

# INTEGRATED PROFIT & LOSS STATEMENT

ANNUAL RESULTS AND ASSUMPTIONS

2019



LafargeHolcim



# MEASURING OUR VALUE: INTEGRATED PROFIT & LOSS STATEMENT

## The LafargeHolcim Integrated Profit & Loss Statement

This is the fifth consecutive year that LafargeHolcim has assessed the order of magnitude of its financial impacts across the triple bottom line. The LafargeHolcim Integrated Profit & Loss Statement (IP&L) represents our approach to the growing discipline of impact valuation. It is also a key element of our sustainability reporting tools and plays a vital role in helping us achieve our sustainability ambitions.

The IP&L is not intended to be a definitive statement of our financial accounts. Rather, it is a tool to allow us to understand and share with stakeholders the extent of our impacts and to track progress against our sustainability ambitions. The tool enhances decision-making processes and sustains value creation in the long term, by raising awareness of risks and opportunities posed by externalities (through quantification), and enabling analysis on what the impact could be on the bottom line. The IP&L statement thus complements our traditional financial and sustainability metrics to give us an indication of the scale of our extended impacts. It provides a compass, pointing us in the direction of increasing sustainable value creation for shareholders, society and the environment.

The LafargeHolcim IP&L 2019 results are displayed in the graph on page 3.

## The growing discipline of impact valuation

We published our first IP&L together with our subsidiary Ambuja Cement in 2014. Since then, the discipline of impact valuation has been further developed and adopted by different companies.

Economic, social and environmental forces transform the operating landscape of business and have a growing influence on a company's cash flow and risk profile. At the same time, company activity has an impact on the environment and society that is not yet recorded in a transparent and comparable way. To protect shareholders and society, it is essential to identify and quantify these impacts. So far, a standardized approach was missing. Therefore, in 2019, a diverse group of bluechip companies, including LafargeHolcim, founded the Value Balancing Alliance (VBA) to create a standardized model to measure and disclose the environmental, human, social and financial value companies provide to

society. The result of this work will be made available to the public, targeting wide-spread adoption by other companies. This new level of transparency will empower decision-makers to create and protect long-term value.

The global impact measurement standard is not only needed to foster long-term thinking, but also to consolidate all the knowledge that has already been created in this field and to create a basis for comparability between firms. The Value Balancing Alliance is, therefore, building on the work of leading academics and well-known organizations, such as the Capitals Coalition, the WBCSD, the Impact Management Project, the GRI and the IIRC.

The Alliance is supported by the four largest professional services networks – Deloitte, EY, KPMG, PwC – as well as by the OECD as a policy advisor and leading academic institutions, such as the University of Oxford and Harvard University.

## Year-on-year performance

In line with the current thinking of the Value Balancing Alliance, we have extended the boundary of our Integrated Profit and Loss statement to include measuring our procurement spend with suppliers and the estimated environmental impacts associated with the purchase of goods and services. With these positive and negative impacts included together with our own operations, our positive value to society is estimated at CHF 17.8 billion.

In own operations, our triple bottom line value to society increased from CHF 5.2 billion to CHF 5.7 billion.

In 2019, retained value (own operations) increased from CHF 2.9 billion to CHF 3.9 billion. The main driver was the issuing of a significant portion of dividends as "scrip" dividends, thus not reflected on the balance sheet. In 2019 dividends paid as cash were CHF 436 million compared to CHF 1.3 billion in 2019. While this had a positive impact on retained value, it also led to a corresponding reduction of our positive socio-economic impact.

Aligning with the potential VBA methodology, in 2019 we have excluded the estimation of indirect taxes paid. In 2018 this amounted to CHF 580 million. This has also led to a reduction of our positive socio-economic impact.

These reductions were partially offset by a reduction of Scope 1 and 2 CO<sub>2</sub> in own operations and now including Scope 3 CO<sub>2</sub> emissions in the supplier section. There were also changes to the scope of water and waste data included, and a change in the methodology used to calculate water scarcity level. Details can be found in the "Changes from last year" section.

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## CHF 16.2 billion

Positive economic benefit from supplier spend

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## CHF 3.9 billion

Retained value (own operations)  
(2018 CHF: 2.9 billion)

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## CHF 5.7 billion

Triple bottom line value (own operations)  
(2018: CHF 5.2 billion)

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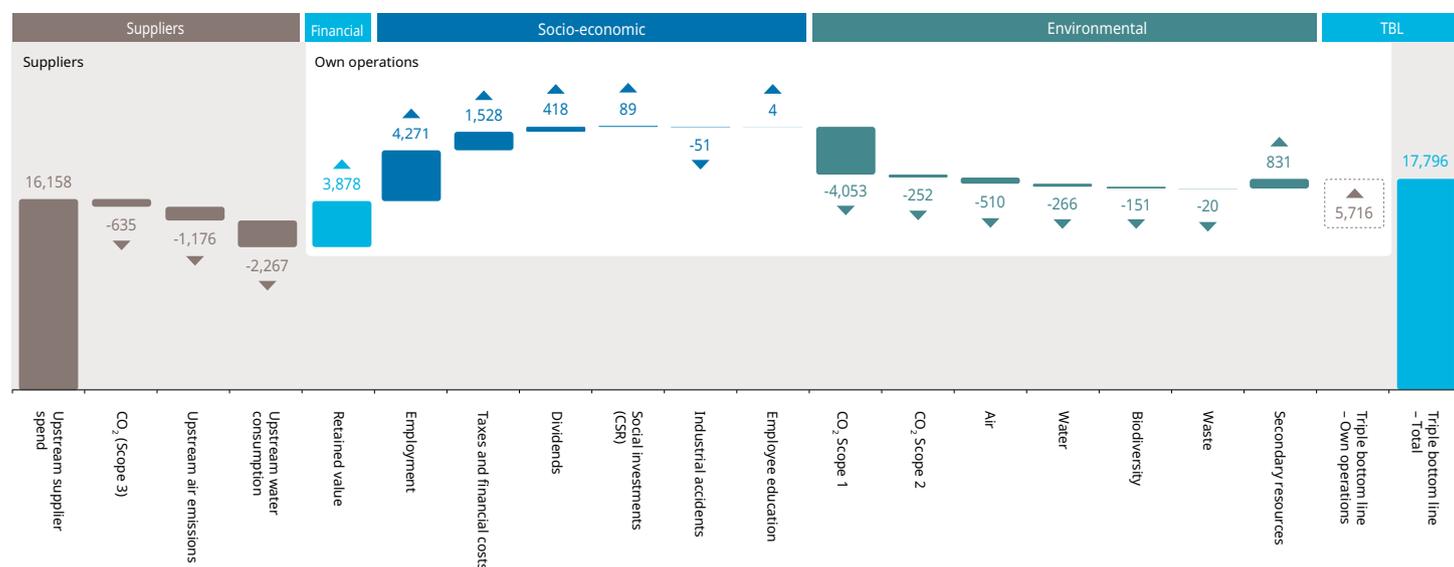
## CHF 17.8 billion

Total triple bottom line value  
(supplier and own operations)



# MEASURING OUR VALUE: INTEGRATED PROFIT & LOSS STATEMENT

## CONTINUED



The IP&L statement is not part of LafargeHolcim's financial reporting or projections. The IP&L is intended to raise awareness of externalities that may or may not affect LafargeHolcim's business, and to assess their relative importance. It contains preliminary considerations that may be subject to change. Furthermore, the IP&L may also change, for example as valuation techniques and methodologies evolve. It should be considered as indicative and it neither represents any final factual conclusions nor is intended to assert any factual admission by any person regarding the impact of LafargeHolcim or any of its related parties on environment or society.

### How to read the IP&L bridge

We portray our IP&L as a bridge chart, designed to show the cumulative effect of sequentially introduced positive or negative values. The bridge starts with the value of our total procurement spend with suppliers and then sequentially shows the positive or negative assessed financial impact of environmental, financial and social drivers of total value. The final bar shows our assessment of the total triple bottom line value of the company. We have differentiated in the chart which value drivers are related to upstream suppliers and which relate to own operations. To allow comparison with previous years, we have added a bar in the "own operations" area of the chart showing the assessment of the triple bottom line value from own operations.

### Changes from last year

In line with the current thinking of the Value Balancing Alliance, we have extended the boundary of our Integrated Profit and Loss statement to include measuring our procurement spend with suppliers and the estimated environmental impacts associated with the purchase of goods and services. Details on the methodology used for these calculations can be found in the "Assumptions used in the IPL calculation" section.

To add more transparency and granularity, we have split out the previous "stakeholder value" category into its component parts – employment, taxes and financial costs and dividends. Seeking to align with the potential VBA methodology, we have excluded the estimation of indirect taxes in 2019.

Aligning with the scope and methodology of our Sustainability Performance Report 2019, we have excluded captive power plants from our water and waste data. The water scarcity level has been recalculated using the World Resources Institute Aqueduct tool, as the previously used WBCSD Global Water Tool has been discontinued.

### What the IP&L tells us

The IP&L indicates that our total triple bottom line calculation – taking into account the monetized social and environmental impacts – is 4.6 times the company's retained financial earnings. For our own operations, it is 1.5 times retained financial earnings.

The value created in the **Socio-economic dimension** is mainly driven by our contribution to local economies through the multiplied effect of salaries, taxes and social investment.

Despite all our efforts, in 2019, 4 employees and 15 contractors lost their lives, compared to 1 employee and 18 contractors in 2018. Additionally, 18 third parties died in relation to our operations. These deaths are unacceptable and run counter to our Zero-Harm culture – our vision of running our operations with zero harm to people – which is a core value of our organization. We reinforced the implementation of our strategy with the full deployment and expansion of "One Team, One Program" and launched several others. The human cost of an occupational accident cannot be monetized, but even if only the lost capacity of a person to generate income is considered, the cost is considerable. The impact on lives and families is immeasurable. We will continue to act to improve the safety and the health of employees, contractors, third parties and communities.

In the **Environmental dimension**, the most significant externality is our CO<sub>2</sub> emissions. These account for a significant portion of our total cost to society, and represent the largest negative impact of our operations. However, we are making good progress. Compared to 2018 the company reduced its net CO<sub>2</sub> Scope 1 emissions per ton of cementitious material by 1.4% to 561 kg/ton in 2019, nearly meeting its 2022 target of 560 kg/ton.

## MEASURING OUR VALUE: INTEGRATED PROFIT & LOSS STATEMENT CONTINUED

Given this strong progress, the company has revised its 2022 target to 550 kg/ton as it moves to reduce its carbon footprint to 520 kg/ton by 2030. In 2019, the Science-Based Targets initiative (SBTi) validated the targets to reduce the company's global carbon footprint as adequate and consistent with the effort to keep temperatures below the "2°C" threshold agreed at the COP21.

Apart from our ongoing activities to reduce CO<sub>2</sub> emissions, reducing CO<sub>2</sub> emissions from cement production to zero will require carbon capture and usage or storage (CCUS). The IEA Roadmap for the cement sector projects CCUS to begin at scale from 2030 onwards. LafargeHolcim is currently working with a number of partners on five projects in four countries, and plans to increase that number in the coming years. The potential carbon capture capacity from these projects is approximately 2 million tons of CO<sub>2</sub> per year.

Air emissions are a key environmental aspect of cement production. We expect that all our cement sites measure and manage air emissions. The impact on the IP&L of emissions to air, mainly NO<sub>x</sub>, SO<sub>2</sub> and dust, reduced in 2019. The majority of LafargeHolcim plants operate within best practice emission ranges and some are among the best in the sector. In 2019 Group dust emissions reduced by around 5 percent year on year.

The IP&L highlights challenges but also opportunities that can help us to maximize our sustainable value creation for shareholders, society and the environment. We are confident that as we implement our sustainability framework, the IP&L will assist us to measure the effectiveness of our programs.

# ASSUMPTIONS USED IN THE IPL CALCULATION

The IP&L takes into account the figures and data reported in the LafargeHolcim Integrated Annual Report 2019 and the Sustainability Performance Report 2019. Additionally, we have for the first time calculated the impact of our upstream supplier spend, taking into account the economic benefit to society as well as the associated environmental impacts of the goods and services we purchase.

## Scope

Aligning with Group financial reporting, our consolidation scope includes the entities covered in the Group consolidated financial statements. The list of principal consolidated companies is presented in the LafargeHolcim Integrated Annual Report 2019, page 176. The Group consolidates a subsidiary if it has an interest of more than one half of the voting rights or otherwise is able to exercise control over the operations.

Aligning with the figures in our Sustainability Performance Report 2019, figures for waste and water in own operations exclude captive power plants.

## Suppliers

The sum of our total procurement spend (excluding intercompany transfers) has been reflected at a ratio of 1:1 on 2019 expenditure. We assume that every Swiss Franc (CHF) transferred will be spent and therefore contributes to the (local) economy. Even if not all of the money transferred is spent, the assumption of the 1:1 multiplier is justified due to secondary and tertiary socio-economic ripple effects, caused by the cash transfers through wage payments, tier two procurement and enhanced purchasing power.

As an organization that purchases goods and services on a global scale, we are committed to determining the impact we are generating throughout our supply chain. We have performed this assessment through an input-output methodology based on the [Exiobase database](#). This fits our needs best to determine the environmental impact of each CHF spent in our supply chain. Exiobase contains the most detailed and up-to-date environmental impacts for the countries we operate in. Based on this, we were able to calculate the additional air emissions (from NO<sub>x</sub>, SO<sub>x</sub>, PM, VOC, dioxins and furans, Hg, Cd, As, Pb, Cr, Ni) as well as the water withdrawal in our supply chain.

These figures were built up using as input the expenditure of LafargeHolcim in 30 different spending categories on a country-by-country basis.

Aligning with our Sustainability Performance Report 2019, Scope 3 emissions have been assessed according to WBCSD-CSI Scope 3 methodology. For this purpose, we assessed the most significant of our suppliers' emissions due to clinker bought and used in the production process during 2019. We also consider fuel- and energy-related activities (not included in Scope 1 and 2), upstream transportation and distribution (downstream). Scope 3 emissions included in the IP&L reflect all activity related to suppliers. We have excluded business travel and employee commuting.

## Own operations Financial dimension

### Retained value (million CHF)

The sum of capital retained in the business calculated by taking Recurring EBITDA and subtracting taxes, interest and dividends. The relevant references in the LafargeHolcim Integrated Annual Report 2019 are:

- Recurring EBITDA (pre IFRS 16): CHF 6,153 – “Record performance” – inside front cover
- Taxes: CHF 806 – Consolidated Statement of Cash Flows, page 168
- Interest: CHF 870 – Consolidated Statement of Income, page 162
- Dividends: CHF 436 – dividends paid on ordinary shares (CHF 322) plus dividends paid to non-controlling interest (CHF 114), both from Consolidated Statement of Cash Flows, page 168

## Socio-economic dimension

### Multiplied socio-economic impacts

The multiplier effect of cash transfers to employees (salaries), governments (direct taxes), finance cost (interest) and shareholders (dividends) has been reflected at a ratio of 1:1 on 2019 expenditure. This number has been corrected for economic inefficiencies, based on the countries in which LafargeHolcim operates based on the Corruption Perceptions Index of 2019.

For taxes paid, we have used the value of total income taxes paid (CHF 722 million – see page 198 of the Integrated Annual Report 2019) rather than the balance sheet figure used for the calculation of retained value.

We assume that every Swiss Franc transferred will be spent and therefore contributes to the (local) economy. Even if not all of the money transferred is spent, the assumption of the 1:1 multiplier is justified due to secondary and tertiary socio-economic ripple effects, caused by the cash transfers through enhanced purchasing power.

## Strategic social investment

Here, we consider the strategic social investment in education projects, community employment projects, community shelter and infrastructure projects, community health projects, community environment projects, community development projects and donations. For each Swiss Franc invested, an average multiplier effect is added. This multiplier effect is estimated as follows, based on independent sources:

- **Education and community employment projects:** Calculated by multiplying actual amount spent in 2019 on education and community employment projects by a factor of 118 percent. This figure was derived using the assumptions below.

## ASSUMPTIONS USED IN THE IPL CALCULATION

### CONTINUED

Investments in education generate public returns from higher income levels in the form of income taxes, increased social insurance payments and lower social transfers. We calculated a return on investment (ROI) for education by linking the average private returns of primary, secondary or higher education to the average capita income for high, middle and low income (G. Psacharopoulos and H.A. Patrinos, 2004).<sup>1</sup>

We derived a formula connecting ROI for education with national incomes (GDP). The multiplier for education ROI used in the tool (118 percent) is based on the 2019 average GDP of the countries in which LafargeHolcim operates based on the income per capita in that country.

- **Community shelter and infrastructure:** Calculated by multiplying the actual amount spent in 2019 on community shelter and infrastructure projects by a factor of 344 percent. We used the ROIs for infrastructure (250 percent based on the average factor of a BCG report<sup>2</sup>), low-income housing (231 percent) and sanitation (550 percent).<sup>3</sup>

The multiplier for low-income housing was derived from a social ROI on low-income housing evaluated by Salman and Aslam (2009) for a case study in Pakistan.<sup>4</sup> The study evaluates the social purpose benefit flow over five years. It takes into account the economic benefits of low-income housing (savings per family household, additional income due to access to mortgage finance, value of new employment generated and potential gains from income-generation programs), but also values social benefits (savings on medical bills due to improved water access, waste management) as well as environmental benefits (cost saving by waste water treatment). The net present value of social and environmental benefits was compared to that of project costs (operational and capital costs) to derive the benefit cost ratio ROI of 231 percent.

For sanitation projects, a study of the WHO (2012) was used that provides insights into the costs and benefits of providing drinking-water supply and sanitation interventions.

- **Community environment:** Calculated by multiplying the actual amount spent in 2019 on community environment projects by a factor of 250 percent, which is the ROI for infrastructure multiplier<sup>2</sup>. This multiplier was chosen because most of the community environment projects are related to provision of infrastructure.
- **Other community development projects:** Calculated by multiplying the actual amount spent in 2019 on community development and other projects by a factor of 267 percent. This factor was derived using the assumptions below.

To measure the ROI for community development projects, we used the ROIs for infrastructure (250 percent), education (118 percent), low-income housing (231 percent) and sanitation (550 percent). A weighted average was calculated assuming that education and infrastructure projects account for 30 percent of community development projects. Further, we assumed that sanitation and low-income housing account for 20 percent. The resulting multiplier we used for community development ROI is 267 percent.

- **Donations:** Donations (cash and in-kind), administration and overheads have been reflected at a ratio of 1:1 on 2019 expenditure.

For these calculations, we assumed that the benefits of these investments are directly earned in the year of investment. In reality, benefits for society are distributed over several years, but if we assume that these investments occur regularly, then we believe this approach best reflects the social returns.

### Inclusive business

Calculated by multiplying the actual amount spent in 2019 on low-income housing projects by 231 percent, sanitation projects by 550 percent and other inclusive business by 267 percent. These figures were derived using the assumptions below.

For low-income housing projects and sanitation projects, the same factors were used as described previously in the section on community shelter and infrastructure projects.

The multiplier for other inclusive business is based on the same multiplier and assumptions as other community development in the strategic social investment section.

### Occupational injuries

Calculated by multiplying the number of fatalities in 2019 by CHF 1,079,560 and lost time injuries by CHF 41,356. These figures were derived using the assumptions below.

The figure calculated reflects the economic costs due to injury or loss of life. Costs include social cost for the person affected, such as loss of current and future income, and medical costs. Further, we have included the costs for community, including lost revenue, social welfare payments and rehabilitation costs.

Costs for the employer were not taken into account, since these are already reflected in the financial section of the IPL.

For fatalities and injuries, the data was based on an Australian research group (Safe Work Australia 2015).<sup>5</sup> The data was adjusted for GDP, based on the countries LafargeHolcim operates in.

1 G. Psacharopoulos and H.A. Patrinos (2004). *Returns to Investment in Education: A Further Update*.

Available at: <http://documents.worldbank.org/curated/en/468021468764713892/pdf/multi-page.pdf>

2 BCG. *The Cement Sector: A Strategic Contributor to Europe's Future*. Available at: [https://cembureau.eu/media/1505/strategiccontributoreurope\\_bcg\\_2013-03-06.pdf](https://cembureau.eu/media/1505/strategiccontributoreurope_bcg_2013-03-06.pdf)

3 G. Hutton (2012). *Global costs and benefits of drinking-water supply and sanitation interventions to reach the MDG target and universal coverage*.

Available at: [https://www.who.int/water\\_sanitation\\_health/publications/2012/globalcosts.pdf](https://www.who.int/water_sanitation_health/publications/2012/globalcosts.pdf)

4 A. Salman & J. Aslam (2009). *Property rights: ensuring well-being through low-income housing*.

Available at: <https://acumen.org/wp-content/uploads/2013/03/Property-rights-for-low-income-housing.pdf>

5 *The Cost of Work-related Injury and Illness for Australian Employers, Workers and the Community: 2012-13*, 2015.

Available at: <https://www.safeworkaustralia.gov.au/system/files/documents/1702/cost-of-work-related-injury-and-disease-2012-13.docx.pdf>

## ASSUMPTIONS USED IN THE IPL CALCULATION

### CONTINUED

#### Employee education

Calculated by multiplying the total training spend in 2019 by the annual turnover rate and the social return rate on education.

This approach enables us to estimate the wider social benefits of training (i.e. social benefits felt by our former employees). The benefits of training felt by those people who remain at LafargeHolcim will be visible internally through efficiency gains and increased revenues.

#### Environmental dimension

##### CO<sub>2</sub> own operations

Calculated by multiplying the tons of absolute gross CO<sub>2</sub> emissions by USD 34 (CHF 34). This figure was derived using the assumptions below.

The amount of CO<sub>2</sub> considered corresponds to our absolute gross emissions (Scope 1 and 2) over a full calendar year. The total tons (t) of CO<sub>2</sub> are multiplied by its societal value, which we assumed to be 34 USD/ton in 2019.

We acknowledge that there are a large range of estimates of the CO<sub>2</sub> societal value. We based our figure on a combination of reports, including the Stern report (assuming 25 USD/t in 2007), analysis made by the Environmental Protection Agency (taking the midpoint of 3 percent and 5 percent discount rates in 2019 and inflating this number to 2019: 34 USD/t), combined with prevalent assumptions used by governments that internalize the cost of CO<sub>2</sub>.

#### Air

The damage costs of air pollutants were retrieved from studies that measure the relationship between the concentration of a pollutant and its impacts on affected receptors (social and environmental) and monetize the damages.

The social and damage costs of emissions were calculated as follows:

- **Air emissions (non-metal):** Calculated by multiplying the emissions in 2019 by a monetary figure derived using the assumptions below. The respective values used can be found in the Values used in the IP&L section. The damage costs of non-metal air emissions (e.g. PM, SO<sub>x</sub>, NO<sub>x</sub>, VOC, dioxins and furans) were based on two studies.<sup>6,7</sup>

The TruCost study (for PM, SO<sub>x</sub>, NO<sub>x</sub> and VOC) considers five impacts: negative health effects; reduced crop yields; material corrosion; effects on timber; and acidification of waterways. The numbers are based on global assumptions, using global averages for emission factors, without taking into account the varied dispersion of air pollutants, differences in ambient air pollution levels or local specific factors.

The damage costs of dioxins and furans were determined from a study evaluating damage costs based on national averages for 32 countries, related to health effects from ingestion and inhalation. The assumptions on this study are found in the heavy metal emissions section below.

- **Heavy metal emissions:** Calculated by multiplying the emissions in 2019 by a monetary figure derived using the assumptions below. The respective values used can be found in the Values used in the IP&L section.

The damage costs of heavy metal emissions (Hg, Pb, Cd, As, Cr and Ni) were determined from a study evaluating damage costs based on national averages for 32 countries, related to health effects from ingestion and inhalation (cancers but also neuro-toxic effects leading to IQ loss, as well as subsequent loss of earnings potential for Pb and Hg).<sup>7</sup>

The analysis quantified burden, dispersion and exposure (deposition velocities) to assess uptake by plants and animals and the impact on the human body (via consumption of tap water, agricultural crops or animal products).

The damage costs were then calculated by multiplying physical impacts by the appropriate cost:

- the unit cost for cancer includes medical expenses, wage and productivity losses, and the willingness to pay to avoid the pain and suffering inflicted by the disease
- the unit cost for IQ includes expenses associated with remedial learning and loss in potential lifetime earnings (costs are discounted at 3 percent but without consideration given to increases in willingness to pay with economic growth in future years).

The study does not consider the effects of groundwater contamination, adjustment of ingestion dose to account for food preparation and the implementation of remedial strategies (e.g. filtration for tap water) or the potential contribution of heavy metals and organic-micro pollutants to other impacts of fine particulate matter. Therefore, total impact attributed to these pollutants can be underestimated, but data from this study is used as an approximation to value their impacts.

#### Water

Calculated by multiplying the amount of water consumed in own operations by CHF 3.7/m<sup>3</sup> and the amount of water harvested by CHF 4.7/m<sup>3</sup>. These costs were derived using the assumptions below.

The societal cost of water is calculated based on the scarcity level of the location where water is consumed or harvested. Scarcity level is determined using the Aqueduct Water Risk Atlas from WRI.org. The (site-specific) scarcity price is provided by a 2013 Trucost report<sup>8</sup> and the water scarcity levels from that report are aligned with the categories from WRI. Since water is withdrawn and harvested in different locations, the resulting average cost per cubic meter is different.

6 Trucost Plc (2013). *Natural Capital at Risk: The Top 100 Externalities of Business*. Available at: <https://www.trucost.com/wp-content/uploads/2016/04/TEEB-Final-Report-web-SPv2.pdf>

7 EEA (2014). *Costs of air pollution from European industrial facilities 2008–2012 – an updated assessment*. Available at: <https://www.eea.europa.eu/publications/costs-of-air-pollution-2008-2012>

8 <https://www.naturalcapitalcoalition.org/wp-content/uploads/2016/07/Trucost-Nat-Cap-at-Risk-Final-Report-web.pdf>

## ASSUMPTIONS USED IN THE IPL CALCULATION

### CONTINUED

#### **Biodiversity**

Calculated by multiplying the number of hectares (ha) impacted (either disturbed or rehabilitated) by CHF 5,332/ha. These figures were derived using the assumptions below.

The net area rehabilitated or disturbed is calculated by subtracting the total hectares of rehabilitated land from the total hectares of disturbed land.

These figures do not apply to the changes observed in the reporting year but to the total number of hectares under company responsibility. The evaluation is based on an estimated distribution of habitats: in forests; shrublands/woodlands; grasslands; ruderal habitats; bare rocks; wetlands; rivers/streams; lakes/ponds; mangroves; salt marshes; coastal zones; and cultivated land.

Based on a 2009 Economics of Ecosystems and Biodiversity (TEEB) report,<sup>9</sup> and estimated habitat distribution of impacted land, the weighted average estimated annual restoration benefits are between USD 1,010/ha and USD 73,900/ha.

#### **Secondary resources and waste**

The societal cost of hazardous and non-hazardous waste is calculated by multiplying the amount of non-hazardous waste that is disposed to landfill or incinerated by CHF 25.8/t and non-hazardous waste which is recycled or downcycled by CHF 24.1/t. Hazardous waste that is sent to landfill or incineration is multiplied by CHF 17.3/t and hazardous waste sent to recycling is multiplied by CHF 16.6/t. These multipliers are derived from an Australian study on hazardous waste.<sup>10</sup>

Costs for society include workplace injury and illnesses costs from treating the hazardous or non-hazardous waste, government and regulatory costs related to regulation of waste, and environmental costs such as climate change costs from greenhouse gas (GHG) emissions, disamenity costs related to decreasing house prices from landfilling, leaching and other air emission costs.

Both regulatory and health-related costs are corrected for the countries in which LafargeHolcim operates by GDP in those countries. Incineration and recycling costs exclude the costs for disamenity (which is assumed only applicable for landfilling) and leaching.

Non-hazardous waste is assumed to contain more organic materials, contributing more to GHG emissions and therefore climate change costs.

Secondary resources are calculated by multiplying the amount of alternative fuels and raw materials used by CHF 25.8/t and industrial mineral components (MIC) and alternative aggregates by CHF 15.2/t. These multipliers are derived from the same Australian study on hazardous waste.<sup>10</sup>

This category includes alternative fuels and raw materials, mineral components (MIC), and reported alternative and recycled materials from ready-mix concrete and aggregates, including asphalt.

Alternative fuels are assumed to avoid the costs of disposing non-hazardous waste to landfill or incineration. It is assumed that 80 percent of the waste would go to landfill and 20 percent would be incinerated.

Mineral components are assumed to avoid the costs of disposing non-hazardous non-organic waste to landfill. Therefore, costs related to climate change are not accounted for in the calculations. Leaching costs and disamenity costs are, however, included. Also, regulatory costs and injury costs are included and adjusted for by GDP in the countries in which LafargeHolcim operates.

<sup>9</sup> Available at: [www.teebweb.org/wp-content/uploads/Study%20and%20Reports/Additional%20Reports/TEEB%20climate%20Issues%20update/TEEB%20Climate%20Issues%20Update.pdf](http://www.teebweb.org/wp-content/uploads/Study%20and%20Reports/Additional%20Reports/TEEB%20climate%20Issues%20update/TEEB%20Climate%20Issues%20Update.pdf)

<sup>10</sup> Marsden Jacob Associates, SRU (2014). *Estimate of the cost of hazardous waste in Australia*. Available at: <https://www.environment.gov.au/protection/publications/cost-hazardous-waste>

# VALUES USED IN THE IP&L

## SOCIO-ECONOMIC

Topic	Indicator	Base price/ multiplier	Unit	Base year	Inflation factor*	Price/ multiplier adjusted for inflation	Price/ multiplier used**
Industrial accidents	Number of fatalities	1,197,493	AUD/#	2008	1.30	1,562,089	1,079,560
	Number lost time injuries	45,874	AUD/#	2008	1.30	59,841	41,356
Inclusive business	Low-income housing projects	231%	%	N/A	1	231%	2.31
	Sanitation projects	550%	%	N/A	1	550%	5.50
	Other inclusive business	267%	%	N/A	1	267%	2.67
	Education projects	118%	%	N/A	1	118%	1.18
	Community development projects (employment)	118%	%	N/A	1	118%	1.18
	Community shelter/ infrastructure projects	344%	%	N/A	1	344%	3.44
	Community health projects	550%	%	N/A	1	550%	5.50
	Community environment projects	250%	%	N/A	1	250%	2.50
	Community other projects	267%	%	N/A	1	267%	2.67
	Donations and overheads	100%	%	N/A	1	100%	1.00
Skills out	Trainings of employees	10.0%	%	N/A	1	19.0%	0.10
Stakeholder value	Salary	100%	%	N/A	1	100%	1
	Finance cost	100%	%	N/A	1	100%	1
	Tax	100%	%	N/A	1	100%	1
	Indirect tax	100%	%	N/A	1	100%	1
	Dividend	100%	%	N/A	1	100%	1

\* Costs and benefits were adjusted for inflation

\*\* USD converted at CHF 0.99, Euro converted at CHF 1.11 and AUD at 0.69

## ENVIRONMENTAL

Topic	Indicator	Base price/ multiplier	Unit	Base year	Inflation factor*	Price/ multiplier adjusted for inflation	Price/ multiplier used in CHF**
CO <sub>2</sub> Scope 1	CO <sub>2</sub> own operations	27	USD/t	2007	1.27	34	34
CO <sub>2</sub> Scope 2	CO <sub>2</sub> from external power	27	USD/t	2007	1.27	34	34
CO <sub>2</sub> Scope 3	CO <sub>2</sub> eq from upstream supplier spend	27	USD/t	2007	1.27	34	34
Air	PM	8,080	USD/t	2009	1.22	9,878	9,817
	SO <sub>x</sub>	1,445	USD/t	2009	1.22	1,767	1,756
	NO <sub>x</sub>	1,325	USD/t	2009	1.22	1,620	1,610
	VOC	845	USD/t	2009	1.22	1,033	1,027
	Dioxins and furans	27,000	€/g	2005	1.26	33,938	37,766
	Hg	2,860,000	€/t	2005	1.26	3,594,863	4,000,364
	Cd	29,000	€/t	2005	1.26	36,451	40,563
	As	349,000	€/t	2005	1.26	438,674	488,156
	Pb	965,000	€/t	2005	1.26	1,212,952	1,349,773
	Cr	38,000	€/t	2005	1.26	47,764	53,152
	Ni	3,800	€/t	2005	1.26	4,776	5,315
Water	Water consumed – own operations	3.0	USD/m <sup>3</sup>	2009	1.22	3.7	3.7
	Water harvested	3.9	USD/m <sup>3</sup>	2009	1.22	4.7	4.7
Biodiversity	Hectares disturbed	4,211	USD/ha	2007	1.27	5,365	5,332
	Hectares rehabilitated	4,211	USD/ha	2007	1.27	5,365	5,332
Waste	Hazardous waste disposed (landfill or incineration)	21.49	AUD/t	2012	1.16	25.0	17.3
	Hazardous waste recovered (recycling or downcycling)	20.6	AUD/t	2012	1.16	24.0	16.6
Waste	Non-hazardous waste disposed (landfill or incineration)	32.1	AUD/t	2012	1.16	37.3	25.8
	Non-hazardous waste recovered (recycling or downcycling)	29.9	AUD/t	2012	1.16	34.8	24.1
Secondary resources	Alternative fuels and raw materials	32.1	AUD/t	2012	1.16	37.3	25.8
	Industrial mineral components	18.9	AUD/t	2012	1.16	22.0	15.2
	Alternative aggregates	18.9	AUD/t	2012	1.16	22.0	15.2

\* Costs and benefits were adjusted for inflation

\*\* USD converted at CHF 0.99; Euro converted at CHF 1.11 and AUD at 0.69

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