

TU.2.A - 52656 Mainstreaming production of digital EPDs in Holcim

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Current approach on EPDs



- ★ Global Cement and Concrete Association has **developed the GCCA EPD tool** that can be used by its members to develop EPDs for cement and concrete products
- ★ The GCCA EPD tool has undergone a verification process for Europe and North America markets. Achieving a **pre-verified tool status** simplifies the procedure of developing an EPD

The screenshot shows the 'Industry EPD Tool for Cement and Concrete' interface. The left sidebar contains navigation options: 'Input data', 'Product description', 'A1-3. Product', 'Materials' (highlighted), 'Manufacturing', 'Waste management', 'Analysis', 'Results', 'EPD results', 'Detailed breakdown', and 'Export'. The main content area is titled 'Materials' and includes a 'Show help' link. Below this, there is a note about using primary data and a section for 'Raw materials' with a table for inputting data.

Industry EPD Tool for Cement and Concrete
opened clinker: Default clinker EUR - Default clinker EUR (CH)

Materials
Show help

In order to improve the quality and representativeness of the EPD, it is strongly recommended to use **primary data** whenever possible. This will also facilitate the verification process and improve the chances of success when filing for a verified EPD. The criteria for the exclusion of inputs and outputs or **cut-off rules** as per the PCR shall also be observed.

The declared unit is: **1 tonne of clinker.** **Mass balance:** 1762 kg per declared unit

Raw materials

Specific clinker
Add exchange: Clinker, user-defined

Default clinker
Add exchange: Clinker, default

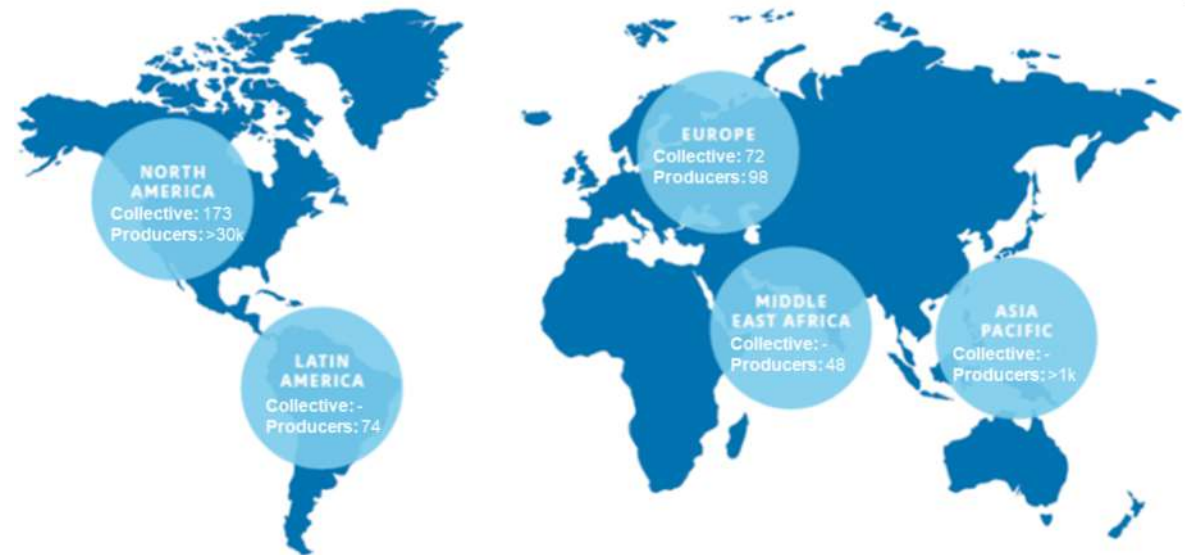
Primary raw materials	Quantity	Transport mode	Distance
Bauxite	0,12 kg	Truck	50 km
		Add transport	
Calcareous marl	466 kg	Truck	50 km
		Add transport	



Challenges with traditional EPDs



- ★ Transition to a decarbonized economy is expected to increase dramatically the demand for product and plant specific EPDs
- ★ Meeting this demand will require to **face and resolve the challenges** faced by the traditional EPD generation approach
 - Highly manual process
 - Requirement for individual EPD verification
 - Overall time and cost intensiveness



Collaboration with Climate Earth



- ★ Holcim has decided to **collaborate with Climate Earth** to investigate the possibility of increased automation in EPD generation
- ★ Climate Earth's EPD generation software has been behind the **generation of the majority of ready mix concrete EPDs in North America** and is currently used successfully by our North America RMX operations.
- ★ The objective of this collaboration is to **transfer the solution to Europe** and **work with the program operators to confirm its acceptance**

Principles of automation in EPDs

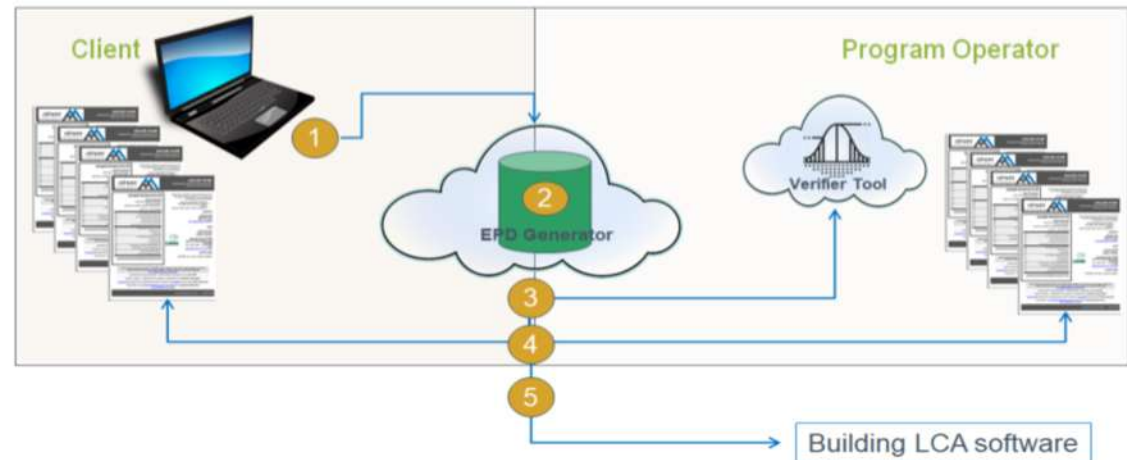


- ★ **Eliminate manual work** by automating:
 - LCA background reports
 - EPD creation
 - Data transmission to program operator
- ★ **Eliminate individual EPD verification** by pre-verifying
 - Customer data
 - EPD templates
 - EPD generator
- ★ **Annual update and re-verification** of customer data

EPD Generator- Process Flow

- 1 Client enters new mix formula
- 2 Generator calculates EPD

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- 3 Generator executes verification algorithms
 - 4 Sends new EPD to client and program operator
 - 5 Sends to LCA software



Future challenges



- ★ The development of automated EPD solutions still faces significant challenges due to:
 - **Increased software complexity** due to lack of worldwide harmonised LCA standards and additional national requirements (e.g. database choice, LCA methodology)
 - **Multiplication of verification costs** due to limited mutual recognition between program operators

