

# Carbon tracking and calculation

**16 January 2024**

@buildoffsite @CIRIAupdates

# Company calculation – supply chain



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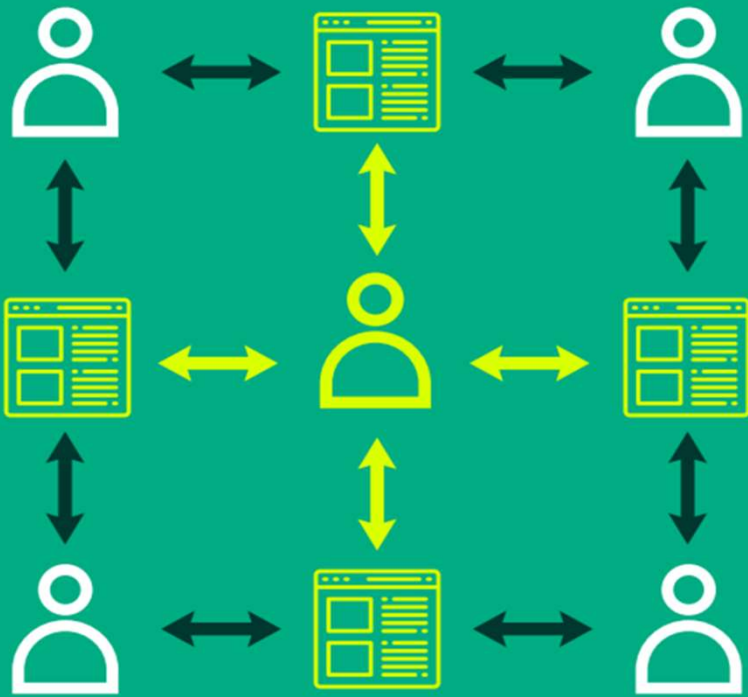


# IMPORTANCE OF DATA TRANSPARENCY TO ENABLE DECISION MAKING

If you can't measure it then how can  
you improve it?

## BEFORE MANUAL METHOD

MANUAL ROUTINE CAN BE CONFUSING  
AND TIME-CONSUMING



## Where were we?

- Demand for customer requests for carbon information was increasing – customer want their Scope 3 carbon
- Mature carbon customer want more accurate and transparent data
- Processes were adhoc and labour intensive and use different systems, opportunities for human error
- Some standard tools but no standard approach to data so can be difficult to compare
- Data was not verified



# YOUR CARBON REPORT



Automated Carbon Reporting Tool

# AFTER AUTOMATED WORKFLOW

AN AUTOMATED WORKFLOW STREAMLINES AND SIMPLIFIES



## What did we do?

- Integrate carbon values within our Finance Platform E1
- Inputs required to calculate carbon value
  - All raw materials used in the product
  - Each business responsible for ensuring the Bill of Materials are correct prior to manufacture
  - All new raw materials added are red flagged until carbon value input
  - Transport of raw materials to plant added
  - Energy used to process the raw materials into the product (electricity, fuels, gas - Scope 1&2)
  - Delivery of product to customer based on distance and vehicle type
- What were the main challenges
  - Huge amount of data, in different formats (several million lines)
  - Different ways of working for different product lines
  - Developing a new calculator in an existing operating system
  - Getting each business to ensure bill of materials were correct

# YOUR CARBON REPORT



Next best thing  
to **EPD /**  
**Verified**



**First** in market



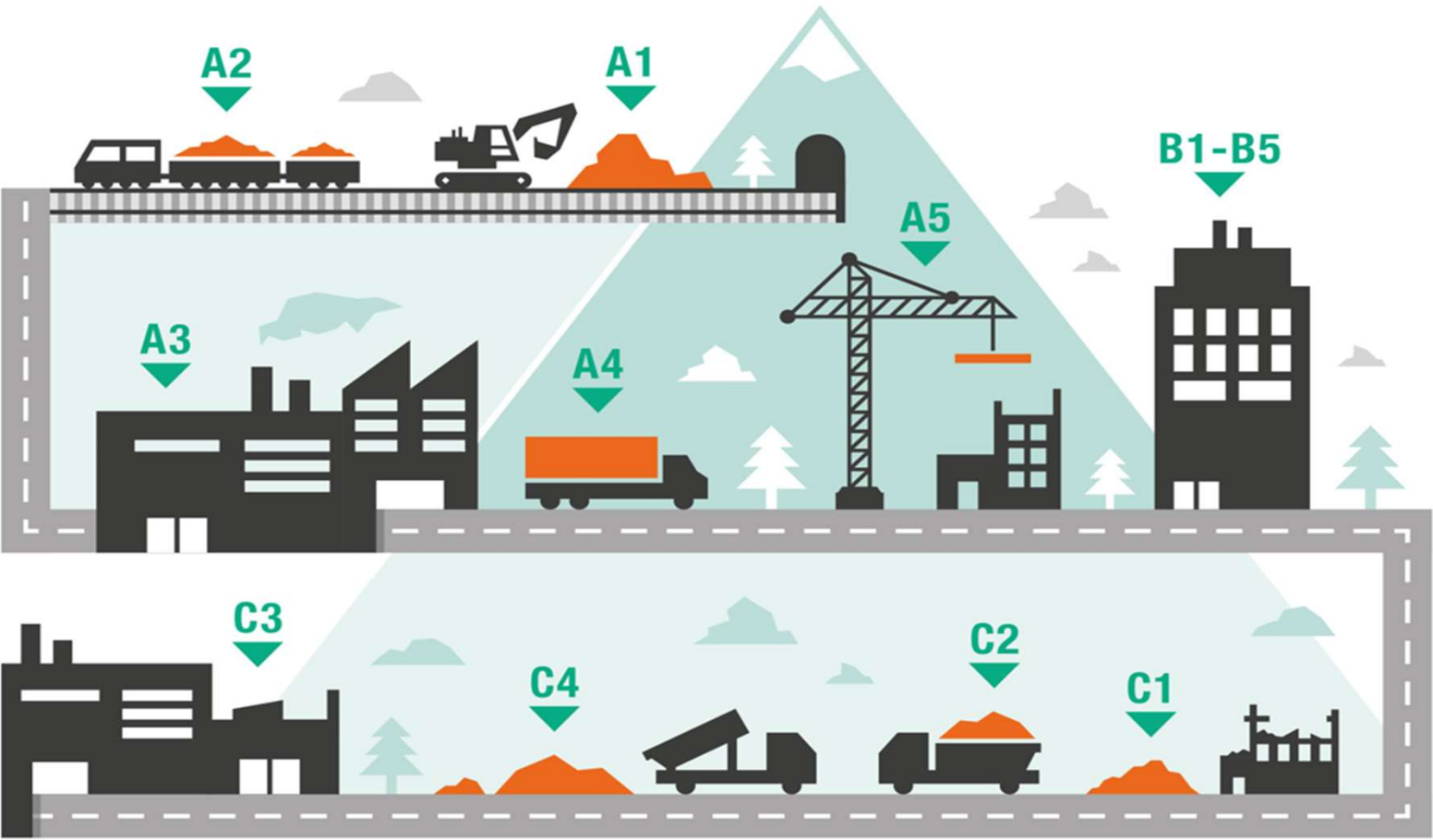
**Why** have we developed  
the tool?

**Customer** demand  
**Drive** customer  
**behaviour**  
**Lead the Market**



This **differentiates** us  
from our competitors

# SOURCES OF EMBODIED CARBON ACROSS THE CONSTRUCTION LIFECYCLE



## A1 - A3 PRODUCT STAGE

- A1 Raw material extraction
- A2 Transport to manufacturing site
- A3 Manufacturing

## A4 - A5 CONSTRUCTION STAGE

- A4 Transport to construction site
- A5 Installation / Assembly

## B1 - B5 USE STAGE

- B1 Use
- B2 Maintenance
- B3 Repair
- B4 Replacement
- B5 Refurbishment

## C1 - C4 END OF LIFE STAGE

- C1 Deconstruction & demolition
- C2 Transport
- C3 Waste processing
- C4 Disposal



# Your Carbon Report Scope



## A1 - A3 PRODUCT STAGE

A1 Raw material extraction

A2 Transport to manufacturing site

A3 Manufacturing

**Scope is A1-A4 of an EPD - what our customers need from us**



# What do our customers receive

- ✓ Google sheets template designed for reports to be sent to customers to their specification
- ✓ Can be sorted by customer, project, product, date, area, plant
- ✓ **Calculation principles EN15804 (EPD Process)**



## YOUR CARBON REPORT



Date Range for Report: FY 2022

Project	Plant	Product	Qty m3	RM kgCO2e / m3 (A1)	RM Tmst kgCO2e / m3 (A2)	Plant kgCO2e / m3 (A3)	kgCO2e Site / m3 (A1-3)	kgCO2e Site / m3 (A1-4)
Building in London	Bow	ECOPact	12,074	218.45	11.51	1.28	231.23	232.20
Building in London	Bow	ECOPact Prime	4,702	145.27	11.96	1.28	158.52	159.71
Building in London	Bow	Watertight	2,594	169.26	11.53	1.28	172.06	173.20
Building in London	Bow	Strike	229	274.79	11.05	1.28	287.13	288.23
Building in London	Bow	Agilia	31	264.53	11.75	1.28	277.56	278.21
Building in London	Bow	Standard Concrete	1,816	299.85	12.35	1.28	313.47	314.52
<b>Total</b>		<b>RMX</b>	<b>21,445</b>	<b>202.80</b>	<b>11.68</b>	<b>1.28</b>	<b>215.76</b>	<b>216.80</b>

Your Carbon Footprint was prepared using a bespoke calculation tool developed by Aggregate Industries UK Ltd. It follows the principles of EN 15804 and has been third party verified by Circular Ecology Ltd. The result is based on primary activity data from Aggregate Industries operations, secondary data comes primarily from the UK Government GHG emission factors for company reporting and Inventory of Carbon and Energy v3.0 by Circular Ecology and University of Bath, with additional data supplied by Carbon Trust. The cement component in the calculations is net CO2 for all Your Carbon Reports and does not include CO2 emissions from the combustion of alternative fuels that have not reached their end of waste status.



**Disclaimer of warranty and liability:**  
Aggregate Industries UK Ltd. is not responsible for and does not guarantee the data, parameters and/or information submitted by the user into the calculation tool or any results provided by the calculation tool. Aggregate Industries UK Ltd. is under no obligation to verify the correctness, truthfulness or adequacy of such data or parameters nor the use of these data and parameters. To the extent permissible at law, Aggregate Industries UK Ltd. will not be liable for any damages or losses of any kind arising from the use of this tool, including, but not limited to direct, indirect, incidental, punitive or consequential damages.

# What are the benefits of Your Carbon Report

- ✓ Customers can quickly get their Scope 3 carbon for the products they have purchased from Aggregate Industries in the format they require
  - ✓ RMX, asphalt, concrete products and aggregates
- ✓ Carbon values for purchased raw materials are from trusted sources such as EPD and industry bodies eg MPA, ICE database, Ecoinvent and Carbon Trust
- ✓ The calculation is to EN15804 and the methodology is 3<sup>rd</sup> party verified by Circular Ecology
- ✓ Carbon values have been supplied to Causeway for their Scope 3 project and Aggregate Industries have been involved in the development
- ✓ Ability to challenge the business to reduce CO2 intensity with real examples
- ✓ Provided the knowledge & data for us to develop EPD, now have 150 RMX EPD

## Further developments since launch

- ✓ Every product in our system now has a live CO2 value so customers can make an informed choice for future projects
- ✓ Our technical teams can now advise customers on the different product options including CO2 information
- ✓ CO2 has now been added to quotes to give customers even more information to make their product choices

# YOUR CARBON REPORT CASE STUDY

## Challenge

Slipform to help significantly reduce the amount of construction joints in the walls of the waste bunker and ensure a completely watertight structure. It was also essential to make the bunker resistant to chemical attack and therefore the concrete needed to be DC-3 class compliant.

## Approach

## ECOPact

Aggregate Industries was brought in to assist main contractors Careys and GB Slipform in the delivery of a 24/7 concrete supply. Use of ECOPact, an engineered low carbon concrete that utilises higher blends of cement substitutes such as GGBS, presented challenges for slipforming when it came to setting times and compressive strengths. Aggregate Industries developed number of mixes to deliver continuous concrete pour and not affect the programme, each with a verified CO<sub>2</sub> value from Your Carbon Report to enable the customer to have the information they required

## Impact

Overall, we were able to deliver a total carbon reduction of 42%, a saving of 608,951 kg or 609 tonnes of eCO<sub>2</sub> in comparison to a standard slipform mix.



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# THANK YOU

Any questions?

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