



INDUSTRIAL DEEP
DECARBONISATION

AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

INDUSTRIAL DECARBONIZATION

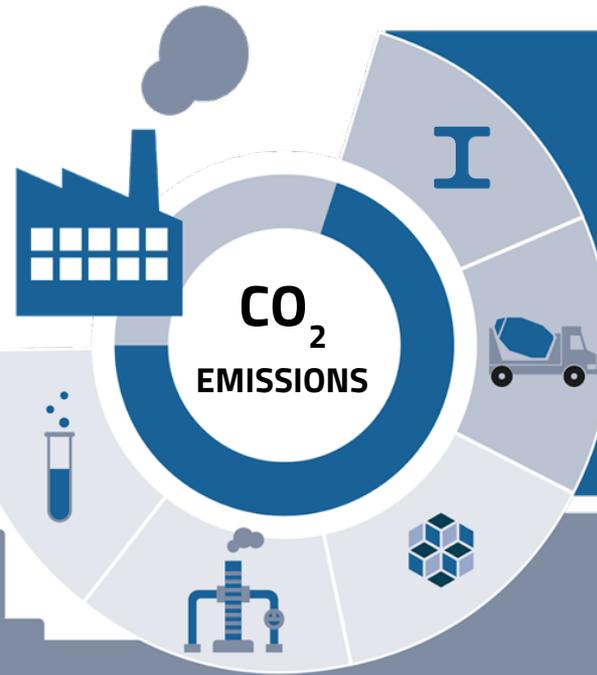
The role of international
collaboration to advance ID



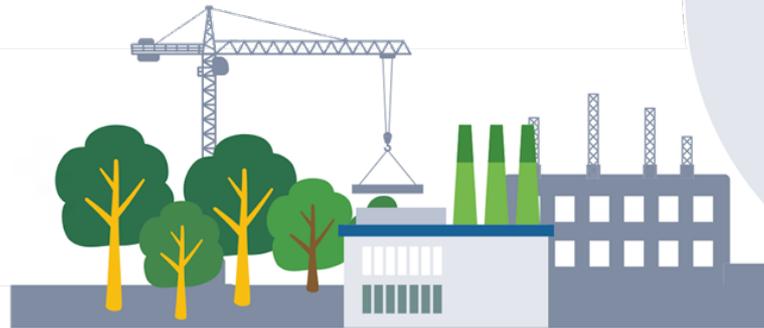
WHY IDDI?

Heavy industry drives the engine of our modern world,
but they are also one of the largest CO₂ emitters.

The top five CO₂-emitting industries (steel, chemical, cement, concrete, aluminum, and refining industry) account for around 70 per cent of total global industrial emissions.



Together, steel, cement and concrete, are responsible for **14-16%** of global energy-related CO₂ emissions.



Challenges



Technology
Availability and
readiness

Policy
Roadmaps
Incentives

Financing
Costs of conversion
and the green
premium

Product
definitions and
standards
Harmonized
approaches

Data
Availability, disclosure
and monitoring
systems

Global collaboration landscape

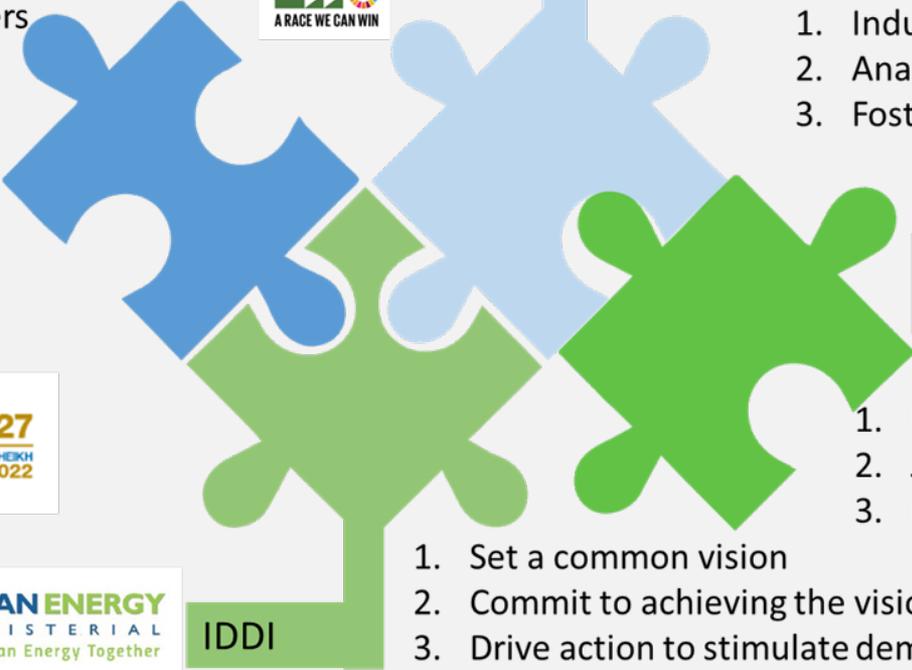
Mission Possible

1. Mobilize industry players
2. Raise ambition



LeadIT

1. Industry transformation pathways
2. Analysis on opportunities
3. Foster public private collaboration



NZI

1. Large investments in R&D
2. Joint Roadmap and action plan
3. Knowledge sharing



IDDI

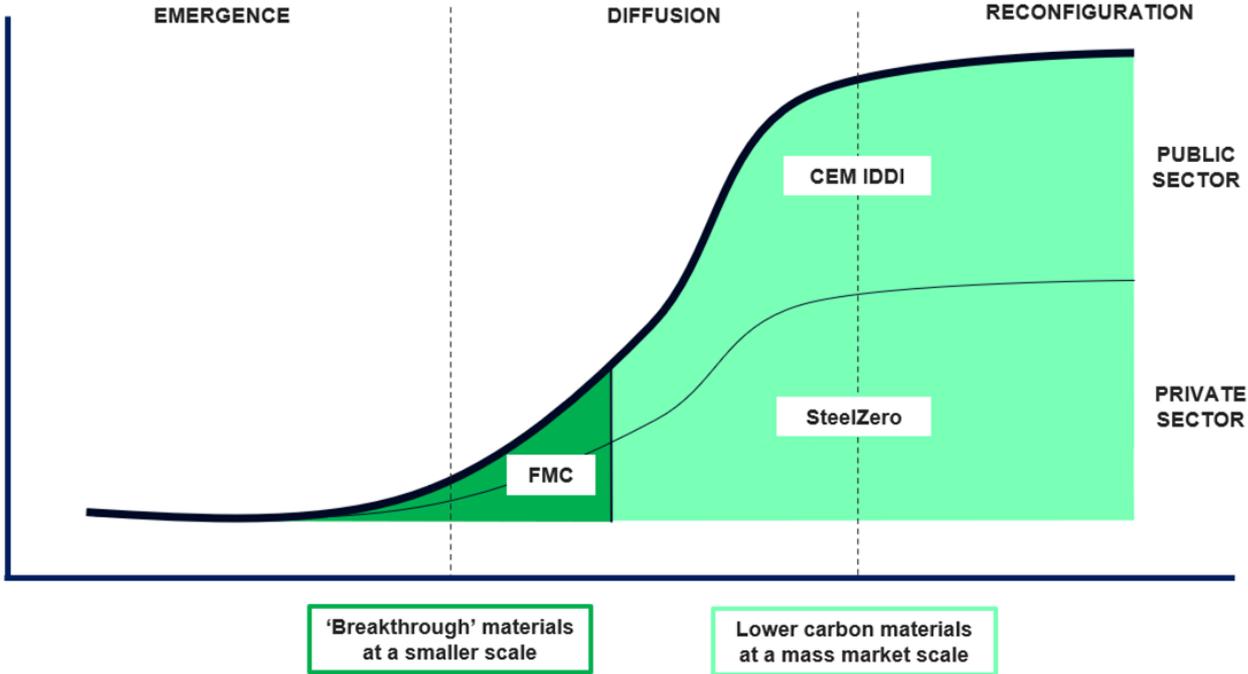
1. Set a common vision
2. Commit to achieving the vision and
3. Drive action to stimulate demand

Overview of existing procurement initiatives

IDDI
Public sector; scale to mass market, technology agnostic

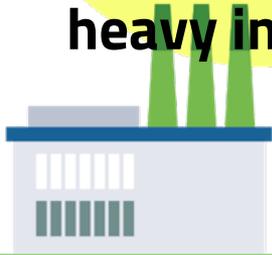
SteelZero
Private sector; scale to mass market, technology agnostic

FMC
public + private; breakthrough tech focus;



WHO IS IDDI?

IDDI is the largest and most diverse coalition of governments and private sector working to decarbonise heavy industries, starting with steel, cement and concrete.



IDDI'S APPROACH

The gap that we want to bridge

There are **two key gaps** in promoting the decarbonisation of industrial sectors.

- Data and standards
- Green public procurement policy



OUR THREE PATHWAYS TO ACHIEVE CHANGE



Our three pathways to achieve change

PATHWAY



1

Building the foundations to enable a thriving global market.

What is green steel, cement and concrete?

A large part of IDDI's work is creating global standards for near zero carbon materials and how to report against them. IDDI will develop:

- Consistent, **global standards** for near zero carbon steel, cement and concrete
- A standard **environmental reporting mechanism**
- An **evaluation process** and tools for project bids which incentivise and reward public work contractors.

Our three pathways to achieve change

PATHWAY

2



Empowering governments to buy near zero carbon materials for their public works.

Green Public Procurement

Using the purchasing power of governments is an efficient way to increase demand for low carbon products.

- Government agencies are top purchasers of steel, cement and concrete for infrastructure projects, which can account for 40% of cement and concrete and 25% of steel nationally.
- IDDI will set a globally recognised pledge for GPP for industrial materials and establish voluntary guidelines for governments to write policy and implement this pledge.
- We will also launch a free or low-cost certification service for manufacturers.

Green Public Procurement Pledge

PATHWAY



3

Encouraging governments to disclose and reduce embodied carbon emission in public construction projects.

Within the next three years IDDI expects to have enabled a minimum of ten governments to pledge to reducing embodied carbon emissions of all major public construction projects by 2050 in line with a 1.5C global warming trajectory.

Governments can commit to one of four levels, depending on their national circumstances

**Ambition level 1
DISCLOSE**

Starting no later than 2025, require disclosure of the embodied carbon in cement, concrete and steel procured for public construction projects.

**Ambition level 2
DISCLOSE + NET
ZERO**

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.

**Ambition level 3
DISCLOSE + NET
ZERO + 2030
TARGET**

Starting no later than 2030, require procurement of low emission cement, concrete and steel in public construction projects.

**Ambition level 4
DISCLOSE + NET
ZERO + 2030
TARGET + ZERO
EMISSION**

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

Gaps and opportunities for a just industrial transformation - Lookout to COP27

- Technology collaboration and access
- Investments in the South
- Building the right skills and ensuring women and youth are on board
- Better data systems
- Funding!!

And the race continues...



Thank you
Rana Ghoneim, Chief
Energy Systems and Industrial Decarbonization Unit

Website

www.cleanenergyministerial.org/initiative-clean-energy-ministerial/industrial-deepdecarbonisation-initiative

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Green Public Procurement Pledge (1/2)



We⁽¹⁾, the undersigned governments, in recognition of:

- the importance of decarbonising the global steel and cement sectors;
- the role of governments to lead by example and incentivise the adoption of energy efficiency and low emission technologies;
- the benefits of measuring and reporting the embodied carbon in the highest-emitting construction materials;
- the importance of encouraging efficient use of construction materials and deployment of available and transformative decarbonisation technologies and best practices to reduce carbon intensity, and accelerate near zero emission production of these materials;

Commit to adopt one or more of the pledge levels in the Pledge document set out below, subject to their internal processes including consultation, and to inform the IDDI of the pledge level to be adopted before the end of 2023.

Green Public Procurement Pledge (2/2)

Pledge⁽¹⁾⁽²⁾

Level One:

Starting no later than 2025, require disclosure of⁽³⁾ the embodied carbon in **cement/concrete and steel**⁽⁴⁾ procured for public construction projects⁽⁵⁾.

Level Two (in addition to Level 1):

Starting no later than 2030, conduct **whole project life cycle assessments**⁽⁶⁾ for all public construction projects, and, by **2050, achieve net zero emissions in all public construction projects.**

Level Three (in addition to Levels 1 and 2):

Starting no later than 2030, require procurement of **low emission cement/concrete and steel**⁽⁷⁾ in public construction projects, applying the highest ambition possible under national circumstances.

Level Four (in addition to Levels 1, 2 and 3):

Starting in 2030, require procurement of a share of cement and/or crude steel from **near zero emission material production** for signature projects⁽⁸⁾.

Explanatory notes (1/6)

1. Government entities at national or sub-national level may be signatories to the pledge. The pledge including the content of the levels and these explanatory notes are not intended to create obligations in international law, and do not create any legal claims of the tenderers in the respective procurement process.
1. Signatories can commit to one or more of the pledge levels. Signatories, represented by an authorised official, will inform the IDDI Secretariat in writing of their intention to subscribe to the Pledge. The Signatories will report to the Secretariat annually on the progress in their goals. The Secretariat will prepare annual statement reports on the progress made towards the pledge.
1. Disclosure will be for steel, and concrete sub-categories (see Footnote 4). The reporting will be demonstrated with Type III Environmental Product Declarations (EPD), or other independently verified reports, covering the same aspects as the EPD, and in a machine readable format using an open data standard where available. Requirements for disclosure should be included in procurements for design services starting January 01, 2025 or earlier. Signatories will include requirements for disclosure in procurements for design services as soon as possible in order to collect as many EPDs as possible starting in 2025. If required, exemptions (e.g., based on project cost threshold or total floor area, to be determined by signatory) can be provided for projects typically delivered by small businesses.

Improved disclosure requirements: by 2030 it is expected that disclosure requirements will be based on a Product Category Rule agreed on across IDDI members, which will include a minimum resolution (i.e. product, facility, supply chain) and a requirement for machine readable format using an open data standard.

Explanatory notes (2/6)

4. Cement, concrete and steel refers to, at a minimum, the following product sub-categories:
 - The cement in ready-mix concrete
 - The cement in prefabricated concrete block
 - Hot rolled structural steel sections
 - Hollow structural steel sections
 - Steel plate
 - Concrete reinforcing steel
5. Public construction projects refers to all infrastructure project-types that the signatory has authority for, which may include but is not limited to: new and refurbished buildings, transportation infrastructure (i.e., fixed installations including roads, railways, airways, waterways, canals and pipelines and terminals such as airports, railway stations, bus stations) and energy-utility infrastructure (such as hydro dams, wind turbines). If required, exemptions can be provided to support implementation (e.g., based on project cost threshold or total floor area, or for reasons related to security or performance, to be determined by signatory) .
5. Whole project life cycle assessments will follow international standards, or already established and used national standards.

Explanatory notes (3/6)

7. The IDDI supports the objective to adopt stable, absolute and ambitious thresholds for near zero material production that takes account of sector-specific nuances. The IDDI employs the IEAs definitions for “near zero” and “low emission” cement and steel production from their report “Achieving Net Zero Heavy Industry Sectors in G7 Members” and its underlying methodology as explained in the Report and the Technical Annex as a robust starting point and will contribute actively to processes to develop, refine and extend them as needed.

Central elements to the methodology include

- a) the definitions and thresholds for near zero and low emission production of steel and cement (Figure 3.7, p. 127-129),
- b) the formulation of low emission steel and cement production to calculate the quantity of low emission steel and cement production (p. 133),
- c) the menu of band ranges in Table A.1, (p. 134) setting the ambition level for low emission steel and cement production (p. 133).

The definitions in the IEA Report do not imply a specific production pathway or exclude a specific methodology, denote a specific carbon content or entirely rule out any residual emissions. They are technology neutral and focus on the production processes of the materials. A uniform and clear end-point in these processes that facilitates comparability has been set: in the case of iron and steel, this is crude steel production, while in the case of cement and concrete, this is cement production.

Explanatory notes (4/6)

Near zero emission production definition: A stable and absolute definition based on a fixed emissions intensity has been identified. For the purpose of this pledge, the near zero emissions definition will be applied encompassing both direct and indirect emissions. Direct emissions are defined according to internationally recognised frameworks for energy and emissions accounting, such as the IEA World Energy Balances and the IPCC's Guidelines for Greenhouse Gas Emissions Accounting. Indirect emissions included are to be limited to those arising from clearly defined steps in the production process. To be truly "near zero", the emission intensity thresholds are set to allow only a limited amount of residual emissions.

The thresholds for near emissions zero steel and cement production take account of the share of scrap use in the case of steel, and the clinker ratio in the case of cement. For the purpose of this pledge, however, governments may choose to apply a static clinker-to-cement ratio, for example based on average values (the global average being 0.7, according to the IEA study, page 121), in order to acknowledge different national circumstances and technology options.

Explanatory notes (5/6)

Low emissions production definition: The definition for “low emissions production” provides recognition of interim measures that deliver substantial improvements in emissions intensity, in line with a trajectory to meet Paris Agreement goals, but which do not meet the near zero emissions definition. Recognition for interim measures are being evaluated on a continuous sliding scale, defined between the near zero threshold and a multiple thereof, with the tonnages of output calculated in proportion to the emissions intensity reduction achieved. Over time, the stringency of the low emissions production definition can be increased, using “band ranges” similar to the energy performance certificates used in the buildings sector.

Signatories acknowledge the central role of concrete in both the procurement process and incentivising additional decarbonisation levers. To allow for coordination and alignment with ongoing efforts, the IDDI will endorse a definition of low and near zero emissions concrete by 2024.

Explanatory notes (6/6)

8. Signatories commit to require procurement of a share of “near zero” cement, concrete and/or crude steel starting no later than 2030 in, for example, individual large scale infrastructure/construction projects such as buildings, transit lines or bridges, or through a procurement programme such as for large vessels, vehicles or equipment. Signatories will determine the share of near zero materials for their commitment through their internal processes including consultation.

A pledge to require procurement of near zero materials is subject to the availability of technology supply and acknowledges that near zero materials may come at a premium cost.