

Brussels, 2 August 2021

Fertilizers Europe's Submission on Public consultation on the revised Climate, Energy and Environmental Aid Guidelines (CEEAG)

1. The EU fertilizer industry's Green Deal challenges – including state aid for environmental protection and energy.

The EU fertilizer sector plays an essential food security role in the European society and economy as the provider of crop nutrients for EU agriculture. The local EU fertilizers industries' contribution to EU food security has been often recognised in the EU's anti dumping actions and in particular the Union Interest, public test analysis and judgments done therein.

With the Green Deal and its ambitious agenda to transform manufacturing with decarbonised raw and finished products, it is essential at all times that policy makers including DG COMP recognise our vital food security role – and the basic imperative to set standards and conditions on state aid with both protect and promote the essential local industry. It should be recorded again that the likely first replacement of EU production is Russian – neither a politically or climate friendly competitor.

Russia, however, is not alone when consideration is given to artificially low state fixed pricing regimes on natural gas. Our competitors in North Africa, the Gulf Cooperation Council, Iran and the other parts of the former Soviet Union all also too adopt highly subsidised government directed gas price regimes. This is regularly confirmed by the IEA periodic reports on subsidies on fossil fuels. [See Annex I for the IEA reference.](#)

The Green Deal's vision and the prospects are exciting representing not only the transformation of the existing fertilizer industry but also the extension of the 'mother ammonia industry' into energy fuels markets as a carbon free carrier. However, to enable the transition to a climate-neutral economy by 2050, the development and adoption of new technologies/ methodologies (e.g., the use of 'green' or 'blue' hydrogen for ammonia production will require very major public support. [An expanded explanation on this is submitted in Annex II, FE article in the publication Fertilizer Focus 'EU hydrogen strategy: Opening up new opportunities for the ammonia sector', September/October 2020; and <https://www.fertilizerseurope.com/paving> the way to green ammonia and low carbon fertilizers.](#)

Indeed, it will be important for this transition to occur in such a way as to keep the EU's new 'green' or 'blue' industries competitive against the risk of high OPEX compared to conventional manufacturing processes - and thereby carbon leakage. Very significant amounts of public support will be required both on OPEX as well as CAPEX. This is well known to Commission, other EU

institutions, technology suppliers, independent expert consultants and the European and international fertilizer industries.

The EU fertilizer sector has a proven commitment and performance record on reducing its emissions over the past decades. It has been successful with its position today as the top most carbon efficient producer region in the world.

Going forward then, the EU fertilizer industry regards the new role of DG COMP as the guardian of fair competition on the European Single Market as a balancing role. The critical balance must be, on the one hand, to permit and promote significantly high public support for decarbonisation while on the other hand, also ensuring that this support is subject to efficiency/effectiveness tests; market distortions tests and the prohibition of 'greenwashing'.

This is a new balance and new set of calibrations for DG COMP, but the EU fertilizer industry supports DG COMP's full and active engagement in both legal and audit terms.

Finally the Green Deal is multi issue multi-dimensional in nature with issues such as ETS, CBAM, energy taxation, electrification – and renewables - all essential components determining the development prospects and viability of the EU industry.

State aid – and its efficient /effective and fair employment is also an essential component. As such we support its inclusion in the Green Deal under the legal and audit auspices of DG COMP and all stakeholders.

Specific Barriers to switching to low carbon energy including hydrogen relevant to the CEEAG consultation

- **'Green' and 'blue' hydrogen** is currently and in the near future, not cost/price competitive with 'grey' hydrogen. On this there is a body of studies done for EC DG ENERGY. Fertilizers Europe has an independent expert study which can be supplied upon request on confidential terms to DG COMP. [See Annex III for sources locating these references.](#)
- The transition in the near future is likely to include production of green hydrogen at our own production sites; near or at industrial complexes; or involving major dedicated hydrogen pipeline networks. In all scenarios very significant technical, financial and infrastructural supports are needed if new low carbon or zero carbon feedstocks and finished fertilizers are to be produced.
 - Because fertilizers are an international commodity products and because the EU is an open and liberalised market well integrated into the global fertilizers markets, it is very difficult to pass on and recover the additional costs of new low or zero carbon feedstock production to our customers, most notably the farmers. This effectively means that, without very significant state assistance, it is difficult to foresee or guarantee the total transformation

of the current grey hydrogen fertilizer industry by way of making positive investment decisions on green and 'blue' hydrogen production.

The two most important contributors to the cost of low carbon production of hydrogen are the electricity price and the electrolyser capex. We recognise therefore that these factors merit public state supports. On the other hand, EU national competition authorities and energy regulators must continue to ensure against the rise of adverse anti-competitive monopoly / oligopoly market powers.

2. Critical factors relevant to the DG COMP consultation, AUGUST 2021

- **Ensure an international level playing field:** Fertilizers Europe calls for a level playing field between EU producers who are subject to EU ETS carbon costs and non-EU producers who are not.

Fertilizers Europe supports a Carbon Border Adjustment Mechanism model, which would be based on continuation of the present principle of EU ETS, including free allowances.

The levelling mechanism should be based on the difference between the product benchmark set in EU ETS and the carbon intensity of imported products, thus giving foreign exporters an incentive to improve their production. Planned carbon border adjustment mechanism needs to include equivalent measures to ensure competitiveness of EU-based exporters.

Another potential competitive-levelling playing field threat now also arises with the EC proposals under RED III involving the additional target obligation of at least 50 % renewable energy for hydrogen/ammonia production 2030 onwards. It is far more realistic to adopt a technology neutral approach that aims at low carbon options including the sourcing of electricity from all low carbon sources including nuclear power if such a target is to be met.

Resource – plant shuffling, we also consider to be a risk that exporters/importers will “play” with. Thus low carbon performing plants will be used for export to the EU and high carbon plants’ products will be directing their production to the domestic market.

- **Provide capex and opex support for all forms of low carbon hydrogen production:** potential hydrogen support instruments like **carbon contracts for difference** are essential to help close the levelized cost gap between grey and green/blue hydrogen production. Any limitations regarding the nature of the renewable electricity should be kept to a minimum. All sources of low carbon electricity will be needed.

- **As CO2 prices are expected to increase steeply**, it is key that there will be effective and proportionate compensation of CO2 costs in power prices.

We therefore urge the Commission to add the fertilizer sector to the list of sectors entitled to receive state aid for indirect ETS cost. This is necessary in order to fully engage in electrification and thereby in the quickest possible decarbonization.

Fertilizers Europe's public position is submitted in Annex IV, ie FE press release October 2020.

Fertilizer Europe's confidential submission on state aid for indirect ETS costs is re-submitted in the CONFIDENTIAL ANNEX.

- **Gas and Hydrogen Infrastructure**

The EU industry supports the continued development of the natural gas network to and within Europe. Natural gas we consider to be a 'long transition factor' and of course a vital factor with regard to 'blue' options on decarbonisation and low carbon raw materials and finished products.

While the concern of the EC is to minimise 'lock-ins' on fossil fuels, with regard to natural gas, the decarbonisation opportunities for blue hydrogen, blue ammonia and blue low carbon fertilizers are considerable and necessary contributions to the Green Deal's net zero carbon target.

All technological and regulatory means should be considered with regard to flexible safe and commercially/technically viable re-purposing and re-engineering of natural gas infrastructure.

With regard to the development of a dedicated Hydrogen infrastructure, the success and lessons of the infrastructure development under the 3rd Energy package can to a considerable extent be repeated. However, the physical and economic challenges facing hydrogen market development are great with the obvious intent is to build a mega hydrogen market. This we recognise will require considerable public support.

Ultimately as industrial consumers we require the ability to compete using hydrogen as a competitive feedstock enabling the ability to compete on the EU's open liberalised fertilizer markets.

- **Electrification and renewables**

This and all energy intensive industries will need abundant supply of very low cost electricity.

Again the experience gained from the 20.20.20 programme can play again. However, having received public support which should be made on ability to become self-standing economically profitable and viable renewables, there is no justification for continual public support. Indeed all support programmes should have business viability tests and time limits set upon them. They should be subject to EC audit not only Member State audit.

- **Taxonomy**

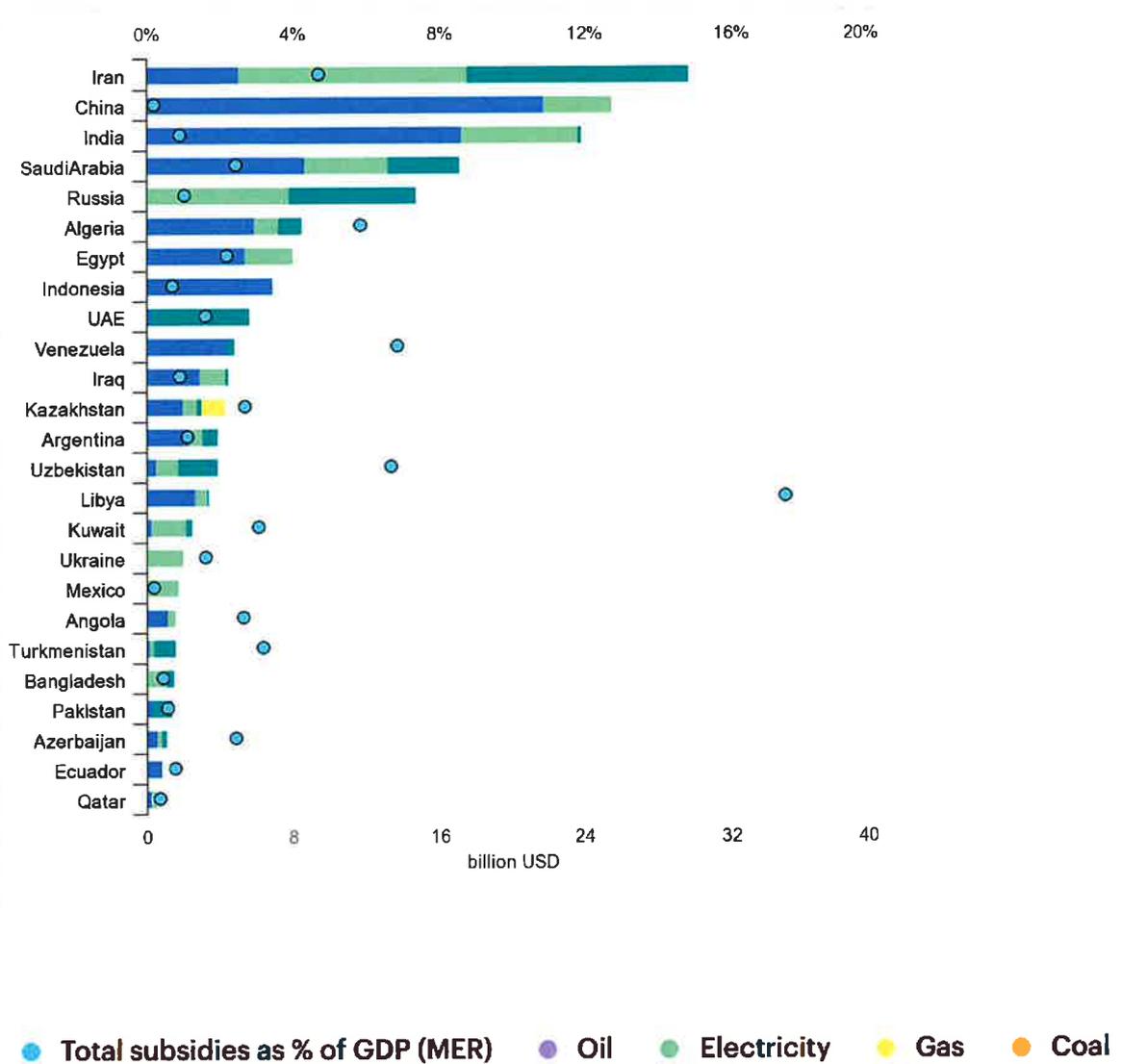
Fertilizers Europe is very concerned that access to any support scheme shall be subject to the compliance with EU taxonomy criteria. Paragraph 69 in the draft CEEAG refers to the use of the EU Taxonomy Regulation 2020/852 article 3 and 'Do No Significant Harm' (DNSH) criteria for balancing the weighing effects on trade and competition.

Firstly, we raise concern about the reference to the EU Taxonomy due to fact that the Taxonomy is a legislative framework largely under development. Although the Regulation has been adopted since June 2020, there are several Delegated Acts still under development. The consequence can be regulatory uncertainty for projects that might be subject to state aid under the implementation of the CEEAG.

Second, the Taxonomy Regulation is a voluntary classification system establishing which activities are defined as environmentally sustainable economic activities. The intention is to create greater transparency for investors. If the taxonomy criteria will be used as a condition for State Aid, it would expand the application of this instrument beyond its original intention, without achieving any additional benefits. Nor would it help industrial decarbonization. Finally, there is no link or consistency between activities included in the EU Taxonomy and sectors/activities subject to carbon leakage risks.

Another additional important concern is that the use of the Taxonomy for our sector may limit the access to funding unfairly. The Taxonomy sets the compliance hurdle very high which drives up the carbon price to extremely high levels while other sections of the CEEAG guidelines aim for cost-effective abatement. Forcing compliance with both conditions puts our sector in an impossible position. The taxonomy was not intended for this use.

ANNEX I – IEA report on value of fossil fuel subsidies



<https://www.iea.org/commentaries/consumption-subsidies-for-fossil-fuels-remain-a-roadblock-on-the-way-to-a-clean-energy-future>

Annex II: An expanded explanation on this is submitted in Annex II, FE article in the publication Fertilizer Focus 'EU hydrogen strategy: Opening up new opportunities for the ammonia sector', September/October 2020; and <https://www.fertilizerseurope.com/paving> the way to green ammonia and low carbon fertilizers.

EU hydrogen strategy

Opening up new opportunities for the ammonia sector

Written by

Antoine Hoxha, Technical Director and **Łukasz Pasterski**, Head of Communications, Fertilizers Europe, Belgium

The recently unveiled EU hydrogen strategy opens a new chapter for the low carbon economy. Hydrogen has what it takes to decarbonise sectors which will not be run by renewable electricity. As one of the biggest producers and users of hydrogen in Europe, fertilizer producers could be the frontrunners in scaling up the production of renewable hydrogen and going beyond fertilizers given that low carbon ammonia could be used as maritime shipping fuel and an energy storage solution.

On the 8 July 2020, the European Commission published 'A hydrogen strategy for a climate-neutral Europe' aiming to revolutionize the way the EU economy is powered. Hydrogen is expected to support the decarbonisation of industry, transport, power generation and buildings across Europe.

The hydrogen strategy explores how clean hydrogen can help reduce the EU economy's GHG emissions in a cost-effective way and looks how to strengthen the production and use of clean hydrogen, focusing, in particular, on mainstreaming renewable hydrogen. This strategy addresses how to transform the potential of hydrogen into reality, through investments, regulation, market creation and research and innovation.

According to the European Commission, the share of hydrogen in Europe's energy mix is projected to grow from less than 2% today to 13-14% by 2050. The reasoning behind it is that hydrogen has what it takes to decarbonise sectors which will not be replaced by renewable electricity.

While the goal is to develop renewable hydrogen produced using

Hydrogen and ammonia has what it takes to decarbonise sectors which will not be replaced by renewable electricity. Hence, the share of hydrogen in Europe's energy mix is projected to grow from less than 2% today to 13-14% by 2050

mainly wind and solar energy, the Commission envisages the so-called 'blue hydrogen' (produced from fossil fuel using CCUS) as part of the mix in the transition period. The Commission argues that market dynamics mean this approach will be needed to cost effectively drive the expansion of a European hydrogen market and drive costs down. It intends to roll out the strategy in three stages (see figure 1).

It is believed that the creation of new markets goes together with the scaling up of the production of hydrogen. Industrial applications and mobility

are pointed out as lead markets. An immediate application would be to reduce and replace the use of carbon-intensive hydrogen in industrial applications such as production of ammonia as well as in the refineries by renewable hydrogen.

Ammonia more hydrogen dense than hydrogen itself

Although it might seem a paradox, ammonia is a better hydrogen carrier than hydrogen itself. Storing and transporting hydrogen is a challenge as it is the smallest and lightest

Figure 1. The path towards a European hydrogen eco-system step-by-step

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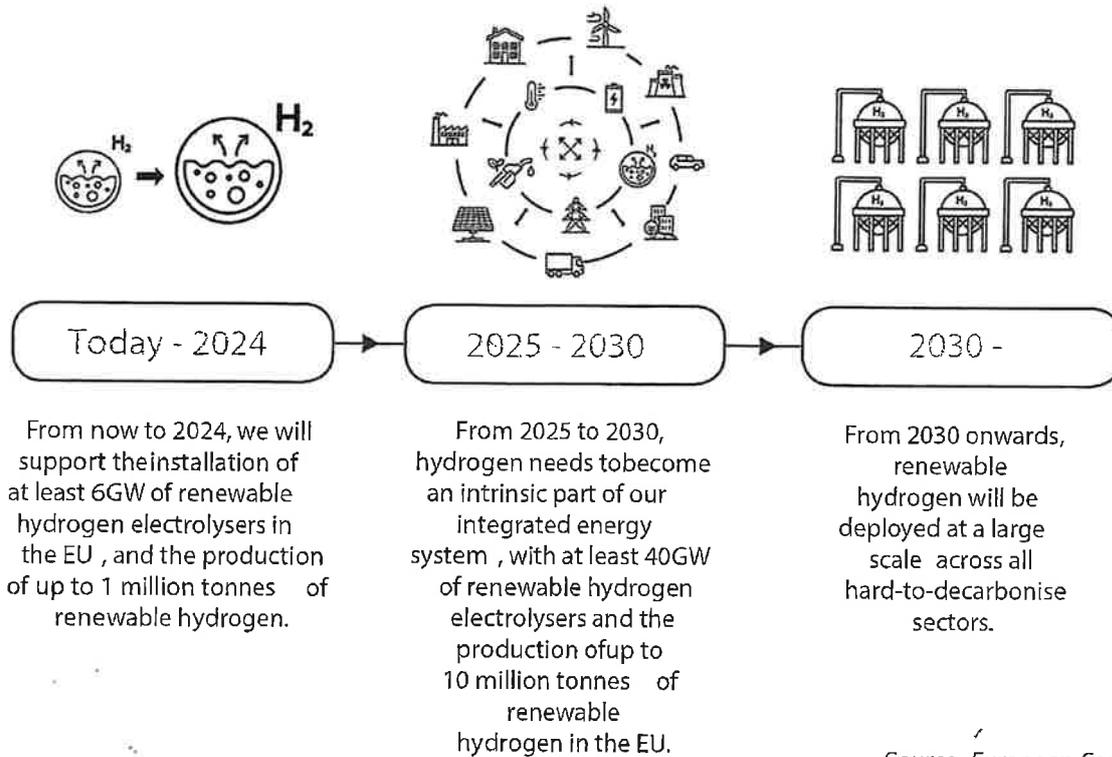
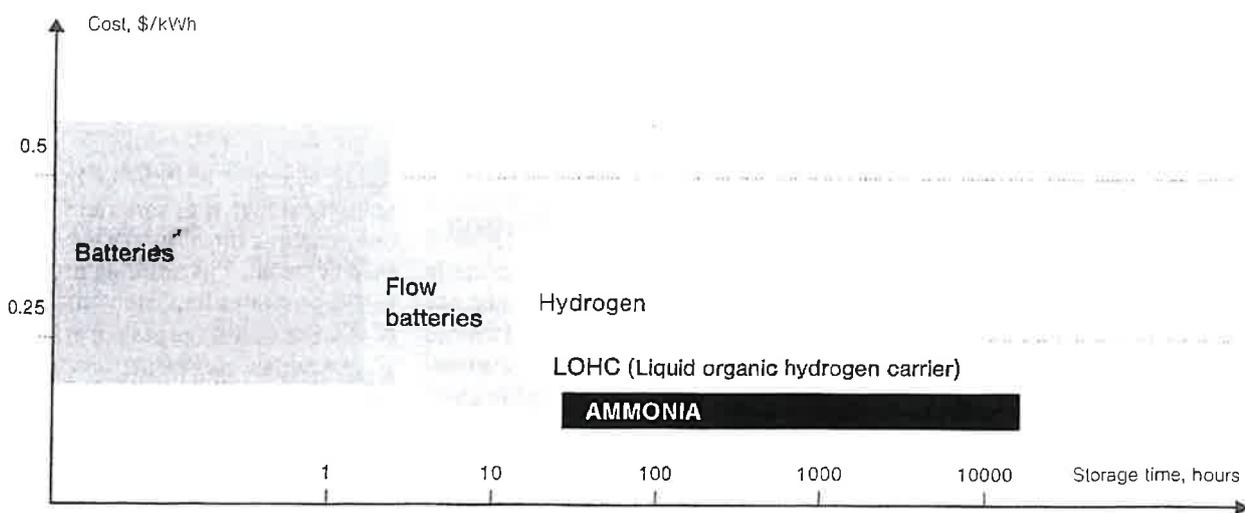
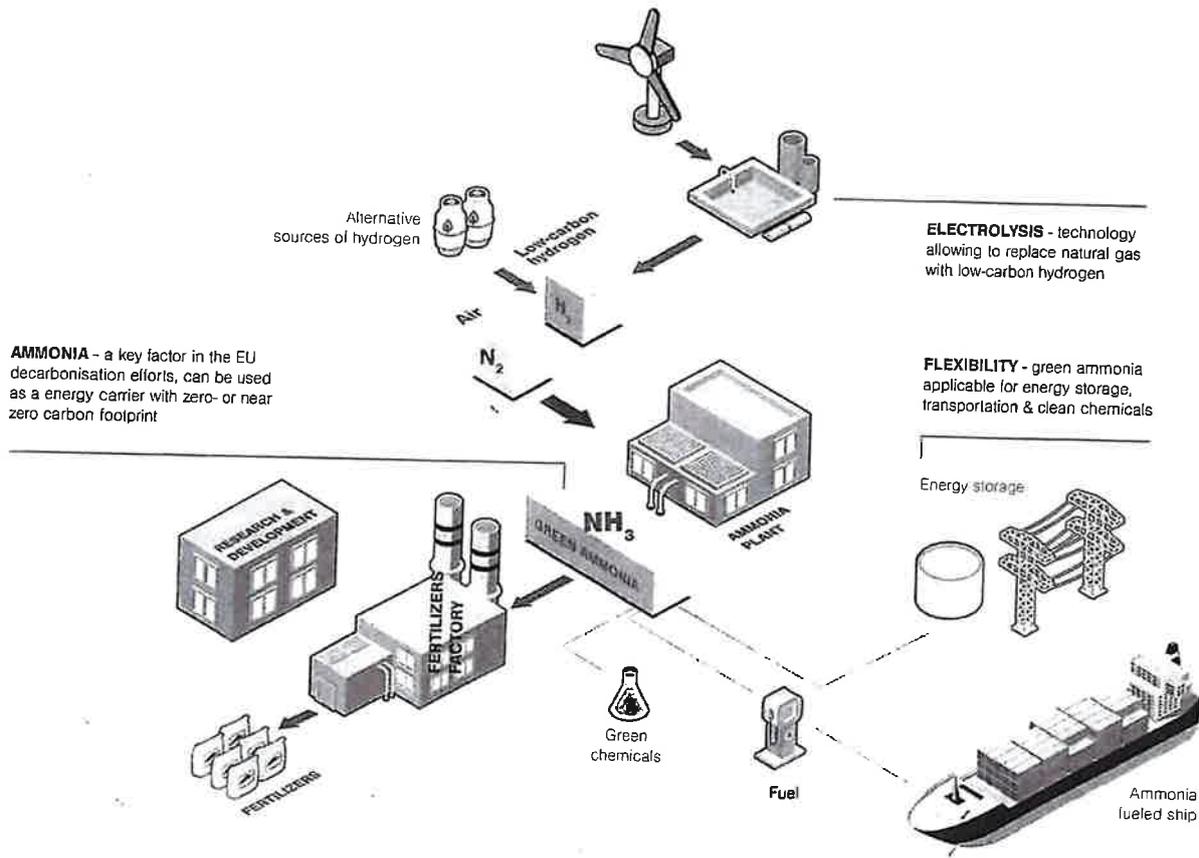


Figure 2. Ammonia as the most cost-effective energy carrier



Source: US Department of Energy

Figure 3. Green ammonia and low carbon fertilizer production in 2050



Source: Fertilizers Europe

By 2050, under the right conditions, ammonia production could be based on decarbonised sources of energy

molecule in nature and it liquifies only at the extremely low temperature of -253°C . Ammonia on the other hand liquifies at -33°C and can be handled easily, similarly to liquified natural gas. Storing hydrogen under pressure is also possible but again, for the same volume, ammonia has a 50% more hydrogen than hydrogen itself. Therefore, when hydrogen is needed, in many applications it makes more economical sense to transform, transport and use it as ammonia.

The nitrogen fertilizer industry is main hydrogen producer

With a share of 53%, the ammonia industry is the biggest producer and user of hydrogen globally. Ammonia is already being produced and transported worldwide in huge quantities (180,000 t annually) as it is the basis of many chemicals and, very significantly, the starting step for producing fertilizers (80% of the demand).

Today, hydrogen is obtained by splitting at high pressures and temperatures the natural gas with the help of steam. This splitting process (SMR) generates important quantities of CO_2 .

A low carbon route involves underground storage of at least part of this CO and gives an element that is commonly called blue ammonia (SMR + carbon capture and storage, CCS). On the other hand, when ammonia is produced from green electricity and water via electrolysis, or other sources

of low carbon hydrogen, the process requires only air.

By 2050, under the right conditions, ammonia production could be based on decarbonised sources of energy, using alternative sources of hydrogen and electrolysis based on renewable energy.

Beyond fertilizers – opportunities for the ammonia industry

In practice, ammonia is the only carbon free fuel. As such, it brings the promise to decarbonise the maritime shipping sector reducing its emissions by 95% by 2035 when demand could reach about 1 mn t ammonia per day. Indeed, with limited modifications and technology improvements, ammonia could be directly used in combustion engines of deep-sea vessels.

The ammonia molecule is also probably one of the best alternatives for the mid/long-term storage of electricity as a chemical energy. As such it can be used in buffering a renewables-based electricity system by transforming electricity into hydrogen/ammonia when renewable energy is abundant and cheap and burned to produce electricity when needed.

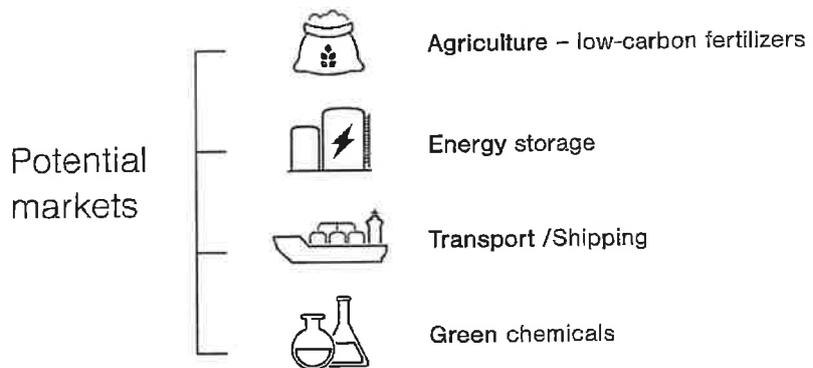
Financing the transition

Public money will be used to accelerate the transition outlined in the EU hydrogen strategy. To target support of the cleanest available technologies, the EU officials plan to introduce common standards, terminology and certification, based on life-cycle carbon emissions, anchored in existing climate and energy legislation, and in line with the EU taxonomy for sustainable investments.

The goal is to propose policy and regulatory measures that will create investor certainty, facilitate the uptake of hydrogen, promote the necessary infrastructure and logistical networks, adapt infrastructure planning tools and support investments.

Noteworthy, fertilizer production has been identified as candidate for a 'first-

Figure 4. Beyond fertilizers - creation of the market for green ammonia



Source: Fertilizers Europe

Ammonia has the right properties to decarbonise the maritime shipping sector, with the potential of reducing its emissions by 95% by 2035

of-a-kind' project under Horizon Europe research and innovation funding. It would also be a pilot scheme for the so-called 'contracts for difference', whereby investors will receive the difference between a CO₂ strike price and actual carbon emissions costs under the EU Emissions Trading System (ETS). The Commission believes that a carbon price of EUR55-90/t would be needed to make clean hydrogen competitive.

Challenges remain

There are still a number of obstacles ahead before the gradual switch can be made from production from current SMR based hydrogen towards low carbon routes. Abundant and competitively priced clean electricity to produce hydrogen is a pre-condition for green ammonia to become competitive and challenge the current production technology.

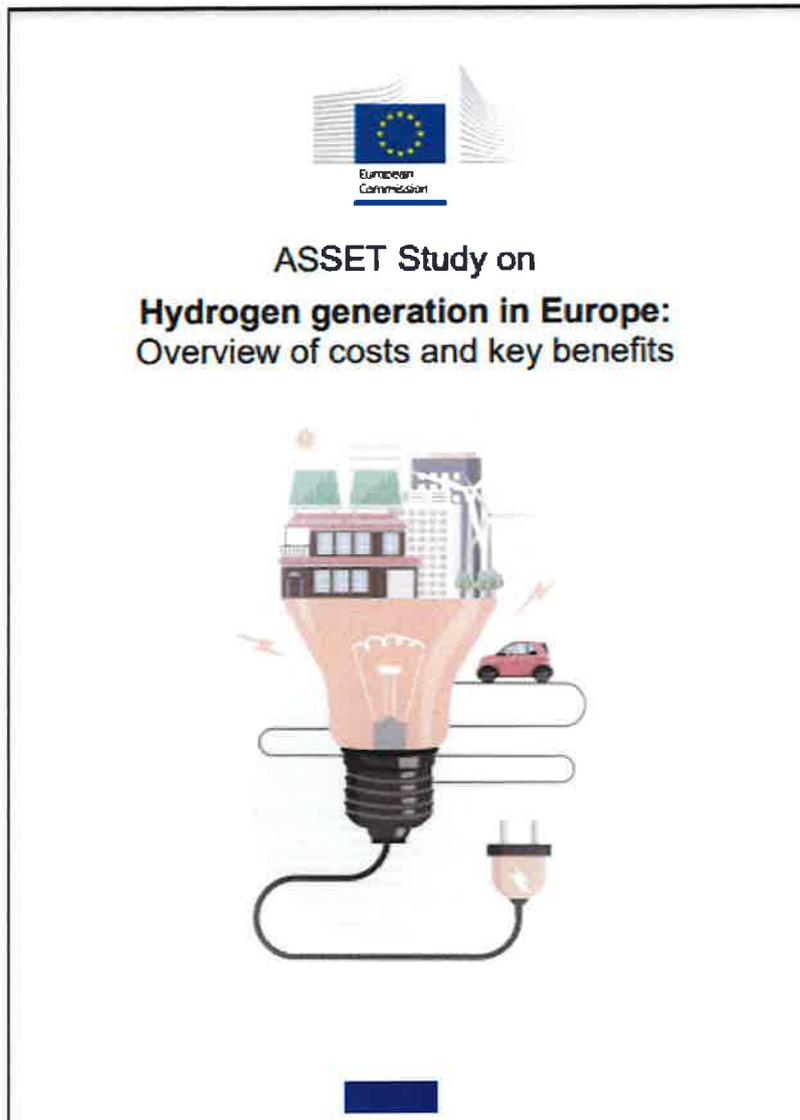
In the EU, the fertilizer sector produces and consumes 3.1 mn t of hydrogen

and is best placed to help upscale new technology in the most cost-effective way. Balancing the EU's climate ambitions with industrial competitiveness will be key to a successful implementation of this strategy. Provided that the schemes considered by the Commission such as the 'Carbon Border Adjustment Mechanism' are in place to help maintain a level playing field between EU producers who are subject to carbon costs and non-EU producers who are not, European fertilizer producers should gain the confidence and the economic room to invest in new technologies.

Cooperation of all stakeholders is required, including the EU, Member States and regional authorities, to support the industry in rolling out new technologies, for example by providing financial incentives, creating markets for low-carbon products and partaking in development of regional hydrogen resources.

For more info visit: <https://www.fertilizerseurope.com/paving-the-way-to-green-ammonia-and-low-carbon-fertilizers/> ■

ANNEX III - references on 'blue' and 'green' investments



https://ec.europa.eu/energy/studies_main/final_studies/hydrogen-generation-europe-overview-costs-and-key-benefits-0_en

ANNEX III – continued



https://ec.europa.eu/energy/studies_main/final_studies/hydrogen-generation-europe-overview-costs-and-key-benefits_en

ANNEX IV



Revised EU ETS State Aid Guidelines to distort internal market and disincentivize investment

Brussels, 22 September 2020: The European fertilizer industry is baffled by the decision of the European Commission to exclude fertilizer sector from the updated EU ETS State Aid Guidelines. The sector finds that a decision based on incomplete data puts producers who partly electrified their production in a competitive disadvantage. This decision is in contradiction with the EU's push to electrify and decarbonise EU industry.

The European Commission's decision to remove fertilizer industry from the list of sectors exposed to carbon leakage due to indirect carbon costs will put at competitive disadvantage industry players that are partly electrified. Such decision is at odds with EU's climate goals, as fertilizer industry will also rely on electrification and will need state support to meet the additional costs incurred in the industry decarbonisation transition.

Jacob Hansen commented "Given that electrification is one of viable decarbonisation options for fertilizer sector, it is hard to understand the Commission's decision to remove NACE 20. 15 from the list of sectors eligible for the EU ETS indirect cost compensation". He added "such decision is in contradiction with the Commission's overarching objective of incentivising European industries to invest in low-carbon technologies, including electrification".

The industry performed its own analysis in parallel to analysis commissioned by the European Commission. Jacob Hansen underlined "our detailed analysis clearly show that the electricity consumption of our sector has been grossly underestimated by the Commission Consultant. Based on three different sources our analysis provides conclusive evidence that the electricity consumption as assumed by the Commission is too low. When using complete and accurate data, we demonstrate that our sector meets a newly set threshold".

The Commission's decision will also create a competition distortion in the Single Market between different European fertilizer manufacturers. "What a Commission's decision means in practice is that for the next 10 years ammonia producers based on fuel will be eligible for free allocations whereas those who partly electrified their production would bear indirect CO₂ costs. In absence of this State aid compensation for the cost of CO₂ in electricity, the ETS system would unduly discriminate the electrified plants" said Jacob Hansen.
