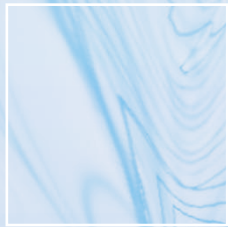


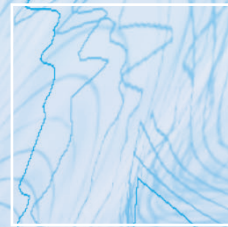
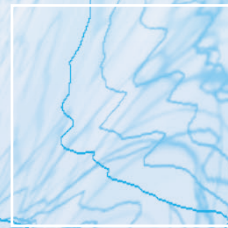
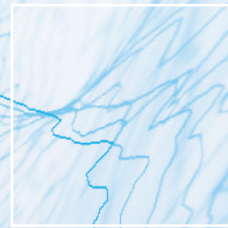


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## *The Importance of the EU Taxonomy: the Example of Electricity Storage*

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### **Highlights**

- The legislative results of the Commission's Sustainable Finance Initiative will play an increasingly important role on investment decisions in the energy sector. The Taxonomy Regulation, adopted last June, provides that investment funds and large EU companies must disclose information on their activities by reference to the EU Taxonomy. It also requires that any national or EU-level labels relating to sustainable investing or any other sustainability-related requirements imposed on investors must be designed by reference to the EU Taxonomy. In substance, this means that 'green funding' will have to finance predominantly, if not exclusively, the commercial activities that are 'taxonomy compliant'. This will have an increasingly significant influence on the attractiveness of energy investments in future.
- There is a need for coherence in the use of all instruments designed for achieving Green Deal objectives, and the EU Taxonomy is therefore an important such instrument.
- The existence of adequate and affordable electricity storage will play an important role in the EU's ability to meet its renewable energy objectives.
- In this respect, for example, the Commission's draft Taxonomy Delegated Act takes a different approach to pumped hydro-storage than the recommendations of the Technical Expert Group on Taxonomy, essentially including one form of pumped hydro-storage while excluding another. This is difficult to understand, given the importance of this product for the Green Deal, and merits careful attention and to ensure that a fully reasoned, justified and coherent position results in the finally adopted version.



## 1. Introduction

Affordable and adequate electricity storage will be crucial to enable the EU to reach its renewable energy and Green Deal targets, given the resultant increasing proportion of intermittent wind and PV in the EU's electricity mix. Failure to develop this capacity may lead to curtailment becoming the default option to deal with the increasing frequency and scale of periods when electricity markets will produce more renewable electricity than can be consumed. If curtailment indeed becomes the default option, the more incremental PV and wind capacity that is installed in future, the greater the curtailment and cost, and the risk of a vicious cost/capacity circle developing.

This is one of the most significant challenges to be faced by the EU in delivering the very high level of wind and PV in the future EU electricity mix that will be needed to deliver full decarbonisation. It needs to be addressed positively and through long-term planning and investment. The Recovery Plan funding represents a good opportunity for funding the storage that will be needed over the next decade, without resulting in increased electricity costs.

The Commission, and the EU as a whole, therefore needs to take a holistic and proactive approach to this challenge.

## 2. The Taxonomy Regulation and the Energy Sector

The EU's Sustainable Finance Initiative aims at setting the global 'gold standard' in defining what is (and what is not) 'green', notably in the context of financial reporting and services. Financial service companies and banks offering 'green' or 'sustainable' products – such as 'green bonds' or 'sustainable funds' – need to have a standard that they must meet in order to

legitimately classify their products in such a manner and avoid "greenwashing".

The original objective of the EU in developing the Sustainable Finance Initiative<sup>1</sup> has now expanded, so that in future, a significant and increasing proportion of EU companies will be obliged to declare the proportion of their activities that are 'green', as part of their annual non-financial reporting obligations. This will enable investors – institutional and private – to make informed choices on the companies in which they invest, and to push industry to make environmentally rational choices in terms of corporate strategy.

In concrete legislative terms, the EU has already adopted into law how and when the 'green' standards must be applied, as the Taxonomy Regulation (Regulation 2020/852<sup>2</sup>) – adopted in June 2020 – provides under Article 4 that « *Member States and the Union shall apply the [Taxonomy] criteria (...) to determine whether an economic activity qualifies as environmentally sustainable for the purposes of any measure setting out requirements for financial market participants or issuers in respect of financial products or corporate bonds that are made available as environmentally sustainable* » and established a number of Taxonomy-related pre-contractual disclosure obligations on financial market participants (Articles 5 to 7).. The EU is now in the latter stages of the detailed process to define what is and what is not 'green', or what is known as 'Taxonomy' compliant.

At first sight, this might seem somewhat removed from an energy policy debate. However, it is rapidly becoming clear that the Taxonomy criteria will play a major role in the energy field.

First, financial institutions such as the European Investment Bank ("EIB") are likely to be increasingly reluctant to finance activities that are not 'Taxonomy

1. [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en)

2. [https://ec.europa.eu/info/law/sustainable-finance-taxonomy-regulation-eu-2020-852\\_en](https://ec.europa.eu/info/law/sustainable-finance-taxonomy-regulation-eu-2020-852_en)



compliant'. Furthermore, more and more governmental and institutional lenders, as well as investment funds, are moving into this 'green only' space. Put simply, non-Taxonomy compliant investments will be progressively more difficult, or more expensive, to fund.

Second, the Taxonomy criteria will have an effect wider than simply funding issues. Companies may 'shy away' from non-Taxonomy compliant investments for reputational reasons.

Third, the Taxonomy criteria will no doubt increasingly become the baseline for many legislative provisions and requirements in other areas. For example, when funding is granted by the EIB, and also from funds allocated from the European recovery Plan for Green Deal-related projects, the Taxonomy criteria are likely to be important, if not determinative. Equally, when the Commission revises the Energy and Environment State Aid Guidelines, for example, it is rather likely that – at least in some respects – they will base subsidy approval on Taxonomy criteria. When designing support schemes for hydrogen, Member States may focus them on Taxonomy-compliant hydrogen. When the Commission approves funding from the Connecting Europe Facility, the question of Taxonomy compliance may be a relevant criteria in establishing priorities.

There is no doubt, therefore, that whether a given category of energy investment falls within the Taxonomy will become really important.

Deciding whether a given activity is 'sufficiently sustainable' to be Taxonomy compliant is far

from simple. It makes no sense to include in the Taxonomy list only activities that emit no GHG, as the aim is to push companies to invest in activities that put the EU on the path to meet its 2050 carbon neutrality objective. Thus, the approach is to include activities that contribute significantly to the decarbonisation goal, taking account of the stage of the decarbonisation cycle of the economy. The criteria to be 'Taxonomy compliant' therefore commence strict, and will become ever stricter. Logically, close to 2050, only activities that emit no GHG will be Taxonomy compliant, with presumably a special category for those that remove carbon from the system.

Two distinct categories of activities can be Taxonomy compliant; activities that contribute to reducing emissions in the EU, such as renewable electricity (known as 'climate change mitigation' measures), and activities that contribute to preparing the EU to deal with the effects of climate change (known as climate change 'adaptation' measures)<sup>3</sup>.

A very wide range of energy-related and other activities are then classified according to relevant externalities, notably GHG. If the activities meet this threshold, then they will be Taxonomy compliant providing that they meet an additional test of 'Do No Significant harm' to other environmental objectives<sup>4</sup>. For example, there is no point in defining an offshore wind park as Taxonomy compliant if it is built on an area of seabed that is particularly important for biodiversity.

It is not difficult to imagine that designing these criteria is technically difficult and politically

3. Note that, technically, the Taxonomy Regulation foresees the establishment of 6 lists, one per fundamental environmental objective enshrined in its Article 9, including (i) climate change mitigation but also (ii) climate change adaptation, (iii) the sustainable use and protection of water and marine resources, (iv) the transition to a circular economy, (v) pollution prevention and control and (vi) the protection and restoration of biodiversity and ecosystems. This article focuses on the first two lists relating to climate change mitigation and adaptation, as the drafting of the taxonomy for the other objectives is scheduled for later.
4. Strictly speaking, they must also be compliant with "minimum safeguards" relating to labour and human rights standards (see Article 3(c) and 18 of the Taxonomy Regulation). However, such safeguard are not contentious and will not be further discussed in this Article.



controversial. To attempt to de-politicise the discussion, the Commission set up a Technical Expert Group (“TEG”) consisting of a wide range of government, industry, academic and civil society experts. On 9 March 2020, this TEG published its comprehensive and impressive report<sup>5</sup>.

Since, as mentioned above, the basic legislation to implement the Taxonomy system has already been adopted, all that is now needed for the system to ‘go live’ is to agree on the Taxonomy list and criteria. Again, in order to de-politicise the process, the Taxonomy Regulation specifies that this list and these criteria are to be adopted via a Delegated Act by the Commission, rather than via the full co-decision legislative procedure. The Commission published its draft Delegated Act on 20 November 2020, as part of a public consultation.

### 3. The Need for a Coherent Approach With Energy Sector Integration and Green Deal Objectives When Setting Taxonomy Standards

The Taxonomy standards can, therefore, be expected to have a very significant effect on future energy investments. Indeed, this is the aim behind the Sustainable Finance Initiative. Considerable care therefore is required when finalizing them to ensure that they in fact contribute to a cost-effective and rational decarbonizing energy market.

By way of example, it is clear that significant additional cost-effective electricity storage capacity in the EU will be essential to deal with the rapidly increasing level of intermittent wind and PV electricity that is central to achieving the Green Deal objectives. Should this not be available, or sufficiently cost-effective, ‘curtailment’ - requiring renewable electricity producers to stop producing at peak times

- may become the default option. Options for such electricity storage include pumped hydro, batteries and hydrogen.

All three of these storage technology categories are covered by the Taxonomy proposal made by the TEG, and are contained in the Commission’s draft Delegated Act. Thus, if the detailed criteria specified in the final delegated act are met, investments into all three technologies will be ‘taxonomy compliant’ and be able to attract green finance.

With respect to electricity storage using both hydrogen and batteries, no issues arise as the category relating to ‘Storage of electricity’ is technology agnostic in their respect<sup>6</sup>.

However, regarding pumped hydro storage, which is a flexible, mature and cost-effective storage solution, an issue merits consideration. There are two types of pumped hydro storage, “open-loop systems”, where the pumped hydro-storage facility is continuously connected to a naturally flowing water source (such as a river), and “closed-loop systems”, where the pumped hydro-storage facility has no natural water inflow into the upper reservoir, and where the water that generates the electricity is previously pumped uphill. Current EU law does not distinguish between the two, neither in energy or environmental law, for example in the Water Framework Directive.

There appears to be no appreciable difference between these two types of pumped storage in terms of the service that they are offering, and its important contribution to achieving the EU’s decarbonisation goals. The report of the TEG included both types of storage within the Taxonomy criteria, both with respect to the relevant life-cycle GHG requirements and in terms of defining ‘do no significant harm’.

However, in the Commission’s draft Delegated Act, it appears that only closed-loop systems are included

5. [https://ec.europa.eu/info/files/200309-sustainable-finance-teg-final-report-taxonomy\\_en](https://ec.europa.eu/info/files/200309-sustainable-finance-teg-final-report-taxonomy_en)

6. See Section 4.10 of Annex I of the Draft Delegated Act, available [here](#).



under the category dedicated to storage systems<sup>7</sup>. Furthermore, although open loop systems can technically be considered as electricity generation facilities for Taxonomy purposes, new criteria are introduced in terms of ‘do no significant harm’ for them, that do not relate to EU or national legislation regulating water use and reservoir establishment or use, *de facto* establishing a new regulatory framework for water management through the means of a Delegated Act. No explanation is given for this change. These new criteria also significantly deviate from the recommendations of the TEG.

The above analysis makes it clear that rapidly developing all cost-effective forms of electricity storage should be an EU energy priority. Pumped-hydro storage, provided that it is developed in full compliance with all environmental and social requirements at EU and national level, can play an important role. Excluding a large part of the potential capacity from the Taxonomy criteria is at best difficult to understand.

Exclusion from the Taxonomy criteria cannot be seen as a technicality, simply limiting developers of pumped-hydro storage from ‘green’ sources of finance, although this in itself would be disincentive enough to its maintenance and development. As discussed above, the impact of non-taxonomy compliance goes far beyond this, as companies may ‘shy away’ from such investments on reputational grounds. Member States may not be willing to provide public support to “open-loop” pumped storage because it is not taxonomy compliant. Similar issues also arise regarding the treatment of hydro in general terms, where again the Commission has taken a more restrictive approach than that proposed by the TEG Expert Group. Hydroelectricity (rather than pumped hydro specifically for energy storage purposes) can also be an important source of balancing power, albeit that its role is primarily focused on delivering renewable electricity. This demonstrates the need

for a holistic approach to achieving the Green Deal objectives between all its policy areas.

#### 4. Conclusions

The above discussion has underlined the importance of developing cost-effective storage technologies to partner the growth in renewable electricity. It is still difficult to predict exactly how much storage will be required by Member States in the coming years, based on their renewable electricity targets, interconnection and grid constraints, and demand response options.

It is important that cost-effective storage is available at the required scale and in-time. Otherwise, as mentioned above, growth in curtailment risks forming a *de facto* block on further investment in renewable electricity. It is equally important that storage is cheaper than the curtailment option; if storage is very expensive - more expensive than the default curtailment option - then they will either need important subsidies (resulting in increased grid costs), or, again, curtailment becomes the default option.

We suggest that this requires greater attention than currently devoted to the issue. Prioritisation of the most cost-effective sources of storage should obviously be a priority. The use of Recovery Plan funding for the development of adequate and cost-effective storage solutions, and without resulting in increased electricity system costs, appears an attractive option for positively addressing this challenge.

7. Section 4.10, when considering the ‘Substantial contribution to climate change mitigation’ of electricity storage states that it only applies to “closed-loop pumped hydropower storage” and that “Pumped storage connected to river bodies are not eligible”.

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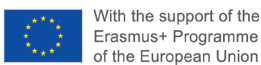
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