

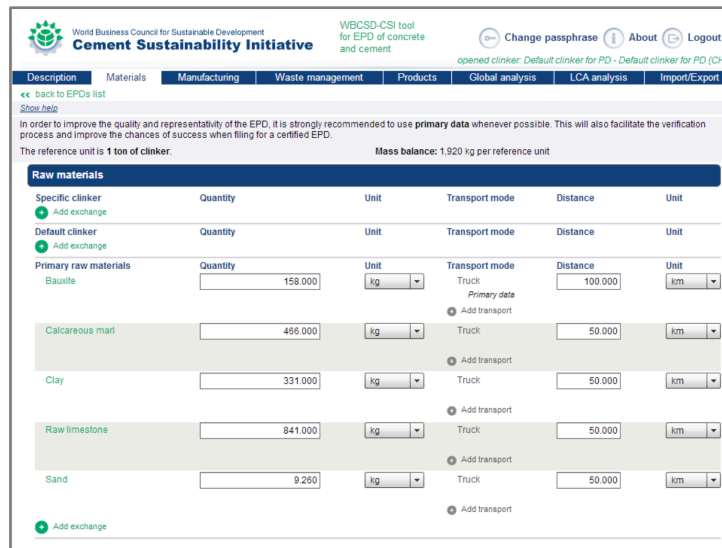
# The Cement Sustainability Initiative commissioned Quantis to develop its online EPD tool for concrete and cement

WBCSD’s Cement Sustainability Initiative (CSI) is a global effort **by 24 leading cement producers**, with operations in more than 100 countries. Collectively, these companies account for around 30% of the world's cement production and range in size from large multinationals to smaller local producers.

To date the CSI remains one of the largest global sustainability programs ever undertaken by a single industry sector.

For more information, see: [www.wbcdcement.org](http://www.wbcdcement.org)

To support companies prepare Environmental Product Declarations (EPDs) of concrete and cement, **CSI commissioned Quantis** to develop a user-friendly online calculation tool using its LCA expertise.



Snapshot of the graphical user interface, including software-aided primary data collection and online help

“To provide a consistent and comparable basis for our members to publish EPDs, we commissioned Quantis, specialist environmental consultants and world-leading experts in the field, to develop our online EPD tool.”

**Roland HUNZIKER**  
Project Manager,  
Cement Sustainability Initiative



# CSI EPD tool: A user-friendly online LCA tool to assist in collecting data and computing EPD results

To support CSI members prepare EPDs, Quantis developed a user-friendly web-based LCA tool aimed at preparing the ground for the subsequent implementation of cement and concrete EPDs.

**EPD<sup>®</sup>**  
THE GREEN YARDSTICK

Environdec  
UN CPC 375 CONCRETE

Self-declaration from the EPD tool

West Business Council for Sustainable Development  
**Cement Sustainability Initiative**  
Environmental Data Sheet  
Self-Declaration based on CSI product category rules UN CPC 375 Concrete

Default cement for PD

Quantity (t)	A1-A3	A4	Total	
Global warming potential, GWP (100 yrs)	1.912E-2	1.922E-2	3.834E-2	kg CO <sub>2</sub> -eq
Depletion potential of the traditional non-renewable fossil fuels	2.284E-2	2.294E-2	4.578E-2	kg oil eq
Acidification potential of air pollutants, AP	2.180E-2	2.190E-2	4.370E-2	kg SO <sub>2</sub> -eq
Eutrophication potential, EP	1.240E-2	1.250E-2	2.490E-2	kg PO <sub>4</sub> -eq
Human toxicity potential, acute, HTP	1.100E-2	1.110E-2	2.210E-2	kg 1,4-dioxin eq
Human toxicity potential, chronic, HTP	1.100E-2	1.110E-2	2.210E-2	kg 1,4-dioxin eq
Photochemical smog potential, PSP	1.100E-2	1.110E-2	2.210E-2	kg O <sub>3</sub> -eq
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## Main functionalities of CSI's EPD tool:

- User-friendly online primary data collection dashboard, accessible over the web from any computer at anytime
- Simplified and pre-framed analysis, compliant with PCR UN CPC 375 concrete
- Generation of automated reports including i) self-declaration in CSI format and ii) background report (complete set of input data and results)
- Assessment of the environmental performance of **clinker, cement and concrete**
- Easily share data collection and exchange datasets with colleagues
- No need to install any software

West Business Council for Sustainable Development  
**Cement Sustainability Initiative**  
WBCSD-CSI tool for EPD of concrete and cement

Change passphrase | About | Logout

opened cement: Default cement; Default cement (CH)

ImpactExpert

Product code: Default cement

Product name: Default cement

Production site(s): Lucerne

Site production capacity (t/yr): 340,000,000

Include infrastructure:

Manufacturer: Quantis

Address: [empty]

Postal code: [empty]

City: [empty]

Country: SWITZERLAND - CH

Used method: CHL

Include toxicity indicators:

Comments: [empty]

Electricity, purchased from the grid

Type	Quantity	Unit	Default value
Coal and peat	24.70	kg	
Oil	2.70	kg	
Gas	23.60	kg	
Biofuels	2.70	kg	
Waste	1.00	kg	
Nuclear	25.40	kg	
Hydro	15.40	kg	
Geothermal	0.20	kg	
Solar PV	0.40	kg	
Wind	3.90	kg	

ENVIRONMENTAL IMPACT CATEGORIES

Indicator	A1-A3	A4	Total	Unit
Global warming	7.912E-2	8.375	7.994E-2	kg CO <sub>2</sub> -eq
Ozone depletion	2.282E-5	1.324E-6	3.014E-5	kg CFC 11-eq
Acidification of land and water	2.180	2.114E-2	2.201	kg SO <sub>2</sub> -eq
Eutrophication	3.229E-1	6.222E-3	3.236E-1	kg PO <sub>4</sub> -eq
Photochemical ozone creation	2.237E-1	1.617E-3	2.247E-1	kg ethylene-eq
Depletion of abiotic resources (minerals)	2.024E-4	2.291E-5	2.251E-4	kg Sb-eq
Depletion of abiotic resources (fossil)	4.889E-3	1.235E-2	5.003E-3	MJ, net calorific value

PARAMETERS OF DESCRIBING RESOURCE USE

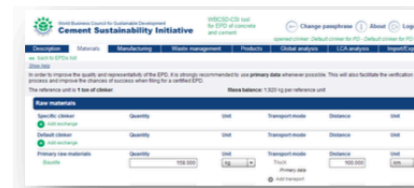
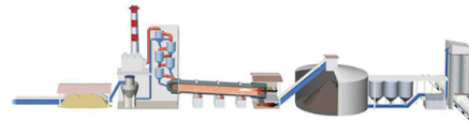
Indicator	A1-A3	A4	Total	Unit
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	7.816E-1	1.768	7.902E-1	MJ, net calorific value
Use of renewable primary energy resources used as raw materials	0.000	0.000	0.000	MJ, net calorific value
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	7.816E-1	1.768	7.902E-1	MJ, net calorific value
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	4.776E-3	1.379E-2	4.914E-3	MJ, net calorific value

# CSI EPD tool: A pre-verified LCA tool to reduce costs and effort of producing cement and concrete EPDs

In order to facilitate the process and reduce the costs of preparing cement and concrete EPDs, the EPD tool was officially pre-verified by an accredited independent verifier.

## Main assets of CSI's EPD tool:

- **Pre-verification of the tool** (once for all), including verification of LCA model, project database, compliance with PCR, and results provided by the tool
- Only the **input data** need to be verified when filing for EPD registration
- **Verification costs reduced by up to 50%**



## Mutual recognition between major EPD Programme Operators:

- Although CSI's PCR for concrete is registered at Environdec, the mutual recognition between **Environdec and IBU** allows EPDs to carry both logos without further verification



“The CSI is supporting the publication of EPDs by member companies as a way to stimulate and improve the environmental performance of cement and concrete at company level but also globally.”

**Philippe FONTA**  
Managing Director,  
Cement Sustainability  
Initiative

