



The Emerging Role of EPDs for Sustainable Concrete

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President & CEO
Climate Earth Inc.
EPDs Made Easy

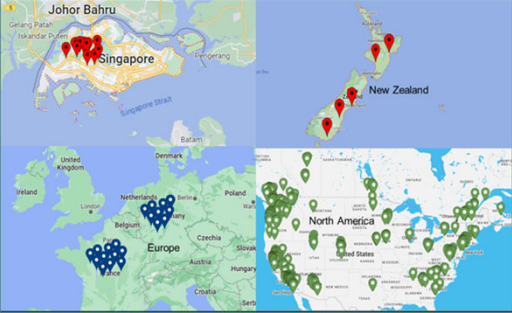


Agenda

- Climate Earth overview
- What is an EPD in 2023
- Implications and opportunities for producers



The Global Leader in Concrete EPD Automation and All Concrete Sectors



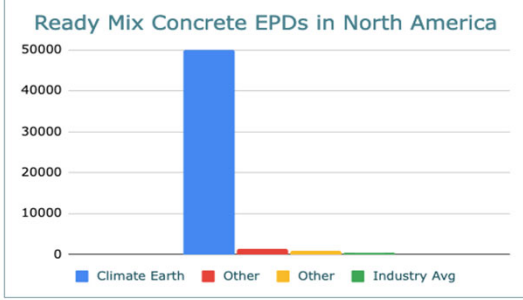
**Experts in EPDs
For Aggregate
Precast
Advanced materials**

Global Suite of EPD Generators

- Ready Mix North America: >750 plants, ~100 in progress
- Cement: Live in France and Germany
- Ready Mix Asia: Live in Singapore
- Ready Mix Europe: In verification for key countries

**Over 50,000 EPDs have been created
using Climate Earth's EPD Generators™**

Ready Mix Concrete EPDs in North America



Category	Count (Approximate)
Climate Earth	50,000
Other (Red)	~1,000
Other (Yellow)	~1,000
Industry Avg (Green)	~1,000

Climate Earth is 100% Focused on the Concrete Industry

Ready Mix on-demand



Aggregate



CMU on-demand



Precast



Cement on-demand



Advanced Materials



A Few of our Customers



Delivering Instant Automated Generation of EPDs for every market -Cement, ready-mix, and CMU

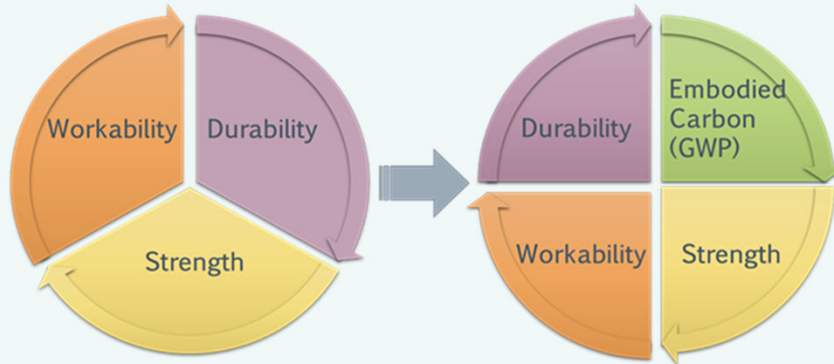


Traditional EPD creation is a manual, slow, & costly process.



What is an EPD in 2023

- Performance measure for GWP
- Purchase metric
- Strategic data



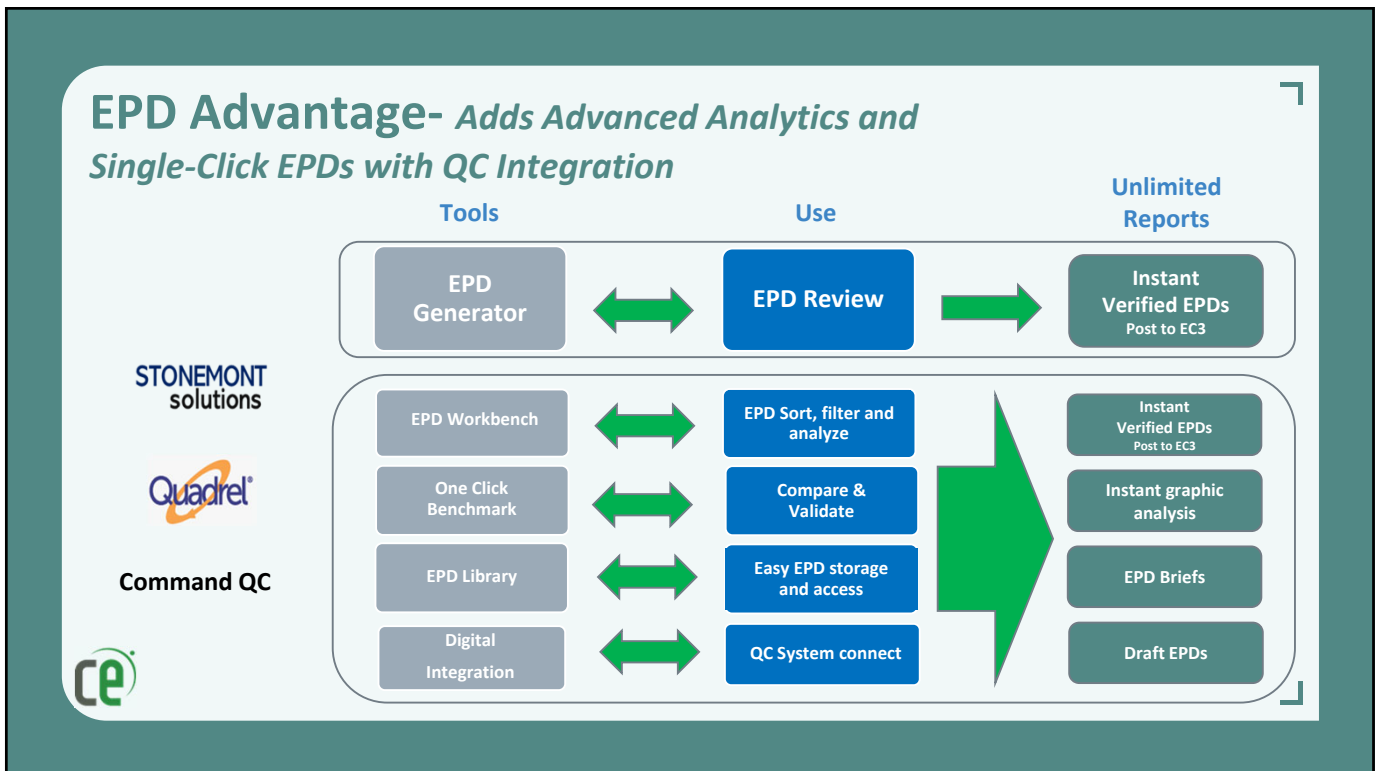
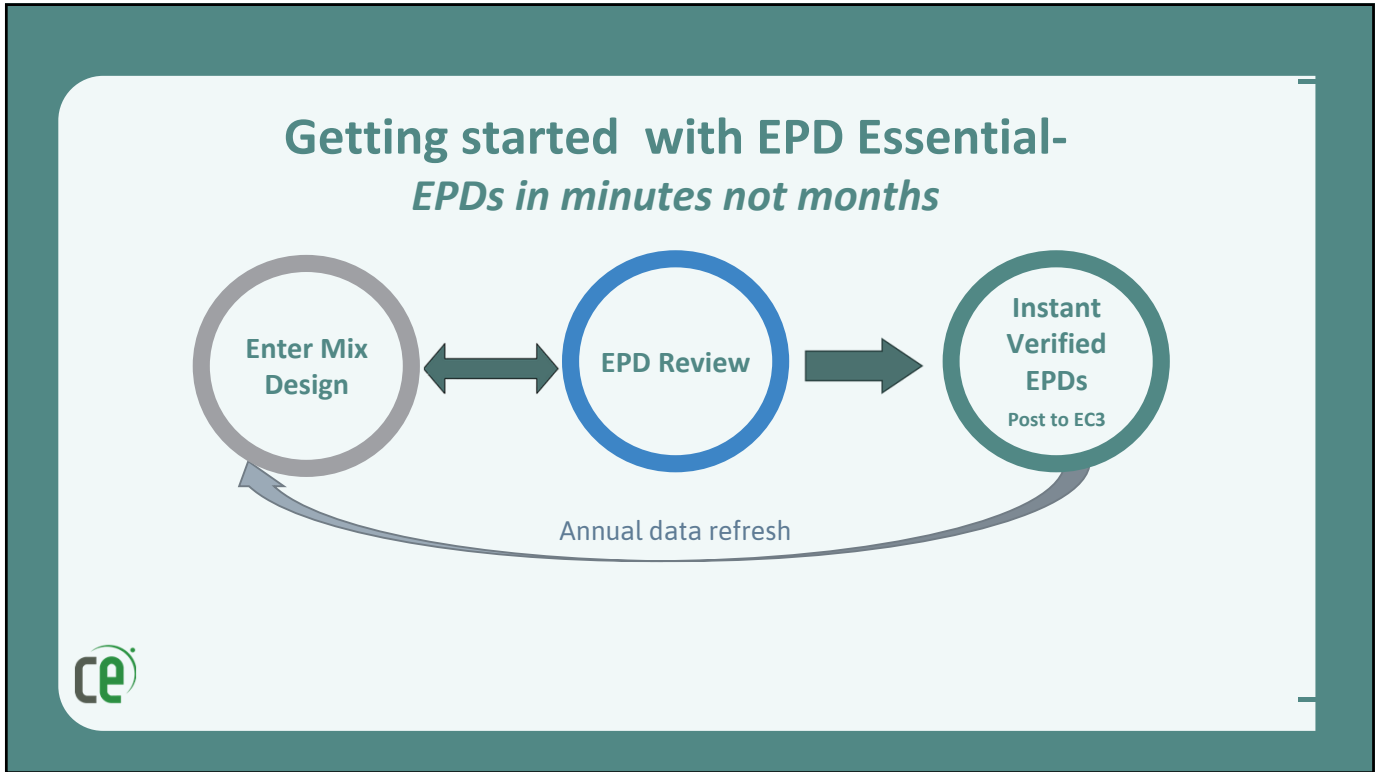
Using EPDs to Better Compete

Producers want:

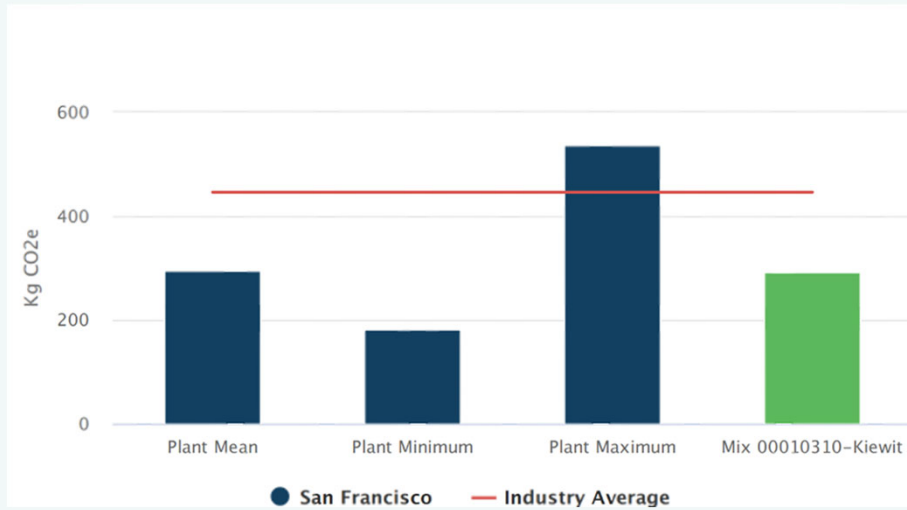
1. EPDs in minutes not months
2. Digital integration with QC and corporate systems
3. Instant benchmarking and analysis
4. Software to demonstrate expertise
5. Highly secure database
6. Reporting and analysis



From spreadsheets to enterprise quality software



Instant Benchmarking- Against the average and against emerging benchmarks



Deep Dive Instant EPD Analysis

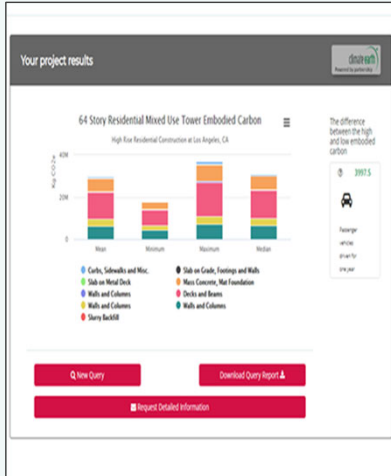
GWP Partial Environmental Impacts

Code	Name	Qty. per Cyd.	UoM	GWP (kg CO2eq)		
				Material (A1)	Transport (A2)	Total (A1-A2)
BridgeView_022	City - Water	35	gal	0.05	0	0.05
ILcement	IL cement	428	lb	214.82	1.26	216.08
BridgeView_003	Crushed Coarse Aggregate - (3/4) Vulcan	1875	lb	8.75	117	9.92
BridgeView_008	Fine Aggregate - [Sand] Vulcan	1050	lb	2.1	0.67	2.78
BridgeView_013	Slag (Lafarge)	250	lb	20	0.1	20.1
x-seed	Master X-Seed	70	fl oz	5.56	0.09	5.65
BridgeView_015	Air Entrainer	7	fl oz	0.11	0.01	0.12
				251	3	255
				Manufacturing (A3):		3.48
				Total (A1-A3):		258



Marketing and Business Development Applications

Project Analysis



Mix Design Analysis

The screenshot shows a software interface for mix design analysis. The main title is "BRIDGE VIEW CONCRETE MIX DESIGN REPORT". Below the title is a photograph of the Golden Gate Bridge. The report is for "Mix 09052012 - San Francisco Plant". The sections include:

- PLANT:** San Francisco Plant, 910 Lee Ave, San Francisco, CA 95110
- DATE OF REPORT:** 09/05/2012
- MIX DESIGN:** A table listing materials and their quantities per CYD.
- ENVIRONMENTAL IMPACTS:** A table listing various environmental metrics and their values.
- COMPARISON TO REGIONAL AVERAGE:** A table comparing the mix design to regional averages for Pacific Southwest.

At the bottom, there is a note: "Bridge View Concrete is pleased to submit this low carbon mix design. The all-digital Concrete Design tool used to create this report puts data directly from our database of materials so that a fully verified EPD for this mix is immediately available."

Digital Integration

Increased Productivity



New applications



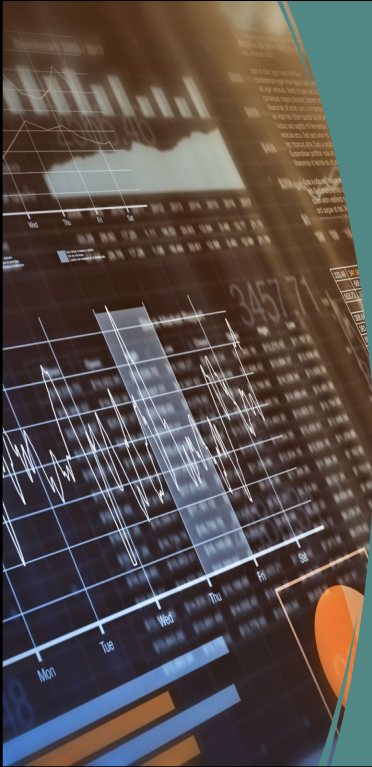
Better marketing

Project Analysis



Mix Design Analysis





The Longer View

EPDs in the digital enterprise

*How data is generated, processed, analyzed, and visualized for end users is **dramatically transformed by new and more ubiquitous technologies, for real-time analysis, leading to faster and more powerful insights, and faster better product innovation.***

[Mckinsey.com](https://www.mckinsey.com)

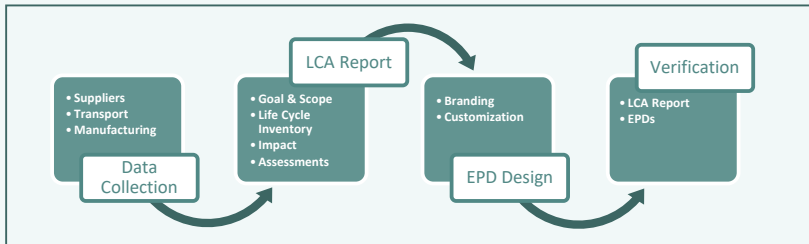
Technology Is Not Enough

- People
- Partnership
- Process
- Expertise

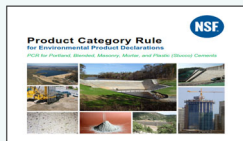


Easy implementation with Climate Earth's guided approach to data collection

One time system setup



- Unlimited instant EPDs
- Annual data refresh



Guided by International Standards
ISO 14040 and 44, ISO 14025, ISO 21930 –
rules for creating PCRs & EPDs



World Class Support with Expertise in:

- **The concrete industry**
- **LCA**
- **EPDs**
- **National and local policy**
- **Global EPD standards trends**
- **Helping producers win more**



*A few of our expert team members
all dedicated to your success*



Why Producers Work with Climate Earth

- > 100% concrete
- > Technology leadership
- > Expert support
- > Robust analysis
- > Digital integration



Thank you

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