

# Electrical Grids and Storage Criteria

## Frequently Asked Questions

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## Questions on Scope

### What assets and activities are within scope of these Criteria?

#### **Electrical grids**

All assets and activities relating to electrical grids are within scope. This includes transformers, transmission/distribution lines, interconnectors, communication and measurement infrastructure, and technology that increase renewable energy use. That is to say that they can potentially be certified under these Criteria. Note, this does not mean everything is automatically eligible. Most assets and activities will be subject to mitigation requirements found in the [Criteria document](#). However, some assets and activities are automatically eligible from a mitigation standpoint. The Criteria document states which types of assets and activities are automatically eligible.

#### **Electricity storage**

Storage assets and activities are slightly more limited in scope. Anything where it is electricity in, electricity out, is within scope. This includes battery and compressed air storage and excludes hydropower storage and hydrogen storage, for example.

All assets and activities must meet the Adaptation & Resilience component of the Criteria.

### My bond is financing exclusively transmission lines to an electricity plant below the threshold of 100g CO<sub>2</sub>/kWh, but it is not financing the plant itself. Does the plant need to meet the relevant Climate Bonds Criteria for the transmission infrastructure to be eligible?

No – so long as the issuer can demonstrate that the plants emissions are below the low carbon power threshold, any direct connections to that plant are, by extension, eligible. However, if a plant does meet the requirements of the relevant Climate Bonds sector criteria (for example, the Solar Criteria), any direct connections to that plant is also eligible.

### Are the requirements for electricity storage the same as for electrical grids?

With the exception of the list of automatically eligible assets and activities, which is more specific, grids and storage must effectively meet the same criteria.

## Questions on Market and Finance

### Do you see these criteria being used by the bond market?

Grid and Storage investment will be crucial to meeting decarbonisation targets in line with limiting global warming to no more than 1.5-degrees Celsius. This is due to the enabling nature of the infrastructure. As such, CBI will be part of a global push to increase investment into electrical grids and storage, and we expect green bonds to be a large part of this. There are already considerable and tangible prospects of certification. As of November 2021, there is already the first certification under these Criteria.

Remember, the CBI Standard and Certification scheme is an additional layer of information which gives investors an indication of whether this bond's Use of Proceeds are aligned with the Paris Agreement. The inclusive nature of the Criteria means there are lots of opportunities for certification.

### [Does CBI view securitisation as green if the backed assets are green and/or the proceeds from the securitisation are used for green purposes?](#)

It is our view that the actual use of proceeds should be green, not necessarily the securitised assets. In other words, it is the projects and assets which the proceeds are allocated to that have to pass the requirements of the Standard. While we encourage the use of green receivables for securitised bonds, it is not a prerequisite.

### [Can covered bonds be certified?](#)

Yes, covered bonds can be certified. Provided that the assets to which the proceeds will be used are compliant with their respective thresholds. However, we do not require that the pool of assets used as collateral in the covered bond are compliant with the respective threshold.

### [How do the Electrical Grids and Storage Criteria correspond to the EU Taxonomy on Sustainable Finance?](#)

The Grids and Storage Criteria are aligned with the requirements for the corresponding economic activities in the EU Taxonomy<sup>1</sup>. This means that if your bond is certified under these Criteria, the investment would be defined as green under the EU Taxonomy, whether Transmission & Distribution or Storage of Electricity.

## Questions on Criteria requirements

### [My bond is not financing infrastructure that directly supports or links to a single power generation plant. How can I get certified?](#)

Your bond may be financing assets and activities that do not directly support a single power generation plant. For example, the project may be general transmission and distribution infrastructure across a whole grid system, or distributed storage assets. There are two other ways these assets and activities can meet the criteria. Both take a system approach to eligibility. If the grid system in which the assets and activities will be located is on a pathway to decarbonisation, *any* investment on that system is eligible<sup>2</sup>. There are two ways to determine whether the system is on such a pathway:

1. The system grid emissions factor is below 100g CO<sub>2</sub> eq/kWh on a rolling 5-year average.
2. 67% of added electricity generation capacity (in MW or GW), over a 5-year rolling average, is comprised of energy generation sources below 100g CO<sub>2</sub> eq/kWh.

More detail can be found in the methodological notes within the Criteria document.

Equally, the assets may be found in the list of automatically eligible assets and activities. If the entire use of proceeds will go to one or more of these assets in the list, the bond is eligible for certification.

### [How do I determine whether my system grid factor is below 100g CO<sub>2</sub> eq/kWh?](#)

There are a number of reputable sources which provide national grid emission factors. One is the International Energy Agency (IEA), though this data is proprietary. The International Financial Institution methodology also provides grid factors for most countries.

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<sup>1</sup> [https://eur-lex.europa.eu/resource.html?uri=cellar:d84ec73c-c773-11eb-a925-01aa75ed71a1.0021.02/DOC\\_2&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:d84ec73c-c773-11eb-a925-01aa75ed71a1.0021.02/DOC_2&format=PDF)

<sup>2</sup> Note: direct connections or supporting infrastructure to power generation plants above the energy generation threshold (100g CO<sub>2</sub> eq/kWh) are never eligible

However, some subsystems will not be found within a single national interconnected grid. For example, Japan has several grid systems that are not interconnected. The national grid factor would thus not reflect each individual subsystem. In this case, the issuer would have to retrieve reputable data for that individual subsystem. This might entail calculating the grid factor using the total emissions from electricity generation, against the amount of electricity generated.

Full details are in the methodological notes in the Criteria document.

#### [How do I determine whether at least 67% of added capacity in my system is below 100g CO<sub>2</sub> eq/kWh?](#)

See the methodological notes in the Criteria document for full details.

Again, the issuer should use reputable data sources to carry out this analysis. Ideally, this would be directly sourced from the network or system operator. Climate Bonds acknowledges that there are limitations in data availability in this regard. Data availability for electricity generation capacity is far easier to retrieve for a single, national interconnected grid system such as India. If the issuer is financing an investment into a subsystem at a subnational level, they may struggle to find the level of granularity needed in data. Currently, there are few ways round this limitation other than directly contacting the system or network operator for the data. Future iterations of the Criteria will aim to solve this issue.

#### [My assets are on a grid system that is not interconnected as part of one national system. How do I determine the system's eligibility?](#)

This issue is discussed in the previous two FAQs above.

#### [My investment will span several control areas that are interconnected. Can I calculate the eligibility of these multiple subsystems?](#)

To determine compliance, it is possible to consider a system covering multiple control areas which are interconnected and with significant energy exchanges between them, in which case the weighted average emissions factor across all included control areas is used, and individual subordinated transmission or distribution systems within that system is not required to demonstrate compliance separately.

#### [What data sources are accepted when evaluating a system's eligibility?](#)

Data must be from reputable sources which are ideally directly sourced. This includes (in an approximate order of preference):

##### **For grid emission factors:**

- The system or network operator.
- National electricity authorities or organisations. For example, the equivalent to the Central Electricity Authority in India.
- International Energy Agency (note this is not openly available data).
- International Finance Institution methodology on grid factors.

##### **For electricity generation capacity:**

- The system or network operator.
- National electricity authorities or organisations. For example, the equivalent to the Central Electricity Authority in India.
- International Energy Agency (note this is not openly available data).
- U.S. Energy Information Administration: provides national data on electricity generation capacity.

### [My bond will finance the installation and operation of smart meter infrastructure? What criteria must the assets meet?](#)

The list of automatically eligible assets and activities in the Criteria document includes ‘Manufacturing, installation, upgrading, leasing and/or operation of equipment to carry information to users for remotely acting on consumption such as, but not limited to, advanced (also known as smart) metering infrastructure, including customer data hubs.’

This infrastructure must meet, or correspond to, the requirements in Article 20 of Directive (EU) 2019/944. Moreover, the key criteria for advanced metering infrastructure is that of two-way communication between the consumer and the meter operator or utility. Full details can be found in methodological note 6 of the Criteria document.

### [Can I demonstrate a system’s eligibility through percentage of electricity generation derived from renewable energy?](#)

No. To demonstrate system eligibility one of the two criteria listed must be met – either:

1. Grid factor is at or below 100g CO<sub>2</sub>/kWh on average over the past 5 years; OR:
2. 67% of added electricity generation capacity over the past 5 years is 'low carbon' or, in other words, at or below 100g CO<sub>2</sub>/kWh or lower. The Criteria document lists which energy technologies fall below this threshold.

### [How should I measure the 100g CO<sub>2</sub>/kWh threshold?](#)

For connections to or from single generation plants, or a small group of plants, the carbon intensity of the plant(s) should be measure on a life-cycle basis. For entire systems, this then depends on the criteria being met. If grid factor is used (number 1 under the previous question), it is the total of electricity emissions divided by the total electricity generation for each year. If added capacity is used (number 2 under the previous question), the issuer should check which energy technology falls below the 100g CO<sub>2</sub>/kWh threshold.

## Questions on the Thresholds

### [How was the 100g CO<sub>2</sub>eq/kWh threshold produced? What does it signify?](#)

This is a scientifically grounded threshold that reflects the maximum allowable CO<sub>2</sub> emissions from power generation today that would keep emissions within the carbon budget required for limiting global warming to no more than 1.5-degrees Celsius. This is based against modelled future changes in electricity production. This number reflects calculations in an EU context, but holds true as a global threshold. The CBI Hydropower Criteria<sup>3</sup> demonstrate how separate calculations of a global, 1.5-degree-aligned threshold also comes out as 100g CO<sub>2</sub>eq/kWh.

The Criteria document references what energy sources are currently considered to fall under this threshold. Ideally issuers will determine compliance with the threshold on a Product Carbon Footprint (PCF) basis. It is accepted that not all issuers will be able to calculate the PCF of all electricity generated on a system, particularly on large, interconnected systems. In lieu of this more complete picture, issuers can instead use approximate

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<sup>3</sup> <https://www.climatebonds.net/standard/hydropower>

assumptions of lifecycle CO<sub>2</sub> emissions by energy source. According to the IPCC<sup>4,5</sup>, certain energy generation technologies generally fall below the threshold of 100gCO<sub>2</sub>eq/kWh:

- Solar
- Wind
- Geothermal
- Hydropower
- Nuclear

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<sup>4</sup> "IPCC Working Group III – Mitigation of Climate Change, Annex III: Technology - specific cost and performance parameters - Table A.III.2 (Emissions of selected electricity supply technologies (gCO<sub>2</sub>eq/kWh))" (PDF). *IPCC. 2014. p. 1335.*

<sup>5</sup> "IPCC Working Group III – Mitigation of Climate Change, Annex II Metrics and Methodology - A.II.9.3 (Lifecycle greenhouse gas emissions)" (PDF). pp. 1306–1308.