

# Technical Expert Group on Sustainable Finance

Taxonomy pack for feedback and workshops invitations  
December 2019

*Please note that this document is for your convenience to work offline.  
Please provide your feedback through the [online surveys](#) only.*

## **Disclaimer**

This call for feedback is part of the DG FISMA, DG ENV, DG CLIMA and DG ENER ongoing work to develop the taxonomy, for which the Commission has set up the TEG. The Action Plan on Financing Sustainable Growth – Action 1 – requests the group to develop the taxonomy on the basis of broad consultation of all relevant stakeholders. This document is not an official Commission document nor an official Commission position. Nothing in this document commits the Commission nor does it preclude any policy outcomes.

## About this document

This document is structured into four parts (A-D).

### PART A: Explanation of the taxonomy approach

#### PART B: Feedback materials, consisting of:

**1. Feedback on 1<sup>st</sup> round climate mitigation activities**

Technical experts and stakeholders can provide feedback on selected economic activities and the proposed criteria for the first sub-set of economic activities expected to make a substantial contribution to climate mitigation under the EU Commission's [Taxonomy proposal](#). These are called the 1<sup>st</sup> Round climate mitigation activities.

[Click here to answer questions by 22 February 2019](#)

**2. Feedback on Usability of the Taxonomy**

Future users of the Taxonomy can provide feedback on the usability and fitness for purpose of the Taxonomy in practice.

[Click here to answer questions by 22 February 2019](#)

#### PART C: Invitation to workshops:

The TEG has identified areas where additional expertise is needed. The Commission has therefore decided to host workshops to gather this expertise. We ask interested experts to register their interests to attend these workshops and thereby provide technical input to the following activities:

- (i) The development of new criteria for further economic activities that have the potential to make a substantial contribution to climate mitigation objectives. These are called the 2<sup>nd</sup> Round climate mitigation activities. [Click here to register interest by 9 Jan 2019.](#)
- (ii) The development of new criteria for activities expected to make a substantial contribution to climate adaptation objectives of the European Union. These are called Adaptation activities. [Click here to register interest by 9 Jan 2019.](#)
- (iii) The development of new criteria to assess “significant harm” across environmental objectives 3-6 (sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and recycling, pollution prevention control, and protection of healthy ecosystems). [Click here to register interest by 9 Jan 2019.](#)

#### PART D: Full list of 1<sup>st</sup> round climate mitigation activities, screening criteria and questions

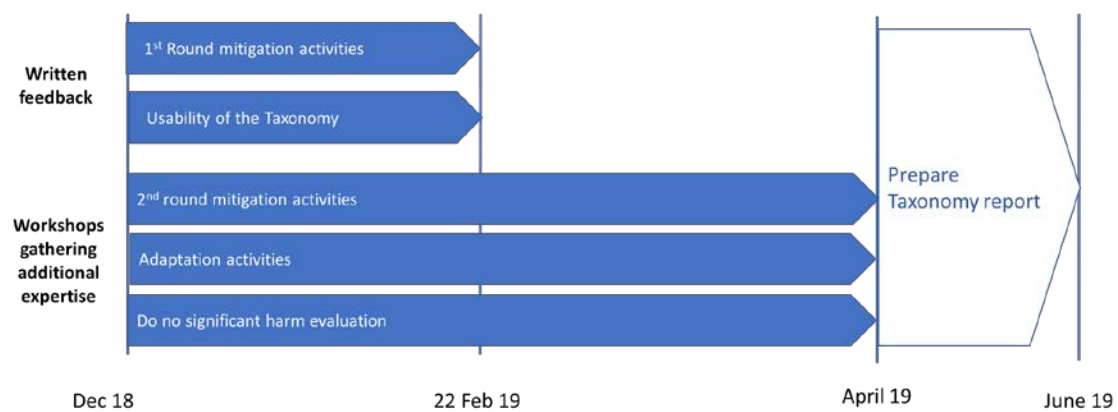


Figure 1: Timeline for Taxonomy development.

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# PART A: Explanation of the taxonomy approach

## 1 Background

In line with the Commission's legislative proposals of May 2018<sup>1</sup>, the European Commission has set up a Technical Expert Group on Sustainable Finance (TEG) to assist it in developing;

- an EU classification system – the so-called taxonomy – to determine whether an economic activity is environmentally sustainable;
- an EU Green Bond Standard;
- benchmarks for low-carbon investment strategies; and
- guidance to improve corporate disclosure of climate-related information.

The Taxonomy is the focus of this invitation for feedback and workshops. Outreach plans from other working groups of the TEG can be found online<sup>2</sup>.

The TEG commenced its work in July 2018. Its 35 members from civil society, academia, business and the finance sector, as well as ten additional members and observers from EU and international public bodies work both through formal plenaries and sub group meetings for each work stream. The members of the TEG and the Commission recognise the importance of transparency and feedback throughout this process.

Members of the current TEG have been appointed as representatives of their organisations (type C members<sup>3</sup>), as individuals appointed in a personal capacity (type A or type B members), or as representatives of European entities (type E members).

The TEG will operate until June 2019, with a possible extension until year-end 2019.

## 2 Purpose of the Taxonomy

In order to meet the EU energy and climate targets for 2030 and to transition to a low carbon- and more environmentally sustainable economic model, the EU faces an investment gap of €150-177bn<sup>4</sup>+ of additional investment per year to 2030. The European Commission's long-term vision 'A Planet for all'<sup>5</sup> indicates that a transition to a net-zero greenhouse gas economy in 2050 will require annual average investments in the range of €1.19 to 1.48 trillion from 2031 during 2050. This means considerable additional investments compared to the baseline, in the range of € 175 to 290 billion a year (including investments needed to replace vehicles).

Private business and households will be responsible for the vast majority of these investments. The financial sector has a key role to play to help re-orienting flows in supporting the transition.

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1 [https://ec.europa.eu/info/publications/180308-action-plan-sustainable-growth\\_en](https://ec.europa.eu/info/publications/180308-action-plan-sustainable-growth_en)

2 [https://ec.europa.eu/info/files/sustainable-finance-teg-consultations-plans\\_en](https://ec.europa.eu/info/files/sustainable-finance-teg-consultations-plans_en)

3 <http://ec.europa.eu/transparency/regexpert/index.cfm?do=faq.faq&aide=2>

4 pp200 A Clean Planet for all- A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy: [https://ec.europa.eu/clima/sites/clima/files/docs/pages/com\\_2018\\_733\\_analysis\\_in\\_support\\_en\\_0.pdf](https://ec.europa.eu/clima/sites/clima/files/docs/pages/com_2018_733_analysis_in_support_en_0.pdf)

5 pp202 A Clean Planet for all- A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy: [https://ec.europa.eu/clima/sites/clima/files/docs/pages/com\\_2018\\_733\\_analysis\\_in\\_support\\_en\\_0.pdf](https://ec.europa.eu/clima/sites/clima/files/docs/pages/com_2018_733_analysis_in_support_en_0.pdf)

towards net-zero emissions. Attracting capital to the economic activities that have the substantial contribution to climate mitigation is therefore key.

However, there are not yet commonly agreed principles and metrics for assessing if economic activities can be considered environmentally sustainable for investment purposes. This is one factor which hampers redirection of capital towards more sustainable economic activities and hence also the possibility to close the above-mentioned investment gaps.

Financial institutions presently identify sustainable economic activities and sustainable investable assets in-house and on a voluntary basis. This is time consuming and costly, and the result is that different financial institutions use different taxonomies. Consequently, investors often find it too burdensome to check and compare different information for different financial products. This creates uncertainty and discouragement for investors and hampers the transition towards a sustainable economy.

An EU taxonomy would fill these gaps, as it would inter alia:

- create a uniform and harmonised classification system, which determines the activities that can be regarded as environmentally sustainable for investment purposes across the EU;
- address and avoid further market fragmentation and barriers to cross-border capital flows as currently some Member States apply different taxonomies;
- provide all market participants and consumers with a common understanding and a common language of which economic activities can unambiguously be considered environmentally sustainable/green;
- provide appropriate signals and more certainty to economic actors by creating a common understanding and single system of classification while avoiding market fragmentation
- protect private investors by avoiding risks of green-washing (i.e. preventing that marketing is used to promote the perception that an organization's products, aims or policies are environmentally-friendly when they are in fact not);
- provide the basis for further policy action in the area of sustainable finance, including standards, labels, and any potential changes to prudential rules.

### 3 Taxonomy approach explained

This section explains the elements of the draft Taxonomy and how the Taxonomy is being developed. It describes:

1. the requirements and principles used by the TEG to assess which economic activities should be included in the Taxonomy, and under which conditions.
2. the NACE<sup>6</sup> sector and economic activity-based framework<sup>7</sup>
3. the methodology used to decide which sectors to consider for analysis by the TEG

#### 3.1 Requirements for designing taxonomy criteria

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6 Nomenclature generale des Activites economiques dans les Communautés europeennes

7 <https://ec.europa.eu/eurostat/web/nace-rev2>

The requirements and principles outlined here were applied by the TEG in the development of technical screening criteria for economic activities in the draft Taxonomy. **All feedback and input to TEG Taxonomy activities through this feedback should also address these requirements and principles.**

Article 3 of the Taxonomy regulation proposal sets out the criteria for determining the environmental sustainability of an economic activity, in line with six environmental objectives:

1. Climate Change Mitigation
2. Climate Change Adaptation
3. Sustainable use and protection of water and marine resources
4. transition to a circular economy, waste prevention and recycling
5. pollution prevention control, and
6. protection of healthy ecosystems.

According to the Taxonomy regulation proposal, the Commission shall establish the technical screening criteria through a series of delegated acts, the first of which will be on the economic activities delivering on the first two environmental objectives (climate change mitigation and climate change adaptation as per Article 6 and 7). As such, the TEG has been mandated to focus and deliver a recommendation to the Commission on these activities and their technical criteria. The criteria should also ensure the economic activity does “no significant harm” to the other objectives. In doing so, the TEG will consider a range of dimensions to the technical criteria as outlined in Article 14 of the proposed Taxonomy regulation. The “do no significant harm” analysis is preliminary and will be extended further.

## 3.2 Taxonomy sector framework

The taxonomy aims to define economic activities as environmentally sustainable. It intends to be as comprehensive as possible and cover all relevant parts of the economy. As such, it is first necessary to establish a sector framework.

The NACE industrial classification system has been adopted by TEG as it was established by EU law<sup>8</sup>, and is compatible with international and Member State frameworks. It is comprehensive in its coverage of the EU economy, is used by EU institutions such as Eurostat, and is already used by some financial institutions.

In some areas, NACE may need to be supplemented by additional categories, where the current level of granularity within NACE is not sufficient. The TEG has also conducted an initial review of other relevant frameworks and classifications, including the environmental goods and services sector (EGSS) framework and of two statistical classifications for environmental activities (CEPA<sup>9</sup>, CReMA<sup>10</sup>). These reviews concluded that in most cases, NACE can be supplemented by additional definitions from other existing classification systems where necessary.

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<sup>8</sup> Regulation (EC) No 1893/2006 of the European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) No 3037/90 as well as certain EC Regulations on specific statistical domains (OJ L 393, 30.12.2006, p. 1).

<sup>9</sup> Classification of Environmental Protection Activities

<sup>10</sup> Classification of Resource Management Activities



The TEG has acknowledged that the existing sector frameworks used to classify economic activities can present challenges when assessing the systemic dimensions of mitigation and adaptation activities, such as cities, land use, transport or energy systems. Further work may be done on a systems approach to economic activities to feed into the final TEG report, but this falls outside the present feedback.

## 4 Methodology for selecting mitigation sectors and economic activities

The methodology for selecting economic activities was based on two factors:

| Consideration                        | Explanation                                                                                                                                                                                                                            |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (1) High emitting NACE macro sectors | Quantitative data on CO <sub>2</sub> e emissions by NACE code. Latest data is 2016 (see below).                                                                                                                                        |
| (2) Enabling sectors                 | Where economic activities have the potential to enable substantial GHG emissions reductions in other sectors, these should also be included (assuming the lifecycle emissions of the activity do not undermine mitigation objectives). |

### 4.1 High emitting NACE macro sectors and enabling sectors

The TEG has identified six macro-sectors for climate mitigation based on GHG emissions. Buildings were also identified as a critical cross-cutting issue, given that they contribute 36% of CO<sub>2</sub> emissions in the EU<sup>11</sup>, although they do not have a dedicated NACE code. Wholesale and retail trade will not be considered separately as the substantive emissions in this sector originate from buildings and are therefore covered by existing taxonomy work.

In addition, two enabling sectors (information and communication and professional, scientific and technical activities) will be considered. Combined, activities in all selected sectors represent 93.7% of CO<sub>2</sub> emissions by NACE code.

#### **Colour key:**

|                                                 |  |
|-------------------------------------------------|--|
| Macro-sector selected based on emissions        |  |
| Macro-sector selected based on enabling         |  |
| Macro-sector to be considered after TEG mandate |  |

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<sup>11</sup> <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>. Note that emissions from buildings are considered across NACE codes. Emissions from domestic buildings are typically not included in NACE codes as domestic occupation is not considered an economic activity, nonetheless activities to reduce emissions from the residential sector should be considered for the taxonomy.

| NACE Macro-sector code                                                                                                         | CO2e (2016) <sup>12</sup> |
|--------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| A - Agriculture, forestry and fishing                                                                                          | 534,586,391.92            |
| B - Mining and quarrying                                                                                                       | 77,860,862.01             |
| C – Manufacturing                                                                                                              | 840,971,066.30            |
| D - Electricity, gas, steam and air conditioning supply                                                                        | 1,098,083,546.14          |
| E - Water supply; sewerage, waste management and remediation activities                                                        | 161,564,425.09            |
| F – Construction                                                                                                               | 57,811,284.18             |
| G - Wholesale and retail trade; repair of motor vehicles and motorcycles                                                       | 77,391,486.34             |
| H - Transportation and storage                                                                                                 | 503,630,311.73            |
| I - Accommodation and food service activities                                                                                  | 18,598,937.77             |
| J - Information and communication                                                                                              | 10,346,281.06             |
| K - Financial and insurance activities                                                                                         | 7,035,014.10              |
| L - Real estate activities                                                                                                     | 5,830,066.52              |
| M - Professional, scientific and technical activities                                                                          | 19,439,533.18             |
| N - Administrative and support service activities                                                                              | 23,549,820.72             |
| O - Public administration and defence; compulsory social security                                                              | 29,552,649.98             |
| P – Education                                                                                                                  | 17,999,543.73             |
| Q - Human health and social work activities                                                                                    | 30,093,334.93             |
| R - Arts, entertainment and recreation                                                                                         | 7,145,887.39              |
| S - Other service activities                                                                                                   | 9,893,256.85              |
| T - Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use | 356,091.23                |
| U - Activities of extraterritorial organisations and bodies                                                                    | 79,082.70                 |

Within these sectors, economic activities to be considered in more detail have been identified based on the most granular available data or, if not available, the professional judgement of technical expert group members.

In prioritising economic activities within sectors, the TEG is also required to consider activities that are likely to make a substantial contribution to climate change mitigation, as indicated in Article 6 of the proposed legislation:

*“An economic activity shall be considered to contribute substantially to climate change mitigation where that activity substantially contributes to the stabilization of greenhouse gas concentrations in the atmosphere at a level which prevents dangerous anthropogenic interference with the climate system by avoiding or reducing greenhouse gas emissions or enhancing greenhouse gas removals through any of the following means, including through process or product innovation:*

<sup>12</sup> Reference: Air emissions accounts by NACE Rev. 2 activity  
[http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env\\_ac\\_ainah\\_r2&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_ac_ainah_r2&lang=en)

- (a) generating, storing or using renewable energy or climate-neutral energy (including carbon-neutral energy), including through using innovative technology with a potential for significant future savings or through necessary reinforcement of the grid;*
- (b) improving energy efficiency;*
- (c) increasing clean or climate-neutral mobility;*
- (d) switching to use of renewable materials;*
- (e) increasing carbon capture and storage use;*
- (f) phasing out anthropogenic emissions of greenhouse gases, including from fossil fuels;*
- (g) establishing energy infrastructure required for enabling decarbonisation of energy systems;*
- (h) producing clean and efficient fuels from renewable or carbon-neutral sources.”*

## 4.2 Selected sectors and climate mitigation activities

A provisional list of activities either under consideration (1<sup>st</sup> Round climate mitigation activities) or proposed for consideration (2<sup>nd</sup> Round climate mitigation activities) is below. Activities not considered in the below list may still be analysed by the TEG or by the Platform on Sustainable Finance which is proposed to continue the technical work currently performed by the TEG<sup>13</sup>. Consideration of a given activity by the TEG does not mean automatically its inclusion in the taxonomy, but rather the decision of the TEG to review and collect evidence on it in order to establish if it can qualify and under which conditions (e.g. technical screening criteria).

| NACE Macro sector                          | Status                                         | Activities                                                                                        | Potential NACE Codes                                                                                                                                                                                                          | Rationale                                                                                                                                                   |
|--------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A Agriculture, forestry and fishing</b> | Work in progress (1 <sup>st</sup> round)       | Afforestation<br>Reforestation<br>Forest rehabilitation/restoration<br>Existing forest management | A 2.1 Silviculture and other forestry activities                                                                                                                                                                              | Within the agriculture, forestry and fishing macro-sector, forestry activities were identified as providing a substantial carbon sequestration opportunity. |
|                                            | Work to begin Jan 2019 (2 <sup>nd</sup> round) | Agricultural activities                                                                           | TBD but likely to include:<br>A 1.1 Growing of non-perennial crops<br>A 1.2 Growing of perennial crops<br>A 1.41 Raising of dairy cattle<br>A 1.42 Raising of other cattle and buffaloes<br>A 1.45 Raising of sheep and goats | Agricultural activities result in 15% of the total emissions covered by NACE codes.                                                                         |

<sup>13</sup> In particular the Platform on Sustainable Finance is expected to be tasked inter-alia to advise the Commission on: i) further developing the taxonomy (including the identification of activities - and their technical screening criteria - delivering on the other environmental objectives) and ii) the need to update the taxonomy to cater for market and technological developments.

|                               |                                                |                                                                                                                                                                                                                                                                                        |                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>B Mining and quarrying</b> | Work to begin Jan 2019 (2 <sup>nd</sup> round) | Improving energy efficiency in mining and mining of materials critical to the low-carbon transition. Extraction of materials used for energy production (see D Electricity, gas, steam and air conditioning supply).                                                                   | B 7.1 Mining of iron ores<br>B 7.29 Mining of other non-ferrous metal ores<br>B 8.91 Mining of chemical and fertiliser minerals | Mining activities cover around 2.1% of total emissions covered by NACE codes. Certain materials are critical to the low carbon transition (for example, lithium has been identified as a critical component for batteries <sup>14</sup> ) and should therefore be examined for taxonomy compliance. The extraction of peat, quarrying, mining of coal and lignite and of crude petroleum are not considered.                      |
| <b>C Manufacturing</b>        | Work in progress (1 <sup>st</sup> round)       | Energy and resource efficiency in manufacturing<br>Manufacture of renewable energy equipment<br>Manufacture of low carbon transport vehicles, equipment and infrastructure<br>Manufacture of energy efficiency equipment for buildings<br>Manufacture of other low carbon technologies | Various non emissions-intensive manufacturing sectors.                                                                          | Manufacturing contributes 23.8% of emissions within NACE codes. Within manufacturing, a general approach for energy efficiency across low emitting sectors was identified for the 1 <sup>st</sup> round, with selected high-emitting sub-sectors considered individually in the 2 <sup>nd</sup> round (see below). In addition, manufacture of key components to enable emissions reductions in other sectors is also considered. |
|                               | Work to begin Jan                              | Manufacturing of:<br>O Ferrous and non-ferrous metals                                                                                                                                                                                                                                  | C 20 Manufacture of chemicals and chemical products<br>C 23.51 Manufacture of cement                                            | Manufacture of basic metals, chemicals and other non-metallic mineral products (including cement) contribute 14.7% of                                                                                                                                                                                                                                                                                                             |

<sup>14</sup> <https://ec.europa.eu/transport/sites/transport/files/3rd-mobility-pack/swd20180245.pdf>

|                                                                              |                                                |                                                                                                                                                                                                                    |                                                                                                                                     |                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                              | 2019 (2 <sup>nd</sup> round)                   | <ul style="list-style-type: none"> <li>o Cement</li> <li>o Chemicals</li> </ul>                                                                                                                                    | C 24.1 Manufacture of basic iron and steel and of ferro-alloys<br>C 24.4 Manufacture of basic precious and other non-ferrous metals | GHG emissions covered by NACE codes. Within these, aluminium, steel, cement and chemicals have been identified for further examination based on emissions intensity and/or importance as raw materials for the low carbon transition.                                                                              |
| <b>D Electricity, gas, steam and air conditioning supply</b>                 | Work in progress (1 <sup>st</sup> round)       | Energy Production (Geothermal)<br>Energy Production (Hydro)<br>Energy Production (Solar PV)<br>Energy Production (Wind energy)<br>Energy Production (Ocean Energy)<br>Energy Production (Concentrated Solar Power) | D 35.11 Production of electricity (to be supplemented with additional classification)                                               | Electricity, gas, steam and air conditioning supply contribute approximately 32% of emissions covered by NACE codes. Within this, the TEG initially focussed on renewable energy generation for threshold setting, with consideration of non-renewable energy generation in the 2 <sup>nd</sup> round (see below). |
|                                                                              | Work to begin Jan 2019 (2 <sup>nd</sup> round) | Electricity power generation<br>Combined heat and power<br>Heat-only generation<br>Electricity transmission, distribution and storage                                                                              | D 35.11 Production of electricity<br>D 35.12 Transmission of electricity<br>D 35.2 Distribution of electricity                      | Electricity, gas, steam and air conditioning supply contribute approximately 32% of GHG emissions covered by NACE codes.                                                                                                                                                                                           |
| <b>E Water supply, sewerage, waste management and remediation activities</b> | Work to begin Jan 2019 (2 <sup>nd</sup> round) | Water<br>Sewerage<br>Waste management                                                                                                                                                                              | E 36 Water collection, treatment and supply<br>E 37 Sewerage                                                                        | Water supply, sewerage, waste management and remediation activities contribute approximately 5% of GHG emissions covered by NACE codes. Sewerage and waste management are the most significant element.                                                                                                            |

|                                     |                                                |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                    |
|-------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     |                                                |                                                                                                                                                                                                                                                                                                                                  | E38 Waste collection, treatment and disposal activities, materials recovery                                                                                                                                     |                                                                                                                                                                                                                                                    |
| <b>H Transportation and storage</b> | Work in progress (1 <sup>st</sup> round)       | Passenger Rail Transport (Interurban)<br>Freight Rail Transport<br>Urban and suburban passenger land transport (public transport)<br>Interurban scheduled road transport services of passengers<br>Infrastructure for low carbon transport<br>Light passenger cars and commercial vehicles<br>Freight transport services by road | H 49.1 Passenger rail transport, interurban<br>H 49.2 Freight rail transport<br>H 49.31 Urban and suburban passenger land transport                                                                             | Transportation contributes around 14.2% of GHG emissions covered by NACE codes. Within transport, the TEG initially focussed on low carbon land transport, with consideration of water and air transport in the 2 <sup>nd</sup> round (see below). |
|                                     | Work to begin Jan 2019 (2 <sup>nd</sup> round) | Water transport<br>Air transport                                                                                                                                                                                                                                                                                                 | H 50.1 Sea and coastal passenger water transport<br>H 50.2 Sea and coastal freight water transport<br>H 50.3 Inland passenger water transport<br>H 51.1 Passenger air transport<br>H 51.2 Freight air transport | Water and air transport contribute 8% of GHG emissions by NACE code.                                                                                                                                                                               |

|                                                          |                                                |                                                                                                                                       |                                                                                                                                                                                                    |                                                                                                                                                                                                         |
|----------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>J Information and communication</b>                   | TBC                                            | Digital / ICT activities which enable emissions reductions.                                                                           | TBC                                                                                                                                                                                                | Further examination is needed, but the TEG considers that selected digital / ICT activities could be included on the basis of enabling GHG reductions in other sectors.                                 |
| <b>F Construction<br/>L Real estate activities</b>       | Work in progress (1 <sup>st</sup> round)       | Construction of new buildings (residential and non-residential)<br>Renovation of existing buildings (residential and non-residential) | F 41 Construction of buildings.<br>F 43 Specialised Construction Activities<br>Construction and renovation of buildings relevant to any economic activity should be aligned with these thresholds. | Buildings contribute 36% of GHG emissions within the EU (note that this considers residential emissions which are typically not captured under NACE codes).                                             |
| <b>M Professional, scientific and technical services</b> | Work to begin Jan 2019 (2 <sup>nd</sup> round) | Critical services for taxonomy-compliant activities                                                                                   | TBC                                                                                                                                                                                                | Services can be a critical enabler for energy efficiency. Where critical services are identified within sectors under consideration for the taxonomy, these will also be considered taxonomy compliant. |



## 5 Methodology for adaptation activities

This section explains the proposed approach to developing a taxonomy of economic activities for adaptation to climate change. It describes the overarching approach, including:

- a definition of adaptation to climate change;
- a process for identifying economic activities that contribute to adaptation;
- adaptation principles that are applicable to all NACE codes / economic activities; and
- an illustrative example.

For activities identified for the first round of feedback ([PART D: Full list of 1st round climate mitigation activities, screening criteria and questions](#)), initial criteria for assessing “no significant harm” to the climate change adaptation objective have been defined. These will be subject to further work and review by the Technical Expert Group with assistance from adaptation experts who respond to the concurrent call for experts.

### 5.1 Definition of adaptation

The proposed regulation uses the following definition<sup>15</sup>: “An economic activity shall be considered to contribute substantially to climate change adaptation where that activity contributes substantially to reducing the negative effects of the current and expected future climate or preventing an increase or shifting of negative effects of climate change”.

### 5.2 Process for adaptation

The proposed approach for an adaptation taxonomy recognises that adaptation is context- and location-specific and requires the use of a process-based approach. The following two-step process must take place to demonstrate that an economic activity at an appropriate (asset or systemic) level and (spatial and temporal) scale contributes to a substantial reduction of the negative effects of climate change:

- a. Assessing the negative effects of climate change on the underlying economic activity, drawing on robust evidence and appropriate climate information;
- b. Demonstrating how the economic activity will address the identified negative effects of climate change or will prevent a shifting of these negative effects.

Moreover, the proposed approach recognises that an adaptation activity may target an asset and/or a system. Asset-level adaptation aims at strengthening an asset or economic activity to withstand identified physical climate risks over the lifetime of the asset. Systemic adaptation addresses climate risks that go beyond a specific economic activity and benefits a wider system, or systems, such as a community, city, ecosystem, or network. This distinction may be reflected in the development of the taxonomy if appropriate, recognising that asset-level adaptation is often a prerequisite for systemic adaptation.

### 5.3 Core principles applicable to all economic activities

While it is not possible to produce a stand-alone and exhaustive list of adaptation activities that can be used under all circumstances, a set of principles could be used to assess the potential

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<sup>15</sup> See article 7 of the proposed regulation.

contribution of economic activities to adaptation to climate change. The interpretation of such principles should be conservative, to safeguard the credibility of the taxonomy. The following list of preliminary broad principles is intended to stimulate reactions and comment that will hopefully lead to the development of a final set of principles for a taxonomy for sustainable finance:

- **Principle 1: An economic activity that contributes to adaptation to climate change addresses material physical climate risks.** Adaptation to climate change should be designed on the basis of an assessment of both current weather variability and expected future climate change, taking into account chronic and acute physical climate risks, and using an approach that incorporates decision-making under uncertainty. The underpinning analysis should use the best available climate projections and data, at the appropriate geographic (national, subnational, sectoral, local) and temporal scales for the economic activity (asset or system(s) in question, for example infrastructure, community, city, ecosystem, river basin or city).
- **Principle 2: The economic activity that contributes to adaptation should avoid maladaptation.** Adaptation should not encourage unsustainable patterns of economic development, for example by encouraging continued development in high-risk locations, or shift impacts faced by others without compensatory measures, or for example through geographic shifting of flood risks downstream a river basin.
- **Principle 3: An economic activity that contributes to adaptation has a monitoring system in place aimed at measuring progress towards adaptation results.** The outcomes of adaptation activities should be monitored and measured against defined indicators for adaptation results. Updated assessments of climate risks and vulnerabilities should be undertaken at the appropriate frequency, e.g. every five or ten years depending on the risks, the context and the availability of new information, technologies or approaches or policies and regulations.
- **Principles 4: An economic activity that contributes to adaptation to climate change is part of a wider strategy.** Adaptation should be part of strategy at the appropriate level (e.g. national adaptation plan, sector strategy, national determined commitment, adaptation communication, etc.) that promotes long-term climate resilience.

In the development of the taxonomy, the above-mentioned principles be reflected in a set of indicative criteria for asset level adaptation and system-level adaptation. The following list of indicative criteria is intended to stimulate reactions and comment that will lead to the development of a final set of criteria for an adaptation taxonomy for sustainable finance.

|                                                |                                                                                                                         |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>1. Climate informed/<br/>adapted design</b> | The economic activity is designed on the basis of an assessment of slow-onset and acute physical climate risks that is: |
| <b>1.1</b>                                     | Based on both current weather variability and future climate change, and on decision-making under uncertainty           |
| <b>1.2</b>                                     | Based on best practice on climate projections and robust climate data                                                   |
| <b>1.3</b>                                     | Location specific                                                                                                       |
| <b>1.4</b>                                     | Consistent with the expected lifetime of the activity.                                                                  |
| <b>2. Avoid<br/>maladaptation</b>              | The economic activity does not have negative effects on other economic growth/development objectives:                   |

|                                                                                                       |                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2.1</b>                                                                                            | No unintended consequences (for example locking into unsustainable technologies), in particular the economic activity will:                           |
| <b>2.2</b>                                                                                            | Pose no environmental or social harm, and consider trade-offs with other objectives such as mitigation to climate change                              |
| <b>2.3</b>                                                                                            | Consider risk cascade and network interdependencies (for example flood defence upstream causing increased risk downstream a river basin)              |
| <b>3. Monitoring and evaluation</b>                                                                   | The contribution of the economic activity to adaptation can be monitored and measured                                                                 |
| <b>3.1</b>                                                                                            | Adaptation results can be monitored and measured against defined indicators                                                                           |
| <b>In the case of systemic adaptation, the following additional requirements could be considered:</b> |                                                                                                                                                       |
| <b>4. Adaptation as main objective</b>                                                                | The economic activity is embedded in a long-term vision to build climate resilience                                                                   |
| <b>4.1</b>                                                                                            | Part of an adaptation strategy (national adaptation plan, sector adaptation strategy, national determined commitment, adaptation communication, etc.) |
| <b>4.2</b>                                                                                            | Demonstrate benefits beyond the activity itself – relevance for wider systems (for example community, city, ecosystem, river basin, economic sector)  |
| <b>5. Transformational objective</b>                                                                  | The economic activity contributes to a system-wide change that addresses systemic failures and allows it to learn how/acquire capacity to adapt       |
| <b>5.1</b>                                                                                            | Promoting new technology, practice or governance process (for example building codes factoring in future climate change)                              |
| <b>5.2</b>                                                                                            | Removing barriers, making future adaptation activities less costly (for example developing hydro met services)                                        |

## 5.4 Proposed structure

In addition to the principles, the process and criteria, the proposed adaptation taxonomy may include:

- examples of economic activities that may be considered adaptation in all circumstances, and
- examples of economic activities that contribute to adaptation vis-à-vis specific vulnerabilities.

For illustrative purposes only, a worked example is provided on waste water treatment (NACE Level 1 code E: Water Supply; sewerage, waste management and remediation activities; NACE Level 2 code 37: Sewerage) and/or related economic activities.

|                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Some examples of economic activities that can be considered adaptation regardless of the specific vulnerabilities of the location/system in which they take place                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Early warning systems for monitoring and forecasting climate-related hazards</li> <li>• Development of emergency plans and procedures</li> <li>• Training on climate change adaptation</li> <li>• Awareness raising activities on climate change adaptation</li> <li>• Construction of distributed closed-loop sewerage systems (which require the construction of a highly specialized wastewater treatment plant for high concentration dark matter)</li> <li>• Separate domestic and industrial sewer from storm sewer</li> <li>• Conservation and/or restoration of natural and semi-natural areas that can function as natural water filtration plants, as a replacement of or addition to conventional water treatment technologies</li> </ul> |
| Vulnerabilities resulting from climate change                                                                                                                                                                                                                                                                                                                                                                                      | Some illustrative examples of adaptation activities vis a vis specific climate vulnerabilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <i>Water shortage</i> (Increase in the frequency and severity of droughts; reduction of surface water and groundwater levels; seasonal and overall reduction of river flows) Undermine sewer function and operations (ie. Flushing)                                                                                                                                                                                                | Construction, extension or upgrading of: <ul style="list-style-type: none"> <li>• Network connectivity infrastructure (to channel water and wastewater flows between plants) - NACE 42.2 Construction of utility projects</li> <li>• Distributed small-scale closed-loop systems - NACE 42.2 Construction of utility projects</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <ul style="list-style-type: none"> <li>• <i>Water excess</i> (Increase in the frequency and severity of precipitations, rainstorms, and flooding; sea level rise)</li> <li>• Exceed existing capacity: overflow into and contamination of rivers and coastal areas; contamination of clean water infrastructure</li> <li>• Damage existing wastewater infrastructure (pipes, pumping stations, tanks, treatment plants)</li> </ul> | <ul style="list-style-type: none"> <li>• Construction, extension or upgrading of: [under NACE code 42 Construction]</li> <li>• Increase pumping stations capacity - NACE 42.2 Construction of utility projects</li> <li>• Upgrade and extend pipes (+ pipe replacement and dredging/insulation from flooding) - NACE 42.2 Construction of utility projects</li> <li>• Build additional storm tanks - NACE 42.2 Construction of utility projects</li> <li>• Upgrade the drainage networks - NACE 42.2 Construction of utility projects</li> <li>• Others: Build flood protection for water treatment plants and pumping stations (elevate buildings; prioritize or re-locate to higher grounds or away from vulnerable coastal zones)</li> </ul>                                               |

This illustrative example demonstrates that expertise in adaptation in the sewerage sector may require an understanding of how climate change may affect broader systems, as well as sector-specific technical expertise.

## PART B: Feedback materials

### **1. Feedback on 1<sup>st</sup> round climate mitigation activities**

Technical experts and stakeholders can provide feedback on selected economic activities and the proposed criteria for the first sub-set of economic activities expected to make a substantial contribution to climate mitigation under the EU Commission's [Taxonomy proposal](#). These are called the 1<sup>st</sup> Round climate mitigation activities.

[Click here to answer questions by 22 February 2019](#)

### **2. Feedback on Usability of the Taxonomy**

Future users of the Taxonomy can provide feedback on the usability and fitness for purpose of the Taxonomy in practice.

[Click here to answer questions by 22 February 2019](#)

All feedback and input to TEG Taxonomy activities through this feedback should address the requirements and principles set out in Part A: [Taxonomy approach explained](#) and in particular, section 3.1 [Requirements for designing taxonomy criteria](#).

## 6 Feedback on 1st round climate mitigation activities

This part of the feedback includes sectors and activities for which the TEG has been able to propose technical screening criteria from pre-existing, market-based taxonomies. The results of this work are provided for open comment. To the extent possible, criteria for defining substantial contribution and the technical criteria for screening these activities for potential significant harm to other environmental objectives are included. This is in line with framework set out in the proposed taxonomy regulation. The “do no significant harm” analysis is preliminary and will be extended further.

The proposed principles, metrics and thresholds for the technical criteria cover the following economic activities (for further details of how these were selected, please see [Methodology for selecting mitigation sectors and economic activities](#)).

| NACE Macro sector                                            | Activities                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A Agriculture, forestry and fishing</b>                   | <a href="#">Afforestation</a><br><a href="#">Rehabilitation/reforestation</a><br><a href="#">Reforestation</a><br><a href="#">Existing forest management</a>                                                                                                                                                                                                           |
| <b>C Manufacturing</b>                                       | <a href="#">Energy and resource efficiency in manufacturing</a><br><a href="#">Manufacture of renewable energy equipment</a><br><a href="#">Manufacture of low carbon transport vehicles, equipment and infrastructure</a><br><a href="#">Manufacture of energy efficiency equipment for buildings</a><br><a href="#">Manufacture of other low carbon technologies</a> |
| <b>D Electricity, gas, steam and air conditioning supply</b> | <a href="#">Energy Production (Geothermal)</a><br><a href="#">Energy Production (Hydro)</a><br><a href="#">Energy Production (Solar PV)</a><br><a href="#">Energy Production (Wind energy)</a><br><a href="#">Energy Production (Ocean Energy)</a><br><a href="#">Energy Production (Concentrated Solar Power)</a>                                                     |
| <b>H Transportation and storage</b>                          | <a href="#">Passenger Rail Transport (Interurban)</a><br><a href="#">Freight Rail Transport</a><br><a href="#">Urban and suburban passenger land transport (public transport)</a><br><a href="#">Infrastructure for low carbon transport</a><br><a href="#">Light passenger cars and commercial vehicles</a><br><a href="#">Freight transport services by road</a>     |

|                                 |                                                                                    |
|---------------------------------|------------------------------------------------------------------------------------|
|                                 | <a href="#">Interurban scheduled road transport services of passengers</a>         |
| <b>F Construction</b>           | <a href="#">Construction of new buildings (residential and non-residential)</a>    |
| <b>L Real estate activities</b> | <a href="#">Renovation of existing buildings (residential and non-residential)</a> |

An example activity sheet is given below. For a full list of all activity sheets and questions, please see [PART D: Full list of 1st round climate mitigation activities](#), screening criteria and questions.

## 6.1 Example sheet: Energy Production (Geothermal)

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | D) Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Code                                    | 35.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Description                             | Energy Production (Geothermal)                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Principle                               | Demonstrate substantial avoidance of GHG emissions                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Metric                                  | Direct GHG emissions - gCO <sub>2</sub> e/kWh                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Threshold                               | Direct GHGs from electricity generation <125gCO <sub>2</sub> e/kWh                                                                                                                                                                                                                                                                                                                                                                                                              |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| (3) Water                               | Minimise consequences on local water quality and consumption from contaminants and changes in the hydraulic regime. Requirements for management or mitigation of potential impacts will require further analysis.                                                                                                                                                                                                                                                               |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| (5) Pollution                           | Minimise emissions of pollutants from geothermal fluids, and, in case of hybrid (geothermal + combustion) plants, from fuel combustion. Requirements for management or mitigation of potential impacts will require further analysis.                                                                                                                                                                                                                                           |
| (6) Ecosystems                          | Perform geological risks assessments to avoid or mitigate the risk of geological hazard directly caused by the activity. Requirements for management or mitigation of potential impacts will require further analysis.                                                                                                                                                                                                                                                          |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Additional notes on conclusions reached | Electricity generation from geothermal energy can cause emissions of greenhouse gases (GHG). These emissions are generally much lower than emissions from electricity generation from fossil fuels. Direct emissions of carbon dioxide (and to a lesser extent methane) result from the release of naturally occurring non-condensable gases from geothermal fluid during the energy extraction process. The emissions threshold of 125gCO <sub>2</sub> e/kwh has been selected |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>because it represents approximately the international weighted average emissions for geothermal energy generation (according to an International Geothermal Association survey from - Bertani and Thain, 2002), which is 122gCO<sub>2</sub>e/kWh. The purpose of setting a threshold that does not automatically make all geothermal energy generation eligible for the Taxonomy, is to encourage better performing assets and management activities. The threshold also applies for geothermal electricity plants which are hybridized with fossil fuel or waste combustion processes.</p> <p>Note that combined Heat and Power production from geothermal will be treated separately (cf. NACE code D35.3)</p> <p>The International Energy Agency 2 Degree Scenario identifies an average emissions intensity across the global electricity sector in 2050 of 35 gCO<sub>2</sub>e/kWh (down from 519 gCO<sub>2</sub>e/kWh in 2014). It is likely that thresholds for geothermal energy plants will need to be reduced in future.</p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 6.2 Feedback questions

For each of the economic activities identified above, please provide responses to the following questions:

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

Please note that some sectors have proposed additional questions, these can be seen in [PART D: Full list of 1st round climate mitigation activities](#), screening criteria and questions.



## 7 Usability of the taxonomy

The proposed regulation envisages two specific uses of the Taxonomy<sup>16</sup>:

1. **Member States** when setting out “*requirements on market actors in respect of financial products or corporate bonds that are marketed as 'environmentally sustainable'*”;
2. **Financial market participants** when marketing “*financial products as environmentally sustainable investments, or as investments having similar characteristics*” will have to disclose how and to what extent the criteria has been used to determine the sustainability of the product. To comply with the regulation, the information disclosed by financial market participants should enable investors to identify:
  - “*the percentage of holdings pertaining to companies carrying out environmentally sustainable economic activities*”; and
  - “*the share of the investment funding environmentally sustainable economic activities as a percentage of all economic activities*”.

For financial market participants, these are disclosure requirements. The taxonomy is not a mandatory list of activities in which to invest. Funds targeting environmental objectives are not limited to investing in taxonomy-compliant activities. Moreover, the taxonomy can also be used on a voluntary basis by any financial institution. The taxonomy should also encourage companies to raise funds for projects that meet the criteria of the taxonomy.

Considering the above, and also the wider aims and objectives of the Taxonomy (See [7 Taxonomy approach explained](#)), potential users of the taxonomy are invited to respond to the below consultation questions.

### 7.1 Feedback questions

1. Referring to the Activity Sheets (see [6.1 Example sheet: Energy Production \(Geothermal\)](#) and in [PART D: Full list of 1st round climate mitigation activities, screening criteria and questions](#)) do you believe the Taxonomy will provide a clear indication of what economic activities should be considered environmentally sustainable? [Yes/No]. Please explain your answer.
2. Do you expect any practical challenges within your organisation to classify an economic activity according to the taxonomy? [Yes/No]. Please explain your answer.
3. For financial market participants: will the proposed structure and format of the Taxonomy enable you to comply with potential future disclosure obligations? [Yes/no]. If not, what changes would you propose?
4. Is the proposed taxonomy approach sufficiently clear and usable for investment purposes? [Yes/No]. If not, what changes would you propose?

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<sup>16</sup> Article 4: Use of the criteria for environmentally sustainable economic activities

- 5. Would the use of the taxonomy require any additional resources (for example in human resources or information technology)? [Yes/No]. If yes, please specify and if possible, give an indication of the expected costs (e.g. as a % of turnover or operating costs).**
- 6. Please provide any additional comments on the design and/or usability of the taxonomy, including proposals for improvement.**

## PART C: Invitation to workshops

### 8 Overview

The TEG has identified areas where additional expertise is needed. The Commission has therefore decided to host workshops to gather this expertise. We ask interested experts to register their interests to attend these workshops and thereby provide technical input to the following activities:

- (i) The development of new criteria for further economic activities that have the potential to make a substantial contribution to climate mitigation objectives. These are called the 2<sup>nd</sup> Round climate mitigation activities. [Click here to register interest by 9 Jan 2019.](#)
- (ii) The development of new criteria for activities expected to make a substantial contribution to climate adaptation objectives of the European Union. These are called Adaptation activities. [Click here to register interest by 9 Jan 2019.](#)
- (iii) The development of new criteria to assess “do no significant harm” across environmental objectives 3-6 (sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and recycling, pollution prevention control, and protection of healthy ecosystems). [Click here to register interest by 9 Jan 2019](#)

**Different workshops will be organized for the different sectors for second round mitigation activities, for adaptation activities and for the do no significant harm assessment. Input from sector based technical experts is expected to take place over a four-month period from December 2018 to March 2019 (including the interest registration period).**

The selection procedure is described in section [8.3 Selection procedure.](#)

#### 8.1 Additional expertise needed

##### 8.1.1 2<sup>nd</sup> Round mitigation activities

Additional expertise is needed in nine macro-economic sectors (Consistent with NACE classifications and the sector prioritisation methodology. Refer to [Selected sectors and climate mitigation activities](#) for the full list of activities and their relevant sub-sectors.

It is expected that up to 20 experts will be invited for each macro-sector, covering each of the sub-sectors and key economic activities within those sub-sectors.

##### 8.1.2 Adaptation activities

The TEG is seeking to complement the existing expertise in the group with expertise in adaptation from individuals (refer to [Methodology for adaptation activities](#) for the intended approach on adaptation activities). The intention is to create a pool of individuals with both cross-cutting and sector specific expertise. It is expected that up to 20 experts will be invited.

##### 8.1.3 Do no significant harm assessment

Individuals with technical expertise across environmental objective 3-6 (sustainable use and protection of water and marine resources, transition to a circular economy, waste prevention and

recycling, pollution prevention control, and protection of healthy ecosystems) will also be invited to provide input in the deliberations of the TEG. It is expected that up to 20 experts will be invited.

## 8.2 Process surrounding workshops

The following process surrounds the workshops:

1. Before the workshops, invited experts will receive a briefing on their role and the scope of their activities. This will be conducted via an online webinar, with dial-in details provided, in late January 2019.
2. Before the workshops, experts will be asked to respond to questions regarding the environmental sustainability of economic activities within each of the selected sectors. Responses are to be provided in writing.
3. Responses from technical experts will be collated and scrutinised with questions arising provided back to the sector experts.
4. Sector experts will then be invited to the workshops to discuss the content in Brussels at the end of March 2019 (dates to be confirmed).
5. Further ad hoc input from the experts in writing or via phone meetings may be requested.
6. The TEG will consider the input of experts in the development of the recommended Taxonomy inclusions through April and May.
7. The recommendations of the TEG to the Commission will be published in the final report in June, unless the TEG mandate is extended beyond June.

Sector experts should also expect to be available for bilateral conversations with TEG members to provide necessary clarifications or additional comments. Experts cannot be reimbursed for travel expenses.

Please note that all technical input received from selected experts will be treated anonymously and confidentially.

Please note that invited experts should treat all information they receive with full confidentiality.

## 8.3 Selection procedure

Experts may register their interest to attend the workshops by completing the online form. Invited experts will be notified by email in mid January 2018. There will be no appeal process for interested experts that could not be invited.

The selection of experts should reflect as much as possible the principle of adherence to equitable geographical representation, favouring the European Union, with due regard to a desirable balance between the genders.

The selection of experts should ensure as much as possible that all disciplines relevant to an integrated assessment of that issue are included, where possible.

### 8.3.1 Selection Criteria - 2<sup>nd</sup> Round mitigation activities

The following criteria will be taken into account when selecting the experts that will be invited to attend the workshops:

1. Internationally or nationally recognized expertise, to be demonstrated by one or more of the following:

- a. Knowledge and experience of EU sectoral policies related to climate mitigation;
  - b. A record of scientific publications on the relevant issues, preferably in peer-reviewed publications;
  - c. Experience in global, regional or national assessments relating to the sector category they are applying to;
  - d. Demonstrated effective participation in international processes relevant to the at least one sector category listed in the application form.
2. The ability to serve in an independent, individual capacity.
3. The ability to participate in the workshops and to respond to questions via email and calls before and after the workshops.

Relevant sector expertise will be taken into account for the mitigation activities.

#### 8.3.2 Selection Criteria - Adaptation activities

For adaptation, experts will be invited for either cross-cutting or sector specific adaptation expertise:

**Cross cutting:** Technical experts with applied knowledge of adaptation and resilience as a cross-cutting issues, including

- a. Systems resilience, including key infrastructure systems and their interdependence;
- b. Natural capital, green infrastructure, ecosystem services and ecosystem resilience;
- c. Community resilience, disaster risk reduction;
- d. Climate modelling, scenario analysis, risk modelling;
- e. Decision-making under uncertainty

**Sector specific:** Technical experts with expertise on climate change adaptation in the macro-sectors of the NACE classification;

The following criteria will be taken into account when selecting the experts that will be invited to attend the workshops:

1. A record of scientific publications on physical climate risk management and adaptation, preferably in peer-reviewed publications, or equivalent professional experience on adaptation gained in a relevant sector or on cross-cutting issues;
2. Experience in global, regional, national, local or project-level assessments relating to physical climate risks and adaptation;
3. Demonstrated effective participation in international, national or local processes relevant to adaptation in at least one sector category listed in the application form or in cross-cutting adaptation;
4. The ability to serve in an independent, individual capacity.
5. The ability to participate in the workshops and to respond to questions via email and calls before and after the workshops.

#### 8.3.3 Selection criteria - Significant harm assessment

The ability to participate in the workshops and to respond to questions via email and calls before and after the workshops.

**Cross cutting:** technical experts with applied knowledge of one or more of the following environmental objectives:

- a. sustainable use and protection of water and marine resources,
- b. transition to a circular economy
- c. waste prevention and recycling
- d. pollution prevention control
- e. protection of healthy ecosystems

**Sector specific:** Technical experts with broad-ranging expertise in the NACE macro-sectors under review by the TEG.

The following criteria will be taken into account when selecting the experts that will be invited to attend the workshops:

- a. Internationally or nationally recognized expertise, to be demonstrated by one or more of the following:
- b. A record of scientific publications on the relevant issues, preferably in peer-reviewed publications;
- c. Applied knowledge relating to economic sectors covered in the Taxonomy on the environmental impact across the objectives of the proposal (water, circular economy, pollution prevention and control, ecosystems), including experience in:
  - a. Environmental Impact Assessments
  - b. Life Cycle Analysis
- d. Experience in global, regional or national assessments relating to the sector category they are applying to;
- e. Demonstrated effective participation in international processes relevant to the at least one sector category listed in the application form;
- f. The ability to serve in an independent, individual capacity.
- g. The ability to participate in the workshops and to respond to questions via email and calls before and after the workshops.

## 8.4 Registration of interest forms

### 8.4.1 2<sup>nd</sup> Round mitigation activities – registration of interest form

1. Please select **at least one area** in which you have experience in developing metrics for addressing climate change mitigation:

| NACE Macro sector                                            | Activities                                                                    | Indicate expertise       |
|--------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------|
| <b>A Agriculture, forestry and fishing</b>                   | Agricultural activities                                                       | <input type="checkbox"/> |
| <b>B Mining and quarrying</b>                                | Improving energy efficiency in mining                                         | <input type="checkbox"/> |
|                                                              | Mining of materials critical to the low-carbon transition.                    | <input type="checkbox"/> |
| <b>C Manufacturing</b>                                       | Energy and resource efficiency in manufacturing                               | <input type="checkbox"/> |
|                                                              | Manufacture of other low carbon technologies                                  | <input type="checkbox"/> |
|                                                              | Manufacture of low carbon transport vehicles, equipment and infrastructure    | <input type="checkbox"/> |
|                                                              | Manufacture of ferrous and non-ferrous metals (including steel and aluminium) | <input type="checkbox"/> |
|                                                              | Manufacture of cement                                                         | <input type="checkbox"/> |
|                                                              | Manufacture of chemicals                                                      | <input type="checkbox"/> |
| <b>D Electricity, gas, steam and air conditioning supply</b> | Electricity power generation <sup>17</sup>                                    | <input type="checkbox"/> |
|                                                              | Combined heat and power                                                       | <input type="checkbox"/> |
|                                                              | Heat-only generation                                                          | <input type="checkbox"/> |
|                                                              | Electricity transmission, distribution and storage                            | <input type="checkbox"/> |
| <b>E Water supply, sewerage, waste</b>                       | Water                                                                         | <input type="checkbox"/> |
|                                                              | Sewerage                                                                      | <input type="checkbox"/> |

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<sup>17</sup> TEG welcomes expertise on mitigation potential and technologies for all energy sources.

|                                              |                                                                |                          |
|----------------------------------------------|----------------------------------------------------------------|--------------------------|
| <b>management and remediation activities</b> | Waste management                                               | <input type="checkbox"/> |
| <b>H Transportation and storage</b>          | Passenger Rail Transport (Interurban)                          | <input type="checkbox"/> |
|                                              | Freight Rail Transport                                         | <input type="checkbox"/> |
|                                              | Urban and suburban passenger land transport (public transport) | <input type="checkbox"/> |
|                                              | Infrastructure for low carbon transport                        | <input type="checkbox"/> |
|                                              | Light passenger cars and commercial vehicles                   | <input type="checkbox"/> |
|                                              | Freight transport services by road                             | <input type="checkbox"/> |
|                                              | Interurban scheduled road transport services of passengers     | <input type="checkbox"/> |
|                                              | Water transport (Sea, coastal and inland)                      | <input type="checkbox"/> |
|                                              | Air transport                                                  | <input type="checkbox"/> |
| <b>J Information and communication</b>       | Digital / ICT activities which enable emissions reductions.    | <input type="checkbox"/> |

**2. In no more than 2000 characters, please describe how you fulfil the selection criteria:**

*Internationally or nationally recognized expertise, to be demonstrated by one or more of the following:*

- Knowledge and experience of EU sectoral policies related to climate mitigation;*
- A record of scientific publications on the relevant issues, preferably in peer-reviewed publications;*
- Experience in global, regional or national assessments relating to the sector category they are applying to;*
- Demonstrated effective participation in international processes relevant to the at least one sector category listed above.*

**3. Please review and confirm the following statements:**

|                                                                          |                          |
|--------------------------------------------------------------------------|--------------------------|
| <b>I confirm that I can serve in an independent, individual capacity</b> | <input type="checkbox"/> |
|--------------------------------------------------------------------------|--------------------------|



**I confirm that I can participate in the workshops and respond to questions via email and calls before and after the workshops**

☐

**1. Please upload a recent CV**

8.4.2 [Adaptation activities – application form](#)

**2. Please select at least one area in which you have experience in:**

**a) Cross-cutting adaptation expertise**

| Cross-cutting adaptation expertise                                                 | Indicate expertise       |
|------------------------------------------------------------------------------------|--------------------------|
| Systems resilience, including key infrastructure systems and their interdependence | <input type="checkbox"/> |
| Natural capital, ecosystem services and ecosystem resilience                       | <input type="checkbox"/> |
| Community resilience, disaster risk reduction                                      | <input type="checkbox"/> |
| Climate modelling, scenario analysis                                               | <input type="checkbox"/> |
| Decision-making under uncertainty                                                  | <input type="checkbox"/> |
| Risk modelling                                                                     | <input type="checkbox"/> |

**b) Sectoral adaptation expertise**

| NACE Macro sector                                                     | Indicate expertise       |
|-----------------------------------------------------------------------|--------------------------|
| A Agriculture, forestry and fishing                                   | <input type="checkbox"/> |
| B Mining and quarrying                                                | <input type="checkbox"/> |
| C Manufacturing                                                       | <input type="checkbox"/> |
| D Electricity, gas, steam and air conditioning supply                 | <input type="checkbox"/> |
| E Water supply; sewerage, waste management and remediation activities | <input type="checkbox"/> |
| F Construction                                                        | <input type="checkbox"/> |
| H Transportation and storage                                          | <input type="checkbox"/> |
| I Accommodation and food service activities                           | <input type="checkbox"/> |
| J Information and communication                                       | <input type="checkbox"/> |
| K Financial and insurance activities                                  | <input type="checkbox"/> |
| L Real estate activities                                              | <input type="checkbox"/> |
| M Professional, scientific and technical activities                   | <input type="checkbox"/> |

|                                                                 |                          |
|-----------------------------------------------------------------|--------------------------|
| N Administrative and support service activities                 | <input type="checkbox"/> |
| O Public administration and defence; compulsory social security | <input type="checkbox"/> |
| P Education                                                     | <input type="checkbox"/> |
| Q Human health and social work activities                       | <input type="checkbox"/> |
| Other (please specify)                                          | <input type="checkbox"/> |

**3. In no more than 2000 characters, please describe how you fulfil the selection criteria:**

*Internationally or nationally recognized expertise, to be demonstrated by one or more of the following:*

- i. A record of scientific publications, preferably in peer-reviewed publications, or equivalent professional experience on adaptation gained in a relevant sector or on cross-cutting issues;*
- ii. Experience in global, regional, national, local or project-level assessments;*
- iii. Demonstrated effective participation in international, national or local processes relevant to adaptation in at least one sector category listed in the application form or in cross-cutting issues;*

**3. Please review and confirm the following statements:**

|                                                                                                                               |                          |
|-------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| I confirm that I can serve in an independent, individual capacity                                                             | <input type="checkbox"/> |
| I confirm that I can participate in the workshops and respond to questions via email and calls before and after the workshops | <input type="checkbox"/> |

**4. Please upload a recent CV**

### 8.4.3 Assessment of significant harm criteria across environmental objectives 3-6

#### 1. Please select at least one area in which you have experience in:

##### a. Cross-cutting expertise

| NACE Macro sector                                            | Indicate expertise       |
|--------------------------------------------------------------|--------------------------|
| Sustainable use and protection of water and marine resources | <input type="checkbox"/> |
| Transition to a circular economy                             | <input type="checkbox"/> |
| Waste prevention and recycling                               | <input type="checkbox"/> |
| Pollution prevention control                                 | <input type="checkbox"/> |
| Protection of healthy ecosystems                             | <input type="checkbox"/> |

##### b. Sectoral expertise

| NACE Macro sector                                                     | Indicate expertise       |
|-----------------------------------------------------------------------|--------------------------|
| A Agriculture, forestry and fishing                                   | <input type="checkbox"/> |
| B Mining and quarrying                                                | <input type="checkbox"/> |
| C Manufacturing                                                       | <input type="checkbox"/> |
| D Electricity, gas, steam and air conditioning supply                 | <input type="checkbox"/> |
| E Water supply; sewerage, waste management and remediation activities | <input type="checkbox"/> |
| F Construction                                                        | <input type="checkbox"/> |
| H Transportation and storage                                          | <input type="checkbox"/> |
| I Accommodation and food service activities                           | <input type="checkbox"/> |
| J Information and communication                                       | <input type="checkbox"/> |
| K Financial and insurance activities                                  | <input type="checkbox"/> |
| L Real estate activities                                              | <input type="checkbox"/> |
| M Professional, scientific and technical activities                   | <input type="checkbox"/> |
| N Administrative and support service activities                       | <input type="checkbox"/> |
| O Public administration and defence; compulsory social security       | <input type="checkbox"/> |
| P Education                                                           | <input type="checkbox"/> |
| Q Human health and social work activities                             | <input type="checkbox"/> |

|                        |                          |
|------------------------|--------------------------|
| Other (please specify) | <input type="checkbox"/> |
|------------------------|--------------------------|

**2. In no more than 2000 characters, please describe how you fulfil the selection criteria:**

*Internationally or nationally recognized expertise, to be demonstrated by one or more of the following:*

- i. A record of scientific publications on the relevant issues, preferably in peer-reviewed publications;*
- ii. Applied knowledge relating to economic sectors covered in the Taxonomy on the environmental impact across the objectives of the proposal (water, circular economy, pollution prevention and control, ecosystems), including experience in:*
  - i) Environmental Impact Assessments*
  - ii) Life Cycle Analysis*
- iii. Experience in global, regional or national assessments relating to the sector category they are applying to;*
- iv. Demonstrated effective participation in international processes relevant to the at least one sector category listed in the application form;*

**3. Please review and confirm the following statements:**

|                                                                                                                                      |                          |
|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>I confirm that I can serve in an independent, individual capacity</b>                                                             | <input type="checkbox"/> |
| <b>I confirm that I can participate in the workshops and respond to questions via email and calls before and after the workshops</b> | <input type="checkbox"/> |

**3. Please upload a recent CV**

## PART D: Full list of 1<sup>st</sup> round climate mitigation activities, screening criteria and questions

| NACE Macro sector                                            | Activities                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>A Agriculture, forestry and fishing</b>                   | <a href="#">Afforestation</a><br><a href="#">Rehabilitation/reforestation</a><br><a href="#">Reforestation</a><br><a href="#">Existing forest management</a>                                                                                                                                                                                                                                                                                     |
| <b>C Manufacturing</b>                                       | <a href="#">Energy and resource efficiency in manufacturing</a><br><a href="#">Manufacture of renewable energy equipment</a><br><a href="#">Manufacture of low carbon transport vehicles, equipment and infrastructure</a><br><a href="#">Manufacture of energy efficiency equipment for buildings</a><br><a href="#">Manufacture of other low carbon technologies</a>                                                                           |
| <b>D Electricity, gas, steam and air conditioning supply</b> | <a href="#">Energy Production (Geothermal)</a><br><a href="#">Energy Production (Hydro)</a><br><a href="#">Energy Production (Solar PV)</a><br><a href="#">Energy Production (Wind energy)</a><br><a href="#">Energy Production (Ocean Energy)</a><br><a href="#">Energy Production (Concentrated Solar Power)</a>                                                                                                                               |
| <b>H Transportation and storage</b>                          | <a href="#">Passenger Rail Transport (Interurban)</a><br><a href="#">Freight Rail Transport</a><br><a href="#">Urban and suburban passenger land transport (public transport)</a><br><a href="#">Infrastructure for low carbon transport</a><br><a href="#">Light passenger cars and commercial vehicles</a><br><a href="#">Freight transport services by road</a><br><a href="#">Interurban scheduled road transport services of passengers</a> |
| <b>F Construction</b><br><b>L Real estate activities</b>     | <a href="#">Construction of new buildings (residential and non-residential)</a><br><a href="#">Renovation of existing buildings (residential and non-residential)</a>                                                                                                                                                                                                                                                                            |

## 9 Agriculture, forestry and fishing

### 9.1 Afforestation

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Agriculture, forestry and fishing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Code                               | 2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Description                        | Silviculture and other forestry activities (Afforestation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Principles                         | <ol style="list-style-type: none"> <li>1. Demonstrate substantial, long-term carbon sequestration from combined vegetation and soil (or above and below ground carbon), compared to a counterfactual with no conversion to forest;</li> <li>2. Include forest activities where substantial mitigation is delivered considering the carbon sequestration of the forest and the emissions associated with the end-product.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Metrics                            | <ol style="list-style-type: none"> <li>1. Comply with the Sustainable Forest Management requirements of the Taxonomy:<sup>18</sup> <ul style="list-style-type: none"> <li>• Management of forest maintains or improves the long-term capacity of the forest to deliver multiple services (e.g. ecosystem services, timber production);</li> <li>• Management of forests maintains soil quality, soil carbon and biodiversity;</li> <li>• No conversion of high carbon stock land (i.e. old growth and primary forest, peatlands, wetlands, and grasslands) since 1994. Where the entity undertaking the afforestation was not directly or indirectly responsible for the conversion, land that was converted before 2010 may be afforested, restored or reforested;</li> <li>• All harvesting is carried out in compliance with national laws;</li> <li>• Harvested forest must be regenerated.</li> </ul> </li> <li>2. Perform GHG accounting and reporting and demonstrate year-on-year mitigation performance improvement by using an internationally recognized GHG accounting methodology (e.g. Verified Carbon Standard, Plan VIVO, Climate Action Reserve) and GHG accounting for harvesting activities (e.g. ISO 14064, FSC-PRO-30-002).</li> </ol> |
| Threshold                          | Compliance with the metrics above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

<sup>18</sup> These can be informed by using internationally accredited forest certification systems, such as e.g. Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification schemes (PEFC), Forest EUROPE SFM principles, Sustainable Forestry Initiative (SFI), or any other national/internationally equivalent/compatible certification system, as a benchmark for application of sustainable forest management.

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (2) Adaptation                          | <ul style="list-style-type: none"> <li>Species resilience and adaptation: <ul style="list-style-type: none"> <li>Promote close-to-nature forestry or similar concepts over monoculture depending on the local requirements and limitations;</li> <li>Select native species or species, varieties, ecotypes and provenance of trees that adequately provide the necessary resilience to climate change, natural disasters and the biotic, pedologic and hydrologic condition of the area concerned, as well as the potential invasive character of the species under local conditions, current and projected climate change.</li> </ul> </li> <li>Forest management planning and operations identify abiotic and biotic risks (e.g. fires, droughts, pests) and reduce the risk of their occurrence.</li> </ul> |
| (3) Water                               | <ul style="list-style-type: none"> <li>Perform assessment of the water requirements of the forest, and water needs of downstream users (both human and natural) and at a minimum identify relevant potential impacts (e.g. quality of discharges into watercourses and quantitative impacts of water use on groundwater and surface water bodies);</li> <li>A water management plan is in place to address relevant risks identified in the assessment and includes measures to protect qualitative and quantitative conditions of ground water and surface water bodies, and reduces possible flood risks for downstream communities;</li> <li>Use adapted species to the local conditions (see also criteria under adaptation).</li> </ul>                                                                   |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| (5) Pollution                           | <ul style="list-style-type: none"> <li>Chemical use: avoid active ingredients that are listed in the Stockholm Convention, the Rotterdam Convention or that are listed as classification Ia or Ib in the WHO recommended Classification of Pesticides by Hazard;</li> <li>Minimise the use of pesticides and favour alternative approaches or techniques, such as non-chemical alternatives to pesticides, in line with the Directive 2009/128/EC on the sustainable use of pesticides;</li> <li>Maintain water and soil quality.</li> </ul>                                                                                                                                                                                                                                                                   |
| (6) Ecosystems                          | <ul style="list-style-type: none"> <li>No conversion of habitats sensitive to biodiversity loss or of high ecological value such as grasslands and any high carbon stock area (e.g. peat lands and wetlands), and areas set aside for the restoration of such habitats;</li> <li>Forests are monitored and protected to prevent illegal logging, in compliance with national laws;</li> <li>When managing the afforested land the management plan includes provisions for managing and maintaining biodiversity and soil carbon.</li> </ul>                                                                                                                                                                                                                                                                    |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Additional notes on conclusions reached | <ul style="list-style-type: none"> <li>About the Principles:</li> </ul> <p>Afforestation can deliver substantial GHG emission mitigation through sequestration of carbon during tree growth. Carbon is fixed above ground and below ground in the vegetation, soil, litter, dead wood and eventually in harvested wood products (HWP) that are derived from the forest in line with</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>the lifetime of these products. For this to contribute to the carbon sink, forests must be maintained for some time.</p> <p>However, ensuring trees are planted and remain is not enough to ensure afforestation activities are delivering substantial GHG emission mitigation. The use of the wood and the management of the forest can impact the net GHG emission performance considerably.</p> <p>To address the potential lifecycle emissions from wood, the carbon sequestration of the forest and the emissions associated with the end-product must both be considered. For example, if whole trees were going to bioenergy uses, emissions of the end-product would be equal to the carbon sequestration that had been achieved and therefore substantial mitigation would not be delivered. However, if most of the end-product was going to construction and some residual matter was going to bioenergy, then substantial mitigation would likely still be achieved. This assumes that the avoided emissions when comparing bioenergy to a fossil fuel alternative are not considered in the lifecycle emissions.</p> <ul style="list-style-type: none"> <li>• About the Metrics:</li> </ul> <p>To ensure that the management of the forest is aligned with enabling substantial GHG mitigation, Sustainable Forest Management (SFM) requirements have been defined for the Taxonomy. The Climate Bonds Initiative's Forestry Criteria and the recast of the EU Renewable Energy Directive (RED) have informed the SFM requirements. The SFM requirements address whether the forest is being managed to promote growth, general forest health, ecosystem service provision, production of timber, soil quality and carbon, forest protection, regeneration after harvesting and ensure that emissions from land use change are not incurred; all of which will impact how effective the forest is at long-term carbon sequestration.</p> <p>The SFM requirements are mandatory across all Forestry activities. One way to inform alignment with them is through internationally accredited forest certification schemes. The Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) are the most widely used and have been evaluated against the SFM requirements and found to comply. Other certification schemes may also be used if they can demonstrate alignment with the SFM requirements.</p> <p>The FSC, PEFC and RED frameworks all look to carbon in a more or less direct way (RED being the most direct). However, the issue with all three approaches is that demonstration of compliance with them does not prove net carbon sequestration. By requiring GHG accounting and reporting to be completed, there is quantification that substantial mitigation is delivered. Internationally accredited forest certification schemes also have added value in terms of ensuring compliance with some of the "do no significant harm" aspects.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



#### 9.1.1 Feedback questions

1. **Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
2. **Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
3. **Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
4. **Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
5. **Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
6. **Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
7. **Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

#### 9.1.2 Additional feedback questions on forestry

In addition to the general questions, the following additional questions are proposed for this economic activity:

8. **How feasible is end-use tracking of wood products delivered from forestry activities?**
9. **Do you agree with the requirements for Sustainable Forest Management of the Taxonomy?**
10. **Do you foresee potential challenges with the implementation of the two Metrics? If so, please elaborate and suggest options for consideration.**
11. **Do you agree with the cutoff date and rationale selected to limit the conversion of high carbon stock land?**
12. **How prescriptive should the Taxonomy be in recommending GHG accounting and reporting methodologies for Forestry?**
13. **Should the taxonomy include a requirement to limit or avoid the use of fertilizers in forests?**

**14. Should the taxonomy encourage improvements to soil and water quality, where feasible?**

**15. Would excluding the conversion of wetlands prevent the establishment of mangroves on existing wetlands (that can help protect from the rising sea levels)?**

## 9.2 Rehabilitation/restoration

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Agriculture, forestry and fishing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| NACE Level                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Code                               | 2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Description                        | Rehabilitation/restoration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Principles                         | <ol style="list-style-type: none"> <li>1. Demonstrate substantial, long-term carbon sequestration from combined vegetation and soil (or above and below ground carbon), compared to a counterfactual with no conversion to forest;</li> <li>2. Include forest activities where substantial mitigation is delivered considering the carbon sequestration of the forest and the emissions associated with the end-product.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Metrics                            | <ol style="list-style-type: none"> <li>1. Comply with the Sustainable Forest Management requirements of the Taxonomy:<sup>19</sup> <ul style="list-style-type: none"> <li>• Management of forest maintains or improves the long-term capacity of the forest to deliver multiple services (e.g. ecosystem services, timber production);</li> <li>• Management of forests maintains soil quality, soil carbon and biodiversity;</li> <li>• No conversion of high carbon stock land (i.e. old growth and primary forest, peatlands, wetlands, and grasslands) since 1994. Where the entity undertaking the rehabilitation/restoration was not directly or indirectly responsible for the conversion, land that was converted before 2010 may be afforested, restored or reforested;</li> <li>• All harvesting is carried out in compliance with national laws;</li> <li>• Harvested forest must be regenerated.</li> </ul> </li> <li>2. Perform GHG accounting and reporting and demonstrate year-on-year mitigation performance improvement by using an internationally recognized GHG accounting methodology (e.g. Verified Carbon Standard, Plan VIVO, Climate Action Reserve) and GHG accounting for harvesting activities (e.g. ISO 14064, FSC-PRO-30-002).</li> </ol> |
| Threshold                          | Compliance with Metrics above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| (2) Adaptation                     | <ul style="list-style-type: none"> <li>• Species resilience and adaptation: <ul style="list-style-type: none"> <li>○ Promote close-to-nature forestry or similar concepts over monoculture depending on the local requirements and limitations;</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>19</sup> These can be informed by using internationally accredited forest certification systems, such as e.g. Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification schemes (PEFC), Forest EUROPE SFM principles, Sustainable Forestry Initiative (SFI), or any other national/internationally equivalent/compatible certification system, as a benchmark for application of sustainable forest management.

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | <ul style="list-style-type: none"> <li>○ Select native species or species, varieties, ecotypes and provenance of trees that adequately provide the necessary resilience to climate change, natural disasters and the biotic, pedologic and hydrologic condition of the area concerned, as well as the potential invasive character of the species under local conditions, current and projected climate change.</li> <li>• Forest management planning and operations identify abiotic and biotic risks (e.g. fires, droughts, pests) and reduce the risk of their occurrence.</li> </ul>                                                                                                                                                           |
| (3) Water                               | <ul style="list-style-type: none"> <li>• Perform assessment of the water requirements of the forest, and water needs of downstream users (both human and natural) and at a minimum identify relevant potential impacts (e.g. quality of discharges into watercourses and quantitative impacts of water use on groundwater and surface water bodies);</li> <li>• A water management plan is in place to address relevant risks identified in the assessment and includes measures to protect qualitative and quantitative conditions of ground water and surface water bodies, and reduces possible flood risks for downstream communities;</li> <li>• Use adapted species to the local conditions (see also criteria under adaptation).</li> </ul> |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (5) Pollution                           | <ul style="list-style-type: none"> <li>• Chemical use: avoid active ingredients that are listed in the Stockholm Convention, the Rotterdam Convention or that are listed as classification Ia or Ib in the WHO recommended Classification of Pesticides by Hazard;</li> <li>• Minimise the use of pesticides and favour alternative approaches or techniques, such as non-chemical alternatives to pesticides, in line with the Directive 2009/128/EC on the sustainable use of pesticides;</li> <li>• Maintain water and soil quality.</li> </ul>                                                                                                                                                                                                 |
| (6) Ecosystems                          | <ul style="list-style-type: none"> <li>• Forests are monitored and protected to prevent illegal logging, in compliance with national laws;</li> <li>• When managing the restored land, the management plan includes provisions for managing and maintaining biodiversity and soil carbon;</li> <li>• In the case of protected forests, species and habitats, the management of the forest should be carried out in a way to lead to no worsening of the conservation status of the habitats and species they are meant to be protected.</li> </ul>                                                                                                                                                                                                 |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Additional notes on conclusions reached | <ul style="list-style-type: none"> <li>• About the Principles:<br/>Restoration and rehabilitation of forests can deliver substantial GHG emission mitigation through sequestration of carbon during tree growth. Carbon is fixed above ground and below ground in the vegetation, soil, litter, dead wood and eventually in harvested wood products (HWPs) that are derived from the forest in line with the lifetime of these products. For this to contribute to the carbon sink, forests must be maintained for some time.<br/><br/>However, ensuring trees are planted and remain is not enough to ensure restoration activities are delivering substantial GHG emission mitigation. The</li> </ul>                                            |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|  | <p>use of the wood and the management of the forest can impact the net GHG emission performance considerably.</p> <p>To address the potential lifecycle emissions from wood, the carbon sequestration of the forest and the emissions associated with the end-product must both be considered. For example, if whole trees were going to bioenergy uses, emissions of the end-product would be equal to the carbon sequestration that had been achieved and therefore substantial mitigation would not be delivered. However, if most of the end-product was going to construction and some residual matter was going to bioenergy, then substantial mitigation would likely still be achieved. This assumes that the avoided emissions when comparing bioenergy to a fossil fuel alternative are not considered in the lifecycle emissions.</p> <ul style="list-style-type: none"> <li>• About the Metrics:</li> </ul> <p>To ensure that the management of the forest is aligned with enabling substantial GHG mitigation, Sustainable Forest Management (SFM) requirements have been defined for the Taxonomy. The Climate Bonds Initiative's Forestry Criteria and the recast of the EU Renewable Energy Directive (RED) have informed the SFM requirements. The SFM requirements address whether the forest is being managed to promote growth, general forest health, ecosystem service provision, production of timber, soil quality and carbon, forest protection, regeneration after harvesting and ensure that emissions from land use change are not incurred; all of which will impact how effective the forest is at long-term carbon sequestration.</p> <p>The SFM requirements are mandatory across all Forestry activities. One way to inform alignment with them is through internationally accredited forest certification schemes. The Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) are the most widely used and have been evaluated against the SFM requirements and found to comply. Other certification schemes may also be used if they can demonstrate alignment with the SFM requirements.</p> <p>The FSC, PEFC and RED frameworks all look to carbon in a more or less direct way (RED being the most direct). However, the issue with all three approaches is that demonstration of compliance with them does not prove net carbon sequestration. By requiring GHG accounting and reporting to be completed, there is quantification that substantial mitigation is delivered. Internationally accredited forest certification schemes also have added value in terms of ensuring compliance with some of the "do no significant harm" aspects.</p> |
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### 9.2.1 Feedback questions

1. **Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**

2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.
6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.

#### 9.2.2 Additional feedback questions on forestry

In addition to the general questions, the following additional questions are proposed for this economic activity:

16. How feasible is end-use tracking of wood products delivered from forestry activities?
17. Do you agree with the requirements for Sustainable Forest Management of the Taxonomy?
18. Do you foresee potential challenges with the implementation of the two Metrics? If so, please elaborate and suggest options for consideration.
19. Do you agree with the cutoff date and rationale selected to limit the conversion of high carbon stock land?
20. How prescriptive should the Taxonomy be in recommending GHG accounting and reporting methodologies for Forestry?
21. Should the taxonomy include a requirement to limit or avoid the use of fertilizers in forests?
22. Should the taxonomy encourage improvements to soil and water quality, where feasible?

### 9.3 Reforestation

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Agriculture, forestry and fishing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| NACE Level                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Code                               | 2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Description                        | Reforestation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Principles                         | <ol style="list-style-type: none"> <li>1. Demonstrate substantial, long-term carbon sequestration from combined vegetation and soil (or above and below ground carbon), compared to a counterfactual with no conversion to forest;</li> <li>2. Include forest activities where substantial mitigation is delivered considering the carbon sequestration of the forest and the emissions associated with the end-product.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Metrics                            | <ol style="list-style-type: none"> <li>1. Comply with the Sustainable Forest Management requirements of the Taxonomy:<sup>20</sup> <ul style="list-style-type: none"> <li>• Management of forest maintains or improves the long-term capacity of the forest to deliver multiple services (e.g. ecosystem services, timber production);</li> <li>• Management of forests maintains soil quality, soil carbon and biodiversity;</li> <li>• No conversion of high carbon stock land (i.e. old growth and primary forest, peatlands, wetlands, and grasslands) since 1994. Where the entity undertaking the reforestation was not directly or indirectly responsible for the conversion, land that was converted before 2010 may be afforested, restored or reforested;</li> <li>• All harvesting is carried out in compliance with national laws;</li> <li>• Harvested forest must be regenerated;</li> </ul> </li> <li>2. Perform GHG accounting and reporting and demonstrate year-on-year mitigation performance improvement by using an internationally recognized GHG accounting methodology (e.g. Verified Carbon Standard, Plan VIVO, Climate Action Reserve) and GHG accounting for harvesting activities (e.g. ISO 14064, FSC-PRO-30-002).</li> </ol> |
| Threshold                          | Compliance with Metrics above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| (2) Adaptation                     | <ul style="list-style-type: none"> <li>• Species resilience and adaptation:</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

<sup>20</sup> These can be informed by using internationally accredited forest certification systems, such as e.g. Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification schemes (PEFC), Forest EUROPE SFM principles, Sustainable Forestry Initiative (SFI), or any other national/internationally equivalent/compatible certification system, as a benchmark for application of sustainable forest management.

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                         | <ul style="list-style-type: none"> <li>○ Promote close-to-nature forestry or similar concepts over monoculture depending on the local requirements and limitations;</li> <li>○ Select native species or species, varieties, ecotypes and provenance of trees that adequately provide the necessary resilience to climate change, natural disasters and the biotic, pedologic and hydrologic condition of the area concerned, as well as the potential invasive character of the species under local conditions, current and projected climate change.</li> <li>● Forest management planning and operations identify abiotic and biotic risks (e.g. fires, droughts, pests) and reduce the risk of their occurrence.</li> </ul>                     |
| (3) Water                               | <ul style="list-style-type: none"> <li>● Perform assessment of the water requirements of the forest, and water needs of downstream users (both human and natural) and at a minimum identify relevant potential impacts (e.g. quality of discharges into watercourses and quantitative impacts of water use on groundwater and surface water bodies);</li> <li>● A water management plan is in place to address relevant risks identified in the assessment and includes measures to protect qualitative and quantitative conditions of ground water and surface water bodies, and reduces possible flood risks for downstream communities;</li> <li>● Use adapted species to the local conditions (see also criteria under adaptation).</li> </ul> |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (5) Pollution                           | <ul style="list-style-type: none"> <li>● Chemical use: avoid active ingredients that are listed in the Stockholm Convention, the Rotterdam Convention or that are listed as classification Ia or Ib in the WHO recommended Classification of Pesticides by Hazard;</li> <li>● Minimise the use of pesticides and favour alternative approaches or techniques, such as non-chemical alternatives to pesticides, in line with the Directive 2009/128/EC on the sustainable use of pesticides;</li> <li>● Maintain water and soil quality.</li> </ul>                                                                                                                                                                                                 |
| (6) Ecosystems                          | <ul style="list-style-type: none"> <li>● Forests are monitored and protected to prevent illegal logging, in compliance with national laws;</li> <li>● When managing the reforested land, the management plan includes provisions for managing and maintaining biodiversity and soil carbon;</li> <li>● In the case of protected forests, species and habitats, the management of the forest should be carried out in a way to lead to no worsening of the conservation status of the habitats and species they are meant to be protected.</li> </ul>                                                                                                                                                                                               |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Additional notes on conclusions reached | <ul style="list-style-type: none"> <li>● About the Principles:<br/>Reforestation can deliver substantial GHG emission mitigation through sequestration of carbon during tree growth. Carbon is fixed above ground and below ground in the vegetation, soil, litter, dead wood and eventually in harvested wood products (HWP) that are derived from the forest in line with the lifetime of these products. For this to contribute to the carbon sink, forests must be maintained for some time.</li> </ul>                                                                                                                                                                                                                                        |



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|  | <p>However, ensuring trees are planted and remain is not enough to ensure reforestation activities are delivering substantial GHG emission mitigation. The use of the wood and the management of the forest can impact the net GHG emission performance considerably.</p> <p>To address the potential lifecycle emissions from wood, the carbon sequestration of the forest and the emissions associated with the end-product must both be considered. For example, if whole trees were going to bioenergy uses, emissions of the end-product would be equal to the carbon sequestration that had been achieved and therefore substantial mitigation would not be delivered. However, if most of the end-product was going to construction and some residual matter was going to bioenergy, then substantial mitigation would likely still be achieved. This assumes that the avoided emissions when comparing bioenergy to a fossil fuel alternative are not considered in the lifecycle emissions.</p> <p>The Technical Expert Group is seeking further advice about whether reforestation that is legally required or part of a forestry entity's business-as-usual should be recognised in the Taxonomy. The argument to include it is that, whether regulated to happen or not, reforestation delivers carbon sequestration that is needed to mitigate climate change. The argument to not include it is that, this carbon sequestration is not additional carbon sequestration as it is anyway regulated to happen (at least in the European Union).</p> <ul style="list-style-type: none"> <li>• About the Metrics:</li> </ul> <p>To ensure that the management of the forest is aligned with enabling substantial GHG mitigation, Sustainable Forest Management (SFM) requirements have been defined for the Taxonomy. The Climate Bonds Initiative's Forestry Criteria and the recast of the EU Renewable Energy Directive (RED) have informed the SFM requirements. The SFM requirements address whether the forest is being managed to promote growth, general forest health, ecosystem service provision, production of timber, soil quality and carbon, forest protection, regeneration after harvesting and ensure that emissions from land use change are not incurred; all of which will impact how effective the forest is at long-term carbon sequestration.</p> <p>The SFM requirements are mandatory across all Forestry activities. One way to inform alignment with them is through internationally accredited forest certification schemes. The Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) are the most widely used and have been evaluated against the SFM requirements and found to comply. Other certification schemes may also be used if they can demonstrate alignment with the SFM requirements.</p> <p>The FSC, PEFC and RED frameworks all look to carbon in a more or less direct way (RED being the most direct). However, the issue with all three approaches is that demonstration of compliance with them does not prove net carbon sequestration. By requiring GHG accounting and reporting to be completed, there is quantification that substantial mitigation is delivered. Internationally</p> |
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|  | accredited forest certification schemes also have added value in terms of ensuring compliance with some of the "do no significant harm" aspects. |
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### 9.3.1 Feedback questions

1. **Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
2. **Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
3. **Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
4. **Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
5. **Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
6. **Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
7. **Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

### 9.3.2 Additional feedback questions on forestry

In addition to the general questions, the following additional questions are proposed for this economic activity:

23. **How feasible is end-use tracking of wood products delivered from forestry activities?**
24. **Do you agree with the requirements for Sustainable Forest Management of the Taxonomy?**
25. **Do you foresee potential challenges with the implementation of the two Metrics? If so, please elaborate and suggest options for consideration.**
26. **Do you agree with the cutoff date and rationale selected to limit the conversion of high carbon stock land?**
27. **How prescriptive should the Taxonomy be in recommending GHG accounting and reporting methodologies for Forestry?**

- 28. Should the taxonomy include a requirement to limit or avoid the use of fertilizers in forests?**
- 29. Should the taxonomy encourage improvements to soil and water quality, where feasible?**

## 9.4 Existing forest management

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Agriculture, forestry and fishing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| NACE Level                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Code                               | 2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description                        | Existing forest management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Principles                         | <ol style="list-style-type: none"> <li>1. Demonstrate improved forest carbon sink from combined vegetation and soil (or above and below ground carbon);</li> <li>2. Include forest activities where substantial mitigation is delivered considering the carbon sequestration of the forest and the emissions associated with the end-product.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Metric                             | <ol style="list-style-type: none"> <li>1. Comply with the Sustainable Forest Management requirements of the Taxonomy:<sup>21</sup> <ul style="list-style-type: none"> <li>• Management of forest maintains or improves the long-term capacity of the forest to deliver multiple services (e.g. ecosystem services, timber production);</li> <li>• Management of forests maintains soil quality, soil carbon and biodiversity;</li> <li>• No conversion of high carbon stock land (i.e. old growth and primary forest, peatlands, wetlands, and grasslands) since 1994. Where the entity undertaking the activity was not directly or indirectly responsible for the conversion, land that was converted before 2010 may be afforested, restored or reforested;</li> <li>• All harvesting is carried out in compliance with national laws;</li> <li>• Harvested forest must be regenerated;</li> </ul> </li> <li>2. Perform GHG accounting and reporting and demonstrate year-on-year mitigation performance improvement by using an internationally recognized GHG accounting methodology (e.g. Verified Carbon Standard, Plan VIVO, Climate Action Reserve) and GHG accounting for harvesting activities (e.g. ISO 14064, FSC-PRO-30-002).</li> </ol> |
| Threshold                          | Demonstrate a positive trend over a given period.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (2) Adaptation                     | <ul style="list-style-type: none"> <li>• Species resilience and adaptation: <ul style="list-style-type: none"> <li>○ Promote close-to-nature forestry or similar concepts over monoculture depending on the local requirements and limitations;</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

<sup>21</sup> These can be informed by using internationally accredited forest certification systems, such as e.g. Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification schemes (PEFC), Forest EUROPE SFM principles, Sustainable Forestry Initiative (SFI), or any other national/internationally equivalent/compatible certification system, as a benchmark for application of sustainable forest management.

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|                                         | <ul style="list-style-type: none"> <li>o Select native species or species, varieties, ecotypes and provenance of trees that adequately provide the necessary resilience to climate change, natural disasters and the biotic, pedologic and hydrologic condition of the area concerned, as well as the potential invasive character of the species under local conditions, current and projected climate change.</li> <li>• Forest management planning and operations identify abiotic and biotic risks (e.g. fires, droughts, pests) and reduce the risk of their occurrence.</li> </ul>                                                                                                                                                                         |
| (3) Water                               | <ul style="list-style-type: none"> <li>• Perform assessment of the water requirements of the forest, and water needs of downstream users (both human and natural) and at a minimum identify relevant potential impacts (e.g. quality of discharges into watercourses and quantitative impacts of water use on groundwater and surface water bodies);</li> <li>• A water management plan is in place to address relevant risks identified in the assessment and includes measures to protect qualitative and quantitative conditions of ground water and surface water bodies, and reduces possible flood risks for downstream communities;</li> <li>• Promote adapted species to the local conditions (see also criteria under adaptation).</li> </ul>           |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (5) Pollution                           | <ul style="list-style-type: none"> <li>• Chemical use: avoid active ingredients that are listed in the Stockholm Convention, the Rotterdam Convention or that are listed as classification Ia or Ib in the WHO recommended Classification of Pesticides by Hazard;</li> <li>• Minimise the use of pesticides and favour alternative approaches or techniques, such as non-chemical alternatives to pesticides, in line with the Directive 2009/128/EC on the sustainable use of pesticides;</li> <li>• Maintain water and soil quality.</li> </ul>                                                                                                                                                                                                               |
| (6) Ecosystems                          | <ul style="list-style-type: none"> <li>• No conversion of habitats sensitive to biodiversity loss or of high ecological value such as old-growth and primary forests (e.g. no encroachment into protected areas of the forestry concession);</li> <li>• Forests are monitored and protected to prevent illegal logging, in compliance with national laws;</li> <li>• When managing existing forests, the management plan includes provisions for managing and maintaining biodiversity and soil carbon;</li> <li>• In the case of protected forests, species and habitats, the management of the forest should be carried out in a way to lead to no worsening of the conservation status of the habitats and species they are meant to be protected.</li> </ul> |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Additional notes on conclusions reached | <ul style="list-style-type: none"> <li>• About the Principles:<br/>Existing forest management can contribute substantially to the mitigation of climate change and limiting warming well below 2-degrees by maintaining essential carbon sinks. Carbon is fixed above ground and below ground in the vegetation, soil, litter, dead wood and eventually in harvested wood products (HWPs) that are derived from the forest in line with the lifetime of these</li> </ul>                                                                                                                                                                                                                                                                                         |

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|  | <p>products. To mitigate climate change there must be substantial additional GHG emissions mitigation, but it is also imperative that existing carbon sinks, such as forests, are maintained and improved. This applies to both planted and natural forests.</p> <p>From a practical point of view, a substantial portion of forestry activities will fall under the bracket of existing forest management. Therefore, it is proposed that existing forest management is recognised in the Taxonomy, provided it can demonstrate improvement in the forest carbon sink.</p> <p>To address the potential lifecycle emissions from wood, the carbon sink of the forest and the emissions associated with the end-product must both be considered. For example, if whole trees were going to bioenergy uses, emissions of the end-product would be equal to the carbon sequestration that had been achieved and therefore substantial mitigation would not be delivered. However, if most of the end-product was going to construction and some residual matter was going to bioenergy, then substantial mitigation would likely still be achieved. This assumes that the avoided emissions when comparing bioenergy to a fossil fuel alternative are not considered in the lifecycle emissions.</p> <ul style="list-style-type: none"> <li>• About the Metrics:</li> </ul> <p>To ensure that the management of the forest is aligned with maintaining the carbon sink, Sustainable Forest Management (SFM) requirements have been defined for the Taxonomy. The Climate Bonds Initiative's Forestry Criteria and the recast of the EU Renewable Energy Directive (RED) have informed the SFM requirements. The SFM requirements address whether the forest is being managed to promote growth, general forest health, ecosystem service provision, production of timber, soil quality and carbon, forest protection, regeneration after harvesting and ensure that emissions from land use change are not incurred; all of which will impact how effective the forest is as a long-term carbon sink.</p> <p>The SFM requirements are mandatory across all Forestry activities. One way to inform alignment with these requirements is through internationally accredited forest certification schemes. The Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) are the most widely used and have been evaluated against the Sustainable Forest Management requirements and found to comply. Other certification schemes may also be used if they can demonstrate alignment with the Sustainable Forest Management requirements.</p> <p>The 'no conversion of high carbon stock land' requirement in the Sustainable Forest Management requirements is considered for existing forest management activities in the sense that the Taxonomy would not want to recognise forestry operations that had converted high carbon stock land, such as peatlands or wetlands, in the last few years.</p> <p>The FSC, PEFC and RED frameworks all look to carbon in a more or less direct way (RED being the most direct). However, the issue with all three approaches is that demonstration of compliance with them does not prove the carbon sink</p> |
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|  | in maintained. By requiring GHG accounting and reporting to be completed, there is quantification of this. Internationally accredited forest certification schemes also have added value in terms of ensuring compliance with some of the "do no significant harm" aspects. |
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#### 9.4.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.
6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.

#### 9.4.2 Additional feedback questions on forestry

In addition to the general questions, the following additional questions are proposed for this economic activity:

8. How feasible is end-use tracking of wood products delivered from forestry activities?
9. Do you agree with the requirements for Sustainable Forest Management of the Taxonomy?
10. Do you foresee potential challenges with the implementation of the two Metrics? If so, please elaborate and suggest options for consideration.
11. Do you agree with the cutoff date and rationale selected to limit the conversion of high carbon stock land?

- 12. How prescriptive should the Taxonomy be in recommending GHG accounting and reporting methodologies for Forestry?**
- 13. Should the taxonomy include a requirement to limit or avoid the use of fertilizers in forests?**
- 14. Should the taxonomy encourage improvements to soil and water quality, where feasible?**
- 15. Would excluding the conversion of wetlands prevent the establishment of mangroves on existing wetlands (that can help protect from the rising sea levels)?**
- 16. Do you agree the Taxonomy should only include existing forest management activities that can demonstrate improvement in forest carbon sink (as opposed to maintenance of carbon sink)?**
  - a. What threshold would be best appropriate to measure improvement of existing forest management, and over what period?**



## 10 Manufacturing

### 10.1 Energy and resource efficiency in manufacturing

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| NACE Level                         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Code                               | C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Description                        | Manufacturing activities no sector specific criteria apply.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Principle                          | Demonstrate substantial GHG emissions reductions for both new and upgrades of existing industrial facilities and production processes through improvements in energy and resource efficiency or other mitigation measures.                                                                                                                                                                                                                                                                                                                                                                                                     |
| Metric                             | <p>The following metrics are being considered:</p> <ul style="list-style-type: none"> <li>• % reduction in GHG emissions per unit of production</li> <li>• % reduction in energy consumption per unit of production</li> <li>• Monetary value of GHG savings (calculated using a shadow price of CO<sub>2</sub>) over the economic life of the asset is worth &gt; XX% of investment cost</li> <li>• Implementation of defined best available techniques (BAT) or energy efficiency technologies meeting high standards such as combined heat and power (CHP), efficient compressed air, variable-speed drives etc.</li> </ul> |
| Threshold                          | To be determined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (2) Adaptation                     | To be determined. Given the breadth and diversity of manufacturing activities considered, a detailed analysis is still in progress.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| (3) Water                          | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| (4) Circular Economy               | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| (5) Pollution                      | Minimise emissions of pollutants to air, soil and water. For activities covered by BREF documents <sup>22</sup> , limit emissions of pollutants to air, soil and water to value within the BATAEL <sup>23</sup> ranges given in the relevant BREF.                                                                                                                                                                                                                                                                                                                                                                             |
| (6) Ecosystems                     | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

<sup>22</sup> BREF documents refer to Best Available Techniques Reference Documents developed according to the Industrial Emissions Directive (IED). BREF documents are available at: <http://eippcb.jrc.ec.europa.eu/reference/>

<sup>23</sup> BATAELs refer to the Best Available Techniques Associated Emissions Levels defined in the BREF documents.

|                                         | Rationale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Additional notes on conclusions reached | <p>The principles and potential quantitative metrics presented relate to improvements in existing manufacturing facilities as well as to the construction of efficient new manufacturing facilities over a defined baseline. They apply to GHG reductions from energy efficiency, resource efficiency and other measures in manufacturing sectors that are not covered by sector specific criteria in the taxonomy. Dedicated criteria for selected sectors with high greenhouse gases emissions will be considered separately. Manufacturing of eligible low carbon technologies are also considered separately.</p> <p>The pros and cons of the four possible approaches are considered below:</p> <p><b>% reduction in GHG emissions per unit of production.</b> Set against a possible baseline of current asset performance, market average or likely alternative scenario.</p> <ul style="list-style-type: none"> <li>• <b>Possible advantages:</b> Fairer approach than a volume threshold in catering for range of sectors and company/facility sizes, straightforward to understand and in most cases straightforward to implement (although see note on resource efficiency)</li> <li>• <b>Possible disadvantages:</b> no guarantee on scale of GHG reduction in absolute terms i.e. a large % reduction could be small in absolute terms if the total baseline emissions are low. The per unit of production element would need to be selected for each individual activity by the users of the taxonomy. The TEG may provide a number of options e.g. weight, volume, number of finished products. However, as this is a percentage threshold, the potential problem of companies being able to choose the most advantageous metric is partially mitigated. As with all GHG metrics, need reference to methodology, definition of baseline and definition of scope. Whilst scope 1 and 2 would be enough in many cases, for resource efficiency improvements often scope 3 is also needed to account for indirect benefits from input material or waste reductions which adds a layer of complication for those types of mitigation benefits</li> </ul> <p><b>% energy consumption reduction per unit of production.</b> Set against a possible baseline of current asset performance, market average or likely alternative scenario.</p> <ul style="list-style-type: none"> <li>• <b>Possible advantages:</b> Energy metrics potentially easier to calculate than GHG savings as does not require conversion from Energy to GHG. Energy metrics are independent of national energy mix of electricity. Manufacturing companies usually monitor energy use so information should be readily available</li> <li>• <b>Possible disadvantages:</b> In low carbon electricity grid countries, the actual GHG emissions saving may be marginal compared to the energy savings (although likely to be other resource benefits)</li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>Monetary value of GHG savings</b> (calculated using a shadow price of CO<sub>2</sub>) over the economic life of the asset is worth &gt; XX% of investment cost. Set against a possible baseline of current asset performance, market average or likely alternative scenario.</p> <ul style="list-style-type: none"> <li>• <b>Possible advantages:</b> Ensures in project investments that GHG benefits are substantial, as considers significance of carbon savings in relation to size of investment, so investments where GHG benefits are marginal would not be eligible.</li> <li>• <b>Possible disadvantages:</b> Requires definition of carbon price and economic life of projects. More complex than % change options. Project focussed so less applicable to other types of investment. As with all GHG metrics, need reference to methodology, definition of baseline and definition of scope. Whilst scope 1 and 2 would be enough in many cases, for resource efficiency improvements often scope 3 is also needed to account for indirect benefits from input material or waste reductions which adds a layer of complication for those types of mitigation benefits</li> </ul> <p><b>Implementation of defined best available techniques (BAT) or energy efficiency technologies meeting high standards.</b></p> <ul style="list-style-type: none"> <li>• <b>Possible advantages:</b> Where appropriate standards can be identified, this is easy to understand and implement for users of the taxonomy. Does not require setting baselines or GHG calculations.</li> <li>• <b>Possible disadvantages:</b> It may be difficult to assess the relevance of BAT, identified for large industrial installations, to smaller facilities. Some BAT assessments are several years old and so may not reflect the latest technologies. Whilst technology standards can be identified, it may be difficult to cover the range of technologies needed across the wide array of manufacturing sectors. If a range of standards are applied, it may be difficult knowing how consistently robust those standards are, and what actual impact they will have in terms of GHG emissions</li> </ul> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10.1.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with any of the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If yes, please explain which and give your rationale. If not, what alternatives do you propose and why?
3. Thresholds have not yet been developed for this activity. You may propose thresholds that could be considered.

- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

## 10.2 Manufacture of renewable energy equipment

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Manufacturing                                                                                                                                                                                                                                                                                                                                                                                       |
| Level                              | TBD                                                                                                                                                                                                                                                                                                                                                                                                 |
| Code                               | TBD                                                                                                                                                                                                                                                                                                                                                                                                 |
| Description                        | Manufacture of products, key components, equipment and machinery for eligible renewable energy technologies.                                                                                                                                                                                                                                                                                        |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                     |
| Principle                          | The manufacture of low carbon technologies that result in substantial GHG emission reductions in other sectors of the economy and including private households is eligible.                                                                                                                                                                                                                         |
| Metric                             | <p>Manufacture of products, key components, equipment and machinery for the following renewable energy technologies is eligible:</p> <ul style="list-style-type: none"> <li>• Geothermal Power</li> <li>• Hydropower</li> <li>• Solar Concentrated Power (CSP)</li> <li>• Solar Photovoltaic (PV)</li> <li>• Wind energy</li> <li>• Ocean energy (see energy activities for definition).</li> </ul> |
| Threshold                          | No threshold applies                                                                                                                                                                                                                                                                                                                                                                                |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                     |
| (2) Adaptation                     | To be determined.                                                                                                                                                                                                                                                                                                                                                                                   |
| (3) Water                          | To be determined.                                                                                                                                                                                                                                                                                                                                                                                   |
| (4) Circular Economy               | <ul style="list-style-type: none"> <li>• Adopt design solutions aimed at improving durability<sup>24</sup>, reparability and recyclability of the products manufactured.</li> <li>• Implement production line quality inspection and testing in order to minimise early stage failures of components/products in the field</li> </ul>                                                               |

<sup>24</sup> To improve durability, examples of measures that could be implemented are: developing components/products that have undergone accelerated life testing to demonstrate durability and low degradation for their expected lifespan in the field (e.g. at least 15 years for inverters); implementing production line quality inspection and testing in order to minimise early stage failures of components/products in the field

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (5) Pollution                           | Minimise emissions of pollutants to air, soil and water. For activities covered by BREF documents <sup>25</sup> , limit emissions of pollutants to air, soil and water to value within the BATAEL <sup>26</sup> ranges given in the relevant BREF.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (6) Ecosystems                          | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Additional notes on conclusions reached | <p>The TEG has proposed eligibility for the manufacture of those specific products, key components, equipment and machinery that are essential for the deployment of technologies that are needed to achieve the climate mitigation goals defined in the 2015 UNFCCC Paris Climate Change Agreement. Eligibility is based on those technologies eligible in the section of the taxonomy on energy production.</p> <p>Manufacture of equipment/components for bio energy, energy storage, power (electricity) to gas equipment and fuel cells will be considered during subsequent rounds (see information on Round 2 sectors in the feedback document) based on definition of eligibility for operation of those activities currently under development by the TEG.</p> <p>The TEG is considering options to define boundaries, and potentially thresholds, that will address the manufacture of products, key components, equipment and machinery along the supply chain that are essential to the eligible low carbon renewable energy technology but not necessarily include the manufacture of those components/materials that are used by both low carbon renewable energy technology and non-low carbon energy technology.</p> |

#### 10.2.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**

<sup>25</sup> BREF documents refer to Best Available Techniques Reference Documents developed according to the Industrial Emissions Directive (IED). BREF documents are available at: <http://eippcb.jrc.ec.europa.eu/reference/>

<sup>26</sup> BATAELs refer to the Best Available Techniques Associated Emissions Levels defined in the BREF documents.

5. **Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
6. **Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
7. **Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

## 10.3 Manufacture of low carbon transport vehicles, equipment and infrastructure

| Sector classification and activity       |                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                             | Manufacturing                                                                                                                                                                                                                                                                                                                                                                                     |
| NACE Level                               | TBD                                                                                                                                                                                                                                                                                                                                                                                               |
| Code                                     | TBD                                                                                                                                                                                                                                                                                                                                                                                               |
| Description                              | Manufacture of zero direct emissions road vehicles and rail transport.                                                                                                                                                                                                                                                                                                                            |
| Mitigation criteria                      |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Principle                                | The manufacture of low carbon technologies that result in substantial GHG emission reductions in other sectors of the economy and including private households is eligible.                                                                                                                                                                                                                       |
| Metric                                   | Manufacture of products, key components, equipment and infrastructure that are essential for zero direct emission road vehicles and/or land transport (i.e. zero emissions LRT, metro, hydrogen bus etc) is eligible.                                                                                                                                                                             |
| Threshold                                | No threshold applies                                                                                                                                                                                                                                                                                                                                                                              |
| Do no significant harm assessment        |                                                                                                                                                                                                                                                                                                                                                                                                   |
| (2) Adaptation                           | To be determined.                                                                                                                                                                                                                                                                                                                                                                                 |
| (3) Water                                | To be determined.                                                                                                                                                                                                                                                                                                                                                                                 |
| (4) Circular Economy                     | To be determined.                                                                                                                                                                                                                                                                                                                                                                                 |
| (5) Pollution                            | Minimise emissions of pollutants to air, soil and water. For activities covered by BREF documents <sup>27</sup> , limit emissions of pollutants to air, soil and water to value within the BATAEL <sup>28</sup> ranges given in the relevant BREF.                                                                                                                                                |
| (6) Ecosystems                           | To be determined.                                                                                                                                                                                                                                                                                                                                                                                 |
| Rationale                                |                                                                                                                                                                                                                                                                                                                                                                                                   |
| Additional notes on conclusions reached. | The TEG has proposed eligibility for the manufacture of those specific products, key components, equipment and machinery that are essential for the deployment of technologies that are needed to achieve the climate mitigation goals defined in the 2015 UNFCC Paris Climate Change Agreement. Eligibility is based on those technologies eligible in the section of the taxonomy on transport. |

<sup>27</sup> BREF documents refer to Best Available Techniques Reference Documents developed according to the Industrial Emissions Directive (IED). BREF documents are available at: <http://eippcb.jrc.ec.europa.eu/reference/>

<sup>28</sup> BATAELs refer to the Best Available Techniques Associated Emissions Levels defined in the BREF documents.



|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>The manufacture of other types of transportation fleets and infrastructure will be considered at a later stage based on definition of eligibility in the transport section of the taxonomy.</p> <p>The TEG is considering options to define boundaries that will address the manufacture of products, key components, equipment and machinery along the supply chain that are essential to the eligible transport vehicles, equipment and infrastructure but that exclude the manufacture of those components/materials that are used by both low carbon transport technology and non-low carbon transport technology.</p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 10.3.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

## 10.4 Manufacture of energy efficiency equipment for buildings

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| NACE Level                         | TBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Code                               | TBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Description                        | Manufacture of energy efficiency equipment for buildings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Principle                          | The manufacture of low carbon technologies that result in substantial GHG emission reductions in other sectors of the economy and including private households is eligible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Metric                             | Various, see below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Threshold                          | <p>Manufacture of the following products (with thresholds where appropriate) and their key components is eligible:</p> <ul style="list-style-type: none"> <li>• High efficiency windows (U-value better than e.g. 0.7 W/m<sup>2</sup>K)</li> <li>• High efficiency doors (U-value better than 1.2/m<sup>2</sup>K)</li> <li>• Insulation solutions, external cladding and roofing systems with high insulation values (e.g. for external walls, basements and ground floors 0.2 W/m<sup>2</sup>K where possible, otherwise 0.5 W/m<sup>2</sup>K, roofs 0.1 – 0.3 W/m<sup>2</sup>K),</li> <li>• Hot water fittings that are verified or labelled as being efficient (e.g. taps, showers)</li> <li>• Appliances that are labelled according to EU regulations as being the most efficient (e.g. washing machines, dishwashers)</li> <li>• High efficiency lighting with daylight and presence controls that are labelled according to EU regulations as being the most efficient</li> <li>• Space heating and domestic hot water systems that are labelled according to EU regulations as being the most efficient</li> <li>• Cooling and ventilation systems that are labelled according to EU regulations as being the most efficient</li> <li>• Façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation</li> <li>• Smart monitoring and control equipment and technologies, in particular the most energy-efficient (according to EN 15232 standard) building automation and control systems for commercial buildings.</li> <li>• Zoned thermostats and devices for the smart monitoring of the main electricity loads for residential buildings, as well as products for heat metering and thermostatic controls for individual homes connected to district heating systems.</li> </ul> |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (2) Adaptation                     | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (3) Water                               | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (4) Circular Economy                    | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (5) Pollution                           | Minimise emissions of pollutants to air, soil and water. For activities covered by BREF documents <sup>29</sup> , limit emissions of pollutants to air, soil and water to value within the BATAEL <sup>30</sup> ranges given in the relevant BREF.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (6) Ecosystems                          | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Additional notes on conclusions reached | <p>The TEG has proposed eligibility for the manufacture of those specific products, key components, equipment and machinery that are essential for the deployment of technologies that are needed to achieve the climate mitigation goals defined in the 2015 UNFCCC Paris Climate Change Agreement.</p> <p>The manufacture of other energy efficiency equipment for buildings is under consideration by the TEG. Manufacture of renewable energy equipment, which may be installed on buildings, is considered separately under manufacture of renewable energy equipment.</p> <p>The TEG is considering options to define boundaries that will address the manufacture of products, key components, equipment and machinery along the supply chain that are essential to the eligible energy efficiency in buildings technologies but that exclude the manufacture of those components/materials that are used by both low carbon technology and non-low carbon technology.</p> |

#### 10.4.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**

<sup>29</sup> BREF documents refer to Best Available Techniques Reference Documents developed according to the Industrial Emissions Directive (IED). BREF documents are available at: <http://eippcb.jrc.ec.europa.eu/reference/>

<sup>30</sup> BATAELs refer to the Best Available Techniques Associated Emissions Levels defined in the BREF documents.

5. **Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
6. **Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
7. **Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

## 10.5 Manufacture of other low carbon technologies

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NACE Level                              | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Code                                    | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description                             | Manufacture of low carbon technologies that result in substantial GHG emission reductions in other sectors of the economy including private households and are not classified in other categories for manufacture of low carbon technologies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Principle                               | Manufacture of low carbon technologies that result in substantial GHG emission reductions in other sectors of the economy and including private households is eligible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Metric                                  | Demonstrate substantial GHG emission reductions through a life cycle carbon footprint.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Threshold                               | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (2) Adaptation                          | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (3) Water                               | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (4) Circular Economy                    | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (5) Pollution                           | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (6) Ecosystems                          | To be determined.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Additional notes on conclusions reached | <p>The inclusion of other low carbon technologies is intended to allow the Taxonomy to be dynamic over time and able to consider eligible other technologies than those explicitly listed. This could cover end-game technologies and, more broadly, all the technological development demonstrating substantial GHG reductions. Such dynamic criterion comes in addition to the explicit criteria for renewable energy equipment, low carbon transport equipment and energy efficiency in building technologies.</p> <p>The TEG will define a metric that builds on existing lifecycle carbon footprint standards. Standards currently being reviewed include:</p> <ul style="list-style-type: none"> <li>• <b>ISO 14067:2018 - Greenhouse gases -- Carbon footprint of products -- Requirements and guidelines for quantification</b></li> <li>• GHG Protocol - Product Life Cycle Accounting and Reporting Standard</li> <li>• <b>PAS 2050:2011 - Specification for the assessment of the life cycle greenhouse gas emissions of goods and services</b></li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• <b>The Product Environmental Footprint (PEF) and Organisational Environmental Footprint (OEF) method, defined in 2013/179/EU:</b> Commission Recommendation of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations (<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013H0179">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013H0179</a>).</li> </ul> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 10.5.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Please indicate any key area where significant harm needs to be avoided. Please explain and propose criteria where appropriate.
5. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
6. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.

## 11 Energy

### 11.1 Energy Production (Geothermal)

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | D) Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Code                                    | 35.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description                             | Energy Production (Geothermal)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Principle                               | Demonstrate substantial avoidance of GHG emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Metric                                  | Direct GHG emissions - gCO <sub>2</sub> e/kWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Threshold                               | Direct GHGs from electricity generation <125gCO <sub>2</sub> e/kWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (3) Water                               | Minimise consequences on local water quality and consumption from contaminants and changes in the hydraulic regime. Requirements for management or mitigation of potential impacts will require further analysis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (5) Pollution                           | Minimise emissions of pollutants from geothermal fluids, and, in case of hybrid (geothermal + combustion) plants, from fuel combustion. Requirements for management or mitigation of potential impacts will require further analysis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (6) Ecosystems                          | Perform geological risks assessments to avoid or mitigate the risk of geological hazard directly caused by the activity. Requirements for management or mitigation of potential impacts will require further analysis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Additional notes on conclusions reached | Electricity generation from geothermal energy can cause emissions of greenhouse gases (GHG). These emissions are generally much lower than emissions from electricity generation from fossil fuels. Direct emissions of carbon dioxide (and to a lesser extent methane) result from the release of naturally occurring non-condensable gases from geothermal fluid during the energy extraction process. The emissions threshold of 125gCO <sub>2</sub> e/kWh has been selected because it represents approximately the international weighted average emissions for geothermal energy generation (according to an International Geothermal Association survey from - Bertani and Thain, 2002), which is 122gCO <sub>2</sub> e/kWh. The purpose of setting a threshold that does not automatically make all geothermal energy generation eligible for the Taxonomy, is to encourage better performing assets and management activities. The threshold also applies for geothermal electricity plants which are hybridized with fossil fuel or waste combustion processes. |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Note that combined Heat and Power production from geothermal will be treated separately (cf. NACE code D35.3)</p> <p>The International Energy Agency 2 Degree Scenario identifies an average emissions intensity across the global electricity sector in 2050 of 35 gCO<sub>2</sub>e/kWh (down from 519 gCO<sub>2</sub>e/kWh in 2014). It is likely that thresholds for geothermal energy plants will need to be reduced in future.</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 11.1.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**



## 11.2 Energy Production (Hydro)

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | D) Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NACE Level                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Code                               | 35.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description                        | Energy Production (Hydro)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Principle                          | Demonstrate substantial avoidance of GHG emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Metric                             | Power density Watt/m <sup>2</sup><br>And /or<br>Direct GHG emissions from the reservoir (gCO <sub>2</sub> e/kWh)                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Threshold                          | If the hydropower plant has no reservoir, or it is built on an existing reservoir without introducing any new reservoirs, i.e. the plant does not lead to additional reservoir emissions, the plant is considered eligible. In other cases, the hydropower plant is eligible if it meets the following thresholds:<br><br>- Direct GHGs from electricity generation <125 gCO <sub>2</sub> e/kWh<br>An/or<br>- The threshold for power density [ $>x$ W/m <sup>2</sup> ]. The threshold will be considered in the 2 <sup>nd</sup> Round. |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (2) Adaptation                     | <ul style="list-style-type: none"> <li>• Ensure resilience to extreme weather events;</li> <li>• Assessment of design and operation to avoid contributing to water and food insecurity, erosion, poor flood control, which exacerbate climate change impacts.</li> </ul>                                                                                                                                                                                                                                                                |
| (3) Water                          | <p>Construction Phase impacts: Ensure that the river catchment assessment shows no significant adverse impacts on upstream and downstream quantitative and qualitative water resources and uses.</p> <p>General impacts: Operation of the hydro power plant must adhere to the principles of the UNECE Convention on the Protection and Use of Transboundary, Watercourses and International Lakes.</p>                                                                                                                                 |
| (4) Circular Economy               | Minimise construction-related waste and ensure appropriate recycling/treatment for waste generated.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (5) Pollution                      | <p>Maintain the quality of the waters at baseline concentrations and to a quality that protects and supports fish life and aquatic habitats.</p> <p>Parameters and acceptable limits/ranges and necessary sampling and measuring frequency are contained in EU Directive 2006/44/EC and should be observed. These address the Quality of Freshwaters needing Protection or</p>                                                                                                                                                          |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | Improvement in order to support fish life and relevant parameters contained in the WFD surface water chemical monitoring and chemical monitoring of sediment and biota.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| (6) Ecosystems                          | <p>Operational Phase Criteria:</p> <p>1) Projects located in or affecting designated protected areas, or areas of high nature and biodiversity value and vulnerability, shall be assessed with a higher scrutiny in compliance with the provisions of the EU Habitats and Birds Directives according to which projects may be implemented only if they do not have a significant negative effect on the conservation objectives for which the sites have been designated;</p> <p>2) Implement appropriate mitigation measures to minimise possible impacts, such as:</p> <ul style="list-style-type: none"> <li>a) restoration of river continuity,</li> <li>b) fish passes,</li> <li>c) restoration of ecological flow,</li> <li>d) establishment of monitoring systems,</li> <li>e) measures to guarantee the connectivity between linked river basins, consider cumulative impacts and avoid fragmentation and isolation of terrestrial species,</li> <li>f) erosion and sedimentation;</li> </ul> <p>3) No risk of invasive and non-native species introduction is demonstrated;</p> <p>Construction Phase Criteria:</p> <p>1) Adheres to the operational phase criteria of Objective 6 above;</p> <p>2) The area of inundation for the reservoir/dam does not adversely impact on terrestrial ecosystems, particularly wetlands and forests.</p> |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Additional notes on conclusions reached | <p>On average, hydropower is a low-emitting source of generation. Evidence to date suggests a median direct emissions intensity across hydropower of 24-28 gCO<sub>2</sub>e/kWh<sup>31</sup> compared to around 310-350 gCO<sub>2</sub>e/kWh for even the most efficient combined cycle gas turbine (CCGT) power station. According to International Hydropower Association 84% of the stations emit less than 100 gCO<sub>2</sub>e/kWh, the global median was 18.5 gCO<sub>2</sub>e/kWh.</p> <p>Considering these data, the threshold has been set at a level where hydropower plants would be eligible unless the emissions from their reservoirs are considerably higher than emissions levels caused by most other renewable</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

<sup>31</sup> Climate Bonds Initiative Hydropower Criteria (2018); Bruckner T., I. A. Bashmakov, Y. Mulugetta, H. Chum, A. de la Vega Navarro, J. Edmonds, A. Faaij, B. Fungtammasan, A. Garg, E. Hertwich, D. Honnery, D. Infield, M. Kainuma, S. Khennas, S. Kim, H. B. Nimir, K. Riahi, N. Strachan, R. Wiser, and X. Zhang (2014), Energy Systems. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>energy technologies. The value of 125 gCO<sub>2</sub>e/kWh has been selected to ensure consistency with the mitigation requirement for geothermal. This provides comparability across lower carbon energy sources.</p> <p>The criteria for HEP as a source of renewable energy build on High Level Expert Group principles, Climate Bonds Initiative thresholds, and European Investment Bank criteria, CDM, and EU guidance note:<br/> <a href="http://ec.europa.eu/environment/nature/natura2000/management/docs/Hydro%20final%20June%202018.pdf">http://ec.europa.eu/environment/nature/natura2000/management/docs/Hydro%20final%20June%202018.pdf</a></p> <p>Scope of emissions: there is no requirement for a life cycle assessment. The GHG emissions threshold only includes scope 1 – direct emissions from reservoirs. Scope 2 – indirect GHG emissions from consumption of purchased electricity, and scope 3 – embedded emissions, mainly from production of materials used to construct dams, are negligible on a per kWh basis.<sup>32</sup></p> <p>Power density: Power density is proposed as an alternative threshold because it is easier to calculate, has an inversely proportional relationship to emissions intensity, and is also used by the CDM assessment methodology. Therefore, it could be used as a proxy to reduce the need for GHG assessments which take time and resources. Data show that hydropower facilities which have power density higher than 5W/m<sup>2</sup> are likely to have GHG emissions well below the threshold of 125gCO<sub>2</sub>e/kWh.<sup>33</sup></p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 11.2.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**

<sup>32</sup> Figures compiled by the IPCC suggest that the median of construction and operation emissions is 4 gCO<sub>2</sub>e/kWh. Other studies suggest they are typically low < 10 gCO<sub>2</sub>e/kWh. Reference: Kumar, A., T. Schei, A. Ahenkorah, R. Caceres Rodriguez, J.-M. Devernay, M. Freitas, D. Hall, Å. Killingtveit, Z. Liu (2011), Hydropower, in IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation; Hertwich et al. (2015), 'Integrated life cycle assessment of electricity supply scenarios confirms global environmental benefit of low-carbon technologies', PNAS May 19, 2015. 112 (20) 6277-6282; Raadal, H., Gagnon, L., Modahl, I., & Hanssen, O. (2011). Life cycle greenhouse gas (GHG) emissions from the generation of wind and hydro power. Renewable and Sustainable Energy Reviews, 15(7), 3417-3422.

<sup>33</sup> International Hydropower Association G-res database (2017).

- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

### 11.3 Energy Production (Solar photovoltaic)

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | D) Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Code                                    | 35.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Description                             | Energy Production (Solar photovoltaic)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Principle                               | Demonstrate substantial avoidance of GHG emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Metric                                  | Direct GHG emissions - gCO <sub>2</sub> e/kWh.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Threshold                               | No threshold applies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (4) Circular Economy                    | <ul style="list-style-type: none"> <li>- Ensure the reparability of the solar photovoltaic (PV) installation or plant thanks to accessibility and exchangeability of the components, e.g. capacitors or boards in inverters, or the bypass diodes in the module junction boxes.</li> <li>- Implement field inspection and monitoring tools at the system level to prevent failures to occur or for early detection of faults.</li> <li>- Select modules and inverter components that have undergone accelerated life testing to demonstrate durability and low degradation for their expected lifespan in the field (e.g. 15 years for inverters, 25 years for modules)</li> </ul> |
| (5) Pollution                           | Select solar PV modules manufactured to the highest environmental standards. Efforts should be made to select the least polluting materials and technology based on life cycle impact assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (6) Ecosystems                          | <p>PV panels should not be installed on forest or wetlands. Panels can be installed on e.g. agricultural land, if the agricultural production yields a low output or if demonstrating that combined land use is resource efficient.<sup>34</sup></p> <p>Give preference to installing PV panel on buildings and other roofs.</p>                                                                                                                                                                                                                                                                                                                                                   |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Additional notes on conclusions reached | <p>Solar PV uses a renewable energy source and has zero direct emissions.</p> <p>The criteria build on High Level Expert Group principles, Climate Bonds Initiative thresholds, and European Investment Bank criteria.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

<sup>34</sup> Combined land use of solar PV and agriculture could actually boost production if the panels are mounted high enough to allow crops planted below to receive as much sunshine as possible (cf. <https://www.ise.fraunhofer.de/en/press-media/press-releases/2017/harvesting-the-sun-for-power-and-produce-agrophotovoltaics-increases-the-land-use-efficiency-by-over-60-percent.html>).

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>The mitigation criteria outlined in this table considers only energy generation from PV, not taking into account emissions from PV manufacturing. Solar PV emissions can vary between 20g and 200g CO<sub>2</sub>-eq/kWh depending on the on the manufacturing processes implemented and on the materials used. Further consideration of how to capture emissions from manufacturing and materials will be addressed in the 2<sup>nd</sup> Round.</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 11.3.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.
6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.

## 11.4 Energy Production (Wind energy)

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | D) Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Code                                    | 35.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Description                             | Energy Production (Wind energy)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Principle                               | Demonstrate substantial avoidance of GHG emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Metric                                  | Direct GHG emissions - gCO <sub>2</sub> e/kWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Threshold                               | No threshold applies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (5) Pollution                           | Minimise operational and maintenance activities causing pollution (e.g. minimise transportation needs to offshore wind farms by implementing automated monitoring and maintenance techniques).                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (6) Ecosystems                          | Consider and minimise: <ul style="list-style-type: none"> <li>- the impact on landscape of the installed wind turbines;</li> <li>- the collision risk for birds and bats population with the blades of wind turbines;</li> <li>- the noise and vibrations generated during installation and operation of wind turbines;</li> <li>- the impact of off-shore wind farms to fishery resources related to e.g. noise, vibration and electromagnetic field generated by submarines power cables</li> </ul>                                                                                                                                                             |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Additional notes on conclusions reached | <p>Wind (on and offshore) is a renewable energy source. The direct emissions of wind energy are zero, therefore no threshold for maximum emissions is set.</p> <p>The criteria builds on HLEG principles, CBI thresholds, EIB criteria, and EU guidance note:<br/> <a href="http://ec.europa.eu/environment/nature/natura2000/management/docs/Wind_farms.pdf">http://ec.europa.eu/environment/nature/natura2000/management/docs/Wind_farms.pdf</a></p> <p>The criteria refers to energy generation from wind. Production of wind energy components is covered in the manufacturing section of the taxonomy under manufacturing of renewable energy equipment.</p> |

#### 11.4.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.
6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.



## 11.5 Energy Production (Ocean Energy)

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | D) Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Code                                    | 35.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description                             | Energy Production (Ocean energy)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Principle                               | Demonstrate substantial avoidance of GHG emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Metric                                  | Direct GHG emissions - gCO <sub>2</sub> e/kWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Threshold                               | No threshold applies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (4) Circular Economy                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (5) Pollution                           | Minimise toxicity of some components, especially the paints. For instance, some deep-water tidal elements are covered in anti-fouling paint and biocides which can be highly toxic.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (6) Ecosystems                          | Consider and minimise the effect of: <ul style="list-style-type: none"> <li>- turbines on fishery resources (i.e. injuries and fatalities caused by turbines);</li> <li>- noise on animal's capacity to navigate, communicate, and hunt in marine environments;</li> <li>- electro-magnetic fields generated especially by cables and underwater substations; this can be problematic as some animals, like crustaceans, use the earth's natural magnetic fields to navigate and communicate;</li> <li>- energy removal from the water, which can also disturb marine life.</li> <li>- if marine current or waves are removed, sediment transportation is disturbed, as well as some animal transportation and reproduction techniques.</li> <li>- tidal power production removes or changes some of the currents and flows.</li> </ul> |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Additional notes on conclusions reached | <p>Ocean Energy has some of the lowest GHG emission rates at 4g CO<sub>2</sub>e/kWh. The direct emissions of ocean energy are non-material, therefore no threshold for maximum emissions is set. Ocean Energy includes:</p> <ul style="list-style-type: none"> <li>- Wave energy (energy from the wave motion),</li> <li>- Tidal energy (energy from marine currents due to the tides),</li> <li>- Ocean thermal (gradient of ocean surface / depth), - Salinity gradient,</li> <li>- Ocean currents (deep sea currents)</li> </ul>                                                                                                                                                                                                                                                                                                     |

|  |                                                                                          |
|--|------------------------------------------------------------------------------------------|
|  | This list of included technologies will need to be revisited as new technologies emerge. |
|--|------------------------------------------------------------------------------------------|

#### 11.5.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.
6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.

## 11.6 Energy Production (Concentrated Solar Power)

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | D) Energy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NACE Level                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Code                               | D35.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description                        | Energy Production (Concentrated Solar Power – 100% CSP plants)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Principle                          | Demonstrate substantial avoidance of GHG emissions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Metric                             | Direct GHG emissions - gCO <sub>2</sub> e/kWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Threshold                          | No threshold applies for 100% CSP plants.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| (2) Adaptation                     | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (3) Water                          | <p>Some CSP technologies can require water to clean solar surfaces and/or use in the process, for steam or cooling purposes. This can be problematic especially knowing that CSP plants are generally built in water-scarce areas.</p> <p>Some CSP technologies have low water consumption such as the dish-type stirling plants, while others, especially solar towers that need water cooling, can use up to 4500 litres of water per MWh. In those cases, air cooling should be preferred as it allows for a drastic reduction of water used.</p> <p>The use of water should be minimised, and the plant's consumption should not have a negative impact on local water reserves.</p> |
| (4) Circular Economy               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (5) Pollution                      | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (6) Ecosystems                     | <p>CSP plants require extensive land to concentrate enough heat. Efforts should be made to ensure that affected land is dedicated to such facilities.</p> <p>Land use can also be a problem as CSP plants require extensive land to concentrate enough heat. Efforts should be made to ensure that the land dedicated to plants is not forest nor agriculture land.</p> <p>CSP plant managers should ensure that during standby, solar reflectors aim at different directions to avoid concentrated heat. This technique has proved to reduce the number of bird kills.</p>                                                                                                              |
| Rationale                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

|                                         |                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Additional notes on conclusions reached | <p>CSP is a renewable energy. 100% CSP-only plants have a life cycle emission rate of 10-35g CO<sub>2</sub>e/kWh, one of the lowest emissions rates for all energy sources.</p> <p>Further criteria will be investigated for hybrid plants and/or fossil fuel use in CSP plants.</p> |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 11.6.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

## 12 Transport

### 12.1 Passenger Rail Transport (Interurban)

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Code                                    | 49.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Description                             | Passenger rail transport (Interurban)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Principle                               | Demonstrate substantial GHG emission reduction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Metric                                  | CO2 emissions per passenger kilometre (gCO2/pkm).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Threshold                               | Zero direct emissions rail and fleet is eligible.<br><br>Low emissions intensity rail activities are eligible if the emissions intensity is below the threshold. Threshold levels will be discussed and set in the 2nd Round.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (2) Adaptation                          | Resilience to increased risk of extreme weather events (e.g. floods, rain, wind and snowfall as well as temperature stress).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (4) Circular Economy                    | Adopt separate passenger waste collection.<br>Recycle waste from maintenance and operation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (5) Pollution                           | For non-zero emission transport, minimise emissions of PM, NOx, PN and other air pollutants to air.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (6) Ecosystems                          | Reduce use of herbicides                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Additional notes on conclusions reached | <p>Passenger rail transport with zero direct emissions or with low and reducing emission intensities contributes substantially to climate mitigation and is aligned with Article 6. 1. (c): ‘increasing clean or climate-neutral mobility’ and Article 6. 1. (f) phasing out anthropogenic emissions of greenhouse gases, including from fossil fuels.</p> <p>Zero direct emissions rail (e.g. electric, hydrogen) is eligible because:</p> <ul style="list-style-type: none"> <li>- With the present energy mix, the overall emissions associated with zero direct emissions rail transport (i.e. electric or hydrogen) are among the lowest compared with other transport modes.</li> <li>- The generation of the energy carriers used by zero direct emissions transport is assumed to become low or zero carbon in the near future (for instance, in</li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>the scenario called EUCO 30<sup>35</sup> that meets the EU targets in the clean energy package, 70% of electricity in the EU is generated from decarbonised sources in 2030). Further work on this assumption is needed to validate it for activities taking place outside the EU.</p> <p>In line with current market practice (such as Climate Bonds Initiative) and European legislation, the TEG is considering setting thresholds that reduce over time. Threshold levels, scope of emissions included, and metrics will be considered further in the 2<sup>nd</sup> Round.</p> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 12.1.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

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<sup>35</sup> See: [https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical\\_report\\_on\\_euco\\_scenarios\\_primes\\_corrected.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical_report_on_euco_scenarios_primes_corrected.pdf)

## 12.2 Freight Rail Transport

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Code                                    | 49.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Description                             | Freight Rail Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Principle                               | Demonstrate substantial GHG emission reductions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Metric                                  | CO2 emissions per tonne- kilometre (gCO2/tkm)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Threshold                               | <p>Zero direct emissions rail (e.g. electric, hydrogen) is eligible.</p> <p>Low emissions intensity rail activities are eligible if the emission intensity is below the threshold. Thresholds will be discussed and set in the 2nd Round.</p> <p>Rail that is predominantly dedicated to the transport of fossil fuels (more than 50%) is not eligible even if meeting the criteria above.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (2) Adaptation                          | Resilience to increased risk of extreme weather events. (e.g. floods, rain, wind and snowfall as well as temperature stress).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (4) Circular Economy                    | Recycle waste from maintenance and operation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (5) Pollution                           | For non-zero emission transport, minimise emissions of PM, NOx, PN and other air pollutants to air.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (6) Ecosystems                          | Reduce use of herbicides                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Additional notes on conclusions reached | <p>Freight rail transport with zero direct emissions or with low and reducing emission intensities contributes substantially to climate mitigation and are aligned with Article 6. 1. (c): 'increasing clean or climate-neutral mobility' and Article 6. 1. (f) phasing out anthropogenic emissions of greenhouse gases, including from fossil fuels.</p> <p>Zero direct emissions rail (e.g. electric, hydrogen) is eligible because:</p> <ul style="list-style-type: none"> <li>- With the present energy mix, the overall emissions associated with zero direct emissions rail transport (i.e. electric or hydrogen) are among the lowest compared with other transport modes.</li> <li>- The generation of the energy carriers used by zero direct emissions transport is assumed to become low or zero carbon in the near future (for instance, in</li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>the scenario called EU CO 30<sup>36</sup> that meets the EU targets in the clean energy package, 70% of electricity in the EU is generated from decarbonised sources in 2030). Further work on this assumption is needed to validate it for activities taking place outside the EU.</p> <p>In line with current market practice (such as Climate Bonds Initiative) and European legislation, the TEG is considering setting thresholds that reduce over time. Threshold levels, scope of emissions included, and metrics will be considered further in the 2<sup>nd</sup> Round.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 12.2.1 Core feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

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<sup>36</sup> See: [https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical\\_report\\_on\\_euco\\_scenarios\\_primes\\_corrected.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical_report_on_euco_scenarios_primes_corrected.pdf)



## 12.3 Urban and suburban passenger land transport (public transport)

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Code                                    | 49.31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Description                             | Urban and suburban passenger land transport services (public transport)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Principle                               | Demonstrate substantial GHG emission reduction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Metric                                  | CO <sub>2</sub> emissions per passenger- kilometre OR per kilometre (gCO <sub>2</sub> /pkm or gCO <sub>2</sub> /km).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Threshold                               | <p>Zero direct emissions land transport activities (e.g. electric light rail transit, metro, tram, trolleybus, bus and rail) are eligible.</p> <p>Other land transport activities are eligible if the emission intensity is below the threshold. Threshold levels will be discussed and set in the 2nd Round.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| (4) Circular Economy                    | Ensure the vehicles, their parts and specifically the batteries are sent for re-use or recycling at the end of their useful life                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| (5) Pollution                           | <p>Reduce impact on air quality through adhering to strictest available standards.</p> <p>Adopt measures to reduce noise pollution.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (6) Ecosystems                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Additional notes on conclusions reached | <p>Urban and suburban passenger public transport with zero direct emissions or with low and reducing emission intensities contributes substantially to climate mitigation and is aligned with Article 6. 1. (c): 'increasing clean or climate-neutral mobility' and Article 6. 1. (f) phasing out anthropogenic emissions of greenhouse gases, including from fossil fuels.</p> <p>Zero direct emissions urban and suburban passenger land transport rail (e.g. electric, hydrogen) is eligible because:</p> <ul style="list-style-type: none"> <li>- With the present energy mix, the overall emissions associated with zero direct emissions urban and suburban passenger land rail transport (i.e. electric or hydrogen) are lower than comparable technologies.<sup>37</sup></li> </ul> |

<sup>37</sup> For instance, for a comparison of well-to-wheel CO<sub>2</sub> emissions of electric buses and diesel buses, see figures 10 and 11 in <https://www.transportenvironment.org/sites/te/files/publications/Electric%20buses%20arrive%20on%20time.pdf>.

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>- The generation of the energy carriers used by zero direct emissions transport is assumed to become low or zero carbon in the near future (for instance, in the scenario called EUCO 30 that meets the EU targets in the clean energy package, 70% of electricity in the EU is generated from decarbonised sources in 2030). Further work on this assumption is needed to validate it for activities taking place outside the EU.</p> <p>- For vehicles with non-zero direct emissions, the TEG will discuss and set the thresholds during round 2. Although the threshold selected may need to be based on direct emissions because of data availability, the TEG will consider taking into account well-to-wheel emissions as well as, where possible, life cycle emissions in the analysis it will carry out, in order to ensure that the technologies offering the overall best available mitigation options are considered eligible.</p> <p>In line with current market practice (such as Climate Bonds Initiative) and European legislation the TEG is considering setting thresholds that reduce over time. Threshold levels, scope of emissions included, and metrics will be considered further in Round 2.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 12.3.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

## 12.4 Infrastructure for low carbon transport

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                       | Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NACE Level                         | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Code                               | 42.11; 42.12; 42.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description                        | Infrastructure for low carbon transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Principle                          | Demonstrate substantial GHG emissions reductions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Metric                             | CO2 emissions per passenger-kilometre, per tonne-kilometre, or per kilometre (gCO2/pkm, gCO2/tkm or gCO2/km).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Threshold                          | <p>The construction and operation of transport infrastructure is eligible in the following cases:</p> <ol style="list-style-type: none"> <li>1. Infrastructure that is required for zero direct emissions transport (e.g. electric charging points or hydrogen fuelling stations) is eligible</li> <li>2. Infrastructure and equipment for active mobility (walking and cycling) are eligible</li> <li>3. Infrastructure that is dedicated to low-carbon transport is eligible if the emissions intensity of the fleet that uses the infrastructure is below the threshold</li> </ol> <p>Infrastructure that is predominantly dedicated to the transport of fossil fuels (more than 50%) is not eligible even if meeting the criteria above.</p> <p>Threshold levels will be discussed and set in in the 2nd Round.</p> |
| Do no significant harm assessment  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (2) Adaptation                     | Resilience to increased risk of extreme weather events. This could include floods, rain, wind and snowfall as well as temperature stress.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| (3) Water                          | <p>Minimise possible contamination to water during construction and with a focus on:</p> <ul style="list-style-type: none"> <li>- prevention of emissions of harmful substances such as diesel and oil, paint, solvents, cleaners and other harmful chemicals;</li> <li>- prevention of construction debris entering water courses.</li> </ul> <p>Minimise the Impact of underground structures on the flow of groundwater</p>                                                                                                                                                                                                                                                                                                                                                                                          |
| (4) Circular Economy               | Maximise opportunities to re-use materials and minimise waste during construction of the transport infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| (5) Pollution                      | Minimise emissions of pollutants to air, water and soil from the construction site, e.g. address transport emissions during the construction phase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (6) Ecosystems                          | Minimise the impacts on biodiversity during the construction phase as well as during the future use of the transport infrastructure (e.g. consider the impact of granting easier access to protected land, such as a nature conservation area, ensure solutions to potential impacts due to habitat fragmentation and barriers to migration).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Additional notes on conclusions reached | <p>Infrastructure for low carbon transport contributes substantially to climate mitigation and are aligned with Article 6. 1. (c) increasing clean or climate-neutral mobility; Article 6. 1. (f) phasing out anthropogenic emissions of greenhouse gases, and (g) establishing energy infrastructure required for enabling decarbonisation of energy systems.</p> <p>The construction of infrastructure for low carbon transport is considered eligible because this is considered a key enabling factor for improving the uptake of the transport modes that are considered eligible under the rest of the transport section of the taxonomy.</p> <p>However, further analysis is needed to assess whether criteria should be put in place setting the right conditions for the construction of infrastructure (i.e. specifying which infrastructure would be eligible, in which cases) as well as whether threshold for the emissions from the construction of the infrastructure are needed. The analysis should be based on a comparison of emissions from the construction and operations of the low carbon transport infrastructure with the emissions savings that are obtained thanks to the use of such infrastructure by low carbon vehicles compared to different transport modes.</p> |

#### 12.4.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.

- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

## 12.5 Light passenger cars and commercial vehicles

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| NACE Level                              | No specific NACE codes available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Code                                    | No specific NACE codes available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description                             | Light passenger cars and commercial vehicles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Principle                               | Demonstrate substantial GHG emission reductions contributing to climate mitigation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Metric                                  | CO2 emissions per vehicle kilometre gCO2/km or gCO2/passenger-km or gCO2/tonne-km.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Threshold                               | <p>Zero direct emissions vehicles (e.g. hydrogen, electric) are eligible.</p> <p>Other vehicles are eligible if the emissions intensity of the vehicle is below the threshold. The level of these thresholds will be discussed and set in the 2<sup>nd</sup> Round.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (4) Circular Economy                    | Ensure the vehicles, their parts and specifically the batteries are sent for re-use or recycling at the end of their useful life.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (5) Pollution                           | <p>For non-zero direct emission vehicles, minimise emissions to air of PM, NOx, PN and other air pollutants from combustion, breaks and tyres</p> <p>Adopt measures to reduce noise pollution</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| (6) Ecosystems                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Additional notes on conclusions reached | <p>This activity includes vehicles classified as M1, N1 and L vehicles, as defined by Regulation (EU) 2018/858.</p> <p>Zero direct emission vehicles and vehicles with low and reducing emission intensities contribute substantially to climate mitigation and are aligned with Article 6. 1. (c) increasing clean or climate-neutral mobility, and Article 6. 1. (f) phasing out anthropogenic emissions of greenhouse gases, including from fossil fuels, including from fossil fuels.</p> <p>Zero direct emissions vehicles (e.g. electric, hydrogen) is eligible because:</p> <ul style="list-style-type: none"> <li>- the generation of the energy carriers used by zero direct emissions transport is assumed to become low or zero carbon in the near future (for</li> </ul> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>instance, in the scenario called EU30<sup>38</sup> that meets the EU targets in the clean energy package, 70% of electricity in the EU is generated from decarbonised sources in 2030). Further work on this assumption is needed to validate it for activities taking place outside the EU.</p> <ul style="list-style-type: none"> <li>- According to the European Environment Agency<sup>39</sup>, across its life cycle, a typical battery electric vehicle (BEV) in Europe offers a reduction in greenhouse gas (GHG) emissions compared with its internal combustion engine vehicle (ICEV) equivalent (e.g. Hawkins et al, 2013; ICCT, 2018b). The extent of the difference can depend on a number of factors, including the size of vehicle considered, the electricity mix and whether the BEV is compared with a petrol or diesel conventional vehicle. Hawkins et al. (2013) reported life-cycle GHG emissions from BEVs charged using the average European electricity mix, 17-21 % and 26-30 % lower than similar diesel and petrol vehicles, respectively. This is broadly in line with more recent assessments based on the average European electricity mix (e.g. Ellingsen et al., 2016; Ellingsen and Hung, 2018).</li> </ul> <p>For vehicles with non-zero direct emissions, the TEG will discuss and set the thresholds during the 2<sup>nd</sup> Round. Although the threshold selected may need to be based on direct emissions because of data availability, the TEG will consider taking into account well-to-wheel emissions as well as, where possible, life cycle emissions in the analysis it will carry out, in order to ensure that the technologies offering the overall best available mitigation options are considered eligible. In line with current market practice (such as Climate Bonds Initiative) and European legislation, the TEG is considering setting thresholds that reduce over time.</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 12.5.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**

<sup>38</sup> See: [https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical\\_report\\_on\\_euco\\_scenarios\\_primes\\_corrected.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical_report_on_euco_scenarios_primes_corrected.pdf)

<sup>39</sup> See: <https://www.eea.europa.eu/publications/electric-vehicles-from-life-cycle>

5. **Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
6. **Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
7. **Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**



## 12.6 Freight transport services by road

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| NACE Level                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Code                                    | 49.41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description                             | Freight transport services by road                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Principle                               | Demonstrate substantial GHG emissions reductions contributing to climate mitigation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Metric                                  | CO2 emissions per kilometre - gCO2/km or CO2 per tonne-kilometre (gCO2/tkm).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Threshold                               | <p>Zero direct emission vehicles (e.g. hydrogen, electric) are eligible</p> <p>Other vehicles are eligible if the emissions intensity is below the threshold. The level of these thresholds will be discussed and set in the 2<sup>nd</sup> Round.</p> <p>Fleets predominantly (more than 50%) dedicated to transport fossil fuels are not eligible even if meeting the criteria above.</p>                                                                                                                                                                                                                             |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (4) Circular Economy                    | Ensure the vehicles, their parts and specifically the batteries are sent for re-use or recycling at the end of their useful life.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| (5) Pollution                           | <p>For non-zero direct emission vehicles, minimise emissions to air of PM, NOx, PN and other air pollutants from combustion, breaks and tyres.</p> <p>Adopt measures to reduce noise pollution.</p>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (6) Ecosystems                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Additional notes on conclusions reached | <p>This activity includes vehicles classified as N2 and N3 vehicles, as defined by REGULATION (EU) 2018/858</p> <p>Zero direct emission vehicles and vehicles with low and reducing emission intensities contribute substantially to climate mitigation and are aligned with Article 6. 1. (c) increasing clean or climate-neutral mobility, and Article 6. 1. (f) phasing out anthropogenic emissions of greenhouse gases, including from fossil fuels, including from fossil fuels. Note that at the time of writing, zero emissions trucks are not believed to be available at a commercial level on the market.</p> |

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|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Zero direct emissions vehicles (e.g. electric, hydrogen) are eligible because:</p> <ul style="list-style-type: none"> <li>- the generation of the energy carriers used by zero direct emissions transport is assumed to become low or zero carbon in the near future (for instance, in the scenario called EUCCO 30<sup>40</sup> that meets the EU targets in the clean energy package, 70% of electricity in the EU is generated from decarbonised sources in 2030). Further work on this assumption is needed to validate it for activities taking place outside the EU.</li> </ul> <p>For vehicles with non-zero direct emissions, the TEG will discuss and set the thresholds during the 2<sup>nd</sup> Round. Although the threshold selected may need to be based on direct emissions because of data availability, the TEG will consider taking into account well-to-wheel emissions as well as, where possible, life cycle emissions in the analysis it will carry out, in order to ensure that the technologies offering the overall best available mitigation options are considered eligible. In line with current market practice (such as Climate Bonds Initiative) and European legislation, the TEG is considering setting thresholds that reduce over time.</p> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 12.6.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

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<sup>40</sup> See: [https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical\\_report\\_on\\_euco\\_scenarios\\_primes\\_corrected.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20170125 - technical_report_on_euco_scenarios_primes_corrected.pdf)

## 12.7 Interurban scheduled road transport services of passengers

| Sector classification and activity      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Macro-Sector                            | Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Level                                   | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Code                                    | 49.39.11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Description                             | Interurban scheduled road transport services of passengers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mitigation criteria                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Principle                               | Demonstrate substantial GHG emission reductions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Metric                                  | CO2 emissions per vehicle kilometre gCO2/km or gCO2/passenger-km                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Threshold                               | Zero direct emissions vehicles (e.g. hydrogen, electric) are eligible.<br>Other vehicles are eligible if the emissions intensity of the vehicle is below the threshold. The level of these thresholds will be discussed and set in round 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Do no significant harm assessment       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (2) Adaptation                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (3) Water                               | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| (4) Circular Economy                    | Ensure the vehicles, their parts and specifically the batteries are sent for re-use or recycling at the end of their useful life                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (5) Pollution                           | Reduce impact on air quality through adhering to strictest available standards<br>Adopt measures to reduce noise pollution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| (6) Ecosystems                          | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Rationale                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Additional notes on conclusions reached | <p>This category includes M<sub>2</sub> and M<sub>3</sub> vehicles, as defined by Regulation (EU) 2018/858.</p> <p>Zero direct emission vehicles and vehicles with low and increasingly decreasing emission intensities contribute substantially to climate mitigation and are aligned with Article 6. 1. (c) increasing clean or climate-neutral mobility, and Article 6. 1. (f) phasing out anthropogenic emissions of greenhouse gases, including from fossil fuels, including from fossil fuels.</p> <p>In line with current market practice (such as Climate Bonds Initiative) and European legislation the TEG is considering absolute thresholds becoming stricter over time. Threshold levels, scope of emissions included, and metrics will be considered further in Round 2.</p> <p>Zero direct emissions vehicles (e.g. electric, hydrogen) is eligible because:</p> <ul style="list-style-type: none"> <li>- the generation of the energy carriers used by zero direct emissions transport is assumed to become low or zero carbon in the near future (for instance, in the scenario called EUCO 30<sup>41</sup> that meets the EU targets in the clean energy package, 70% of electricity in the EU is generated from decarbonised sources in 2030). Further work on this</li> </ul> |

<sup>41</sup> See: [https://ec.europa.eu/energy/sites/ener/files/documents/20170125\\_-\\_technical\\_report\\_on\\_euco\\_scenarios\\_primes\\_corrected.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20170125_-_technical_report_on_euco_scenarios_primes_corrected.pdf)

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>assumption is needed to validate it for activities taking place outside the EU.</p> <ul style="list-style-type: none"> <li>- With the present energy mix, the overall emissions associated with zero direct emissions passenger land transport (i.e. electric or hydrogen) are lower than comparable technologies<sup>42</sup>.</li> </ul> <p>For vehicles with non-zero direct emissions, the TEG will discuss and set the thresholds during round 2. Although the threshold selected may need to be based on direct emissions because of data availability, the TEG will consider taking into account well-to-wheel emissions as well as, where possible, life cycle emissions in the analysis it will carry out, in order to ensure that the technologies offering the overall best available mitigation options are considered eligible.</p> |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 12.7.1 Feedback questions

- 1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?**
- 2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?**
- 3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.**
- 4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?**
- 5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.**
- 6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.**
- 7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.**

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<sup>42</sup> For instance, for a comparison of well-to-wheel CO<sub>2</sub> emissions of electric buses and diesel buses, see figures 10 and 11 in <https://www.transportenvironment.org/sites/te/files/publications/Electric%20buses%20arrive%20on%20time.pdf>.

## 13 Buildings

### 13.1 Construction of new buildings (residential and non-residential)

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sector                             | F – Construction.<br>Note that construction of new buildings relevant to any economic activity should be aligned with these thresholds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Level                              | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Code                               | 41; 43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description                        | Construction of buildings (residential and non-residential); Specialised construction activities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Principle                          | <p>Construction of highly efficient new buildings can make a substantial contribution to climate mitigation objectives by avoiding emissions.</p> <p>The top performing buildings in a country based on GHG emissions or energy efficiency, should be eligible for the Taxonomy.</p> <p>In-use monitoring of actual performance is required to demonstrate that the building performs as designed. This should be measured and adjusted according to the national calculation method or the ISO 52000 standard series (e.g. normalised occupancy patterns and normalised average climate conditions over a time-span of at least 2-3 years). Lock-in should be avoided<sup>43</sup>.</p> <p>The TEG has adopted a precautionary principle to exclude buildings dedicated to fossil fuel projects. According to the IEA's World Energy Outlook, no CO<sub>2</sub>-emitting energy infrastructure is to be developed in the coming years if the Paris Agreement target is to be met, as emissions from existing infrastructure will already cover 95% of the global carbon budget (ref. IEA World Energy Outlook 2018; see also <a href="#">here</a>).</p> |
| Metric                             | The TEG will investigate using in-use carbon performance (CO <sub>2</sub> e/m <sup>2</sup> /yr) or in-use energy performance (kWh/m <sup>2</sup> /yr). Compliance with Member State definitions for Nearly-Zero Energy Buildings (NZEB) will be used where the above approach is not yet in place.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Threshold                          | The TEG will undertake additional work to investigate country specific thresholds for carbon and energy performance. Where the national methodology defining Nearly Zero Energy Buildings (NZEB) under the Energy Performance of Buildings Directive meets the relevant threshold, it will be considered to comply with the taxonomy. Where the threshold above is                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

<sup>43</sup> Defined as: decisions which result in loss of economically viable choices for reducing energy demand in the future. Source: Global Buildings Performance Network.

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | <p>exceeded by the local NZEB methodology, the NZEB methodology will be the taxonomy standard.</p> <p>In the absence of additional thresholds, the NZEB standard will be the taxonomy standard.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Do no significant harm assessment</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| (2) Adaptation                           | <ul style="list-style-type: none"> <li>• Thermal resilience of the interior environment of the building and exterior environment around the building. This can be achieved using e.g. green infrastructures of different types</li> <li>• Resilience to increased risk of extreme weather events. This could include floods, rain, wind and snowfall as well as temperature stress.</li> <li>• Minimisation of flood risks and improved property protection (including natural water retention and drainage areas)</li> </ul>                                                                                                                                            |
| (3) Water                                | <ul style="list-style-type: none"> <li>• In water scarce areas (see EEA water scarcity mapping) water consumption during the use phase is minimised. Examples of measures include: low-flow taps and showers, appliances, toilets and urinals, rain-water harvesting and grey water recycling.</li> <li>• Minimise possible contamination to water during construction and with a focus on: <ul style="list-style-type: none"> <li>○ prevention of emissions of harmful substances such as diesel and oil, paint, solvents, cleaners and other harmful chemicals;</li> <li>○ prevention of construction debris entering water courses.</li> </ul> </li> </ul>            |
| (4) Circular economy                     | <ul style="list-style-type: none"> <li>• Maximise opportunities to re-use materials and minimise waste during construction and demolition.</li> <li>• Increase life span of building, adopting design solution for making easy the adaptation of the building.</li> <li>• Maximise the future potential of building material reuse and recycling, adopting design solutions for ease of deconstruction<sup>44</sup>.</li> </ul>                                                                                                                                                                                                                                          |
| (5) Pollution                            | <ul style="list-style-type: none"> <li>• Select location of building taking into account the demand of transport, e.g. by siting the building close to public transport system. For commercial buildings, implement of staff travel plans and infrastructure to support electric vehicles and cycling.</li> <li>• Minimise emissions to air, water and soil from the construction site, e.g. address transport emissions during the construction phase.</li> <li>• Select fit-out and finishes to reduce indoor pollution (VOC, radon, etc.);</li> <li>• Design ventilation in order to ensure healthy air and minimise the intake of external air pollution.</li> </ul> |
| (6) Ecosystems                           | <p>Minimise the impacts on biodiversity by:</p> <ul style="list-style-type: none"> <li>• Ensuring that new buildings are not constructed on protected land.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>44</sup> Verification of design solutions shall be with reference to the Checklists provided in the European Commission's Level(s) framework. The checklists can be found in table 2.2.2/2.2.5 of the [Level 1 common performance assessment guidance](#). Other semi-quantitative indices, scoring or calculator tools may also be used provided that they address as a minimum the majority of the design aspects covered by Level(s).

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | <ul style="list-style-type: none"> <li>• Avoid building on arable or greenfield land of recognised high biodiversity or agricultural value.</li> <li>• Avoid urban sprawl by, e.g. preferring brownfield over greenfield sites.</li> <li>• Where significant quantities of timber are used for construction purposes, this should be certified according to FSC/PECF standards or equivalent.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Rationale</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Additional notes on conclusions reached | <p>The mitigation principles reflect the fundamental Taxonomy aim of identifying economic activities which contribute substantially to climate change mitigation. The TEG is proposing thresholds which will encourage rapid transition of existing building stock while promoting high performance new buildings.</p> <p>Almost<sup>45</sup> all new buildings in the EU as of 1 January 2021 will need to be NZEB as defined in the Energy Performance of Buildings Directive and Member State implementation standards. There are considerable advantages to aligning with an established legislative standard which is flexible, comprehensive and dynamic, taking into account building category, typology, physical boundary, type and period of balance, included energy uses, renewable energy sources (RES), cost optimality, etc. Regional variation however is also a challenge as it may mean that some national NZEB definitions are not sufficiently ambitious to include in the Taxonomy. The TEG notes that setting additional thresholds could address this issue and proposes to investigate this further.</p> <p>The Energy Performance Certificates (EPCs) are widely used in Europe to certify the level of energy performance of a building. Like with NZEB, the national definitions and classifications used for EPCs vary across EU Member States. The TEG also proposes to undertake additional research on Energy Performance Certificates (EPCs) to consider their use as a proxy when evaluating taxonomy compliance.</p> <p>For very high efficiency new buildings, embodied carbon can be significant. For this reason, a lifecycle metric would be preferable. International standard methodologies do exist for lifecycle emissions measurement, but data is limited and agreed thresholds are not available. For this reason, the Sustainable Finance Platform should work towards lifecycle thresholds in future iterations of the Taxonomy. Building bill of materials (kg) was considered as a proxy, but it was felt that this does not strongly enough correlate with embodied carbon or reflect possible choices for less carbon-intensive building materials.</p> <p>In-use monitoring is required as the energy and carbon performance of buildings often varies substantially between design and use phase<sup>46</sup>.</p> |

<sup>45</sup> Some limited exceptions are permitted by the legislation.

<sup>46</sup> For example, see analysis by the Better Buildings Partnership: <http://www.betterbuildingspartnership.co.uk/our-priorities/measuring-reporting>

### 13.1.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.
6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.



## 13.2 Renovation of existing buildings (residential and non-residential)

| Sector classification and activity |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sector                             | F – Construction.<br>Note that renovation of buildings relevant to any economic activity should be aligned with these thresholds.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Level                              | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Code                               | 41; 43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description                        | Renovation of existing buildings (residential and non-residential). Note this relates to activities in two NACE codes: construction of buildings (residential and non-residential) and Specialised Construction Activities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Mitigation criteria                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Principle                          | <p>Renovation of existing buildings can make a substantial contribution to climate mitigation by increasing energy and carbon efficiency.</p> <p>Renovation of existing buildings should be eligible in two cases;</p> <ul style="list-style-type: none"> <li>• Buildings with high carbon or energy performance which can be renovated to achieve the highest performance standards.</li> <li>• Buildings with lower carbon or energy performance which can make substantial improvements.</li> </ul> <p>In-use monitoring of actual performance is required to demonstrate that the building performs as designed. This should be measured and adjusted according to the national calculation method or the ISO 52000 standard series (e.g. normalised occupancy patterns and normalised average climate conditions over a time-span of at least 2-3 years). Lock-in should be avoided<sup>47</sup>.</p> <p>The TEG has adopted a precautionary principle to exclude buildings dedicated to fossil fuel projects. According to the IEA's World Energy Outlook, no CO<sub>2</sub>-emitting energy infrastructure is to be developed in the coming years if the Paris Agreement target is to be met, as emissions from existing infrastructure will already cover 95% of the global carbon budget (ref. IEA World Energy Outlook 2018; see also <a href="#">here</a>).</p> |
| Metric                             | <p>The TEG will investigate using in-use carbon performance (CO<sub>2</sub>e/m<sup>2</sup>/yr) or in-use energy performance (kWh/m<sup>2</sup>/yr), calculated according to the national calculation method or the ISO 52000 standard series.</p> <p>Alignment with Nearly-Zero Energy Buildings (NZEB) standards will be used as a proxy in cases where the above approach is not viable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Threshold                          | <p>The renovation should target either:</p> <ul style="list-style-type: none"> <li>- Absolute performance: As with construction of new buildings, the TEG will investigate the feasibility of setting a country-specific threshold for renovation of buildings which already demonstrate high carbon or energy</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

<sup>47</sup> Defined as: decisions which result in loss of economically viable choices for reducing energy demand in the future. Source: Global Buildings Performance Network.

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | <p>efficiency. Renovation to NZEB standards is accepted in the absence of this standard.</p> <ul style="list-style-type: none"> <li>- Relative performance: A percentage reduction in energy consumption or carbon emissions performance of 50% should be achieved.</li> </ul> <p>A thorough building survey and the setup of an accurate energy model are required, to ensure that the extent of the improvement works required to improve the building's performance can be accurately determined based on the thermal performance of the existing building fabric.</p>                                                                                     |
| <b>Do no significant harm assessment</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| (2) Adaptation                           | <ul style="list-style-type: none"> <li>• Thermal resilience of the interior environment of the building and exterior environment around the building. This can be achieved using e.g. green infrastructures of different types</li> <li>• Resilience to increased risk of extreme weather events. This could include floods, rain, wind and snowfall as well as temperature stress.</li> <li>• Minimisation of flood risks and improved property protection (including natural water retention and drainage areas)</li> </ul>                                                                                                                                 |
| (3) Water                                | <ul style="list-style-type: none"> <li>• In water scarce areas (see EEA water scarcity mapping) water consumption during the use phase is minimised. Examples of measures include: low-flow taps and showers, appliances, toilets and urinals, rain-water harvesting and grey water recycling.</li> <li>• Minimise possible contamination to water during construction and with a focus on: <ul style="list-style-type: none"> <li>○ prevention of emissions of harmful substances such as diesel and oil, paint, solvents, cleaners and other harmful chemicals;</li> <li>○ prevention of construction debris entering water courses.</li> </ul> </li> </ul> |
| (4) Circular economy                     | <ul style="list-style-type: none"> <li>• Maximise opportunities to re-use materials and minimise waste during construction and demolition.</li> <li>• Increase life span of building, adopting design solution for making easy the adaptation of the building.</li> <li>• Maximise the future potential of building material reuse and recycling, adopting design solutions for ease of deconstruction<sup>48</sup>.</li> </ul>                                                                                                                                                                                                                               |
| (5) Pollution                            | <ul style="list-style-type: none"> <li>• For commercial buildings, implement of staff travel plans and infrastructure to support electric vehicles and cycling.</li> <li>• Minimise emissions to air, water and soil from the construction site, e.g. address transport emissions during the construction phase.</li> <li>• Select fit-out and finishes to reduce indoor pollution (VOC, radon, etc.);</li> <li>• Design ventilation in order to ensure healthy air and minimise the intake of external air pollution.</li> </ul>                                                                                                                             |

<sup>48</sup> Verification of design solutions shall be with reference to the Checklists provided in the European Commission's Level(s) framework. The checklists can be found in table 2.2.2/2.2.5 of the [Level 1 common performance assessment guidance](#). Other semi-quantitative indices, scoring or calculator tools may also be used provided that they address as a minimum the majority of the design aspects covered by Level(s).

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (6) Ecosystems                         | Where significant quantities of timber are used for construction purposes, this should be certified according to FSC/PECF standards or equivalent.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Rationale</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Additional notes on conclusion reached | <p>The mitigation principles reflect the fundamental Taxonomy aim of identifying economic activities that contribute substantially to climate change mitigation. The TEG is proposing thresholds that will encourage rapid transition of existing building stock while promoting high performance new buildings.</p> <p>There should be renovation pathways towards deep renovation which avoid lock-in effects in the future. Many of the buildings being renovated in the coming years will not be renovated again before 2050.</p> <p>The TEG proposes two thresholds for buildings.</p> <ul style="list-style-type: none"> <li>• An absolute threshold for buildings which can be renovated to high standards</li> <li>• A percentage reduction in carbon emissions or energy consumption to allow renovation of inefficient building stock to be eligible under the Taxonomy.</li> </ul> <p>The threshold of 50% is based on the experiences of the Climate Bonds Initiative in the Australian and US markets and feasible improvements based on local buildings performance standards.</p> <p>The Energy Performance Certificates (EPCs) are widely used in Europe to certify the level of energy performance of a building. The national definitions and classifications used for EPCs vary across EU Member States. The TEG is undertaking research to assess Energy Performance Certificates (EPC) and to consider their use as a proxy when evaluating taxonomy compliance.</p> <p>In the vast majority of cases, embedded emissions from renovation materials will not be material in the context of overall emissions savings from renovation, so a lifecycle metric is not proposed here.</p> <p>In-use monitoring is required as the energy and carbon performance of buildings often varies substantially between design and use phase<sup>49</sup>.</p> <p><b>Management of a portfolio of buildings</b></p> <p>The majority of building stock improvements are made across a portfolio of buildings. Where a portfolio of buildings is considered, the approach taken at a portfolio level should be coherent with the standards for construction and renovation of individual buildings. The group proposes to develop user guidance to enable end-users of the taxonomy to interpret the standards proposed for individual buildings.</p> |

<sup>49</sup> For example, see analysis by the Better Buildings Partnership: <http://www.betterbuildingspartnership.co.uk/our-priorities/measuring-reporting>

### 13.2.1 Feedback questions

1. Do you agree with the proposed principle for determining a substantial contribution to climate mitigation for this activity? [Yes/No]. If not, what alternatives do you propose and why?
2. Do you agree with the proposed metrics for assessing the extent of the mitigation contribution? [Yes/No]. If not, what alternatives do you propose and why?
3. Where thresholds have been considered, please indicate whether you agree with the proposed thresholds for the activity to qualify for inclusion in the Taxonomy. [Yes/No]. Please explain your answer. If relevant, you may propose alternative thresholds that could be considered.
4. Do you agree with the 'do no significant harm' criteria identified for these activities? [Yes/No]. If not, what alternative approach or requirements do you propose (e.g. referring to existing market initiatives and best practices) and why?
5. Is there any key area where significant harm needs to be avoided and which is not mentioned already? [Yes/No]. Please explain why and what requirements could be used to avoid such harm.
6. Would the proposed criteria give rise to adverse consequences, e.g. risk of stranded assets or the risk of delivering inconsistent incentives? [Yes/No]. Please explain.
7. Can the proposed criteria be used for activities outside the EU? [Yes/No]. If not, please propose alternative wording that could be considered.