

# Environmental Product Declarations

Cement, Ready-Mixed Concrete and Aggregates



We deliver **innovative** and **sustainable** solutions to fulfill our customers' **ambitions** and communities' **dreams**.

So

**ROMANIA**  
builds  
**BETTER**

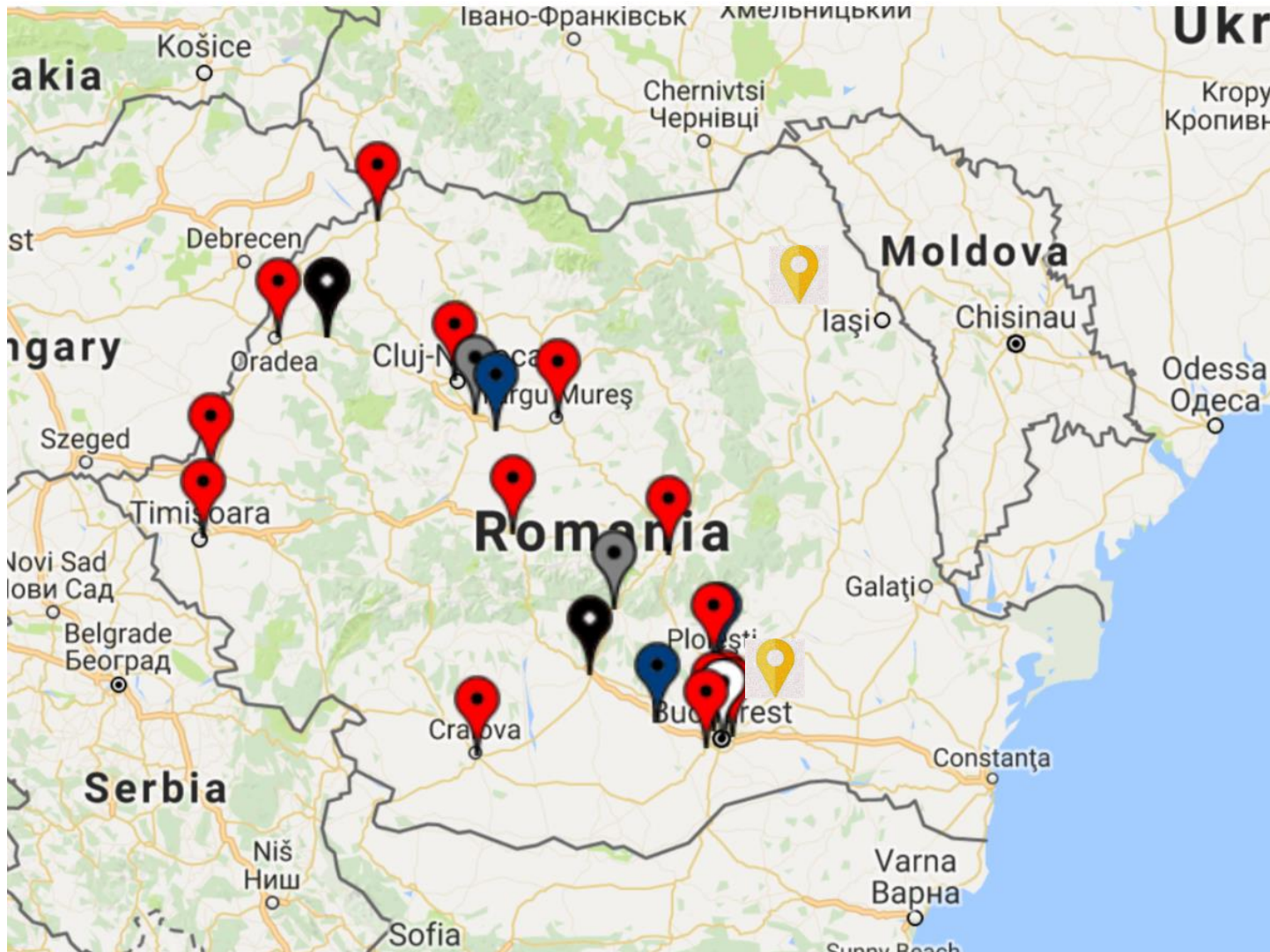
# Agenda

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# Holcim Romania at a glance



- Plants: 2 CEM, 2 Terminals, 15 RMX, 3 Agg and HQ
- > 950 people
- > EUR 700 million investments
- Products & consultancy services

# EPDs: What?

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- EN ISO 14025: 2010 => “*environmental product declaration that gives quantified environmental info using preset parameters and when necessary, supplementary environmental info*”
- An EPD describes a product throughout its entire life cycle – all relevant environmental information from “cradle to gate”...or even from “cradle to grave”
- EPDs are third party verified and guarantee reliability of manufacturers’ information
- Product Calculation Rules for EPDs are defined by EPD program holders – for building products EN 15804 is introduced as respective standard in Europe

The global trend for EPDs: become a standard and a marketing tool!

# EPDs: Why & How?

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- Holcim Romania initiated in 2013 an internal “Sustainable Construction Project”:
  - ▶ **Aim:** to develop green solutions and to have partnership for SC with major players in the building chain, for launching projects to whom we can bring our expertise and network support. To link our products and Green Building Rating Schemes.
  - ▶ **Outcome:** BES 6001 certification, LCA and EPDs

- June-Oct 13: LCA Data Inventory, done by Holcim Romania
- Nov 13: LCA Study, done by Ingenieurbüro TRINIUS GmbH, Germany
- Dec 13: Generic EPDs developed by Holcim Romania per product category
- Jan 14: EPDs validated by a Third Party Verifier (Sweden)
- Jan 14: EPDs published on [www.environdec.com](http://www.environdec.com) and on [www.holcim.ro](http://www.holcim.ro)
- ...Valid until January 2019 😊

# Basis for LCA calculation

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## CEMENT

- All cement types and all plants
- Declared unit: 1000 kg average cement
- Underlying PCR – Part A: EN 15804
- Underlying PCR – Part B: The International EPD<sup>®</sup> System: Cement (vers.2013-05-16)
- Underlying standard: ISO 14040:2008 and ISO 14044:2008
- Reference year: 2012
- Cradle-to-gate
- Data used in LCA calculation = HoRo data + GABI6 Database (PE International, 2012)

## READY-MIXED CONCRETE

- Most sold types of ready-mixed concrete, all RMX plants
- Declared unit: 1 m<sup>3</sup> average concrete
- Underlying PCR – Part A: EN 15804
- Underlying PCR – Part B: The International EPD<sup>®</sup> System: Concrete
- Underlying standard: ISO 14040:2008 and ISO 14044:2008
- Reference year: 2012
- Cradle-to-gate
- Data used in LCA calculation = HoRo data + GABI6 Database (PE International, 2012)

# Output of LCA calculation

Parameter	Unit
Global warming potential	kg CO <sub>2</sub> -eq
Depletion potential of the stratospheric ozone layer	kg R11-eq
Acidification potential of land and water	kg SO <sub>2</sub> -eq
Eutrophication potential	kg PO <sub>4</sub> <sup>3-</sup> -eq
Formation potential of tropospheric ozone photochemical oxidants	kg ethene-eq
Abiotic depletion potential for non fossil resources	kg Sb-eq
Abiotic depletion potential for fossil resources	MJ

Environmental Impact

Parameter	Unit
Renewable primary energy as energy carrier	MJ
Renewable primary energy resources as material utilization [MJ]	MJ
Total use of renewable primary energy resources	MJ
Non renewable primary energy as energy carrier	MJ
Non renewable primary energy as material utilization	MJ
Total use of non renewable primary energy resources	MJ
Use of secondary material [kg]	kg
Use of renewable secondary fuels [MJ]	MJ
Use of non renewable secondary fuels [MJ]	MJ
Use of net fresh water	m <sup>3</sup>

Use of natural resources



# EPDs: Lessons Learned

## Planning

- LCA development = data-intensive and time-consuming procedure
- EPD validation = a smooth process as long as LCA is properly developed

## People

- Cross-functional participation = a must
- Internal buy-in = crucial
- Feedback loops with EPD Verifier = important

## Rollout

- Timeline confirmed with all the participants = a must
- Profitability drives sustainability 😊

## Output

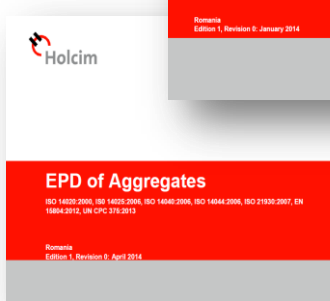
- EPD language rather challenging
- We will 100% know what is the ROI of EPD only after it has been used 😊



# EPDs: Benefits

Today we have:

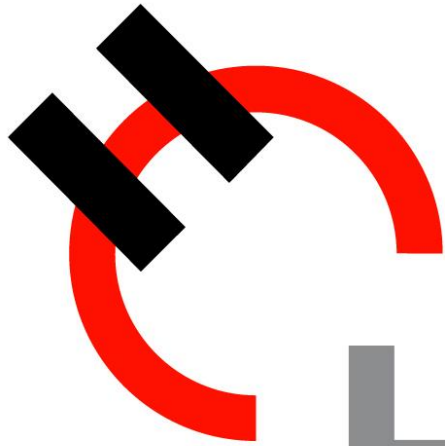
- a tool for promoting our products and to differentiate ourselves
- a view on how are we and in which direction we should go further for “greening” our product portfolio 😊
- a tangible argument for linking our products and Green Building Rating Schemes (LEED, BREEAM, etc)
- the advantage of fact based communication through externally verified data on the environmental impact of producing:
  - ▶ 1 t of cement
  - ▶ 1 t of aggregates
  - ▶ 1 m<sup>3</sup> of concrete
- a starting point:
  - ▶ in further making a valuable comparison between different construction materials
  - ▶ in enabling customers who can further develop a Life Cycle Assessments for their products/buildings and to report and communicate their sustainable performance.



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“Nothing in life is to be feared. It is only to be understood.”  
(*Marie Curie*)



Holcim

 A member of  
**LafargeHolcim**