efficiency is not a marginal criteria.

Additionally, such an efficiency gain is without counting on the benefits BEVs can have for the energy system if grid-integrated thanks to smart and bidirectional charging, where their batteries can improve the efficiency of the entire energy system. As the making synthetic fuels in itself is already very energy intensive. Each Kwh used for the production of synthetic fuels is one that cannot serve other, more efficient means.

5. Which policies can promote most energy-efficient transport?

To ensure that Europe's future vehicle fleet is as energy efficient as possible, we recommend the following policy actions:

1. **No U-turn:** Any early review or any U-turn in already agreed policy is detrimental for investment confidence in the energy transition.
2. **Limit the role of e-fuels in CO2 standards:** In the upcoming review of the CO2 standards for cars and vans, we urge policymakers to restrict the use of e-fuels to niche markets that cannot be directly electrified, for emergency services, or vehicles of specific usages such as forestry.
3. **Focus e-fuels on hard-to-abate sectors:** Divert the use of limited e-fuels to other sectors where electrification is still not an option and where so much is needed: aviation, long-haul maritime.
4. **Introduce differentiated taxation:** Vehicle taxation should be tied to energy efficiency. Registration taxes, road taxes, and fuel duties should favour energy-efficient vehicles. For instance, a bonus-malus system could be introduced, where less efficient vehicles face higher taxes, and more efficient options benefit from tax breaks. The revision of the Energy Taxation Directive could be instrumental in this perspective.

²¹ [Transport & Environment, "E-fuels too inefficient and expensive for cars and trucks, but may be part of aviation's climate solution," Transport & Environment, February 14, 2023.](#)

5. **Prioritise energy efficiency in public procurement:** Public procurement can be a powerful tool to set an example. Green public procurement criteria should prioritize the energy efficiency of vehicles used in the public sector. By including energy efficiency requirements in public tenders, governments can drive demand for the most efficient technologies. The Net Zero Industrial Act already paves the way in this direction.

Conclusion: Increase electricity use to reduce energy consumption

Energy efficiency is not just a technical consideration, it is a strategic imperative for Europe's energy security, economic competitiveness, Europeans' cost of living, and environmental sustainability. By prioritising the development and use of the most energy-efficient transport modes, the EU can reduce its dependence on imported fossil fuels, lower costs for consumers, and ensure that the shift to renewable energy is as efficient as possible.

We strongly urge you to take decisive action in the upcoming CO2 standards review and to adopt policies that will promote the most energy-efficient transport solutions. This is essential to meeting the EU's decarbonisation objectives and securing a sustainable future for all Europeans.

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/>

Members of the Platform for Electromobility are:

- 3M
- ALSTOM
- BELLONA EUROPA
- CHADEMO
- CHARGEPOINT
- CHARGEUP EUROPE
- COMMUNITY OF EUROPEAN RAILWAY (CER)
- CONFEDERATION OF THE EUROPEAN BICYCLE INDUSTRY (CONEBI)
- COPPER ALLIANCE
- DANFOSS
- E.DSO
- ECOS
- ELECTRA
- E-MOBILITY EUROPE
- ENEL X
- ENTSO-E
- EURELECTRIC
- EUROBAT
- EUROCITIES
- EUROPEAN CYCLISTS' FOUNDATION
- EUROPEAN GEOTHERMAL ENERGY COUNCIL (EGEC)
- EUROPEAN RAIL INFRASTRUCTURE MANAGERS (EIM)
- EUROPEAN RAIL SUPPLY INDUSTRY ASSOCIATION (UNIFE)
- EUROPEON
- EV100
- FORD MOTOR EUROPE
- FPPE
- FREENOW
- HITACHI ENERGY
- HUBJECT
- IBERDROLA
- MILENCE
- POLIS
- RECHARGE
- RENAULT GROUP
- SMARTEN
- SOLARPOWER EUROPE
- TESLA
- TRANSPORT & ENVIRONMENT (T&E)
- UBER
- UNION FRANÇAISE DE L'ELECTRICITÉ (UFE)
- UNION INTERNATIONALE DES TRANSPORTS PUBLICS (UITP)
- VATTENFALL
- VOLVO CARS
- WINDEUROPE

Renault Group

Uber

UFE
Union Française de l'Électricité

VOLVO

EUROBAT
ASSOCIATION OF EUROPEAN AUTOMOTIVE AND INDUSTRIAL BATTERY MANUFACTURERS

TESLA

SolarPower Europe

Cu International Copper Association Europe

EGEC
GEO THERMAL

ALSTOM

Danfoss

FREENOW

Hitachi Energy

3M Science. Applied to Life.

HUBJECT

CONEBI
Confederation of the European Bicycle Industry

enel x

POLIS
CITIES AND REGIONS FOR TRANSPORT INNOVATION

Ford

BELLONA
EUROPA

Wind EUROPE

CER

eurelectric

E-Mobility Europe

smartEn
SMART ENERGY EUROPE

EuropeOn
ELECTRICAL CONTRACTORS ASSOCIATION

FPPE

ECF
EUROPEAN CYCLISTS' FEDERATION

E.D.S.O.
SHARED GREEN CAR CHARGING FOR YOU

ChargeUp
EUROPE

Iberdrola

unife
THE EUROPEAN RAIL INDUSTRY

ecos

ELECTRA

VATTENFALL

T&E

CHAdcMO

Allego

greenway

RECHARGE

UITP EUROPE

EIM
European Rail Infrastructure Managers

-chargepoint+

CLIMATE GROUP
EV100

milence

EURO CITIES



Disclaimer

The members who contributed to this document shared the aim of establishing a constructive and transparent exchange of views on the economic and social implications of synthetic fuels for road transport in Europe. The objective was to compile existing studies on this topic and bring a different perspective to ongoing debates. Each stakeholder contributed their knowledge and vision on these issues. The information and conclusions in this report represent these contributions, but should not be treated as binding on the organisations involved.