

H2ero Net Zero

Hydrogen Europe Position Papers

**Reforming carbon markets
to enable a liquid,
sustainable and affordable
hydrogen market**

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Reforming carbon markets to enable a liquid, sustainable and affordable hydrogen market

Hydrogen has seen an unprecedented development from an innovative niche technology to a systemic element in the EU's efforts to transition to a climate-neutral society in 2050. It will become a crucial energy vector and the other leg of the energy transition – alongside renewable electricity – by replacing coal, oil, and gas across different economy segments.

Meeting the increased EU net greenhouse gas (GHG) emission reduction target of at least 55% by 2030 and the ambitious targets of the EU Hydrogen Strategy requires a substantial adjustment of carbon markets, rational regulatory measures, and favourable conditions for investments. Only on top of appropriate state aids, EU funding, and quotas, a well-designed carbon pricing policy will be increasingly essential to provide price signals reflecting the costs of carbon emissions and trigger the right incentives for producers and consumers to switch to clean solutions such as clean hydrogen.¹ As such, Hydrogen Europe welcomes the European Commission's proposals under the "Fit for 55" package² of reshaping the EU's carbon pricing policy.

This document contains a series of five position papers prepared by Hydrogen Europe on the topic of carbon market reforms. They address the following legislative proposals:

[The EU Emission Trading System \(ETS\) revision](#)

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[The phasing out of ETS free allowances and the phasing in of a Carbon Border Adjustment Mechanism \(CBAM\)](#)

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[The EU ETS reform for aviation](#)

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[The creation of a new, separate EU ETS for road transport and buildings emissions](#)

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[The Energy Taxation Directive \(ETD\) reform](#)

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[1] Clean hydrogen is defined in Hydrogen Europe's paper 'Hydrogen Act – Towards the creation of the European Hydrogen Economy'; https://www.hydrogeneurope.eu/wp-content/uploads/2021/04/2021.04_HE_Hydrogen-Act_Final.pdf

[2] Revisions of the EU's Emission Trading System (ETS) Directive, of the Energy Taxation Directive (ETD), of the Effort Sharing Regulation (ESR), and the Carbon Border Adjustment Mechanism (CBAM) proposal.

A revised, more ambitious EU ETS: essential for deep decarbonisation

Hydrogen Europe welcomes the European Commission's EU ETS revision proposal, specifically:

- The increased linear reduction factor and rebasing of the cap,
- The buffer market stability reserve intake and the 24% intake rate,
- The extension of emission trading to new sectors and all hydrogen production technologies,
- The increased volume of ETS funds and the creation of the Social Climate Fund.

The deep decarbonisation of the EU economy and the development of a clean hydrogen market requires a robust EU Emission Trading System (ETS). It shall provide a reliable price for CO₂ emissions and ensure the necessary flexibility and predictability for operators. At present, the European Union Allowance (EUA)³ price is at an all-time high, making it clear that it is time to shift to clean technologies. Besides, the current energy prices context should not be used as a pretext to hamper the increased ambition for the ETS. On the contrary, more needs to be done.

The carbon content of energy carriers should become the "new currency" of the EU economy and the basis for a stable economic recovery. Yet, current carbon prices only marginally support the business case for decarbonisation projects to ramp up clean hydrogen, especially for the large scale, commercial introduction of clean hydrogen technologies.

To put this in perspective, the CO₂ abatement costs of carbon capture and storage (CCS) technology are between €44 to €110/t – depending on CCS technology and natural gas prices, while the CO₂ abatement cost of renewable hydrogen can range anywhere from €66/t to over ~€455/t depending on local renewable hydrogen production costs, the type of fossil fuel replaced by renewable hydrogen and the industrial sector it is applied in.⁴ Therefore, the more the carbon price increases, the stronger the price signal will be to switch to low-carbon and renewable hydrogen technologies.

Hydrogen Europe's seven key recommendations for a truly ambitious EU ETS:

1. Keep the proposed increased Linear Reduction Factor (LRF) to 4.2% in combination with the one-off reduction (rebasings) of the ETS cap to address the structural excess of allowances and ensure that the overall ETS allowance cap better reflects the actual emissions.

Hydrogen Europe considers the LRF as the main element driving decarbonisation under the EU ETS. Therefore, it is central to align it with the increased EU ambitions for emission reductions. The EU ETS allowance cap has been significantly higher than the verified CO₂ emissions in the system over the last few years.⁵ This results from the rapid decrease of CO₂ emissions in the power sector and a low LRF.

[3] Allowance for the emission of 1 tonne of CO₂e emission under the EU ETS.

[4] Data from Hydrogen Europe. The lowest CO₂ abatement costs apply to the steel sector, while most challenging abatement costs apply to replacement of natural gas for high grade heat generation.

[5] Please see the Publications of the total number of allowances in circulation in 2017, 2018, 2019, and 2020 for the purposes of the Market Stability Reserve under the EU Emissions Trading System established by Directive 2003/87/EC.

Instead, methane steam reforming (MSR) has mostly contributed to the relative scarcity of ETS allowances. Therefore, rebasing the cap is essential to ensure that the overall ETS allowance cap better reflects the actual emissions and makes up for the delayed implementation of a higher LRF when the ETS revision enters into force.

2. Keep the proposed MSR intake rate at 24%, create a buffer MSR intake, and decrease the higher absorption threshold.

Introduced in 2019, the Market Stability Reserve (MSR) is instrumental in addressing the EU ETS market surplus accumulated since Phase 2. The MSR was the main reason for strengthening the EU ETS market price in 2018-2019. During the shock resulting from the Covid-19 pandemic in 2020, the benefits of the MSR have become even more obvious. According to the current EU ETS directive, the “intake rate” of the MSR is set to retreat from today’s 24 % to 12 % after 2023. There is an obvious risk that this will seriously weaken its ability to handle market disruptions in the future, resulting in a much lower EUA market price at times. Therefore, an intake rate of at least 24 % is necessary also beyond 2023.

Hydrogen Europe welcomes the Commission’s proposal to remove the undesired ‘threshold effect’ by creating a ‘buffer MSR intake’, which can help prevent EUA price volatility when the Total Number of Allowances in Circulation (TNAC) is nearing the upper threshold. The hydrogen industry also supports the inclusion of aviation and maritime emissions in calculating the surplus by including them in the TNAC. In addition, we underline the need to adjust the predefined thresholds that trigger the injection or absorption of allowances.

The current thresholds were defined in 2015 based on an estimation of the hedging needs at the time. Today, it is clear that reducing the upper threshold (833M EUAs) is the bare minimum to reflect a gradually decarbonising economy.

3. Keep the proposed extension of ETS to all hydrogen production technologies and ensure a gradual extension of the ETS to new sectors.

For the ETS to become a more impactful tool incentivising decarbonisation and clean hydrogen competitiveness, it needs to cover sectors currently exposed to no CO₂ pricing (maritime) and/or insufficient CO₂ pricing (road transport and buildings). The role of hydrogen as a decarbonisation solution should be recognised beyond hard to abate sectors, including transport and heating across the whole “Fit for 55” package.

Hydrogen Europe considers it important to set up robust monitoring, reporting and verification (MRV) systems for new sectors where it may be lacking. In addition, we believe that transitional arrangements or pilot periods should be foreseen and implemented ahead of the gradual integration of new sectors into the EU ETS. It is also important to recognise that the marginal abatement costs can differ across sectors and that carbon pricing must be technology-neutral.

As such, **Hydrogen Europe supports the inclusion of emissions from both road transport and buildings into one single separate new market-based emission trading system (ETS II) running in parallel to the current EU ETS (ETS I).**⁶ Such a parallel system could include elements of the current ETS that have proven their efficiency, such as the LRF, carbon leakage provisions and

[6] Please see Hydrogen Europe’s position paper [“The European Emissions Trading System: A system fit to decarbonise European transport?”](#) (Page 10)

established MRV procedures along with a review clause, that would assess whether sectors or parts of sectors are ready for integration into EU ETS I. Impacts on vulnerable consumers should also be carefully assessed, and stronger mandates should remain leading drivers.

Hydrogen Europe is in favour of including the maritime sector under the existing ETS (ETS I). The Commission follows this line in its proposal and focuses on large ships (above 5,000 gross tonnages), accounting for 90% of CO₂ emissions (in line with the existing scope of the MRV regulation). This scope de facto excludes smaller maritime vessels and inland navigation from the ETS scope, whose emissions remain covered solely by the Effort Sharing Regulation (ESR). The decarbonisation of inland vessel fleets and small maritime ships⁷ should be factored in.

4. Keep the proposed increased ambitions of GHG emission reduction targets under the Effort Sharing Regulation (ESR) proposal and the parallel coverage of buildings and transport sectors by ESR and ETS.

Considering the increased net GHG emission target of at least 55% by 2030, Member States might have to curb emissions by around 10% beyond the current target under the ESR. Member States are likely to reaffirm the need to maintain national targets under the ESR and preserve its broad scope to stimulate effective measures at the national level. To strengthen ambition and introduce adequate CO₂ price signals, the proposed integration of new sectors into the ETS should take place in parallel with their continued coverage under the ESR.

5. Further increase the Innovation and Modernisation Funds by setting aside a larger share of ETS allowances than proposed by the Commission and streamline revenues towards clean investments only.

The **Innovation Fund** plays a key role in supporting the development of immature low-carbon technologies. Therefore, **the volume of EUAs set aside for this purpose should be further increased.** What's more, these **revenues should be used strictly for clean investments.** Additionally, it should be made explicit that the Innovation Fund covers projects in Power-to-X and sector coupling (e.g., in Article 10a.8). The Innovation Fund could also support projects in countries outside the EU under the European Neighbourhood Policy (ENP) scope. However, it should be proven that these projects substantially contribute towards the EU's 2030 targets for renewable energy consumption and targets for hydrogen use in industry and transport. At the same time, it should be ensured that funding is directed at activities covered by the ETS and these projects contribute to fostering the development of EU industry and EU technology abroad.

Similarly, the **Modernisation Fund** is key to supporting lower-income Member States' energy transition. Considering the state of energy infrastructure across EU countries differs, so does the transition pace. This could negatively affect the cohesion of the EU. Therefore, **the volume of EUAs set aside for this purpose should be increased too.**

Any major transition requires social acceptance and, therefore, the necessary actions to support those most in need.

[7] *Ibid*

For this reason, **Hydrogen Europe welcomes the creation of the Social Climate Fund, which will mobilise €72.2 billion for the period 2025-2032 to support households and transport users affected by the impact of the new EU ETS.** Moreover, we highlight the need to alleviate economic stress on Europeans and vulnerable households that may see costs rise due to the measures related to carbon pricing.

We also call for the ETS II revenues to be earmarked towards alternative fuels, hydrogen refuelling infrastructure and cost-efficient decarbonisation solutions for buildings, such as hydrogen-based heating appliances.⁸ In addition, at least 50% of ETS revenues generated by the maritime sector should be earmarked towards a fund such as the Green Ocean Fund, in light of previous difficulties of the sector to access funding under the Innovation Fund. The Green Ocean Fund should finance innovation and first movers, ensure the uptake of energy-saving technologies on ships and bunkering/charging infrastructure for zero-carbon fuels like renewable hydrogen. In addition, the Fund should target hydrogen-based fuels in European ports and support the uptake of zero-carbon fuels by ships via carbon contracts for difference (CCfDs).

The Commission should assess any new global market-based emission reduction measures adopted by the IMO with respect to their ambition and environmental integrity.

6. Hydrogen Europe welcomes the inclusion of the Carbon Contracts for Difference (CCfDs) under the scope of the Innovation Fund.

The hydrogen industry sees CCfDs as an effective instrument to minimise investment risks during a transition phase for clean hydrogen at the demand side, complementing hydrogen (sub)targets and avoiding any potential overcompensation. **However, the EU ETS should explicitly state that the rules to be adopted by the Commission shall include technology-specific competitive tendering mechanisms** (e.g., renewable hydrogen projects should not be put in competition with low carbon hydrogen).

CCfDs offer the opportunity to guarantee investors in innovative climate-friendly technologies a fixed price that rewards fossil CO₂ emission reductions in a fixed manner, settled against the actual price levels of the EU ETS. Concretely, CCfDs could finance (for example, via competitive auctions) the gap between the EU ETS price and the price parity level of carbon-neutral solutions. This would facilitate the integration of renewable energy into new sectors at the best cost. As such, we consider the Climate, Energy and Environmental Aid Guidelines (CEEAG) revision should facilitate CCfDs use at the national level. **Furthermore, we emphasise the crucial need to establish a common EU CCfDs design framework or guidelines to increase the use of Contracts for Difference (CfD) to target clean hydrogen production.**

7. Ensure a level-playing field across clean energy carriers in terms of access to funding.

Treatment for hydrogen and hydrogen-based fuels should be non-discriminatory with respect to access to development support and technological benchmarks. It is important to ensure that negative emissions are not accounted as zero.

[8] Please see the BatHyBuild study 'Use of hydrogen in buildings' (2021) for more information: https://www.waterstofnet.eu/_asset/_public/BatHyBuild/Hydrogen-use-in-buildings-BatHyBuild-29042021.pdf

Following the proportionality principle, the ETS should aim to keep all reporting obligations for emissions proportional, efficient and at a level-playing field for all energy carriers. The Member States shall ensure that national transposition does not hamper innovation and is technologically neutral.

Hydrogen Europe considers the EU ETS is an efficient and market-based tool to reduce carbon emissions across the EU which should be preserved and strengthened. Any additional national measures should be designed to complement and be consistent with the ETS (e.g., subsidies for early decommissioning of coal plants; subsidies for CCS; Carbon Contracts for Difference; etc.). It is crucial to ensure that national measures do not disrupt the efficiency of emissions trading to avoid jeopardising the EU ETS market price signals. It is important to complement the EUA price with adequate EU-level sectoral legislation such as quotas, targets, and refinancing mechanisms, due to the varying CO₂ abatement costs among sectors.

The ETS revision shall also ensure proper market liquidity to prevent EUA price volatility and provide compatibility with investment cycles in all the sectors it covers while enabling the achievement of GHG emission reduction targets. Moreover, Member States should be obliged to cancel allowances equal to the amount of CO₂ savings stemming from national policy measures such as coal phase-out.

The progressive phasing out of ETS free allowances and phasing in of a WTO-compliant CBAM: a necessity for stepped-up decarbonisation while providing for an international level-playing field

With increased ambitions for emission reductions at the EU level, securing a level playing field with third parties and incentivising other economies to ramp up decarbonisation efforts has become crucial. In this context, the European Commission released a proposal for a Carbon Border Adjustment Mechanism (CBAM) under its 'Fit for 55 Package'. Based on this, the scheme would start as of January 2023 and apply to a number of sectors, including the power sector and energy-intensive industries (cement, steel, aluminium, chemicals for fertilisers). Free allocations for sectors covered by the CBAM would be gradually phased out by 2035.

In the EU ETS revision and CBAM proposals, Hydrogen Europe welcomes:

- The planned decreasing share of free allowances,
- The eligibility of renewable and low-carbon hydrogen to free allowances,
- The introduction of conditionality to access free allowances,
- The introduction of a CBAM to foster decarbonisation abroad and domestically while providing a level playing field between the EU and third countries.

The hydrogen sector considers an adequately designed CBAM as a key tool to a level-playing field for the EU industry against risks of carbon leakage. It could foster decarbonisation domestically with the parallel phasing out of free allowances,⁹ with regard to sectors covered by CBAM, on top of other measures like the increased LRF and benchmarks.

Moreover, it could also encourage decarbonisation in third countries due to the incentive for foreign exporters to escape the CBAM cost.

1. Hydrogen Europe welcomes the planned decreasing share of free allowances, providing for additional incentives to the industry to decarbonise and for increased revenues for climate purposes (e.g., via ETS funds).

It supports the progressive phasing out of free allowances for goods aimed at the EU domestic market, in parallel to the CBAM introduction, providing a level-playing field for EU exporters is effectively ensured, and the indirect costs impacts accounted for. The production of hydrogen is an activity listed under Annexe I to the current EU ETS Directive. It covers all hydrogen production by steam methane reforming or partial oxidation exceeding a production capacity of 25 t/day. Currently, fossil-fuel-based hydrogen production is de facto subsidised by free allowances eligibility. With this support provided to fossil-fuel-based hydrogen, this means that companies receive very few incentives to change to costlier yet climate-friendly alternatives, such as low-carbon or renewable production methods, and hinders the development of those clean technologies.

2. Hydrogen Europe welcomes the proposed eligibility of renewable and low-carbon hydrogen to free allowances and the introduction of conditionality to access free allowances.

[9] Please see Hydrogen Europe's position paper '[ETS cap reduction and phasing out of free allowances: towards the stepping up of decarbonisation in the aviation sector](#)' (Page 9)

This financially incentivises the switch from fossil-fuel-based to clean production processes. Yet, this eligibility should be effective as soon as the legislation enters into force. It must also be clear how carbon captured and used is accounted for and avoid double counting. Besides, this eligibility should not hinder or delay the eventual phasing out of free allowances for those sectors that will be covered by carbon leakage protection mechanisms such as CBAM. It is also a positive development to make free allowances conditional, as from 2026, on implementing measures recommended in energy audits as per Article 8(4) of the EED and on investments in “techniques to increase energy efficiency and reduce emissions.” We also support that operators who want to demonstrate that they are eligible for free allowances should have the possibility, as an alternative, to demonstrate the implementation of other measures leading to GHG reductions equivalent to those recommended by the audit report. Just like for the above, this should not delay the planned gradual phasing out of free allowances.

3. With regards to CO₂ captured and used (CCU) for the production of e-fuels (RFNBOs), Hydrogen Europe is fully aligned with the Commission’s view that double counting of released CO₂ emissions should be avoided and therefore call for the zero-rating of these fuels under the Monitoring and Reporting Regulation (MRR), understanding however that accounting of captured carbon emissions is made under the EU ETS and binds the original emitter. To further boost the use of sustainable fuels in road transport, aviation and the maritime sector, zero-rating should apply regardless of the mode of CO₂ capture (i.e., from industrial installations, biogenic CO₂, or direct air capture).

Anticipating increasing volumes of imported RFNBOs, we call on the Commission to already take a forward-looking approach and design a framework that also rewards the use of imported, sustainable (and audited) e-fuels by EU sectors.

4. If free allowances are being phased out and CBAM phased in, the Commission should explore ways to ensure EU exporters are covered by carbon leakage protection, putting them on a fair level playing field with competitors on foreign markets. Besides, participation of EU or foreign importers of final products that the CBAM does not cover as such to the EU single market would cause unfair competition for EU players. It is therefore crucial that a fair level-playing field is provided there too. Moreover, the impacts on the competitiveness of EU downstream industries incorporating products subject to CBAM should also be considered to ensure a level-playing field with non-EU companies (especially considering that neither Scope 3 emissions nor all ETS sectors are included under the CBAM proposal). Eventually, Scope 2 and 3 should be covered too as soon as possible and in the least administratively burdensome manner.

5. In addition to phasing out free allowances and providing carbon leakage protection, the CBAM proposal should serve as a negotiating tool for the EU to form a wide international coalition for coordinated carbon pricing policies. Indeed, addressing carbon leakage ultimately requires greater integration and linkage between the EU ETS and other carbon schemes internationally. Intensifying the EU’s climate diplomacy efforts, fostering expansion of carbon trading internationally, and providing a level playing field for EU industry and industry from third countries are key to addressing both carbon

leakage and driving successful international climate cooperation

6. Consistency should be ensured between CBAM and the upcoming delegated act on RFNBOs and the Guarantees of Origin system for renewable hydrogen, also with a view to enabling clean hydrogen imports from third countries. The calculation of actual embedded emissions should take into account ongoing standardisation work and not duplicate applicable methodologies. The use of default values, although simpler, could lead to a risk of circumvention of the instrument. Clarification of the articulation with the existing customs regime will be necessary to ensure the good functioning of the CBAM.

7. The proposed provision to potentially modify the definitions and system boundaries of existing Union-wide ex-ante product benchmarks may have far-reaching consequences affecting free allocation by significantly modifying the number of installations on the benchmark curve. If outliers are to be artificially compared with mainstream installations, determining a true, technically, and scientifically based benchmark is hardly possible. Such consequences should be carefully considered as the potential impact in the allocation period 2026-2030, along with the proposed increased annual reduction rate, could affect the ability of the industry to decarbonise in light of growing global competitive pressures.

ETS cap reduction and phasing out of free allowances: towards the stepping up of decarbonisation in the aviation sector

On 14 July, the European Commission unveiled one of its most ambitious legislative packages ever, the "Fit For 55". With the aim of achieving 55% emissions reduction by 2030, the package targets different fields (energy, mobility, taxation, etc.) in a quest to promote a swift transition to more environmentally sustainable practices. Among the proposed initiatives, the Commission presented a proposal that amends the existing Emissions Trading System as it relates to the aviation sector.¹⁰

In the revision proposal, Hydrogen Europe welcomes:

- The phasing out of free allowances and increased auctioning of aviation allowances, incentivising a switch to Sustainable Aviation Fuels (SAF),
- The mandate of the Innovation Fund is to support breakthrough technologies and infrastructure to produce low- and zero-carbon fuels in aviation, especially hydrogen-based fuels.

Our policy ask:

SAF suppliers should not have to submit allowances for fuels produced from captured CO₂. The European Commission should publish clarifications on how to account for emissions of e-fuels to avoid double counting.

Hydrogen Europe welcomes the European Commission's proposal to update rules for the aviation sector.

The initiative comes right in time to support the decarbonisation of one of the hardest to abate sectors, whose traffic volume is still expected to rise in the coming decades.¹¹

Therefore, we support the proposal to reduce the allocation of free allowances from 2024 to a complete phase-out of free allowances by 2027; to cap the total number of aviation allowances in the ETS at current levels and annually reduce the cap by a linear reduction factor of 4.2%. The more the carbon price increases, the stronger the price signal will be to switch to hydrogen-based fuels and hydrogen-powered aircraft in the long term.

However, for this to happen, the European Commission estimates that the carbon price would need to be set at EUR160, which is not expected to be the case in the short term. A low carbon price would fail to boost the decarbonisation plans of the aviation sector, ultimately falling behind potential competitors in other continents and causing further environmental damage locally. It is of key importance that all the legislation pertaining to the aviation sector (e.g., ReFuelEU Aviation, REDII recast, ETD, AFIR, etc.) are fully complementary, well-coordinated and coherent because any single regulation alone would be insufficient in fulfilling the development and decarbonisation task efficiently. Also, adequate funding must be granted to scale up the production of synthetic fuels and establish the necessary infrastructure, for instance, through reinvesting revenues from auctioned allowances.

[10] <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0552>

[11] <https://ec.europa.eu/info/sites/default/files/refueleu-aviation-sustainable-aviation-fuels.pdf>

Air traffic (intra and extra-EU) would increase by 43% by 2030 and 88% by 2050, relative to 2015, following the recovery from the COVID-19 pandemic.

The European Emissions Trading System: A system fit to decarbonise road transport?

Hydrogen Europe recommends the following actions to the European institutions as part of the legislative negotiations on road transport aspects of the EU ETS:

- Set a strong carbon price to support the uptake of low and zero-emission technologies.
- Amend Annexe III (c) of EU ETS with the addition of emissions factor(s) that recognise the Well-to-Tank benefits of hydrogen and hydrogen-derived fuels (RFNBOs) for road transport to create a level playing field for the whole-system emissions of all energy carriers.
- Alternatively, amend the Annex to require the Commission to set out these emission factors in delegated acts before the start of the EU system (by 2023 at the latest).
- Ensure coherence of the emission factors with the requirements of the Renewable Energy Directive and its upcoming Delegated act on RFNBOs, the Taxonomy Regulation, and avoid potential double-counting with ETS activities in the industrial sectors.

Context

The “Fit for 55” Package has shown a clear recognition for the role of hydrogen in all sectors of the European economy as an energy vector, energy carrier, and as a fuel in pure and derived forms for all mobility applications.

Hydrogen Europe welcomes the proposal of the European Commission to revise the EU Emissions Trading System (ETS)¹² to match the Green Deal’s political ambition and reach the 55% GHG reduction target required by the European Climate Law.¹³ **We also welcome the European Commission’s recognition for the need to create two separate pricing systems in the EU ETS that factor in the different abatement costs of sectors.** The existing ETS system (henceforth ETS I), covering industrial activity and power generation, improved significantly by expanding the scope to maritime ships above 5,000 gross tonnages (GT). Meanwhile, the revision proposal introduces a novel CO2 pricing system within the ETS system (ETS II), which can act as a critical instrument of decarbonising road transport and buildings sectors.

Strong carbon pricing will be key if we want to further reduce CO2 emissions in the transport sector. The TCO – total cost of ownership – is the main driver for commercial vehicles, and today we need an ambitious carbon price if we want transport operators to choose zero-emission vehicles for their business. The market uptake of zero-emission vehicles will only be realised if their operations are profitable, and today this requires an ambitious carbon price. Decarbonisation of the road transport system can no longer be achieved by setting high-performance standards for vehicles, but it will require a number of legal supporting measures, all of them interlinked.

[12] Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757 ([“EU ETS proposal”](#)).

[13] Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ([“European Climate Law”](#)).

When it comes to the revenues from the ETS for road transport, it should be (partly) earmarked to be used for investments into the charging and hydrogen infrastructure.

The current EU ETS proposal could be the connecting piece to solve the decarbonisation dilemma of the road transport sector. Hydrogen Europe believes that ETS II could play a key role in scaling the uptake of renewable fuels of non-biological origin (RFNBOs) in road transport, particularly in existing fleets and used vehicles.

Road transport – Rewarding the uptake of hydrogen-derived fuels in existing fleets

The ETS II system should create incentives for a switch to sustainable fuels such as renewable and low-carbon hydrogen, as well as other renewable fuels of non-biological origin (RFNBOs). Unfortunately, **Hydrogen Europe underscores that ETS II¹⁴ does not adequately incentivise the uptake of higher shares of RFNBOs in the fuel mix of energy suppliers.** This is as a result of the reference in Annexe III to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories as the primary source of emission factors to be used in the calculations. However, despite their recent revision in 2019, the Guidelines do not contain any specific fuel emission factors for RFNBOs. The lack of such emission factors may lead to RFNBOs being treated as equivalent to conventional fossil fuels, which would have the opposite effect to their promotion in the “Fit for 55” package.

This lack of clear emission factors for RFNBOs hampers the fuel suppliers in making business decisions to gradually

decarbonise their fuel supply with progressively higher blends of renewable, carbon-neutral fuels. Not only does this impact the roll-out of RFNBOs, **but it also hinders the achievement of the REDII transport target and the RFNBO sub-target by fuel suppliers.** Hydrogen Europe acknowledges that the novel Annex III states that these IPCC Guidelines “*shall be used unless fuel-specific emission factors identified by independent accredited laboratories using accepted analytical methods are more accurate.*” Unfortunately, the proposed revision of the EU ETS Directive and its new Annexe III does not clarify to suppliers of RFNBOs as to which emission factors would be applied in the future, how this system would be linked to the REDII sub-target, and whether sustainable fuels would be incentivised under this system.

Having clear regulatory signals is critical. This includes emissions factors that fully recognise the Well-to-Tank (WtT) GHG emission reduction potential of RFNBOs. Instead, the current proposal would result in **insufficient and incoherent regulatory incentives that would strike against the decarbonisation of existing European fleets in short, medium, and even long-term horizons.** Putting the potential role of RFNBOs to decarbonise existing vehicle fleets into context, a recent report by European Automobile Manufacturers has shown that the average age of cars and vans on the European market is approximately 11.6 years, the average of trucks is 13 years. In comparison, the average age of buses is 11.7.¹⁵ Suppose trends of average lifetimes for existing road vehicles continue. In that case, a European market for used conventional road vehicles may probably continue well past 2035 and 2040.

[14] ETS Annexe III PART C – Monitoring and reporting of emissions corresponding to the activity referred to in Annexe III

[15] [ACEA Report Vehicles in Use](#)

Incentivising the use of RFNBOs for existing road vehicles also has the advantage of creating value chains needed for the uptake of drop-in fuels in other modes of transport, such as waterborne and aviation, that have limited avenues of decarbonising their sectors without the use of e-fuels. The ramp-up in the production of Fischer-Tropsch based fuels and methanol-derivates such as synthetic gasoline or kerosene (compliant with REDII sustainability criteria for RFNBOs) can be used to ease the adoption of drop-in fuels in ships and aircraft by decreasing the costs of these fuels thanks to a larger supply pool. Furthermore, as the number of existing road vehicles using e-fuels progressively drops from 2035 onwards, the share of RFNBOs in the other sectors will progressively increase to not only match but also to likely exceed the ambition set out by RefuelEU Aviation and FuelEU Maritime proposals.

Lastly, it is important to note that the carbon emission factors of these renewable synthetic fuels and the methodology for their application for the purposes of the ETS II should, of course, **be fully coherent with the functioning of the ETS I.** Particular attention should be paid to **avoid potential circumstances of double counting** (for example for carbon captured within installations covered by the ETS I and used for the production of RFNBOs). Furthermore, **all emission factors should be aligned with the upcoming Delegated acts on RFNBOs, as well as in line with the Taxonomy Regulation.**

Taxing fuels based on their environmental performance and broadening the scope of taxation: positive steps to make the ETD a key lever to establish price parity between clean and fossil fuels

Restructuring energy taxation by reducing fossil fuels subsidies, eliminating double taxation, granting fiscal rewards to those investing in clean energy technologies is central to establishing a robust system of GHG emission reduction. The revision should also explore mechanisms to promote greater greenhouse gas emission reductions, energy efficiency, and alternative fuels (hydrogen, synthetic fuels, e-fuels, advanced biofuels, electricity, etc.) in all economic sectors.

The creation of a clean hydrogen economy depends on creating a distinct regulatory framework and keeping energy taxation as low as possible throughout the hydrogen value chain, particularly at the production stage. The persistence of taxation loopholes and exemptions (de facto, subsidies) for fossil fuels (including via support to all kinds of electricity not considering GHG intensity) delays the market introduction and large-scale deployment of all clean technologies, not least clean hydrogen. It is time the European Commission increases the minimum level of taxation for energy products and electricity from carbon-intensive sources.

In the revision proposal, Hydrogen Europe welcomes:

- the inclusion of hydrogen under the scope of taxation, recognising the role hydrogen can play in many end-uses, including as heating and motor fuel,

- the possible exemptions of RFNBOs; mandatory exemption for RFNBOs should apply to road transport, on top of the maritime and aviation sectors,
- the definition of “low-carbon fuels” and its categorisation as a self-standing tax category, as well as the differentiated treatment afforded to those fuels, in line with their environmental performance.

However, it should be ensured that RFNBOs do not eventually risk being recognised as NRFNBOs (Non-Renewable Fuels of Non-Biological Origin) instead, due to Article 2(6) of the ETD where a physical mass balance approach is applied at border/customs for the control of the mix and to Article 21 which does not provide for RFNBO exemption from the control and movement provisions. It could indeed lead RFNBOs to lose their tax advantage (linked to their renewable character), contradicting the whole spirit of the ETD revision.

The principle of taxing energy products based on energy content allows a more accurate comparison and a fairer competition between energy products while promoting energy efficiency. The creation of an implicit category of taxable energy products, based on their environmental performance, is a step in the right direction. It allows the creation of a hierarchy of product categories based on their general environmental performance.

Indeed, energy consumers investing in and utilising low carbon/renewable feedstocks and fuels should be recognised and (fiscally) rewarded for their efforts. In contrast, high-carbon, polluting processes, fuels, and feedstocks should face a proportionately higher fiscal burden. This is especially true as many industrial consumers must invest in new processes and infrastructure to adapt their operations for clean hydrogen. This differentiated tax treatment for renewable and low-carbon fuels and applications that drive the EU's green transition could be key in making clean hydrogen a business case sooner. It could also be determining in bolstering the required faster pace of the transition to clean technologies and the whole energy system efficiency. Against that background, the clean hydrogen value chain should benefit from the ETD from the lowest minimum environmental tax rates and tax exemptions. Moreover, the European Commission should push at EU- and Member State-levels to implement tax investment credits for the clean hydrogen value chain and extend existing R&D tax exemptions and credits schemes to clean hydrogen. Besides, links with taxonomy after completing the process and the development of the complementary delegated act announced in Commission Communication to determine tax rates should be explored.

Nonetheless, the revision proposal falls short of creating a direct correlation between CO₂ emissions and applicable taxation, which would have been preferable, as it would have benefited the most environmental energy products even within what is now the same tax category. **Indeed, the measures reducing the fiscal burden on certain forms of energy must assess the GHG reduction effect of those energy products.**

Promoting electricity use in transport with no consideration of GHG intensity, for instance, would hamper decarbonisation. As such, any measures should be technology-neutral (also meaning 'energy-carrier-neutral') and market-driven. For that reason, loopholes for potentially carbon-intensive electricity under Articles 13, 14, and 15 are contrary to the polluter-payer principle and should be removed. In this context, potential amendments to the Excise Monitoring and Control System (EMCS) or the use of Guarantees of Origin/Sustainability certificates could be enacted.

Besides, exemptions for electricity supplied to stationary aircraft (Article 14(5)) and for electricity supplied to vessels in port (Article 15(5)) should be removed.

Yet, Hydrogen Europe takes note of the elimination of most loopholes and exemptions applicable to fossil fuels in the maritime and aviation sector and welcome them. It represents a high incentive to switch such fuels to more environmentally friendly options such as hydrogen. However, the proposal should go further in that direction, as certain continued exemptions have the potential to undermine efforts in these areas and should be removed. On top of exemptions for electricity supplied to stationary aircraft and vessels at berth mentioned in the above paragraph, exemptions for business and pleasure flights (Article 14(1)) should be removed too.

In parallel, the ETD should continue to allow the exemption of taxable products used under fiscal control in the field of pilot projects for the technological development of more environmentally-friendly products or in relation to fuels from renewable resources (Article 16a), of electricity generated from

fuel cells (Article 16b(5)), electricity produced from combined heat and power generation (Article 16c), and should allow the exemption of renewable fuels of non-biological origin (Article 16d).

Finally, Article 22(4) on the chargeable event for hydrogen should be made clearer. While the proposal to align it to the one for natural gas may be suitable in most cases, it should also be remembered that hydrogen can also be supplied by economic operators directly as fuel at hydrogen refuelling stations; such a situation should be envisioned.

The definition of the chargeable event for hydrogen should not create any undue administrative barriers for hydrogen refuelling stations. Furthermore, from this provision, it is unclear what the chargeable event is when considering the consumption of RFNBOs other than hydrogen.



H2ero Net Zero

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accelerating the European hydrogen industry**



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