

PLEASE KEEP YOUR MICROPHONE MUTED 😊



GOOD

MORNING — AFTERNOON — EVENING!



WONASA & KIVI
Carbon Footprint
Natural Stone compared with other materials

Who is Sini Laine?

Executive Director, KIVI – Stone from Finland

“A very entrepreneurial and down to earth individual with experience ranging from content creation and account management to networking and team leading. Deep understanding of delivering digital marketing solutions and analyses that have business value. Experience of both the client and agency side of marketing. “

20 years experience in marketing, ICT, digital space and business

Worked for companies e.g. Huhtamaki Oyj, Microsoft, Nokia Oyj, Wunderman.

Born & raised in an entrepreneur family operating in civil engineering



KIVI – Stone from Finland in a Nut Shell

KIVI - Stone from Finland (former Finnish Natural Stone Association) was founded in 1938 and we are the only association representing companies operating in the natural stone industry in Finland.

78 members, 18 partners, 40 student members

KIVI is a member of Euroroc, Green Building Council Finland, Suomen Yrittäjät (an interest and service organization for small and medium-sized enterprises (SMEs)) and The Association for Finnish Work.

Our mission is to increase the demand and the awareness of the natural stone as a low carbon footprint construction material. We aim to enable the best possible business environment for our member organizations.



KIVI Values 2020

Expertise

Sustainability



Courage





CARBON FOOTPRINT: THE CALCULATION



WORLD GREEN BUILDING COUNCIL

SUSTAINABLE DEVELOPMENT GOALS



3 GOOD HEALTH AND WELL-BEING

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

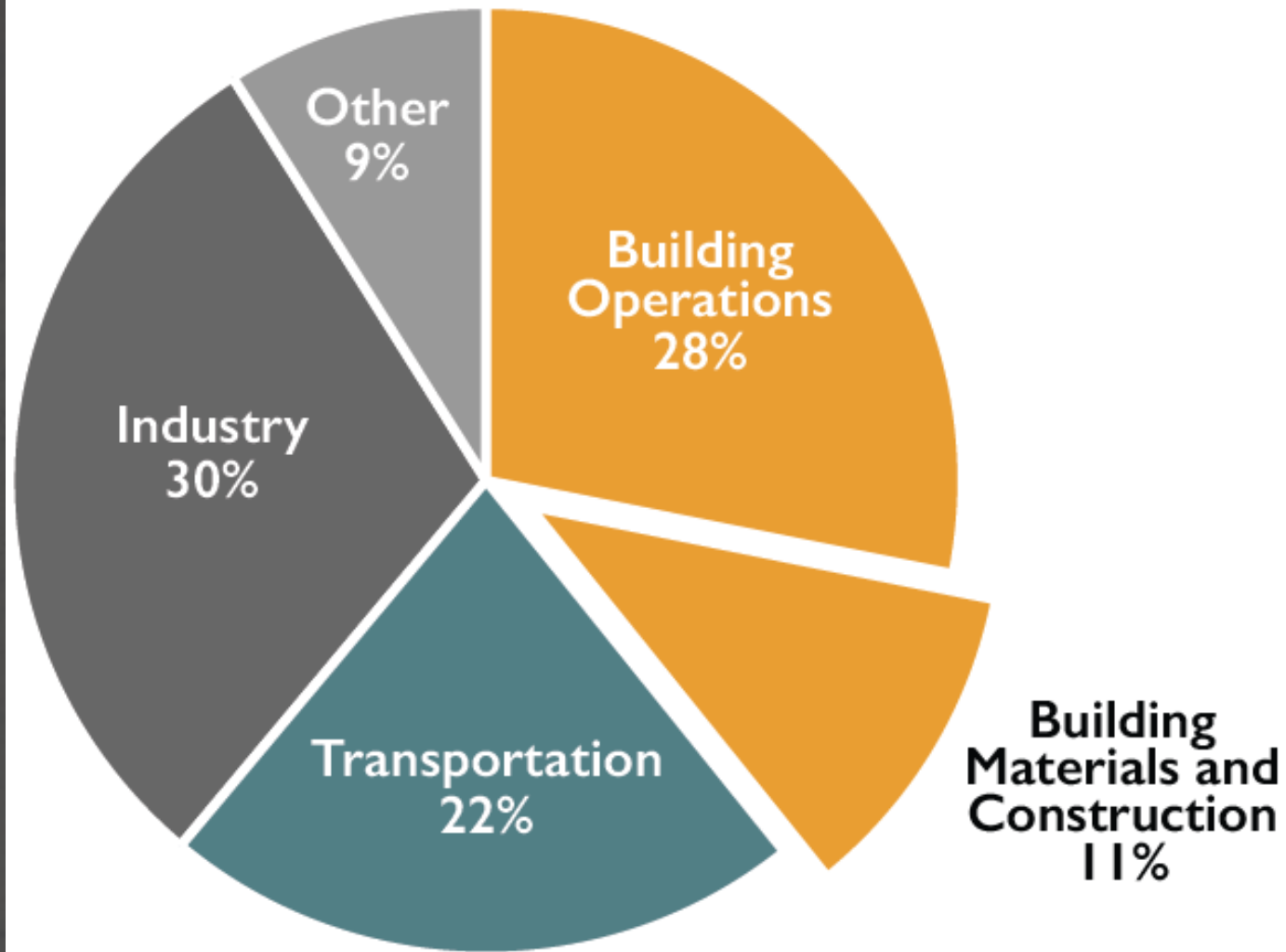
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

15 LIFE ON LAND

17 PARTNERSHIPS FOR THE GOALS

Global CO₂ Emissions by Sector



Source: © 2018 2030, Inc. / Architecture 2030. All Rights Reserved. Data Sources:
UN Environment Global Status Report 2017; EIA International Energy Outlook 2017



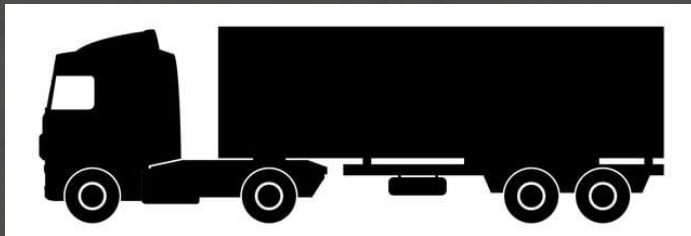
What is Carbon Foot Print?

“The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO₂).”

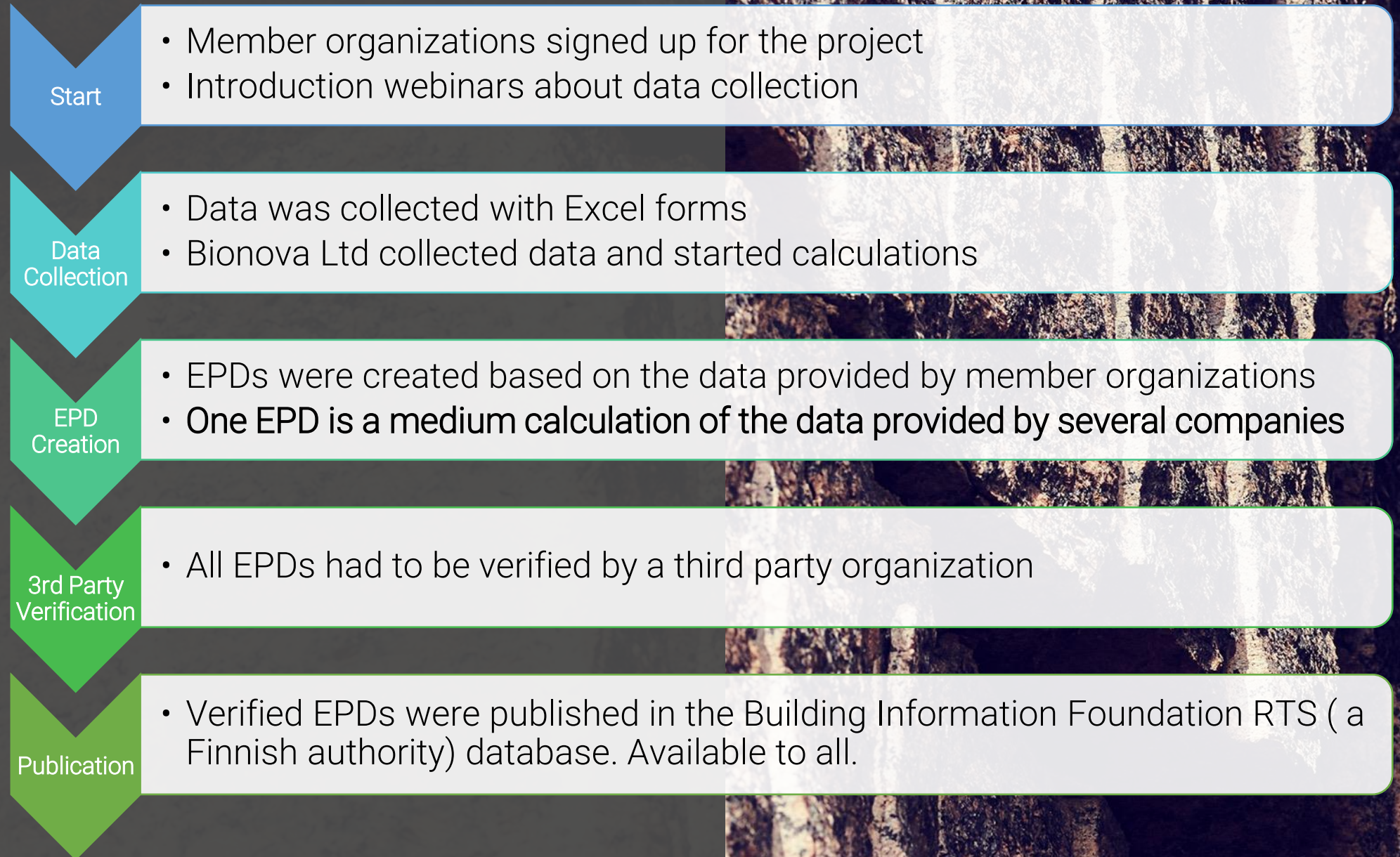
Wikipedia

100 km drive with stones as cargo

4 kgCO₂e =



The process of EPD creation: Finland



Official Evidence

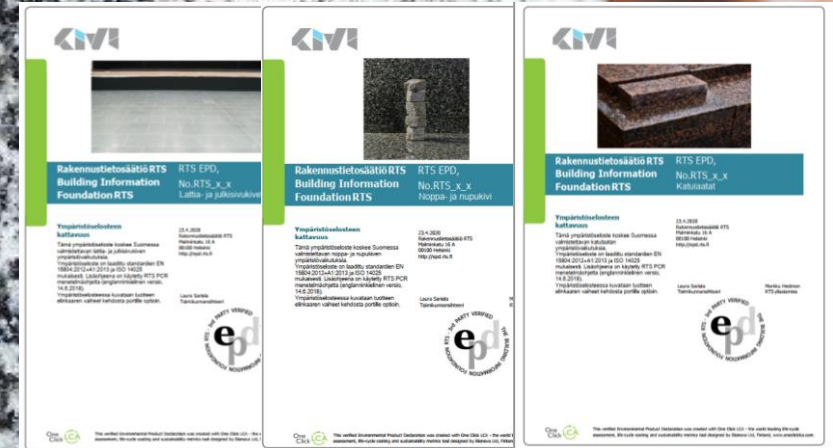
The public sector in Finland will start requiring the documents proofing the materials carbon emissions.

The Environmental Product Declaration provides data about the environmental impacts of a product through the product life cycle.

In Europe, EPDs must conform to the European Standard, which ensures that EPD for construction products use

- a common methodology,
- report a common set of environmental indicators
- have a common reporting format.

=> EPD can be integrated into building level assessment and used to compare construction products in a building context.



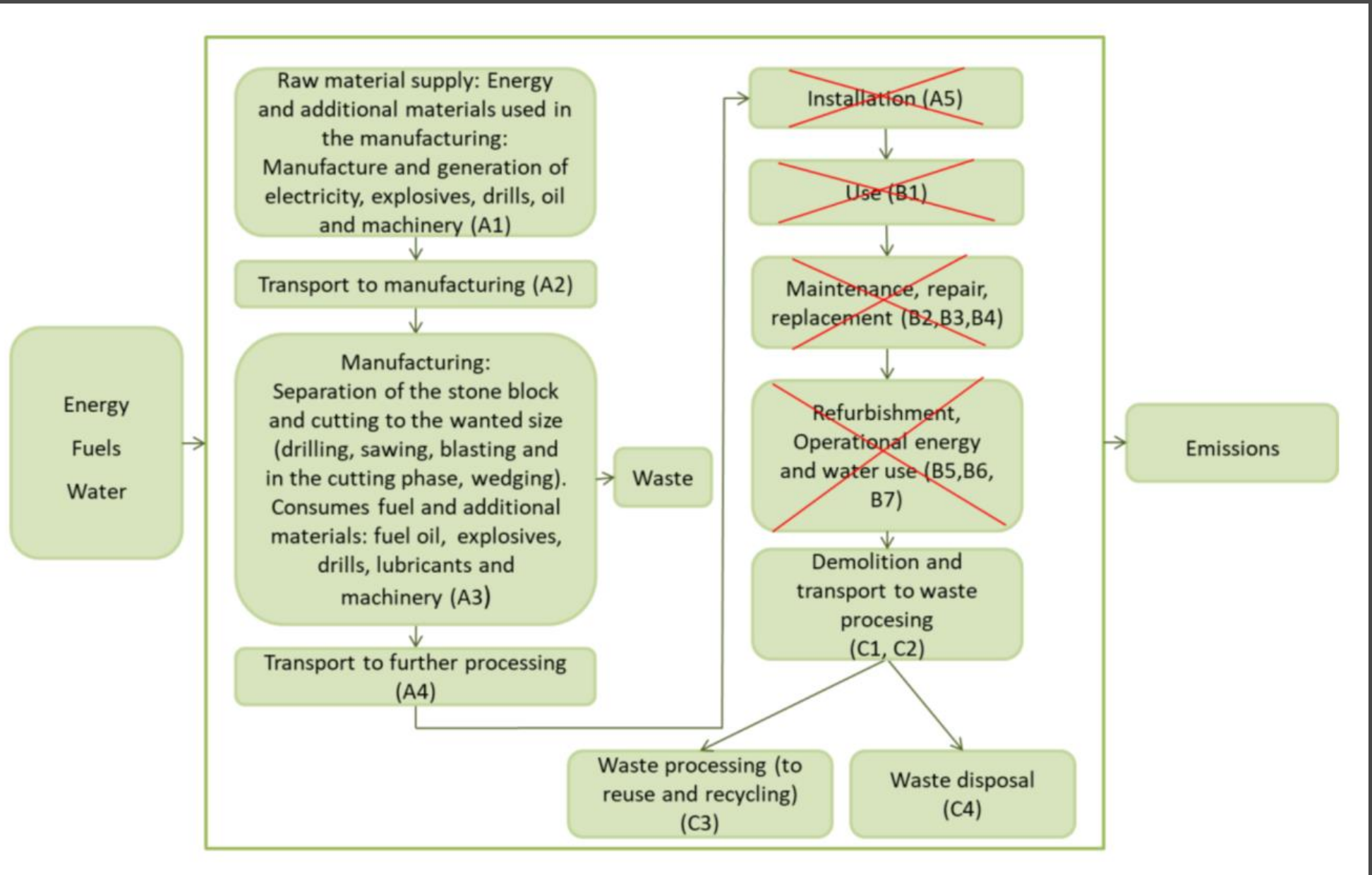
Life-cycle Stages According to EN Standards

Product Stage			Construction Process Stage	Use Stage								End-of-Life Stage				Benefits and loads beyond the system boundary		
Raw material supply	Transport	Manufacturing	Transport to building site	Installation into building	Use/application	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D

Source:

<https://www.oneclicklca.com/support/faq/>





Environmental Impact Indicators

All EN 15804 EPDs report the same 24 different environmental indicators/parameters

Environmental impact, Curbstone, solid staircase, and solid wall from stone								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Global warming potential	kg CO ₂ -eqv	1,04E+2	1,71E+1	0E0	2,17E+0	1,66E-1	0E0	-5,74E+1
Depletion of stratospheric ozone layer	kg CFC11-eqv	1,92E-5	3,36E-6	0E0	4,26E-7	1,67E-8	0E0	-9,93E-6
Formation of photochemical ozone	kg C ₂ H ₄ -eqv	2,05E-2	2,72E-3	0E0	3,45E-4	3,48E-5	0E0	-1,19E-2
Acidification	kg SO ₂ -eqv	4,93E-1	5,50E-2	0E0	6,98E-3	8,70E-4	0E0	-2,75E-1
Eutrophication	kg PO ₄ 3--eqv	8,96E-2	9,27E-3	0E0	1,18E-3	1,14E-4	0E0	-4,87E-2
Abiotic depletion of non-fossil resources	kg Sb-eqv	1,15E-3	1,06E-4	0E0	1,34E-5	1,84E-7	0E0	-7,38E-4
Abiotic depletion of fossil resources	MJ	1,41E+3	2,68E+2	0E0	3,40E+1	2,52E+0	0E0	-7,80E+2

Read more <https://www.igbc.ie/what-is-an-epd/>



PLEASE NOTE!

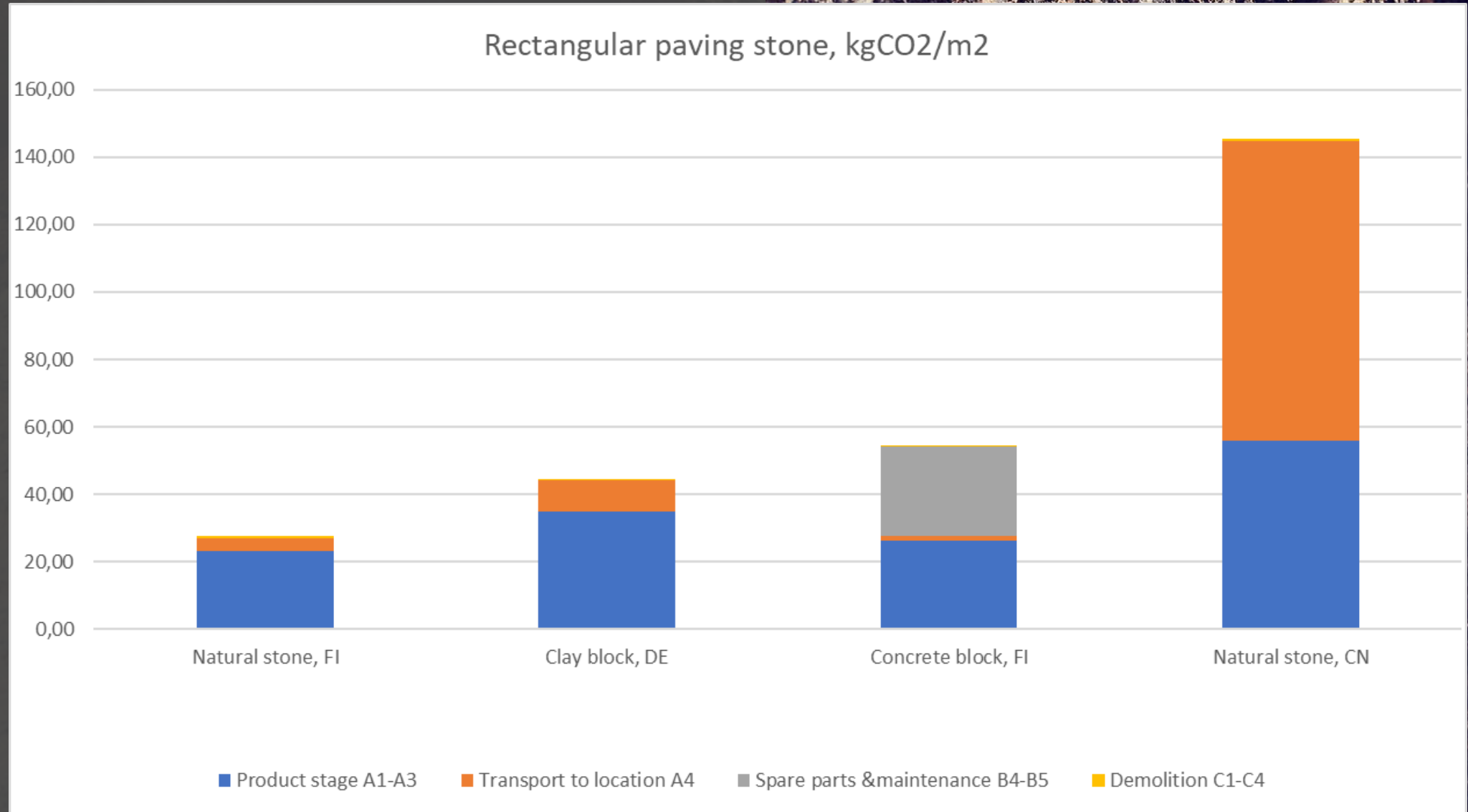
- All calculations presented here are only valid in the Finnish market.
- Stone used in calculations is originated from Finland, i.e. it is local stone.
- Other materials compared have also EPDs calculated with the same calculation model and standards.
- The length of transportation is measured from the origin country to Finland.



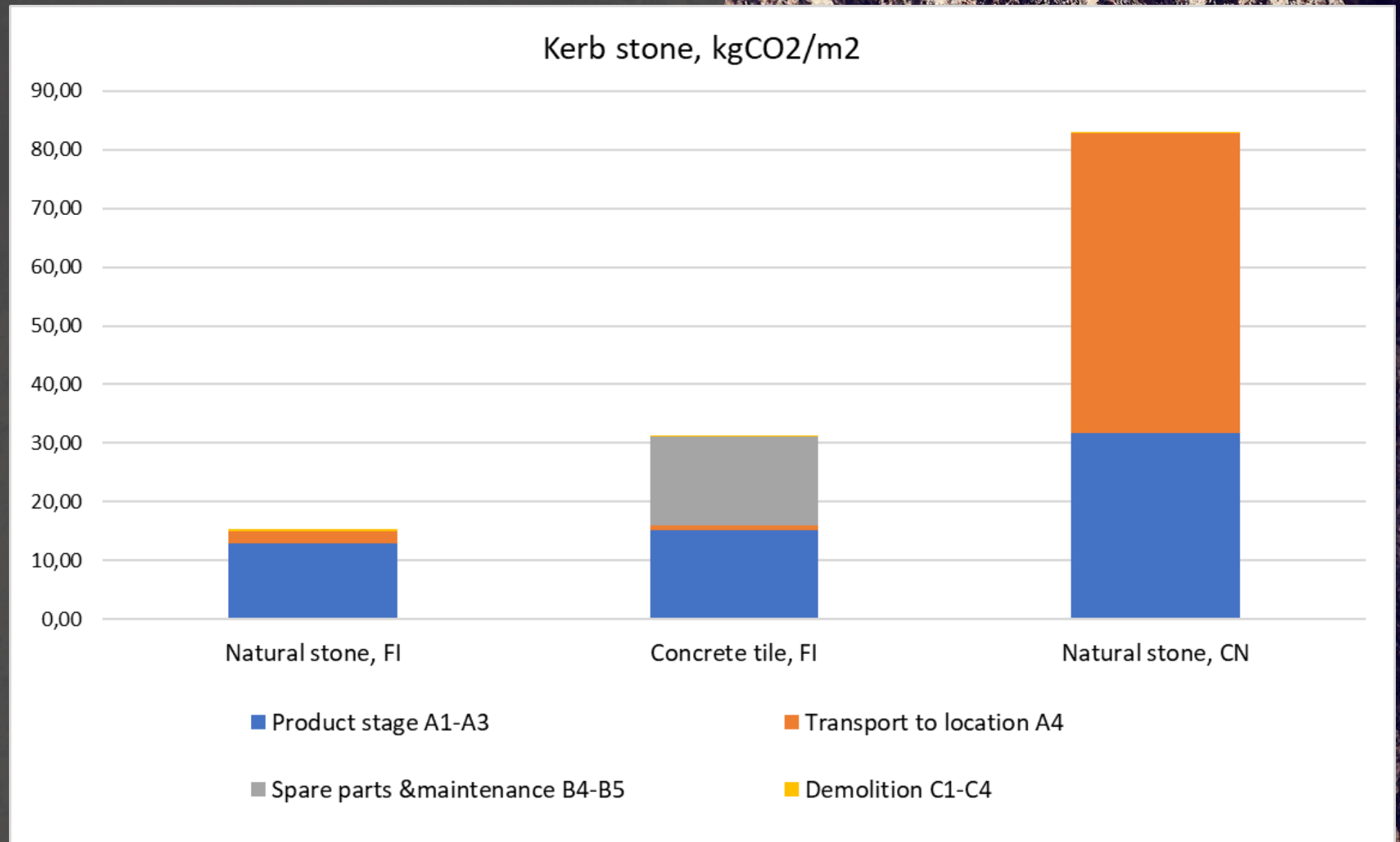


NATURAL STONE
COMPARED WITH OTHER MATERIALS

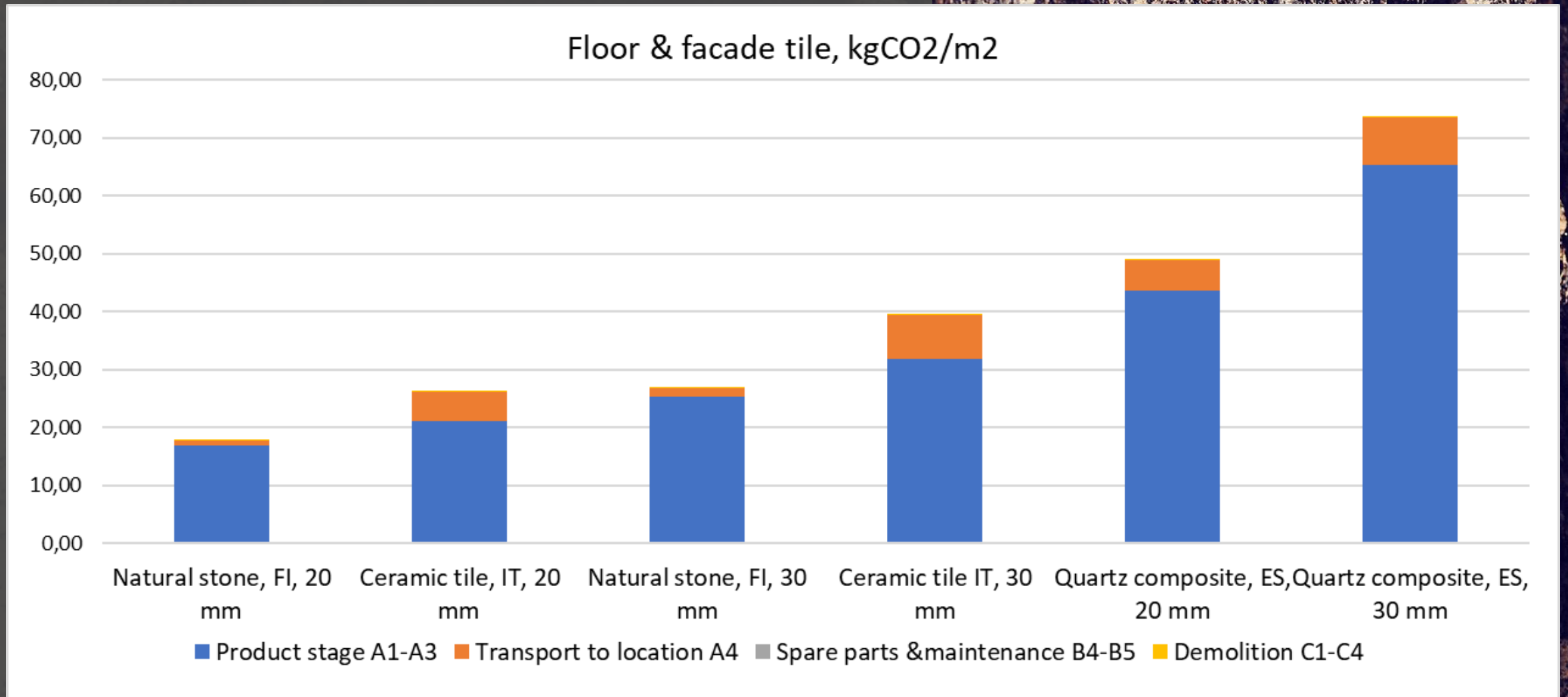
Rectangular paving stone, 80 mm



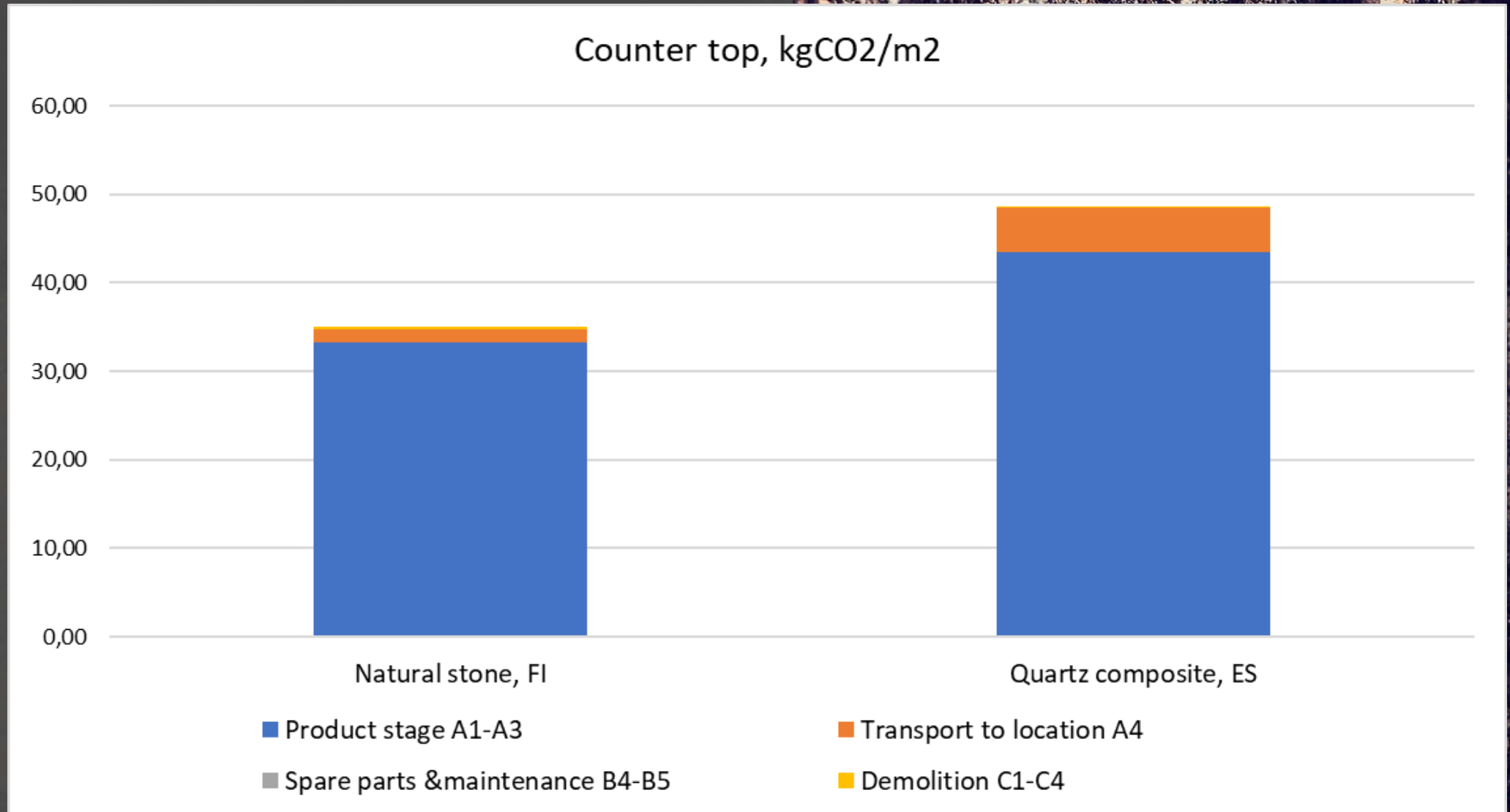
Kerb stone, 270 mm x 170 mm



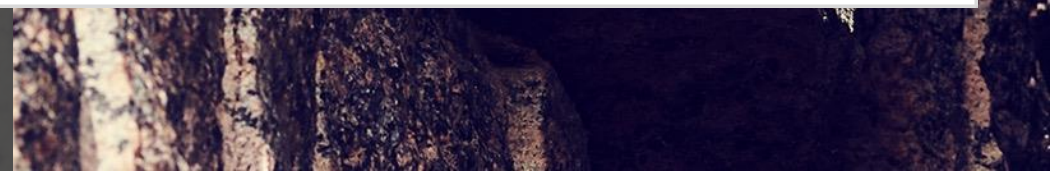
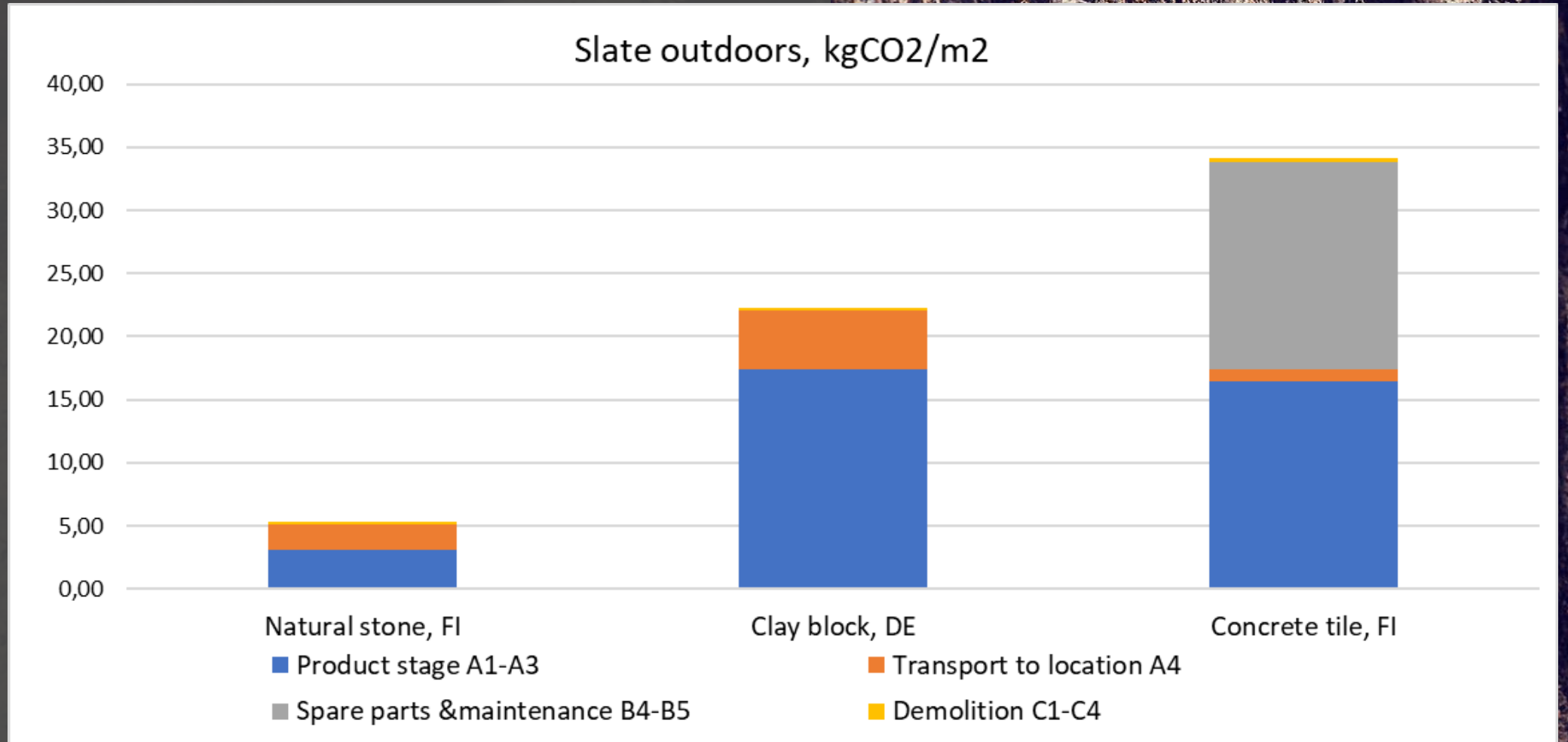
Floor & facade tile, 20 mm and 30 mm



Counter top, natural stone 30 mm, composite 20 mm



Slate, outdoors





LESSONS LEARNED

Key Take Aways

- EPD calculation is a **MUST-DO** in the near future.
- Make sure your own reporting is in order.
- Demand a separate guide for marketing purposes from the EPD consultant.
- Commit your management, team, people to the project.
- Communicate your efforts!



Key Key Take Aways

This is
a major opportunity
for natural stone!

Think outside the box!



Useful Links

EPDs from Finland

<https://www.eco-platform.org/list-of-all-eco-epd.html>

Filter by #Product manufacturer" KIVI ry

Simple EPD Guide

<https://www.oneclicklca.com/simple-epd-guide/>

What is an EPD?

<https://www.igbc.ie/what-is-an-epd/>

Different EPD databases around the world

<https://www.oneclicklca.com/support/faq-and-guidance/documentation/database/>

Download City Policy Framework

<https://www.embodiedcarbonpolicies.com/>

World Green Building Council

<https://www.worldgbc.org/>



Connect with KIVI

LinkedIn

<https://www.linkedin.com/company/kivi-stone-from-finland>

Instagram

https://www.instagram.com/kivi_stonefromfinland/

Material will be shared and you can send questions to me.

Sini Laine, Executive Director

sini.laine@kivi.info





Thank you for listening!