

The Netherlands' feedback for the public consultation regarding the draft delegated act on the EU Taxonomy – December 18th 2020

The Netherlands attaches great value to the development of this taxonomy, as in our view it is a vital instrument to support the greening of the financial sector and the broader economy. In the legislative process towards the final agreement of the taxonomy regulation, the Netherlands emphasized the importance of a science based taxonomy in line with the state of the art developments in the market and coherence with current policies.

Overall, the Netherlands is pleased with the thorough process the Commission has followed to get to this delegated act and the overall level of ambition in the contents of it, based on the extensive and scientifically based work of the Technical Expert Group. In that regard, we would like to urge the Commission to comprehensively review all responses, under the above mentioned criteria, before adoption of the delegated act.

On a more detailed level, without trying to comment on all specific thresholds, the Netherlands would like to highlight a couple specific of issues (below), in line with Dutch policy priorities. Most of these have been stressed earlier in the Member States Expert Group or earlier input.

Annex I - draft delegated act on climate mitigation

Comments per sector

1. Agriculture

1. Agriculture and forestry: 1.1, 1.2 and 1.3. - Farm records

- The IPCC guidelines for NGHGI are quite comprehensive and complex and are not well known by farmers. We foresee difficulties for individual agricultural holdings to use the IPCC guidelines. As such we find it important that further guidance be provided on the application of these IPCC guidelines, including for SMEs. The Netherlands requests the Commission to integrate this element when drafting the delegated with regard to article 8 of the taxonomy regulation.
- Suggestion to add the following sentence to the do no significant harm-criteria on 1.1, 1.2 and 1.3: "Activities do not lead to the disturbance, capture or killing of legally protected species or the deterioration of legally protected habitats. Negative effects on other species are minimized."
 - Without including the protection of non-legally protected species, they may experience harm as a result of economic activities. Such harm should be minimized.

3. Manufacturing

3.3 Manufacture of low carbon technologies for transport

On section 3.3 k&l, please see input provided in relation to section/activity 6.10 and 6.11.

3.9 Manufacture of hydrogen

It appears that The Netherlands' comments and concerns provided in our response to the call for questions and remarks prior to the MSEG-meeting of December 10th (Annex I), have not led to any changes in the current threshold for H₂ manufacturing, and the alignment with the EU Hydrogen Strategy remains unclear.

We wish to reaffirm that according to our calculations, the **current threshold of 2.256 tCO₂eq/t would exclude all forms of hydrogen production from methane from inclusion under the EU Taxonomy**. This would appear to be actually in conflict with the EU Hydrogen Strategy which states that in the short and medium term other forms (other than renewable-based) of low-carbon hydrogen are needed, primarily to **rapidly reduce emissions from existing hydrogen production**.

We also wish to reconfirm that in the EU Hydrogen Strategy it is incorrectly stated that the well-to-gate emissions of hydrogen production from steam methane reforming are 9 kgCO₂eq/kgH₂ (p.4). We have now received **written confirmation from the IEA** (see Annex II) that this is the case. These figures from the Future of Hydrogen (2019) report refer to **production emissions only, not full life-cycle emissions**. Likewise, the figures of steam reforming of methane with CCS with 90% capture achieving 1 kgCO₂eq/kgH₂, and 4 kgCO₂eq/kgH₂ with a capture rate of 56%, both cases refer to direct process emissions only, not well-to-gate. **It would therefore be categorically incorrect to use these misinterpreted figures as a basis for the potential emission reduction for fossil-fuel based H₂ production in the EU Taxonomy.**

In the scoping paper of the 13th meeting it states (p.11) : "*Blue hydrogen should in principal be able to qualify with CCS provided that the capture of CO₂ is carried out efficiently*". We would appreciate **further clarity on this statement, perhaps in the form of a worked example** of hydrogen production from methane with carbon capture and storage, in order to better understand the assumptions (particularly direct/indirect emission, technically possible capture rate) used by the Commission in deriving this statement.

We wish to reiterate the significance of blue hydrogen in achieving significant and rapid **emission reductions** for European industry and other sectors. **We would strongly endorse having a threshold in line with that of the CertifHy low-carbon hydrogen goal of the 4.37 kgCO₂/kgH₂**. This argumentation is further outlined in our original response.

Annexes:

1. Annex I - Comments on Technical screening criteria – 3.9 Manufacture of hydrogen
2. Annex II – Email – 'H₂ production – IEA reference in the EU Hydrogen Strategy'

Annex I - Comments on Technical screening criteria – 3.9 Manufacture of hydrogen

In the current version of the Taxonomy the Technical Screening Criteria for hydrogen production has been adjusted significantly from that of the TEG report, being reduced from 5.8 tCO₂eq/t to 2.256 tCO₂eq/t. The reason for this adjustment is stated as to bring it in line with the EU Hydrogen Strategy. **We find the correspondence with the EU Hydrogen strategy unclear, and according to our own calculations, the current threshold of 2.256 tCO₂eq/t would exclude all forms of hydrogen production from natural gas from inclusion under the EU Taxonomy**. This would appear to be actually in conflict of the EU Hydrogen Strategy which states that in the short and medium term other forms (other than renewable-based) of low-carbon hydrogen are needed, primarily to rapidly reduce emissions from existing hydrogen production. Below we explain the reasoning behind our conclusion.

We believe that this problem stems from the confusion that in the **EU Hydrogen Strategy it is incorrectly stated that the well-to-gate emissions of hydrogen production from steam methane reforming are 9 kgCO₂eq/kgH₂** (p.4). We have confirmed with the IEA that these figures from the 2019 Future of Hydrogen report refer to **production emissions only, not full life-cycle emissions**. Likewise, the figures of steam reforming of natural gas with CCS with 90% capture achieving 1 kgCO₂eq/kgH₂, and 4 kgCO₂eq/kgH₂ with a capture rate of 56%, both cases refer to direct process emissions only, not well-to-gate. We believe that this confusion may have caused threshold for hydrogen production to be tightened over ambitiously. We explain further below:

The taxonomy currently assumes full life-cycle emissions of for H₂ from natural gas: if 20% (80% reduction) = 2,256 kgCO₂/kgH₂, then 100% equals 11,28 kgCO₂/kgH₂. We assume then that emissions related to the upstream emissions of natural gas production used for making hydrogen are = 2,28 kgCO₂/kgH₂ (11,28 kgCO₂/kgH₂ - 9 kgCO₂/kgH₂ (process related emissions)). If CCS removes the maximum possible 90% of the 9 kgCO₂/kgH₂ (process emissions) = 0,9 kgCO₂/kgH₂, the overall lifecycle emission reduction achievable with CCS is 3,18 kgCO₂/kgH₂. This would mean a maximum possible threshold level of 3,18/11,28 = 72%. **The 80% life-cycle threshold of 2,256 kg thus assumes a reduction rate of CCS of more than 100% of process emissions**. It would appear that the foreseen capture rates by the IEA for process emissions only, have been applied to the total well-to-gate figures, leading to an unattainable threshold.

Furthermore we would also like to highlight the importance of **facilitating cost-effective CO₂ removal from hydrogen production processes**. As the IEA (2019) states, there are two primary options for CO₂ removal from the most common form of H₂ production, steam methane reforming. Capture from the high-pressure synthesis gas stream can capture approximately 60% of total plant emissions, at capture costs of around 53 USD/tCO₂. This 60% reduction can achieve reductions which are in line with the CertifHy low-carbon hydrogen goal of the 4.37 kgCO₂/kgH₂, based on a full well-to-gate lifecycle emission of 91 gCO₂eq/MJ (10,920 kgCO₂/kgH₂).

To achieve 90% capture, a steam methane production facility would need to be equipped with post-combustion capture technology, to capture the CO₂ from the reformer. This entails **far higher CAPEX and OPEX**, pushing the capture costs to 80 USD/tCO₂. In the Netherlands we recognize the potential to achieve cost-effective CO₂ capture from fossil-based hydrogen production, supporting projects that have abatement costs which are relatively close to the current ETS prices. These capture projects are also important partners in the larger Porthos CCS Project, which is recognized as a European Project of Common Interest. Having these projects excluded under the EU Taxonomy would therefore be unfavourable.

Based on this argumentation, **we would strongly endorse having a threshold in line with that of the CertifHy low-carbon hydrogen goal of the 4.37 kgCO₂/kgH₂**. This represents a tightening against the TEG report, but does not prevent cost-effective CO₂ reduction from existing SMRs being excluded from the taxonomy.

For newbuild fossil-fuel based hydrogen production installations, different technologies such as auto-thermal reforming (ATR) or partial oxidation (POX) process could be considered, and the threshold in the taxonomy could be adjusted downwards. We look forward to continue this discussion with regards to the development of a common low-carbon threshold/standard for the promotion of hydrogen production installations based on their full life-cycle GHG performance (by June 2021), as included as action under the EU H₂ Strategy.

Annex II – Email – ‘H2 production – IEA reference in the EU Hydrogen Strategy’

Mikunda, T. (Tom)

From: [REDACTED]@iea.org>
Sent: dinsdag 15 december 2020 12:00
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: H2 production - IEA reference in the EU Hydrogen Strategy

Hi [REDACTED],

Thank you for reaching out and flagging your concern.

I have discussed your email internally. There seems to be indeed some misinterpretation of the numbers on the carbon footprint of blue hydrogen as presented in the IEA's *Future of Hydrogen* report from 2019. The numbers we presented in this report refer to direct CO₂ emissions. It seems the authors of the *EU Hydrogen Strategy* report have interpreted them as lifecycle emissions (including non-CO₂ GHG emissions), as erroneously referred to in the footnotes of the EU document.

We think it would be best if the Dutch ministry raises this concern with the EC directly. You can refer to this email and/or put the IEA in copy to their exchange as needed. The EC can always contact the IEA directly for further clarification of the numbers if needed.

Best regards,

[REDACTED]

From: [REDACTED]@minezk.nl>
Sent: Monday, December 14, 2020 17:29
To: [REDACTED]@iea.org>
Subject: H2 production - IEA reference in the EU Hydrogen Strategy
Importance: High

Hi [REDACTED],

I have to come back to you again regarding the references to IEA work used in the EU Hydrogen Strategy.

As we discussed, it appears that two (important) references used in the EU Hydrogen Strategy have been misinterpreted. Footnote 22 and 23 on page 4 wrongly states the figures for hydrogen production are well-to-gate rather than only direct emissions. 9 kgCO₂eq/kgH₂ relates of course to direct emissions, inline with the EU benchmark for H₂ production of 8.85 gCO₂eq/kgH₂.

- *The well-to-gate greenhouse gas emissions of steam reforming of natural gas are 9 kgCO₂eq/kgH₂ (IEA, 2019).*
- *The well-to-gate greenhouse gas emissions of steam reforming of natural gas with CCS with 90% capture is 1 kgCO₂eq/kgH₂, and 4 kgCO₂eq/kgH₂ with a capture rate of 56% (IEA, 2019).*

The problem is that these figures seem to be used in further EU policy making, namely the EU Taxonomy, and the technical criteria for H₂ production of 2,256 kgCO₂/kgH₂, on well-to-gate emissions, which we believe will prevent all H₂ production from natural gas (SMR or ATR). This can have significant consequences for the availability of blue hydrogen for emissions reductions in various sectors.

My question – do you see any possibility of the IEA explicitly highlighting this error to the Commission. A response to this email would suffice.

Kind regards,

[REDACTED]

4. Energy

The Netherlands suggest to amend the delegated act, by removing the following sentence:

"The activity is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria specified in this Section."

In Annex I, in the third paragraph (listed below) in all four following activities:

- 4.8 Electricity generation from bioenergy;
- 4.13 Manufacture of biogas and biofuel for transport;
- 4.20 Co-generation of heat/cool and power from bioenergy; and
- 4.24 Production of heat/coal from bioenergy.

Considerations:

- The reference to article 10(2) of the taxonomy regulation makes explicit that the activity is no part of the activities described in 10(1). However there is no clear consideration found in the material why this should be the case.
- The proposed Taxonomy Regulation (EU) 2020/852, article 10.1a contains a clear reference to technology contributing to renewable energy. This is also the case for sustainable bioenergy. Since the sustainability criteria as defined in the renewable energy directive (2018/2001) (RED) are part of this regulation the contribution to 10.1a is clearly provided. So bioenergy should not be categorized as 10(2) technology.
- The first environmental target provided in the 2020/852 article 9, is emission reduction. Since the emission reduction of at least 80% is a requirement in the Annex 1 (as proposed), this is guaranteed for bio-energy.
- The Renewable Energy Directive (2018/2001) itself provides provisions to ensure the use of best available technology, high efficiency conversion and a ban on co-firing. All this kind of considerations are already part of article 29.11 of that directive. So compliance with the RED as a criterion does provide insurances of efficient production of energy.
- The emission reduction requirement of 80% in the Annex 1 is a high value ensuring only biomass with high efficiency and low environmental impact are used.
- The reference to 10(2) is made for all fossil processes and biomass, not for the other renewable sources. Since biomass complying with the sustainability criteria is considered a renewable source this distinction does not make sense. It is better to clearly split between renewable and non-renewable sources.
- There is no plausible scenario for reaching the 2030 and 2050 targets without bioenergy. However technology development of bioenergy will be excluded from 9.1 (research development and innovation) in case it is considered a 10(2) activity. This could have significant impact on the future innovation that is needed for those cases where bioenergy is still an option.

6. Transport

Sustainable aviation

The Netherlands asks the Commission to develop additional criteria for sustainable aviation in line with the new Strategy for Sustainable and Smart Mobility. The current draft taxonomy only provides for the production of biofuels for transport (4.13, of course next to general provisions on hydrogen and electricity) and for airport infrastructure (6.17). In keeping with activity 4.13 and the challenges of reducing aviation carbon emissions, the Netherlands strongly recommends adding renewable fuels infrastructure to activity 6.17. Renewable fuels are widely acknowledged as the key technology in reducing aviation and shipping and heavy-duty vehicle emissions in the short to medium term.

For the long-term drive towards zero-emission aviation, activity 3.3 (manufacture of low carbon technologies for transport) should include separate screening criteria for low-carbon aircraft technologies. Special attention is warranted here for hybrid-electric drivetrains as a medium-term technology. Hybrid-electric aircrafts do not have zero tailpipe emissions, but promise significant CO2 efficiency gains over current generation aircraft. Chapter 6 should also be expanded with additional activities for the operation of low-carbon aircraft for freight and passenger transport. Here special attention is needed for both retrofitting and the uptake of renewable fuels beyond the minimum requirements the Commission is due to propose in its ReFuelEU initiative.

Proposal for amendment of the DA regarding Biofuels/Bio-energy

Proposal is to add under 'Substantial contribution to climate change mitigation' in the following sections (also in the relevant sections of Annex II):

Annex I

- 6.15 (Infrastructure enabling low-carbon road transport)
- 6.16 (Infrastructure for water transport)
- 6.17 (Low carbon airport infrastructure)

the following sentence to the enumeration:

(x) the infrastructure is dedicated to the provision of renewable fuels of which, in addition to the Renewable Energy Directive (2018/2001) sustainability requirements, is demonstrated that the social conditions of the local population and respect of rights of employees are guaranteed during production.

Considerations:

- The Renewable Energy Directive (2018/2001) is based on the IPCC principle that short-cycle fuels should be classified as low carbon and seen as "0" emissions from tailpipe. Compliance with the RED criteria should be basis for insurances of efficient production of energy for transport. Suggesting that only infrastructure for zero-emission tailpipe vehicles can be regarded as a climate measure does not.
- No scenario for reaching the 2030 and 2050 targets without bioenergy can be found. Negation of this scientifically proved fact could have significant impact on the future innovation that is needed for those cases where bioenergy is still an option.
- The amount of energy needed to support the infrastructure would be - by no means - renewable (renewable electricity and renewable hydrogen produced from it) in time. In practice this will mean that gas-fired power plants will have to produce substantial amounts of energy to supply those ships and causes extra associated CO2 emissions instead of reducing them.
- The additional focus on social criteria in which bio-feedstocks are used for the transition to a climate-neutral and circular economy is an important issue to the Dutch government, as recently described in a letter to Parliament: 'Duurzaamheidskader biograndstoffen' October 16 2020.

6.10 – 6.11 Sea and coastal freight/passenger water transport

Also related to section 3.3 k&l.

For these sections/activities The Netherlands proposes that after 2025, not only the first point (i) for 3.3 k&l and 6.10 and 6.11 the first point (a) will apply, but that during the revision, points ii, iii and iv for 3.3 k&l and points b,c and d for 6.10 and 6.11 are updated and brought in line with the developments of the requirements of GHG reduction by the EU and IMO and also will apply to the period after 31 December 2025.

Rationale:

By doing so the sustainability definition of a sea going vessel will remain in line with the development and the transition path in the sector.

7. Construction

7.1. Construction of new buildings and 7.2. Renovation of existing buildings. Do no significant harm ('DNSH'). Transition to a circular economy. P. 210 & 214

- A DNSH principle that favours bio-based building materials is missing.
- The use of sustainably acquired bio-based materials is central to the transition to a circular economy in the construction/renovation sector. As such it can be helpful to include this.
- Suggestion to add the following sentence: "... Enable reuse and recycling. The use of sustainably acquired bio-based building materials are favoured over conventional building materials, where possible."

7.2. Renovation of existing buildings. Do no significant harm ('DNSH'). Protection and restoration of biodiversity and ecosystems. P. 215

- A DNSH principle that protects residing species during renovations is missing.
- When renovation takes place at the expense of residing species, such as birds, biodiversity/ecosystems are not automatically protected or restored.
- Suggestion to place "N/A" with: "Insulation of existing buildings for the purpose of climate mitigation does not threaten the habitat of residing species. Nest sites are therefore conserved or replaced with new nest boxes."

Annex II - draft delegated act on climate adaptation

General comments

The above input on the delegated act on climate mitigation articles 1.1, 1.2, 1.3, 7.1, 7.2 and 10.1 is relevant for the delegated act on climate adaptation as well. To limit the length of this document, this is not repeated here.

Flood risk management

Given the fact that rising water levels are a realistic scenario even if climate targets are met, it is highly desirable to have an explicit entry for flood risk management / flood defences in the EU green taxonomy. For the Dutch green bond in particular climate change adaptation is an important component, as the Green Bond Framework defines the Delta Fund as one of the key expenditure categories.

While some activities related to flood risk management are mentioned in the Annex of the Delegated acts, such as:

- Restoration of Wetlands (p. 41) - projects like 'Room for River'
- Construction and operation of water collection, treatment and supply systems (p. 161)
- Renewal of water collection, treatment and supply systems (p. 163)
- Engineering and consultancy dedicated to adaptation (p. 259)
- Research and innovation related to nature based solutions for adaptation (p. 262)

The flood risk management/ flood defences themselves still do not seem to have an explicit entry in the Annex Delegated Act for Climate Change Adaptation, although we understand it is part of the taxonomy. However, due to rising water levels it is essential to have flood defences improved to ensure that the vulnerable areas are adequately protected for the expected sea rise level of 2050. In the case of the Netherlands about 55% of the territory of the Netherlands is vulnerable either for sea flooding or river flooding¹. We therefore urge the Commission to add a specific category Flood Risk Management/Flood Defences to the EU Green Taxonomy.

1.1. Growing of non-perennial crops. Substantial contribution to climate change adaptation. P. 1.

The substantial contribution criteria for this activity in the delegated act on climate adaptation is disproportionate (too lax) to what is under the same heading in the delegated act on climate mitigation. The criteria for adaptation should include subdivision in drawing up a plan, a benefit analysis, additionality, permanence. Alternatively, this should be addressed in the delegated act on article 8 of the taxonomy regulation.

¹ Please see <https://themasites.pbl.nl/o/risico-overstromingen/> and <https://www.pbl.nl/correctie-formulering-over-overstromingsrisico>.