

Nuclear in the EU taxonomy

Position Paper on DNSH

Open issues

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Nuclear Energy and the EU Sustainable Finance Taxonomy

SCHEER Mandate

- The Technical Expert Group on Sustainable Finance (TEG), which was tasked with advising the Commission on the technical screening criteria for the climate change mitigation and adaptation objectives, did not provide a conclusive recommendation on nuclear energy and indicated a further assessment of the '**do no significant harm**' aspects of nuclear energy is necessary.
- After establishing that a given activity could make a substantial contribution to the climate objectives, the TEG screened activities that could risk doing significant harm to one of the four (non-climate) environmental objectives. It followed a full **life-cycle approach**, to avoid errors such as considering an activity sustainable with a negative effect during a given stage (upstream or downstream).
- As the in-house science and knowledge service of the Commission with extensive technical expertise on nuclear energy and technology, the JRC is invited to carry out such analysis and to draft a technical assessment report on the '**do no significant harm**' (DNSH) aspects of nuclear energy consistent with the specifications of **Articles 17 and 19 of the Taxonomy Regulation**.

(<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32020R0852&from=EN>)

SCHEER Mandate

- The Taxonomy Regulation **2020/852** contains several articles (in particular articles 17 and 19) that set the legal framework for the DNSH principle.
 - *key issues in Article 17:*
 - Significant harm to environmental objectives**
 - (iii) the long-term disposal of waste may cause significant and long-term harm to the environment;
 - (e) pollution prevention and control, where that activity leads to a significant increase in the emissions of pollutants into air, water or land, as compared with the situation before the activity started; or

Article 19

Requirements for technical screening criteria

- (b) specify the **minimum requirements** that need to be met to avoid significant harm to any of the relevant environmental objectives, considering both the short- and long-term impact of a given economic (f)
- (f) be based on **conclusive scientific evidence** and the **precautionary principle** enshrined in Article 191 TFEU;
- (g) take into account the **life cycle**, including evidence from existing life-cycle assessments, by considering both the environmental impact of the economic activity itself and the environmental impact of the products and services provided by that economic activity, in particular by considering the production, use and end of life of those products and services;

Position Paper on Nuclear in Taxonomy on HLW (2020 Mraz/Lorenz)

“materials sufficiently resistant to radiation, toxic impacts, involved heat production, etc. have not been identified in the past 50 years. The material the industry has put its biggest hope on for use in a granite based deep geological disposal is copper – or rather was. “

“copper in a KBS-repository may corrode at much faster rates than acceptable and release radioactivity from the canisters already after only around 1,000 years of storage time.“

Status of repository projects

- Only last year new research showed that corrosion at interfaces (containers) were neglected: : *“The complex corrosion behavior of materials over large time scale can be expected. The effects of corrosion products scale formation, radiation and bacteria etc. in the repository may all play a role in the corrosion process. **Much work needs to be done to get a clearer scenario of corrosion development over geological time scale.**”* And continues: *“Corrosion is accelerated by the interface interaction between dissimilar materials could profoundly impact the service life of the nuclear waste packages (...). Once the container is damaged due to corrosion, surface waters and underground waters play a role in the transportation of radionuclides in water bodies, causing harm to humans. So the waste container serving as the first barrier to prevent HLRW from migrating into biosphere is of great importance.*

- The **Onkalo final repository** in Finland, which according to some industry organisations would be only months away from being granted an operational license, is supposed to use the very same Swedish copper canister system, which are not licensed yet.
- Corrosion is an unsolved issue at Cigeo/France as well.

Outlook on upcoming regulations

- EIB energy policy
- State aid for environmental protection and energy