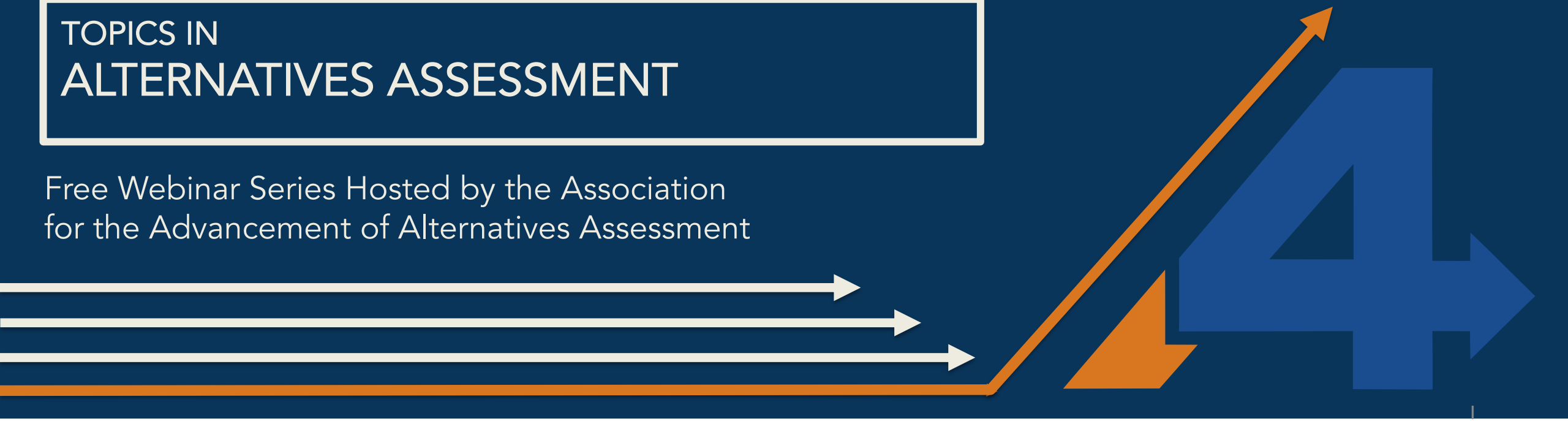
A4 2022 Quarterly Webinar:

Forging Tighter Connections Between Goals for Climate and Safer Chemicals

Wednesday, July 12, 2022
12:00 PM - 1:00 PM ET

TOPICS IN
ALTERNATIVES ASSESSMENT

Free Webinar Series Hosted by the Association
for the Advancement of Alternatives Assessment



ASSOCIATION FOR THE ADVANCEMENT OF ALTERNATIVES ASSESSMENT

HOW WE MAKE A DIFFERENCE

- Advancing the science, practice, and policy of alternatives assessment and informed substitution
- Fostering international and interdisciplinary collaboration
- Supporting a community of practitioners dedicated to the adoption of safer chemicals

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Goals for Today

Our Climate Crisis: A current focus on decarbonization solutions related to the use of fossil fuels mainly in the energy and transportation sectors

- These solutions miss the fact that fossil fuels are also the fundamental building blocks of the chemicals and materials ***that are embedded in more than 96% of manufactured goods.***

Goals for today:

- Learn about current initiatives, policy and business strategies as well as resources and tools that are supporting both climate and safer chemical goals.
- Hear from you: ***what opportunities can you share that are forging tighter connections between needs that are addressing climate mitigation and a transition to safer chemicals?***

Today's Speakers

Dorren Fedrigo
Climate Action Network - Europe

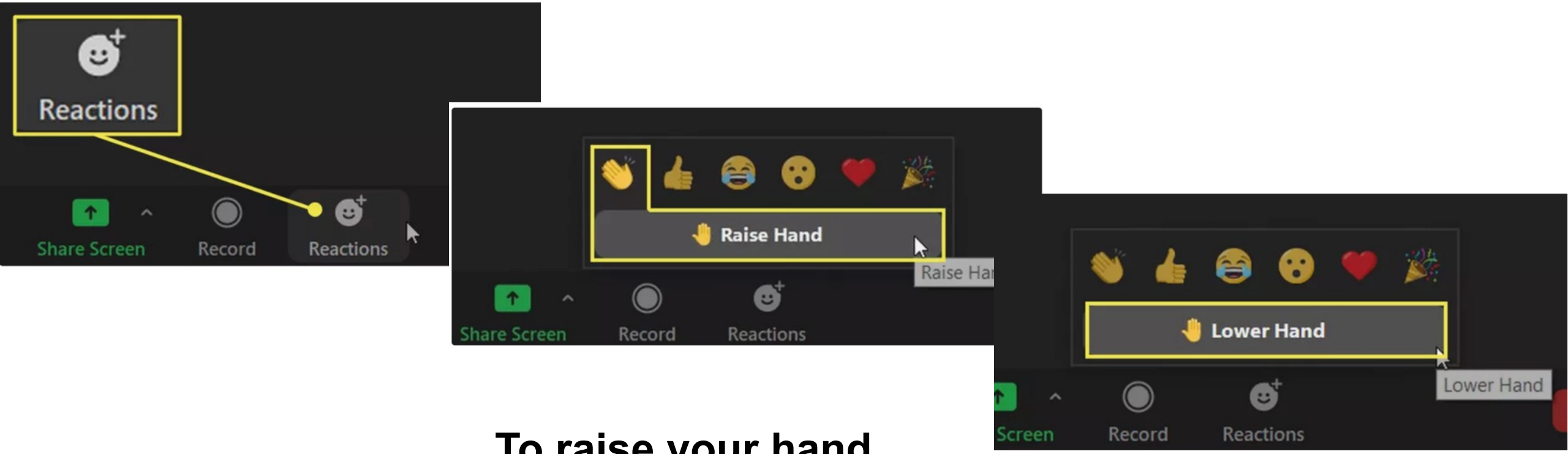
Mikhail Davis
Interface

Teresa McGrath
Healthy Building Network

Webinar Logistics

- We are using Zoom Meeting. **Please keep your lines muted and your videos off.**
- Use "**speaker view**" in Zoom – it will offer the best viewing experience.
- During the Q&A portion of the session, if you wish to ask a question or offer a comment, **please raise your hand** [we'll show you how in the next slide]
  - Feel free to unmute your line and turn on your video so engage more voices/faces in the conversation.
  - Also feel free to use the chat.
- This session is being recorded and will be posted with the slide deck on the A4 website: www.saferalternatives.org
- An inventory of resources described on this webinar will also be posted on the A4 website.

We want to engage you during the Q&A - Please raise your hand in Zoom



To raise your hand

1. Open the “reactions” button
2. Hit “raise hand” button
3. Please “lower hand” button afterwards

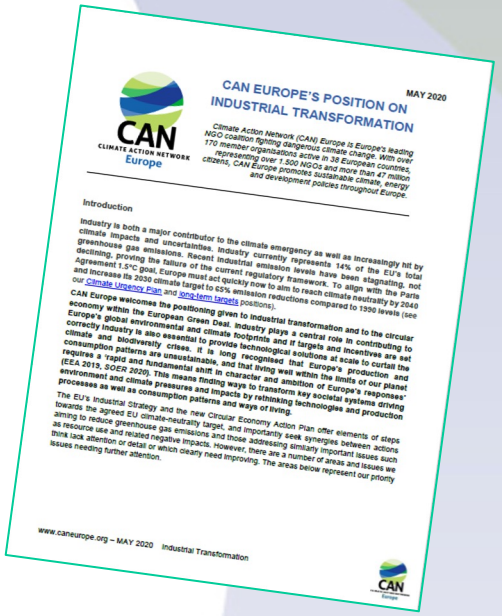
✓ The chat will work too

Association for the Advancement of Alternatives Assessment (A4): Webinar on toxics-climate nexus

Doreen Fedrigo
Industrial Transformation Policy Coordinator,
Head of Production and Consumption team
12.07.2022

CAN Europe's industry work

- from organisation's historical industrial *decarbonisation* approach to industrial *transformation*, beyond 'technological decarbonisation'
- not just fuel/feedstock shifts and energy efficiency and carbon capture and storage (and use)
- linking climate and biodiversity and pollution through 'circularity' and pushing for 'integrated approaches'
- Taking up from CAN-EEB 2020 Paris Agreement Compatible (PAC) Scenario report and adding more detail to demands
  - ecodesign of **products/production** processes
  - **technologies** in a context (technologies when needed, environmental & social profiles, no burden-shifting)
  - **business models** for sharing/leasing/circularity
  - **demand-side management**
  - **sufficiency** (absolute reduction of resource & energy use)


CAN EUROPE'S POSITION ON INDUSTRIAL TRANSFORMATION

MAY 2020

CAN Europe

Introduction

Industry is both a major contributor to the climate emergency as well as increasingly hit by climate impacts and uncertainties. Industry currently represents 14% of the EU's total greenhouse gas emissions. Recent industrial emission levels have been stagnating, not declining, proving the failure of the current regulatory framework. To align with the Paris Agreement 1.5°C goal, Europe must act quickly now to aim to reach climate neutrality by 2040 and increase its 2030 climate target to 65% emission reductions compared to 1990 levels (see our Climate Urgency Plan and long-term targets positions).

CAN Europe welcomes the positioning given to industrial transformation and to the circular economy within the European Green Deal. Industry plays a central role in contributing to Europe's global environmental and climate footprints and if targets and incentives are set correctly industry is also essential to provide technological solutions at scale to curtail the climate and biodiversity crises. It is long recognised that Europe's production and consumption patterns are unsustainable, and that living well within the limits of our planet requires a 'rapid and fundamental shift in character and ambition of Europe's responses' (EEA 2019, SOER 2020). This means finding ways to transform key societal systems driving environment and climate pressures and impacts by rethinking technologies and production processes as well as consumption patterns and ways of living.

The EU's Industrial Strategy and the new Circular Economy Action Plan offer elements of steps towards the agreed EU climate-neutrality target, and importantly seek synergies between actions aiming to reduce greenhouse gas emissions and those addressing similarly important issues such as resource use and related negative impacts. However, there are a number of areas and issues we think lack attention or detail or which clearly need improving. The areas below represent our priority issues needing further attention.

www.caneurope.org – MAY 2020 Industrial Transformation

CAN Europe's industry work

(Soft law)

- **EU ETS** *(Emissions Trading System)*
- CBAM *(Carbon Border Adjustment Mechanism)*
- **Ecodesign of Sustainable Products Regulation** (Sustainable product policy initiative) – *ESPR/SPPI*
- IED *(Industrial Emissions Directive)*

priority files

- **Industrial Forum**
- Alliances
  - (**European Clean Hydrogen Alliance**)
  - (**European Raw Materials Alliance**)
- High Level Group on Energy-Intensive Industries
- **High Level Roundtable on Safe and Sustainable Chemicals**
- **Processes4Planet Partnership Feedback Panel**
- **Just Transition Platform** – steel and horizontal

CAN CLIMATE ACTION NETWORK Europe

CAN Europe's transition pathway recommends

CAN Europe's transformation pathway recommendations for the chemical industry

Climate Action Network (CAN) Europe is Europe's leading NGO coalition fighting dangerous climate change. With over 185 member organisations active in 38 European countries, representing over 1.700 NGOs and more than 40 million citizens, CAN Europe promotes sustainable climate, energy and development policies throughout Europe.

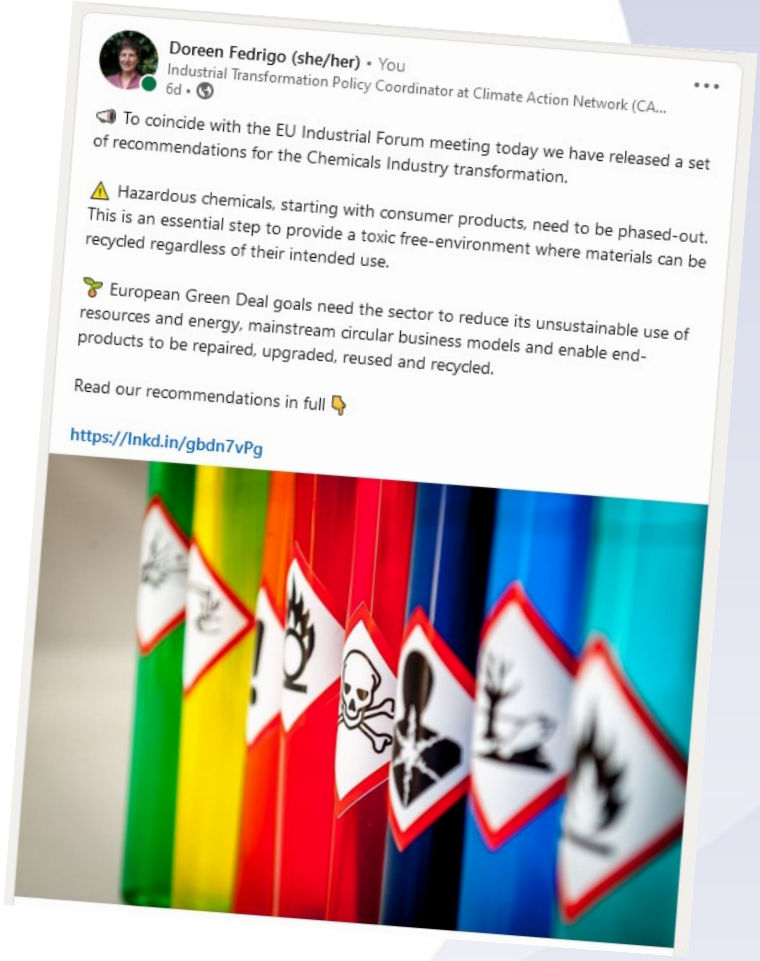
Executive Summary

The chemical industry is one of the central energy-intensive industries (EIIs) to be targeted in EU efforts to reduce environmental and social impacts through the European Green Deal. As a dynamic and heterogeneous sector, it features considerable potential to help address climate-related and wider environmental and social crises. Opportunities to transform the industry to reduce its negative impacts are significant and this transformation must go beyond pure decarbonisation to make it a pollution and toxic-free, net zero emission, circular, and socially just industry.

The sector's transformation needs are various, not least because of its extreme dependency on fossil fuels and its unsustainable product profiles – whether as pesticides, chemicals or plastics, many of its products are problematic. The transformation that began with a sea-change revolution in chemicals management legislation is complex and explains why the EU has published a Chemicals Strategy for Sustainability while also introducing a chemicals chapter to an EIIs transition pathway process to be published in late 2022. Instead of addressing key negative impacts at the heart of its business activities - especially its fossil fuel dependency for both energy and feedstock, its pollution profile and the hazardousness of most of its products - the sector continues to resist profound structural changes needed to achieve its transformation.

For the chemicals industry to truly contribute to wider efforts to step back from several environmental and social brinks - from climate and habitat destruction, to pollution and impacts on human and non-human health - a transformation pathway is needed. The issues to address are systemic and horizontal in relation to the different policies involved and the sector's creativity and dynamism must be harnessed to:

- **Phase-out hazardous chemicals and their export**
- **Reduce material and energy use**
- **Design plastic for clean circularity and reduce plastic production**
- **Improve product design to extend its lifetime**
- **Mainstream circular business models in the chemical industry**



https://caneurope.org/can-europes-transformation-pathway-recommendations-for-the-chemical-industry/

Phase-out hazardous substances

- **Majority of the EU citizens is worried** about the impact of chemicals present in everyday products on both the environment (90%) and human health (85%) (Eurobarometer)
- **Substitute** them with already existing safer alternatives
- **Multiple sources of exposure**
- Risk assessments generally conducted on a **single chemical basis**, not on combined/multiple exposures
- Safer/cleaner product **design is suitable for circularity** approach as the presence of hazardous substances hampers recyclability

75%

of chemicals produced in Europe are hazardous to human health and/or the environment - EEA

CAN
CLIMATE ACTION NETWORK
Europe

Reduce material and energy use

- **Top energy consumer for all industry sectors** (18.5% of all industry final energy use)
- **0.6%** of total energy consumption from **renewables and biofuels**
- Feedstock data showing disproportionately dependence on mineral oil with only **9% being represented by renewable materials**
- **Forecasts about electrification, hydrogen and biomass use, coupled with growth, indicating that efficiency needs to be coupled with sufficiency**

CAN
CLIMATE ACTION NETWORK
Europe

Develop product design to extend its lifecycle

- **Design phase**: where the majority of emissions can be **avoided from the start** (up to 80% of products' environmental impacts determined at the design phase)
- **Mismatch between** available **products** and their **recycling profiles**
- Delivery of safer and more durable **products able to enter a clean circular loop** (repair, upgrade, remanufacture, reuse and finally recycling)
- **The majority of waste** deriving from different waste streams **is not recycled** (European Environment Agency)

CAN
CLIMATE ACTION NETWORK
Europe

Thank you for your attention

Doreen Fedrigo
Industrial Transformation Policy Coordinator
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With support from:
Giulia Nardi
Industrial Transformation Policy Officer
giulia.nardi@caneurope.org

Resources:
Industrial Tranformation position:
https://caneurope.org/can-europe-position-on-industrial-transformation/

PAC Scenario report:
https://caneurope.org/achievements/paris-agreement-compatible-pac-scenario-vision-transition/

Embodied Carbon & Material Health

Teresa McGrath

HBN HEALTHY BUILDING NETWORK
KNOW BETTER

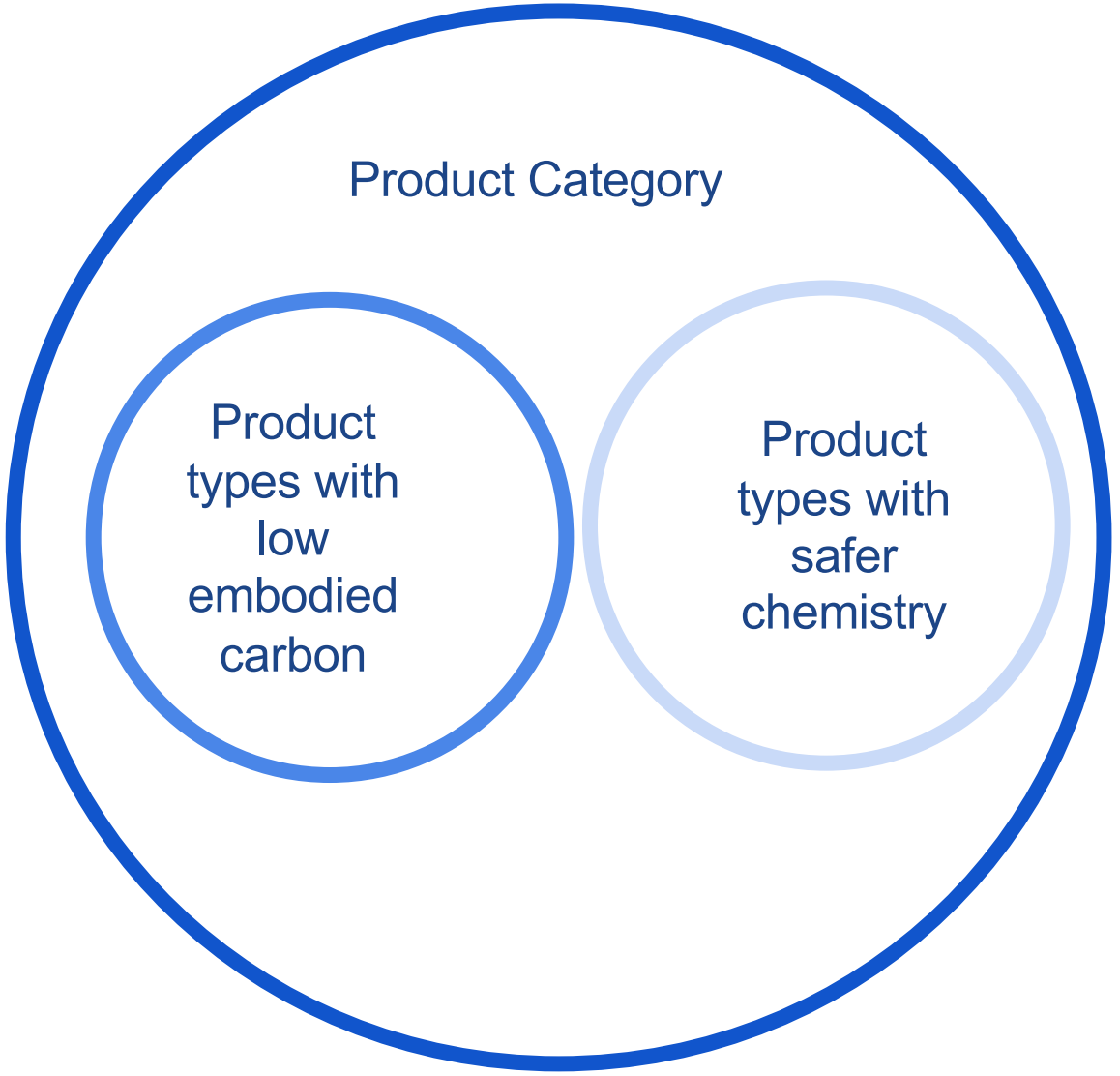
Why Materials Matter

People spend up to 90% of their time in buildings, and indoor air contains some pollutants at 2 to 5 times higher levels than outdoor air. (EPA Report on the Environment)

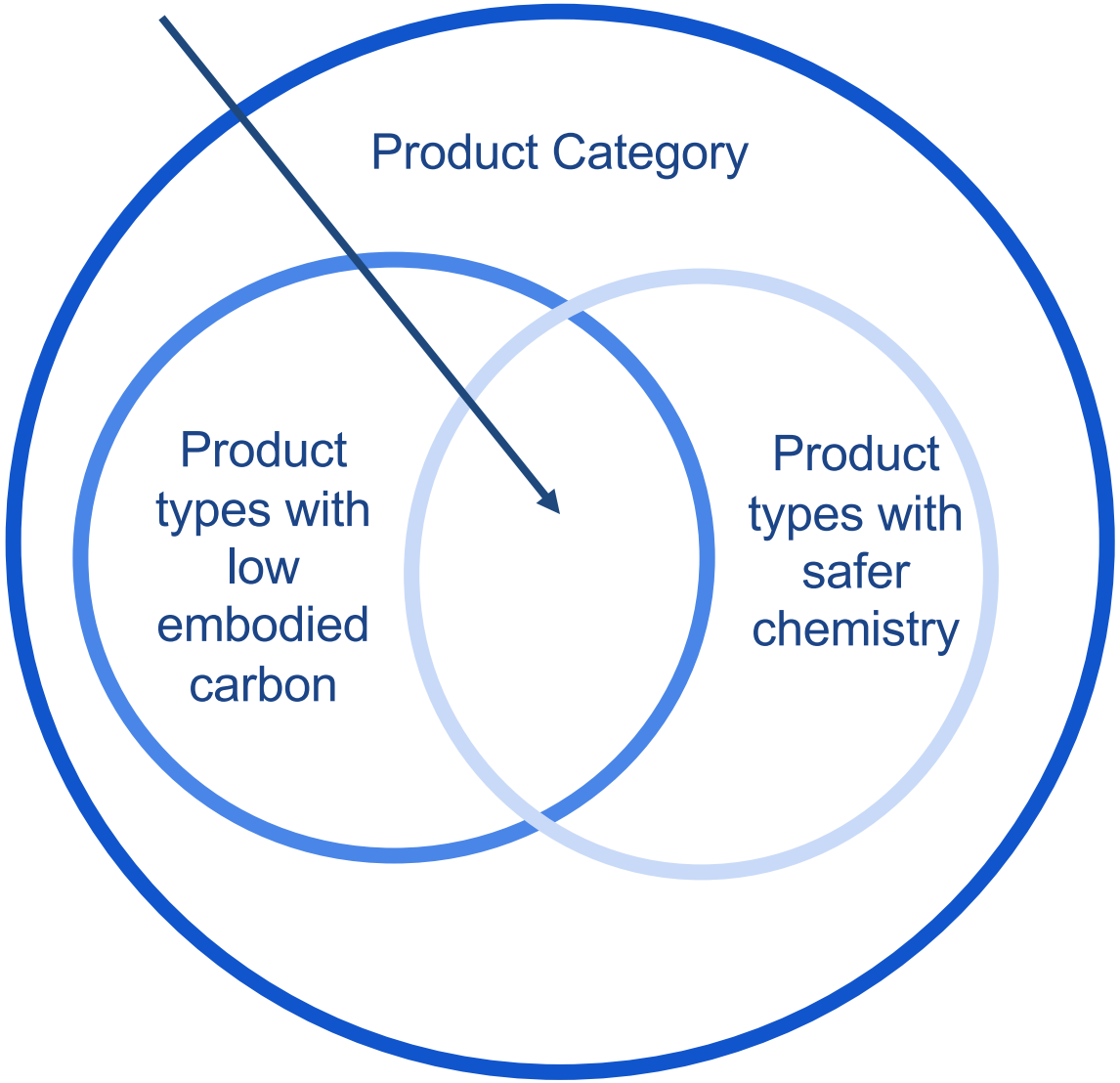
Climate and Chemicals

- Direct impacts of high global warming potential chemicals
- Toxic chemicals increase communities' vulnerability to climate change effects
- Tighter buildings can trap more chemicals inside

Current perception



Preferred product types



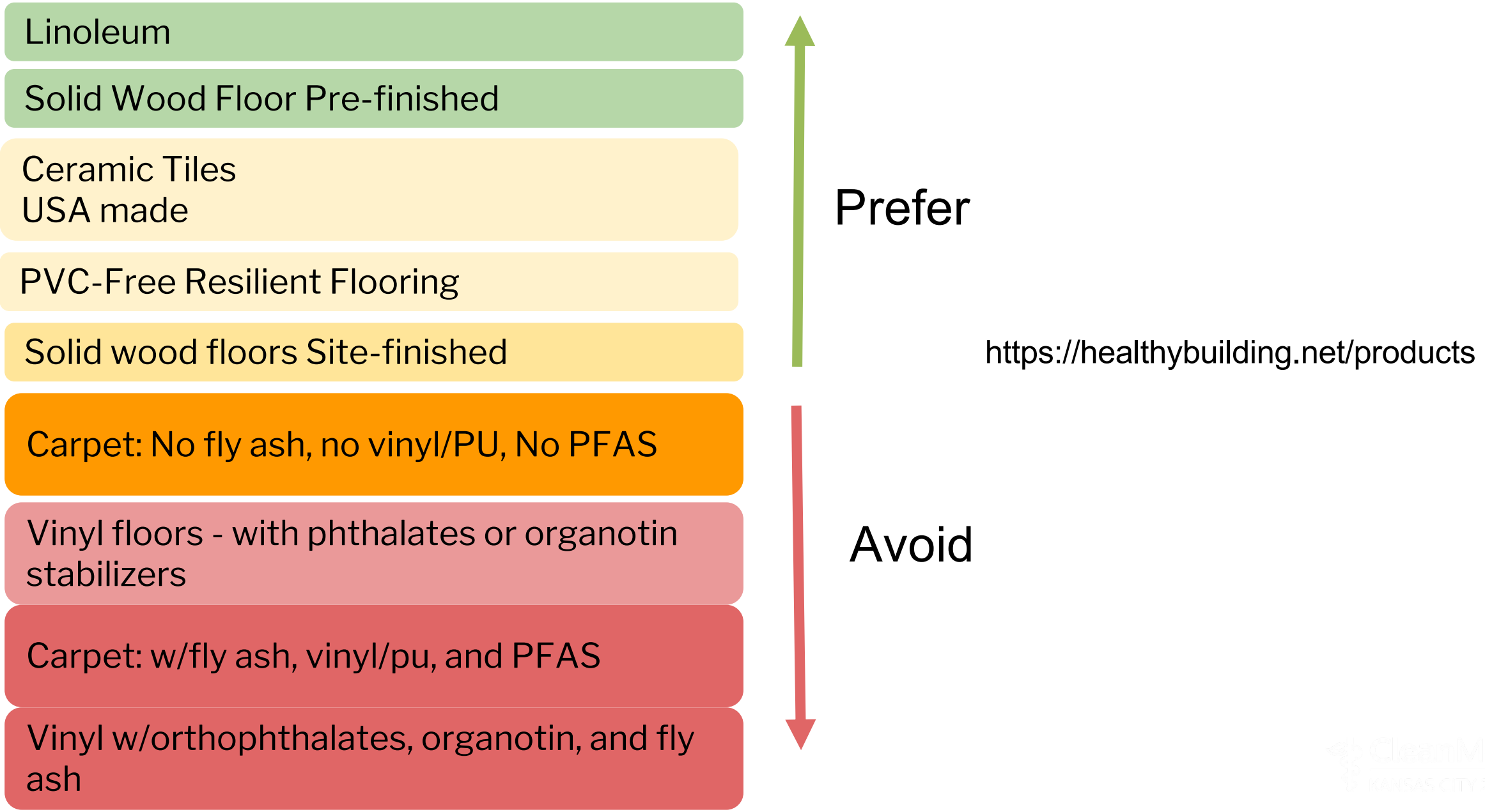
Flooring: Carpet & Resilient

HBN KNOW BETTER

Material health drivers flooring

- Toxic heavy metals in fly ash
- Manufacturing releases from vinyl and polyurethane production
- Per and polyfluoroalkyl substances PFAS

Product types first! Material health

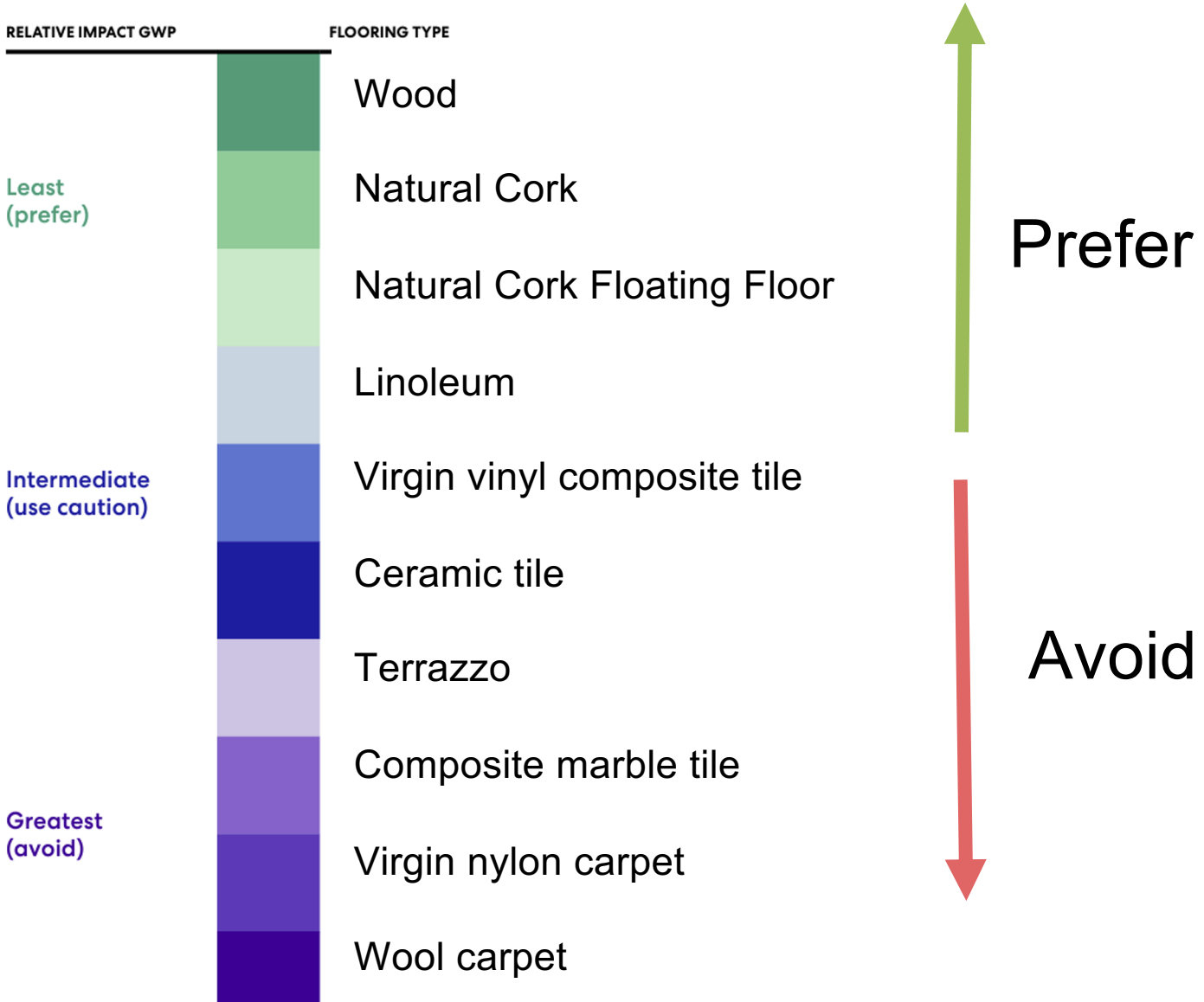


https://healthybuilding.net/products

Embodied carbon drivers flooring

- **Carpet fiber (nylon) raw material production**
- **Resin production**
- **Service life**

Product type first! Embodied carbon



Prefer

Avoid

Bowyer, Jim. “Comparison of Environmental Impacts of Flooring Alternatives”. Dovetail Partners Consuming Responsibly Report No. 4.January 14, 2019 https://dovetailinc.org/upload/tmp/1579549416.pdf

Intersection of material health and carbon - Flooring

- Alignment
  - Long service life
  - Biobased product types: e.g. wood, linoleum, cork
  - Avoid virgin nylon carpet
  - Use circular and safe materials
- Conflict
  - PVC product types

Product Categories

Flooring

Paint

Drywall

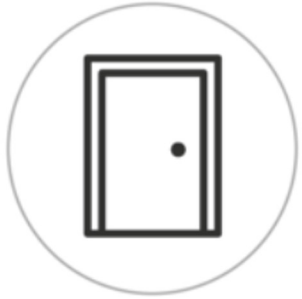
Insulation

Flooring Installation

Sealants

Countertops

Cabinetry & Millwork



Doors

Turf

Water Pipes

Roofing

Know Better, Do Better

Thank You

Teresa McGrath
tmcgrath@healthybuilding.net

HBN HEALTHY BUILDING NETWORK

Three Lenses of Materials & Health

Transparency, Trade-offs and Transformation in the Flooring Industry

Mikhail Davis, Director of Technical Sustainability
July 11, 2022


How do you know if these products are healthy and sustainable?

Courtesy of BrightWorks Sustainability

This is how we see it.

We use three lenses to make decisions on materials. These are our guideposts.

Embodied Carbon

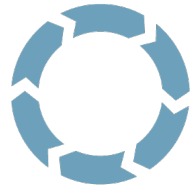
Measuring Embodied Carbon in everything you make and choose.

Green Chemistry

Choosing products based in Green Chemistry

Circular Economy

Partnering with businesses engaged in Circular Economy practices.



AIA Materials Pledge

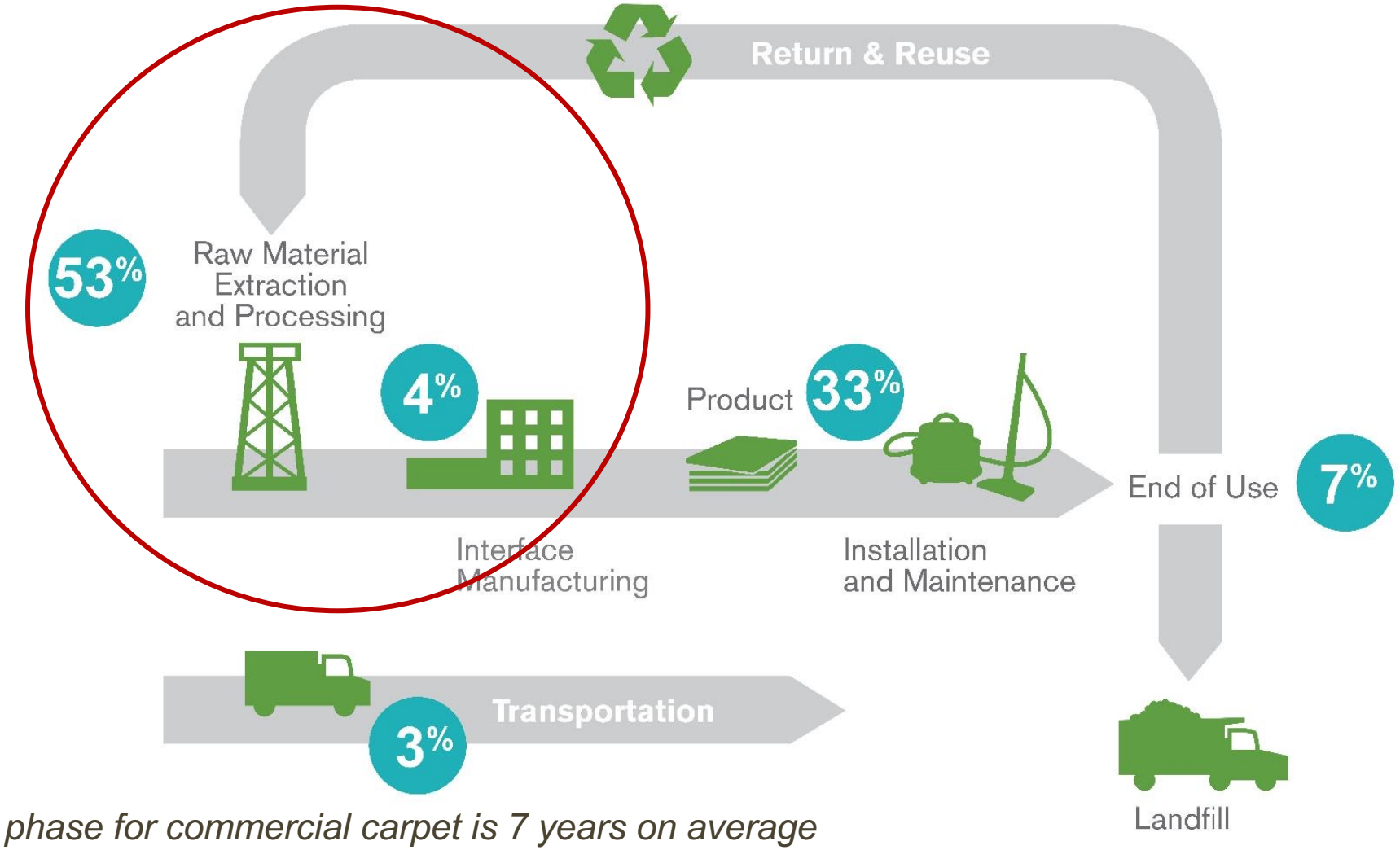
- **Support Climate Health** by preferring products which reduce carbon emissions and ultimately sequester more carbon than emitted.

- **Support Human Health** by preferring products which support and foster life throughout their lifecycles and seek to eliminate the use of substances that are hazardous.

- **Support a Circular Economy** by reusing buildings and materials; and by designing for material efficiency, long life, and perpetual cycling
- **Support Ecosystem Health** by preferring products which support and regenerate the natural air, water, and biological cycles of life through thoughtful supply chain management and restorative company practices.
- **Support Social Health and Equity** by preferring products from manufacturers who secure human rights in their own operations and in their supply chains, and which provide positive impacts for their workers and the communities where they operate.

Interface Carpet Tile | Lifecycle Carbon Impacts

GREENHOUSE GAS EMISSIONS ARE PREDOMINANTLY FROM RAW MATERIALS



**Note: Use phase for commercial carpet is 7 years on average*


$1,200

Interface®

Introducing Our CQuest™ Backings Line

CQUEST™GB

The next evolution of our GlasBac™ backing. It features the same superior performance with a construction of post-consumer recycled content from carpet tiles, bio-based additives, and pre-consumer recycled materials, which are net carbon negative.

CQUEST™BIO

A non-vinyl bio-composite backing made with bio-based and recycled fillers which are net carbon negative.

CQUEST™BIOX

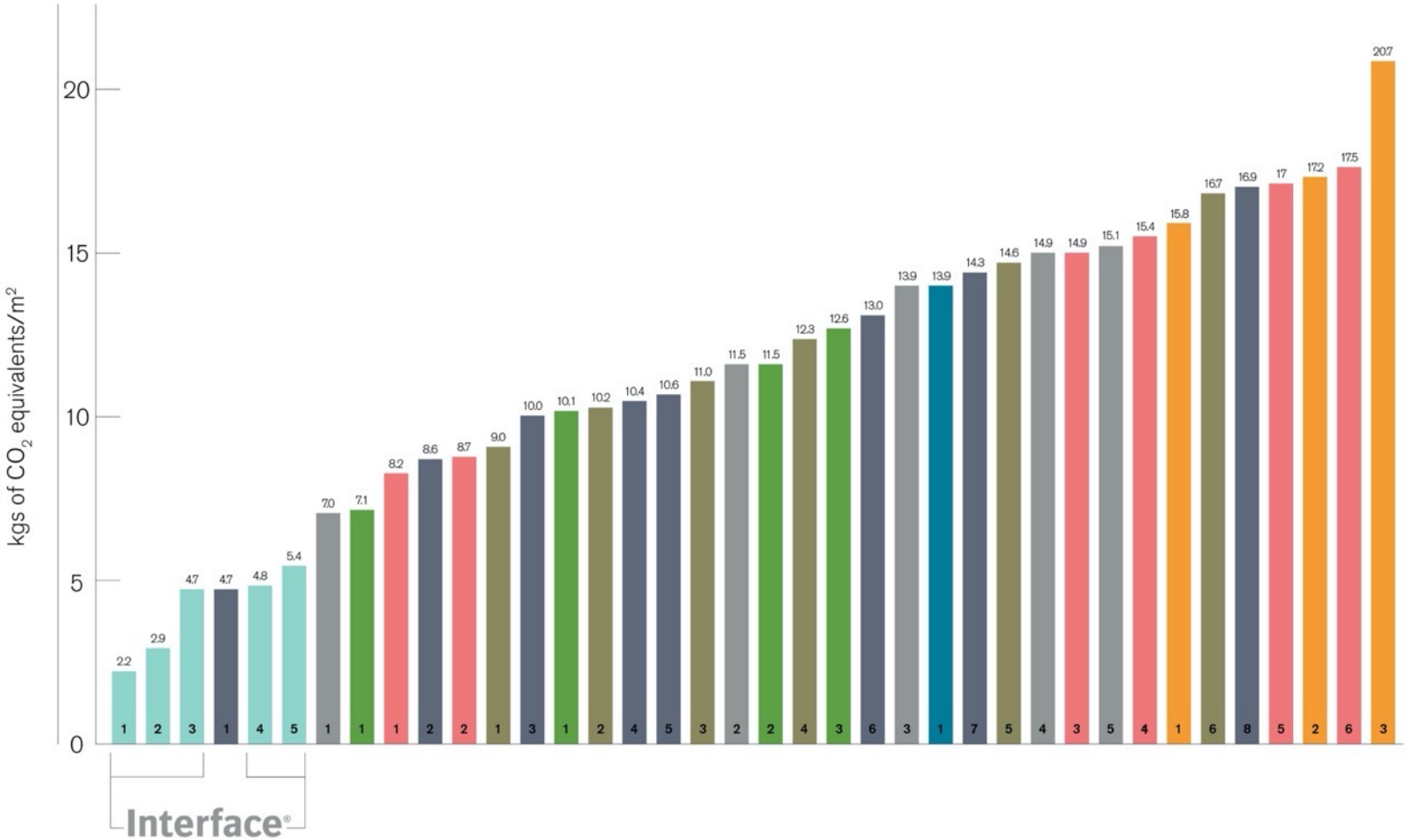
Our backing that stores the most carbon. It's the same material make-up as CQuest™Bio with a higher concentration of carbon negative materials.

To learn more about our complete line of backings visit interface.com/backings and to learn more about carbon negative backings visit interface.com/carbonnegative

NOTE: Carpet tiles made with CQuest™Bio and CQuest™GB, while they do not have a negative embodied carbon footprint, are carbon neutral throughout their full product life cycle through our Carbon Neutral Floors™ program.

CRADLE-TO-GATE, FROM RAW MATERIAL EXTRACTION THROUGH MANUFACTURING

Carpet Tile Carbon Footprint Comparison



Bentley
1 Afirma II Solution Dyed
2 Affix Hardback Solution Dyed
3 Afirma II Piece Dyed
4 Affix Hardback Piece Dyed
5 NexStep Cushion Solution Dyed
6 NexStep Cushion COLORCAST (Piece Dyed)

Interface Americas
1 CQUEST GB
2 CQUEST Bio
3 CushionBac Renew
4 Glasbac
5 ReadyBac

J+J Flooring
1 Nexus Modular Backing

Mannington
1 Infinity 2
2 rEvolve
3 rEvolve II

Milliken
1 WellBac Comfort Backing ES/ESP Solution Dyed Nylon 6
2 WellBac Comfort Plus Backing Nylon 6
3 WellBac Comfort Backing Solution Dyed Nylon66
4 WellBac Comfort Plus Backing Solution Dyed Nylon66
5 WellBac Comfort Backing Digital Dyed Nylon 66
6 WellBac Comfort Plus ES/ESP Digital Dyed Nylon 66

Mohawk
1 Ecoflex ONE
2 Ecoflex Matrix
3 Ecoflex Air
4 Ecoflex ICT
5 Ecoflex NXT

Shaw/Patcraft*
1 EcoWorx carpet tile with EcoSolution Q100
2 StrataWorx carpet tile with EcoSolution Q
3 StrataWorx carpet tile with Solution Q or SolutionQ Extreme
4 Ecoworx Platinum carpet tile with EcoSolution Q
5 Ecoworx Gold carpet tile with EcoSolution Q
6 Ecoworx with Nylon 66
7 EcoLogix carpet tile with EcoSolution Q
8 EcoLogix carpet tile with Nylon 66

**Shaw/Julie Industries also publishes EPDs for ESD carpet tile but GWP values are identical to the Shaw/ Patcraft branded products*

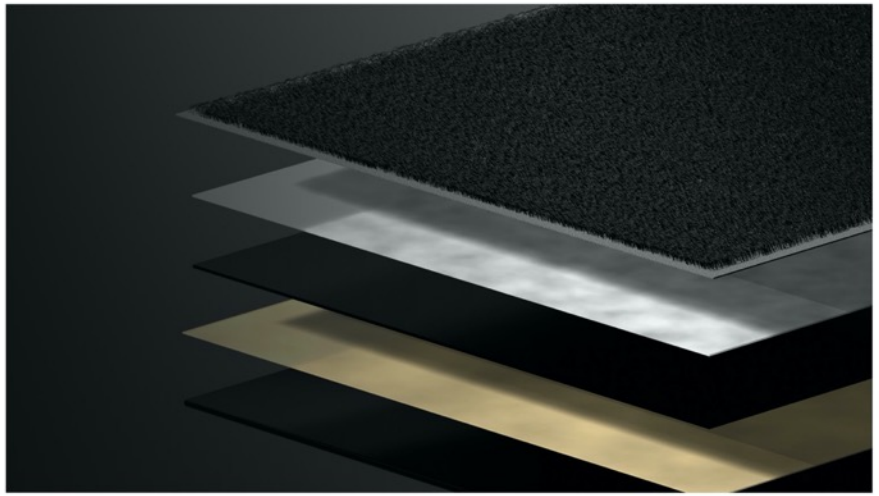
Tarkett Tandus Centiva
1 ethos Modular with Recycled Nylon
2 ethos Modular
3 ER3 Modular
4 Flex-Aire Cushion Modular

The carbon footprint values are taken from publicly available third party verified Environmental Product Declarations. Although Environmental Product Declarations generally have limited comparability, the characterization factor for each product's carbon footprint is the same across all of these Environmental Product Declarations. This data is geographically limited to United States manufacturing and the above metrics do not compare any product outside of the United States. Updated May 2022

EMBODIED BEAUTY

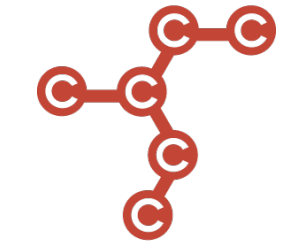
OUR PATH TO CARBON NEGATIVE.

Our path to carbon negative products is part of bringing our Climate Take Back™ mission to life, with the aim to reverse global warming.



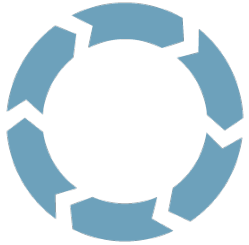
PRODUCT TOKYO TEXTURE [-CO2] **COLOR** 106621 TAUPE **INSTALLED** HERRINGBONE
PRODUCT VINTAGE KIMONO **COLOR** 106593 TAUPE **INSTALLED** ASHLAR

What about Green Chemistry?



Embodied Carbon

Green Chemistry



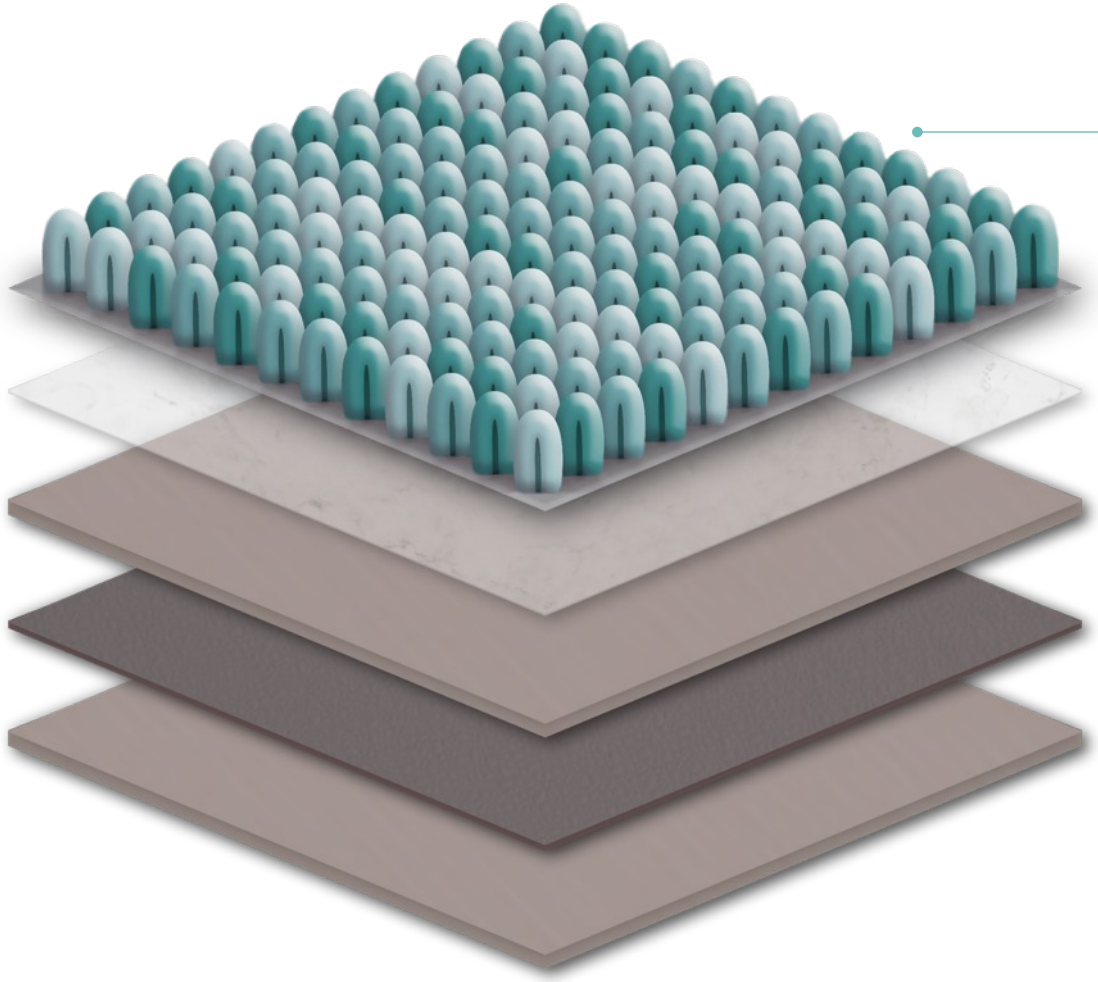
Circular Economy

Interface®

What is Interface CQuestGB carpet tile made of?

85-91% recycled or bio-based content with 18-26% post-consumer recycled content

42% USDA certified bio-based content



Yarn / Pile: 75-95% total recycled content, PCR content (50% standard) from sources like fishing nets and old carpet

Primary Backing

Latex: 82% recycled (post-industrial limestone and recycled & VAE plastic w/ carbon capture content)

Thermoplastic Composite: 97% recycled or bio-based: post-industrial vinyl and scrap, PCR ground carpet tile/LVT with bio-oil and bio-filler

Fiberglass

Thermoplastic Composite (see above)

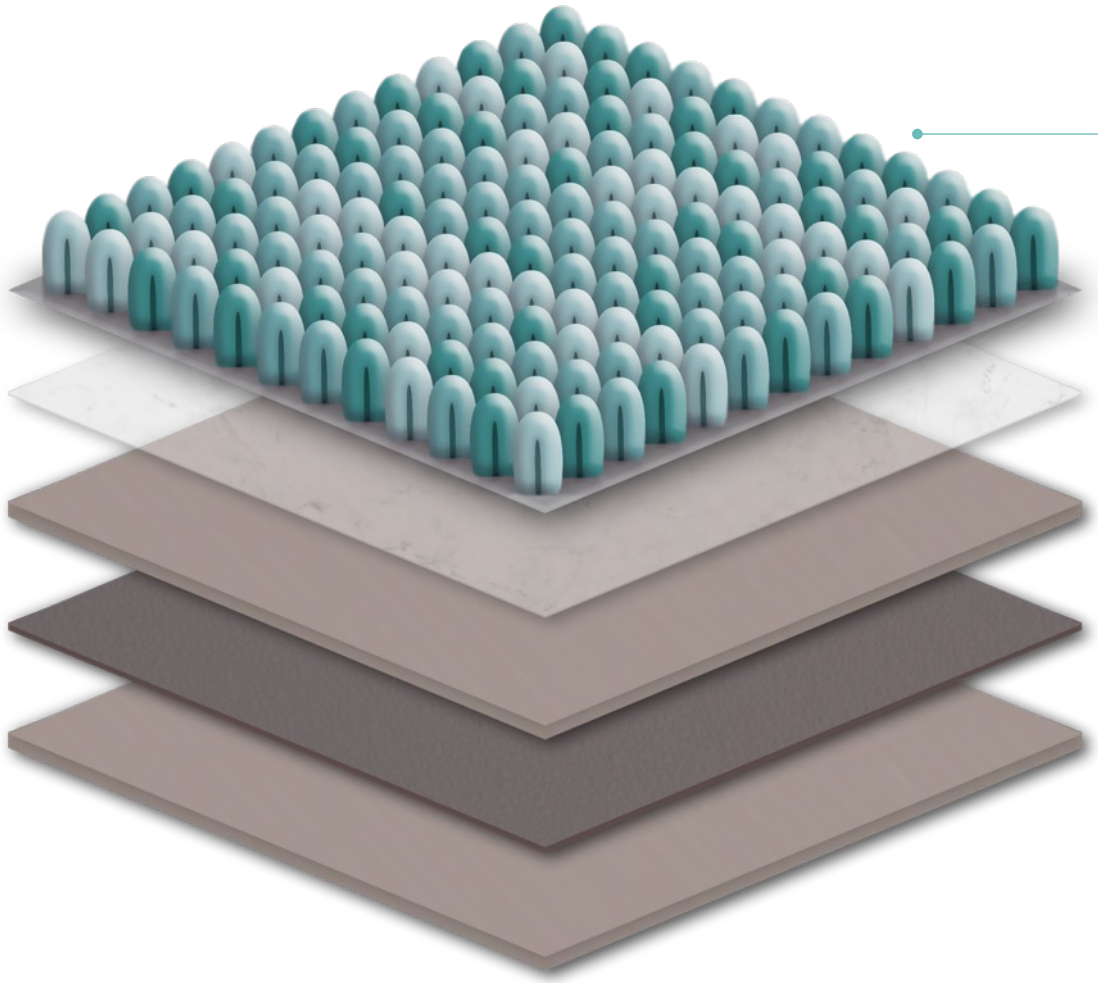
Certified Closed Loop Product (12%) and at least 66% Recyclable

Interface®

What is Interface's non-vinyl CQuestBio carpet tile made of?

77-84% recycled or bio-based content with 1-18% post-consumer recycled content

47% USDA certified bio-based content



Yarn / Pile: 75-95% total recycled content, PCR content (50% standard) from sources like fishing nets and old carpet

Primary Backing

Latex: 82% recycled (post-industrial limestone and recycled & carbon capture VAE plastic)

Thermoplastic Composite: 83% recycled or bio-based limestone filler, bio-resin, EVA plastic, bio-oil and bio-filler

Fiberglass

Thermoplastic Composite (see above)

GreenCircle CERTIFIED — *Certified at least 65% Recyclable*

cradletocradle

Declare.SM

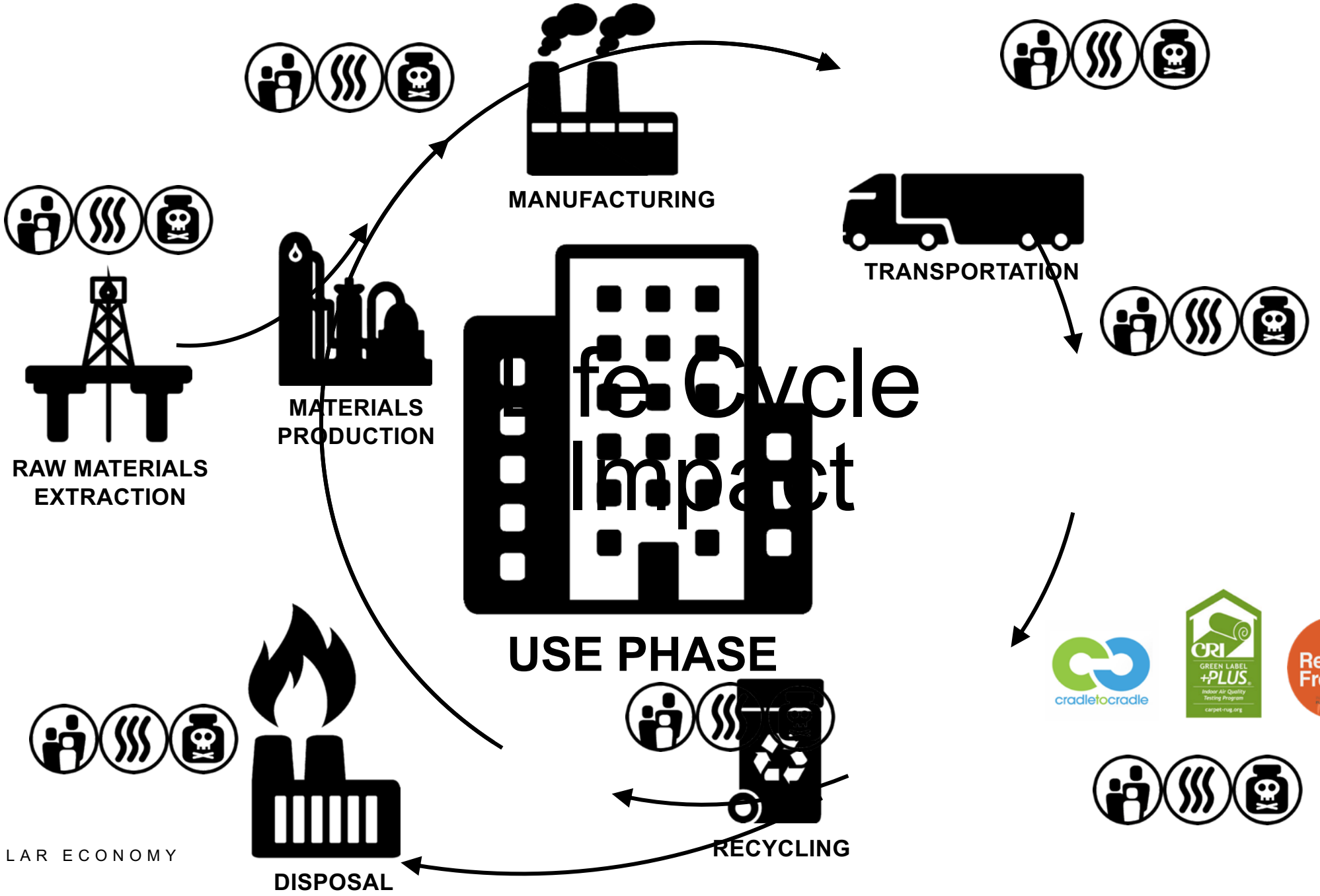
Antimony oxide (Sb2O5)	1314-60-	0.1-1%	
Benzene, 1,1'-methylenebis[2-isocyanato-	2536-05-2	< 0.1%	
Benzene, 1,1'-oxybis-, tetrapropylene derivs., sulfonated, sodium salts	119345-04-9	< 0.1%	
Benzene, C10-13-alkyl derivs.	67774-74-7	< 0.1%	
FLUOROALKYL ACRYLATE COPOLYMER	1188515-72-1	< 0.1%	
STYRENE-BUTADIENE-VINYLIDENE CHLORIDE BASED POLYMER	208448-00-4	1-10%	

VOC Content: N/

Third Party Verified

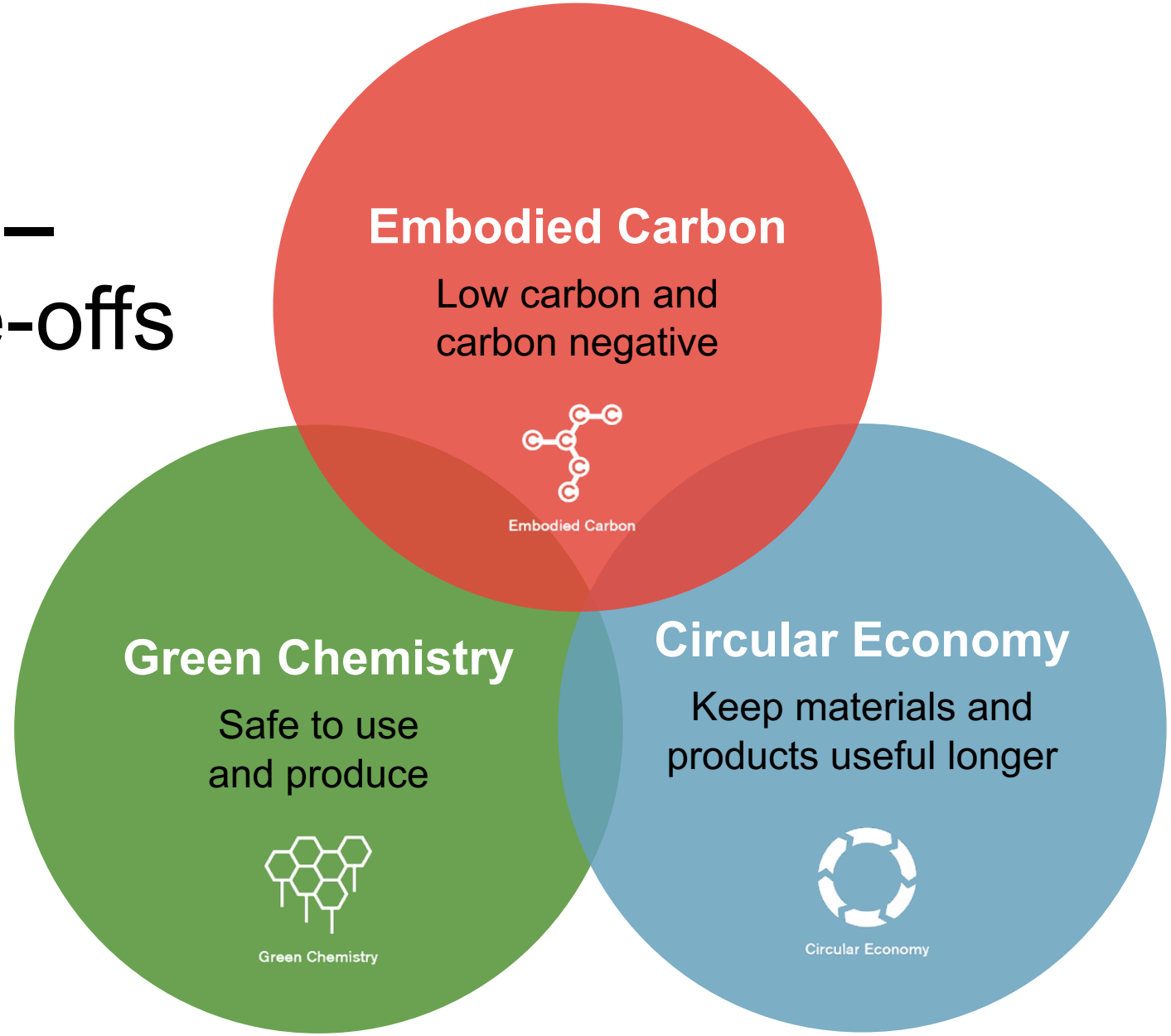
MANUFACTURER CLAIMS VERIFIED BY WAP Sustainability INTERNATIONAL **LIVING FUTURE** INSTITUTE℠ declareproducts.com

cradletocradle



CIRCULAR ECONOMY

The Three Lenses – Overlaps and Trade-offs



1994	NOW-2020	WHAT'S NEXT...
		
Smokestacks	Factories to Zero	Factories as Forests
		
Take Make Waste	Recycled, closed loop materials	Products from dispersed materials
		
Petroleum intensive products	Low carbon products	Products that sequester carbon
		
Disconnected supply chain	Sustainable supply chain	Supply chain that benefits all life

Thank you

Mikhail Davis
Director of Technical Sustainability –Americas
Interface
mikhail.davis@interface.com

Upcoming A4 Activities

- Watch your emails for A4's announcements about upcoming webinars in early fall and winter.

- A4 is in the early stages of planning a workshop: evaluating mixtures in the context of an alternatives assessment.

A4 website: www.saferalternatives.org

THANK YOU!

Please complete evaluation poll before you leave