



## Holcim's Climate Strategy

# Too little – too late

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# Key Insights

## Cement

- **Carbon footprint:** The global cement and concrete industry produces up to 8% of the annual global emissions of CO<sub>2</sub>. To produce one kilogram of the most commonly used cement (Ordinary Portland Cement), almost one kilogram (911g) of CO<sub>2</sub> is emitted.
- **Use:** Cement is currently the most used material in global construction. Experts say that the material is largely overused.
- **CO<sub>2</sub> reductions possible:** Different studies show that cement production can become less CO<sub>2</sub> intensive. Furthermore, CO<sub>2</sub> emissions could be reduced by lowering cement overuse.

## Holcim's CO<sub>2</sub> emissions

- **Carbon Major:** Holcim is among the top 50 companies in the world that have emitted the largest amounts of CO<sub>2</sub> and is the biggest polluter within the cement industry.
- **Swiss Carbon Major:** Since 1950, Holcim has emitted over 7 billion tonnes of CO<sub>2</sub>, equivalent to 0.42% of global fossil fuel and all industrial CO<sub>2</sub> emissions worldwide. This is more than twice as much as the whole of Switzerland emitted during the same period.
- **Costs:** The damage caused by one tonne of CO<sub>2</sub> is estimated to cost EUR 195. If Holcim had to pay this price for its 2021 direct emissions (scope 1) only, it would cost CHF 21.7 billion, which is close to Holcim's turnover of that same year (CHF 26.8 billion).
- **Rising emissions:** Despite continuous pledges to reduce its emissions, Holcim's absolute CO<sub>2</sub> emissions are currently on the rise.

## Holcim's climate strategy

- **Too late:** Despite the company's early knowledge of the carbon intensity of cement production and its detrimental impact on the climate, Holcim only started setting emission reduction goals in the early 2000s.
- **Too little:** To meet the 1.5°C limit of the Paris Agreement, absolute emission reductions are necessary. However, for most of its emissions, Holcim has only set relative goals to reduce the cement emissions per tonne of cementitious material and not the company's absolute emissions, and even these goals fall short of what is needed. The company claims otherwise and relies on the validation of its climate strategy by the Science Based Targets initiative (SBTi), which applies methods that grant big historical polluters greater emission allowances in the future than small polluters (see SBTi below).
- **Future heavy reliance on technology:** Post 2030, Holcim plans on a heavy reliance of Carbon Capture, Utilisation and Storage (CCUS) technologies to reduce its emissions and achieve net zero by 2050. There is substantial concern that this technology will not be scientifically, technically, economically, and socially feasible to be applied on such a grand scale.
- **Misleading Labelling of ECOPact:** The labelling and advertisement of Holcim's ECOPact range as 'green concrete', as having 'net zero' emissions, or referring to it as ecological is misleading. ECOPact products are less carbon intensive than conventional concrete, but they still cause CO<sub>2</sub> emissions. Such products should rather be labelled as 'less carbon intensive than conventional products' and include precise information on their climate impact.

## Science Based Targets initiative (SBTi)

- **Holcim and the SBTi:** The multi-stakeholder initiative helps companies to set emission reduction targets and claims to use methods that are in line with the latest climate science. Holcim's climate targets are validated by the SBTi. Inconsistencies with the SBTi's methods and governance ultimately fall back on the integrity of Holcim's climate targets.



- **Deficient methods:** For target-setting, the SBTi suggests using one of two methods, both of which rely on the *grandfathering principle*. This principle is reaffirming the status quo, by granting big polluters more emission allowances in the future than small polluters. The SBTi methods neglect companies' historical responsibilities, capabilities and equity principles, as well as the internationally agreed principle of *Common but Differentiated Responsibilities* (Rio-Principle).
- **Governance:** The SBTi faces criticism over governance issues, such as its independence from the industry, financing, transparency, procedures in the validation process, as well as conflicts of interests. At the moment, the SBTi acts as both standard setter and validator without an independent third-party audit.
- **Risk of CO<sub>2</sub> overshoot:** Due to the use of deficient methods, the SBTi legitimise an overshoot of the remaining carbon budget for the 1.5°C pathway.

## Demands

Given the globally necessary reduction path to keep global warming below 1.5°C as defined in the Intergovernmental Panel on Climate Change's (IPCC) sixth Assessment Report, the *severity* and *irreversibility* of the adverse effects of global warming as well as Holcim's *historic responsibility* and *capabilities*, HEKS demands Holcim to set *at the very least* the following emission reduction targets to do its part to limit global warming to 1.5°C:

- a reduction target of **at least 43% of its absolute and relative emissions** (scope 1, 2 and 3) until 2030, compared to 2019 levels, and
- a reduction target of **at least 69% of its absolute and relative emissions** (scope 1, 2 and 3) by 2040, compared to 2019 levels.

## Context

In June 2022, HEKS/EPER asked Holcim to raise its climate targets to adhere to this 1.5°C compatible pathway. Holcim refused, stating that this IPCC pathway is not aligned with the cost-optimal sector-specific guidance provided by the International Energy Agency (IEA) and the SBTi, which they prefer to follow.

Since Holcim is not ready to even take the emission reduction pathway necessary on a global average and to undertake rapid, urgent and substantial emission reductions to keep global warming below 1.5°C, HEKS/EPER supports the civil complaint against Holcim – *Asmania et. al v. Holcim* – launched by four Indonesian individuals (named Asmania, Arif, Bobby and Edi) from the Indonesian island of Pari, that is threatened to be submerged due to the adverse effects of global warming. Holcim's current voluntary climate actions and targets have shown to be insufficient in the climate urgency.

# 1. Summary

Climate change is happening. The clock is ticking. The global consensus is that global warming must not go beyond 1.5°C. Yet, to stand a chance of achieving this 1.5°C limit, the remaining carbon budget must be distributed fairly among all actors. Currently, the global cement industry contributes up to 8% of the global annual carbon dioxide (CO<sub>2</sub>) emissions, since the production of cement is extremely CO<sub>2</sub> intensive. The Swiss-based cement group Holcim Ltd. is the biggest player within the cement and concrete industry, and among the top 50 largest CO<sub>2</sub> emitters in the world. Since 1950, Holcim has emitted over 7 billion tonnes of CO<sub>2</sub>, which accounts for 0.42% of all global industrial CO<sub>2</sub> emissions, or twice as many emissions as produced by the whole of Switzerland during the same period. Holcim has published a climate strategy which includes the ambition to become a net zero corporation by 2050. However, as this report shows, Holcim's climate targets and business strategy are not in line with the 1.5°C limit and are therefore further exacerbating the climate crisis.

This report looks at Holcim's past, current and future climate impact through assessing its past and present emissions, as well as its future emission reduction plans. It explains that Holcim has largely contributed to the climate crisis due to its enormous historical emissions. The corporation's 2021 emissions still account for three times the annual emissions of Switzerland and have risen in recent years. The report concludes that Holcim's emission reduction targets are incompatible with the 1.5°C limit. According to the latest climate science, to stand a 50% chance of achieving the 1.5°C limit with no or limited overshoot, absolute emission reductions of 43% until 2030, 69% until 2040 and 84% until 2050 from a 2019 base year are required.

While claiming to have scientific targets, Holcim has explicitly not considered the above stated 1.5°C Intergovernmental Panel on Climate Change (IPCC) emission reduction pathway, but preferred to follow the cost-optimal sector-specific guidance provided by the International Energy Agency (IEA) and the Science Based Targets initiative (SBTi). Holcim's net zero ambition also includes a heavy reliance on Carbon Capture, Utilisation and Storage technologies for which technical, economic, social and scientific feasibility is not guaranteed.

The report finally dedicates a chapter on the SBTi, which is a multi-stakeholder initiative that helps companies set emission reduction targets and has validated Holcim's climate targets. It concludes that the SBTi methods for target-setting are reinforcing the status quo by neglecting important aspects for attributing the remaining emission budget fairly while achieving the 1.5°C limit, such as the responsibility, the capability of emitting actors, as well as equity principles. The credibility of the SBTi is further weakened by several governance issues.

It is important to highlight that carbon majors, including Holcim, are playing a fundamental role in the transition to a carbon free economy, since in relation to their greenhouse gas emissions, they are comparable to states. Innovative solutions are a necessity to adapt to new climate change realities. However, without rapid and drastic emission reductions, mere adaptation measures will not suffice. People around the world and particularly in the global South are already suffering severe damages and losses from current levels of global warming. These damages will increase in the coming years, if global warming is further accelerated. Therefore, there are no alternatives to rapid, urgent, and substantial emission reductions in order to achieve the 1.5°C limit.

Holcim has largely contributed to the crisis we are all in. And with its current climate strategy, the company fails to contribute to achieving the 1.5°C limit goal. Holcim has acted too late and does too little, given its larger than average historic responsibility and economic capability.

## **1.1 Preliminary Note**

HEKS/EPER has a policy of confronting companies and key stakeholders with the criticism and findings it publishes. This has been done in this report. HEKS/EPER contacted Holcim in April, May, July and December 2022. When presented with a set of questions or demands, Holcim replied in due time and provided HEKS/EPER with detailed information on three different occasions. Holcim refused to comment on the key insights that it received in December 2022. Holcim's answers to HEKS/EPER's questions, as well as their reply to HEKS/EPER's demands, are integrated in the present report. HEKS/EPER has also contacted the SBTi with a set of questions and the key insights of the analysis and given them due time to review and comment on the main conclusions about the SBTi presented in this report. The SBTi provided HEKS/EPER some general comments, without providing detailed written answers to the presented questions. Both the SBTi and Holcim were informed about the publication of this report.

## 2. The climate impact of the global cement and concrete industry

### Key Insights

- **Carbon footprint:** The global cement and concrete industry produces up to 8% of the annual global emissions of CO<sub>2</sub>. To produce one kilogram of the most commonly used cement (Ordinary Portland Cement), almost one kilogram (911g) of CO<sub>2</sub> is emitted.
- **Use:** Cement is currently the most used material in global construction. Experts say that the material is largely overused.
- **CO<sub>2</sub> reductions possible:** Different studies show that cement production can become less CO<sub>2</sub> intensive. Furthermore, CO<sub>2</sub> emissions could be reduced by lowering cement overuse.

### 2.1 CO<sub>2</sub> intensive industry

Cement is the most used ingredient in construction around the world. The global industry produces approximately 4 billion tonnes (Gt) of cement per year, or 130 tonnes per second<sup>1</sup>. This vast quantity causes a significant amount of CO<sub>2</sub> emissions<sup>2</sup>. The industry emits up to 8% of global CO<sub>2</sub> emissions<sup>3</sup>. The global cement industry emits the equivalent of more than any individual country except China and the USA<sup>4</sup>. A Life Cycle Assessment of Ordinary Portland Cement calculated that 911 g of CO<sub>2</sub> is emitted for every 1000 g of cement produced<sup>5</sup>. In other words, roughly speaking, every kilogram of cement also causes nearly a kilogram of CO<sub>2</sub> emissions. This is mainly due to two process steps in the production of cement: around two thirds of these CO<sub>2</sub> emissions come from the calcination of limestone, in which heat is used to decompose limestone (CaCO<sub>3</sub>) into Calcium oxide, commonly referred to as burnt lime or quicklime, which is needed to produce cement. In this process, large amounts of CO<sub>2</sub> are released, as the following chemical formula shows:  $\text{CaCO}_3 + \text{heat} = \text{CaO} + \text{CO}_2$ <sup>6</sup>. The other third of cement production's CO<sub>2</sub> emissions come from the carbon fuels (mainly coal) used to heat the cement kilns to 1,400 °C<sup>7</sup>. The industry thus contributes a vast quantity of CO<sub>2</sub> through the mere production of cement. This represents the industry's direct emissions, or scope 1 emissions. Further emissions are indirect and come largely from the gener-

1 Andrew. 2019. Global CO<sub>2</sub> emissions from cement production, 1928–2018. Earth System Science Data. p. 2. Retrieved from: <https://doi.org/10.5194/essd-2019-152>.

2 Op. cit. p. 2.

3 Op. cit. p. 2.

4 "Over the entire period 1850-2020, US cumulative emissions amount to 110 Gt CO<sub>2</sub> (25% of world total), the EU's to 80 Gt CO<sub>2</sub> (18%), and China's to 60 Gt CO<sub>2</sub> (14%)." Source: Andrew and Peters (2021). Global fossil CO<sub>2</sub> emissions (EFOS), total and by fuel type. Retrieved from: <https://essd.copernicus.org/preprints/essd-2021-386/>.

5 Olagunju B. and Olanrewaju O. 2021. Life Cycle Assessment of Ordinary Portland Cement (OPC) Using both Problem Oriented (Midpoint) Approach and Damage Oriented Approach (Endpoint). July 9th, 2021. Retrieved from: <https://www.intechopen.com/chapters/77062>.

6 The term "calcination of limestone" refers to the "process of thermal decomposition of limestone into quicklime and carbon dioxide" (CO<sub>2</sub>). Source: Kumar G. et al. 2007. Lime Calcination. In: Wang, L.K., Hung, Y.T., Shammas, N.K. (eds) Advanced Physicochemical Treatment Technologies. Handbook of Environmental Engineering, vol 5. Humana Press. [https://doi.org/10.1007/978-1-59745-173-4\\_14](https://doi.org/10.1007/978-1-59745-173-4_14).

7 Andrew. 2019. Global CO<sub>2</sub> emissions from cement production, 1928–2018. Earth System Science Data. p. 2. Retrieved from: <https://doi.org/10.5194/essd-2019-152>.

ation of purchased electricity (scope 2), and from other indirect emissions along the value chain (scope 3)<sup>8</sup>.

Once cement is produced, it is then almost exclusively used by the concrete industry, as concrete is made from cement. The production of concrete relies on a heavy use of natural resources: it uses billions of tonnes of sand and gravel (aggregates<sup>9</sup>) and 17 billion tonnes of water (17 km<sup>3</sup>), equal to about 9% of the annual global water use (excluding agricultural irrigation)<sup>10</sup>. The cement and concrete industry's vast water demand is leading to reduced water supplies for drinking and irrigation, especially in drought-prone and water-stressed regions. Indeed, 75% of the water used by the cement industry comes from these regions<sup>11</sup>.

In cement production plants, the dust from wind-blown stocks and mixers causes air pollution, resulting in workers at cement plants often developing health issues, including respiratory complications, such as coughs, asthma, and lung infections<sup>12</sup>. Limestone quarries and cement factories, along with the trucks that ferry materials between them and building sites, are also often sources for environmental pollution. The mining of sand can further have negative consequences on biodiversity and landscapes when it is mined illegally in rivers or beaches<sup>13</sup>. The production of cement and concrete have therefore considerable negative effects on both the environment and human health. The Guardian consequently described concrete as the *"most destructive material on Earth"*<sup>14</sup>.

## 2.2 Alternatives are possible

The IPCC (see below Chapter 4.4) is the global authority for assessing climate science, with the mandate of providing *"regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation"*<sup>15</sup>. The IPCC has written six assessment reports to date, in which it assesses and compiles the latest climate science. In its latest AR6 assessment report *"Mitigating Climate Change"*, published in April 2022, it specifically addresses the contribution of the cement and concrete industry to climate change, and states that it is possible to significantly reduce CO<sub>2</sub> emissions in this industry by *"basic material efficiency efforts to use only well-made concrete thoughtfully and only where needed (e.g., using right-sized, prefabricated components)"*<sup>16</sup>.

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- 8 Scopes 1, 2 and 3, as used in the cement industry, are defined as follows: Scope 1 emissions are direct emissions occurring from sources that are owned or controlled by the company. For example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc. Scope 2 emissions are indirect emissions from the generation of purchased electricity consumed in the company's owned or controlled equipment. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organisational boundary of the company. Scope 2 emissions physically occur at the facility where electricity is generated. Scope 3 emissions are a consequence of the activities of the company, but come from sources not owned or controlled by the company. Examples of scope 3 activities are extraction and production of purchased materials, transportation of purchased fuels, and use of sold products and services. Source: World Business Council for Sustainable Development. 2011. The Cement CO<sub>2</sub> and Energy Protocol: CO<sub>2</sub> and Energy Accounting and Reporting Standard for the Cement Industry. Retrieved from: <http://docs.wbcsd.org/2011/05/CSI-CO2-Protocol.pdf>.
- 9 Aggregates are inert granular materials such as sand, gravel or crushed stone that, along with water and cement, are an essential ingredient for concrete. See for more information on aggregates: PCA America's Cement Manufacturers. 2022. Aggregates. Website. Retrieved from: <https://www.cement.org/cement-concrete/concrete-materials/aggregates>.
- 10 Miller et al. 2018. Impacts of booming concrete production on water resources worldwide. In: Nature Sustainability. Retrieved from: <https://www.nature.com/articles/s41893-017-0009-5>.
- 11 Op.cit..
- 12 Rahmani et al. 2018. Effect of Exposure to Cement Dust among the Workers: An Evaluation of Health Related Complications. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6026423/>.
- 13 Hernandez, Marco. 2021. The messy business of sand mining explained. Reuters. Retrieved from: <https://graphics.reuters.com/GLOBAL-ENVIRONMENT/SAND/ygdpzkyavw/>.
- 14 Watts, Jonathan. 2019. Concrete: the most destructive material on Earth, The Guardian, 25 February 2019. Retrieved from: <https://www.theguardian.com/cities/2019/feb/25/concrete-the-most-destructive-material-on-earth>.
- 15 The IPCC was "created in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP)", and its objective is "to provide governments at all levels with scientific information that they can use to develop climate policies". Source: IPCC. 2022. About the IPCC, retrieved from: <https://www.ipcc.ch/about/>.
- 16 IPCC. 2022. Assessment Report 6 Working Group III. Mitigating Climate Change. Chapter 11 Industry. p. 7. Retrieved from: [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_Chapter\\_11.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter_11.pdf).



This could reduce emissions by 24–50% through lower demand for clinker<sup>17</sup>. Cement could further be substituted by other, less emission intensive materials (e.g., ground limestone and calcined clays), the IPCC concludes<sup>18</sup>. These findings are also supported by a study of the Swiss Federal Institute of Technology, which finds that reductions of up to 80% of CO<sub>2</sub> emissions compared to 1990 levels are achievable by 2050 without using carbon capture and storage technologies<sup>19</sup> (further on carbon capture and storage, see Chapter 4.6).

The IPCC states that there is an overconsumption of cement and concrete since the materials are inexpensive, durable and ubiquitous and consumption decisions have typically not given weight to the production emissions of the purchased goods<sup>20</sup>. This highlights that a fundamental change in the construction sector is required and that coordinated actions by all sector stakeholders are needed: producers, consumers and regulators. Consequently, the entire building sector needs to change so that concrete and cement are only used in small quantities and where not replaceable through alternative, less carbon-intensive alternatives.

These findings suggest that fast and drastic emission cuts within the cement, concrete and construction industry are possible. Despite this knowledge and the existence of feasible alternatives, the entire cement and concrete industry is lagging behind. The International Energy Agency reports that the whole cement industry is currently not on track to meet Net Zero Emissions by 2050<sup>21</sup>. In fact, the industry has since 2015 increased its average emission intensity as well as its global absolute emissions<sup>22</sup>. The industry is thus delaying climate action by continuing to increase its CO<sub>2</sub> emissions year by year.

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17 *"Clinker is a nodular material produced by heating limestone and clay at a temperature of about 1400 °C – 1500 °C. It is the basic ingredient of cement, the one which confers hydraulic properties to cement".* Source: Global Cement and Concrete Association. 2022. Glossary. Retrieved from: <https://gccassociation.org/our-story-cement-and-concrete/glossary/>.

18 IPCC. 2022. Assessment Report 6 Working Group III. Mitigating Climate Change. Chapter 11 Industry. p. 7. Retrieved from: [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_Chapter\\_11.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter_11.pdf).

19 Favier, A. 2018. A sustainable future for the European Cement and Concrete Industry. Technology assessment for full decarbonisation of the industry by 2050. p. 6. Retrieved from: [https://www.research-collection.ethz.ch/bitstream/handle/20.500.11850/301843/AB\\_SP\\_Decarbonisation\\_report\\_Final-v2.pdf?sequence=14&isAllowed=y](https://www.research-collection.ethz.ch/bitstream/handle/20.500.11850/301843/AB_SP_Decarbonisation_report_Final-v2.pdf?sequence=14&isAllowed=y).

20 IPCC. 2022. Assessment Report 6 Working Group III. Mitigating Climate Change. Chapter 11 Industry. p. 7. Retrieved from: [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_Chapter\\_11.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter_11.pdf).

21 IEA (2022), Cement, IEA, Paris. Retrieved from: <https://www.iea.org/reports/cement>.

22 Op. Cit.

### 3. Holcim's past and present CO<sub>2</sub> emissions

#### Key Insights

- **Carbon Major:** Holcim is among the top 50 companies in the world that have emitted the largest amounts of CO<sub>2</sub> and is the biggest polluter within the cement industry.
- **Swiss Carbon Major:** Since 1950, Holcim has emitted over 7 billion tonnes of CO<sub>2</sub>, equivalent to 0.42% of global fossil fuel and all industrial CO<sub>2</sub> emissions worldwide. This is more than twice as much as the whole of Switzerland emitted during the same period.
- **Costs:** The damage caused by one tonne of CO<sub>2</sub> is estimated to cost EUR 195. If Holcim had to pay this price for its 2021 scope 1 emissions only, it would cost CHF 21.7 billion, which is close to Holcim's turnover of that same year (CHF 26.8 billion).
- **Rising emissions:** Despite continuous pledges to reduce its emissions, Holcim's absolute CO<sub>2</sub> emissions are currently on the rise.

#### 3.1 Holcim Ltd., global leader of the cement industry

This report focuses on Holcim Ltd. (hereafter Holcim), the self-proclaimed and manufacturing leader in the global cement industry<sup>23</sup>. However, the issues raised here are not unique to Holcim, but highlight the fundamental problems of the global cement industry that urgently need to be tackled.

Holcim was founded by Adolf Gygi and Ernst Schmidheiny in 1912/1914 in Holderbank, Switzerland<sup>24</sup>, and only changed its name from Holderbank to Holcim in 2001. The sector has long roots in Switzerland. Cemsuisse, the Association of the Swiss Cement Industry, assigns this to the fact that Switzerland has rich deposits of limestone and marl – particularly in the Jura Arc region.<sup>25</sup> Lafarge was founded by Joseph-Auguste Pavin de Lafarge in 1833 (in Le Teil in France) in the limestone quarries of Ardèche. In 2015, Lafarge was acquired by Holcim to form LafargeHolcim in 2015. In 2021, LafargeHolcim was again renamed to Holcim, and its headquarters were moved to Zug (Switzerland)<sup>26</sup>. The main products manufactured by Holcim are cement, aggregates and ready-mix concrete<sup>27</sup>. In its business segment called “Solutions & Products”, Holcim sells roofing products, dry mortars and precast concrete and has announced plans to develop its Solution & Products portfolio further<sup>28</sup> (see Chapter 4.8).

After the merger between the two leading companies, Holcim is now the leading transnational cement company. Out of the USD 326 billion in revenue generated by the global cement industry in 2021, Holcim alone generated revenues of USD 28 billion (CHF 26.8 billion) in 2021<sup>29</sup>, equivalent to 9% of the overall revenue of the global cement industry for that year. By the end of 2021, the transnational company had 67,409 employees worldwide and operated in 60 countries<sup>30</sup>.

- 23 Holcim calls itself the “global leader in innovative and sustainable building solutions.” Holcim. 2022. Website. Retrieved from: <https://www.holcim.com>. / As of 2020, Holcim had the biggest annual cement production among all cement companies: Datis Export Group. 2022. Website. Retrieved from: <https://datis-inc.com/blog/top-10-cement-companies-in-the-world-in-2020/>.
- 24 Zippia. 2022. Holcim Company History Timeline. Retrieved from: <https://www.zippia.com/holcim-careers-1119803/history/>.
- 25 Cemsuisse. 2022. Portrait of the cement industry. Website. Retrieved from: <https://www.cemsuisse.ch/en/portrait-of-the-cement-industry/>.
- 26 Holcim. 2022. Shareholders support all proposals at 2021 Annual General Meeting. Website. Retrieved from: <https://www.holcim.com/media/media-releases/annual-general-meeting-2021>.
- 27 Holcim. 2022. Our brands. Website. Retrieved from: <https://www.holcim.com/who-we-are/our-brands>.
- 28 Holcim. 2022. Roofing. Retrieved from: <https://www.holcim.com/what-we-do/solutions-and-products/roofing>.
- 29 Holcim. 2022. Annual Report 2021. p. 6. Retrieved from: <https://www.holcim.com/annual-interim-reports>.
- 30 Holcim. 2022. Annual Report 2021. p. 30. Retrieved from: <https://www.holcim.com/annual-interim-reports>.

Over the three decades prior to the acquisition of Lafarge by Holcim, both companies had continuously grown into industry leaders through a series of acquisitions<sup>31</sup>. Just before the merger, their cement production reached a peak and started to stagnate, with a total cement production of 251.7 million tonnes at the end of 2014<sup>32</sup>. Consequently, the acquisition of Lafarge by Holcim would have resulted in Holcim having a dominant market position in multiple countries, de-facto being able to dictate market terms. Therefore, antitrust authorities of numerous countries imposed conditions on the acquisition and obliged Holcim to divest assets. For example, the European Commission ordered Holcim to divest assets in Germany, Romania, Slovakia, France, the UK, Czech Republic, and Spain<sup>33</sup>. The Competition Commission of India ordered Holcim to divest three cement plants and two grinding stations with a total capacity of around 11 million tonnes per annum<sup>34</sup>. In North America, the US Federal Trade Commission<sup>35</sup> required Holcim to divest cement plants, quarries, terminals and other assets in 12 US states as well as in Canada<sup>36</sup>. In combination, these multiple divestments led to a sharp decline in Holcim's production, from 251.7 million tonnes of cement in 2014 by Holcim and Lafarge together, to 189 million tonnes in 2018 when the divestments were completed, a decrease of 25% within four years<sup>37</sup>. In 2021 the total cement sales of Holcim increased again to reach 200.8 million tonnes<sup>38</sup>.

### 3.2 Holcim is a Carbon Major

With total CO<sub>2</sub> emissions of over 7 billion tonnes CO<sub>2</sub> in the last 70 years (see details below), Holcim is one of two companies with headquarters in Switzerland figuring on a list of the 108 largest Carbon Majors worldwide<sup>39</sup>, and the largest emitter among cement companies<sup>40</sup>. The other Swiss Carbon Major is the mining giant Glencore<sup>41</sup>. According to a study published in 2021 by the investment foundation Ethos<sup>42</sup>, Holcim is the largest CO<sub>2</sub> emitter of all Swiss Market Index (SMI) companies, closely followed by Nestlé, after which other SMI companies have far lower emissions. The following chart compares the CO<sub>2</sub> emissions of Holcim and other SMI companies (Glencore is missing since it is listed on the London Stock Exchange).

31 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. p. 6. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.

32 Op. cit.

33 European Commission. 15 December 2014. Mergers: Commission approves acquisition of Lafarge by Holcim, subject to conditions. Retrieved from: [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_14\\_2683](https://ec.europa.eu/commission/presscorner/detail/en/IP_14_2683).

34 LafargeHolcim. 2015. Retrieved from: <https://www.holcim.com/lafargeholcim-receives-revised-cci-divestment-order>.

35 Federal Trade Commission. 4 May 2015. FTC Requires Cement Manufacturers Holcim and Lafarge to Divest Assets as a Condition of Merger. Retrieved from: <https://www.ftc.gov/news-events/press-releases/2015/05/ftc-requires-cement-manufacturers-holcim-lafarge-divest-assets>.

36 Divestments were done in Illinois, Iowa, Louisiana, Massachusetts, Michigan, Minnesota, Montana, New Jersey, New York, Ohio, Tennessee, Wisconsin, and several locations in Canada.

37 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. p. 6. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.

38 Holcim. 2022. Annual Report 2021. p. 199. Retrieved from: <https://www.holcim.com/annual-interim-reports>.

39 Climate Accountability Institute. 2020. Press Release- Update of Carbon Majors 1965-2018. p. 2. Retrieved from: <https://climateaccountability.org/pdf/CAI%20PressRelease%20Dec20.pdf>

40 Other big cement producers such as HeidelbergCement and Cemex have smaller contributions. Op. cit. p. 2.

41 Glencore emits almost double the amount of Holcim's annual CO<sub>2</sub> emissions. The mining corporation's scope 1 emissions in 2021 were 15 million tonnes of CO<sub>2</sub>, scope 2 were 11 million tonnes, and scope 3 emissions corresponded to 254 million tonnes of CO<sub>2</sub> (Glencore has such large scope 3 emissions mainly because of the gigantic sales of coal, producing a total of 280 million tonnes of CO<sub>2</sub>). Source: Glencore. 2022. Sustainability Report 2021. p. 29. Retrieved from: [https://www.glencore.com/rest/api/v1/documents/67a0543aca31dec0a4dba8e30e5b1b96/GLEN\\_2021\\_sustainability\\_report.pdf](https://www.glencore.com/rest/api/v1/documents/67a0543aca31dec0a4dba8e30e5b1b96/GLEN_2021_sustainability_report.pdf).

42 Ethos. 2021. What would it cost for listed companies to contribute to solving the climate, land and water crises? The case of the Swiss Market Index. Retrieved from: <https://www.ethosfund.ch/en/news/natural-capital-a-new-study-estimates-the-cost-of-environmental-neutrality-for-the-non>.

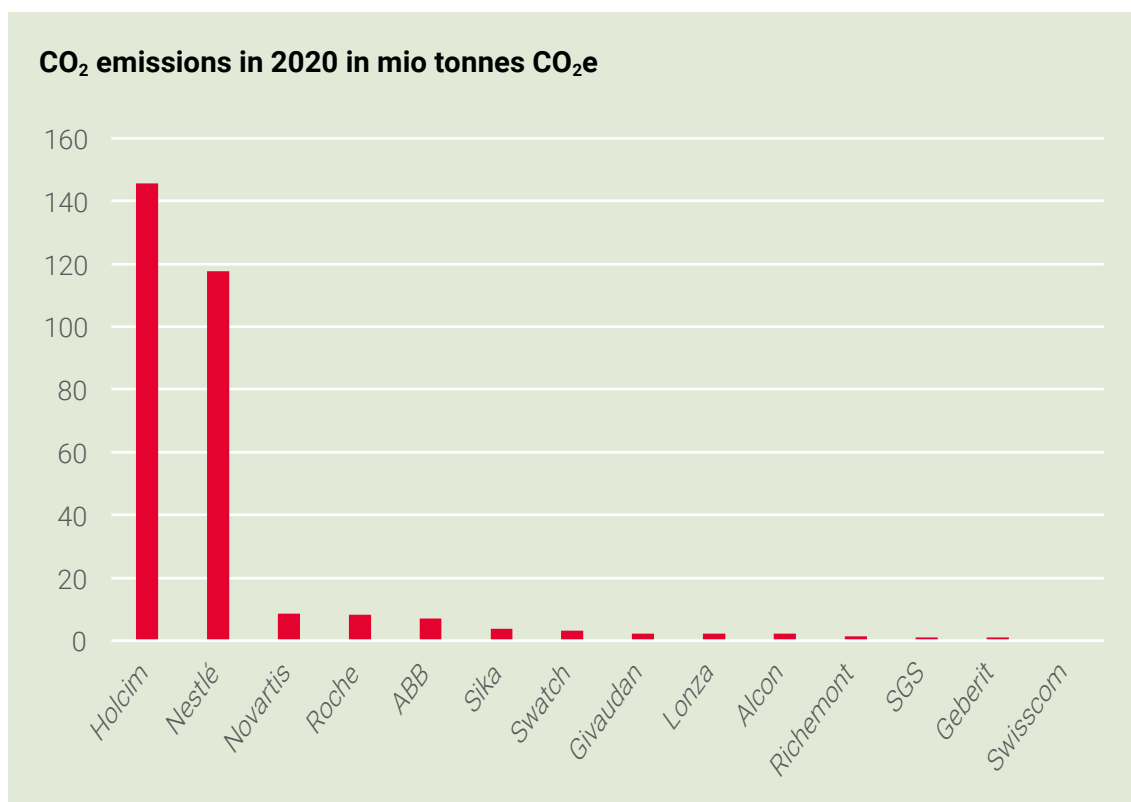


Figure 1: Comparison of CO<sub>2</sub> emissions of Holcim and other SMI companies<sup>43</sup>.

Out of the SMI companies, Holcim has the highest carbon intensity, meaning that it has the highest amount of CO<sub>2</sub> in kilograms emitted per CHF of revenue generated. Holcim's carbon intensity is 6.3 kg of CO<sub>2</sub> per CHF of revenue, Nestlé's carbon intensity is at 1.4 and Novartis' is at 0.2<sup>44</sup>.

### 3.3 Historic CO<sub>2</sub> emissions of Holcim

To determine the historical CO<sub>2</sub> emissions of Holcim, HEKS commissioned a report from the Climate Accountability Institute that developed a model to assess the company's CO<sub>2</sub> emissions from 1950 to 2021, based on the company's own production and emission data<sup>45</sup>. The model estimating CO<sub>2</sub> emissions also distinguishes between the three different scope emissions, that is direct emissions (scope 1), indirect emissions from the generation of purchased electricity (scope 2), and other indirect emissions occurring along the value chain (scope 3)<sup>46</sup>.

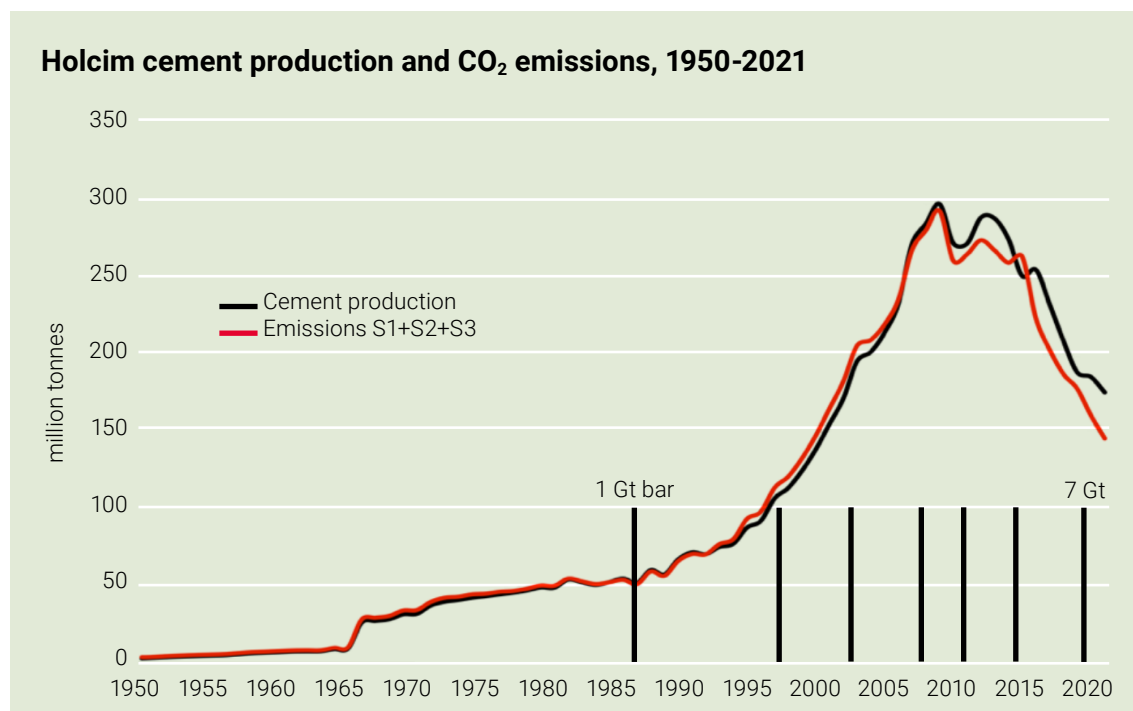
43 Graph based on CO<sub>2</sub> emissions data from Source: Ethos. 2021. What would it cost for listed companies to contribute to solving the climate, land and water crises? The case of the Swiss Market Index. Retrieved from: <https://www.ethosfund.ch/en/news/natural-capital-a-new-study-estimates-the-cost-of-environmental-neutrality-for-the-non>.

44 Calculations based on sales data from Annual Reports of Holcim, Nestlé and Novartis and CO<sub>2</sub> emissions data from Source: Ethos. 2021. What would it cost for listed companies to contribute to solving the climate, land and water crises? The case of the Swiss Market Index. Retrieved from: <https://www.ethosfund.ch/en/news/natural-capital-a-new-study-estimates-the-cost-of-environmental-neutrality-for-the-non>.

45 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>. The Climate Accountability Institute (CAI) is one of the world's leading research institutes in attribution science, specialised in quantifying CO<sub>2</sub> emissions and assigning them to individual emitters, particularly greenhouse gas-intensive companies. For this purpose, the institute uses the publicly accessible production data of the companies and calculates the CO<sub>2</sub> emissions of the companies based on the CO<sub>2</sub> content of the production processes. Source: Heede, R., Carbon Majors: Accounting for carbon and methane emissions Methods & Results Report, Climate Mitigation Services 2014 1, p. 9. Retrieved from: <https://climateaccountability.org/pdf/MRR%209.1%20Apr14R.pdf>.

46 World Business Council for Sustainable Development. 2011. The Cement CO<sub>2</sub> and Energy Protocol: CO<sub>2</sub> and Energy Accounting and Reporting Standard for the Cement Industry. Retrieved from: <http://docs.wbcsd.org/2011/05/CSI-CO2-Protocol.pdf>.

The following Figure shows how Holcim's cement production and CO<sub>2</sub> emissions in millions of tonnes (scopes 1, 2, and 3 combined) have evolved over time.



**Figure 2: Cement production and CO<sub>2</sub> emissions (scope 1, 2 and 3 combined), both in millions of tons, of Holcim (before 2015: of Holcim and Lafarge) from 1950 until 2021<sup>47</sup>.** The black bars were added by the authors and indicate cumulative historic emissions.

The black bars in the Figure above indicate when 1 Gt of cumulative historic CO<sub>2</sub> emissions was reached: starting from 1950, it took 36 years until the first Gt of historic CO<sub>2</sub> emission was reached in 1986. The second Gt bar was achieved 12 years later in 1998, and the third Gt bar was reached only five years later in 2003. Since then, the pace has remained quite stable, with a new Gt of CO<sub>2</sub> emissions every four to five years<sup>48</sup>.

In sum, over the period of 1950-2021, Holcim produced a total of 7.26 Gt (7.26 billion tonnes) of cement, which equals 6.5% of global cement production, and emitted a total of 7.15 Gt (7.15 billion tonnes) of CO<sub>2</sub><sup>49</sup>. In comparison, Switzerland has emitted cumulative CO<sub>2</sub> emissions of 3.02 billion tonnes on its territory from 1751 to 2020<sup>50</sup>. In only roughly a quarter of the time, that is in the last 70 years, Holcim has emitted more than twice as much as Switzerland, or 161 times the current annual emissions of Switzerland<sup>51</sup>. The study found that Holcim emitted 7.15 Gt CO<sub>2</sub> from 1950-2021, without being able to consider the emissions of Holcim and Lafarge prior to 1950, since no data on cement production was found for Lafarge from 1833 to 1949 and for Holcim from 1914 to 1964<sup>52</sup>.

47 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. p. 6. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.

48 The 4 Gt bar was reached 4 years later in 2007, the 5 Gt bar was reached again 4 years later in 2011, the 6th Gt bar 4 years later in 2015 and the 7 Gt bar 5 years later in 2021.

49 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. p. 6. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.

50 Our world in data, 2022. Who has contributed most to global CO<sub>2</sub> emissions? Data can be found under 'table'. Retrieved from: <https://ourworldindata.org/contributed-most-global-co2>.

51 The greenhouse gases emissions of Switzerland in 2020 amounted to 43.4 million tonnes of CO<sub>2</sub>eq. (latest data available). Source: Federal Office for the Environment. 2022. Klima: Das Wichtigste in Kürze. Retrieved from: <https://www.bafu.admin.ch/bafu/de/home/themen/klima/inkuerze.html>.

52 Hence, the analysis is based on reported cement production by Lafarge from 1950 to 2020 and by Holcim from 1965 to 2021. Source: Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.



The study of the Climate Accountability Institute shows that Holcim is among the biggest CO<sub>2</sub> emitters worldwide: it is responsible for 0.42% of all global fossil fuel and cement emissions from 1751 to 2020<sup>53</sup>. With this carbon footprint, the company ranks 48<sup>th</sup> on the list of the top 108 “carbon majors”, which together caused 69.6% of all industrial CO<sub>2</sub> emissions<sup>54</sup>. Holcim is also the biggest CO<sub>2</sub> emitter within the cement industry<sup>55</sup>. The Swiss company’s emissions are comparable to the ones of other carbon majors such as the French oil and gas company TOTAL (0.83% of all global fossil fuel and cement emissions) or German coal power producer RWE (0.47%)<sup>56</sup>. Therefore, together with other Carbon Majors and similar to states, Holcim is responsible for a substantial part of man-made global warming.

### 3.4 Externalised costs of Holcim’s current carbon footprint

In 2021, Holcim was responsible for a total of 156 million tonnes of CO<sub>2</sub> emissions, that is the sum of scope 1 (119 million tonnes), scope 2 (7 million tonnes) and scope 3 (30 million tonnes) emissions<sup>57</sup>, representing 76% scope 1 emissions, 5% scope 2 emissions and 19% scope 3 emissions. This stands in contrast to oil, gas and coal companies, which have 85-95% scope 3 emissions (due to the combustion of oil, gas and coal by their customers) and very low scope 1 and scope 2 emissions<sup>58</sup>. According to Holcim, over two thirds of its scope 1 emissions come from the calcination of limestone (CaCO<sub>3</sub>), which emits large amounts of CO<sub>2</sub>, and the remaining third of scope 1 CO<sub>2</sub> emissions come from the use of fossil fuels (mainly coal) to heat the cement kilns<sup>59</sup>.

The following Figure shows how the company’s CO<sub>2</sub> emissions have evolved overall and by scope from 2019 to 2021.

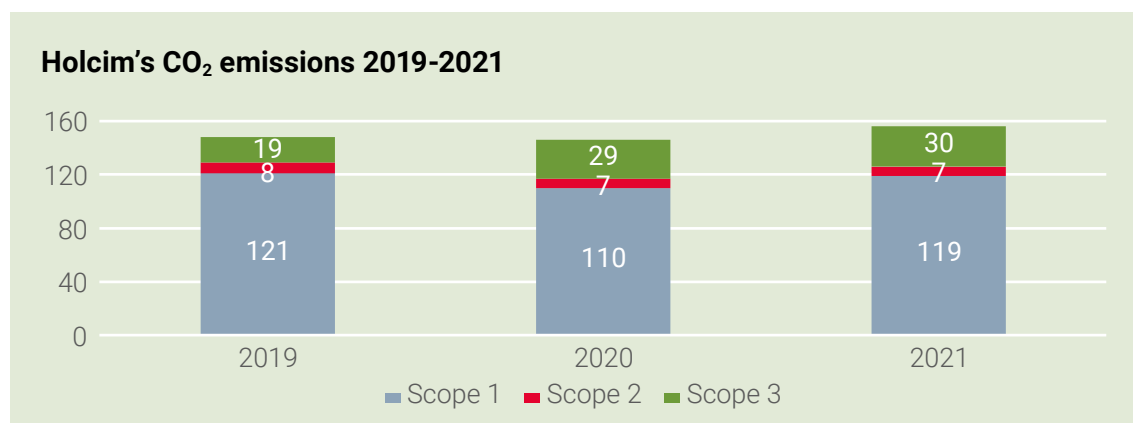


Figure 3: Holcim CO<sub>2</sub> emissions 2019-2021 (overall, and by scope 1, 2 and 3)<sup>60</sup>.

- 53 The total global industrial emissions since 1751 amounted to 1.68 trillion tonnes CO<sub>2</sub>. Source: Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.
- 54 Climate Accountability Institute. 2020. Press Release- Update of Carbon Majors 1965-2018. p. 2. Retrieved from: <https://climateaccountability.org/pdf/CAI%20PressRelease%20Dec20.pdf>. Note: Holcim ranks 48th in the full dataset of the Carbon Majors from 1965-2020, which is not publicly available, but has been confirmed by author Richard Heede to HEKS.
- 55 Op. cit.
- 56 Climate Accountability Institute. October 2020. Carbon Majors dataset, Top Twenty. Retrieved from: <https://climateaccountability.org/pdf/CarbonMajorsPDF2020/Figures%20%20Tables/Figures%20%20Tables/TopTwenty%20CO2e%201751-2018%20Table.png>.
- 57 Op. cit. p. 7.
- 58 For example, Glencore scope 1 emissions amount for 5%, scope 2 for 4% and scope 3 for 91%. Source: Glencore. 2022. Sustainability Report 2021. p. 29. Retrieved from: [https://www.glencore.com/rest/api/v1/documents/67a0543aca31dec0a4dba8e30e5b1b96/GLEN\\_2021\\_sustainability\\_report.pdf](https://www.glencore.com/rest/api/v1/documents/67a0543aca31dec0a4dba8e30e5b1b96/GLEN_2021_sustainability_report.pdf)
- 59 Holcim. 2022. Climate Report 2022. p. 10. Retrieved from: <https://www.holcim.com/sites/holcim/files/atoms/files/08042022-holcim-climate-report-2022.pdf>. / The term “calcinations of limestone” refers to the “process of thermal decomposition of limestone into quick lime and carbon dioxide” (CO<sub>2</sub>). Source: Kumar G. et al. 2007. Lime Calcination. In: Wang, L.K., Hung, Y.T., Shammass, N.K. (eds) Advanced Physicochemical Treatment Technologies. Handbook of Environmental Engineering, vol 5. Humana Press. [https://doi.org/10.1007/978-1-59745-173-4\\_14](https://doi.org/10.1007/978-1-59745-173-4_14).
- 60 Holcim. 2022. Sustainability Performance Report 2021. p. 7. Retrieved from: <https://www.holcim.com/sustainability/reports>.

As the Figure shows, while Holcim's scope 2 emissions have been quite stable over the last three years, there was an important increase in scope 3 emissions between 2019 and 2020. This is because Holcim introduced a new methodology to calculate its scope 3 emissions in 2020, which led to an increase of 10 million tons of CO<sub>2</sub> in the 2020 figure, with an increase of scope 3 emissions of roughly 50% compared to the year before. Clearly, Holcim had underestimated its scope 3 emissions until the introduction of this new measurement methodology in 2020, therefore underreporting millions of tonnes of CO<sub>2</sub> emissions for years. Furthermore, the Figure also shows that despite the announcement of a Net Zero strategy in 2020<sup>61</sup>, Holcim increased its absolute scope 1 CO<sub>2</sub> emissions, with an additional 9 million tonnes of scope 1 emissions in 2021 compared to 2020<sup>62</sup>. Holcim states that 2021 was a recovery year after 2020, which had a lower production due to the Covid-19 pandemic<sup>63</sup>.

To contextualise Holcim's current total CO<sub>2</sub> emissions (scope 1, 2 and 3 combined), one can compare it to the total CO<sub>2</sub> emissions of Switzerland. While Switzerland emitted 43.4 million tonnes of CO<sub>2</sub> in 2020<sup>64</sup>, Holcim's emissions amounted to 146 million tonnes of CO<sub>2</sub><sup>65</sup>, which is 3.4 times more.

Another way of quantifying the large sum of Holcim's annual CO<sub>2</sub> emissions, is by comparing it to the external costs it causes. The German Environmental Agency has developed an internationally recognised methodology for evaluating the costs of the damages and losses that occur worldwide per tonne of CO<sub>2</sub> emissions. The regularly updated method serves as a guidance for governments and businesses and estimates that the damage caused per tonne of emitted CO<sub>2</sub> amounts to EUR 195<sup>66</sup>. If Holcim thus had to pay EUR 195 per tonne of its scope 1 emissions for the year 2021, it would add up to CHF 21.7 billion, which is close to its turnover of that same year (CHF 26.8 billion<sup>67</sup>). Currently, the negative consequences and costs caused by CO<sub>2</sub> emissions and other greenhouse gases are shouldered by society at large and not by high-emitting actors themselves. To sum up, Holcim contributes with its exorbitant carbon footprint to billions of CHF of losses and damages and has externalised these over decades, as the public and specifically affected groups have had, have, and will have to bear them.

61 Holcim. 2020. Holcim Signs Net Zero Pledge with Science-Based Targets. <https://www.holcim.com/media/media-releases/lafargeholcim-net-zero-pledge-science-based-targets>.

62 Holcim, 2022. 2021 Sustainability Performance Report. p. 7. Accessed under: <https://www.holcim.com/sustainability/reports>.

63 Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.

64 The greenhouse gases emissions of Switzerland in 2020 amounted to 43.4 million tonnes of CO<sub>2</sub>eq. (latest data available) Source: Federal Office for the Environment. 2022. Klima: Das Wichtigste in Kürze. Retrieved from: <https://www.bafu.admin.ch/bafu/de/home/themen/klima/inkuerze.html>.

65 Holcim, 2022. 2021 Sustainability Performance Report. p. 7. Accessed under: <https://www.holcim.com/sustainability/reports>.

66 This amount was estimated by the German Environmental Agency (UBA) assuming a 1% discount rate (otherwise the applicable external costs increase to EUR 680 per tonne). Source: German Environmental Agency (UBA). 2020. Methodenkonvention 3.1 zur Ermittlung von Umweltkosten. Kostensätze. Retrieved from: [https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2020-12-21\\_methodenkonvention\\_3\\_1\\_kostensaetze.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2020-12-21_methodenkonvention_3_1_kostensaetze.pdf).

67 Holcim. 2021. 2021 Integrated Annual Report. p. 6. Retrieved from: <https://www.holcim.com/annual-interim-reports>.

## 4. Analysis of Holcim's Climate Strategy

### Key insights

- **Too late:** Despite the company's early knowledge of the carbon intensity of cement production and its detrimental impact on the climate, Holcim only started setting emission reduction goals in the early 2000s.
- **Too little:** To meet the 1.5°C limit of the Paris Agreement, absolute emission reductions are necessary. However, for most of its emissions, Holcim has only set relative goals to reduce the cement emissions per tonne of cementitious material and not the company's absolute emissions, and even these goals fall short of what is needed. The company claims otherwise and relies on the validation of its climate strategy by the Science Based Targets initiative (SBTi), which applies methods that grant big historical polluters greater emission allowances in the future than small polluters (see SBTi below).
- **Future heavy reliance on technology:** Post 2030, Holcim plans on a heavy reliance of Carbon Capture, Utilisation and Storage (CCUS) technologies to reduce its emissions and achieve net zero by 2050. There is substantial concern that this technology will not be scientifically, technically, economically, and socially feasible to be applied on such a grand scale.
- **Misleading Labelling of ECOPact:** The labelling and advertisement of Holcim's ECOPact range as 'green concrete', as having 'net zero' emissions, or referring to it as ecological is misleading. ECOPact products are less carbon intensive than conventional concrete, but they still cause CO<sub>2</sub> emissions. Such products should rather be labelled as 'less carbon intensive than conventional products' and include precise information on their climate impact.

### 4.1 Too little, too late: Holcim's relative reduction targets

Carbon Majors from the fossil fuel and cement industries knew that their products had an impact on climate change since the mid-1960s. This was the finding of an inquiry by the Commission on Human Rights of the Philippines, published in 2021. As one of the Carbon Majors, Holcim is also identified in this report<sup>68</sup>. Already prior to the evidence about climate change, cement producers like Lafarge and Holcim knew that the production of cement, especially the calcination of limestone, produces large quantities of CO<sub>2</sub>. When throughout the 1960s and 70s scientists around the world were gaining evidence that the emission of greenhouse gases, including CO<sub>2</sub>, caused climate change and that climate change would engender global risks, losses and damages, Holcim and Lafarge could have started to reduce their absolute emissions. Yet both companies did the contrary, and have since combined increased their cement production six-fold, and consequently also their CO<sub>2</sub> emissions<sup>69</sup>. Upon request, Holcim did not tell HEKS/EPER in which year they started setting emission reduction targets. In 1999, Holcim launched the Cement Sustainability Initiative together with other cement companies. In 2001, the CSI companies then agreed on a methodology

68 The Commission on Human Rights of the Philippines (CHRP). 2022. National Inquiry on Climate Change: Report, p. 100 ff. and p. 19, with many references to early scientific reports and the industries' knowledge. Retrieved from: [http://climatecasechart.com/wp-content/uploads/sites/16/non-us-case-documents/2022/20220506\\_Case-No.-CHR-NI-2016-0001\\_judgment-1.pdf](http://climatecasechart.com/wp-content/uploads/sites/16/non-us-case-documents/2022/20220506_Case-No.-CHR-NI-2016-0001_judgment-1.pdf). / Similarly and including Holcim and Lafarge see also: Centre for International Environmental Law (CIEL). 2017. Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis. p. 26. Retrieved from: <https://www.ciel.org/wp-content/uploads/2019/01/Smoke-Fumes.pdf>.

69 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. p. 6. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.

for calculating and reporting CO<sub>2</sub> emissions<sup>70</sup>. The first emission reduction goal of Holcim known to HEKS was set in 2002<sup>71</sup>. In a recent interview Holcim's CEO Jan Jenisch mentioned on Swiss television SRF that the pressure resulting from climate change and its relevance, indeed, only came up during the last three to five years<sup>72</sup>. Considering their knowledge about their high production emissions and their negative consequences on the climate, Holcim's climate strategy came too late.

Additionally, the initial goals of both companies were only targeted to achieve *relative or specific* CO<sub>2</sub> emissions reduction goals, i.e., goals of reduction of CO<sub>2</sub> emissions per tonne of cementitious materials, without *absolute* reduction goals on their overall CO<sub>2</sub> emissions. In its 2002 Annual Report, Holcim stated to reduce their global average specific net CO<sub>2</sub> emissions per tonne of cementitious material by 20% by 2010, with 1990 as the reference year<sup>73</sup>. Even though, Holcim achieved this goal, the absolute combined CO<sub>2</sub> emissions of Lafarge and Holcim increased from 70.8 million tonnes of CO<sub>2</sub> in 1990 to 265.8 million tonnes of CO<sub>2</sub> in 2010, thereby almost quadrupling absolute CO<sub>2</sub> emissions within twenty years along with production that followed a similar path during that same time<sup>74</sup>. This shows that a reduction of relative CO<sub>2</sub> emissions can be annihilated by an increase in production that will cause an increase in absolute CO<sub>2</sub> emissions. Although absolute CO<sub>2</sub> emissions decreased along with a significant reduction in overall cement production after 2015, this is – as aforementioned – a consequence of decisions by regulating authorities after the acquisition of Lafarge by Holcim in 2015 and not a result of an adjusted business strategy of Holcim.

Consequently, when Holcim eventually defined some reduction targets, they came not only too late but also did not prevent the company from continuing to emit large amounts of CO<sub>2</sub> emissions over the last two decades. Apart from Holcim's historical responsibility to act (due to its vast historical emissions, as detailed in Chapter 3.3.), Holcim has also far beyond average economic capacities to reduce its emissions fast, since it earned billions of CHF over the past years and decades (with average recurring earnings before interests and taxes of CHF 4 billion per year between 2017 and 2021<sup>75</sup>). On the basis of Holcim's far beyond average economic capability and its vast historical responsibility in the climate crisis, Holcim must at the very least do what is required as a global average emission reduction to keep global warming below 1.5°C. That is an emission reduction of 43% until 2030 and 69% until 2040 from a 2019 base year.

## 4.2 Holcim's 2030 reduction and 2050 net zero targets

Today Holcim acknowledges that the cement industry is responsible for about 7% of global CO<sub>2</sub> emissions, or about 5% of global greenhouse gas emissions, and that they as the global leader in the cement industry, *"have a key role to play to address today's climate crisis"*. As such, Holcim states to be the leader in carbon-related disclosures. Holcim is *"committed to leading the green transformation of cement"*. Holcim further declares that climate change and its impacts are one of the *"salient human rights risks"*, which Holcim seeks to *"proactively identify, cease, prevent or mitigate"*, adding that they *"clearly recognise the link between a company's environmental performance and climate change, and how that in turn impacts human rights."* In 2021, the company also signed a statement of support by companies for the UN Resolution on the Human Right to a Healthy

70 Holcim. 2022. Communication by email on May 5, and July 11, 2022. Responses of Holcim to questions sent by HEKS.

71 Holderbank. 2002. Annual Report 2002. p. 4.

72 SRF 10vor10. 6.10.2022. Fokus: Klimaklage gegen Schweizer Konzern Holcim. Available at <https://www.srf.ch/play/tv/10-vor-10/video/fokus-klimaklage-gegen-schweizer-konzern-holcim?urn=urn:srf:video:962a3179-2ca5-4d74-837b-5b3fe0d1c77c>.

73 Holderbank. 2002. Annual Report 2002. p. 4.

74 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. p. 6. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.

75 Holcim. October 2021. Delivering Superior Performance. Capital Market Day 2021. p. 4. Retrieved from: [https://www.holcim.com/sites/holcim/files/atoms/files/holcim\\_capital\\_markets\\_day\\_2021\\_breakout\\_6\\_superior\\_performance.pdf](https://www.holcim.com/sites/holcim/files/atoms/files/holcim_capital_markets_day_2021_breakout_6_superior_performance.pdf)

Environment. Holcim's climate targets and pathway are validated by the SBTi (see more in Chapter 5), they are defined company-wide and are not limited to a specific region<sup>76</sup>.

In its most recent Climate Report, issued in spring 2022, Holcim presents its net zero roadmap, including targets for 2030 and 2050<sup>77</sup>. This report is the result of a request by Ethos, the Swiss Foundation for Sustainable Development, which promotes and engages in socially responsible investment<sup>78</sup>. Ethos is composed of over 230 institutional investors who together manage roughly CHF 330 billion<sup>79</sup>. In 2021, Ethos requested Holcim to publish a climate report and to submit it to a vote at Holcim's 2022 shareholder Annual General Assembly (AGM)<sup>80</sup>.

Holcim's new net zero road map and emission reduction targets are presented as follows<sup>81</sup>:

- Holcim chose 2018 as its baseline year for scope 1 and scope 2, but not for scope 3 emissions. For its scope 3 emissions, the report states that the baseline year is 2020.
- In 2018, the company emitted 576kg CO<sub>2</sub> per tonne of cementitious material produced for scope 1, and 38 g for scope 2 emissions. Both relative values decreased slightly until 2021.
- For 2030, the company aims at reducing its scope 1 and scope 2 emissions by 25% from the base year of 2018.
- For its scope 3 emissions, Holcim has relative emission reduction targets to reduce emissions by 25.1% by 2030 from the 2020 base year.
- For 2040, there are no climate targets envisaged.
- Holcim summarises its 2050 targets as follows:
  - *"Holcim commits to reduce Scope 1 and 2 GHG emissions by 95% per ton of cementitious materials by 2050 from a 2018 base year"*.
  - *"Holcim commits to reduce absolute Scope 3 GHG emissions by 90% by 2050 from a 2020 base year"*. This target is the sole absolute target.

After analysing the report's findings, Ethos recommended to vote against the report at Holcim's AGM for several reasons, which will be described in further detail in the following sections of this chapter<sup>82</sup>.

### 4.3 Relative vs. absolute emission reduction targets

Although Holcim claims to *"take absolute emissions very seriously"*,<sup>83</sup> nearly all of Holcim's most recent emission reduction targets have remained *relative*, meaning that the targets aim at reducing the emissions per tonne of cementitious material and not the company's *absolute* emissions. Until 2030, Holcim aims at reducing its relative CO<sub>2</sub> emissions by on average minus 25% across scope 1 and 2 from the 2018 base year. For its scope 1 emissions which account for a large proportion of all its emissions, this means that the company will still emit 446kg CO<sub>2</sub> per tonne of cementitious ma-

76 Holcim. 2022. Communication by email on May 5, June 15, and July 11, 2022. Responses of Holcim to questions sent by HEKS. (Emphasis added) See also the list of salient human rights risks: Holcim. 2021. Human Rights Directive. p. 4. Retrieved from: [https://www.holcim.com/sites/holcim/files/documents/21062021\\_holcim\\_sustainability-human-rights-directive.pdf](https://www.holcim.com/sites/holcim/files/documents/21062021_holcim_sustainability-human-rights-directive.pdf).

77 Holcim. 2022. Climate Report 2022. p. 13. Retrieved from: <https://www.holcim.com/sites/holcim/files/2022-04/08042022-holcim-climate-report-2022.pdf>.

78 Ethos. 2002. Overview of Ethos: Ethos Governance. Retrieved from: <https://www.ethosfund.ch/en/about-ethos/overview-of-ethos>

79 Ethos. 2022. Geschäftsbericht 2021. p. 5. Retrieved from: [https://www.ethosfund.ch/sites/default/files/2022-06/WEB\\_ETHOS-RA-RF\\_2021\\_ALL.pdf](https://www.ethosfund.ch/sites/default/files/2022-06/WEB_ETHOS-RA-RF_2021_ALL.pdf).

80 Ethos. 2021. LafargeHolcim répond à son tour favorablement à une demande d'Ethos. Retrieved from: <https://www.ethosfund.ch/fr/news/say-on-climate-lafargeholcim-repond-a-son-tour-favorablement-a-une-demande-d-ethos>.

81 See Holcim. 2022. Climate Report 2022. p. 12, 13, 20. Retrieved from: <https://www.holcim.com/sites/holcim/files/2022-04/08042022-holcim-climate-report-2022.pdf>. On 10 November 2022, Holcim updated these targets to be in line with the 1.5°C SBTi framework: Holcim. 2022. Media Release: Holcim upgrades its 2030 Climate Targets in line with the SBTi 1.5°C Framework. Website. Retrieved from: <https://www.holcim.com/media/media-releases/sbti-validation>.

82 Ethos. 2022. Ethos Proxy Report on Holcim. Document sent by Ethos to HEKS.

83 Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.



terial in 2030, an emission reduction of 22.4% since 2018 levels. For its scope 3 emissions (totalling in 2021 to 30 million tonnes of CO<sub>2</sub>), Holcim set relative emission reduction goals 25.1% by 2030<sup>84</sup>.

Major criticism of these targets has come from the Ethos foundation, which called on shareholders to vote against Holcim's 2021 Climate Report at the last AGM<sup>85</sup>. Setting relative goals only, means that the company may reduce its emissions per tonne of cement, while in absolute numbers continue to emit substantial or even increasing amounts of CO<sub>2</sub> emissions. This is exactly what Holcim did from 2018 to 2021: while the corporation was able to decrease its relative emissions from 576 to 553 kg CO<sub>2</sub> per tonne of cementitious material, it increased its absolute annual emissions from 135<sup>86</sup> to 156<sup>87</sup> million tonnes of CO<sub>2</sub>. In three years, Holcim reduced its relative emissions by nearly 4%, while increasing its absolute emissions by 15.5%. Holcim's relative targets will not suffice to stop such a trend in the future and clearly does not represent an attitude in which absolute emissions are taken *very seriously* as Holcim claims.

#### 4.4 The 1.5° emission reduction pathway according to the IPCC

In its sixth Assessment Report (AR6), the IPCC presented its latest figures on the remaining carbon budget<sup>88</sup>: This budget is to be understood as the total sum of CO<sub>2</sub> emissions worldwide which can still be emitted from the beginning of 2020, with different likelihoods of limiting global warming to 1.5°C: The IPCC has calculated that for a 50% probability of staying within the 1.5°C limit, the remaining global carbon budget is at 500 Gt CO<sub>2</sub>. For a 67% probability of staying within the 1.5°C limit, the remaining global carbon budget is 400 Gt CO<sub>2</sub>. If the probability is to be increased to 83%, the remaining global carbon budget is 300 Gt CO<sub>2</sub>. How small this remaining budget is and how necessary it is for Holcim to decisively reduce its relative and absolute emissions becomes evident from the fact that Holcim alone has caused 7.15 Gt CO<sub>2</sub> with its group-wide business activities to date<sup>89</sup>.

In addition to the remaining global CO<sub>2</sub> budget, the IPCC states that global modelled pathways that limit warming to 1.5°C with no or limited overshoot require *immediate* action and a reduction of *global* greenhouse gas emissions

- by 43% until 2030,
- by 69% until 2040 and
- by 84% until 2050, to reach net zero from 2050-2055 from a 2019 base year <sup>90</sup>.

In the following IPCC AR6 figure, different emission reduction pathways have been modelled: the bright blue line is the required average emission reduction pathway that is needed to stand a 50% chance of limiting global warming to 1.5°C with no or limited overshoot. All emission pathways above the bright blue line are projected to bring global warming temporarily or permanently to levels higher than 1.5°C<sup>91</sup>. What is particularly pertinent is that the pathway modelled in the bright blue line requires deep and rapid emission reductions until 2030, which can then be slowed down until

84 The data for this paragraph is from: Holcim. 2022. Media Release: Holcim upgrades its 2030 Climate Targets in line with the SBTi 1.5°C Framework. Website. Retrieved from: <https://www.holcim.com/media/media-releases/sbti-validation>.

85 Ethos. 2022. Ethos Proxy Report on Holcim. Document sent by Ethos to HEKS. p. 19.

86 LafargeHolcim. 2018. Sustainability Report 2018. p. 23. Retrieved from: [https://www.holcim.com/sites/holcim/files/2022-04/14052019\\_publications\\_lafargeholcim-sustainability-report-2018.pdf](https://www.holcim.com/sites/holcim/files/2022-04/14052019_publications_lafargeholcim-sustainability-report-2018.pdf).

87 Holcim. 2021. Holcim Sustainability Performance Report 2021. Retrieved from: [https://www.holcim.com/sites/holcim/files/2022-04/25022022-sustainability-performance\\_fy\\_2021\\_report-en.pdf](https://www.holcim.com/sites/holcim/files/2022-04/25022022-sustainability-performance_fy_2021_report-en.pdf).

88 IPCC. 2022. Sixth Assessment Report, Working Group I. Summary for Policy Makers. p. 29. Retrieved from: [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf).

89 Heede, R. 2022. History of Holcim Ltd: CO<sub>2</sub> emissions 1950-2021. Climate Accountability Institute. p. 7. Retrieved from: <https://climateaccountability.org/pdf/CAI%20Holcim%20Rpt%20Jul22.pdf>.

90 IPCC, Summary for Policymakers, in: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, § C.1.1 and Table SPM.2, Retrieved from: [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf).

91 IPCC. 2022. AR6: Mitigation of Climate Change. Summary for Policymakers. Figure SPM.4. Retrieved from: <https://www.ipcc.ch/report/ar6/wg3/figures/summary-for-policymakers/figure-spm-4>.

2050. Whereas, with slow emission reductions until 2030, followed by more rapid reductions until 2050, the likelihood of failing to limit global warming to 1.5°C increases substantially, as can be seen on the chart's dark blue line.

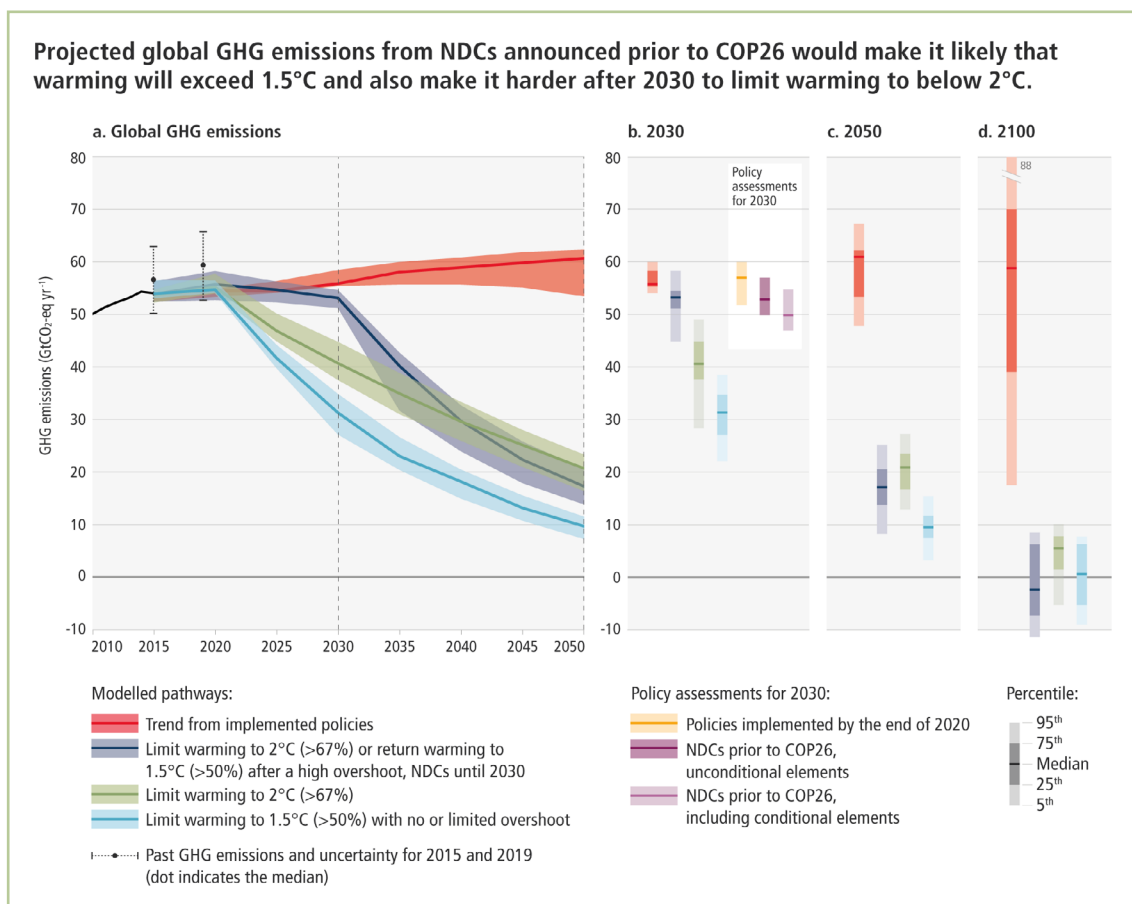


Figure 4: From the IPCC AR6, modelled emission reduction pathways<sup>92</sup>

Holcim stated in May 2022 to have considered three climate scenarios from the IPCC to develop its climate scenario planning, but that these did not include the Paris compliant pathway that would keep global warming at 1.5°C<sup>93</sup>. The company did not specify how this consideration was implemented into its policies and actions and whether the pathway was considered for its updated targets that it released in November 2022. On the 1.5°C pathway from the IPCC and the referenced 43% emission reduction until 2030 from a 2018 base year, Holcim states that the number reflects a holistic figure and that it does not seem to take the sector-specific scientific literature into account<sup>94</sup>. Indeed, the 43% emission reduction until 2030 referenced by the IPCC represents the required global average emission reduction, in order to stand a over 50% chance of meeting the 1.5°C limit from the Paris agreement<sup>95</sup>. As a self-proclaimed leader of the green transformation of cement and given Holcim's far beyond average historic responsibility and financial capability, Holcim should in fact reduce its emissions much faster than the required global average. If companies like Holcim fail to reduce their emissions at the very least at the rate of the global average, how can companies with lesser financial and scientific capabilities be expected to do so? And how should global warming then be limited to 1.5°C?

92 Op.cit.

93 In its answer, Holcim states to have considered the representative concentration pathways (RCP) 2.6, 4.5 and 8.5 from the IPCC. However, the Paris compliant pathway is the RCP 1.9. Holcim. 2022. Communication by email on May 4, 2022. Responses of Holcim to questions sent by HEKS. The RCP pathways were used in the IPCC's previous assessment reports but is simply explained here: [https://en.wikipedia.org/wiki/Representative\\_Concentration\\_Pathway](https://en.wikipedia.org/wiki/Representative_Concentration_Pathway).

94 Holcim. 2022. Communication by email on June 15, 2022. Responses of Holcim to questions sent by HEKS.

95 UNFCCC. 1992. United Nations Framework Convention on Climate Change. Retrieved from: <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

There is very high confidence that near-term actions aimed at limiting global warming to close to 1.5°C would substantially reduce climate change related projected losses and damages as well as risks, compared to higher levels of warming, without preventing them all<sup>96</sup>. These risks include sea-level rise, an increase in water-related hazards and extreme weather events, intensification of heavy precipitation, flooding, tropical cyclones, and drought. As a consequence, severe adverse impacts include among others loss of fresh water availability, rising pressures on food production and access, ill health, premature deaths, displacement, economic and infrastructure losses, and the loss of biodiversity including the extinction of species<sup>97</sup>.

The 1.5°C limit represents the global political and scientific consensus, and which Holcim recognises, against which climate ambitions are to be measured<sup>98</sup>. The IPCC makes clear that *“without immediate and deep emissions reductions across all sectors, limiting global warming to 1.5°C is beyond reach”*<sup>99</sup>. Rapid action on emission reductions is required from both states and non-state actors. As the Paris Agreement states, it *“welcomes the efforts of non-Party stakeholders to scale up their climate actions”*, whereby non-Party stakeholders include *“civil society, the private sector, financial institutions, cities and other subnational authorities”*<sup>100</sup>. To achieve the above stated global average emission reduction pathway, urgent emission cuts are required from all actors, and the largest lever sits in the hands of those, like Holcim, who have and continue to emit the most.

#### 4.5 Holcim’s relative emission reduction pathway is incompatible with the 1.5°C limit

On 10 November 2022, Holcim announced that it had updated its climate targets for 2030, and that these were now in line with the sector’s new 1.5°C SBTi framework. Holcim updated its 2030 relative emission reduction scope 1 and 2 targets from 20.5% to 25% from a 2018 base year, and its emission reduction targets for its scope 3 emissions from 20% to 25.1% from a 2020 base year<sup>101</sup>. Although the company claims otherwise, Holcim’s emission reduction targets are still incompatible with the 1.5°C limit for two reasons: first, and although the company is taking absolute emissions very seriously, no *absolute* emission reduction targets are included in Holcim’s climate strategy for its scope 1 and 2 emissions (as discussed in section 3.4.). Yet, absolute emission reductions are paramount to achieve the 1.5°C limit (as discussed in section 4.4.).

Secondly, even when testing Holcim’s *relative* emission reduction pathway against the required 1.5°C pathway to stand a over 50% chance of achieving the 1.5°C limit with no or limited overshoot, the targets fall too short: for 2030, Holcim aims at an emission reduction of 25% CO<sub>2</sub> per tonne of cementitious material compared to 2018 levels (scope 1 and 2), which is far below the above stated 43% emission reduction until 2030 from a 2019 base year. In the Figure below, both reduction pathways are held against each other in a simplified manner, as it only compares the two pathways with their percentage of emission reduction until 2030, 2040 and 2050 against a 2018 base year. The Figure aims at modelling the difference between the IPCC emission reduction pathway, if the 1.5°C limit is to be achieved with an over 50% chance with no or limited overshoot, vs. Holcim’s targeted relative emission reduction pathway. The shaded surface in between both lines represent the CO<sub>2</sub> emissions that Holcim will produce on its count above the required 1.5°C pathway.

96 IPCC. 2022. AR6 WGII. Climate Change 2022: Impacts, Adaptation and Vulnerability: Summary for Policymakers. para. B.4. p.13. Retrieved from: [https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_SummaryForPolicymakers.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_SummaryForPolicymakers.pdf).

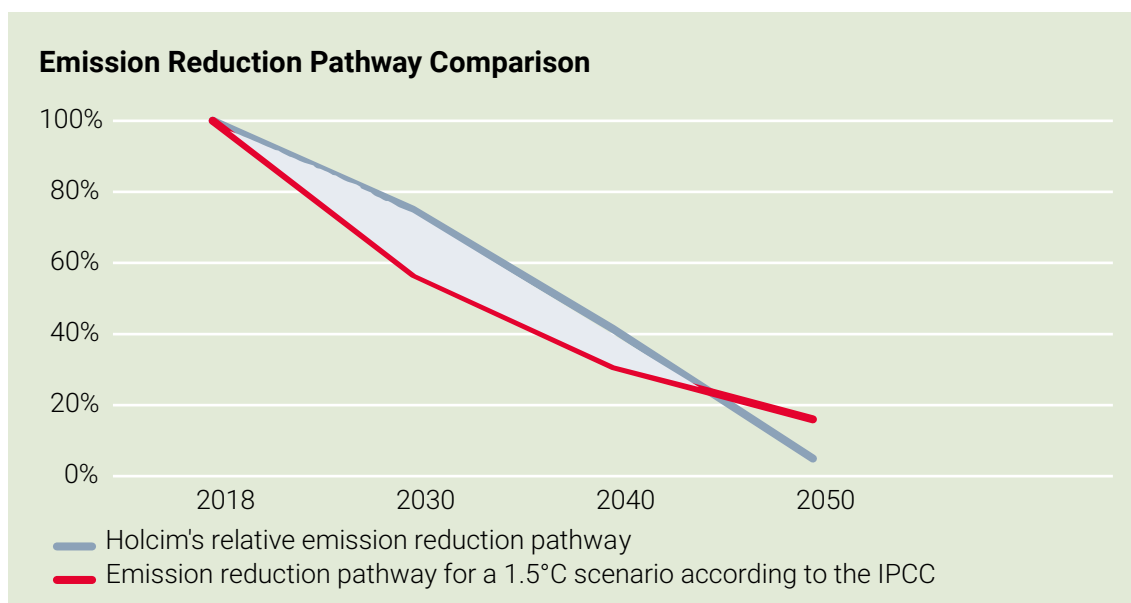
97 Op.cit. p. 16-17.

98 Rajamani, L. and Guérin, E. in Klein, D. et. al. (Hrsg.). 2017. The Paris Agreement on Climate Change, Oxford, p. 76.

99 IPCC. 2022. Press release: The evidence is clear: the time for action is now. We can halve emissions by 2030. April 4, 2022. Retrieved from: <https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-pressrelease/>. (emphasis added).

100 United Nations 2015. Paris Agreement. Retrieved from: [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf); UNFCCC. 1992. United Nations Framework Convention on Climate Change. Retrieved from: <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

101 Holcim. 2022. Media Release. Holcim upgrades its 2030 Climate Targets in line with SBTi 1.5°C Framework. 10 November. Retrieved from: <https://www.holcim.com/media/media-releases/sbti-validation>.



**Figure 5: Comparison of the emission reduction pathway of Holcim's relative emission reduction targets vs. the IPCC modelled pathway if global warming is to be limited to 1.5°C (with no or limited overshoot).**

Contrary to the 1.5°C pathway of the IPCC, Holcim chooses low relative emission reduction targets until 2030 in the short term, which it will have to compensate for with more rapid emission reductions from 2030 to 2050. This somewhat parallels the above discussed reduction pathway from the IPCC coloured with a dark blue line on Figure 4 (page 20), which would limit global warming with a 67% probability to 2°C<sup>102</sup>. This all shows that currently Holcim is delaying climate action to effectively limit global warming to 1.5°C and that its updated targets change nothing to this fact.

#### 4.6 Problematic reliance on Carbon Capture Utilisation and Storage

As part of its climate strategy, Holcim has announced that it will follow a 2050 net zero pathway<sup>103</sup>. However, Holcim's net zero pathway does not mean that Holcim will have no GHG emissions by 2050: the company has announced that it aims at reducing its scope 1 and 2 emissions by 95% and not by 100% (scope 1 emissions in 2050 will thus be at around 29 kg of CO<sub>2</sub> per tonne of cementitious material, scope 2 emission in 2050 will amount to around 2 kg of CO<sub>2</sub> per tonne of cementitious material)<sup>104</sup>. Scope 3 emissions are targeted to be reduced by 90% until 2050: this means that 10% or 2.9 kg of CO<sub>2</sub> per tonne of cementitious material of scope 3 emission will remain<sup>105</sup>.

While serious long-term net zero targets are important climate commitments, they must always be coupled with immediate action, since otherwise long-term goals risk remaining forever out of reach<sup>106</sup>. Without immediate, rapid, and drastic absolute emission cuts, future net zero pledges are hardly achievable. Currently, there is a widespread corporate tendency to make net zero promises, either without substantiating how they intend to get there, or by planning on a heavy reliance on carbon

<sup>102</sup> IPCC. 2022. AR6: Mitigation of Climate Change. Summary for Policymakers. Figure SPM.4. Retrieved from: <https://www.ipcc.ch/report/ar6/wg3/figures/summary-for-policymakers/figure-spm-4>.

<sup>103</sup> Holcim. 2021. Media Release. 'Holcim first in its sector with full net-zero pathway endorsed by SBTi'. 28 October 2021. Retrieved from: <https://www.holcim.com/media/media-releases/holcim-net-zero-sbti>.

<sup>104</sup> 29 kg correspond to 5% of 576 kg of CO<sub>2</sub> per tonne of cementitious material and 2 kg correspond to approx. 5% of 38 kg of CO<sub>2</sub> per tonne of cementitious material (calculations based on the data cited in the previous footnote).

<sup>105</sup> Calculations based on the 29kg CO<sub>2</sub> scope 3 emissions from the 2020 base year as indicated in Holcim's 2020 Sustainability Performance Report retrieved on p. 5 from: [https://www.holcim.com/sites/holcim/files/2022-04/26022021-sustainability-lafargeholcim\\_sustainability-performance-report-2020-en\\_187627639.pdf](https://www.holcim.com/sites/holcim/files/2022-04/26022021-sustainability-lafargeholcim_sustainability-performance-report-2020-en_187627639.pdf).

<sup>106</sup> The Energy & Climate Intelligence Unit and Oxford Net Zero. 2021. TAKING STOCK: A global assessment of net zero targets. Scrutinising countries, states and regions, cities and companies. March 2021. p. 4. Retrieved from: [https://ca1-eci.edcdn.com/reports/ECIU-Oxford\\_Taking\\_Stock.pdf?mtime=20210323005817&focal=none](https://ca1-eci.edcdn.com/reports/ECIU-Oxford_Taking_Stock.pdf?mtime=20210323005817&focal=none).

offsetting or novel technologies such as Carbon Capture Utilisation and Storage (CCUS)<sup>107</sup>. This is also what Holcim projects doing. The cement company plans on cutting its emissions the most from 2030 to 2050. It seeks to do so by upscaling CCUS, which is understood to encompass methods and technologies to remove CO<sub>2</sub> from the atmosphere, followed by recycling the CO<sub>2</sub> for utilisation and providing safe and permanent storage options. Storage options include injecting CO<sub>2</sub> in geologic formations and oceans or trees to enable the biological fixation of CO<sub>2</sub> via photosynthesis<sup>108</sup>. Holcim acknowledges that CCUS is currently still in a pilot project phase and is expected to become more important from 2030 onwards<sup>109</sup>. In Holcim's own visualisation on its net zero pathway that is displayed below, the dark blue triangle that represents CCUS is projected to substantially help Holcim to become a net zero company. However, when HEKS asked Holcim for a transparent count of the tonnes of CO<sub>2</sub> that have already been captured by these pilot projects in recent years and the number of CO<sub>2</sub> tonnes that Holcim aims at capturing in the future, the company did not provide a substantiated answer. It only stated to have the objective of developing a handful of solutions for use and storage, but that no single solution will be perfectly scalable<sup>110</sup>. This is backed by the findings of the Ethos foundation, which regrets that Holcim does not provide more details on its CCUS projects. Ethos calculated that by 2050, Holcim intends on reducing approximately 60% of its emissions with CCUS technologies<sup>111</sup>. How this expected heavy reliance on CCUS technologies is to be met with a handful of projects, whose scalability and deployment is largely uncertain, remains unclear<sup>112</sup>.

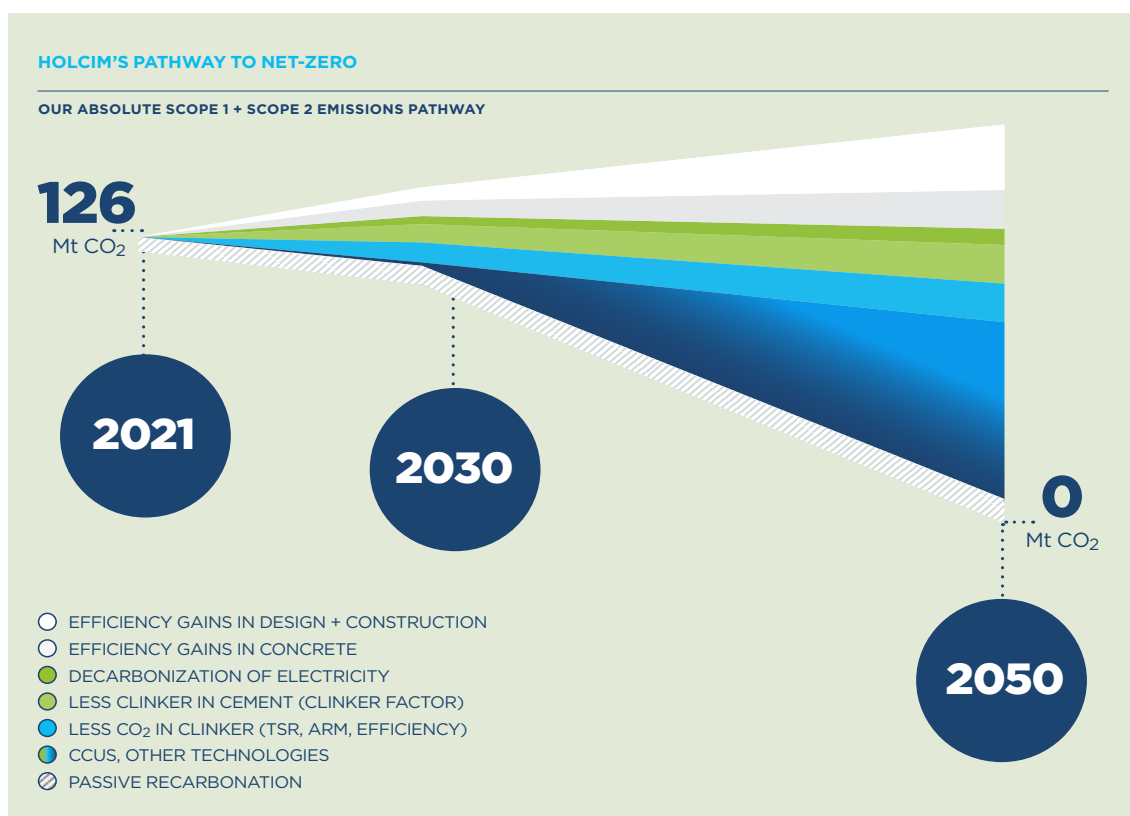


Figure 6: Holcim's Pathway to net-zero<sup>113</sup>

107 Op. cit. p.5. For an extreme example, see the net zero pledges of the FIFA world cup in Qatar 2022 and a respective complaint before the Swiss advertising commission: *Plainte-Alliance-Climatique-Suisse-contre-FIFA-du-2-novembre-2022-1.pdf* (avocatclimat.ch).

108 American Institute for Chemical Engineers. 2022. What is CCUS? CCUS Network. Retrieved from: <https://www.aiche.org/ccusnetwork/what-ccus>.

109 Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.

110 Op. cit.

111 Ethos. 2022. Ethos Proxy Report on Holcim. Document sent by Ethos to HEKS.

112 Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.

113 Holcim. 2022. Climate Report 2022. p. 14. Retrieved from: <https://www.holcim.com/sites/holcim/files/2022-04/08042022-holcim-climate-report-2022.pdf>.



Indeed, the CCUS' effectiveness and scalability is, according to scientific evidence, highly uncertain: the IPCC points out that CCUS and other carbon dioxide removal options can lead to emissions reductions required in energy-intensive industries to reach the 1.5°C limit, but stresses that heavy reliance on such technology is a major risk for the ability to limit warming to 1.5°C. The IPCC further identifies that their large-scale deployment is to date unproven *"and may be limited by economic, financial, human capacity and institutional constraints in specific contexts"* as well as specific characteristics of large-scale industrial installations. Additionally, major concerns about adverse environmental and social side effects exist<sup>114</sup>. This is echoed by a study on CCUS published in September 2022 by the Institute for Energy Economics and Financial Analysis. It looked into 13 flagship cases comprising about 55% of the total current nominal capture capacity operating worldwide. It concluded that ten out of the 13 flagship projects reviewed, which together comprised 90% of the total capture capacity in their sample, *"have failed or are underperforming mostly by large margins"*<sup>115</sup>. Clearly, the reliance on CCUS technologies is highly speculative, as they are not yet ready and deployable on a large scale<sup>116</sup>.

Additionally, the costs for CCUS projects are expected to be considerable: by 2030, companies will have to count on spending between USD 75 to 100 per tonne of captured CO<sub>2</sub><sup>117</sup>. If Holcim were to pay a price of USD 100 for all its 2021 absolute CO<sub>2</sub> emissions, which amounted to 156 million tonnes of CO<sub>2</sub><sup>118</sup>, the sum would be USD 15.6 billion<sup>119</sup>, which would be more than half of its 2021 net sales, which amounted to CHF 26.8 billion<sup>120</sup>. Meaning that significant additional costs may arise for Holcim from 2030 onwards for capturing, storing and recycling its CO<sub>2</sub> emissions.

Besides being expensive, the scope of CCUS is also limited. There is major uncertainty as to whether the technology will be sufficiently able to mitigate the large amounts of CO<sub>2</sub> emitted by the cement industry. A study which has assessed the feasibility of CCUS for the cement industry comes to the general conclusion that an average cement plant emits much more CO<sub>2</sub> than could be utilised in one single CO<sub>2</sub> utilisation plant<sup>121</sup>. Consequently, a net zero cement plant would need to put the remaining CO<sub>2</sub> into a geological storage site, which would need to be located in the close proximity of the cement plant, to be an economically and technical feasible solution.

In sum, there are considerable limitations and constraints to the use of CCUS, and to date Holcim has not clarified how it intends to overcome them. Based on the current state of science, there are to date no indications whatsoever that the net zero pledge of Holcim by 2050 will be achieved.

114 IPCC. 2018. IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. p. 55, p. 96, and p. 121. Retrieved from: [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15\\_Full\\_Report\\_High\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf). (emphasis added).

115 Institute for Energy Economics and Financial Analysis. 2022. The Carbon Capture Crux. Lessons Learned. p. 1 and p. 71. Retrieved from: <https://ieefa.org/resources/carbon-capture-crux-lesson-learned>.

116 For further literature on this topic see: International Institute for Sustainable Development. 2022. Navigating Energy Transitions: Mapping the Road to 1.5°C. IISD Report. p. 8. Retrieved from: <https://www.iisd.org/system/files/2022-10/navigating-energy-transitions-mapping-road-to-1.5.pdf>. or European Academies Science Advisory Council. 2018. Negative emission technologies: What role in meeting Paris Agreement targets? p. 29. Retrieved from: [https://easac.eu/fileadmin/PDF\\_s/reports\\_statements/Negative\\_Carbon/EASAC\\_Report\\_on\\_Negative\\_Emission\\_Technologies.pdf](https://easac.eu/fileadmin/PDF_s/reports_statements/Negative_Carbon/EASAC_Report_on_Negative_Emission_Technologies.pdf).

117 Olle Martial. 2022. Carbon Capture multiplied by 10 by 2030. Energynews. 28 April 2022. Retrieved from: <https://energynews.pro/en/carbon-capture-multiplied-by-10-by-2030/>.

118 Holcim, 2021. 2021 Sustainability Performance Report. p. 7. Retrieved from: [https://www.holcim.com/sites/holcim/files/2022-04/25022022-sustainability-performance\\_fy\\_2021\\_report-en.pdf](https://www.holcim.com/sites/holcim/files/2022-04/25022022-sustainability-performance_fy_2021_report-en.pdf).

119 Calculation: 156million x USD 100 = USD 15.6 billion.

120 Holcim. 2021. Holcim Integrated Annual Report 2021. p. 6. Retrieved from [https://www.holcim.com/sites/holcim/files/2022-03/25022022-finance-holcim\\_fy\\_2021\\_report-full-en.pdf](https://www.holcim.com/sites/holcim/files/2022-03/25022022-finance-holcim_fy_2021_report-full-en.pdf).

121 Monteiro, J. and Roussanaly, S. 2022. CCUS scenarios for the cement industry: Is CO<sub>2</sub> utilization feasible? Journal of CO<sub>2</sub> Utilization. Volume 61.102015. p. 9. Retrieved from: <https://doi.org/10.1016/j.jcou.2022.102015>.

## 4.7 Selection of baseline year

A further issue in Holcim's targets arises from the inconsistency in the selection of the baseline year for its targets. It chose different baseline years for its scope 1 and 2 targets (2018) versus its scope 3 targets (2020). Holcim's behaviour is characteristic of companies that tend to choose baseline years that suit their targets best – meaning that companies choose a year in which their emissions were high, since it is easier to reduce emissions from a year with high emissions than from year with low emissions. In 2018, the company had, according to its sustainability report, 22 million tonnes of CO<sub>2</sub> scope 3 emissions<sup>122</sup>. As explained in chapter 2.2, in 2020 a new methodology for measuring scope 3 emissions was introduced, which led to a substantial increase in Holcim's reported scope 3 emissions, which thus rose in 2020 to 29 million t of CO<sub>2</sub>. Logically, the low scope 3 emissions for 2018 were less favourable for communicating emission reductions in the future, compared to the higher numbers from 2020. Without other reasons presented by Holcim, it can be assumed that Holcim chose different baseline years to favour their communication on climate targets.

## 4.8 Holcim's business development vs. climate strategy

With some of its recent business strategy and sales, Holcim seems to be engaging with more climate friendly solutions. One example: Holcim announced that it would expand the percentage of sales of its Solutions & Products segment, which is less carbon-intensive than the Cement or Ready-Mix Concrete segment. The Solutions & Products segment is projected to grow from a share of 13% in 2021 to 30% in 2025. Therefore, the relative share of its Cement division will decrease from 57% in 2021 to about 40% in 2025<sup>123</sup>. In line with this strategy, Holcim announced in May 2022 that it was divesting its entire Indian cement business to the Indian Adani Group for CHF 6.4 billion<sup>124</sup>. The sale was closed on September 16, 2022<sup>125</sup>. According to Holcim's CEO Jan Jenisch, this divestment will result in a -23% reduction of Holcim's absolute CO<sub>2</sub> emissions, since the sold cement plants covered about a quarter of Holcim's cement production<sup>126</sup>. Holcim communicated very actively around this sale and the CO<sub>2</sub> emission reductions that it engenders. However, the buyer of the Indian business, the Adani Group, has a rather louche track record on environmental compliance<sup>127</sup>. When asked about the due diligence steps of the 'responsible exit' strategy in this sale – as foreseen in the UNGPs and OECD Guidelines for Multinational Enterprises, which Holcim proclaims to follow, Holcim did not provide any information.

Further actions and announcements by Holcim cast doubt on the company's actual climate ambition and indicate no coherent strategy to reduce those parts of its business that are particularly CO<sub>2</sub> intensive. Only one week after declaring the sale of its Indian cement business, Holcim announced the acquisition of a ready-mix concrete company in the United States<sup>128</sup>. In July 2022, Holcim announced the acquisition of two ready-mix concrete companies in Romania<sup>129</sup> and in Poland<sup>130</sup>.

122 LafargeHolcim. 2018. Sustainability Report 2018. p. 23. Retrieved from: [https://www.holcim.com/sites/holcim/files/2022-04/14052019\\_publications\\_lafargeholcim-sustainability-report-2018.pdf](https://www.holcim.com/sites/holcim/files/2022-04/14052019_publications_lafargeholcim-sustainability-report-2018.pdf).

123 Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.

124 Holcim. 2022. Adani Group to acquire Holcim's India business. Website. Retrieved from: <https://www.holcim.com/media/media-releases/holcim-india-business-acquired>.

125 Holcim. 2022. Holcim closes India divestment. Website. Retrieved from: <https://www.holcim.com/media/media-releases/india-divestment-closing>.

126 Etwareea, R. 2022. Holcim se retire d'Inde, un marché pourtant en forte croissance. May 16, 2022. Retrieved from: <https://www.letemps.ch/economie/holcim-se-retire-dinde-un-marche-pourtant-forte-croissance>.

127 See for example: Smee Ben. 2021. Adani admits breaching environmental conditions for Carmichael coalmine. The Guardian. 15 May 2021. Retrieved from: <https://www.theguardian.com/environment/2021/may/16/adani-admits-breaching-environmental-conditions-for-carmichael-coalmine>.

128 Holcim. 2022. Holcim expands ready-mix footprint in US. Website. Retrieved from: <https://www.holcim.com/media/media-releases/holcim-expands-ready-mix-footprint-us>.

129 Holcim. 2022. Holcim acquires General Beton Romania. Website. Retrieved from: <https://www.holcim.com/media/media-releases/general-beton-romania>.

130 Holcim. 2022. Holcim to acquire ready-mix concrete assets of Ol-Trans in Northern Poland. Website. Retrieved from: <https://www.holcim.com/media/media-releases/ol-trans>.

According to Holcim's 2021 Annual Report, eight ready-mix concrete companies were acquired in that year<sup>131</sup>. Holcim is therefore expanding its business in ready-mix concrete, which contains cement, meaning that it continues to invest in particularly CO<sub>2</sub> intensive business areas. Nevertheless, 80% of Holcim's Research and Development is dedicated to sustainability, and Holcim has invested over CHF 200 million in 2021 to operationalise its decarbonisation levers, and intends to invest CHF 500 million annually by 2025 to deliver on its sustainability targets<sup>132</sup>. To put this number in context: in 2022, Holcim had to pay a USD 778 million fine after pleading guilty to US charges of providing material support to the Islamic State in Syria to keep a cement factory operating during the war<sup>133</sup>.

Lastly, Holcim's growth strategy may not lead to the required absolute emission reductions, but is likely to bring a stagnation of CO<sub>2</sub> emissions. In its investor presentation of October 2021, Holcim set itself an annual net sales growth goal of 3-5% over the coming years<sup>134</sup>. If Holcim's growth strategy is achieved with cement or concrete, even partly, there is a significant risk that this strategy will collide with the need to drastically reduce absolute CO<sub>2</sub> emissions.

#### 4.9 Misleading labelling of "green concrete" and "ECOPact"

As part of its climate strategy, Holcim sells so-called "green concrete" under the trademark ECOPact<sup>135</sup>. The company states that ECOPact concrete is sold at a range of low-carbon levels, from 30% to 100% less carbon emissions compared to standard (CEM I) concrete. This concrete is made from recycled materials, while unavoidable CO<sub>2</sub> emissions are offset by CO<sub>2</sub> certificates. Holcim states that these certificates follow international standards (e.g. Gold standard, Verra). However, Holcim also acknowledges that its first duty is to reduce its own emissions and that offsetting them does not reduce them<sup>136</sup>. Within Holcim's ECOPact range, ECOPact<sup>zero</sup> is presented as the concrete with "up to 100% CO<sub>2</sub> reduction" compared to standard concrete<sup>137</sup>. The name ECOPact<sup>zero</sup> gives the false impression that the production of this cement does not emit any CO<sub>2</sub> emissions. This is not true, since Holcim offsets the unavoidable CO<sub>2</sub> emissions from ECOPact<sup>zero</sup> with CO<sub>2</sub> certificates. Holcim states that this is provided as a tool for customers to offset *their own* carbon emissions to reach neutrality<sup>138</sup>. However, these are hardly the emissions of the customers, but are Holcim's emissions that were generated from the production of this concrete.

While the emissions that Holcim offsets are rather low – according to Holcim representing ~ 0.008% of the Groups CO<sub>2</sub> emissions<sup>139</sup> – the labelling of Holcim's ECOPact range as 'green-concrete' as well as 'zero' misleads investors, customers, architects, regulating bodies and the public, who might assume that this concrete is emission-free. While Holcim's actions to reduce the carbon intensity of its cement and concrete products is extremely important and necessary, the labels

131 Holcim. 2022. Annual Report 2021. p. 189. Retrieved from: <https://www.holcim.com/annual-interim-reports>.

132 Holcim. 2022. Communication by email on June 15, 2022. Responses of Holcim to questions sent by HEKS.

133 See Swissinfo.ch. 2022. Holcim Unit Pleads Guilty in US, Fined \$778 Million Over Payments to Islamic State. October 18, 2022. Retrieved from: [https://www.swissinfo.ch/eng/holcim-unit-pleads-guilty-in-us--fined--778-million-over-payments-to-islamic-state/47988664#:~:text=\(Bloomberg\)%20%2D%20Holcim%20Ltd.,in%20the%20war%20torn%20country](https://www.swissinfo.ch/eng/holcim-unit-pleads-guilty-in-us--fined--778-million-over-payments-to-islamic-state/47988664#:~:text=(Bloomberg)%20%2D%20Holcim%20Ltd.,in%20the%20war%20torn%20country).

134 Holcim. 2021. Strategy 2025 – "Accelerating Green Growth". 18 November. Capital Markets Day. Presentation. Retrieved from: [https://www.holcim.com/sites/holcim/files/documents/holcim\\_capital\\_markets\\_day\\_2021\\_strategy\\_2025\\_presentation\\_1.pdf](https://www.holcim.com/sites/holcim/files/documents/holcim_capital_markets_day_2021_strategy_2025_presentation_1.pdf).

135 Holcim. 2022. ECOPact – the green concrete. Website. Retrieved from: <https://www.holcim.com/what-we-do/ready-mix-concrete/ecopact-green-concrete>.

136 Holcim. 2022. Communication by email on May 4, 2022. Responses of Holcim to questions sent by HEKS.

137 Holcim. 2022. ECOPact – the green concrete. Website. Retrieved from: <https://www.holcim.com/what-we-do/ready-mix-concrete/ecopact-green-concrete>.

138 Holcim. 2022. Communication by email on May 4, 2022. Responses of Holcim to questions sent by HEKS. (Emphasis added).

139 In 2020 Holcim purchased approximately 9,000 tons of CO<sub>2</sub> credits and generated 4,000 tons of CO<sub>2</sub> credits with partner projects (Ecuador) to commercialise net-zero products. Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS. For its purchased CO<sub>2</sub> credits, Holcim stated to have developed an internal guideline. Any carbon offsets have to meet the following principles: they have to be real, measurable, permanent, meet the requirement of additionality and be independently verified.

used for describing and advertising these less CO<sub>2</sub> intensive alternatives are deceptive. In a guidance on carbon neutrality claims, the WWF highlights the importance of avoiding net zero, carbon neutral, or green labels for products that still cause CO<sub>2</sub> emissions and thus contribute to climate change, as they are misleading<sup>140</sup>.

Moreover, CO<sub>2</sub> offsetting schemes are controversial. HEKS's partner organisations around the globe warn that carbon credits from CO<sub>2</sub> offsetting schemes often lead to land grabbing, evictions and/or human rights abuses<sup>141</sup>. A proper human rights and environmental due diligence assessment also applies for investments into carbon offsetting schemes. Whereas Holcim's carbon offsetting schemes have to meet international standards and their own internal guidelines, no information was provided by Holcim as to whether a proper human rights and environmental due diligence assessment is included in these standards<sup>142</sup>. Nevertheless, Holcim does not plan on offsetting carbon emissions on a grand scale<sup>143</sup>. Offsets are also controversial because there is broad uncertainty whether they achieve emission reductions at all<sup>144</sup>. There is a growing body of legal cases and decisions by advertising authorities that hold that the promotion of carbon neutrality by means of offsets is misleading for consumers, because companies could not provide the necessary evidence to prove that voluntary carbon credits achieve the promised emission reductions<sup>145</sup>.

Selling concrete under the labels of 'ecological', 'green', or as having 'zero-emissions' seems like adding a filter into a cigarette and calling it a healthy cigarette. This is misleading. As of now, alternatives such as Holcim's ECOPact products still emit CO<sub>2</sub> and should therefore be labelled as 'less carbon intensive than conventional products' and not as green or net-zero products.

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140 WWF. 2020. WWF recommendations for corporate climate strategies in the era of the Paris Agreement and the (new) role of 'compensation' projects. Retrieved from: [https://www.wwf.ch/sites/default/files/doc-2021-10/2020\\_12\\_15\\_WWF\\_Recommendations\\_Climate\\_Strategies\\_in\\_the\\_Paris\\_Era.pdf](https://www.wwf.ch/sites/default/files/doc-2021-10/2020_12_15_WWF_Recommendations_Climate_Strategies_in_the_Paris_Era.pdf).

141 World Rainforest Movement is a partner organisation of HEKS that works on carbon storage. They assert that relying on plantations to store carbon is a false solution to avoid climate chaos. Furthermore, carbon offset plantations allow polluting companies to continue burning fossil fuels. Source: World Rainforest Movement. 2022. Carbon Storage. Website. Retrieved from : <https://www.wrm.org.uy/subjects/carbon-storage> <https://wrm.org.uy/browse-by-subject/tree-plantations/carbon-sink-plantations/>.

142 Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.

143 Op.cit..

144 Kaupa, C. 2022. Peddling False Solutions to Worried Consumers the Promotion of Greenhouse Gas 'Offsetting' as a Misleading Commercial Practice. (July 8, 2022). Journal of European Consumer and Market Law. Retrieved from: <https://ssrn.com/abstract=4157810> or <http://dx.doi.org/10.2139/ssrn.4157810>.

145 See for example: two Dutch cases: Case against Shell, 26. August 2022, Shell promotes a product "*CO<sub>2</sub> compensation*", which promises consumers to "*drive CO<sub>2</sub> neutral*." The claim implies equivalence between emissions and offsets. However, complainants show that the climate benefits of "*CO<sub>2</sub> compensation*" are more uncertain than the climate harm caused by CO<sub>2</sub> emissions. Consequently, the claim is factually incorrect, and therefore misleading consumers. According to RCC (the Dutch Consumer Protection Authority), Shell has failed to provide sufficient evidence to disprove these arguments, and to prove that its marketing claims are factually correct. RCC advises Shell to stop these advertising claims. See for more info on the case here: <https://www.reclamecode.nl/uitspraken/resultaten/vervoer-2021-00190/304997/>. / Case against KLM, 8. April 2022, in which KLM promotes the service "*CO<sub>2</sub>ZERO*." According to KLM, this service allows consumers to neutralize/compensate their emissions. Using the same argument as in its decision on Shell, the RCC finds that KLM has not provided sufficient evidence that its products actually achieve the promised result. The promotion is therefore misleading. See for more info on the case here: <https://www.reclamecode.nl/uitspraken/klm/reizen-en-toerisme-2021-00553/338478/>. See also a case against Glencore in Australia: PCWP and others v. Glencore, 8. September 2022, See for more info on the case here: <http://climatecasechart.com/non-us-case/pcwp-and-others-v-glencore/>. Furthermore, a list of German cases can be found here: [https://climate-laws.org/litigation\\_cases?q=greenwashing%20Germany](https://climate-laws.org/litigation_cases?q=greenwashing%20Germany).

## 5. Problems with Holcim's reliance on the Science Based Targets initiative (SBTi)

### Key Insights

- **Holcim and the SBTi:** The multi-stakeholder initiative helps companies to set emission reduction targets and claims to use methods that are in line with the latest climate science. Holcim's climate targets are validated by the SBTi. Inconsistencies with the SBTi's methods and governance ultimately fall back on the integrity of Holcim's climate targets.
- **Deficient methods:** For target-setting, the SBTi suggests using one of two methods, both of which rely on the *grandfathering principle*. This principle is reaffirming the status quo, by granting big polluters more emission allowances in the future than small polluters. The SBTi methods neglect companies' historical responsibilities, capabilities and equity principles, as well as the internationally agreed allocation principle for future emission reductions of *Common but Differentiated Responsibilities*.
- **Governance:** The SBTi faces serious criticism over governance issues, such as its independence from the industry, financing, transparency, procedures in the validation process, as well as conflicts of interests. At the moment, the SBTi acts as both standard setter and validator without an independent third-party audit.
- **Risk of CO<sub>2</sub> overshoot:** Due to the use of deficient methods, the SBTi legitimise an overshoot of the remaining carbon budget for the 1.5°C pathway.

### 5.1 What is the Science Based Targets initiative?

Holcim's climate targets are validated by the SBTi<sup>146</sup> and were among the first long-term targets validated by the initiative<sup>147</sup>. The SBTi was launched by the Carbon Disclosure Project (CDP), the UN Global Compact and two environmental NGOs, the World Resources Institute (WRI) and the World Wide Fund for Nature (WWF)<sup>148</sup>. The initiative aims at driving "*ambitious climate action in the private sector by enabling organisations to set science-based emissions reduction targets*"<sup>149</sup>. The initiative states that their science-based targets represent the minimum fair share of emission reductions that individual companies must undertake in order to make a contribution to limit global warming to 1.5°C. The initiative further underlines that "*companies can and should do more beyond their science-based targets to further reduce their climate impact as quickly as possible.*" And that "*additional pressure from civil society has a crucial role to play in pushing companies to go further and faster.*"<sup>150</sup> By the end of 2021, 2,253 companies across 70 countries and from 15 industries had had their targets approved by the SBTi. These companies represent together more than one third (USD 38 trillion) of the global economy (based on global market capitalisation)<sup>151</sup>.

146 Holcim states the following: "*Taking a rigorous science-driven approach, Holcim's 2050 emissions reduction goals are among the first long-term targets validated by the Science Based Targets initiative (SBTi)*". Source: Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.

147 Holcim. 2022. Communication by email on May 5, 2022. Responses of Holcim to questions sent by HEKS.

148 Science Based Targets initiative. 2022. About us. Website: <https://sciencebasedtargets.org/about-us>.

149 Op.cit.

150 SBTi. 2023. Communication by Email on January, 10, 2023. Responses of the SBTi to the questions sent by HEKS

151 SBTi. 2022. Companies committed to cut emissions in line with climate science now represent \$38 trillion of global economy. May 12, 2022. Retrieved from: <https://sciencebasedtargets.org/news/companies-committed-to-cut-emissions-in-line-with-climate-science-now-represent-38-trillion-of-global-economy>.



Although its name suggests otherwise, the SBTi is not a scientific organisation, but a multistakeholder initiative. According to Holcim, the SBTi is one of the highest scientific authorities in this area<sup>152</sup>. Nevertheless, the SBTi does not produce scientific knowledge but applies chosen methods (see more in Chapter 5.2). For the cement sector in particular, the SBTi has applied the sector-specific guidelines from the International Energy Agency (IEA)<sup>153</sup>, that, according to Holcim, aim to arrive at a cost-optimal scenario across sectors<sup>154</sup>. Yet adhering to a cost-optimal scenario for the cement industry is not the equivalent of effectively doing its share to prevent a global temperature increase of more than 1.5°C, let alone the most optimal scenario for people suffering severe climate induced losses and damages.

## 5.2 Deficient SBTi target-setting methods

One of the core disputes in the effort to tackle the climate crisis is how the small remaining carbon budget for the 1.5°C pathway is to be allocated. Different methodologies and principles have been developed to assess the distribution of the remaining carbon budget. The analogy of a cake helps to understand the issue, the central question being, how are the remaining pieces of the cake distributed to all involved stakeholders. Do you give the biggest pieces to those who have already eaten most of the cake? Or do you grant the bigger pieces to those who have for years been waiting to eat a bit more than a few crumbs? Or perhaps, do you distribute more pieces of the cake than is available, so you end up sharing a cake that does not exist? The allocation of the remaining carbon budget concerns not only countries, but analogously also global companies, and especially those whose carbon footprint has – comparable to states – considerably contributed to the climate crisis.

Some of the criticism of the SBTi puts into question whether the methods chosen by the SBTi and the SBTi approved targets legitimise an excess of the remaining carbon budget for the 1.5°C pathway. Whereas this criticism will be explored further below, the SBTi states on this matter, that it has reviewed several scientific studies to determine 1.5°C -aligned pathways at the global and sectoral level in its 'Pathways to Net-Zero: SBTi Technical Summary'<sup>155</sup>. According to the SBTi the allocation of the remaining carbon budget to the different sectors included considerations of technology, cost, as well as socioeconomic factors, and the availability of decarbonisation levers. Yet, historical emissions were not included in these considerations<sup>156</sup>. The SBTi acknowledges that the cement industry produces a significant amount of greenhouse gas emissions. However, a dedicated cement-pathway is, according to the SBTi, justified due to the CO<sub>2</sub> intensive cement production process of the calcination of limestone, which means that the rate at which the sector can decarbonize may differ from the overall rate of the possible global decarbonization<sup>157</sup>. More specifically, the SBTi has found the cement sector pathway 'IEA Net Zero by 2050'<sup>158</sup> to be most suitable and meeting the SBTi's criteria<sup>159</sup>. Under this scenario, the SBTi states, that scope 1 emissions from the cement sector will be reduced by 23% in 2030 and by 63% in 2040 from 2019 levels, however without stating whether these are absolute or relative emission reductions<sup>160</sup>. Both targets fall below the

152 Holcim. 2022. Communication by email on May 4, 2022. Responses of Holcim to questions sent by HEKS.

153 See International Energy Agency (IEA). 2022. Cement: Report. Website: <https://www.iea.org/reports/cement>.

154 Holcim. 2022. Communication by email on June 15, 2022. Responses of Holcim to questions sent by HEKS.

155 SBTi. 2021. PATHWAYS TO NET-ZERO: SBTi Technical Summary. October 2021. Retrieved from: <https://sciencebasedtargets.org/resources/files/Pathway-to-Net-Zero.pdf>.

156 SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

157 Op.cit.

158 IEA. 2021. Net Zero by 2050 A Roadmap for the Global Energy Sector. Retrieved from: [https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector\\_CORR.pdf](https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf).

159 The criteria include according to the SBTi: plausibility (credibility of narrative), responsibility (reduced risk of not meeting the 1.5°C goal), objectivity (not biased towards any particular industry or organization) and consistency (they should have a strong internal logic). This information was given by the SBTi to HEKS in: SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

160 SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

required global average emission reductions necessary according to the IPCC's 1.5°C pathway<sup>161</sup> and rely on slow emission reductions in the short term, which will be compensated with more rapid emission reductions until 2050. Whereas this may be justified on technological and cost-optimal grounds, it still delays the necessary rapid emission reductions (see Chapter 4.4) and contributes to risking a failure of limiting global warming to 1.5°C.

The above-described sector specific pathway is embedded in the SBTi's two main target-setting methods, which are designed to assess corporate emission reduction targets<sup>162</sup>. These are:

- The Absolute Contraction Approach (ACA): This is a “one-size-fits-all method” ensuring that companies setting targets deliver absolute emissions reductions in line with global decarbonisation pathways. According to the SBTi, most companies setting science-based targets with the SBTi opt for this method. The ACA method relies on the grandfathering principle, which will be explained hereafter.
- The Sectoral Decarbonisation Approach (SDA): This method was developed in 2015 and allows carbon-intensity targets to be derived from global mitigation pathways for some of the most carbon-intensive activities such as cement. The SDA method relies on the grandfathering principle as well as the convergence principle, according to which all companies from the same sector converge towards a certain emission intensity by 2050<sup>163</sup>. For the cement sector, this means that all cement companies applying the SDA-method will converge towards the same amount of CO<sub>2</sub> emissions per tonne of cementitious material by 2050.

Overall, methods for setting emission reduction targets always rely on model assumptions. The ACA and SDA methods are both, among others, based on the *grandfathering principle*, with which companies with high historical greenhouse gas emissions are granted a higher emission budget for the future than companies with a low carbon emission history<sup>164</sup>. The grandfathering principle allocates remaining resources according to *the rule of first possession*<sup>165</sup>. It grants the stakeholders an exemption from regulatory or policy requirements, allowing them to continue with an activity following an institutional change that either legally prohibits or regulates this activity for others<sup>166</sup>. This approach relies on the assumption that it is more costly and difficult for companies with high emissions to reduce their emissions fast. Consequently, the grandfathering principle allows high emitting actors to carry on emitting large amounts of CO<sub>2</sub> emissions, while raising the bar for other, less emission-intensive companies. Political scientists and economic analysts describe this approach as a disincentive for proactive behaviour regarding emission reduction and unjust by nature<sup>167</sup>. By applying the grandfathering principle and including it in both SBTi-methods, the right to development, which includes the right that the benefits of development should be distributed fairly,

161 IPCC, Summary for Policymakers, in: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, § C.1.1 and Table SPM.2, Retrieved from: [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf).

162 SBTi. 2021. Understand the methods for science-based climate action. Retrieved from: <https://sciencebasedtargets.org/news/understand-science-based-targets-methods-climate-action>.

163 Bjørn A. et. al. 2021. From the Paris Agreement to corporate climate commitments: evaluation of seven methods for setting ‘science-based’ emission targets, *Environmental Research Letters*, 16, 054019, 2021, p. 9, para 4.3.2. Retrieved from: <https://iopscience.iop.org/article/10.1088/1748-9326/abe57b/pdf>.

164 Knight C. 2014. Moderate Emissions Grandfathering, *Environmental Values*, vol. 23, no. 5, 2014, pp. 571–92. p. 572, JSTOR, Retrieved from: <http://www.jstor.org/stable/43695180>.

165 Nash, J. R., and R. L. Revesz. 2007. Grandfathering and environmental regulation: the law and economics of new source review. *Northwestern University Law Review* 101: 1677–733. Retrieved from: <https://www.proquest.com/docview/233366983>.

166 For an analysis from an economic perspective, see: Damon M., Cole D.H., Ostrom E., and Sterner T. 2019. Grandfathering: Environmental Use and Impacts. *Review of Environmental Economics and Policy*, volume 13, issue 1, Winter 2019, pp. 23–42. p. 25. doi: 10.1093/reep/rey017.

167 See for economic perspective: Damon M., Cole D.H., Ostrom E., and Sterner T. 2019. Grandfathering: Environmental Use and Impacts. *Review of Environmental Economics and Policy*, volume 13, issue 1, Winter 2019, pp. 23–42. p. 26. doi: 10.1093/reep/rey017. Or political scientist: Caney, S. 2009. Justice and the distribution of greenhouse gas emissions. *Journal of Global Ethics* 5: 125-46, CrossRef. Retrieved from: <https://www.tandfonline.com/doi/abs/10.1080/17449620903110300?journalCode=rjge20>.

is completely neglected<sup>168</sup>. Companies with high historical and current emissions, such as Holcim, are granted a bigger piece of the remaining cake than companies, who have barely contributed to the climate crisis so far. The distribution of the remaining carbon budget via the grandfathering principle reaffirms the status quo and leaves only a few crumbs of the cake to those who have barely had any. The SBTi states that historical emissions are very important, especially for energy intensive sectors and companies, but that the SBTi's focus is on rapid and steep emission reductions from current emission levels, and that therefore historical emissions are out of scope<sup>169</sup>.

The grandfathering principle is only one of several principles that can be used for target setting. Other principles, which are not part of the SBTi methods, include<sup>170</sup>: the *immediate per capita convergence (IEPC)*, which assumes that the remaining carbon budget is a common collective good belonging equally to all of humanity, and that the remaining emission allowances should be distributed immediately per capita in equal parts; the *per capita convergence (PCC)* principle, which combines the grandfathering principle with the IEPC and allows a linear emission reduction over time from current levels, until the emission allowances converge at a set date towards equal per capita levels; the *equal cumulative per capita emissions (ECPC)*, which combines equality and responsibility principles and allows equal per capita emissions, while reducing the allowance for those who have historically emitted the most in the past; the *ability to pay* method, which distributes emission allowances according to the annual GDP per capita, meaning that countries with high per capita GDP receive smaller emissions allowances than countries with low per capita GDP, as they do not have the same capabilities to pay for a rapid transition to a low carbon economy. Further principles and methods include the *equity* principle, the *responsibility* principle, and the *capabilities* principle.

Particularly important for allocating the remaining global carbon budget is the *Common but Differentiated Responsibilities (CBDR)* concept, first mentioned in the Rio Declaration at the first Rio Earth Summit in 1992<sup>171</sup>. The declaration states in its Principle 7:

*"In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command."*<sup>172</sup>

Art. 4(3) of the Paris Agreement and United Nations Framework Convention on Climate Change (UNFCCC) also refers to this concept: *"The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities"*<sup>173</sup>. This principle sets

168 See UNGA. 1986. Declaration on the Right to Development. Adopted by General Assembly resolution 41/128 of 4 December 1986. Art. 2 (3). Retrieved from: <https://www.ohchr.org/sites/default/files/rtd.pdf>. As well as the policy brief of the Special Rapporteur on the Right to Development: Alfaragii, S. 2021. Climate action and the right to development: a participatory approach A policy brief from the United Nations Special Rapporteur on the right to development, Saad Alfaragii on the occasion of the United Nations Climate Change Conference 2021. Retrieved from: [https://www.ohchr.org/sites/default/files/2021-12/Policy\\_Brief\\_RTD\\_Climate\\_Action.pdf](https://www.ohchr.org/sites/default/files/2021-12/Policy_Brief_RTD_Climate_Action.pdf).

169 SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

170 See Van Den Berg, N.J., Van Soest, H.L., Hof, A.F. et al. 2020. Implications of various effort-sharing approaches for national carbon budgets and emission pathways. *Climatic Change* 162, p. 1809, Table1, Retrieved from: <https://doi.org/10.1007/s10584-019-02368-y>.

171 United Nations Conference on Environment and Development. 1992. Rio Declaration on Environment and Development. Retrieved from: [https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A\\_CONF.151.26\\_Vol.I\\_Declaration.pdf](https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151.26_Vol.I_Declaration.pdf).

172 Op. cit. Principle 7, p. 2.

173 United Nations 2015. Paris Agreement. Retrieved from: [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf); UNFCCC. 1992. United Nations Framework Convention on Climate Change. p. 5. [emphasis added] Retrieved from: <https://unfccc.int/resource/docs/convkp/conveng.pdf>.

out that actors with large historical responsibility in the climate change crisis as well as large economic capabilities must reduce emissions faster than those with comparably small historical greenhouse gas emissions and low economic capabilities.

Due to its reference in the different climate agreements, the *Common but Differentiated Responsibilities* concept is the most democratically accepted, and represents a just and sustainable way of distributing the remaining carbon budget. Yet this approach and its underlying principles of equity, which includes responsibility, capability, equality and sovereignty are entirely lacking in all of the SBTi methods. These principles are analogously applicable to companies, especially globally operating companies with emissions that are comparable to states' emissions, and must therefore be embedded in methods for target-setting. As such, corporations with large historical responsibility and large economic capabilities should reduce their emissions faster than those with a smaller historical responsibility and lower economic capabilities.

In fact, some existing emission reduction target-setting methods for companies have embedded the principle of historical responsibility. Among them is the so-called BT-CSI (British Telecom – Climate Stabilisation Intensity) method<sup>174</sup>, which includes responsibility, right to development and capabilities principles and uses separate emission pathways for developed and developing countries. As a consequence, companies in developed countries are expected to reduce emissions faster than corporations in developing countries with lower economic capabilities and historical emissions. In a recent study, the CSO-method (Centre for Sustainable Organisation) has been found to meet the condition of applying the Common but Differentiated Responsibilities Principle, meaning that when the CSO-method is applied, companies in developed countries need to reduce their emissions at a faster rate than companies in developing countries<sup>175</sup>.

While the SBTi claims to “drive ambitious science-based climate action”, and that historical emissions are very important, it has not been able to show in a transparent way why it has selected the ACA and SDA methods, over other more equitable methods, backed by international scientists, such as the BT-CSI or CSO methods. Upon request, the SBTi has not provided written feedback about its selection of methods and why the Common but Differentiated Responsibilities concept or the underlying principles of equity, responsibility and capability are lacking in all of the SBTi methods<sup>176</sup>. Highlighting this issue, the SBTi even received a formal complaint from Bill Baue, former member of SBTi Technical Advisory Group, in February 2021, questioning the choice of target-setting methods<sup>177</sup>. In his complaint, Baue states that “the two methodologies that are exclusively recommended by SBTi are the products of SBTi partners, while the methodologies that are recommended against are all created independent of SBTi, raising significant self-dealing and conflict of interest concerns”<sup>178</sup>. Therefore, the SBTi’s alleges to validate so-called science-based targets, which, however, completely ignore historical responsibilities and capabilities, and thus equity principles that are recognized to be important pillars in assessing the setting of emission reduction targets in the light of the ultimate objective to prevent dangerous anthropogenic interference with the climate system (Art. 2 UNFCCC).

174 See Bjorn, A. et al. 2021. From the Paris Agreement to corporate climate commitments: evaluation of seven methods for setting ‘science-based’ emission targets. *Environmental Research Letters*, (16): 1-14. p. 9. Retrieved from: <https://iopscience.iop.org/article/10.1088/1748-9326/abe57b>.

175 More information on the CSO-method, developed by the Centre for Sustainable Organisations can be found here: Rekker S. et al. 2022. Measuring corporate Paris Compliance using a strict science-based approach. p. 3. Retrieved from: <https://www.nature.com/articles/s41467-022-31143-4>.

176 HEKS. 2022. Questions sent by HEKS to the SBTi on December 12, 2022.

177 Baue, B. 2021. Formal Complaint: Science Based Targets Conflicts of Interest. Retrieved from: [https://bbaue.medium.com/formal-complaint-science-based-targets-conflicts-of-interest-f8199407ac10#\\_ftn2](https://bbaue.medium.com/formal-complaint-science-based-targets-conflicts-of-interest-f8199407ac10#_ftn2).

178 Op.cit.

### 5.3 SBTi methods and relative reduction targets

According to the SBTi's website, companies are free to choose their preferred method for target setting, also beyond the ACA and SDA methods. Also, the SBTi recommends that companies should choose the method and target that drive the greatest emission reductions<sup>179</sup>. In fact however, the SBTi strongly encourages using either the ACA or SDA method, depending on the company's business portfolio<sup>180</sup>. Whereas the SBTi acknowledges that *absolute* reduction targets are the most impactful way to reduce total global atmospheric emissions<sup>181</sup>, it recommends the SDA method which includes only relative emission reductions. The SBTi suggests this method for homogenous companies, which are companies that are predominantly operating in one sector (such as cement, iron, steel, or aluminum). For heterogenous companies, which have a diverse portfolio, the SBTi recommends the ACA method, which applies absolute emission reduction targets<sup>182</sup>. Consequently, in its sector-specific guidance for the cement industry, the SBTi states that the SDA method is to be used, which allows companies to set relative emission reduction targets only<sup>183</sup>. Accordingly, large cement producers like Holcim, HeidelbergCement and Cemex have all opted for the SDA method, which enables them to set relative reduction targets only, while still being validated by the SBTi<sup>184</sup>.

The SBTi's recommendation to use two methods, neither of which takes into account equity principles such as responsibility and capability, does not match SBTi's claim of validating targets compatible with limiting global warming to 1.5°C and using *methods that drive the greatest emission reductions*. Furthermore, to recommend and validate relative emission reduction targets to be 1.5°C compatible without any absolute emission reduction targets for a sector that accounts for up to 8% of the total global annual emissions, is insufficient and clearly does not represent the most ambitious approach for mitigating the climate crisis. With this practice the global allowable emissions in line with the 1.5° limit may be substantially overshoot<sup>185</sup>.

### 5.4 Governance: Financial independence and lack of independent review

The SBTi has stated that it will introduce a number of changes in regard to its framework and governance in 2023<sup>186</sup>. The following sections, highlight three governance issues that pertain until today. The SBTi states to be *"a non-profit initiative without any commercial relationship or interests with the entities submitting targets for validation by the SBTi and adhering to a robust conflict of interest policy"*<sup>187</sup>. However, the SBTi generates revenue from validating the companies' climate

179 SBTi. 2020. Science Based Target Setting Manual. p. 5. Retrieved from: <https://sciencebasedtargets.org/resources/legacy/2017/04/SDTi-manual.pdf>.

180 SBTi, Downey, K. 2022. 1.5°C Science Based Target Setting In The Cement Sector: Public Consultation Webinar 16 March 2022, p. 17. Retrieved from: <https://sciencebasedtargets.org/resources/files/Cement-public-consultation-webinar-slide-deck.pdf>.

181 SBTi. 2015. Sectoral Decarbonization Approach (SDA): A method for setting corporate emission reduction targets in line with climate science. p. 18. Retrieved from: <https://sciencebasedtargets.org/resources/files/Sectoral-Decarbonization-Approach-Report.pdf>

182 SBTi, Downey, K. 2022. 1.5°C Science Based Target Setting In The Cement Sector: Public Consultation Webinar 16 March 2022, p. 17. Retrieved from: <https://sciencebasedtargets.org/resources/files/Cement-public-consultation-webinar-slide-deck.pdf>.

183 Science Based Targets. 2022. Cement Science Based Target Setting Guidance. Retrieved from: <https://sciencebasedtargets.org/resources/files/SDTi-Cement-Guidance.pdf>.

184 Cemex. 2022. Our 2030 Targets. Retrieved from: <https://www.cemex.com/sustainability/esg-reporting-center/our-2030-targets/>. / HeidelbergCement. 2021. HeidelbergCement signs "Business Ambition for 1.5°C" and joins "Race to Zero" campaign of the UN. July 21, 2021. Retrieved from: <https://www.heidelbergcement.com/en/pr-21-07-2021>.

185 See also Bjorn, A. et al. 2021. From the Paris Agreement to corporate climate commitments: evaluation of seven methods for setting 'science-based' emission targets. *Environmental Research Letters*, (16): 1-14. p. 12. Retrieved from: <https://iopscience.iop.org/article/10.1088/1748-9326/abe57b>.

186 These will include (a) Expansion of SBTi board to provide more diversity and perspectives; (b) Setting up of a technical council as independent technical decision-making body for standards and guidance; (c) Creation of a compliance function with oversight of both, standards development and target validation, and responsible for implementing a grievance and complaints mechanism. Information from: SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

187 SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

targets. According to a review about the SBTi authored by Deloitte in 2020, commissioned by the IKEA Foundation, the SBTi's corporate-sourced income accounted for 10% of total revenue in 2021. An additional 22% of total revenue in 2021 was generated through fees for the target validation process. The SBTi charges companies up to USD 14,500 for validating their targets<sup>188</sup>.

The SBTi performs a problematic double role, by defining the emission reduction target-setting methods, as well as then reviewing and validating the company's targets, while receiving funds from the same companies whose targets it needs to validate. On this point the SBTi states to act *"in full independence from companies for both, the development of standards, and sector-specific methods, and for the validation of targets"*<sup>189</sup>.

Within the auditing sector and among sustainability initiatives (from different sectors such as the food and beverages, clothing, electronics, etc.), the problem of being both the standard setter and validator is well-known, and it is typically recognised that the only way of circumventing this is to assign the auditing to an independent third party, meaning that another institution should either define the target setting methods, or validate the companies' targets. Indeed, according to ISEAL, an international initiative that sets quality criteria for environmental and social standards, accredited certification should be done by independent and accredited third parties, as it is the most credible form of assessment<sup>190</sup>. Most standard setters use third parties to verify compliance with their rules<sup>191</sup>. The SBTi is not part of the ISEAL Alliance. Contrary to this very clear and long-standing recommendation in sustainability auditing, the SBTi has precisely no independent third-party auditing body that conducts the validation of the targets. Target validation team members are employees of the SBTi<sup>192</sup>. The SBTi thus performs a problematic double role, by being both the standard setter and target validator.

## 5.5 Governance: Transparency and integrity of the targets

Another point of concern pivots around the transparency of the SBTi. The SBTi signs Non-Disclosure Agreements<sup>193</sup> with companies, according to which it cannot disclose information on the companies' targets and their absolute emissions. This issue has also been raised in the complaint by Bill Baue, who accused the SBTi of contravening its own commitment to the scientific prerequisites of transparency and replicability<sup>194</sup>. The simple publication of the absolute scope 1, 2 and 3 emission data of the companies, as well as the methods used in target setting could display a commitment to transparency, as well as prove the application of replicable and verifiable scientific standards. Yet the SBTi does not publish this information.

Further criticism applies to the integrity of the SBTi approved targets. The New Climate Institute examined the climate targets of 25 multinational corporations, including the two Swiss compa-

188 For the financial details, see Deloitte. 2020. Science Based Targets initiative. Review and Recommendations. Final Report. p. 42. Retrieved from: <https://ikeafoundation.org/wp-content/uploads/2021/04/040720-SBTi-Review-and-Recommendations-FINAL-REPORT.pdf>. / SBTi. 2021. SBTi Target Validation Service Offerings. Retrieved from: <https://sciencebasedtargets.org/resources/files/SBTi-Target-Validation-Service-Offerings-December-2021-1.pdf>.

189 SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

190 ISEAL. Assuring Compliance with Social and Environmental Standards. ISEAL Code of Good Practice 2018. p. 15. Retrieved from: [https://www.isealalliance.org/sites/default/files/resource/2018-02/ISEAL\\_Assurance\\_Code\\_Version\\_2.0.pdf](https://www.isealalliance.org/sites/default/files/resource/2018-02/ISEAL_Assurance_Code_Version_2.0.pdf).

191 Examples of standard setters who use third party auditing include: Forest Stewardship Council (FSC). Website: <https://ch.fsc.org/de-ch/>. / Organic Agriculture Europe certification; Website: <https://www.ecocert.com/en/certification-detail/organic-farming-europe-eu-n-848-2018/>. / European ECOLABEL certification. Website: [https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel-home\\_en](https://environment.ec.europa.eu/topics/circular-economy/eu-ecolabel-home_en). All three have third-party auditing, done by Ecocert. Website: <https://www.ecocert.com/en/>. The certification Fairtrade International is done by third-part auditor Flocert. Website: <https://www.flocert.net/about-flocert/vision-values/roots-role-fairtrade/>.

192 SBTi. 2022. FAQs. Retrieved from: <https://sciencebasedtargets.org/faqs#what-can-i-expect-from-the-target-validation-process>.

193 Lo, J. 2022. Science Based Targets initiative accused of providing a 'platform for greenwashing'. Climate Home News. February 6, 2022. Retrieved from: <https://www.climatechangenews.com/2022/02/06/science-based-targets-initiative-accused-providing-platform-greenwashing/>.

194 Baue, B. 2022. SBTi Progress Report Confirms Its Commitment to Intransparency and Irreplicability. May 19, 2022. Retrieved from: <https://www.linkedin.com/pulse/sbti-progress-report-confirms-its-commitment-bill-baue/>.

nies Novartis and Nestlé (but not Holcim)<sup>195</sup>: it found that 18 companies have SBTi approved targets compatible with the 1.5°C or 2°C goal, but that the majority of these targets are 'highly contentious'. For instance, Nestlé, Ikea and Unilever are among the companies with SBTi-validated climate targets that meet the strongest 1.5C SBTi standard, but which the New Climate Institute found to have 'very low integrity'. This is because the report found that the net zero targets from the analysed companies included, on average, only a 40% emission reduction, instead of 100%, as the term net zero would suggest. For a 'science-based' initiative to gain full public and scientific credibility, a real cultivation of transparency and integrity is key. The SBTi does not meet these expectations.

## 5.6 Governance: Holcim's role in the context of the SBTi's Cement Guidance

Recently, and accompanied by an Expert Advisory Group (EAG), the SBTi developed a new Cement Guidance<sup>196</sup>. According to the SBTi, invitations for participation in the EAG considered a balance of stakeholder categories, geographical diversity and gender<sup>197</sup>. However, out of the 18 members of the EAG, 11 are cement company representatives (incl. Holcim), and one representative comes from a research academy which is financed by 30 cement companies<sup>198</sup>. This means that only one third (6 members out of 18) of the stakeholders are not linked to cement companies. This composition is hardly 'balanced' as claimed by the SBTi. While the role of the EAG is stated to be advisory and that the decision-making lies entirely within the SBTi<sup>199</sup>, its advisory interests may still be likely to lean on the side of the cement industry, rather than following a 1.5°C compatible and most ambitious emission reduction pathway. Holcim in particular is part of the EAG and has sponsored the new Cement Guidance<sup>200</sup>, while at the same time going through the target-setting and validation process of the SBTi – meaning the SBTi had to validate Holcim's targets against the new standard, which Holcim itself had funded and co-advised.

## 5.7 Conclusion on the SBTi

The SBTi plays a key role in validating and legitimising Holcim's climate targets. The biggest concern with the SBTi is that its methods do not consider the historical responsibility and capability of companies when distributing the carbon budget. The SBTi thus validates and publicly legitimises insufficient climate targets and that consequently the global allowable emissions in line with the 1.5° limit may be substantially overshoot. Furthermore, the SBTi faces important criticism over governance issues, such as its independence from the industry, financing, transparency, procedures in the validation process, as well as conflicts of interest and the fact that the SBTi acts as both standard setter and validator without third-party examination. All concerns over the SBTi's target-setting methods and governance issues ultimately fall back upon the integrity and credibility of Holcim climate targets.

195 New Climate Institute. 2022. Corporate Climate Responsibility Monitor 2022. p. 5, 22, 51. Retrieved from: <https://newclimate.org/wp-content/uploads/2022/02/CorporateClimateResponsibilityMonitor2022.pdf>.

196 Science Based Targets initiative (SBTi). 2022. Cement. Retrieved from: <https://sciencebasedtargets.org/sectors/cement>.

197 Op. cit.

198 European Cement Research Academy (ECRA): 2022. ECRA Members. Retrieved from: <https://ecra-online.org/membership/members/>.

199 SBTi. 2023. Communication by Email on January 10, 2023. Responses of the SBTi to the questions sent by HEKS.

200 SBTi. 2022. Cement Guidance, p. 6. Retrieved from: <https://sciencebasedtargets.org/resources/files/Cement-guidance-public-consultation.pdf>.



## 6. Too little, too late: Conclusion

The global consensus is that global warming must not go beyond 1.5°C. Yet to stand a chance of achieving this limit, companies such as Holcim, which has state-like emissions, bears particular responsibility in mitigating climate change. Holcim has acted too late and does too little in light of the climate crisis. The group has emitted 7.15 billion tonnes of CO<sub>2</sub> since 1950 and thereby contributed 0.42% of all historic industrial CO<sub>2</sub> emissions. This percentage is the largest share among cement companies worldwide. Although Holcim has recently slightly reduced the CO<sub>2</sub> intensity of its cement products, its absolute CO<sub>2</sub> emissions increased drastically over the past few decades and continue to do so to date. Like other carbon majors, Holcim is responsible for a substantial portion of man-made global warming and has a major responsibility in reducing its absolute CO<sub>2</sub> emissions fast. Alongside its responsibility, Holcim has earned billions of CHF over the past years and decades and has significant economic capacities to do so. Holcim therefore has a far beyond average economic capacity and historical responsibility to reduce its absolute CO<sub>2</sub> emissions fast and to set ambitious and just climate targets for the future.

According to the IPCC, to stand an over 50% chance of achieving the 1.5°C limit with no or limited overshoot, **absolute emission reductions of 43% until 2030, 69% until 2040, and 84% until 2050 from a 2019 base year are required on a global average.** Holcim's relative emission reduction targets as well as its net zero plans, which include a heavy reliance on not yet feasible CCUS technologies, are not in line with this reduction pathway.

This report has shown that Holcim's future targets and promises are insufficient. When HEKS/EPER asked Holcim in June 2022 to update their climate targets to include absolute and relative emission reductions of 43% until 2030 and 69% until 2040, Holcim refused to do so, stating that this IPCC pathway is not aligned with the sector-specific guidance provided by the International Energy Agency (IEA) and the SBTi, which they prefer to follow. Since Holcim is not ready to take the pathway necessary in view with the 1.5°C limit and to undertake rapid, urgent and substantial emission reductions, HEKS/EPER supports the civil complaint against Holcim - *Asmania et. al v. Holcim* - launched by four Indonesian individuals (named Asmania, Arif, Bobby and Edi) from the Indonesian island of Pari, that is threatened to be submerged due to the adverse effects of global warming. Holcim's current voluntary climate actions and targets have shown to be insufficient in the climate urgency.

Climate Change is happening. With current levels of warming, people around the world and particularly in the global South are already facing severe climate-induced losses and damages. Rapid and substantial actions are needed, from everyone and particularly from those who bear the greatest responsibility in this crisis. Holcim is one of them.

## 7. Demands

Given the globally necessary reduction path as defined in the IPCC's sixth Assessment Report, as well as Holcim's *historic responsibility* and *capabilities*, this report asks Holcim again to set *at the very least* the following targets to do its part to limit global warming to 1.5°C:

- a reduction target of **at least 43% of its absolute and relative emissions** (scope 1, 2 and 3) until 2030, compared to 2019 levels, and
- a reduction target of **at least 69% of its absolute and relative emissions** (scope 1, 2 and 3) by 2040, compared to 2019 levels.

## Glossary

ACA	Absolute Contraction Approach
AR6	6 <sup>th</sup> Assessment Report (of the IPCC)
BT-CSI	British Telecom – Climate Stabilisation Intensity
CBDR	Common but Differentiated Responsibilities
CCUS	Carbon Capture, Utilisation and Storage
CDP	Carbon Disclosure Project
CHF	Swiss Franks
CO <sub>2</sub>	Carbon Dioxide
CSI	Cement Sustainability Initiative
CSO	Centre for Sustainable Organisation
EAG	Expert Advisory Group
ECPC	Equal Cumulative per Capita emissions
GDP	Gross Domestic Product
Gt	Gigatonnes
HEKS/EPER	Swiss Church Aid (Hilfswerk der Evangelischen Kirchen der Schweiz / Entraide Protestante Suisse)
IEA	International Energy Agency
IEPC	Immediate per Capita Convergence
IPCC	Intergovernmental Panel on Climate Change
OECD	Organisation for Economic Co-operation and Development
PCC	Per Capita Convergence
SBTi	Science Based Targets initiative
SDA	Sectoral Decarbonisation Approach
SRF	Schweizer Radio und Fernsehen (Swiss Radio and Television)
UN	United Nations
UNGP	United Nations Guiding Principles on Business and Human Rights
WRI	World Resources Institute
WWF	World Wide Fund for Nature
UNFCCC	United Nations Framework Convention on Climate Change