Consultation response on EU Taxonomy

With reference to the European Commission's proposal and consultation documents which can be accessed here.

Prepared by Timothy Suljada and Dr. Charlotte Wagner on behalf of the Stockholm Environment Institute, 24 September 2021

Background to this response:

The Stockholm Environment Institute (SEI) *is an international non-profit research and policy organization that tackles environment and development challenges. Headquartered in Sweden, the institute has centres in Estonia, Thailand, Kenya, UK, US, and Colombia. We connect science and decision-making to develop solutions for a sustainable future for all. Stakeholder involvement is at the heart of our efforts to build capacity, strengthen institutions and equip partners for long-term change. Our knowledge and findings are accessible: as our own open access material, in leading academic journals, and repackaged for effective decision support.*

A background to the contributors to this response, and a disclosure of their interests can be found in Annex A.

Recommendations

Our response includes the following recommendations, which are supported by further explanation and evidence under the Detailed explanation.

1. Generally, the indicators used in the environmental objective, pollution prevention and control do not consider substance of concern consistently across air, water and soil in line with the criteria set out in Article 59(10) of the REACH regulation (SVHCs). 'The indicators be consistently based on the criteria for polluting substances in Article 59(10) of the REACH regulation. Moreover, it should be possible to exclude substances from the 'inherently safe' list based on the latest science, not only the current legislation.

2. The pollution criteria for the manufacture of chemicals and chemical products sets a low threshold for chemical products that are "inherently safe", relying on the inclusion of hazardous substances in legislation that cannot keep pace with critical findings emerging in scientific literature. Taking the precautionary principle, scientific literature should be sufficient

for exclusion of a substance from being “inherently safe” in the criteria for a substantial contribution to pollution prevention and control.

3. The rationale for do no significant harm (DNSH) in the manufacture of chemicals and chemical products does not capture the end-of-life of the products, even though this constitutes an important source of chemical pollution to the environment. It is thus important that releases of chemical products occurring during end-of life treatment such as landfill, incineration, waste water treatment plants, recycling and other end-of-life fates of products containing hazardous chemicals are also considered in the activity evaluation and included in the rationale of DNSH.

4. Manufacture of plastic packaging goods criteria do not prioritise plastic for reuse over recycling, which is inconsistent with the objective of a transition to a circular economy. The hierarchy of end use clearly favours the lower processing associated with reuse over recycling so this should be reflected in the substantial contribution criteria for the transition to circular economy.

5. The criteria for DNSH associated with the manufacture of plastic packaging goods should include a full life-cycle approach to ensure that no plastics remain unaccounted for and contaminate marine and other ecosystems. Design-for-recycling should include efforts to collect and directly reuse/recycle by manufacturers, which will ensure that high quality materials are created that can be used in the same application.

6. Electricity generation from hydropower should include pumped storage hydropower within the activity boundary. The battery function of pumped storage would make a substantial contribution to pollution prevention and control by significantly reducing the need for traditional batteries and their associated environmental impacts due to resource extraction and energy consumption during production.

7. The criteria for DNSH associated with electricity generation from hydropower should be expanded to include pollution to air, water and soil. The current criteria consider pollution only implicitly under water quality, which ignores construction of new hydropower and associated flooding that may mobilize legacy contaminants contained in flooded soils.

8. The DNSH criteria associated with urban and suburban passenger land public transport take an end-of-life waste management approach and are therefore not consistent with the ambition level proposed in the Commission’s Circular Economy Action Plan under the European Green Deal. The DNSH for transition to circular economy should go beyond managing waste, reuse and recycling to include measures aiming to promote longer lifetimes of electronics and also possibly introducing recycled content requirements.

Detailed explanation behind recommendations

1. Inconsistency of substances of concern considered for pollution prevention and control across air, water and soil. In particular, substances fulfilling the criteria set out in Article 59(10) of the REACH regulation (SVHCs) are currently only considered for pollution to air but should be included in pollution of (marine and fresh-) water and soil, since these are

important routes of environmental transport and ultimately the sources of human and ecosystem exposure (Li et al., 2018; Lohmann et al., 2007; Sunderland et al., 2018). This is also consistent with REACH's recognition of the importance of persistent, bioaccumulative and toxic (PBT)), or very persistent and very bioaccumulative (vPvB) substances for drinking water contamination and the improved guidance for these substances published in 2019 (Arp & Hale, 2019; Neumann & Schliebner, 2019).
Similarly, persistent organic pollutants (POPs), which have PBT properties, should also be considered under pollution to water, in addition to the other two environmental media in which they are already included.

2. Section 2.3 and 2.4 Manufacture of chemicals and chemical products: Section A specifies that chemical products need to be inherently safe, meaning that "substances and ingredients fulfilling hazardous properties criteria listed in (1) are excluded." Recent estimates suggest that more than 350,000 substances are commercially used (Wang et al., 2020). For the majority, little information regarding toxicity is available (Grandjean & Landrigan, 2014). Further, substantial time may pass between the scientific finding that a substance meets the SVHC criteria listed in (1), and its inclusion on the SVHC candidate list and subsequent phase out under Annex XIV. Whereas ChemSec's Substitute It Now! list, which identifies substances meeting the EU REACH criteria identified in article 57 based on peer-reviewed science articles contains >900 substances, the SVHC candidate list which relies on member state nominations includes 219 substances and only 54 substances have been regulated under Annex XIV (ChemSec; European Chemicals Agency; European Chemicals Agency). It becomes clear that the lack of inclusion among Annex XIV and the SVHC candidate list is largely determined by the availability of data, political will, and legislative speed and does not allow to determine a substance's inherent safety and emphasizes that at a minimum, meeting the criteria in the scientific literature should be sufficient for exclusion of a substance.

3. DNSH criteria for Section 2.3 and 2.4 Manufacture of chemicals and chemical products: Under the rationale of DNSH criteria, chemical releases are thought to occur "in industrial places, agricultural use of pesticides, professional or consumer use of products containing hazardous ingredients, as well as household activities". End-of-life fate is not mentioned, though it constitutes an important source of chemical pollution to the environment. This includes land fill or incineration, waste water treatment plants, recycling as well as other end-of-life fates of products containing hazardous chemicals, such as transport to third countries (Li & Wania, 2016; Sunderland et al., 2018). It is thus important that releases of chemical products occurring during end-of life treatment are also considered in the activity evaluation and included in the rationale of DNSH.

The second concern relates to the list of Substances of Concern presented under the DNSH criteria, which includes a variety of criteria used in regulatory frameworks to identify hazardous chemicals. Recently, a scientific consensus has emerged that persistence alone is a major cause of concern for chemical safety (p-sufficient approach) (Cousins et al., 2020; Cousins et al., 2019; Kwiatkowski et al., 2020). Continued releases of any such chemical will lead to its accumulation in the environment increasing the probability of adverse outcomes due to human and ecosystem exposures. While REACH does not currently consider persistence alone sufficient for regulation, the US state of California has adopted the p-sufficient approach (Bălan et al., 2021). This indicates that a p-sufficient approach may soon be the state-of-the-art approach to chemical regulation. In order for an activity to meet the DNSH criteria, substances that meet the persistence criteria alone should hence be excluded.

Finally, an improved definition regarding emissions under Section D is warranted. In its present form, the criteria is unclear in whether emissions associated with the activity should be "limited as far as possible", or only be lower than the mid-point of the BAT-AEL. Average emission levels are mainly determined by the regulatory requirements and not state-of-the-art technology, and may not always be protective. For example, waste water treatment using Cyclic Activated Sludge Systems are effective for removing perfluorinated alkyl substances (PFAS), yet conventional waste water treatment may result in higher PFAS concentration in effluents from waste water treatment compared to influents, and waste water treatment plants have become a key release source for PFAS (Chen et al., 2018; Coggan et al., 2019; Sunderland et al., 2018).

In addition, requiring lower emissions irrespective of toxicity could easily lead to regrettable substitution, where a substance with less data but a higher toxicity is used to replace a substance of concern. While this substance may be released at lower levels, it may in fact cause greater harm. An example where such a regrettable substitution occurred is the replacement of bisphenol A with bisphenol S in food packaging applications (Trasande, 2017). Without determining toxicity alongside release magnitude, this section is unlikely to fulfill the 'DNSH' criteria.

4. Section 2.5- Manufacture of plastic packaging goods: Not prioritizing plastic for reuse over recycling is inconsistent with the objective of generating a circular economy. As pointed out in the taxonomy, today packaging is the main constituent of plastics waste and the lack of manufacturer responsibility over the full life cycle of plastics packaging has been driving the growth of single use plastics application (Hopewell et al., 2009).

5. DNSH criteria for Section 2.5- Manufacture of plastic packaging goods: Current primary, mechanical recycling processes are limited by degradation of mechanical properties and inconsistent the maintaining an equally high quality product (Schyns & Shaver, 2021). As a result, virgin materials is combined with recyclates to produce high quality products (Schyns & Shaver, 2021). Even at 100% recycling rates, this would continuously increase the amount of plastic needing to be recycled or else disposed of. This is especially concerning as plastics materials may take decades or longer to degrade, and will accumulate in the environment if not fully recycled, unless they are incinerated (Chamas et al., 2020). A full life-cycle approach should be baked into the criteria to ensure that no plastics remain unaccounted for and contaminate marine and other ecosystems. Design-for-recycling should include efforts to collect and directly recycle/reuse by manufacturers, which will ensure that high quality materials are created that can be used in the same application.

These DNSH criteria does not consider pollution among its objectives for sustainable rubber and plastics manufacturing even though the majority of polymeric materials require chemical additives that can be lost (released to the environment) during manufacturing, use and disposal. Additives include substances like phthalates, poly(vinyl chloride) and flame retardants that have been identified as toxic, persistent and/or bioaccumulative and contribute to global marine and terrestrial environmental contamination (Hahladakis et al., 2018; Meeker et al., 2009). In other cases, the monomeric starting substance may be of concern. For example, fluoropolymer production has substantially contributed to the global contamination of soils, drinking water supplies, and marine environments with PFAS (Lohmann et al., 2020). These examples emphasize that the pollution of air, water, and soils with chemicals during manufacture, use and disposal/recycling should be considered in the criteria.

6. Section 3.7 – Electricity Generation from hydropower: In addition to electricity production, hydropower dams can function like a battery for energy storage (pumped storage hydropower), allowing to redistribute electricity production across time (Graabak & Korpås, 2016). This can significantly reduce the need for traditional batteries and their associated environmental impacts due to resource extraction and energy consumption during production (McManus, 2012). The multi-purpose function of hydropower should be considered in the boundary of the activity.

7. DNSH criteria for Section 3.7 – Electricity Generation from hydropower: Construction of new hydropower and associated flooding may mobilize legacy contaminants contained in flooded soils, and has the potential to increase their toxicity as in the case of microbial methylation of mercury, impacting the reservoir and downstream locations (Calder et al., 2016). However, in its current form the DNSH criteria does not include pollution to air, water and soil, and pollution is only implicitly considered under water quality. Neither the impact of hydropower on water quality and nor the importance for prevention of pollution are indicated for hydropower in Tables 2 of the Draft report by the Platform on Sustainable Finance on preliminary recommendations for technical screening criteria for the EU taxonomy.

8. Section 8.7. Urban and suburban passenger land public transport: One of the technical screening criteria for a substantial contribution to pollution prevention and control is “zero tailpipe emissions (coherently with the Climate Mitigation SC)”. While this appears to be an appropriate performance threshold for eliminating most point sources air pollution from urban and suburban transport, it may raise questions on how this may compromise achievement of other environmental objectives, for example transition to a circular economy. The performance threshold for the DNSH screening criteria for transition to circular economy leaves room for consumption-driven resource depletion upstream where materials are produced. It states that “measures are in place to manage waste”, including “reuse and recycling of batteries and electronics, including critical raw materials therein” and that measures should be “compliant with Directive 2000/53/EC ("End-of-life of vehicles Directive")”. However, this directive may not be fit for purpose for the ambition level proposed in the Commission’s Circular Economy Action Plan under the European Green Deal, which goes beyond an end-of-life approach to include measures aiming to promote longer lifetimes of electronics and also possibly introducing recycled content requirements.

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Annex A. Background and disclosure of interests

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As part of our work, over the past several years, SEI has actively engaged with European-based organizations and activities seeking to promote sustainable finance. This includes:

- Observers to the Advisory Council of the Green Bond Principles, Social Bond Principles, Sustainability Bond Guidelines and Sustainability-link Bond Principles of the International Capital Market Association.
- Members of the Expert Network on Second Opinion on Green Bond Frameworks.