

Meeting with EBA/GD4S/NGVA, 4 March 2021

Sustainable and Smart Mobility Strategy

Scene setter.

- The European Biogas Association (EBA), Gas Distributors for Sustainability (GD4S) and Natural Gas Vehicle Association (NGVA) would like to share with you their vision on how renewable and low carbon fuels such as biomethane, green electricity, green hydrogen and advanced liquid biofuels could contribute to the implementation of the Sustainable and Smart Mobility Strategy.
- A key point concerns the change of the current methodology to determine CO₂ emissions of road transport vehicle fleets of manufacturers. The associations want to change from the tailpipe emissions to a "Well-to-Wheel" approach or life cycle approach. They would like to see fuel credits under the CO₂ emission performance standards for cars and vans as part of the Fit For 55 package.

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Objective(s)

- To outline the main orientations of the Sustainable and Smart Mobility Strategy for low carbon and renewable fuels as well as zero-emission powertrain technologies.
- To highlight the importance of continued investment in the production and development of renewable and low carbon fuels and point out the work on establishing a Low carbon and renewable fuels alliance.

Key Messages.

- **All transport modes are indispensable for our transport system. All must become sustainable.** The Sustainable and Smart Mobility Strategy includes ambitious measures aiming at significantly reducing CO₂ and pollutant emissions across all modes. It will put users' first, exploiting digitalisation and automation, enhancing connectivity and ensuring safety and accessibility.
- The first pillar of the Strategy is to **boost the uptake of low- and zero-emission vehicles as well as renewable and low-carbon fuels without further delay.** I welcome the efforts of your industries.

- The Strategy announces a whole set of policy initiatives: the a revision of the CO2 standards for cars and vans, Renewable Energy Directive and the Energy Taxation Directive, Effort Sharing Regulation and possible extension of the Emission Trading Scheme, complemented by revisions of the Directive for Alternative Fuels Infrastructure and the revision of the TEN-T regulation, but also the review of the Energy Efficiency Directive. The CO2 standards for heavy duty vehicles are also up for review in 2022. A lot is on the table for this year.
- We have **two key policy objectives**: we need to quickly scale up the production of renewable and low carbon fuels. We need to ensure that those fuels are used where they matter most – in modes that have little alternatives for decarbonisation at hand.
- The gas industry needs to start scaling up the biomethane and e-gases production but also of low carbon hydrogen to affordable costs in the EU. Investments in sustainable liquid and gaseous fuels and the relevant transport systems would strengthen the role of the EU as leader in these technologies, thus increasing its competitiveness.
- Fossil alternative fuels can only remain part of it by becoming carbon neutral (e.g. with Carbon Capture and Storage (CCS) or other technologies).
- Aviation and waterborne transport face great decarbonisation challenges in the next decades. These modes must have priority access to renewable and low-carbon liquid and gaseous fuels. In addition, those fuels could then also be used in road transport, and particularly long haul road freight.
- The **ReFuelEU Aviation and FuelEU Maritime initiatives** will boost the production and uptake of sustainable aviation and maritime transport.
- Furthermore, DG MOVE is in the lead of efforts to consider establishing a **Renewable and Low-Carbon Fuels Value Chain Alliance**, within which public authorities, industry and civil society, will cooperate to boost the supply and deployment of the most promising fuels. It will complement action under the European Clean Hydrogen Alliance.
- I know you are in contact with my services and I count on the active support and participation of your associations in this Alliance.

- As regards the revision of the **Alternative Fuels Infrastructure Directive**, the Impact Assessment is ongoing. We intend to ensure that all needs for minimum infrastructure in all modes of transport are addressed, including possible binding requirements and further measures to ensure full interoperability of infrastructure and use services for all alternatively fuelled vehicles.
- The Commission will also adopt a **strategic roll-out plan** outlining supplementary actions in support of rapid deployment of alternative fuels infrastructure. The strategic roll-out plan will include recommendations on planning and permitting processes as well as on financing of alternative fuels infrastructure, particularly for road.

Defensive Points

What will be the future role of liquid and gaseous fuel in transport?

- The most ambitious scenario for GHG reductions in transport defined in the impact assessment accompanying the "Communication on the EU's Climate Change Action Plan" shows that liquid and gaseous fuels, including oil and gas products and excluding hydrogen, will account for more than half of the energy used in transport by 2050.
- We will need these fuels in maritime and air transport and, to a lesser extent, in long-distance road freight transport.

Is it still realistic to say that we are technology-neutral, if all car manufacturers are investing heavily in battery-electric vehicles?

- We have clear, scientific evidence showing us the level of emission reduction that we need to achieve in order to help maintaining climate change within acceptable limits. The European Green Deal and the Mobility Strategy set out the details of how we can meet these objectives.
- In this context, being technologically neutral means promoting technologies that contribute to these objectives, in a way that is proportionate to the level of their contribution. The market will then determine which of the technologies that are compatible with our need to become carbon-neutral will play a stronger role in each sector.
- In road passenger transport, there is now strong market momentum for battery-electric vehicles in road passenger transport. But this does not rule out the need to support other technologies, particularly hydrogen-fuel cells and renewable low carbon fuels such as advanced biofuels, biomethane or electro fuels, which will also continue to contribute to decarbonisation.

Shouldn't well-to-tank emissions and life-cycle emissions be taken into account in CO2 emission standards legislation? Fuel credits under the CO2 standards could enable the practical recognition of the contribution of such fuels to the reduction of CO2 emissions.

The CO2 standards are in the responsibility of colleagues in DG CLIMA.

The current "Tank-to-Wheel" (TTW) approach, by focusing on the tailpipe CO2 emissions of the vehicles, is considered fully coherent with other policy instruments contributing to the EU's climate and energy policy, including the EU Emissions Trading System (ETS), the Effort Sharing Regulation and policy initiatives taken in the fuels and transport sector.

The future role of liquid and gaseous fuels in road transport will be framed by the Commission's proposal for the revision in 2021 of the current regulation on CO2 emission performance standards for cars and vans. This proposal will determine a clear pathway from 2025 onwards towards zero-emission mobility. At this moment, it is too soon to state how the current regulation will be revised.

I assume that you are in constant discussion with colleagues in DG CLIMA and would like to hear more about these discussions.

Is there a lack of EU financial support for renewable low carbon fuels?

Although, the EU has given support to renewable fuels industry, in particular under the Horizon 2020 programme, substantive research and innovation is still needed to bring biomethane, e-gases and low carbon hydrogen to a level of suitable market impact. In this respect, the EU will continue supporting the research and innovation for the production of these fuels at affordable costs through the Horizon Europe programme and other relevant financial tools.

We count on the EU relevant industry to leverage EU industry investments to overcome existing biomethane, e-gases and low carbon hydrogen production barriers, to make these fuels become a real business case in the shortest possible time.

Do you think that Energy Taxation will consider the intensity of carbon fuels by favouring low-carbon fuels?

- The main objective of this revision is to align the taxation of energy products and electricity with EU energy and climate policies with a view to contributing to the EU 2030 targets and climate neutrality by 2050 in the context of the European Green Deal.
- All possible options are under study. However at this moment, it is too soon to state how the current regulation will be revised. The Commission's proposal is expected by June 2021.

What EU grant funding and financial instruments can be used to support clean and sustainable fuels and the relevant infrastructure?

- Let me underline the opportunities offered for sustainable transport by the Recovery and Resilience Facility(RRF). This funding will be used by Member States on the basis of national plans which will detail the sectors benefitting from such support. I would therefore invite you to work with national authorities to ensure that transport sector needs are adequately addressed in this framework.
- The RRF should notably provide support that would lead to more environmentally friendly approaches or digitalisation in transport. The guidance documents issued recently by the Commission refers explicitly to support to sustainable alternative transport fuels. Obviously, we expect Member States to make strong use of this opportunity to support deployment of a dense network of recharging and refuelling stations.
- I also draw in particular your attention to InvestEU. The InvestEU aims at supporting the competitiveness of the Union economy and its companies through investment support, including for decarbonisation of logistics and related infrastructures and mobile assets.
- Its "Sustainable Infrastructure Window" is specifically designed to support private investments in transport infrastructure as well as fleet renewal – the greening of mobile assets being identified as a priority.
- We are aware of the need to decarbonising logistics (trucks and modal shift) especially implemented smaller family owned freight operators. The InvestEU is implemented by partners' financial institutions, such as the European Investment Fund, specialized in supporting SMEs, including in the transport sector.
- Further Horizon Europe, this program offers further opportunities for instance for Hydrogen and low carbon fuels research.
- Please do not overlook the other existing funding opportunities for the transport sector infrastructure. Support from CEF will remain available during the 2021-2027 period for deployment of alternative fuels infrastructures.
- Finally let me mention the Cohesion and structural funds that also support our Green Deal agenda by reinforcing sustainable regional development, where public transport plays crucial role.
- Targets such as the further deployment of alternative fuels infrastructure in urban and rural environments and promotion of clean urban mobility are at the core of our policy being supported by regional instruments, such as ERDF and Cohesion Fund.

Background

Natural gas and Biomethane

- Natural gas can be sourced from fossil natural gas or from biomass and wastes as biomethane injected into the general gas grid or by power to gas technologies (e-gas) .
- Natural gas presents limited environmental advantages compared to oil based fuels, but these advantages are significantly increased when natural gas is blended with biomethane and/ or e-gases.
- According to the industry, for passenger cars, on a WtW basis, natural gas reduces GHG emissions by 23% compared with petrol and by 7% compared with diesel. In heavy-duty applications, benefits compared to diesel amount to 16% for CNG up to 20 % for LNG. In maritime applications, the use of LNG provides an overall Well-to-Wake benefit up to 21% compared with conventional HFO (Heavy-Fuel Oil) fuels. These figures are strongly contested by T&E due to the fact that methane fugitive emission are not or partially accounted in the "Well-to Tank" part. In any case, the industry should monitor and minimize methane emissions in the whole natural gas chain.
- Natural gas and biomethane in liquefied form as LNG is an attractive option for ships and trucks due to its high energy density and low pollutant emissions. The use of LNG in the maritime is the best option in the short term to meet the requirements for decreasing the sulphur content in maritime fuels in the Sulphur Emission Control Areas.
- The number of LNG trucks is significantly growing in the last years. Currently, three OEMs manufacture LNG trucks for sale in the European market (IVECO, SCANIA and VOLVO). The number of maritime vessels powered by LNG in use in the EU is also increasing. (In 2019, there was 159 LNG vessels in operation and 159 on order . As regards CNG vehicles, the number of CNG vehicles remain stable in the last years. About 1.2 M of CNG vehicles are registered in the EU, being Italy the dominant market. In the Nordic countries there are vehicles fleet that run only on biomethane.
- Biomethane is defined as methane produced from biomass, with properties close to natural gas allowing blending fossil natural gas and biomethane without any changes to the gas infrastructure or to gas vehicles. Biomethane can be produced by upgrading biogas produced through anaerobic digestion or by thermochemical conversion of biomass.

- In Europe in 2017, the number of biogas plants has been estimated to over 17,783 for a total installed capacity of about 10 GW; biogas is upgraded in more than 500 plants in 15 countries. While biogas is being produced in all EU member states (except Malta), not all countries started to convert it into biomethane. There are fourteen European countries (AT, CH, DE, DK, FR, FI, HU, IS, IT, LU, NL, NO, SE, UK) that currently upgrade part of their biogas production into biomethane. In 11 countries (AT, CH, DE, DK, FI, FR, LU, NL, NO, SE, UK) biomethane is injected into the natural gas pipeline system and it is used as vehicle fuel in 12 countries (AT, CH, DE, DK, FR, FI, HU, IS, IT, NL, SE, UK).
- The Commission Delegated Regulation (EU) 2019/1745 of 13 August 2019 lays down the standards to be applied for natural gas supply for road and waterborne transport.

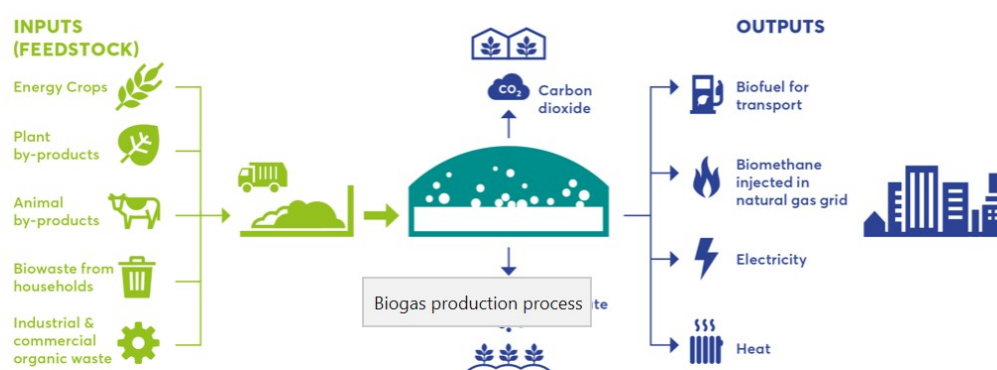


FIGURE 1

Schematic overview of inputs and outputs of the biogas and biomethane production process

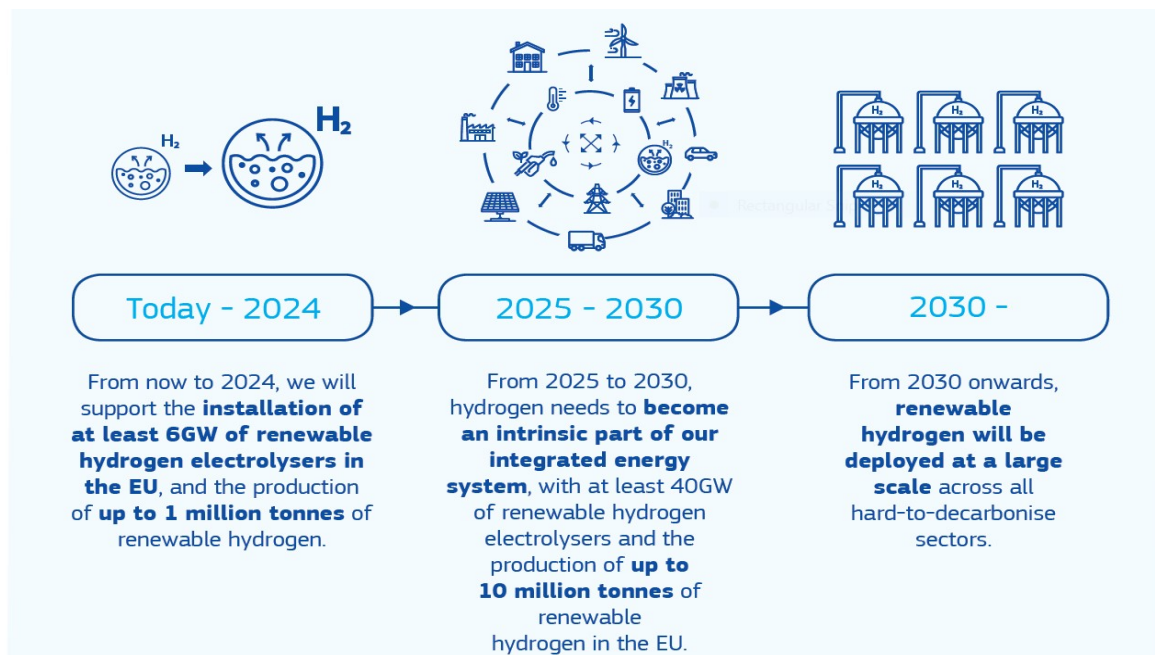


Hydrogen

- Hydrogen accounts for less than 1% of Europe's present energy consumption and its use in transport is almost negligible. However, clean hydrogen is expected to play a key role in the decarbonisation of the European economy where other alternatives might not be feasible. This includes freight transport, public buses and waterborne transport.
- The Commission adopted on 8 July 2020 "A Hydrogen strategy for a climate neutral Europe" The strategy will explore actions to support the production and use of clean hydrogen, focusing in particular on the mainstreaming of renewable hydrogen. However, it is necessary to note that the production of hydrogen through reforming of natural gas is still the dominant technology. Moreover, the use of carbon capture storage (CCS) technologies can significantly reduce full life-cycle greenhouse gas emissions compared to existing hydrogen production.
- The market for H&FC vehicles is very limited. Less than 1,000 H&FCs and around 100 buses are registered in the EU, as well as a very small number of H&FC trucks are in operation. The number of hydrogen refuelling stations is approximately 112.. The Commission Delegated Regulation (EU) 2019/1745 of 13 August 2019 lays down the standards to be applied for hydrogen gaseous supply for road transport.

- Definitions:

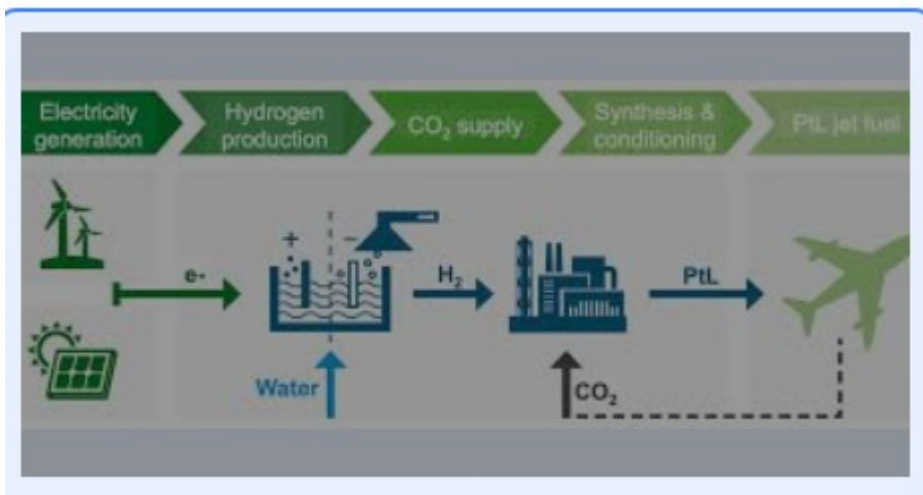
- Green Hydrogen:** Produced solely from renewable energy, either from electricity (e.g. by electrolysis) or from biofuels (e.g. by gasification)
 - Blue Hydrogen:** Hydrogen produced from fossil based energy at a (strongly) reduced CO2 emission level, such as from
 - electricity mixes containing a share of fossil based electricity,
 - natural gas produced with Carbon Capture & Storage (CCS), leaving some CO2 in the order of 10% escaping to the environment,
 - Grey Hydrogen also named brown hydrogen:** Hydrogen produced from conventional and fully fossil energy based processes such as steam-methane reforming (SMR), serving as low-CO2 emission fuel by substituting other specifically more CO2-intensive fuels such as coal or oil, and allowing to utilizing the efficiency potential of direct hydrogen end-use applications such as fuel cells



Synthetic fuels-Electrofuels (e-kerosene) , e-diesel , e-gas

- Synthetic fuels are produced by combining hydrogen with carbon. Hydrogen can mainly be produced from natural gas and from electrolysis, where electricity is used to split water into oxygen and hydrogen. In both processes, hydrogen combined with carbon can form gaseous or liquid hydrocarbons through a synthesis process. **Synthetic fuels from electricity sources are named electrofuels.**
- Synthetic fuels are drop-in fuels, therefore they can be blended with conventional fuels without the need to adapt or modify vehicle engines or aircraft turbines.

- The sustainability and particularly the GHG emission reduction potential of synthetic fuels is determined by the origin of both hydrogen (natural gas or electricity and in this later case of the origin of the electricity) and carbon.
- The sustainability of the synthetic fuels changes significantly from the pathway selected for their production. Electrofuels produced from renewable electricity and biogenic carbon (from biomass), or by CO₂ captured directly from the air, are the most sustainable options.
- Synthetic fuels produced from blue hydrogen and CO₂ from non-biogenic origin, where the CO₂ is produced through e.g. fossil fuel burning and later captured through CCS technologies, can be considered as transitional options.
- The overall low efficiency of electrofuels is a clear disadvantage compared to the direct use of electricity in the battery electric vehicle. This fact discourages the use of electrofuels in road transport. However, given the lack of fuel alternatives in aviation, it is necessary to give priority to the use of synthetic fuels and in particular to electrofuels from carbon-free electricity in the aviation sector.



Revision of the Alternative Fuels Infrastructure Directive and a roll-out plan with funding opportunities and requirements

- The main objective is support the roll-out of dense, widely-spread network ensuring easy access for all customers in the EU.
- COM will consider options for binding targets on the roll-out of infrastructure, and further measures to ensure full interoperability of infrastructure and use services for all alternatively fuelled vehicles.
- Detailed needs assessment (e.g. number of public recharging points) will be part of Impact Assessment accompanying AFID revision.
- Other key issues in the revision of the Directive will tackle: adequate information for consumers to end the current lack of transparency on pricing, and facilitating seamless cross-border payments.

- COM will also adopt a strategic roll-out plan outlining supplementary actions in support of rapid deployment of alternative fuels infrastructure.
- The strategic roll-out plan will include recommendations on planning and permitting processes as well as on financing, Need for a comprehensive network of recharging and refuelling infrastructure.

CO2 standards for passenger cars and light duty vehicles (Regulation 2019/631)

- Average emissions of the EU fleet in 2030 will have to be 37,5% lower than in 2021 for cars and 31% lower than in 2021 for vans. An intermediate target of 15% emission reduction is set for 2025, both for cars and for vans, in order to ensure swift action. The review is foreseen under the "Fit for 55 package"
- The CO2 regulation is based on a "Tank to wheel" approach that is contested by producers of renewable liquids and gaseous fuels who would like to implement a credit system that consider the "well to tank" advantages of these fuels.

CO2 standards for heavy-duty vehicles (Regulation 2019/1242)

- The legislation sets binding CO2 emission targets for lorries: a 15% reduction by 2025 compared to the 2019 baseline emissions and 30% reduction by 2030. A review is foreseen after the review of the CO2 standards **for light duty vehicles**
- The CO2 regulation is based on a "Tank to wheel" approach that is contested by producers of renewable liquids and gaseous fuels who would like to implement a credit system that consider the "well to tank"

Renewable and low carbon fuels value alliance

In the new Sustainable and Smart Mobility Strategy (COM(2020) 789 final) the Commission announced it will consider to establish a Renewable and Low-Carbon Fuels Value Chain Alliance, within which public authorities, industry and civil society, will cooperate to boost the supply and deployment of the most promising fuels, complementing action under the European Clean Hydrogen Alliance and building on the success of the European Battery Alliance.

It is projected, the alliance shall deliver on the following objectives: (a) screen production pathways; (b) seek synergies across different transport modes; (c) develop business framework for alternative fuels; (d) facilitate formation of innovation consortia; (e) develop project pipeline and mobilize investors; (f) guide through the fuel certification processes. The Commission counts on active contribution from relevant industry stakeholders in the architecture of the future alliance – dedicated targeted consultations are planned in coming months. The Commission shall conclude on the reflection process by Q4 2021

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