



Concrete Innovations Session 24

Leveraging LCA data for Organizational Sustainability

2024.09.18

James Salazar: WAP Sustainability




Consider us your outsourced sustainability department.

We are a team of talented sustainability professionals that provide technical and strategic competencies to clients.


We help manufacturers, brands, retailers, healthcare, and financial organizations achieve their ESG / sustainability objectives.

WAP Sustainability was created out of understanding the role of the Sustainability Manager firsthand. We know this is a complex area to navigate.


*We're here to help.
We're here to help simplify sustainability.*




MANAGED SERVICE




PRODUCT TRANSPARENCY




LIFE CYCLE ASSESSMENT




CARBON MANAGEMENT



HEALTHY MATERIALS



ESG SUPPORT



CERTIFICATIONS & VERIFICATION

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1

AGENDA

01

Where does LCA fit in

02


Identifying hotspots and decarbonization

03


Leveraging LCA at scale

04


Eliminating bottlenecks




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1. Where does LCA fit in



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LCAs are **only one of the many tools** used in a sustainability professional's toolbox.

Company-level impacts vs. product-level impacts.

CARBON MANAGEMENT

MANAGED SERVICE

HEALTHY MATERIALS

LIFE CYCLE ASSESSMENT

PRODUCT TRANSPARENCY

ESG SUPPORT

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What is a Life Cycle Assessment?

Raw Materials

Manufacturing

Packaging

Distribution

Use-of-Product

End-of-Life

LIFE CYCLE ASSESSMENT

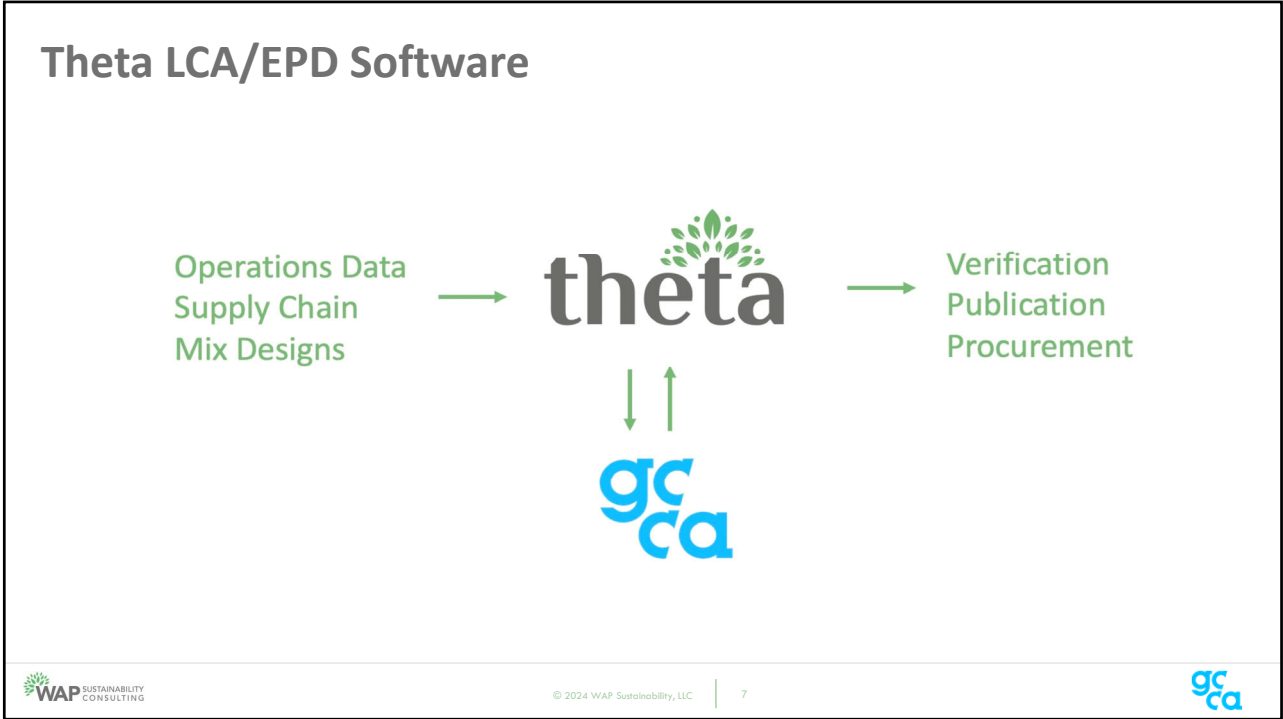
Sometimes referred to as "Product Carbon Footprint" or "Embodied Carbon"

LCAs quantify the environmental impacts of specific products and/or processes at various points in their lifecycle.

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LCA and EPD Software

Enter the number of plants you want to add.

Number of Plants

1

Country

United States

Continue

Add additional plants. You can add these to an existing division or create a new one.

Company

WAP Sustainability Consulting

Division/Subsidiary

Click here to add a new division

Enter the name of the new division/subsidiary.

Plant Name

City

State/Province

Alabama

Save

General

Reporting Period

Start Date

End Date

01/01/20

12/31/20

Plant Information - Annual Production and Usage

Concrete Production

Total Concrete Production (yr3)

Batch Waste (%)

55,000

1

Purchased Energy

Purchased Electricity - Used at Plant (kWh)

Purchased Electricity From Green Grid

Site Generated Renewable Electricity (solar, wind) - Used at Plant

Site Generated Bio Based Electricity (wood waste) - Used at Plant

Site Generated Renewable Electricity (solar, wind) - Sold

Site Generated Bio Based Electricity (wood waste) - Sold

Natural Gas - Used at Plant (ft3)

Secondary Fuels - Liquid

Secondary Fuels - Solid

Fuel Oil - Used at Plant (gal)

Diesel - Used at Plant (gal)

Gasoline - Used at Plant (gal)

LPG (Liquefied Propane Gas) - Used at Plant (gal)

Transit Mix Only - Diesel - Used in Fleet (gal)

Natural Gas - Used in Fleet (ft3)

114,961.78

1,080,000

0.005

0.322


0.001

0.008


0

0

Simple



LCA and EPD Software



ENVIRONMENTAL PRODUCT DECLARATION

READY- MIXED CONCRETE PRODUCED BY: WAP Sustainability Consulting

FACILITY: WAP Sustainability

STRENGTH: 2500 @ 28 days

MIX NAME: 2500 psi 50 GGBFS

IMPACT INDICATOR		PER YD3	PER M3
Global Warming Potential	kg CO2e	192.97	252.39
Ozone Depletion	kg CFC11e	7.39E-06	9.66E-06
Acidification	kg SO2e	0.62	0.82
Eutrophication	kg Ne	0.28	0.37
SFP (Smog)	kg O3e	12.11	15.84
Non-renew. energy	MJ, NCV	1037.06	1356.43

GENERAL INFORMATION

Declared Product

Ready - Mixed Concrete produced by WAP Sustainability Consulting

Date of Issue and EPD Number

June 14, 2023

Period of Validity


5 years: 6/14/2028

EPD Holder

Program Operator

WAP Sustainability Consulting

The Output Your Customers Expect



What can an LCA do for my company?

Product-level impacts have company-wide implications.

Where are my environmental hotspots?


How do I report the Scope 3 GHG emissions of my products?

How do I benchmark my product against my competitor?


What suppliers should I prioritize for impact reduction?

What do I need to create a zero-carbon product?

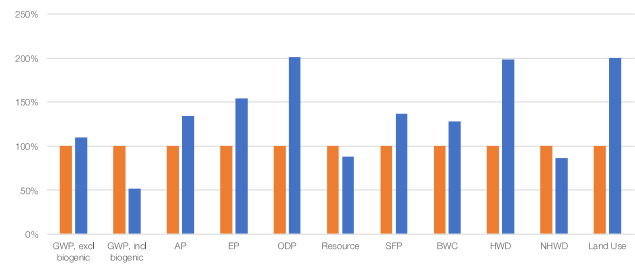
How do I set Science-Based Targets?



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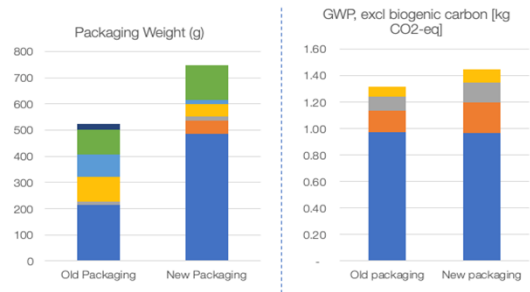


LCA results are not always what you expect.

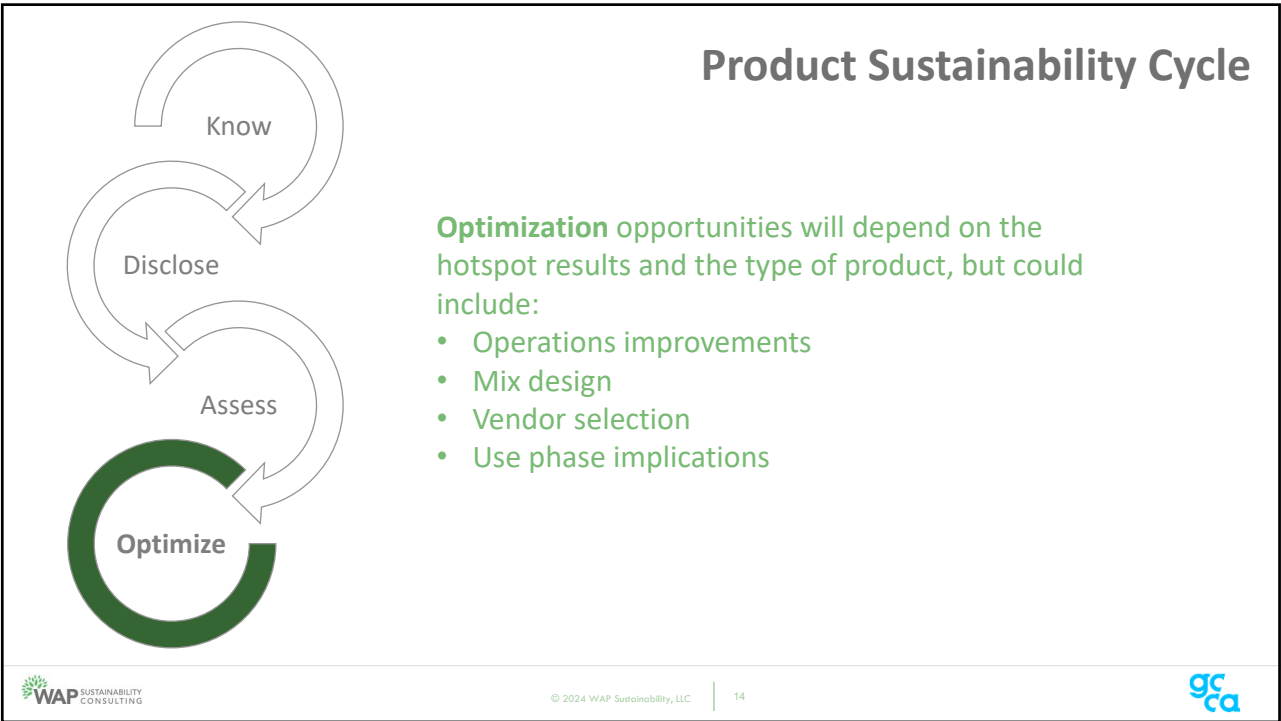


Upon enacting significant material changes in hopes to reduce environmental impacts, **impact categories actually went up** posing a challenge that resulted in changing commitments and priorities.

Lifecycle GWP Results



2. Identifying hotspots and decarbonization



theta

LCA and EPD Software

Add a new mix.

Show mixes.

Plant

WAP Sustainability

Mix

2500 psi 50 GGBFS

Show

2500 psi 50 GGBFS (2500 28 days)

Ingredient	Amount	Units	Supplier	Action
Portland Cement	150	lb	Portland Cement	Edit Delete
Slag Cement	140	lb	Slag Cement	Edit Delete
Fly Ash	62.09	lb	Fly Ash (no processing)	Edit Delete
Crushed Coarse Aggregate	1,126.08	lb	NRMCA - Crushed Coarse Aggregate	Edit Delete
Natural Coarse Aggregate	552.54	lb	NRMCA - Natural Coarse Aggregate	Edit Delete
Crushed Fine Aggregate	168.67	lb	NRMCA - Crushed Fine Aggregate	Edit Delete
Natural Fine Aggregate	1,282.15	lb	NRMCA - Natural Fine Aggregate	Edit Delete
Air Entrainment	0.08	lb	Air Entrainment Company	Edit Delete
Plasticizer & Superplasticizer	0.25	lb	NRMCA - Plasticizer & Superplasticizer	Edit Delete
Set Accelerator	0.44	lb	Set Accelerator	Edit Delete
Grease	100	kg	Great Lakes Midwest - Crushed Coarse Aggregate	Edit Delete
BatchWater	35	gal	Not Specified	Edit Delete

Updated: 6/8/2023 4:38:24 PM

Compare mixes to benchmarks.

Mix

WAP Sustainability-2500 psi 50 GGBFS - new slag

Benchmark Mix

2500 Baseline

WAP Sustainability-2500 psi 50 GGBFS - new slag versus 2500 Baseline

Graph Generate Report

3. Leveraging LCA at Scale

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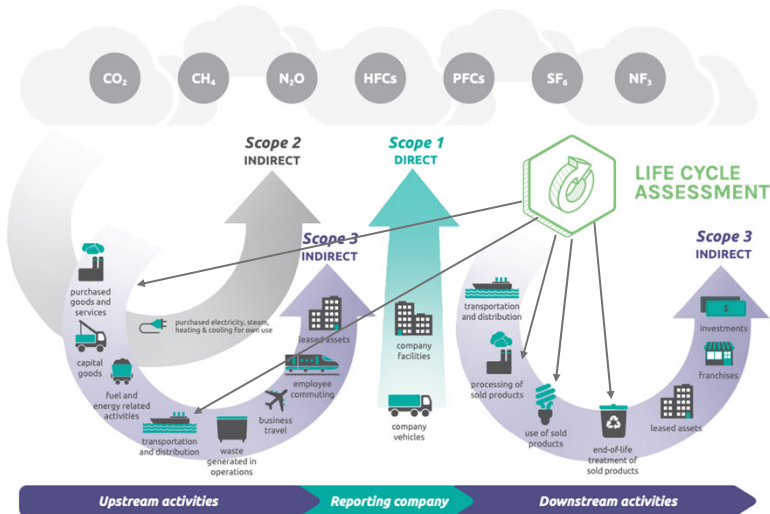
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LCA as a Carbon Tool

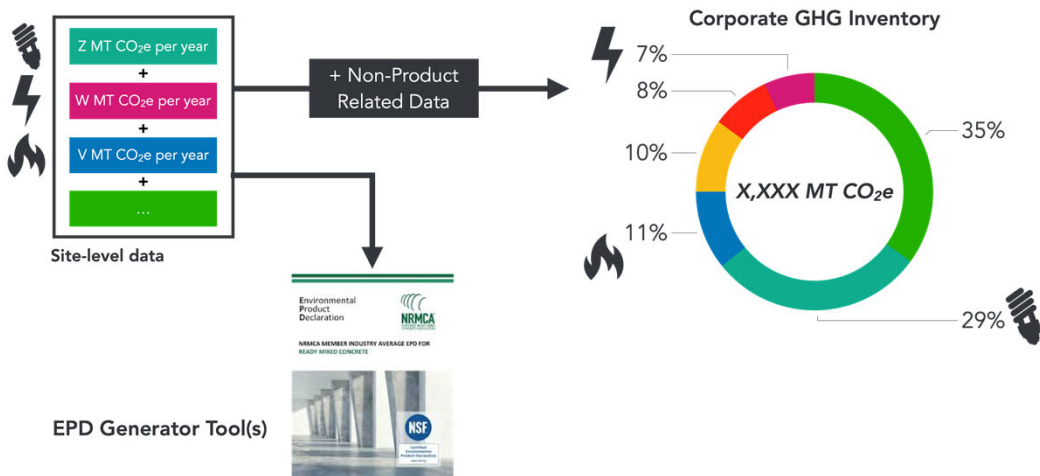
- Improves data quality of company-wide scope 3 GHG data
- Provides product-level carbon footprint
- A critical tool in setting and tracking reduction goals at the company and product level.



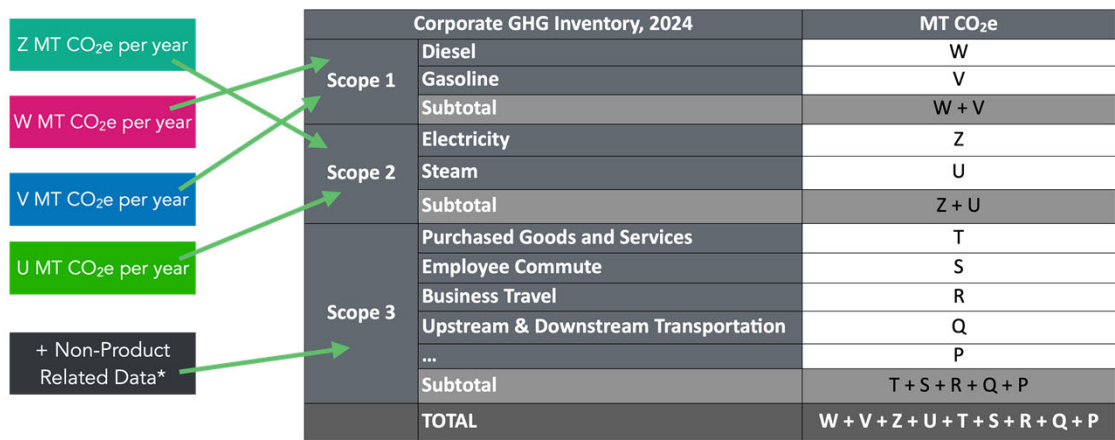
Source: Figure 1.1 of Scope 3 Standard.



Product carbon footprints (also known as LCAs) and corporate carbon accounting rely mostly on the same input data.



Creating site-level EPDs streamlines the GHG inventory process.



* Some product-related data from the EPD data collection may be used in Scope 3, such as Waste Generated in Operations.

4. Eliminating Bottlenecks

There are currently **two major forces** that are **shaping the future of LCAs and sustainability.**

REGULATIONS *(Requirements)*



GSA

U.S. General Services Administration

Per Diem Lookup

Buy through us

Sell to government

Real estate

Policy and regulations

Small business

Travel

Technology

About us

Home

Real Estate

GSA Properties

Inflation Reduction Act

LEC program details

Low-embodied carbon projects

GSA Properties

Overview

2023 Lighthouse season

Capital Investment and Leasing Prospectus Library

Courthouse Program

Inflation Reduction Act

LEC program details

Low-embodied carbon projects

LEC pilot

E&ST program details

HPGB program details

Land ports of entry and the Bipartisan Infrastructure

Outleasing

Regional Buildings

Renting GSA Property

Low-embodied carbon projects

The map above indicates project locations. The following table contains a list of projects anticipated to implement LEC materials. Learn more about the [LEC program](#).

<https://www.gsa.gov/real-estate/gsa-properties/inflation-reduction-act/lec-program-details/lowembodied-carbon-projects>

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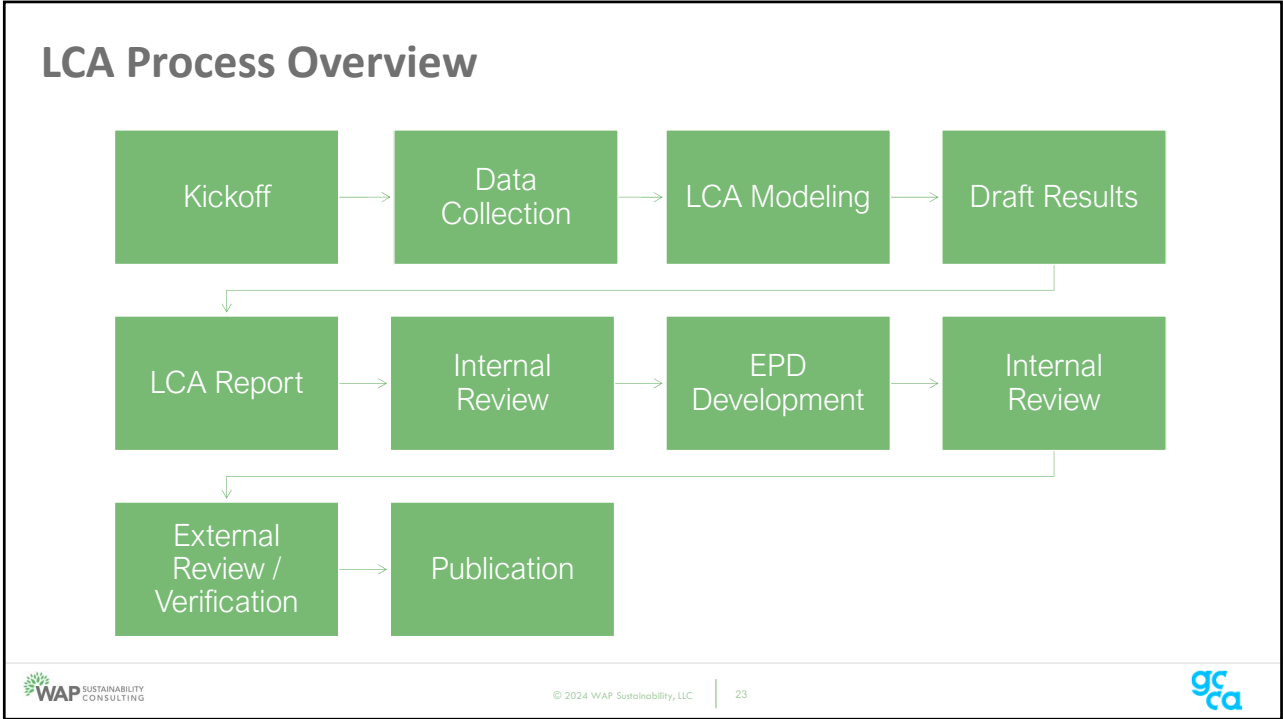
Slide 21

LS0 Lisa beers requested that we take a few mins to introduce the different kinds of requests they may get from customers and where EPDs can help, and where they are not useful!

Lydia Schreiber, 2024-08-22T21:30:51.478

LS0 0 Robert mentioned in our convo with Lisa that he may have some good info to support this.

Lydia Schreiber, 2024-08-22T21:37:11.308



LCA and EPD Software

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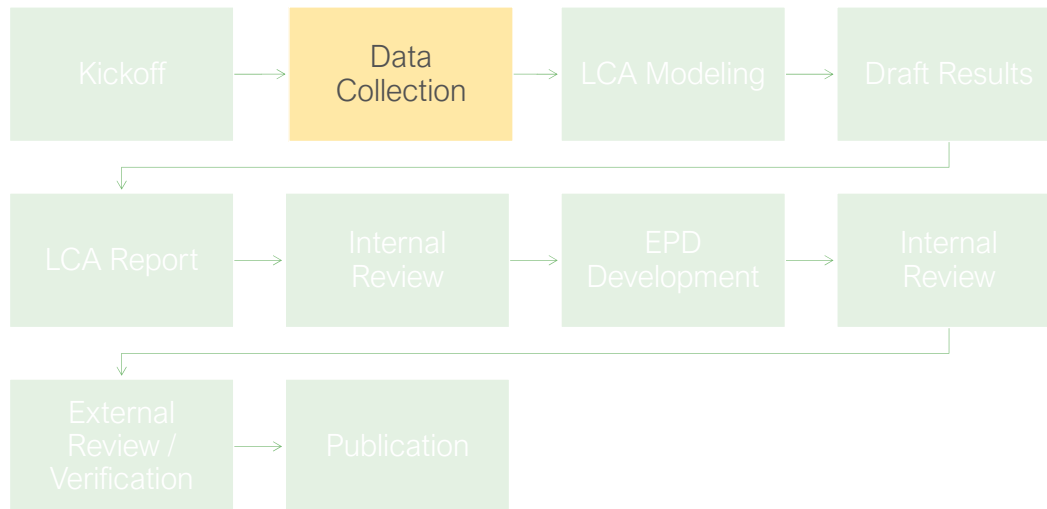
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Simple

gc ca

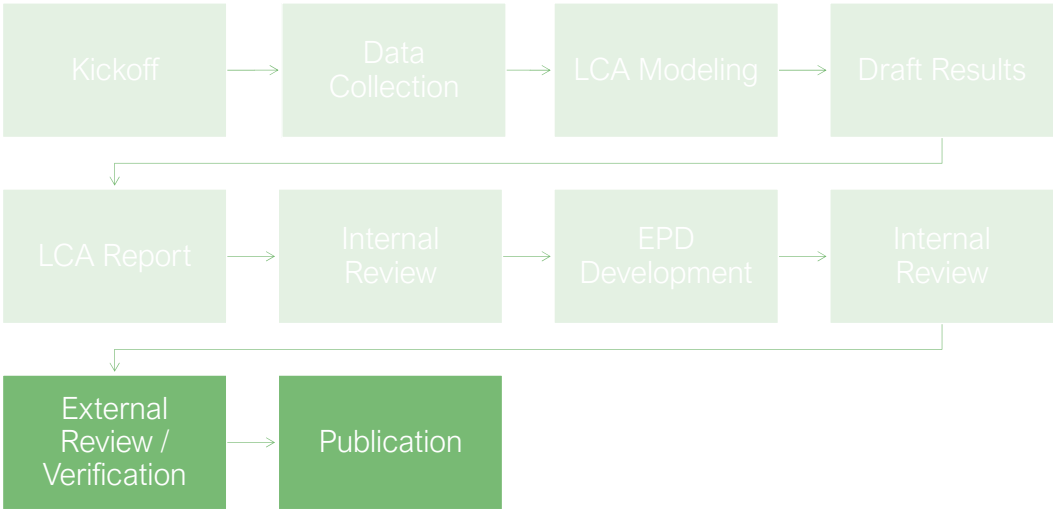
Process Overview



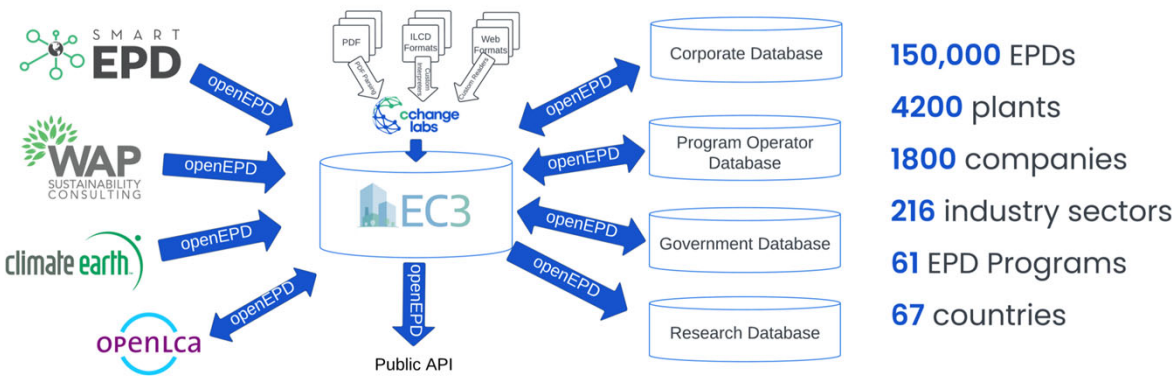
Gathering the data

- Integration with existing data systems
- Integration with QC software
- Leveraging industry average data

Process Overview



Digital EPD Transfer via API



<https://www.open-epd-forum.org/>

Email me!
james@wapsustainability.com



<https://wapsustainability.com/software/theta-epd/>