LCA and Product Carbon Footprints for the plastics industry

- From business cases to implementation -

Danish Plastics Industry Conference

Mara Boitz - Global Account Manager at Carbon Minds

28.09.2023

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Agenda

Introducing Carbon Minds

Product Carbon Footprints: the Why, the How, the What

Supply Chain transparency with Carbon Footprint data

Summary & Q&A

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Taking net-zero chemical value chains from ambition to achievement

Data
Representative life-cycle inventory data for LCAs and PCF calculations

Strategy and Support
Environmental assessments and reduction strategies (make or buy)

Training
Life Cycle Assessment and inhouse methodologies & capacities

REFERENCES

5-HT Digital Hub Chemistry & Health, Agora Energiewende, AVIENT, Braskem, BRENNTAG, BYK, CLIB, covestro, DECHEMA, EVONIK, FUCHS, heubach, International Academy | RWTH Aachen University, Institut für Kunststoffverarbeitung, kunststoffland NRW e.V., kuraray, LANXESS, Lubrizol, SAP.io, TRICON, UPM Biofore Beyond Fossils, Wuppertal Institut

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LCA AND CARBON FOOTPRINTS

A fast-moving field

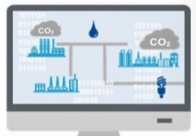
Industry in transition

1

ined-up approach to sustainable packaging

BASF calculates the CO_2 footprint of its products

March 22, 2021 | 10am and 3pm CET



BASF
We create chemistry

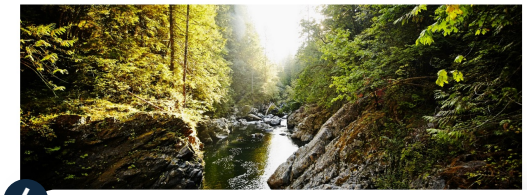
2

3

BRENNTAG Corporate

Sustainability | Investor Relations | Career | Media | About

Brenntag introduces new service to provide business partners with Product Carbon Footprint data to drive sustainability agenda



4

VENATOR

About us | Products and applications | Sustainability | Investor relations | Careers

Venator automates product carbon footprint with help from Atos

December 07, 2022

New partnership supports Venator's sustainability ambition

5

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TRINSEO STARTS ITS JOURNEY TOWARDS AUTOMATED PCF CALCULATION ACROSS ITS ENTIRE PORTFOLIO WITH ATOS

June, 22, 2022

New partnership takes Trinseo's net-zero ambition to the next level

HORGEN, Switzerland--(BUSINESS WIRE)-- Trinseo (NYSE: TSE), a specialty material solutions provider,and Atos today announced that Trinseo has started using Atos' recently launched digital solution to identify and monitor the carbon footprint of its entire portfolio. This will enable Trinseo to deliver superior product data on the carbon footprint of its products

6

CLARIANT

GENERAL INFORMATION ON METHODOLOGY

Product Carbon Footprint

PRODUCT CARBON FOOTPRINT (PCF)

7

covestro Global Corporate Website

Company | Solutions

Covestro Press / Digitalization driving sustainability forward

22 June 2023

Covestro established app for product carbon footprint calculation

Digitalization driving sustainability forward

[1] https://www.youtube.com/watch?v=ZqaTaVeF8c4
[2] https://vimeo.com/812808981
[3] https://corporate.brenntag.com/en/media/news/
[4] https://www.venatorcorp.com/investor-relations/financial-news/2022
[5] https://investor.trinseo.com/home/news/
[6] https://www.clariant.com/en/Sustainability/Climate-Change/
[7] https://www.covestro.com/press/

Source: https://www.thedrum.com/

Why does the chemical and plastics value chain work on product carbon footprints?

Why do companies work on product carbon footprint calculations?

Because product carbon footprint calculations create business value!

Reputation / customer requests	○ Meet requests from customers, investors, employees ○ Appeal & green company marketing
Risk mitigation & strategy	○ Compliance with laws and policies ○ Strategic planning and capacity building
Revenue security and license to operate	○ Optimize procurement of material and energy ○ Higher margins for low-emission products

And product carbon footprints can be used to fight climate change!

How can we achieve these business values and calculate product carbon footprints?

How can you start calculating product carbon footprints, increase your reputation and fulfill your customers requests?

Strategic management support and services

Training and methodology development

Collect data and calculate

PRODUCT CARBON FOOTPRINTS

Reduce emission of your products and fight climate change

How can you start calculating product carbon footprints, increase your reputation and fulfill your customers requests?

PRODUCT CARBON FOOTPRINTS

Strategic mana supp ser

Make it or buy it ? - Two pathways for the same goal

Collect data and calculate

Training and methodology development

Reduce emission of your products and fight climate change

What is the most important factor to get product carbon footprints calculated?

Trust & Consistency

- Be transparent and open about your approach
- Stick to existing standards, accepted by industry
- Agree on a standard that you will follow

UEIL/ATIEL method in consistency with TfS, Catena-X, PEF, API & ISO standards

The Product Carbon Footprint Guideline for the Chemical Industry

PEF/OEF

ISO

Catena-X

TÜVRheinland CERTIFIED

Certified Calculation Method
Regular Surveillance

www.tuv.com
ID 0000081021

3rd party certification
For Carbon Minds cm.chemicals database

Ingredients for PCFs for you or your service provider

Without data no calculation is possible!

1. Data for your processes and your value chain

- Your systems (e.g., ERP)
- LCA databases
- Suppliers

Good decisions come from good data

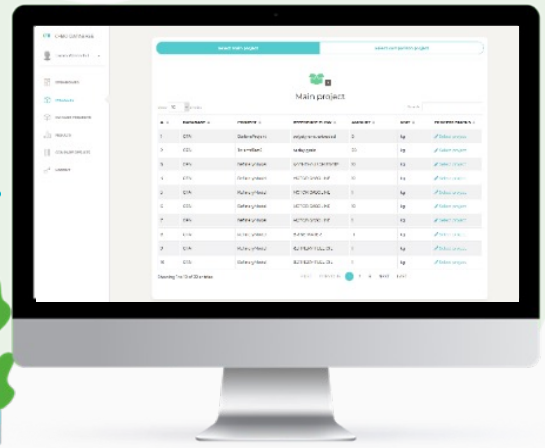
cm.chemicals

We work with

SimaPro, iPoint, openLCA, carbmee, MATLAB, Excel, Brightway2

and more...

Raw materials



Carbon footprints

We work with

PEF/OEF, Together for Sustainability, Catena-X, UBIL, atiel

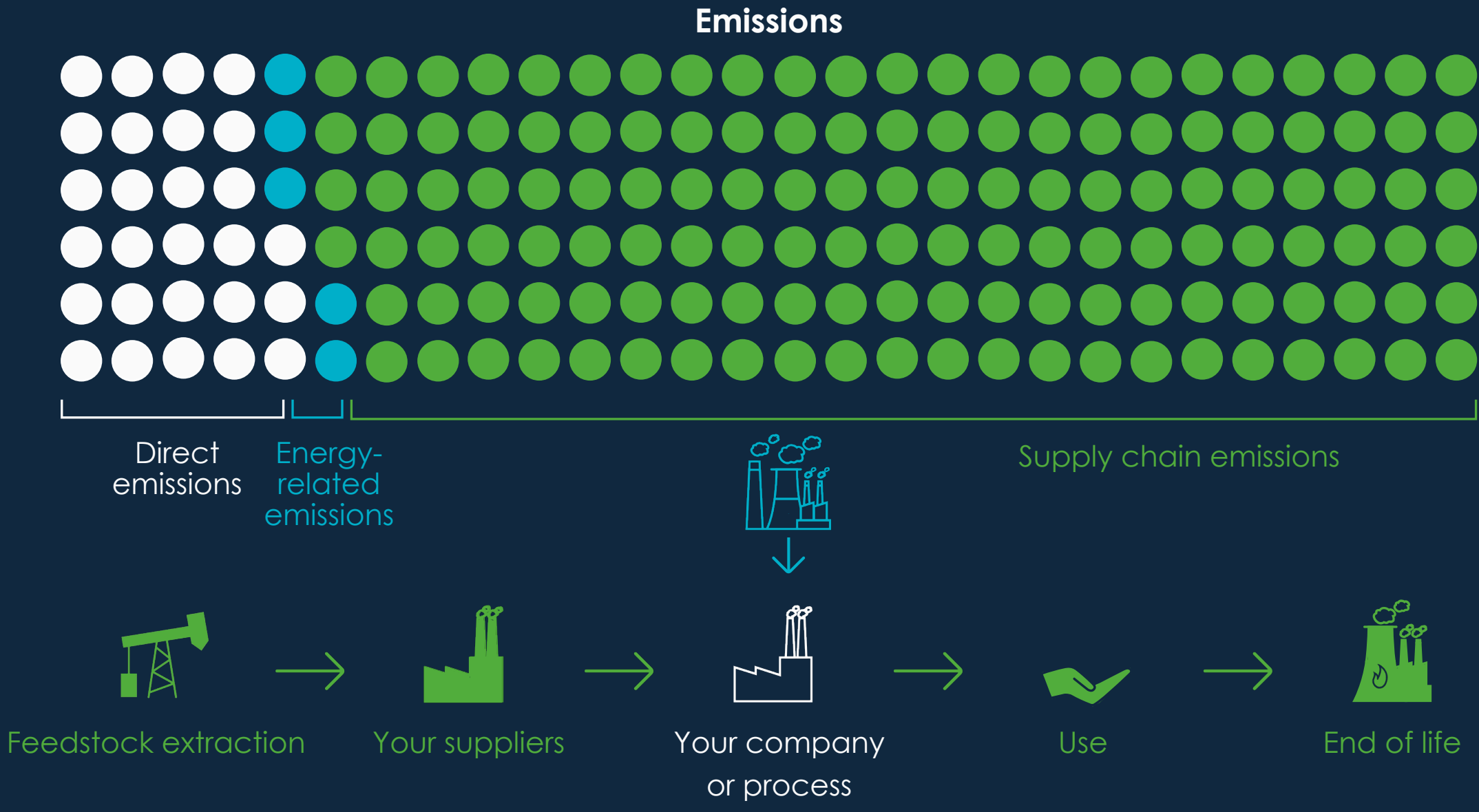
PDF

2. IT system and software to calculate your PCFs

3. Communication, standards and knowledge

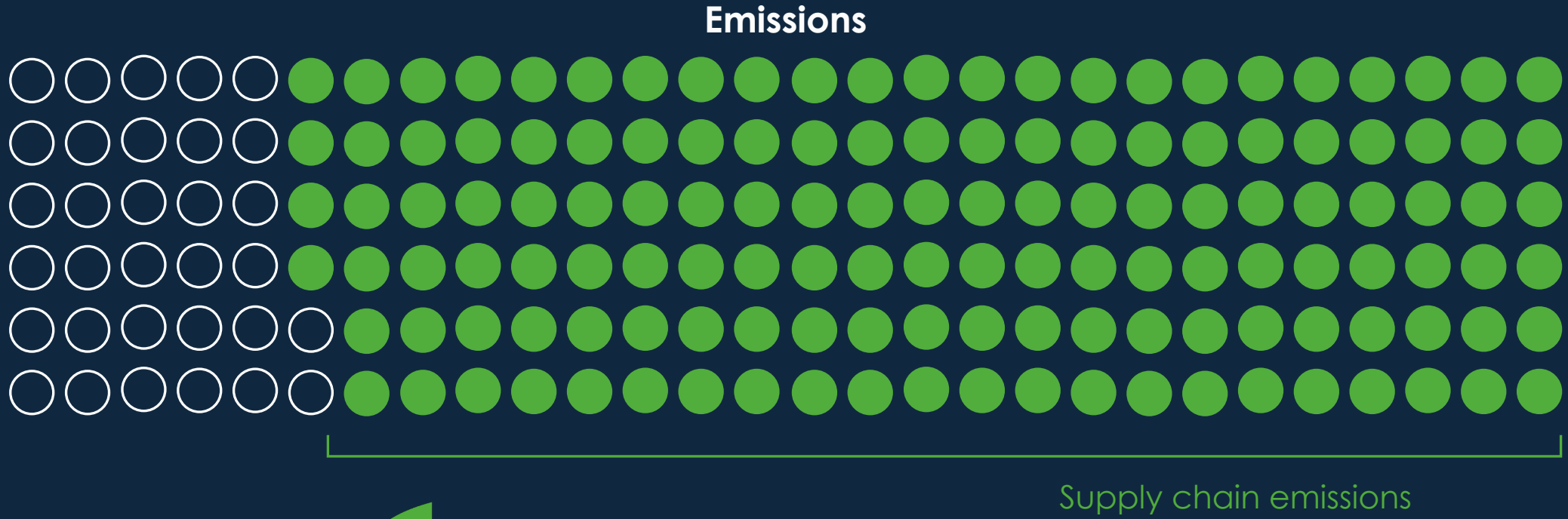
Climate impacts of chemical production

Example: corporate carbon footprints of major chemical producer



Climate impacts of chemical production

Example: corporate carbon footprints of major chemical producer



Lack of transparency in supply chain emissions is a major barrier to reducing emissions

– SCIENCE BASED TARGET INITIATIVE

Challenge #1
Coverage

Challenge #2
Actionability

Challenge #3
Quality

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DATABASE

Certified Calculation Method
Regular Surveillance
TÜVRheinland CERTIFIED
www.tuv.com
ID 0000081021

Coverage
120,000+ datasets covering 1,000+ chemicals and plastics

Specific
190 regions and over 100 individual production routes

Certified
Methodology in compliance with ISO 14040, 14044, 14067and TfS – Together for Sustainability

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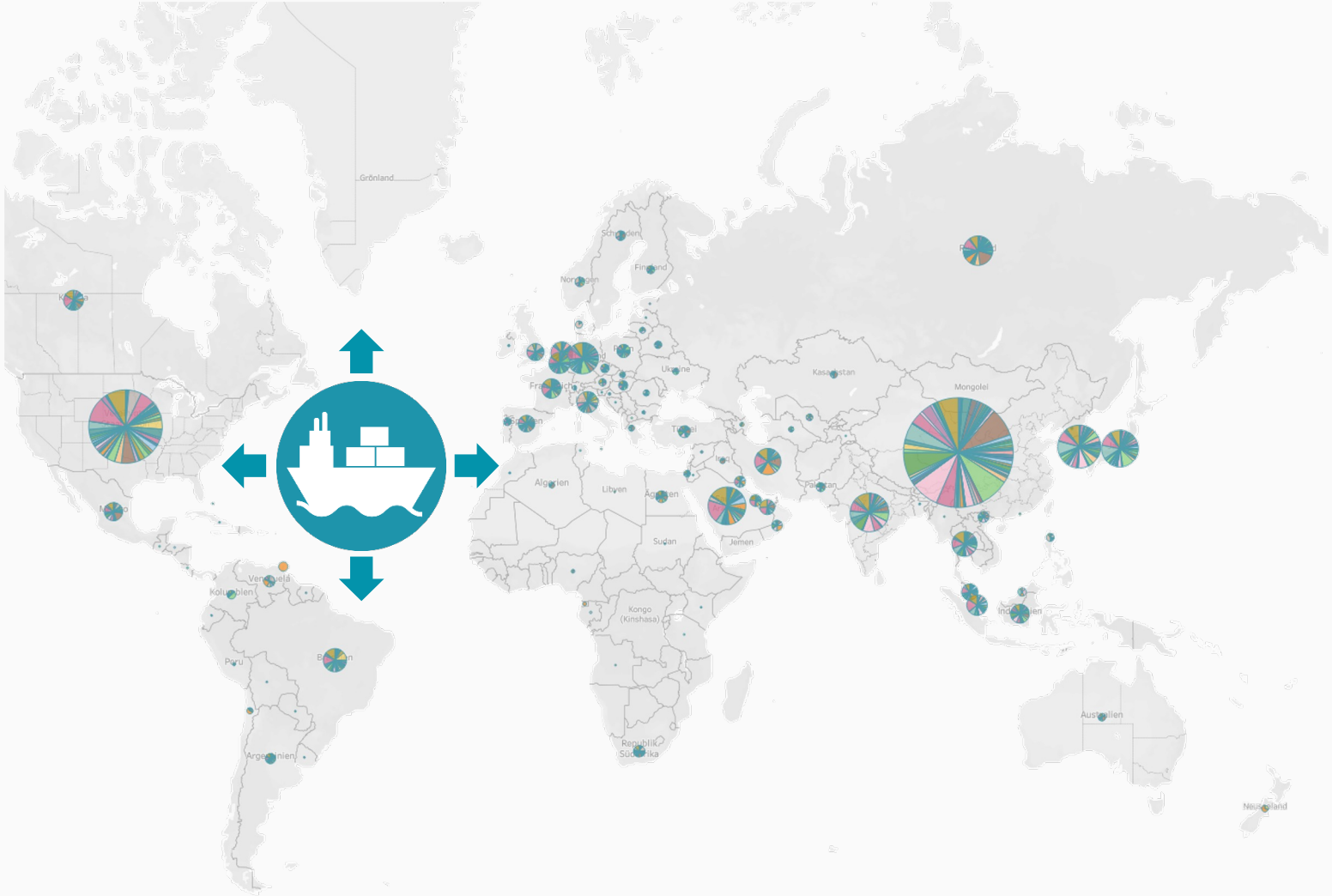
PCF – why representative data is important
Understanding the Structure of the Chemical Industry

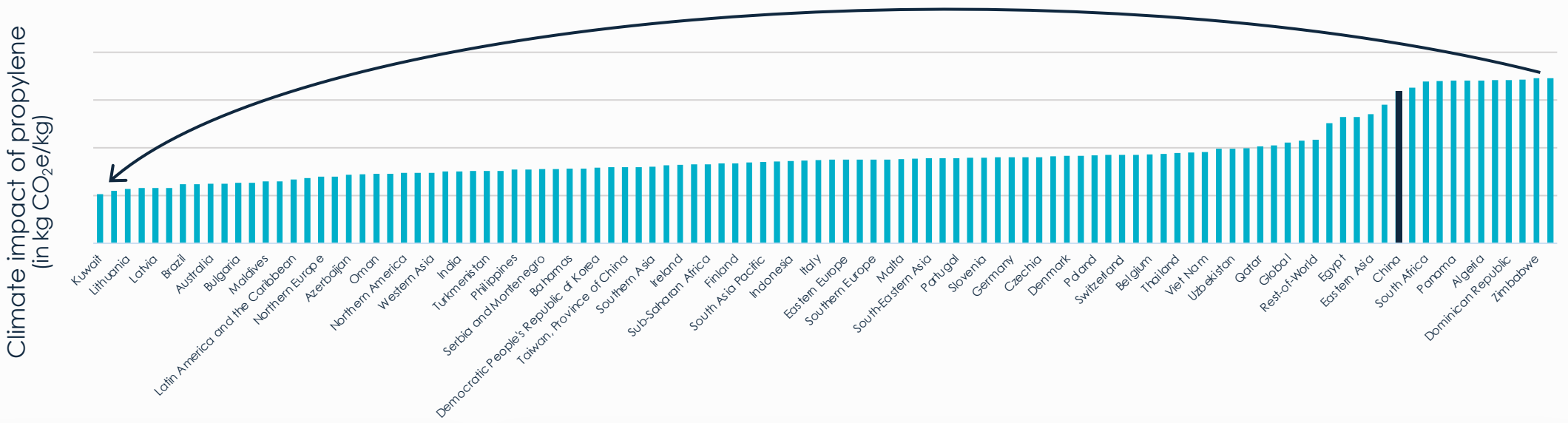
Production locations and volumes of chemicals

Technologies used and process parameters

International trade flows between production regions



Example of **cm.chemicals data**: Getting the full picture for **propylene**

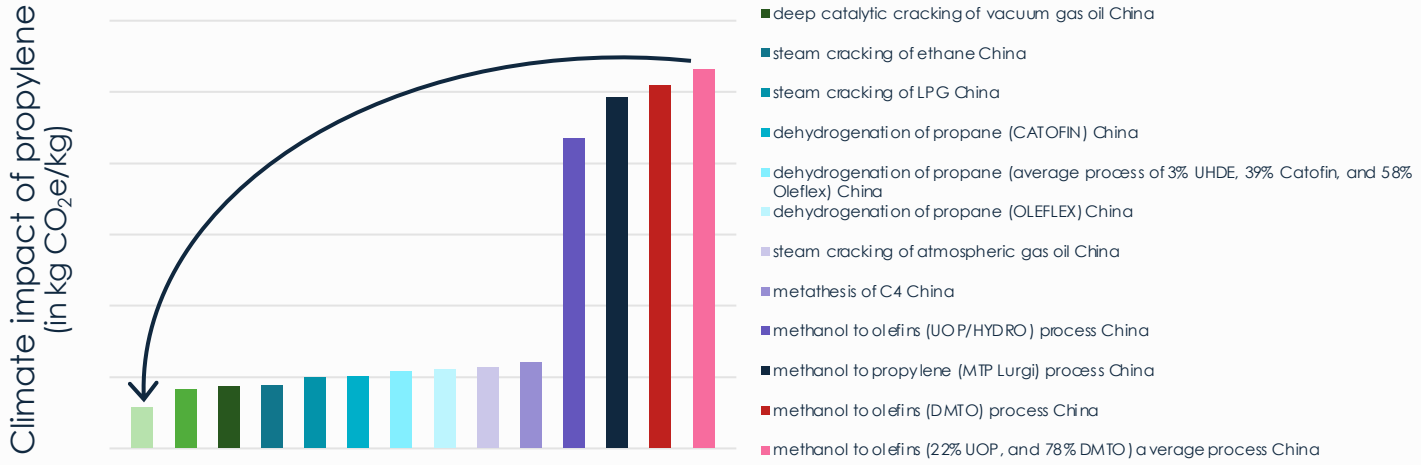


Identify differences in environmental impacts between countries…

…explore differences between technologies

Find reduction opportunities

Technologies in China



Why cm.chemicals

Benefits for sustainability teams

FIND DATA MORE EASILY
Find the data you need for your Product Carbon Footprint (PCF), LCA, and Scope 3 calculations more easily with the world's largest life-cycle database for chemicals and plastics.

IDENTIFY POTENTIAL REDUCTIONS
Explore regional and technological data to analyse hotspots, identify reduction potentials, and develop strategies to reach environmental targets.

COMPLIANCE AND CERTIFICATION
Communicate your results with confidence knowing that your calculation is based on data that‘s independently certified for ISO 14040/44 and 14067, as well as TfS.

Benefits for your company

RESPOND TO CUSTOMER REQUESTS
Broad data coverage in cm.chemicals enables you to develop a comprehensive set of product carbon footprints, even for a large product portfolio.

MARKET LOW-CARBON PRODUCTS AND MANAGE RISKS
Prepare for upcoming regulations, develop low-carbon offerings for new, “green” market segments and achieve climate targets by addressing supply chain emissions

TRUST AND REPUTATION
Using independently certififed data that‘s aligned with industry standards builds trust, reduces reputational risks from greenwashing claims, and helps position your company as an environmental leader.

Summary and Conclusion

Why

do companies work on PCF calculations?

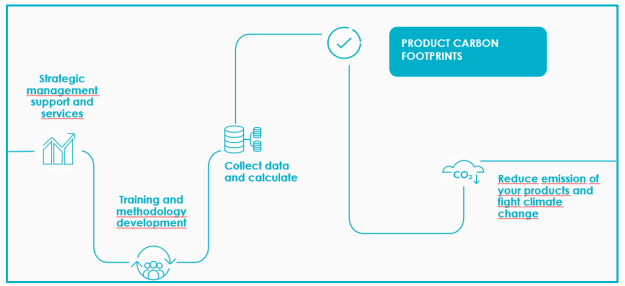
Because product carbon footprint calculations create business value!

And product carbon footprints can be used to fight climate change!

How

can you start calculating PCFs?

Find out what stage of development your company is in.



What

are the ingredients to calculate PCFs?

Build your capacities and use high quality, representative data.

Carbon Minds supports you at every stage of development in your PDF calculation through **consulting, training, or data**.

Thank you!

Mara Boitz

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Web: www.carbon-minds.com

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