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## **GREEN PUBLIC PROCUREMENT GUIDE**

How to set commitments to buy low and near-zero emission concrete, steel and construction projects in public procurement practices

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## Introduction

The Industrial Deep Decarbonization Initiative (IDDI) is a coalition of governments and private sector, academia and civil society creating an enabling environment for industrial decarbonization through:

- aggregating green public procurement (GPP) commitments to create early markets for low and near-zero emission construction materials; and
- supporting the harmonization of standards, and creation of definitions for low and near zero emission steel, cement, and concrete.

In 2022, the IDDI launched the **Green Public Procurement Pledge**, which sets out four levels of commitment to the procurement of low and near-zero emission steel, cement and concrete in public construction projects. **A Statement of Intent** was added to the Pledge, providing an on-ramp for governments wanting to signal their intention to explore the procurement of low emission materials.

## "If you make it we will buy it"

The Green Public Procurement Pledge

Statement of Intent	Level One	Level Two	Level Three	Level Four
Start now to work towards key aspects of the pledge without timebound commitments.	Starting no later than 2025, require disclosure of the embodied carbon in cement/concrete and steel procured for public construction projects.	Starting no later than 2030, conduct whole project life cycle assessments for public construction projects, and, by 2050, achieve net zero emissions in all public construction projects.	Starting no later than 2030, require procurement of low emission cement/concrete and steel in public construction projects, applying the highest ambition possible under national circumstances.	Starting in 2030, require procurement of a share of cement and/or crude steel from near zero emission material production for signature projects.



Governments joining IDDI choose their starting point and level of ambition

This guidance is intended to support governments in adopting GPP Pledge commitments (i.e. commitments to purchase low and near-zero emission concrete and steel for construction projects) into existing procurement practices. This guidance is for setting advance commitments, it does not include technical guidance for the life cycle assessment of either materials or construction projects.

The primary target audience for this guidance is government officials assigned with a) assessing the government's readiness to adopt Pledge commitments and b) developing a policy proposal to adopt and implement Pledge commitments. The guidance could also be followed to set commitments for other materials and products. All readers should come away with a greater understanding of how a public procurement practice can be leveraged to meet environmental objectives.

## The GPP Pledge

This section describes the intended purpose of each level of the IDDI GPP Pledge.

IDDI invites governments to join the GPP Pledge, selecting a starting point and level of ambition based on national circumstances. The Pledge levels were designed in 2022 based on best practices of leading jurisdictions. The GPP Pledge is intended to create demand signals with advanced commitments for procurement of low and near zero emission materials starting in 2030.

The Pledge includes a commitment to use Environmental Product Declarations (EPDs), which are defined in Annex 1 – Glossary of Terms. The 2023 IDDI GPP Pledge Announcement includes the following statement:

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We commit to support the development and use of harmonised emissions accounting standards and definitions for low and near zero emission construction materials, starting with steel, cement and concrete. We will use robust Type III Environmental Product Declarations (EPDs) or otherwise independently verified Life Cycle Assessments (LCAs) as the basis for standardised reporting and defining GHG intensity levels in public procurement.

IDDI members agreed on Type III EPDs as the disclosure method endorsed in the Pledge because they are so widely used in existing procurement policy and green building certifications, and because they include indicators for other environmental impacts such as freshwater use and can therefore support avoidance or mitigation of other unintended environmental consequences.

Level 1 - Starting no later than 2025\*, require disclosure of the embodied carbon in cement/concrete and steel procured for public construction projects.

\* The start point refers to when a government committing to the GPP Pledge would announce its intention to begin requiring disclosure. The Pledge was written in 2022 and "2025" can be replaced with "as soon as possible", noting that providing EPDs may take several years, and time is of the essence for suppliers wishing to sell low or near zero emission products to meet impending GPP, regulatory and international trade policies.

In the Pledge the words 'require disclosure' mean requesting that suppliers submit an EPD to disclose the embodied carbon and other environmental impacts of materials or products sold. There are two main purposes of starting with a Level 1 disclosure requirement:

- to give advance notice to suppliers to create/update and publish EPDs in advance of a policy start date; and
- to begin collecting EPD data to inform further policy development, like setting emission reduction thresholds.

Disclosure requirements can also be used to improve the accuracy of existing reporting. Many governments have already established their own life cycle emission databases, collecting statistical emissions data from public carbon footprint inventories, private sector databases and EPDs, which they use to conduct life cycle assessments of construction projects and other procurements over time. While statistical data is considered adequate for many of the thousands of products and processes that go into a construction project, it is widely agreed by experts and industry that more robust data is needed to represent high volume, high emitting materials such as concrete and steel, which can comprise most of a project's embodied emissions.

Work is underway at IDDI and other initiatives to recommend improvements to harmonize the standards underlying EPDs and GHG accounting for products. It is recommended that governments follow international efforts to improve GHG accounting for products, and work with their national standards body and advocate for improvements and harmonization of EN and ISO standards for EPDs.

However, issuing disclosure requirements should not wait for these improvements. Setting advance disclosure requirements will facilitate capacity building and development of a submission process for suppliers and a collection process for governments which can be updated over time. See *IDDI Green Public Procurement Guide - Disclosure Requirements: Giving suppliers advance notice and beginning to collect EPDs for examples from leading governments and guidance on developing disclosure requirements.* 

Level 2 - Starting no later than 2030, conduct whole project life cycle assessments for all\* public construction projects, and, by 2050, achieve net zero emissions in all public construction projects.

\*In their 2023 commitments to the GPP Pledge, the governments of Canada, Germany, the United Kingdom, and the United States consulted with stakeholders before defining the scope of application. Feedback consistently recommended a graduated approach, ramping up over time. See the four government's 2023 Pledge announcements and refer to the Guide on Preliminary Consultations for examples and further information.

The purpose of GPP Pledge Level 2 is to endorse the importance of a whole project life cycle assessment, as well as procurement of lowest emission materials, to achieve the lowest embodied carbon infrastructure project. A whole project life cycle assessment is intended to facilitate design decisions for most efficient use of high emitting materials (as well as circular construction practices that address resource efficiency), to reduce overall embodied emissions. The GPP Pledge is based on the premise illustrated below.



Lowest embodied carbon project design

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Lowest embodied carbon materials



Lowest embodied carbon infrastructure asset

Level 3 - Starting no later than 2030, require procurement of low emission cement/concrete and steel in public construction projects, applying the highest ambition possible under national circumstances.

The primary purpose of the GPP Pledge Level 3 commitment is to signal demand to the concrete, cement, and steel sectors to trigger investment in the decarbonization of high emitting production processes. By committing to the GPP Pledge at Level 3, participants are joining a growing number of other governments and private sector companies that are providing industry with the surety needed to invest in iterative and transformational upgrades towards net zero production. Demand signals also serve to grow the supply of low and near-zero emission materials to meet buyers' net zero targets.

An additional benefit of a Level 3 commitment is its relative ease of administration in comparison to the complexity and expense of conducting whole project LCAs. An EPD can be created once and reused for multiple tenders, whereas a whole project life cycle assessment is a series of calculations conducted for an individual project. Level 3 commitments can also be met with product regulations such as the EU **Construction Products Regulation** for concrete/cement and the **EcoDesign for Sustainable Products Regulation** for steel, (once thresholds have been set, starting in 2027 for the CPR), or **Responsible Steel** (with an EPD).

Some governments are applying both Level 2 and Level 3 commitments, requiring whole project life cycle assessment for major projects, as well as setting thresholds for specific high volume, high emitting materials. Refer to the **Target Setting for Green Public Procurement Programs** white paper to learn more about examples and relative merits of both project level and product specific targets.

## Level 4 - Starting in 2030, require procurement of a share of cement and/or crude steel from near zero emission material production for signature projects.

The purpose of the GPP Pledge Level 4 is for governments to help create early markets for near zero emission materials. Near zero emission materials are produced using breakthrough technologies, such as green hydrogen, and carbon capture and storage (CCS). Many governments invest in breakthrough technologies through industrial decarbonization funding programs rather than through procurement, and governments are exploring other ways of paying in advance for future emission reductions, such as through 'carbon contracts for difference' mechanisms. Governments should explore the most effective supply and demand-side policies to support rapid decarbonization of industrial sectors to meet the timelines of the Paris Agreement. There are several ways public procurement can contribute to this objective and governments should assess options in the context of their existing policy landscape and Trade Agreements. Some governments may be able to form advance contracts for zero emission materials. Some governments may be able to form advance contracts for zero emission materials.

The First Movers Coalition (FMC), ConcreteZero, and SteelZero are complementary procurement campaigns aimed at private sector buyers. These campaigns are working globally to secure advance contracts and mobilize investment in the first tranche of large scale decarbonization projects. Governments are encouraged to promote FMC, ConcreteZero and SteelZero and to join IDDI GPP Level 4 to 'walk the talk', mobilizing private sector investment and simultaneously committing to be a first customer for near zero emission materials.

## Low emission materials and government policy

Commitments to purchase low emission construction materials may have broader implications to governments, and there may be broader government policies that are relevant to adopting them.

#### **Cross-departmental considerations**

Multiple government departments may be considering issues related to low emission materials and products for different reasons. For example, there may be discussions about the international trade of low emission products and avoiding 'carbon leakage', such as through Carbon Border Adjustment Mechanisms. Governments may be considering economy-wide policies such as product regulations, labelling schemes, or including embodied carbon in building codes. There may be existing funding programs and other support for the decarbonization of the industries that make and wish to sell low emission materials. There may be one or more R&D departments using life cycle assessments on innovations such as CCUS, that may ultimately form part of a supply chain for low emission materials. At the practice level, both procurement and environmental departments may support the development of green procurement policy, and the infrastructure projects for which low emission materials will be bought are often owned and managed by individual departments (such as government buildings, roads and bridges, schools and hospitals), referred to here as 'custodial departments'.

This guide focusses on the practice level implications to custodial departments and green procurement teams but recommends consultations across all departments to ensure a harmonized approach. The primary common policy issue is the measurement and verification of credible claims for low emission products as they are traded between entities.



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#### **Overarching environmental mandates**

The objectives of the GPP Pledge fit under multiple overarching environmental mandates. Governments that are party to the Paris Agreement must submit Nationally Determined Contributions, all of which commit to reducing economy wide greenhouse gas emissions. Many governments are creating industrial decarbonization strategies, which include roadmaps to net zero cement and or steel production by 2050, and which could include a commitment to support domestic demand, including through GPP. Some governments have greening government operation plans that include net zero targets, some are specific to real property and construction projects, and some may be considering adding Scope 3 or embodied emissions to their government operations GHG inventory. Each government will likely have an internal process to link new commitments to existing mandates.

#### Product regulations, national standards, labels and GPP

While mandatory GPP requirements must be met by any company selling to the government, product regulations must be met by all products being offered for sale within the whole jurisdiction, including for both private sector and government procurement. National standards establish minimum requirements and best practices for regulations and may be referenced in regulations and GPP policies. Labelling schemes communicate information in standards for all consumers to rely on to make well-informed purchasing decisions.

Product regulations are advantageous to government procurement – they are a legal requirement that then doesn't have to be addressed specifically in each procurement, which reduces administrative burden for both buyers and suppliers. However, thresholds in economy-wide regulations are often necessarily less ambitious than governments may be able to achieve as a single buyer and leading governments may choose to exceed them in procurement targets.

It is recommended that governments in jurisdictions with low-emission product regulations show leadership by considering them as a minimum requirement and committing to bolder reduction targets for government procurement.

# Government procurement and construction materials

This section describes an illustrative public procurement practice, and within that construction procurement, as context for IDDI GPP Pledge commitments.

#### **Government procurement**

Governments procure a vast array of goods and services to support the delivery of services to citizens. In large governments, procurement may be broken down into high level categories such as construction, information and communications technology (ICT), goods, and services. This is because procurement processes and contract types are sufficiently distinct for each of these categories that category-specific expertise in each is warranted. Government procurement is often also broken down by the size and complexity of procurements, with smaller procurements requiring less due diligence and often being automated, and large complex procurements typically managed by centralized expert teams.

The IDDI GPP Pledge is most applicable to construction procurement since governments mostly use concrete and steel in infrastructure projects. It is recommended that commitments are initially implemented in major projects run by centralized teams of experts, with an expanding scope of application over time to most or all construction procurements.

#### Authority for commitments

The IDDI GPP Pledge is open to national and sub national governments. Jurisdictional authorities for procurement will apply to each government. Some national governments, and common markets such as the EU may have some authority over the procurement of other levels of government (this is known as centralized procurement), while in some countries each level of government (national, state and city) may have their own authority (decentralized procurement). Separate from procurement, some governments may have infrastructure investment programs that award funding to other levels of government to complete public infrastructure projects.

IDDI GPP Pledge commitments apply to "projects within the signatory's authority". For greatest impact, commitments should be applied to the widest scope of infrastructure projects possible – in addition to procurement this could also include government funding of infrastructure projects completed by others.

#### **Green procurement**

Typical green procurement policies include multiple environmental indicators. This could include the reduction of greenhouse gas emissions, energy and water efficiency, reduction of waste and toxics, and conservation of biodiversity. In addition to GPP policies, governments may set net zero targets for their government operations, including their real property, fleet, and other goods and services procured. Green procurement may form part of an overarching sustainable procurement policy, which would then also include social and socio-economic criteria. The IDDI GPP Pledge commitments support GHG reductions in GPP policies as well as net zero government operations, or Scope 3, targets. EPDs include various environmental indicators, like Global Warming Potential (GWP), fresh-water use, and others. Requirements for EPDs could also support future policy development in other priority areas.

#### **International Trade Agreements**

The **Agreement on Government Procurement** (GPA) is a plurilateral agreement under the auspices of the World Trade Organization (WTO) which regulates the procurement of goods and services by the public authorities of the parties to the agreement, based on the principles of openness, transparency and non-discrimination.

It is not required to be party to the GPA to join the IDDI GPP Pledge, however, the Pledge is aligned with the principles and framework of the GPA including:

- Article III General Exception on applying "measures necessary to protect human, animal or plant life or health"; and
- Article X which states that a Party may "prepare, adopt or apply technical specifications to promote the conservation of natural resources or protect the environment".

Trade Agreements may also be leveraged to support broader objectives related to GPP Pledge commitments. For example, the WTO GPA Article V Developing Countries allows for "special and differential treatment for developing and least-developed countries" which could be applied to help grow developing markets that wish to supply low and near-zero emission materials to their trading partners.

There are many bilateral and regional trade agreements which include chapters on procurement, most of which are based on the WTO-GPA, but may differ. It is the responsibility of each government to confirm that GPP Pledge commitments are aligned with any Trade Agreement they are party to.

#### Procurement and construction project life cycle

The term procurement is often used to refer to the transactional process of issuing a tender document, evaluating and selecting a successful bidder, and awarding a contract. A procurement practice includes this stage but also encompasses a much longer life cycle (there are multiple established procurement life cycle diagrams with a range of five to thirteen stages). Layered over that, a construction project also has typical phases, which include the design, construction period, and associated reporting processes most implicated by GPP Pledge commitments. (See diagram on page 11.)

As well as setting commitments in procurement, it is recommended that governments consider embodied carbon in their investment planning, where life cycle costing might be applied to assess a portfolio most in line with a net zero target. IDDI GPP Pledge commitments are implemented in the design, tender process, and construction phase.

#### **Construction procurement**

Construction procurement may have a set of commitments that meet a green procurement policy or greening government operations plan but are specific to construction projects. Most construction procurement practices will have procedure manuals which translate commitments into specific instructions for internal procurement and project management teams.

Construction procurement is often a two-step process, in which government first engages a design team which might include an architect and various engineers and consultants required for the project. The design team works with the government project owner to develop the technical specifications and blueprints, which are then issued for tender and become contractual requirements for builders, the material suppliers, and other sub trades they engage to complete the project. There are many variations on the contractual relationship between project owners and these actors, but in all instances, commitments need to be relayed to designers, builders and ultimately material suppliers.

Some governments may already have commitments related to embodied carbon in construction that the GPP Pledge aligns with, while some may need to propose new ones. Procedure manuals may need to be updated.

#### Standard technical specifications

Construction projects typically rely on standard technical specifications to organize and communicate instructions to builders. Standard technical specifications will typically provide instructions in line with building codes that all construction projects are required to follow (both government and private sector projects). These may be maintained by the government, or by another entity and referenced by government in its policies. Standard technical specifications may need to be updated to include instructions on including low emission materials in construction projects.



#### IDDI GPP commitments along the procurement and construction project life cycle

### Reporting

Government commitments often have differing reporting requirements, which may be linked to the overarching environmental mandate referenced for the commitments, for example:

- government-wide GHG inventory reporting (including Scope 3),
- green procurement reporting,
- reporting against overarching sustainable development or industrial decarbonization commitments, or
- IDDI GPP Pledge reporting.

Different reporting requirements have varying characteristics, which could include:

- annual or periodic publication,
- qualitative progress update, or
- quantitative reporting, like
  - number of procurements criteria has been included in,
  - number of projects that have completed whole project life cycle assessments, or
  - volumes of materials purchased + average GWP.

Reporting characteristics can be assigned to new policies based on a balance of the relative significance of the commitment and minimized administrative burden. A government's central construction team may have project-level reporting tools and procedures already in place, such as to track operational emissions at the portfolio level, to which embodied carbon could be added.

It is recommended that governments aim to report the GWP of construction projects, and the volume and GWP of primary materials such as concrete and steel used in construction projects. As well as providing for transparent reporting, this would make data available that can be used for setting future thresholds, as well as project design decisions, related policy development, and R&D. Leading governments are exploring setting Scope 3 targets and reporting against them. It is recommended that reporting for individual projects, materials, and products is required in a format that produces interoperable data that can be rolled up to support Scope 3 or other environmental reporting.

See **Standards and Evaluation of Green Public Procurement** for further examples and recommendations on databases and automated reporting tools to simplify administration of GPP Pledge commitments.

For the IDDI GPP Pledge an annual qualitative progress update is required until 2030, when it is anticipated most governments will have a framework in place to begin reporting quantitatively.

#### Market readiness – supply chain development in public procurement

One of the main principles of public procurement is 'open procurement' and one of the meanings of this principle is that given the use of public funds, public procurement opportunities should be open to all companies qualified and interested in bidding on them. As a result, governments typically do not enter longstanding relationships or supply chain development activities with individual companies the way private sector buyers may. In public procurement, market readiness activities must also be open and available to all interested suppliers.

Another principle that flows from open procurement is the encouragement of healthy competition: At the time new requirements are set in public procurements there should already be multiple bidders qualified to meet them.

Many government procurement practices include specific activities that are designed to test and support market readiness. These might include 'Request for Information' processes or sector-specific supplier engagement programs. Some governments have teams that work with small businesses through economic development programs, helping them respond to government tenders. Governments may have automated bidding platforms which include notification services, allowing suppliers to receive information on types of procurements they are interested in.

Governments may have innovation or economic development programs that invest financially in emerging low emission manufacturing and related services, or 'first customer programs' designed to test or showcase new and innovative products on government infrastructure projects.

Public procurement practices often have multiple effective tools available for wide-reaching engagement with the market. Governments should explore all opportunities to leverage market readiness programs and activities to implement the IDDI GPP Pledge commitments and help grow the market for low and near-zero emission materials and products.

As a first step it is recommended a preliminary public facing consultation be held with suppliers of cement, concrete, and steel construction products, as well as related service providers and experts, to test the readiness of the supply chain before setting commitments. In 2023 the Governments of Canada, Germany, the UK and the US made commitments to the GPP Pledge at COP28. Each government based their commitment on preliminary consultations which are summarized in the Guide on Preliminary Consultations.

# Developing a policy proposal to adopt and implement Pledge commitments

Each government will need to assess their own policy landscape and procurement practice, which may include many of the elements listed in the Government procurement and construction materials section above. Each government will have an established proposal and approval process to create new policy and to update procedure manuals and procurement support programs.

In summary, a proposal should include the following typical sections:

**Why** should government adopt procurement requirements for low and near zero emission materials? What mandates will they help to meet?

- Environmental and net zero mandates, including industry roadmaps
- Reducing emissions from government operations
- Near, mid-, and long-term low emission supply chain development and related economic activity

Who in government will be directly implicated by the adoption of such policy?

- Custodial departments
- Procurement policy division
- Construction procurement and project management teams
- Green procurement or environmental experts

Who else in government should be consulted regarding GPP commitments?

• Environmental, industrial development, infrastructure investment, innovation and trade departments

What should be considered when designing policy/procedures for commitments?

- Scope of application what procurements are within the authority of the signatory government? Could commitments be applied to investment programs that fund infrastructure projects completed by other levels of government? Are there logical ways to roll commitments out over time, starting with high value projects? Could governments within a jurisdiction work together to expand scope and send an aggregated demand signal to their shared suppliers?
- What types of policy will meet the desired objectives: whole project level, material-specific or both?
- Are there any other government innovation, economic development or market development programs that can be leveraged for uptake of the commitments?

What might be required to adopt GPP commitments?

- Consultations with the marketplace and experts
- Updates to policy, procedure manuals and standard technical specifications
- Reporting process integration into existing or new process
- Associated market readiness activities

When should policy be adopted?

- Consultations and approvals processes determine start date
- Iterative timeline: advance notice, disclosure start date, start date for thresholds, incrementally lower thresholds towards near zero or net zero

This guidance is intended to support governments in adopting GPP Pledge commitments (i.e. commitments to purchase low and near-zero emission concrete and steel for construction projects) into existing procurement practices. By following the guidance, government officials should be able to assess the government's readiness, and develop a policy proposal to adopt and implement Pledge commitments.

Key sections of this guidance will be expanded on in separate guidance documents which will include examples and case studies. See for example:

- IDDI Green Public Procurement Guide -

Preliminary Consultations: Assessing jurisdictional readiness to begin procuring low emission materials for construction projects

- IDDI Green Public Procurement Guide -

Disclosure Requirements: Giving suppliers advance notice and beginning to collect EPDs

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## Annex 1 – Glossary of terms

Term	Definition	Source
Carbon Border Adjustment Mechanism (CBAM)	CBAM is an EU's policy that puts a price on the carbon emitted during the production of carbon intensive goods entering the EU. It so aims to encourage cleaner industrial production in non-EU countries. By confirming that a price has been paid for the embedded carbon emissions generated in the production of certain goods imported into the EU, the CBAM ensures the carbon price of imports is equivalent to the carbon price of domestic production, and that the EU's climate objectives are not undermined.	European Commission
Carbon capture, utilization and storage (CCUS)	A suite of technological processes which involve capturing carbon dioxide [CO <sub>2</sub> ] gas for use or long-term storage. <b>Carbon capture and utilization</b> (CCU) is a process in which captured CO <sub>2</sub> is used to produce a new product. This can displace fossil-derived carbon products with 'green products' such as e-fuels. CCU stores carbon temporarily, depending on the lifespan of the manufactured product.	CCU definition adapted from the SR1.5 glossary CCS definition from the IPCC AR6 Glossary.
	related sources is separated (captured), conditioned, compressed and transported to a storage location for long- term isolation from the atmosphere. CCS can also be applied to $CO_2$ from the combustion of biomass (called BECCS) and since plants absorb $CO_2$ during growth, BECCS offers permanent removal of $CO_2$ from the atmosphere.	
Carbon contracts for difference	A policy tool to make green technologies more attractive by offsetting the added cost involved in transitioning to sustainable compared with conventional procedures, for a specified period of time.	BMWK and IEA
Carbon leakage	Carbon leakage refers to the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries with laxer emission constraints. This could lead to an increase in their total emissions.	European Commission
Embodied carbon	The GHG emissions associated with the upstream stages of a product's life (extraction, production, transport, and manufacturing). Many initiatives to track, disclose, and reduce embodied carbon emissions also consider emissions associated with the use of a product and its disposal (i.e., GHG emissions across a product's lifecycle).	US Government Environmental Protection Agency

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Term	Definition	Source
Environmental Product Declaration (EPD)	An environmental report providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information. An EPD also includes additional product and company information.	ISO 14025:2006
Global Warming Potential (GWP)	The term "GWP" is used in EPDs, PCRs, and Buy Clean policies for construction products as an impact category to report on embodied GHG emissions.	
Greenhouse gas (GHG)	Gaseous constituent of the atmosphere, natural or anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds.	ISO 14064-1:2018, 3.1.1
	Note 1: Greenhouse gases caused by human activities and relevant for this document include carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), nitrous oxide (N <sub>2</sub> O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF <sub>6</sub> ) and nitrogen trifluoride (NF <sub>3</sub> ). Note 2: The IPCC publish up to date global warming potential values for greenhouse gases.	
Greenhouse gas (GHG) emission	Release of a <i>greenhouse gas</i> into the atmosphere.	ISO 14064-1:2018, 3.1.5
Interoperable; interoperability	The ability of a system to work with other systems, specifically with the aim of exchanging and making use of information and data. In the context of product category rule harmonization, the term interoperable sets out the ambition that emission accounting requirements in product category rules could be made less flexible and that different product category rules could be harmonized, making the resulting data in EPDs comparable.	As used in the IEA <i>Emissions Measurement</i> <i>and Data Collection for a New Zero Steel</i> <i>Industry</i> (2023) report and the IDDI white paper <i>Driving Consistency in the Greenhouse</i> <i>Gas Accounting System</i> (2023).
Life cycle	Consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal.	ISO 14044:2006
Life Cycle Assessment (LCA)	Compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system throughout its life cycle.	ISO 14044:2006
Product Category Rules (PCR)	A set of specific rules, requirements, and guidelines for developing environmental product declarations for one or more product categories.	From ISO 14025:2006
Scope 1, 2 and 3	The GHG Protocol Corporate Standard classifies a company's GHG emissions into three 'scopes': Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.	The Greenhouse Gas Protocol





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