Press briefing

Council Conclusions on hydrogen – a door open to subsidies for nuclear and gas?

25 November 2020

1. Background

- The German presidency circulated on **19 October 2020** a first draft text of Council Conclusions outlining that only renewable hydrogen is a sustainable option in the long-term and should be supported.[1]

- Further to comments from Member States wishing to offer new subsidies to the gas industry and to the nuclear industry, a revised version was circulated by the German presidency on **6 November 2020**.[2] This version significantly weakens the priority given to renewable hydrogen. Renewable hydrogen is no longer depicted as "*the only long-term sustainable solution*" but rather as one option in parallel to "*other safe and sustainable technologies*" (paragraph 2.11). Throughout the text, the words "*safe and sustainable hydrogen*" are added but this expression is not defined and opens the door to subsidies to nuclear-based and gas-based hydrogen rather than focusing exclusively on renewables.

- This opening is still considered insufficient by the Member States supporting nuclear-based and gas-based hydrogen. They propose to replace renewable hydrogen by "*low-carbon hydrogen*" (see annex). According to the Commission's hydrogen strategy[3], low-carbon hydrogen is defined the following way:

  > '*Low-carbon hydrogen' encompasses fossil-based hydrogen with carbon capture and electricity-based hydrogen, with significantly reduced full life-cycle greenhouse gas emissions compared to existing hydrogen production.*"

  This definition is vague enough to encompass hydrogen obtained via electrolysis with electricity supplied from nuclear energy and hydrogen obtained from fossil gas with steam methane reforming.

- The German presidency circulated another revised version of the document on **20 November 2020**. This new version goes even further in the opening to gas and nuclear energy. Renewables are not any more the focus of the document. Paragraph 2.11 now reads that "*different safe and sustainable low-carbon technologies can contribute to EU climate neutrality in 2050*". Paragraph 5.5 calls for "*a visionary and ambitious roadmap and strategy for climate neutrality (…) with regard to hydrogen produced with safe and sustainable low-carbon technologies*". Paragraph 4.13 calls for promotion of investment in "*safe and sustainable low-carbon technologies for the production*

[1] Document 12075/20 of 19 October 2020.

[2] Document 12075/1/20 REV 1 of 6 November 2020.

[3] COM(2020) 301 final, A hydrogen strategy for a climate-neutral Europe, 8 July 2020.

and application of hydrogen". Paragraph 5.18 opens state aid support to electrolysis technologies "*particularly* (and not exclusively) *from renewable sources*".

This weakening of the Council conclusions prepared by the German presidency is a door open to subsidies for nuclear energy and the gas industry. What is at stake is how the billions of euros foreseen by the European recovery plan (NextGenerationEU) will be used. Will they be flagged towards renewables as the only safe and sustainable long-term option or will they perpetuate the fossil and nuclear lock-in?

The key moment will be this **Friday 27 November**, when Member States Ambassadors will meet in COREPER and discuss the text.

2. Gas and CCS – un unproven technology raising many unsolved questions

Carbon capture and storage is a technology that has never been developed at scale in Europe. Several projects have been launched since 2008 in the power sector, notably as part of the European Energy Programme for Recovery, for an estimated EU subsidy of 1 billion euros. All of them except one have failed and have been terminated.[4] The revival of this technology leaves the same questions unanswered:

- *What is the efficiency of the capture technique?* According to the gas industry, the capture performance varies with different technologies. The predominant technology of today, steam methane reforming, allows for a capture rate of 60-70%.[5] Hydrogen obtained with such a process should not be called decarbonized. According to the IEA, the climate footprint of CCS can vary by a factor 1 to 4 between the various technologies and their associated capture performance. A capture performance of at least 90% should be the minimal requirement for CCS technologies.

- *What is the carbon performance on a lifecycle perspective?* In addition of the poor performance of the CO2 capture technology, coupling CCS with fossil gas does not solve the issue of upsteam greenhouse gas emissions linked to the extraction of fossil gas. As outlined by the Commission, methane emissions linked to fossil gas outside Europe amount to 232-615 MtCO2eq.[6] These emissions will not be addressed if we continue using fossil gas to transform it into hydrogen.

- *What to do with the captured carbon dioxide?* To date, the issue of the storage of large volumes of captured CO2 remains unanswered. Some depleted gas fields may seem as an appropriate storage location, in the North Sea for example. However, we may only use these sites to store small quantities of CO2 captured in neighboring industrial hubs. They do not represent a viable option for most of Europe. Where do countries without access to the North Sea intend to dump their CO2?

3. Nuclear – neither safe nor sustainable

Hydrogen obtained by electrolysis should only be supplied from renewable sources to be truly safe and sustainable. In the case where it is produced with nuclear energy, it keeps the system lock-in with an energy source that is not safe nor sustainable.

The accident of Fukushima reminded us that no country, even the most developed, are free from the risk of a major nuclear disaster. No long-term solution has been brought to date about the future of highly toxic and highly persistent in time radioactive waste and spent fuel.

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[4] COM(2020) 476 final, *Report on the implementation of the European Energy Programme for Recovery and the European Energy Efficiency Fund*, 3 September 2020.

[5] https://eurogas.org/website/wp-content/uploads/2020/06/DNV-GL-Eurogas-Report-Reaching-European-Carbon-Neutrality-Full-Report.pdf

[6] COM(2020) 663 final, *An EU strategy to reduce methane emissions*, 14 October 2020.

For that reason, the technical experts group underpinning the work the taxonomy for sustainable finance concluded that "*it was not possible for TEG, nor its members, to conclude that the nuclear energy value chain does not cause significant harm to other environmental objectives on the time scales in question. The TEG has therefore not recommended the inclusion of nuclear energy in the Taxonomy at this stage."*[7] The Commission followed this approached and excluded nuclear energy from the scope of the delegated act under preparation to establish the detailed thresholds and criteria of the taxonomy. In the absence of a clear-cut subsidy regime for existing nuclear power plants, operators aim at finding new revenues sources via indirect subsidies to hydrogen produced from nuclear-generated electricity.

4. The only solution: renewable energy sources from additional installations

The Commission set out an objective of at least 6 GW of renewable hydrogen electrolysers in the EU by 2024 and 40 GW of renewable hydrogen electrolysers by 2030. Money from the European recovery programme (NextGenerationEU) and state aid should be used exclusively for renewable hydrogen in order to trigger cost reduction for electrolysers.

Renewable hydrogen should be considered a high added value product and used in a smart way only where alternatives are not cost-efficient. In most cases direct electrification is the most efficient choice and demand-side policies such as energy efficiency should always be given the absolute priority over hydrogen production.

Renewable hydrogen should ultimately be produced by new renewable installations or to absorb surplus produced by existing installations, following the concept of additionnality.[8] Using existing power plants is largely insufficient in terms of volumes. It also leads to perverse effects. Firstly, it may channel large volumes of renewable electricity towards electrolysers, indirectly triggering the need to reopen conventional plants to meet the missing demand. Secondly, it would create a distortion on the internal market between those who invest in new renewable capacity and those who use the national electricity mix. As a period of transition, using existing installations could be used under certain conditions.

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[7] https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy-annexes_en.pdf

[8] See non-paper of 9 November 2020 from Austria, Denmark, Spain, Ireland, Luxembourg and Portugal.

Annex I - Extracts of Member States comments

CZ

2.11 That there are different technologies and sources for the production of hydrogen, ~~but~~ **while** priority should be given to ~~renewable~~ hydrogen from electrolysis from decarbonised electricity, in particular renewable ~~as~~ **being** the ~~only~~ long-term sustainable solution~~, focusing on achieving competitiveness while making use of the decarbonisation potential of other safe and avoiding lock sustainable technologies in effects the short and medium term~~.

FI

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FR

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3.7 The EU's state-aid rules to develop a fit-for-purpose approach ~~also~~ enabling ~~large scale~~ investments in ~~safe and~~ ~~sustainable~~ low carbon hydrogen technologies in Member States for all parts of the value chain.

HU

2.11 ~~That there are different technologies and sources for the production of hydrogen, but while priority should be given to R~~renewable hydrogen ~~as being is a the only~~ long-term sustainable solution~~, focusing on achieving competitiveness~~ **while making use of the decarbonisation potential of other safe** and ~~avoiding lock-~~**sustainable low carbon technologies will be the choice for some Member States.** ~~in effects the short and medium term.~~

NL

3.12 Cooperation instruments enabling large-scale cross-border **joint** investment projects as in an IPCEI on Hydrogen **or as joint tenders for renewable and low carbon hydrogen production** and of the Commission's support for this process by coordinating efforts, providing guidelines and taking into account the difficulty of establishing a ~~new~~ hydrogen ~~economy~~ **market** while maintaining international competitiveness.

PL

3.2 The National Recovery **and Resilience** Plans **and European funds** to accelerate investments into the ~~foundation~~ **creation** of hydrogen lead markets in Europe and **support Member States in scaling up demand and supply of renewable and low-carbon hydrogen as well as technology transfer and other support measures aiming at replacing** the ~~related infrastructure~~ **use of carbon-intensive hydrogen**.

3.7 The EU's state-aid rules to develop a fit-for-purpose approach ~~also~~ enabling ~~large scale~~ investments in renewable and ~~safe and sustainable~~ low-carbon hydrogen technologies in Member States for all parts of the value chain.

RO

2.11 That there are different technologies and sources for the production of hydrogen, and stresses the importance of ensuring a technological neutral approach for deployment of long-term sustainable ~~but~~solutions ~~but while priority should be given to renewable hydrogen as being the only long-term sustainable solution, focusing on achieving competitiveness while making use of the decarbonisation potential of other safe and avoiding lock-sustainable technologies in effects the short and medium term.~~

3.7 The EU's state-aid rules to develop a fit-for-purpose approach ~~also~~ enabling ~~large scale~~ investments in **low carbon** ~~**safe and sustainable**~~ hydrogen technologies in Member States for all parts of the value chain.