

Australian Government
Climate Active Program
Public Disclosure Statement



NAME OF CERTIFIED ENTITY: **Holcim Australia Pty Ltd**

REPORTING PERIOD: **2019**

Declaration

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 Carbon Neutral Standard Carbon Neutral Program.

Signature		Date	20 March 2020
Name of Signatory	Cyril Giraud		
Position of Signatory	National Development & Sustainability Manager		

Carbon neutral certification category	Product Environmental Product Declaration Pathway
Date of most recent external verification/audit	2019-07-10
Auditor	Jane Anderson, ConstructionLCA Limited
Auditor assurance statement link	https://www.environdec.com/Detail/?Epd=13359



Australian Government
Department of the Environment and Energy

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Carbon neutral information

1A. Introduction

About Holcim Australia

Holcim Australia (Holcim) is a leading supplier of construction materials in Australia, originally serving the industry under the well-known Readymix and Humes brands dating back to 1901. Today Holcim continues to supply essential construction materials including aggregates, sand, ready-mix concrete, engineered precast concrete and prestressed concrete solutions to a range of customers and projects throughout Australia.

Holcim operates across the Australian continent supplying concrete from a network of concrete plants, quarries, precast and concrete pipe plants, and mobile and on-site project facilities. As part of LafargeHolcim, Holcim Australia can be counted on for state-of-the-art product development, reliable service and advanced technical expertise for your next project.

Published in 2019, the ViroDecs™ ready-mix concrete Environmental Product Declaration (EPD) (<https://www.environdec.com/Detail/?Epd=13359>) is a product of Holcim's drive to comprehensively analyse and communicate to customers the embodied environmental impacts of Holcim's ready-mix concrete mixes. The development of a ready-mix concrete EPD is a critical "missing" piece to having all key infrastructure and building products represented by an EPD in Australia. Its publication will support designers and developers to drive improved sustainable procurement and materials selection. Holcim's ViroDecs™ EPD also has the potential to challenge common beliefs of environmental sustainability, by supporting the standardisation and transparency of environmental claims.

The carbon accounting published in the EPD was based on data collected from across Holcim's Australian operations, including over 190 concrete batching plant sites and 46 quarries. The resulting life cycle assessment (LCA) is compliant with ISO 14025 and EN 15804 and has been independently reviewed by an approved, third-party verifier under EPD Australasia. As such the carbon accounting in the EPD aligns with the Climate Active Products and Services Standard as well as the provisions in section 4.a of the Carbon Neutral Certification and Environmental Product Declaration product guidance.

ViroDecs™ Carbon Neutral Ready-Mix Concrete

Through the EPD pathway for carbon neutral certification, Holcim is addressing the global warming impact of its ready-mix concrete as quantified in the ViroDecs™ EPD.

This carbon neutral certification covers Holcim's range of ViroDecs™ ready-mix concrete sold in Australia, which includes both normal and special class concrete (refer to Table 1).

Table 1 – Features of normal class and special class concrete

Feature	Holcim ViroDecs™ EPD	
	Normal class concrete mixes	Special class concrete mixes
Specification	Typically specified by: <ul style="list-style-type: none"> • State • Strength grade • Blend • Developed for residential applications, low rise buildings, paving and driveways, etc. Its specification and ordering have been simplified as far as practicable. 	Typically specified by: <ul style="list-style-type: none"> • Project • Strength grade OR prescription mix • 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. • High strength designations above 50 MPa are also class as special class concrete, e.g. 65 MPa, 80 MPa and 100 MPa.
Geographic scope	Australia-wide	Australia-wide / Project site-specific
Typical function	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 provides a summary of the materials included in Holcim ViroDecs™ ready-mix concrete and their relative composition by weight.

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

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%

1B. Emission sources within certification boundary

Attributable processes and emission sources (within certification boundary)

The certification boundary follows a cradle-to-gate score and encompasses the following EPD life cycle stages (Figure 1):

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

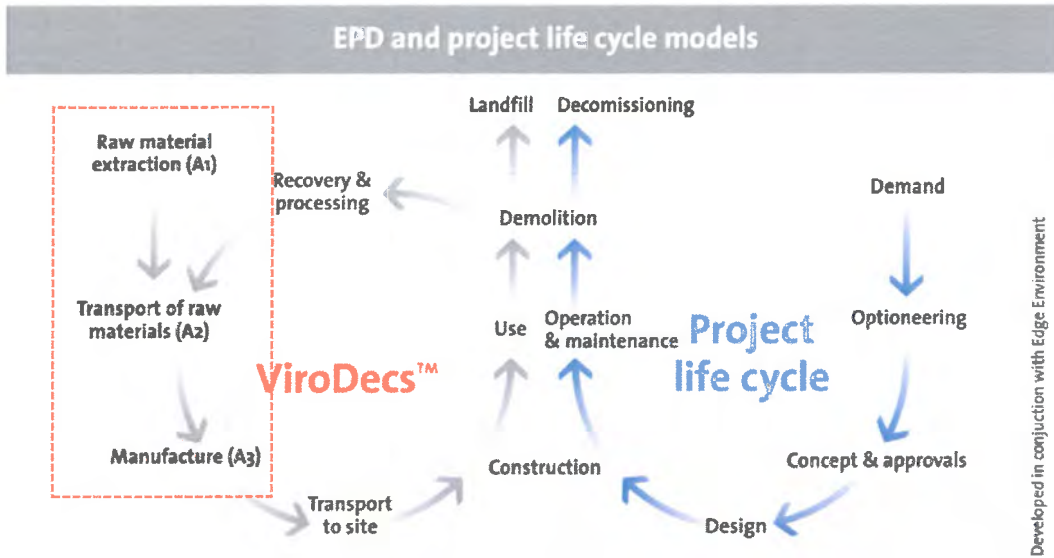


Figure 1 – Scope of this certification in the broader life cycle of construction and infrastructure projects.

Concrete is prepared by mixing cement, coarse and fine aggregates, and water, with or without the addition of auxiliary agents and additives. The fresh concrete is placed on the building site or prefabricated in factory moulds, compressed, and hardened in the desired shape by the hydration of cement to form a solid artificial stone. The cradle-to-gate certification boundary considers all processes from the extraction of raw materials to the batching of concrete (Figure 2).

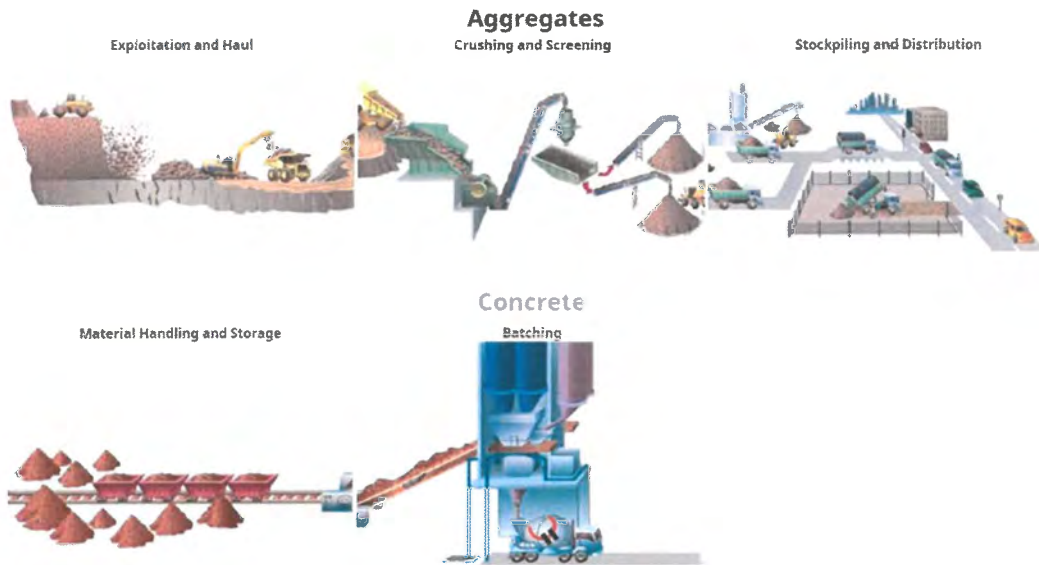


Figure 2 – Operations controlled by Holcim from quarry to batching.

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

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF₆)

- Nitrogen trifluoride (NF₃)

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 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 16757:2017. 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 2012:01 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.

Concrete manufacturing is undertaken primarily at Holcim branded concrete batching plants, with some manufacturing occurring at Holcim's subsidiary branded sites (e.g. Excel Concrete, Broadway and Frame Premix) to Holcim's mix design specifications. 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.

Excluded processes and emission sources (within certification boundary)

The following emission sources have been excluded in line with the provisions of the Climate Active Carbon Neutral Standard:

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

The impact of excluding these sources is not expected to materially affect the overall total emissions.

Non Attributable processes and emission sources (outside certification boundary)

Downstream life cycle stages (i.e. gate to grave) were not considered in the study and the impact of these stages (e.g. construction, use, disposal) shall not be considered zero. Downstream emissions were not quantified because ready-mix concrete is an intermediate product and the final product is highly variable (e.g. can range from a building column to a pavement). The activity data for the downstream life cycle stages is therefore difficult to quantify and highly variable.

The key non attributable emission sources are:

- Transport to site;
- Construction stage;
- Maintenance and refurbishment inputs;
- Carbonation of concrete leading to CO₂ absorption during residence time in building; and
- Deconstruction and disposal/recycling.

1C. Diagram of the certification boundary (process map)

Figure 3 presents the certification boundary for the carbon account. All processes indicated within the solid black line are considered within the certification boundary. Key cradle to gate, non attributable emissions which have been excluded from the carbon account are also indicated outside the solid black line.

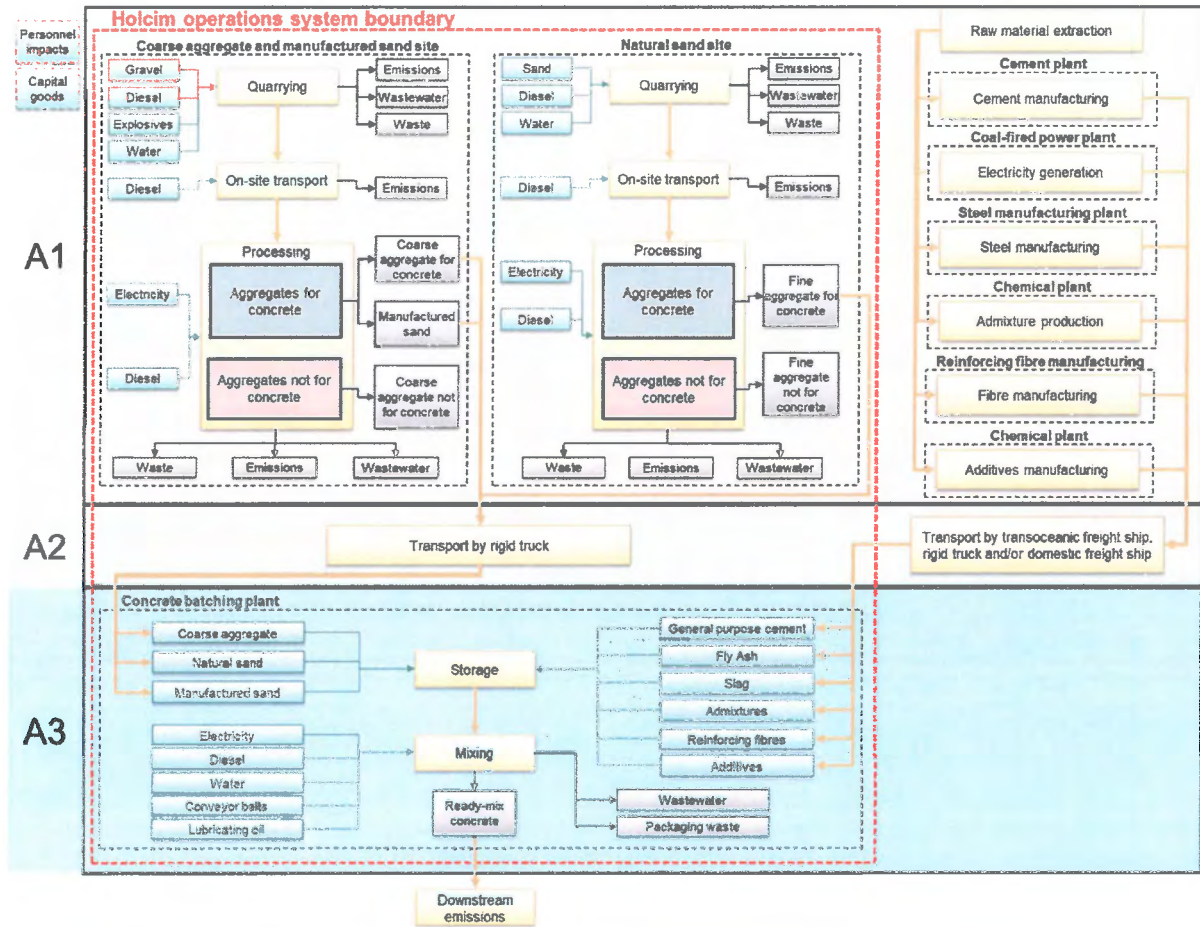


Figure 3 - Certification boundary (cradle to gate, note that gate to grave emissions are excluded)

Functional Unit: kg CO₂-e / m³ of ViroDecs™ Ready-Mix Concrete

2. Emissions reduction strategy

Holcim Australia, a member of LafargeHolcim, has carbon reduction targets aligned to the LafargeHolcim 2030 Sustainable Development Plan (“the 2030 Plan”). The 2030 Plan aims to generate one third of net sales from sustainable products and solutions. LafargeHolcim has also set targets to reduce net CO₂-e emissions per tonne of cementitious materials and help customers avoid 10 million tonnes of CO₂-e from the construction of buildings and infrastructure each year.

Supply of low-carbon materials and solutions is key to reduce the carbon intensity of the ready-mix concrete. Holcim Australia’s carbon reduction strategy aims to increase the replacement of general-purpose cement with supplementary cementitious materials (SCM) such as fly ash, slag and silica fume. The strategy involves:

- Increasing the sale of ready-mix concrete with higher SCM replacement;
- Promoting the specification of higher SCM replacement (or lower CO₂-e concrete) on Infrastructure Sustainability (IS) or Green Star rated projects; and
- Improving internal systems and processes for product development to drive innovation and customised design of mixes.

Holcim’s ViroDecs™ EPD supports the strategy by providing:

- Better communication of its environmental performance;
- Alignment with relevant industry rating schemes (the Infrastructure Sustainability rating and the Green Star rating); and
- Detailed information regarding emissions hotspots.

3. Emissions summary

Holcim’s ViroDecs™ ready-mix concrete will be sold as a carbon neutral product on an ‘opt-in’ basis. This means that customers can elect to purchase any ViroDecs™ ready-mix concrete from Holcim as a carbon neutral product.

As this Public Disclosure Statement is provided to initiate Holcim’s carbon neutral certificate, no carbon neutral concrete was sold in 2019. Table 3 will be updated in Holcim’s Product Disclosure Statement in 2020 based on the quantity of carbon neutral concrete sold in the 2020 calendar year. To provide an indication of the breakdown of the emissions sources for Holcim’s ViroDecs™ ready-mix concrete, an estimate based on a small-scale project requiring 5,500 m³ of concrete is provided below:

Projection of emissions for first year of certification: Yes No

First year of certification: 2020

Emission source	t CO ₂ -e
Aggregate	0.111
General Purpose Cement	1.273
Supplementary Cementitious Materials (SCMs)	0.041
Admixtures	0.014
Additives	0
Concrete plant resources	0.011

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Total Gross Emissions per annum	1.450
GreenPower or retired LGCs	0
Total Net Emissions	0
Total Net Emissions opted in as Carbon Neutral Product/Service	0

Please note that the emissions per m³ and emissions breakdown will vary greatly depending on project requirements. The above information should not be used to infer average or typical performance. Rather, we encourage you to consult Holcim's publicly available emissions information contained in our Environmental Product Declaration for ready-mix concrete:

<https://epd-australia.com/epd/holcim-virodecs-ready-mix-concrete/>

Carbon offsets

4A. Offsets summary

As Holcim's ViroDecs™ ready-mix concrete will be sold as a carbon neutral product on an 'opt-in' basis, offsets will be purchased on an on-going basis in line with purchases of Holcim carbon neutral concrete. For up to date information throughout the reporting year regarding the supply of Holcim carbon neutral ready-mix concrete and the requisite purchases of carbon offsets please refer to the Holcim Australia website: <http://www.holcim.com.au/ViroDecs>. As no carbon neutral concrete was sold in 2019, there were no offsets purchased for the 2019 calendar year.

Table 4. Offsets Summary								
Projects supported by offset purchase	Eligible offset units	Registry	Year retired	Serial number (including hyperlink to registry transaction record)	Vintage	Quantity	Offsets to be used for this reporting period	
Total offsets cancelled:							0	
Total offsets banked for use future years:								

Base year offset: Yes No

Offsets forward purchased for next reporting period: Yes No

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4B. Offset projects (Co-benefits)

Not applicable – initial application

5. Use of trade mark

Not applicable – initial application

Table 5. Trade mark register	
Where used	Logo type

6. Have you done more?

Not applicable – initial application