

Buildings Criteria

Frequently Asked Questions

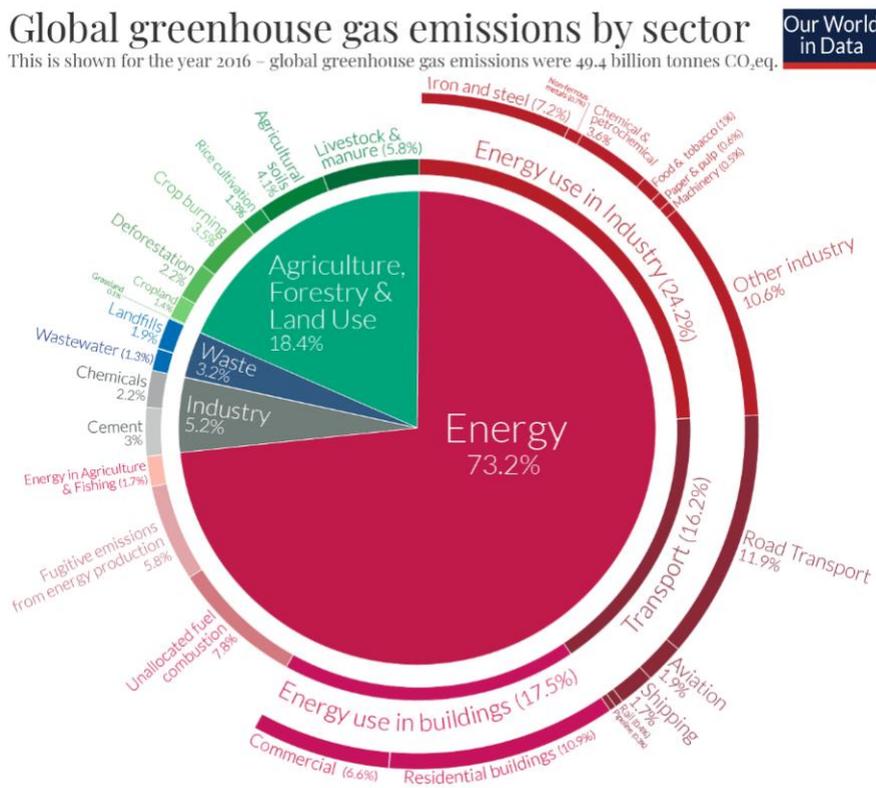


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Why decarbonising buildings matter?

Climate Bonds Initiative have developed definitions for what constitutes a green activity or investment to facilitate the issuer’s issuance and market screening methodologies that monitor and record issuances across the full spectrum of labels (the GSS+). This in turn indicates the pathway to raising capital to support decarbonisation in various sectors and hard to abate industries. Energy use according to Ritchie (2020) accounts for more than 70% Greenhouse Gas Emissions with Industry at 24.2%, Transport 16.2% and Buildings 17.5%.ⁱ

Figure 1. Global greenhouse gas emissions (source: [https://ourworldindata.org/emissions-by-sector#:~:text=The%20world%20emits%20around%2050,equivalents%20\(CO2eq\)%5D](https://ourworldindata.org/emissions-by-sector#:~:text=The%20world%20emits%20around%2050,equivalents%20(CO2eq)%5D))



OurWorldinData.org – Research and data to make progress against the world’s largest problems. Source: Climate Watch, the World Resources Institute (2020). Licensed under CC-BY by the author Hannah Ritchie (2020).

Specifically looking at the buildings space, we see the following further breakdown:

- **Residential buildings (10.9% of global emissions):** energy-related emissions from the generation of electricity for lighting, appliances, cooking etc. and heating at home.
- **Commercial buildings (6.6% of global emissions):** energy-related emissions from the generation of electricity for lighting, appliances, etc. and heating in commercial buildings such as offices, restaurants, and shops.

Whilst change can be delivered in several ways, a robust framework needs principles that signal the credibility of transition. Our, Financing Credible Transitions paper, launched in 2020 with Credit Suisse, is the very first body of work that establishes five Core Principles for Transition. These five principles ensure that all activities are aligned with zero carbon by 2050 and nearly halving emissions by 2030 (and a 1.5 degree target), science based (and not entity, or country-specific) offsets aren’t considered, technological solutions and viability trumps business as usual and the provision of actions and not pledges. The Climate Bonds Building Criteria set out which building assets are eligible under the Climate Bonds Standard and in line with these principals and hallmarks.

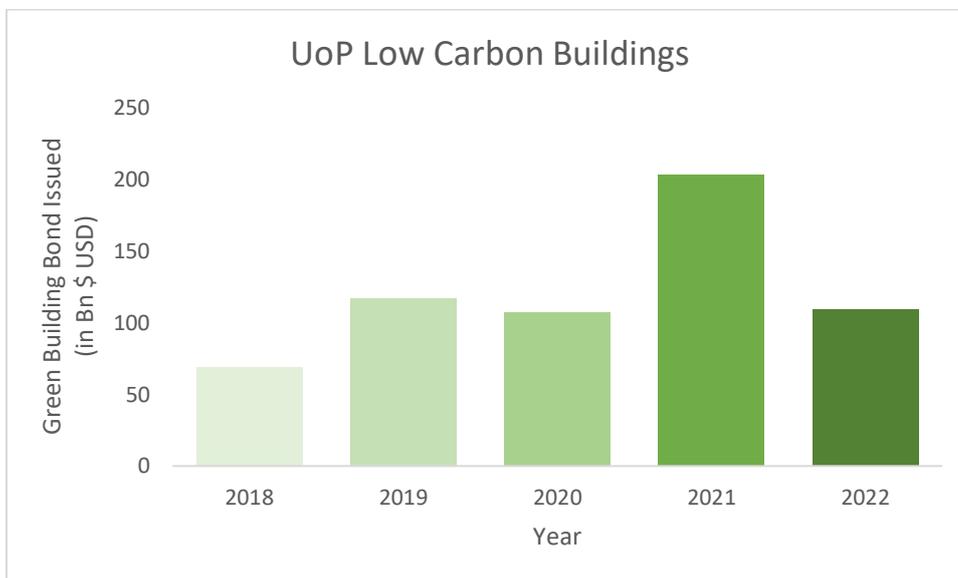
Why adapt the Climate Bonds Standard to access funding to achieve decarbonisation goal?

The Climate Bonds Standard is an authoritative climate change standard that eases decision-making and focuses attention on credible climate change solutions. The scheme has been based on the eligibility criteria for Use of Proceeds (UoP) across the green sectors such as buildings, transport, water infrastructure, waste management, agriculture, and renewable energy and more recently it is expanding the sectorial criteria to several high-emitting sectors such as hydrogen, cement, chemicals and steel.

The current version of the Standard (v3.0) sets out the requirements to be met for Issuers seeking certification of a bond, loan, or other debt instruments. The requirements are separated into pre-issuance and post-issuance requirements.

- The Pre-Issuance Requirements need to be met by Issuers seeking Certification prior to Issuance.
- Post-Issuance Requirements need to be met by Issuers seeking continued Certification following issuance of the bond, loan, or other debt instrument.

The graph below highlights the total Use of proceeds (UoP) bonds issued against low carbon buildings over the course of the last five years. The Buildings sector remains one of the three largest UoP categories, collectively contributing 81% to the total volume of issuance relative to the energy and transport sectorsⁱⁱ.



The upcoming revision of the Standard (v4.0) has been expanded to accommodate the critical transition space and to reflect the movement and changes in the market. One of the fundamental changes from standard v3.0 has been the expansion of certification to include Entity certification and the inclusion of a ruleset to ensure credible issuance of Sustainability Linked Bonds (SLBs) as part of the applicable mechanisms for non-financial Entities. The eligibility for Entities certification and issuance against SLBs requires the assessment of a company-wide Transition Plan and its Key Performance Indicators (KPIs), along with suitable safeguards.

How financing buildings improve operating performance?

The Climate Bonds low carbon building certification criteria were first developed in 2012 and was aimed towards reducing the *operating emissions* of existing buildings. The scope of the building criteria includes criteria that applies to assets and projects that relates to commercial buildings, residential and the built environment, which are projects that are not specifically buildings/related but are part of the wider built environment.

The buildings sector represents one of the largest contributors to climate change, both on a global and local level, but there is a vast potential for cost-effective mitigation through science based proven demand reduction and energy efficiency technologies. The foundational requirements considered when developing these criteria aimed to ensure low transaction costs to meeting the criteria and the criteria should be aimed at existing buildings. The criteria focused on operational performance and the major source emissions (in-use emissions, *ala* energy efficiency). Only this can provide the required information on speed of decarbonisation required (1.5 degree aligned pathway to net zero). This approach ensures that global building stock remains on track, as a sector and as regulators, owners, or portfolio managers.

Existing buildings accounts for up to 17% of the world's emissions, and in the absence of a demand side energy transition in the existing buildings and new buildings the global energy consumption across the sector is likely to grow 65% by 2050ⁱⁱⁱ. The Paris Agreement (2016) has highlighted the need to limit the emissions to ensure the temperatures remain within 1.5 degrees of pre-industrial averages. The currently under development new building criteria are fully aligned with, or better than these 1.5 degree aspirations.

Our Criteria ensures to offer a robust and transparent method for investors and other key market players to access whether bonds issued to fund commercial, residential buildings, public spaces and building components deliver outcomes compatible with global change targets. That is, the assets linked to those bonds:

- Have a low GHG footprint and/or significantly reduce emissions in line with the rapid decarbonisation required to meet the Paris goals.
- Promote adaptation to climate change and facilitate increased climate resilience.
- Meet minimum disclosure requirements to raise level of transparency in reporting around green assets and investments.

What are the zero carbon Building Criteria?

The criteria have been designed with an ambition of a zero-carbon future in 2050 and offers a pathway to reach that outcome in a manner that accommodates climatic and regional variations. This is a notable deviation from other Climate Bonds criteria, and results in a city/ region specific methodology. This approach requires using the best available data to establish appropriate emissions performance thresholds. In cases where this data is not available an alternative pathway is applied using suitable proxies developed from the building certification applicable in that region/country. Following this, all new builds constructed after December 2021 are additionally required to deliver net-zero ready. The Net Zero ready requirements additionally include no use of fossil fuels for heating, hot water, cooking or on-site electricity generation, meaning the new builds need to be delivered without inbuilt redundancy of systems and liability for future investment to operate net-zero emission with fully decarbonised energy supply infrastructure.

Additional considerations include the electrical system is required to have “connection ready” infrastructure for electric mobility (e.g., charging points etc.) to ensure that built assets are both operationally net zero and able to support the community within which it resides.

The Low Carbon Buildings Criteria sets out what property assets are eligible for certification under the Climate Bonds Standard. It covers three different types of property assets: residential, commercial, and urban open spaces.

space assets such as parks and supporting infrastructure such as street lighting, etc. For a project to satisfy the Low Carbon Building Criteria it must provide guidance addressing three core aspects: Mitigation, Adaptation & Resilience and Disclosure.

The criteria developed under the Climate Bonds Standard address GHG mitigation components, ensuring a 1.5 degree, science based decarbonisation pathway to net zero by 2050. The global building sector is understandably at different stages of development and adapting to this low carbon future, considering both new build and retrofit programmes, resulting in vast variation in each location. These variations present in differing approaches and requirements baked into Performance Ratings, Tracking & Reporting Policies. These regional and local differences are collectively accommodated in the Building criteria.

The criteria are a product of extensive consultation, using Technical Working Groups (TWGs), Industry Working Groups (IWGs) and public stakeholder engagement and commentary. The TWGs comprise scientific, academic and research partners, civil society organizations and specialist consultancies. The IWGs are represented by a broad, global range of industry experts, partners and operators including potential bond issuers and investors.

This has required necessitating that the eligibility criteria provide for two routes to certification:

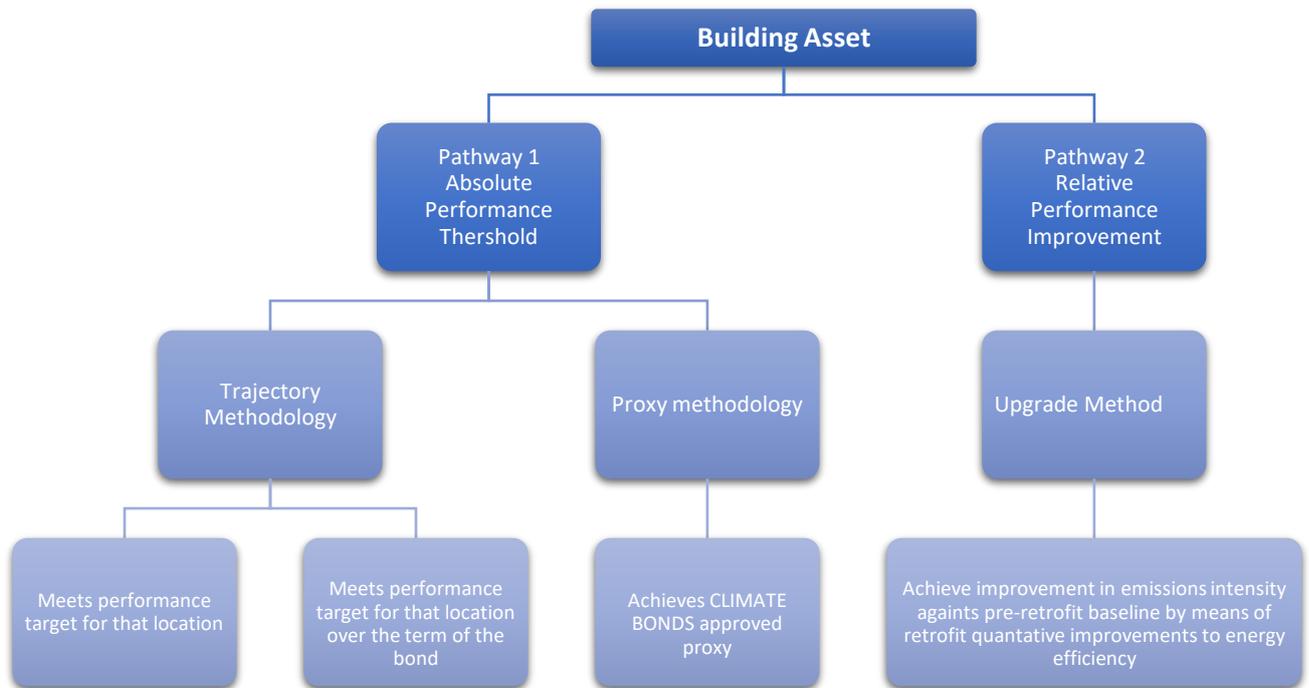
- **Pathway 1** - Absolute Performance Improvement Pathway; or
- **Pathway 2** - Relative Performance Improvement Pathway.

Bond issuers have two options to establish compliance within the absolute performance threshold, one being a Quantitative Threshold where the emissions intensity of the building achieves the appropriate performance target for buildings in that location and another one is Qualitative proxy where rating of the building achieves the CLIMATE BONDS approved proxy. Although the Quantitative Threshold is naturally simplistic it remains out of reach for some cities including some building types where the data does not exist in any reliable form. In such markets existing instruments such as building standards, codes, and rating schemes can

be leveraged as proxies for building in that market. In markets where both options are available, Quantitative Threshold approach is preferred while the latter is meant to serve as an interim solution until data becomes available. The diagram below illustrates the eligibility pathways.

Under the *trajectory* and *proxy method* the Buildings constructed after December 2021 should meet the net-zero ready requirements and all upgrade works cannot include fossil fuel equipment.

Diagram1. Certification pathways for bond issuers



Under **Pathway 2**, quantitative improvements to energy efficiency are required. In other words, a retrofit is required to improve its emissions intensity against pre-retrofit baseline by a prescribed amount and rate over time. This will allow the certification of projects that achieve improvement in emissions intensity through the application of sufficiently ambitious energy efficiency measures and fuel switch technologies (e.g., lights, heat pumps, renewable micro generation, etc).

A minimum improvement in emissions intensity of 50% is required for bond terms of 30 years and 30% for bond terms of 5 years. A linear extrapolation of targets is used to achieve transition between 5 years (30% efficiency) and 30 years (50% efficiency) issuances.

What portfolio of projects can be Certified?

Many applications from issuers seeking certification of a portfolio of buildings covering different building types in different cities are noted. In such cases, the performance targets required a weighted average across the different building types included in the portfolio. Care is required to ensure buildings included in a portfolio are covered by existing criteria.

To be certified against *Condition 3* each building in the issuer's portfolio must satisfy the conditions of a CLIMATE BONDS-approved proxy. This is known as the *Simple Aggregation Method* where each building included in the pool must be compliant on its own right.

For portfolios to be certified under *Pathway 2*, the issuers can simply aggregate them into one portfolio and this aggregated portfolio must satisfy the required minimum improvement in emissions rather than each building individually complies.

What are the Assets and Projects in Scope of the Criteria?

Eligibility of assets and projects:

The assets and UoPs are eligible for inclusion in a certified Climate Bond if they meet the mandatory mitigation requirements as explained above.

The table below presents indicative building assets and associated use of proceeds that might be included in a Certified Climate Bond, which is subjected to meeting the specific criteria described.

The signposts provided in the table as follows:

	Indicates UoP, when fully described and documented automatically meet the Criteria requirements with no further disclosure or documentation required
	Indicates that the eligibility of these UoP is conditional on meeting specific requirements
	Indicates that the UoP are not eligible for certification under any circumstances.

Eligibility of assets and projects

Eligible Asset Types	Eligible Use of Proceeds	Mitigation
Residential Buildings - a building or portfolio of buildings where more than half of the floor area is used for dwelling purposes, including but not limited to the following categories of residential buildings: <ul style="list-style-type: none"> • Single family • Multi-family • Rentals 	Origination or refinancing of loans or mortgages, including portfolios	
	Capital costs of performance upgrades such as building envelope retrofits, lighting upgrades, appliance and equipment upgrades, smart metering, etc	
	Operating expense of ongoing maintenance, where increased energy efficiency and decreased carbon emissions are materially significant	
Commercial Buildings - a building or portfolio of buildings where more than half of the floor areas used for commercial purposes, incising but not limited to the following subcategory: <ul style="list-style-type: none"> • Offices • Schools & campuses • Shopping centres and retail 	origination or refinancing of loans or mortgages, including portfolios	
	Capital costs of performance upgrades such as building envelope retrofits, lighting upgrades, appliance and equipment upgrades, smart metering, etc	
	Operating expense of ongoing maintenance, where increased energy efficiency and decreased carbon emissions are materially significant	
Industrial Buildings - a building or facility dedicated to the manufacturing, altering, repairing, cleaning, washing, breaking-up, adapting or processing any article Manufacturing facility Agriculture/livestock facilities Energy generation facilities	origination or refinancing of loans or mortgages, including portfolios	
	Capital costs of performance upgrades such as building envelope retrofits, lighting upgrades, appliance and equipment upgrades, smart metering, etc	
	Operating expense of ongoing maintenance, where increased energy efficiency and decreased carbon emissions are materially significant	

Although the table categorises these assets and UoP across several sectors, it is stressed that bond issuances are not restricted from

addressing multiple food, fibre and fuel commodities and mixed systems. Bonds financing multiple projects may also have to prove compliance with other Sectors to be eligible for a Climate Bond Certification. For example, if a bond includes both buildings and solar projects it would be mandatory for the issuer to prove compliance with both the Building Criteria and Solar Criteria.

The red-light items are excluded either because they are incompatible with a low carbon climate-resilient economy or because determining their eligibility is outside the mandate of the Building Criteria.

How updated are the Climate Bonds low carbon buildings criteria ?

Various unintended challenges have occurred in the building certification space. As the importance of, and our understanding of, carbon emissions from the built environment has evolved, a significant number of sustainability schemes/certifications have been developed around the world. A further complexity, involves buildings previously qualifying under Design Stage proxies, now failing to meet the Climate Bonds long-term metrics.

Subsequently, Climate Bonds are introducing an updated set of criteria for new buildings. The current Climate Bonds criteria focuses on the *in-use* phase of a building's lifestyle, but a significant source of emission from building, arise from the impacts of material procurement and construction materials used in buildings.

The contribution of embodied carbon, occurring because of the construction of new buildings or renovation of existing buildings has become increasingly more material in the overall carbon performance of a building, as the operational emissions falls. It is important to note the various technology efficiency improvements and maturing knowledge, in delivering net zero/ready buildings. It's thus essential that no New Buildings lock in fossil fuel usage over its operational lifespan.

Key components considered in achieving the above include:

- i. Eliminating the risk of *fossil fuel lock-ins* and deliver 'net zero' or 'net zero ready' buildings.
- ii. The *role of hydrogen* in buildings (electricity is still a more cost-effective solution for buildings). Considerations include the IPCC's position on hydrogen "*The ease of switching to electricity means that hydrogen is not expected to be a dominant pathway for buildings. [...] Using electricity directly for heating, cooling and other building energy demand is more efficient than using hydrogen as a fuel*". Hydrogen's potential is well recognised, but it still has faces technical challenges. It's also worth noting that other industries may pose a more urgent demand on global hydrogen supply lines.
- iii. Viewed from the building ecosystem and community lens, electric vehicle (EV) and *EV-ready charging infrastructure* as a crucial decarbonisation transition technology pathway. Such EV charging infrastructure of new buildings, supports the greater community's ability to transition to low carbon mobility solutions (*viz.* supporting charging-ready building infrastructure, enables the community at large to shift away from high carbon mobility solutions).
- iv. The current Climate Bonds criteria assumes that the energy performance of a building improves simultaneously with grid decarbonisation. This necessitated that criteria include additional requirements to drive energy efficiency in buildings. As the building becomes fully electrified, they are considered zero carbon ready any grid sourced energy consumption will continue to produce emissions until that energy supply is decarbonised. For instance, owners who opt not to convert to onsite renewables, and source their residual *energy from the (local) grid*, which is not decarbonising rapidly enough, they are likely to remain above the zero emissions trajectory targets. To prevent this, various safeguards have been created, addressing country level energy efficiency trajectories, and full electrification after breaching specific emission intensities.
- v. The *embodied carbon emission* contributions from renovations or new buildings becomes increasingly important as the operational emission rates fall. This embodied carbon accounts significantly to the buildings' whole-life emissions inventory over time. A successful location-based trajectory requires significant and accurate data to accurately estimate benchmarks. There is currently no globally standardised methodology to identify the benchmarks by location or building type. Various approaches are considered including incentive-based development of the marketplace for *embodied carbon information* (e.g. detailed life cycle information on materials used; or development of a buildings lifecycle Global Warming Potential 2030 [EU]; or supplier created Environmental Product Declarations (EPD)).

Given the challenges around developing a zero-carbon trajectory for embodied carbon and market readiness, *mandatory disclosure* becomes an option. Questions to ask include to what level? Monitoring & Reporting of data (quality?); Materiality (RICS approach, carbon intensive elements of a building footprint?).

What is the Climate Bonds trajectories solution?

The trajectory methodology of the Low Carbon Buildings Criteria are hurdle rates that comply with rapid decarbonisation required by 1.5° degrees scenario and the Paris Accord. To ensure that Climate Bonds Certification achieves significant scale and environmental impact, Climate Bonds developed trajectories with the TWG for commercial buildings where the emissions intensity is set against the top 15% of buildings in a city. This serves as an initial baseline that is used to create a linear trajectory to zero carbon emissions by 2050 which gives a performance target that becomes more stringent year-on-year. These zero carbon trajectories are used to align the Climate Bond Standard for Low Carbon Buildings to a 1.5-degree pathway. Emissions performance thresholds and trajectories will be set for specific building types (e.g., offices, hotels, shopping centres) in a city due to the significant variations in energy consumption. There is a scarcity of reliable operational performance data for buildings in many parts of the world. Without this data we will not be able to determine the baseline and low carbon trajectories for these areas and resultantly may not be able to certify building portfolios. As such, a process was developed to allow *estimate of the baselines* in these data deprived locations. Climate Bonds have developed a tool able to accurately estimate these trajectory benchmarks. Locations are extrapolated assuming similar climate and geographical characteristics.

Climate Bonds has developed an easy-to-use CO2 target Calculator that enables issuers to ascertain the performance targets that must be satisfied to gain the certification in their cities. The calculator automatically calculates the performance target an issuer must satisfy based on the year the bond is issued, length of the bond term, building type and city the building is located in. The tool is made available on our website [here](#).

The calculator currently covers major cities in the USA, Australia, Europe and recently published trajectories include; Singapore, Sweden, Canada and updates (re-estimation) to Japan (2019). We have also established trajectories for 699 European cities. Climate Bonds will continue to expand its coverage of cities as and when performance data of those cities become publicly available.

For more information on the Low Carbon Buildings Criteria, contact standards@climatebonds.net

ⁱ Hannah Ritchie, Max Roser and Pablo Rosado (2020) - "CO₂ and Greenhouse Gas Emissions". Published online at [OurWorldInData.org](https://ourworldindata.org). Retrieved from: <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>

ⁱⁱ www.climatebonds.net/market/data/

ⁱⁱⁱ <https://www.eia.gov/todayinenergy/detail.php?id=41433>