



# **PUBLIC DISCLOSURE STATEMENT**

**HOLCIM AUSTRALIA PTY LTD**

**PRODUCT CERTIFICATION – READY-MIX  
CONCRETE (OPT-IN)**


**CY2024**

Australian Government  
**Climate Active**  
**Public Disclosure Statement**



An Australian Government Initiative



NAME OF CERTIFIED ENTITY	Holcim Australia Pty Ltd
REPORTING PERIOD	1 January 2024 – 31 December 2024 Arrears report
DECLARATION	<p><i>To the best of my knowledge, the information provided in this public disclosure statement is true and correct and meets the requirements of the Climate Active Standard.</i></p>  <p>Cyril Giraud Head of Sustainability 1 August 2025</p>



**Australian Government**  
**Department of Climate Change, Energy,  
the Environment and Water**

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Version: January 2024

# 1.CERTIFICATION SUMMARY

TOTAL EMISSIONS OFFSET	6,403 tCO <sub>2</sub> -e
THE OFFSETS USED	100% CERs
RENEWABLE ELECTRICITY	N/A
CARBON ACCOUNT	Prepared by: Edge Environment Pty Ltd
TECHNICAL ASSESSMENT	27 June 2025 (CY2022) Edge Environment Pty Ltd Next technical assessment due: CY 2025 PDS

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## 2. CERTIFICATION INFORMATION

### Description of Product certification

This product certification is for Holcim's range of ready-mix concrete that is covered by an EPD. Features and the composition of the ready-mix concrete are described in Table 1 and 2.

- Functional unit: 1 m3 of ready-mix concrete sold for the period.
- Offered as: opt-in product
- Life cycle: cradle-to-gate (as shown in Figure 1). Life cycle stages for the construction stage (A4-A5), use stage (B1-B7), and end of life stages (C1-C4) are not included in this climate active certification. The impact of downstream life cycle stages (e.g. transport to construction site, construction, use, disposal) is relatively minor compared to the cradle-to-gate emissions but shall not be considered zero.

The responsible entity for this service certification is Holcim Australia Pty Ltd, ABN 87 099 732 297.

This Public Disclosure Statement includes information for CY2024 reporting period.

*Table 1 – Features of Holcim ready-mix concrete*

	Normal class concrete mixes	Special- class concrete mixes
<b>Specification</b>	<p>Typically specified by:</p> <ul style="list-style-type: none"> <li>• State</li> <li>• Strength grade</li> <li>• Blend</li> <li>• Developed for residential applications, low-rise buildings, paving and driveways, etc. Its specification and ordering have been simplified as far as practicable.</li> </ul>	<p>Typically specified by:</p> <ul style="list-style-type: none"> <li>• Project</li> <li>• Strength grade OR prescription mix</li> <li>• Prescription mixes are based on aggregate to cement ratios (with no set water to cement ratios). There is no strength guarantee for some prescription mixes.</li> <li>• High strength designations above 50 MPa are also classified as special class concrete, e.g. 65 MPa, 80 MPa and 100 MPa.</li> </ul>
<b>Geographic scope</b>	Australia-wide	Australia-wide / Project site-specific
<b>Typical function</b>	Designed for residential applications, low rise buildings, paving and driveways etc. Its specification and ordering have been simplified as far as practicable.	High strength or high-performance concrete, architectural off-form finishes and other decorative applications. Special-class concrete is designed and specified based on a wide range of technical and other requirements.

Table 2 – Key materials and typical compositional breakdown for Holcim’s ready-mix concrete range.

Materials	Typical % (by weight)
General purpose cement	5 - 21%
Aggregate	67 - 84%
Supplementary cementitious materials	0 - 11%
Water	11.6 - 12%
Admixtures	0.01 - 0.02%

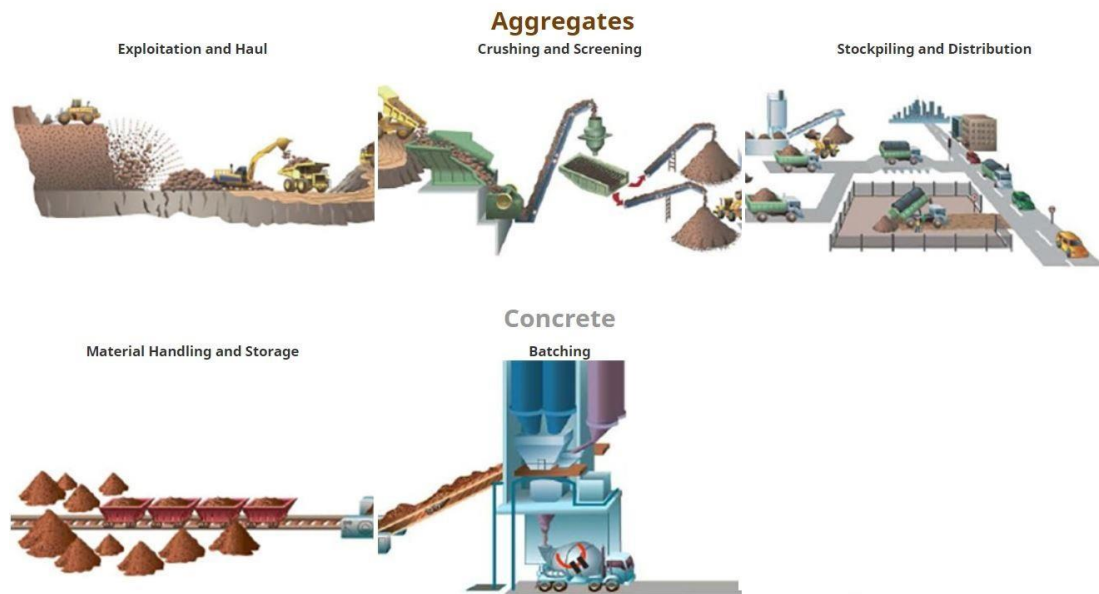


Figure 1 – Cradle-to-gate (A1-A3) life cycle stages of precast concrete products

An EPD is a meticulously verified and registered document that transparently communicates comparable data about the life-cycle environmental impact of a product, including its Global Warming Potential (GWP), commonly referred to as embodied carbon.

Through Holcim's Climate Active Certification, customers have the option to opt-in for the offsetting of the GWP associated with their ready-mix concrete. This certification is managed through the EPD pathway. The carbon accounting in the EPD aligns with the Climate Active Products and Services. The carbon accounting published in the EPDs is based on data collected from across Holcim's operations and is compliant with international life cycle and EPD standards (ISO 14025 and EN 15804). Additionally, it undergoes independent review by an approved, third-party verifier under EPD Australasia.

List of EPD associated with this certification.		
Registration No.	Valid until	Product
EPD-IES-0020611:001 to EPD-IES-0020788:001	17/07/2030	<a href="#">Holcim Australia – Ready-mix concrete – Climate Active</a>

## **Description of business**

Holcim, a prominent supplier of construction materials in Australia, boasts a rich legacy dating back to 1901. Today, Holcim continues its legacy by providing essential construction materials, including aggregates, sand, ready-mix concrete, engineered precast concrete, and prestressed concrete solutions, to a diverse array of customers and projects across Australia.

In 2019, Holcim Australia embarked on a significant initiative by registering its first EPD (Environmental Product Declaration) for its ready-mix concrete. This was the first EPD for ready-mix concrete in Australia, and a pivotal step reflecting Holcim's unwavering commitment to comprehensively analyse and communicate the embodied environmental impacts of its products. Holcim aims to ensure that all its key products are represented by an EPD in Australia. These EPDs play a crucial role in supporting designers and developers in making informed decisions regarding sustainable procurement and materials selection, thereby promoting standardisation and transparency in environmental claims and specifications.

Concrete manufacturing is undertaken primarily at Holcim branded concrete batching plants, with some manufacturing occurring under Holcim's subsidiary brands such as Excel Concrete, Broadway and Frame Premix (i.e. Tolling). All sites regardless of the brand name are owned and operated by Holcim. Holcim ready-mix concrete is delivered in bulk to customers with no packaging.

### 3. EMISSIONS BOUNDARY

The certification boundary follows a cradle-to-gate score and encompasses the following EPD life cycle stages (Figure 2):

- Raw material supply – EPD module A1
- Transport of raw materials – EPD module A2
- Manufacturing – EPD module A3

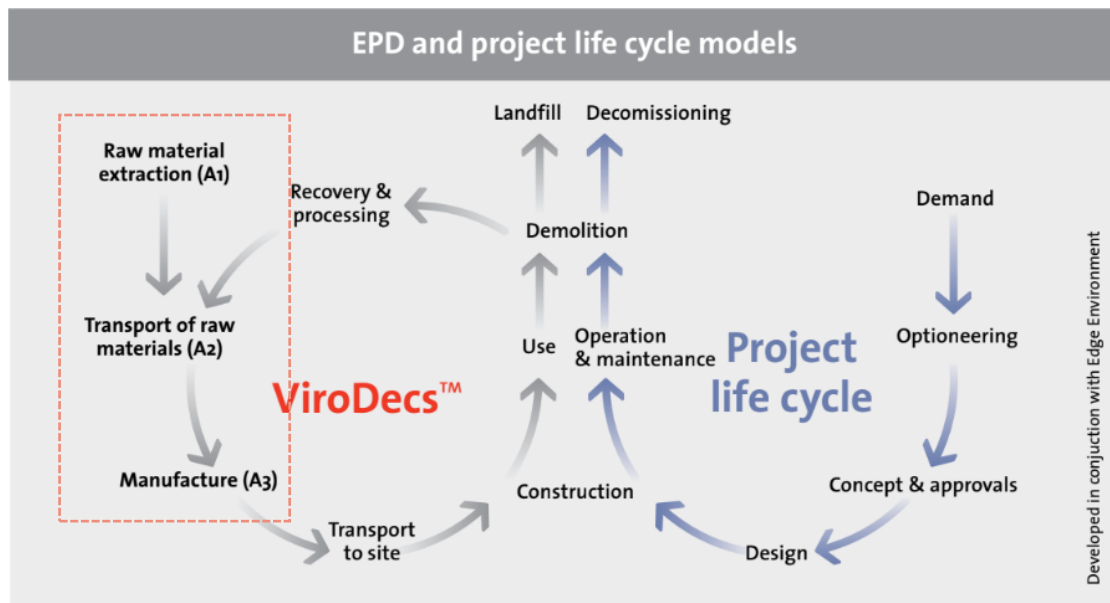


Figure 2 – Scope of this certification in the broader life cycle of construction and infrastructure projects.

The carbon account includes the following greenhouse gasses (GHGs), at minimum:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF<sub>6</sub>)
- Nitrogen trifluoride (NF<sub>3</sub>)

Please note that the EPD impact assessment method that informs this carbon account (Global Warming Potential category of the CML) considers more substances than the above list.

## **Raw material supply**

This life cycle stage (EPD module A1) includes the following emission sources:

- Holcim's quarry operations for the extraction of coarse aggregate, natural sand and manufactured sand;
- Production of other raw materials by third parties: cement, admixtures, fly ash, slag, reinforcing fibres and additives; and
- Direct emissions reported in the National Pollution Inventory.

Some emissions sources were modelled as co-products, in accordance with BS EN 16757:2022. These include:

- Fly ash;
- Ground granulated blast furnace slag; and
- Silica fume.

As such, the above materials are considered as co-products of their production process and the impacts for their production process are allocated according to PCR 2019:14 Construction Products and Construction Services (co-produced goods, multi-output allocation). Default background data from LCA databases was used to model the above co-products:

- Fly ash: the AusLCI process for fly ash treats it as a waste material and only includes transport impacts.
- Ground granulated blast furnace slag: the AusLCI process for slag is allocated based on economic value, as the product has significant economic value at the point of collection.
- Silica fume: the ecoinvent process for silica fume treats it as a waste material and only includes transport impacts.

## **Transport to concrete production plants**

This stage includes:

- The transport by truck of Holcim-produced raw materials to concrete batching plants; and
- The transport by ship and/or truck of other raw materials from third-party supplier locations to the concrete batching plants.

## **Manufacturing**

This stage includes the following emission sources:

- Electricity for all manufacturing operations;

- Diesel for manufacturing operations;
- Mains water consumption;
- Production of lubricating oil;
- Production of conveyor belts;
- Disposal of raw materials' packaging waste;
- Treatment of wastewater; and
- Direct emissions reported in the National Pollution Inventory.

## Inside the emissions boundary

All emission sources listed in the emissions boundary are part of the climate active certification.

**Quantified** emissions have been assessed as 'attributable processes' of a product or service. These attributable processes are services, materials and energy flows that become the product or service, make the product or service and carry the product or service through its life cycle. These attributable emissions have been quantified in the carbon inventory.

**Non-quantified** emissions have been assessed as attributable and are captured within the emissions boundary, but are not measured (quantified) in the carbon inventory. All material emissions are accounted for through an uplift factor. Further detail is available at Appendix C.

## Outside the emissions boundary

**Non-attributable** emissions have been assessed as not attributable to a product or service. They can be **optionally included** in the emissions boundary and therefore have been offset, or they can be listed as outside of the emissions boundary (and are therefore not part of the climate active certification). Further detail is available at Appendix D.

## Inside emissions boundary

### Quantified

#### Raw material Supply

- Quarry operations for aggregates, natural and manufactured sand
- Production of other raw materials for concrete manufacturing by third parties including, cement, admixtures, SCM
- Direct emissions reported in NPI

#### Transport of raw materials

- Holcim produced raw materials to concrete batching plants: Truck
- Third-party raw materials to concrete batching plants: Truck/ Ship

#### Manufacturing (Concrete plant resources)

- Electricity
- Diesel
- Mains water
- Lubricating oil
- Conveyor belts
- Wastewater treatment
- Direct emissions reported in NPI

### Non-quantified

n/a

### Excluded

- Personnel
- Infrastructure & capital goods
- Production equipment not directly consumed in the process

## Outside emission boundary

### Non-attributable

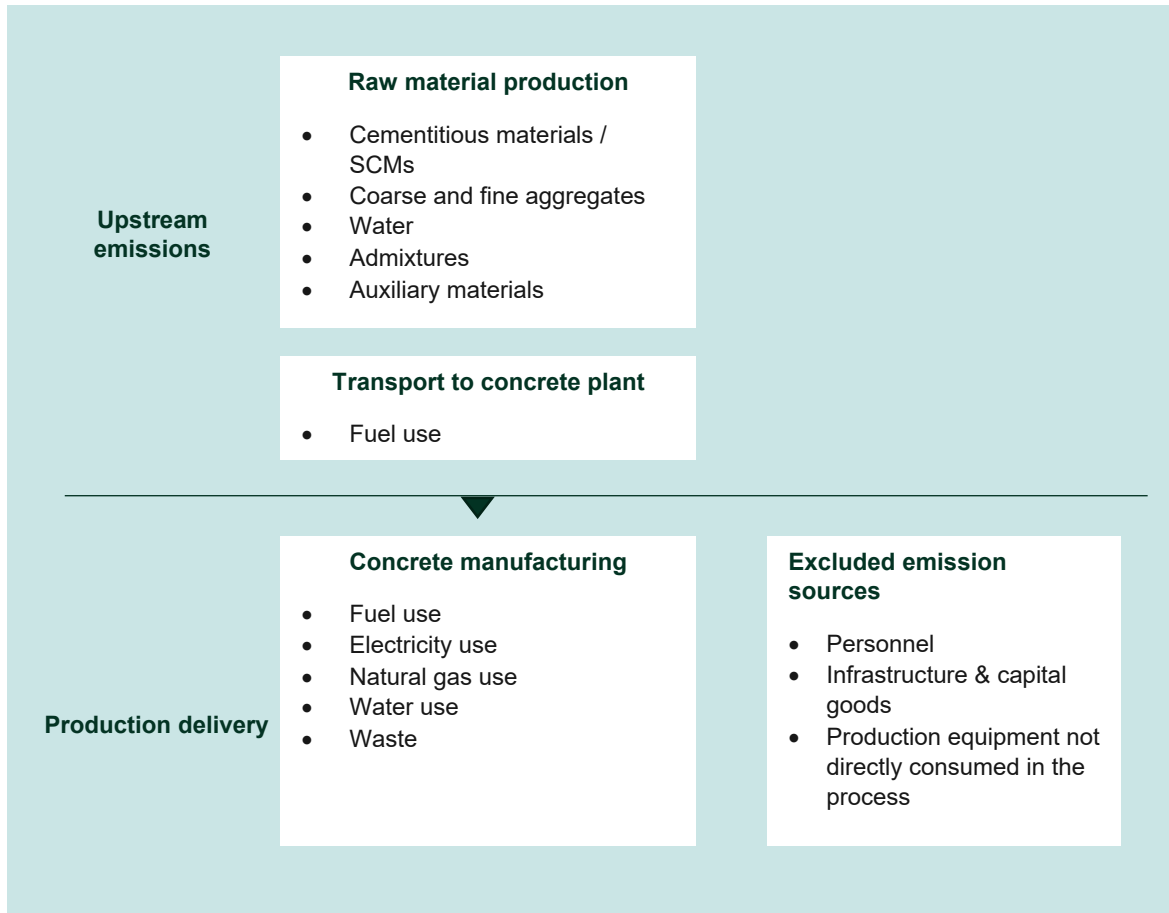
Downstream life cycle stages (i.e. gate to grave).

The key non attributable emission sources are:

- Transport to construction site
- Construction stage
- Maintenance and refurbishment inputs
- Carbonation of concrete leading to CO<sub>2</sub> absorption during residence time in building
- Deconstruction and disposal/recycling

## Product process diagram

Cradle-to-gate boundary.



The contribution of personnel, infrastructure and capital goods and production equipment not directly consumed in the process are excluded in line with the Product Category Rules. These have met all three exclusion conditions as shown in Appendix C.

## 4. EMISSIONS REDUCTIONS

### Emissions reduction strategy

To avoid the most extreme impacts of climate change, the world must rapidly transition to a near net-zero economy by 2050 to limit warming to 1.5°C against pre-industrial levels. As a global leader in innovative and sustainable building solutions, Holcim is part of the solution in addressing the urgent challenge of climate change. We are putting climate action at the heart of our business strategy, to build progress for people and the planet.

At Holcim, we are taking a science-driven approach on the journey to becoming a net-zero company. Holcim was amongst the first companies worldwide to have its 2030 and 2050 CO<sub>2</sub> reduction targets validated by the Science Based Targets initiative (SBTi) as aligned with a 1.5°C scenario.

Our commitment to accelerate decarbonization across the whole building value chain is based on four key areas:

- **Decarbonising our operations:** We are Decarbonising our energy use across our operations, from alternative fuels to renewable electricity; deploying decarbonized materials for low carbon product.
- **Building better with less:** We are decarbonising construction with our range of low carbon materials.
- **Circular construction:** Shifting gears from a linear “take-make-dispose” approach to a circular “reduce, recycle, regenerate” economy.
- **Making buildings sustainable:** We are decarbonising cities with our broad range of Solutions and Products, to make buildings more sustainable in use.

In 2022, Holcim updated its Global 2030 climate targets in line with the SBTi's revised 1.5°C-aligned roadmap. With these upgraded targets, we confirm our commitment to decarbonize building, leveraging the most advanced science.

- Holcim commits globally reduce gross scope 1 GHG emissions 23.3% per tonne of cementitious material and scope 2 GHG emissions 65% per tonne of cementitious materials within the same timeframe.<sup>1</sup>
- Holcim commits to reduce its gross scope 3 GHG emissions from purchased goods and services 25.1% per tonne of purchased clinker and cement by 2030 from a 2020 base year.
- Holcim also commits to reduce its scope 3 GHG emissions from fuel and energy related activities 20% per tonne of purchased fuels by 2030 from a 2020 base year.
- Furthermore, Holcim commits to reduce its scope 3 GHG emissions from downstream transport and distribution 24.3% per tonne of materials transported within the same timeframe.

In 2022, Holcim also updated its Global 2050 climate targets in line with the SBTi's revised 1.5°C-aligned roadmap

- We will reduce our scope 1 and 2 GHG emissions by 95% per tonne of cementitious materials from a 2018 base year.<sup>1</sup>
- We will reduce our absolute scope 3 GHG emissions by 90% by 2050 from a 2020 base year.<sup>2</sup>

Our Global Climate Report shares our progress on our net-zero journeys, including our upgraded 2030 targets aligned with the 1.5°C framework and validated by the Science Based Targets initiative. Please refer to Holcim's Climate Policy<sup>3</sup>, webpage on climate action<sup>4</sup> and Global Climate Report<sup>5</sup> for further details.

## Emissions reduction actions

Holcim Australia continues to focus on reducing the embodied carbon impact of its ready-mix concrete products through a number of levers, such as design efficiency, optimizing the quantity of cement, supplementary cementitious materials (SCM), admixtures, and reducing site impacts (i.e. on site solar). Holcim's Climate Active Certification allows customers to opt-in to offset the remaining embodied carbon.

Holcim's launched, its ECOPact ready-mix concrete range in April 2021. Since its launch, ECOPact has continued to be supplied and specified across projects during the current reporting period, with ongoing efforts to increase uptake of lower-carbon concrete mixes and optimise product formulations. Holcim's ECOPact ready-mix concrete product is a sustainable construction solution designed to meet the demands of modern construction while reducing environmental impact. With a focus on embodied carbon reduction, environmental transparency, and emissions reduction targets, ECOPact is setting a new standard for responsible construction materials.

Key Features of ECOPact ready-mix concrete:

1. Embodied Carbon Reduction: ECOPact offers a minimum 30% reduction in embodied carbon compared to Ordinary Portland cement concrete. This can help reduce the carbon footprint of building and infrastructure construction projects.
2. Environmental Product Declaration (EPD): A product-specific EPD will be registered with EPD Australasia. EPDs provide transparent information about the environmental impact including embodied carbon of the concrete, enabling informed decision-making during project planning and design stages.
3. Global Green Tag Product Health Declaration (PHD) - Platinum Certification: The "GreenTag PHD™ Communicates Product Health – is one of the first of its kind. A GreenTag PHD™ assesses and certifies the product from a human health perspective.
4. Science-Based Emissions Reduction Targets: Holcim has globally committed to science-based emissions reduction targets for 2030 and 2050, validated by the Science Based Targets initiative

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<sup>1</sup> The target boundary includes land-related emissions and removals from bioenergy feedstocks.

<sup>2</sup> This net-zero validation was evaluated within the parameters of the Business Ambition for 1.5°C campaign and it covers categories 1, 3, 4, 6, 7 and 9 of Holcim's scope 3 emissions.

<sup>3</sup> [https://www.holcim.com/sites/holcim/files/2023-04/holcim\\_climate\\_policy.pdf](https://www.holcim.com/sites/holcim/files/2023-04/holcim_climate_policy.pdf)

<sup>4</sup> <https://www.holcim.com/sustainability/climate-action>

<sup>5</sup> <https://www.holcim.com/sites/holcim/files/docs/28022025-holcim-climate-report-2024.pdf>

(SBTi). These targets ensure that Holcim's operations align with international efforts to mitigate climate change, contributing to a more sustainable future

These product features reflect Holcim's ongoing operational practices for reducing embodied carbon in ready-mix concrete, which continue to be applied and refined during the current reporting period.

Additional information in relation to the key features of ECOPact ready-mix concrete:

1. Reduction in embodied carbon in comparison to Australian Life Cycle Inventory (AusLCI) database value (excluding infrastructure) for an ordinary Portland cement ready-mix concrete (i.e. no innovation or use of supplementary cementitious materials). Link to AusLCI data <https://www.alcas.asn.au/auslcii> and AusLCI cement and concrete background report <https://www.auslci.com.au/> ). The impact of fibres, pigments and oxides are excluded from the embodied carbon reduction calculations.
2. Link to Holcim EPDs registered with EPD Australia - <https://epd-australasia.com> . ECOPact EPD Registration may not be final at the time of supply.
3. Link to Global Green Tag Product Health Declaration (PHD) - Platinum Certification - <https://www.globalgreentag.com/products/holcim-ready-mix-concrete/> . Please note that decorative concrete ingredients (e.g. off white cement, pigments and oxides) are not included in the scope of the PHD assessment. Please refer to the PHD for further details.
4. Link to SBTi's target dashboard for information regarding Holcim's Targets - <https://sciencebasedtargets.org/companies-taking-action>

## 5. EMISSIONS SUMMARY

### Emissions over time

This section compares emissions over time between the base year and the current year of certification. The emissions intensity of the functional unit and the total emissions change each year depending on quantity and type of opt in Climate Active products sold.

		Emissions since base year	
		Total tCO <sub>2</sub> -e	Emissions intensity of the functional unit
Base year:	2019	0	0
Year 1:	2020	128	0.245
Year 2:	2021	3,420	0.275
Year 3:	2022	5,129	0.263
Year 4:	2023	6,813	0.277
Year 5:	2024	6,403	0.253

### Significant changes in emissions

Our products are Climate Active certified on an opt-in basis. This means we expect to see significant changes in emissions intensity and total emissions of certified products from year-to-year, depending on which ones of our thousands of products are offset in a given year.

The table below summaries the various emissions by key material for the ready-mix concrete sales in current year (2024) and the previous year (2023).

Significant changes in emissions			
Attributable process	Previous year emissions (t CO <sub>2</sub> -e)	Current year emissions (t CO <sub>2</sub> -e)	Reason for change
Aggregates	506	466	Volume decreased; environmental factors and LCA model updated
General Purpose Cement	5,735	5,112	Volume increased; environmental factors and LCA model updated
Supplementary Cementitious Materials	476	565	Volume increased; environmental factors and LCA model updated
Admixtures	51	63	Volume increased; environmental factors and LCA model updated
<b>Additives</b>	0	118	Additives introduced to some mixes
Concrete plant resources	44	79	Volume increased; environmental factors and LCA model updated

## Use of Climate Active certified products and services

N/A

## Emissions summary

Holcim's ready-mix concrete is sold as a Climate Active product on an 'opt-in' basis. This means that customers can elect to purchase any ready-mix concrete from Holcim as a Climate Active product.

The table below shows a summary of the emissions sources for this reporting period (CY2024).

Emission source	tCO <sub>2</sub> -e
Aggregates	466
General Purpose Cement	5,112
Supplementary Cementitious Materials	565
Admixtures	63
Additives	118
Concrete plant resources	79
<b>Attributable emissions (tCO<sub>2</sub>-e)</b>	<b>6,403</b>

Product offset liability	
Emissions intensity per functional unit	0.253 tCO <sub>2</sub> -e / m <sup>3</sup>
Emissions intensity per functional unit including uplift factors	N/A
Number of functional units covered by the certification	25,351 m <sup>3</sup>
<b>Total emissions (tCO<sub>2</sub>-e) to be offset</b>	<b>6,403 tCO<sub>2</sub>-e</b>

## 6. CARBON OFFSETS

### Eligible offsets retirement summary

Offsets retired for Climate Active certification

Type of offset units	Eligible quantity (used for this reporting period)	Percentage of total
Certified Emissions Reductions (CERs)	6,403	100%

Project description	Type of offset units	Registry	Date retired	Serial number (and hyperlink to registry transaction record)	Vintage	Staple quantity	Eligible quantity retired (tCO <sub>2</sub> -e)	Eligible quantity used for previous reporting periods	Eligible quantity banked for future reporting periods	Eligible quantity used for this reporting period	Percentage of total (%)
Enercon Wind Farms in Karnataka Bundled Project - 73.60 MW	CERs	ANREU	23 Nov 2021	<a href="#">200,764,977 -200,824,976</a>	CP2	0	60,000*	10,489	3,108	6,403	100%
<b>Total offsets retired this report and used in this report</b>									6,403		
<b>Total offsets retired this report and banked for future reports</b>								3,108			

\*40,000t for Holcim's Humes Precast concrete (opt-in) future sales / 20,000t for Holcim's ready-mix concrete (opt-in) future sales.

## Co-benefits

The Bundled Wind Power Project in Tamilnadu, India involves installation of 396 Wind Turbine Generators (WTGs) with a total cumulative installed capacity of 236 MW. The wind energy project activity (Project) involves in the Enercon Wind Farms (WFs) in Karnataka Bundled Project with a total cumulative installed capacity of 73.6 MW. Apart from generation of renewable electricity and associated environmental benefits, the project has also been conceived to contribute towards sustainable development of the region - socially, technologically, and economically. The participants' view on the contribution of this Project towards sustainable development follows these indicators:

Social well-being:

- Improves electricity availability in the region and reduces electricity deficit situation in the local region.
- Creation of employment opportunities for the local people during the erection and commissioning of the WFs.
- Promoting infrastructural development like approach roads in the areas where the Project is located.
- Increased investment in wind energy projects will further push R&D efforts by technology providers to develop more efficient and better machinery in future.

Economic well-being:

- The project activity results in generation of additional employment opportunities directly and indirectly which helps improve the standard of living of the people in and around the project activity location.
- The generation of the offsets provides financial incentives, which encourage channelling more investment into cleaner energy projects and also result in improved returns to the project stakeholders.
- Promotes industrial growth by catering to the energy needs arising out of the supply-demand gap of electricity.

## 7. RENEWABLE ENERGY CERTIFICATE (REC) SUMMARY

### Renewable Energy Certificate (REC) Summary

N/A

# APPENDIX A: ADDITIONAL INFORMATION

Additional retirement details for CER-IND-Enercon Wind Farms Karnataka.

The screenshot displays the ANREU website interface. The header includes the Australian Government logo and the text 'Australian National Registry of Emissions Units'. A navigation menu on the left lists various options like 'ANREU Home', 'Account Holders', and 'My Profile'. The main content area is titled 'Transaction Details' and shows a notification 'Transaction Successfully Approved'. Below this, the transaction details for ID AU20415 are listed, including its current status as 'Sending (91)', status date, type as 'Cancellation (4)', initiator, and approver. It also provides details for the transferring and acquiring accounts. At the bottom, a 'Transaction Blocks' table is shown with one entry for a Kyoto Voluntary Cancellation.

**Transaction Details**

Transaction details appear below.

**Transaction Successfully Approved**

**Transaction ID:** AU20415  
**Current Status:** Sending (91)  
**Status Date:** 23/11/2021 17:33:06 (AEDT)  
 23/11/2021 06:33:06 (GMT)  
**Transaction Type:** Cancellation (4)  
**Transaction Initiator:** Grant, Andrew William Thorold  
**Transaction Approver:** Grant, Andrew William Thorold  
**Comment:** Retired on behalf of Holcim (Australia) Pty Ltd to for Climate Active Certification for the period FY21-FY23.

**Transferring Account**

**Account Number:** AU-2734  
**Account Name:** Tasman Environmental Markets Pty Ltd  
**Account Holder:** Tasman Environmental Markets Pty Ltd

**Acquiring Account**

**Account Number:** AU-2764  
**Account Name:** Voluntary Cancellation - CP2  
**Account Holder:** Commonwealth of Australia

**Transaction Blocks**

Party	Type	Transaction Type	Original CP	Current CP	ERF Project ID	NGER Facility ID	NGER Facility Name	Safeguard	Kyoto Project #	Vintage	Expiry Date	Serial Range	Quantity
IN	CER	Kyoto Voluntary Cancellation	2	2					IN-1286			200,764,977 - 200,824,976	60,000

## APPENDIX B: ELECTRICITY SUMMARY

N/A

# APPENDIX C: INSIDE EMISSIONS BOUNDARY

## Non-quantified emission sources

N/A

## Excluded emission sources

Attributable emissions sources can be excluded from the carbon inventory, but still considered as part of the emissions boundary if they meet **all three of the below criteria**. An uplift factor may not necessarily be applied.

1. A data gap exists because primary or secondary data cannot be collected (**no actual data**).
2. Extrapolated and proxy data cannot be determined to fill the data gap (**no projected data**).
3. An estimation determines the emissions from the process to be **immaterial**).

	No actual data	No projected data	Immaterial
Capital goods	Yes	Yes	Yes
Personnel	Yes	Yes	Yes
Production equipment not directly consumed in the process	Yes	Yes	Yes

### The following is further justification for why these emission sources have been deemed immaterial:

Capital goods, including buildings, infrastructure, and production equipment that are not directly consumed in the manufacturing process, have been excluded from the assessment. The embodied emissions associated with these assets are typically amortised over long operational lifetimes and, when allocated to the functional unit of the product system, are generally very small compared with emissions associated with operational energy use, material inputs, and other directly consumed resources.

Personnel-related impacts have also been excluded. In attributional life cycle assessment, the environmental impacts associated with employees (e.g. commuting) are typically considered independent of the specific product system because individuals would generate similar impacts regardless of their employer; therefore, including these impacts would not meaningfully change the comparative results of the assessment.

## APPENDIX D: OUTSIDE EMISSION BOUNDARY

Non-attributable emissions have been assessed as not attributable to a product or service (do not carry, make or become the product/service) and are therefore not part of the Climate Active claim. To be deemed attributable, an emission must meet two of the five relevance criteria. Emissions which only meet one condition of the relevance test can be assessed as non-attributable and therefore are outside the Climate Active claim. Non-attributable emissions are detailed below.

1. **Size** The emissions from a particular source are likely to be large relative to other attributable emissions.
2. **Influence** The responsible entity could influence emissions reduction from a particular source.
3. **Risk** The emissions from a particular source contribute to the responsible entity's greenhouse gas risk exposure.
4. **Stakeholders** The emissions from a particular source are deemed relevant by key stakeholders.
5. **Outsourcing** The emissions are from outsourced activities that were previously undertaken by the responsible entity or from outsourced activities that are typically undertaken within the boundary for comparable products or services.

This Climate Active certification is based on EPD life cycle with a cradle to gate scope that excludes all downstream life cycle stages (i.e. gate to grave) from the certification boundary. The downstream emissions include:

- Transport to construction site
- Construction stage
- Maintenance and refurbishment inputs
- Carbonation of concrete leading to CO<sub>2</sub> absorption during residence time in building
- Deconstruction and disposal/recycling

In the summary table below, a written justification for all judgments made are provided to categories emissions sources against the relevance test criteria as non-attributable.

## Non-attributable emissions sources summary

Emission sources tested for relevance	Size	Influence	Risk	Stakeholder	Outsourcing	Justification
Transport to construction site	N	N	N	N	N	<p><b>Size:</b> Emissions from transport to the construction site are expected to be small relative to the other attributable emissions.</p> <p><b>Influence:</b> The organisation has limited ability to influence transport logistics once products leave its operational control.</p> <p><b>Risk:</b> This emission source does not materially contribute to the organisation’s exposure to climate-related financial, regulatory, supply chain or reputational risks.</p> <p><b>Stakeholders:</b> Key stakeholders are unlikely to consider transport to construction sites a significant or relevant emission source for the organisation’s product/service.</p> <p><b>Outsourcing:</b> This activity occurs outside the organisation’s operational boundary and is typically managed by third-party logistics or project contractors.</p>
Construction stage	N	N	N	N	N	<p><b>Size:</b> Emissions generated during the construction stage that are specific to the concrete are expected to be small relative to the other attributable emissions.</p> <p><b>Influence:</b> Construction activities are undertaken by contractors and project developers, and the organisation has limited ability to influence these emissions.</p> <p><b>Risk:</b> This emission source does not materially contribute to the organisation’s climate-related financial, regulatory or reputational risks.</p> <p><b>Stakeholders:</b> Stakeholders are unlikely to consider construction-stage emissions as a relevant emission source for this product.</p>

		<p><b>Outsourcing:</b> Construction activities occur outside the organisation’s operational boundary and are managed by third-party contractors.</p>
<p><b>Maintenance and refurbishment inputs</b></p>	<p>N N N N N</p>	<p><b>Size:</b> Emissions associated with maintenance and refurbishment inputs are expected to be small relative to the other attributable emissions.</p> <p><b>Influence:</b> Significant maintenance or refurbishment is not expected over the life of the product and these activities are managed by asset owners or operators, limiting the organisation’s ability to influence associated emissions.</p> <p><b>Risk:</b> This emission source does not materially affect the organisation’s exposure to climate-related risks.</p> <p><b>Stakeholders:</b> Key stakeholders are unlikely to view maintenance and refurbishment emissions as a relevant source for the organisation’s product/service.</p> <p><b>Outsourcing:</b> These activities occur outside the organisation’s operational boundary and are typically undertaken by building owners or third-party service providers.</p>
<p><b>Carbonation of concrete leading to CO2 absorption during residence time in building</b></p>	<p>N N N N N</p>	<p><b>Size:</b> The impact of CO<sub>2</sub> absorption from carbonation is expected to be small relative to the other attributable emissions.</p> <p><b>Influence:</b> Carbonation occurs passively over the building’s lifetime and is not within the organisation’s operational control or influence.</p> <p><b>Risk:</b> This process does not materially contribute to the organisation’s exposure to climate-related financial, regulatory or reputational risks.</p> <p><b>Stakeholders:</b> Stakeholders are unlikely to consider carbonation-related CO<sub>2</sub> absorption a relevant emission source for the organisation’s product.</p> <p><b>Outsourcing:</b> This process occurs during the building use phase outside the organisation’s operational boundary.</p>

**Deconstruction and disposal/recycling**

N N N N N

**Size:** Emissions associated with deconstruction and disposal or recycling at end-of-life are expected to be small relative to the other attributable emissions.

**Influence:** End-of-life treatment occurs decades after construction and is determined by future asset owners and waste management practices beyond the organisation's influence.

**Risk:** This emission source does not materially contribute to the organisation's exposure to climate-related risks.

**Stakeholders:** Key stakeholders are unlikely to consider end-of-life treatment a relevant emission source for the organisation's product.

**Outsourcing:** Deconstruction and disposal or recycling activities occur outside the organisation's operational boundary and are managed by third-party contractors.



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