EC Draft Taxonomy Delegated Regulation on climate mitigation & climate adaption

Eurelectric dedicated hydropower response

December 2020

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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Markets & Investments Committee
Electrification & Sustainability Committee
Generation & Environment Committee

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We are concerned about the technical screening criteria and the general assessment of hydropower. **It risks to be considered unsustainable if the draft delegated acts do not change substantially.** Hydropower is not only renewable itself – it also balance the fluctuations from other renewables such as wind- and solar power and is by far the most important provider of renewable flexibility. By regulating water flows and counteracting the effects of droughts and floods, it also contributes significantly to climate change adaption.

Our main concerns with regards to hydropower are the following:

- **Creating a double standard for Hydropower.** "Do No Significant Harm "(DNSH) criteria for hydropower should be defined for hydropower along the same principles as for other renewable technologies with direct reference to current EU legislation. Therefore, DNSH criteria for hydropower need only to refer to the Water Framework Directive and the Marine Framework Strategy Directive as the main EU-wide environmental legislation for hydropower without further specifications.
- The Draft Delegated Act and its Annexes **do not follow the technology neutrality** principles laid out in the mother regulation and the principles in the preface of the draft delegated act. According to TFEU[1], a delegated act cannot go further than its mother regulation. Eurelectric is worried that the Commission is treading beyond its mandate provided by the Parliament and Council by deviating on the concerns mentioned above.

  We strongly recommend to set the same standard of reference to existing EU law for all renewable electricity generation technologies.

As a solution, we suggest the following changes to be made:

1. DNSH for Objective 3 for sustainable use and protection of water and marine resources: A singular reference to the Water Framework directive and the Marine Strategy Framework Directive

Original text from Section 4.5 in ANNEX I – Climate Change Mitigation. Equivalent in ANNEX 2 – Climate Change Adaption.

(3) Sustainable use and protection of water and marine resources

1 Article 290

1. Operation of existing hydropower plants, including refurbishment activities to enhance renewable energy or energy storage potential.

All technically feasible and ecologically relevant mitigation measures have been implemented to reduce adverse impacts on water as well as on protected habitats and species directly dependent on water.

The effectiveness of those measures is monitored in the context of the authorisation or permit setting out the conditions aimed at achieving good status or potential of the affected water body.

The operation of the hydropower plant fully complies with that authorisation or permit issued by the competent authority, and sets out all relevant mitigation measures necessary to:

(a) ensure conditions as close as possible to undisturbed continuity in the specific water body the plant relates to, including state-of-the-art and fully functional fish passes and turbines preventing fish kill, measures to ensure minimum ecological flow and sediment flow, adaptation of the operation of the plant;

(b) reduce the impact of hydropeaking;

(c) protect or enhance habitats for aquatic species;

(d) reduce adverse impacts of eutrophication.

2. Construction of new hydropower plants

The plants are conceived, by design and location and by mitigation measures, so that they comply with one of the following:

(a) the plants do not entail any deterioration nor compromise the achievement of good status or potential of the specific water body they relate to, as demonstrated by a cumulative impact assessment referred to in this Section;

(b) the plants do neither significantly deteriorate nor compromise the achievement of good status/potential of the specific water body they relate to and are justified by overriding reasons in the public interest.

The plants are conceived, by design and location and by mitigation measures, so that they do not permanently compromise the achievement of good status/potential in any of the water bodies in the same river basin district.

A cumulative impact assessment has been performed that identifies and addresses any significant regional or basin-level environmental impacts. The assessment:

(a) addresses all potential impacts on water bodies, as well as on protected habitats and species directly dependent on water, considering in particular:

(i) migration corridors, free-flowing rivers or ecosystems close to undisturbed conditions;

(ii) all impacts of existing and of already authorised and planned infrastructure developments in the basin, for

example as part of a hydropower cascade or of other activities (for example agriculture, transport etc.);

(b) is based on recent, comprehensive and accurate data, including monitoring data on biological quality elements that are specifically sensitive to hydrological alterations, and on the expected status of the water body as a result of the new activities, as compared to its current one.

The cumulative impact assessment demonstrates that the project does not permanently exclude the achievement of the objectives of good status/potential in other water bodies or connected ecosystems within the same river basin district.

Where the cumulative impact assessment demonstrates that the envisaged project neither deteriorates nor compromises the achievement of good status/potential of the specific water body, as a result of site-specific conditions or the use of state-of-the-art technology, the operation of the new hydropower plant fully complies with its authorisation or permit setting out the conditions aimed at achieving good status or potential of the affected water body. The plant respects appropriate environmental standards in terms of flow management and flood regime (magnitude, frequency, duration, timing and rate of change) and of mitigation measures, including controlled releases, state of the art and fully functional fish passages, state of the art turbines preventing fish kill, controlled temperature, appropriate ecological flow, sediment flow, timing of operation of turbines.

Where the cumulative impact assessment demonstrates that the envisaged project could deteriorate or compromise the achievement of good status/potential of the specific water body it relates to, a further in-depth cost-benefit assessment is performed. That in-depth cost-benefit assessment demonstrates that such deterioration will not be significant and will comply with all of the following criteria:

(a) the beneficial objectives served by the planned hydropower plant in terms of renewable energy generation and energy storage cannot, for reasons of technical feasibility or disproportionate cost, be achieved by alternative means that would lead to a better environmental outcome (alternative location, rehabilitation/refurbishment of existing hydro-power plants or infrastructures, use of technologies not disrupting river continuity, where relevant, consideration of other potential sources of electricity, which may offer in the particular case a better environmental alternative; the beneficial objectives served by the planned hydropower

plant are justified by overriding reasons in the public interest;

(b) the benefits expected from the planned hydropower plant outweigh the costs from deteriorating the status of water that are accruing to the environment and to society. The in-depth cost-benefits analysis considers the following aspects:

(i) the marginal quantity of energy generated and its contribution to increasing the share of renewable energy in the energy mix, in accordance with the national renewable energy strategy when relevant;

(ii) impacts on water status or potential upstream and downstream;

(iii) impacts on biodiversity, in particular on Protected Areas (such as Natura 2000 sites in the Union, areas relied upon for drinking water, areas with bathing water);

(iv) the benefits of ecosystem services (quantitatively where possible);

(c) all technically feasible and ecologically relevant mitigation measures are included in the permit or authorisation and are implemented to reduce the adverse impacts on the status of the water body the planned hydropower plant relates to. Those measures:

(i) ensure conditions as close as possible to undisturbed continuity (including state-of-the-art and fully functional fish passes and turbines preventing fish kill, measures to ensure minimum ecological flow and sediment flow, adaptation of the operation of the plant);

(ii) reduce the impact of hydropeaking;

(iii)protect or enhance habitats for aquatic species;

(iv) reduce adverse impacts of eutrophication;

(d) in addition to the mitigation measures referred to in point (d) and where relevant, compensatory measures are implemented to ensure that the project does not increase the fragmentation of water bodies in the same river basin district. This is achieved by restoring continuity within the same river basin district to an extent that compensates the disruption of continuity, which the planned hydropower plant may cause. Compensation starts prior to the execution of the project.

Proposed new text

(Delete all original wording and replace with)

The activity complies with the provisions of Directive 2000/60/EC and in the Directive 2008/56/EC).

Argumentation

Electricity generation technologies are treated differently even though they fall under the same economic activity under the NACE code system. (D35.1.1 – "production of electricity").

The preface of the draft delegated act specifically refers to the principle of technology neutrality on the NACE classification: "*In order to ensure a level playing field, the same economic activities should be subject to the same technical screening criteria for each climate objective. It is therefore necessary that the technical screening criteria, where possible, follow the classification of economic activities laid down in the NACE Revision 2 classification system of economic activities established by Regulation (EC) No 1893/2006 of the European Parliament and of the Council*."

This double standard is done by applying either no criteria to one renewable technology versus multiple different criteria for another renewable technologies. The level of specification in the DNSH-criteria for hydropower goes far beyond what is determined in the rest of the delegated acts, esp. as regards DNSH principle 3 on the sustainable use and the protection of water and marine resources.

Article 17 (1c) of the Taxonomy Regulation states that the activity "*shall be considered to significantly harm (…) where that activity is detrimental to the good status or the good ecological potential of bodies of water, including surface water and groundwater*." At the same time the Water Framework Directive (WFD) states in Article 1 "*that purpose of this Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater*" and "*promotes sustainable water use based on a long-term protection of available water resources*".

The Commission concluded in the 2019 Fitness Check of the Water Framework Directive that the directive itself was still fit for purpose and the question at hand was regards to the implementation in each Member State.

To uphold to the principle set out by the commission and the regulation itself, a singular reference as proposed by Eurelectric to the WFD and the MSFD would cover the full scope of the DNSH for Objective 3 for sustainable use and protection of water and marine resources.

Referencing clearly to WFD will also avoid double regulatory standards within the water protection which could even further increase legal uncertainty and hamper the implementation.

Additional and more specific criteria at EU level will contribute to contradiction in EU policy goals and will impede a coherent implementation of the Taxonomy regime throughout the EU. It may even lead to a loss of flexible clean electricity needed in keeping the level of security of supply high, increasing other renewable electricity generation and ensuring a safe energy transition.

Eurelectric points out that the Commission refers via footnote 255 to its own opinion in the delegated act. We believe the Commission do not have the legal competence to introduce a Commission notice C/2018/2619 in footnote 255 of Annex I of the delegated act (page 109) which in its first sentence clearly states: "*This document reflects the view of the European Commission and is not of a binding nature*".

2. Apply the same technical screening criteria for all renewable electricity generation technologies

Original text in Annex 1 climate mitigation, chapter 4.5.

The activity complies with either of the following criteria:

(a) the life-cycle GHG emissions from the generation of electricity from hydropower, including mixed pumped hydropower storage connected to a free-flowing water source are lower than 100gCO2e/kWh.
The life-cycle GHG emissions are calculated using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018, ISO 14064-1:2018 or the G-res tool250. Quantified life-cycle GHG emissions are verified by an independent third party.

(b) the power density of the electricity generation facility is above 5 W/m2.

Proposed new text

~~*The activity complies with either of the following criteria:*~~

~~*(c) the life-cycle GHG emissions from the generation of electricity from hydropower, including mixed pumped hydropower storage connected to a free-flowing water source are lower than 100gCO2e/kWh.*~~

~~*The life-cycle GHG emissions are calculated using Commission Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018, ISO 14064-1:2018 or the G-res tool250. Quantified life-cycle GHG emissions are verified by an independent third party.*~~

~~*(d) the power density of the electricity generation facility is above 5 W/m2.*~~

The activity generates electricity from hydropower.

Argumentation

The draft is not compliant with Article 19 of the mother regulation which requires screening criteria to be "respecting the principle of technological neutrality".

This principle must be implemented for all renewable electricity generation technologies according to RED II. Hydropower – even though properly defined as contributing substantially to climate change mitigation – is required to prove this evidence by proving its life-cycle-emissions being below 100 g CO2/kWh or by proving its power density being above 5 W/km². For other renewable technologies, such as wind power and solar photovoltaic, no criteria for proving this evidence is required. Technology neutrality as required by the mother regulation would mean that either no or all technologies of the same economic activity (i.e. generation of electricity) are subject to the same technical screening criteria.

Article 19 (1k) of the Taxonomy Regulation requires that screening criteria are "*easy to use and be set in a manner that facilitates the verification of their compliance*". This is not the case for the proposed methods for calculating the life-cycle GHG emissions and the power density factor. The application of the power density factor for hydropower plants will give misrepresented results in European climate zones. Some reservoirs in tropical climate zones have shown significant carbon footprint due to the methane gas caused by flooding large areas of vegetation. However, this is not the case for hydropower installations in Europe due to cooler climatic conditions. . It is not justified, that hydropower must carry out life cycle assessments, unlike other renewable technologies. With worldwide median lifecycle emissions of 24g CO2e/kWh, the emissions of hydropower plants are well below the proposed emission threshold of 100g CO2e/kWh.

Hydropower schemes are complex by nature. Common setups include one reservoir supplying water to several hydropower plants or one hydropower plant being supplied by multiple cascading reservoirs. In addition, hydropower installations often serve multiple purposes beyond electricity generation such as flood control, drinking water supply and irrigation. The power density factor is simple in form, but does not manage to encompass these complex factors of hydropower scheme. These complicating factors have not been assessed in the TEG report nor in the draft delegated regulation. Therefore, it is not easy to use as specified in the mother regulation.

Data to calculate the correct power density is difficult to obtain as regards the surface of the reservoir. A precise calculation requires a net approach; subtracting the pre-impoundment (before regulation) surface area from current surface area (after regulation). This would address flooded area due to the hydropower installation and not the natural flooded lake. However, data for pre-impoundment surface area are very difficult to obtain, since many were built several decades, even centuries ago. There is the risk that the application of the power density factor will give misrepresented results.

3. All electricity storage technologies should be categorised as economic activities substantially contributing to climate change mitigation and not as enabling activities

Original text chapter 4.10

The activity is the construction and operation of electricity storage facilities including closed-loop pumped hydropower storage, defined as hydro plants with no natural water inflow into the upper reservoir, where the water that generates electricity was previously pumped uphill. Pumped storage connected to river bodies are not eligible.

Proposed text

The activity is the construction and operation of electricity storage. ~~facilities including closed-loop pumped hydropower storage, defined as hydro plants with no natural water inflow into the upper reservoir, where the water that generates electricity was previously pumped uphill. Pumped storage connected to river bodies are not eligible.~~

Argumentation

The European energy transition requires substantial investments in storage technologies in order to fulfil the requirements to reduce CO2 emissions and to keep the high levels of security of supply and grid stability.

Hydropower is the only large-scale renewable generating option to offer storage of energy which can be transformed into electricity instantaneously. This applies for river basins with natural inflow, pumped storage and reservoir storage. All these are substantial contributions to climate change mitigation as described in Article 19 (1a) and 19 (1j) or the regulation, but it is not reflected in the draft delegated act.

Closed-loop hydropower storage is a niche in Europe, nearly all existing pumped storage assets have either natural inflow or are connected to river bodies. They can provide valuable grid services, yet only on a very limited scale due to their very limited existence. The existing hydropower reservoirs especially in the Alps, the Pyrenees and in Scandinavia provide multiannual storage capacity on a large scale already today. We see the differentiation between and the resulting different criteria to be applied for closed-loop pumped hydropower storage and for mixed pumped hydropower storage as artificial without any contribution to sustainability. See Eurelectric storage report for further details[2]

Mixed-pump storage is currently considered under section 4.5 “Electricity generation from hydropower”, and is therefore subject to a threshold of GHG emissions of not more than 100 gCO2 per kWh. This threshold is required for the “turbine mode", hence for the activity of generation of electricity. This evokes difficulties of practical implementation. Any electricity storage technology does not produce electricity by itself but consumes it (the quantity of electricity taken out of the grid for pumping a given volume of water up in a higher reservoir) and gives it back to the grid when the system service is needed. Due to technical constraints, the amount of electricity given back to the grid is in any case smaller than the amount taken out.

[2] Eurelectric storage paper

At this stage in the path towards 2050, all electricity storage technologies, should be categorised as economic activities making a substantial contribution based on their own performance, and not only as enabling activities. All dedicated electricity storage technologies should be listed in 4.10. including respective specifications in the DNSH criteria.

We urge the Commission to use definitions of storage in line with the Clean Energy Package. No distinction should be made between pumped storage power plants in general and "closed looped pump storage plants". Sustainable use and protection of water and marine resources is already regulated under the Water Framework Direction.

4. The activity 'Installation, maintenance and repair of renewable energy technologies' must include all renewable electricity generation technologies as defined by RED II

Original text Section 7.6 annex 1

[No text under hydropower section]

The activity consists in one of the following individual measures, if installed on-site as technical building systems:

(a) installation, maintenance and repair of solar photovoltaic systems and the ancillary technical equipment;

(b) installation, maintenance and repair of solar hot water panels and the ancillary technical equipment;

(c) installation, maintenance, repair and upgrade of heat pumps contributing to the targets for renewable energy in heat and cool in accordance with Directive (EU) 2018/2001 and the ancillary technical equipment;

(d) installation, maintenance and repair of wind turbines and the ancillary technical equipment;

(e) installation, maintenance and repair of solar transpired collectors and the ancillary technical equipment;

(f) installation, maintenance and repair of thermal or electric energy storage units and the ancillary technical equipment;

(g) installation, maintenance and repair of high efficiency micro CHP (combined heat and power) plant;

(h) installation, maintenance and repair of heat exchanger/recovery systems;

Proposed text for including hydropower in installation, maintenance and repair chapter 7.6. Annex 1

(i) installation, maintenance and repair of hydropower turbines and the ancillary technical equipment.

Original text for cross-reference chapter 4.5.

[No text under hydropower section]

Proposed text for cross-reference chapter 4.5.

[*Insert under description of the activity in chapter 4.5] Where the activity is an integral element of the activity 'Installation, maintenance and repair of renewable energy technologies' as referred to in Section 7.6 of this Annex, the technical screening criteria specified in Section 7.6 apply.*

Argumentation

We call for including hydropower and bioenergy as any other renewable electricity generation technology in the references made to installation, maintenance and repair of assets.

Hydropower has to be treated as any other renewable electricity generation technology falling under the provisions of RED II.

Hydropower technologies hold a strong competitive position in the EU, a fact that has been confirmed by the recent Commission Staff working document on the Clean Energy Transition – Technologies and Innovations.[3]

The text in the draft delegated act is not compliant with Article 19 of its mother regulation which requires screening criteria to be "respecting the principle of technological neutrality". Technology neutrality as demanded by the mother regulation would mean that either no or all technologies of the same economic activity (i.e. generation of electricity) have to fall under the provisions for Installation, maintenance and repair of the assets

[3] 14.10.2020 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020SC0953

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability

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