

R<THiNK

Kiwa Trainingsen


Sustainability

The logo for nibe, featuring a horizontal yellow bar above the word "nibe" in a bold, lowercase, sans-serif font.





# A fully sustainable and planet neutral construction industry for our and future generations

 Search for sustainable topics

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 **TO R<THiNK**

15 januari 2018

# Adviesbureau NIBE voegt zich bij Kiwa Group

Het vooraanstaande adviesbureau voor duurzaam bouwen NIBE uit Bussum werkt per 1 januari 2018 nauw samen met de Kiwa Group. NIBE houdt zich onder meer bezig met Life Cycle Assessments (LCA's), Environmental Product Declarations (EPD's) voor bouwproducten en advisering op het gebied van duurzaam bouwen. Het bureau blijft zelfstandig en onder eigen naam opereren in de Kiwa Group. NIBE-directeur Mantijn van Leeuwen: "In de loop van de jaren

United Nations: in 1987, the United Nations Brundtland Commission defined sustainability as

***“meeting the needs of the present without compromising the ability of future generations to meet their own needs.*”**

Oxford dictionary

***“The quality of causing little or no damage to the environment and therefore able to continue for a long time”***

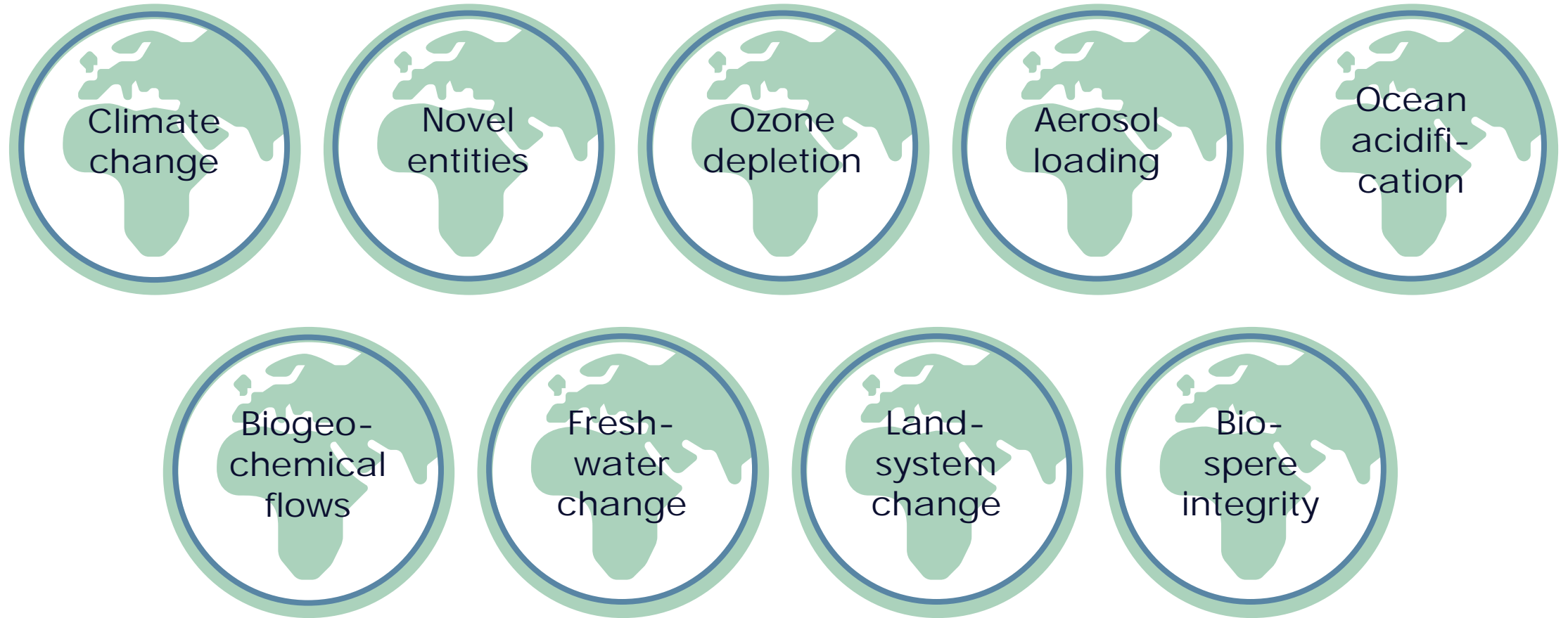




# Planetary boundaries What is the current status?

# Planetary boundaries

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9 planetary boundaries as assessed by Stockholm Resilience Centre | Stockholm University

**Do we cross any planetary boundaries?**

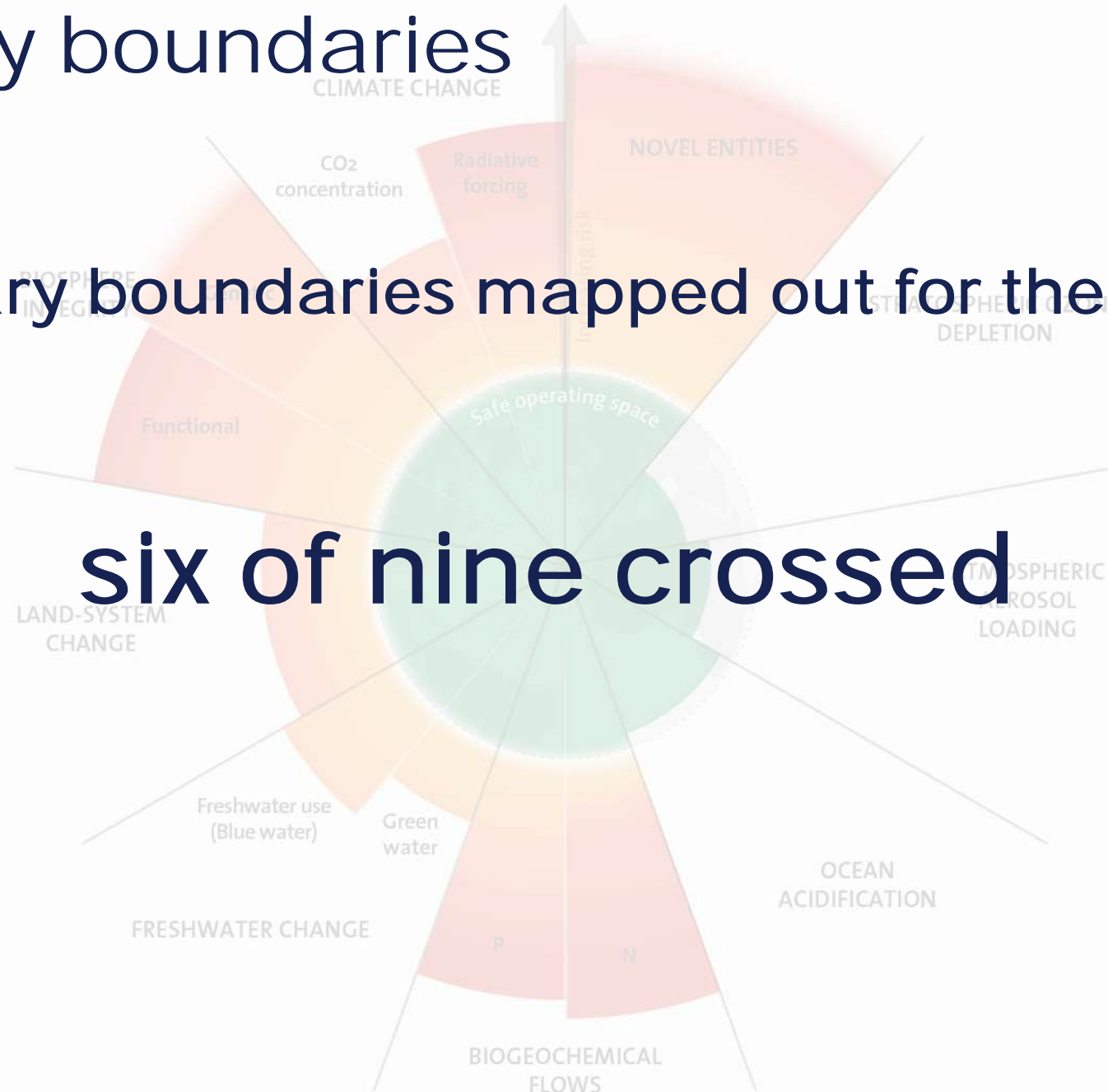
**If so, How many?**



# Planetary boundaries

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All planetary boundaries mapped out for the first time



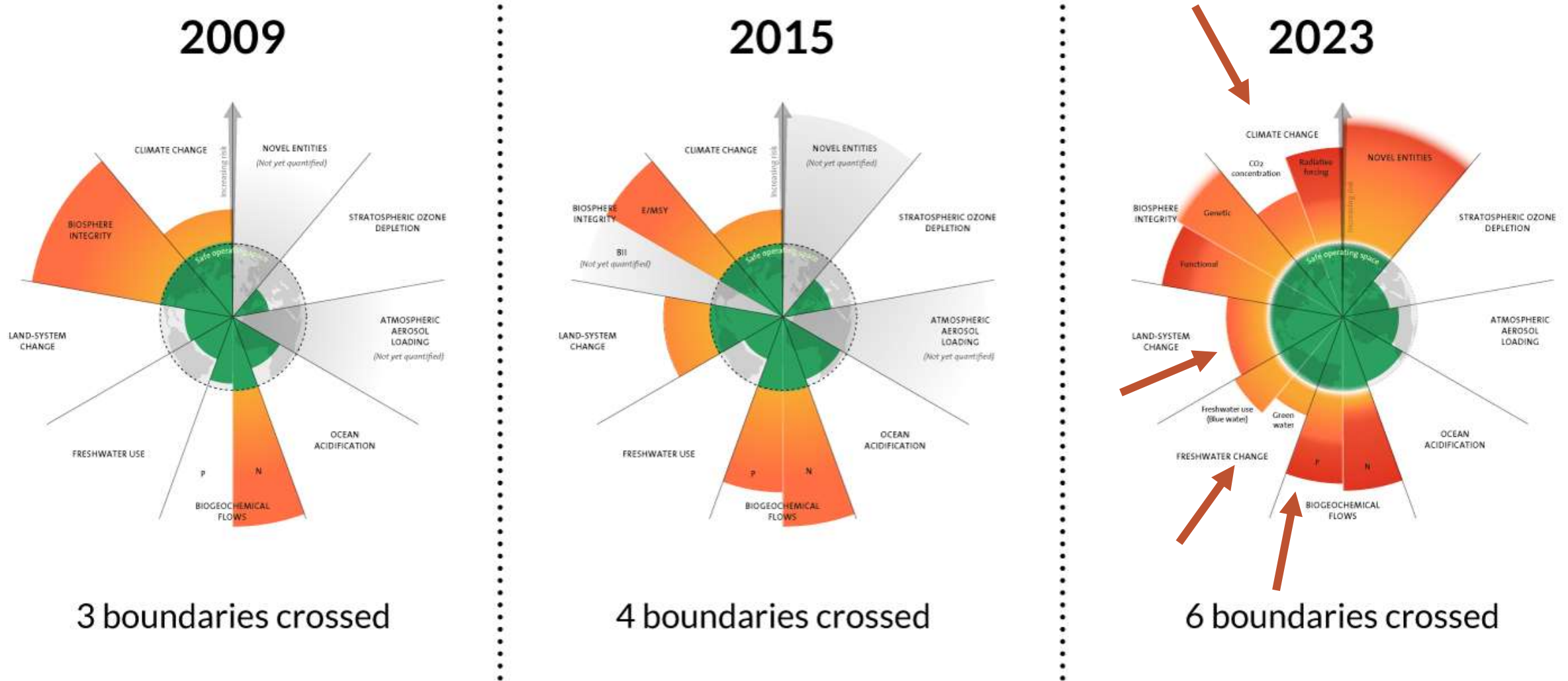
**six of nine crossed**



# Planetary boundaries

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Increased since 2009



Credit: "Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023"



# Global Warming



**Is current policy on track to reach  
a maximum temperature  
increase of +1,5 °C?**

Is current policy on track to reach a maximum temperature increase of  $+1,5^{\circ}\text{C}$ ?

Yes,  
 $+1,5^{\circ}\text{C}$



No,  
But  
close

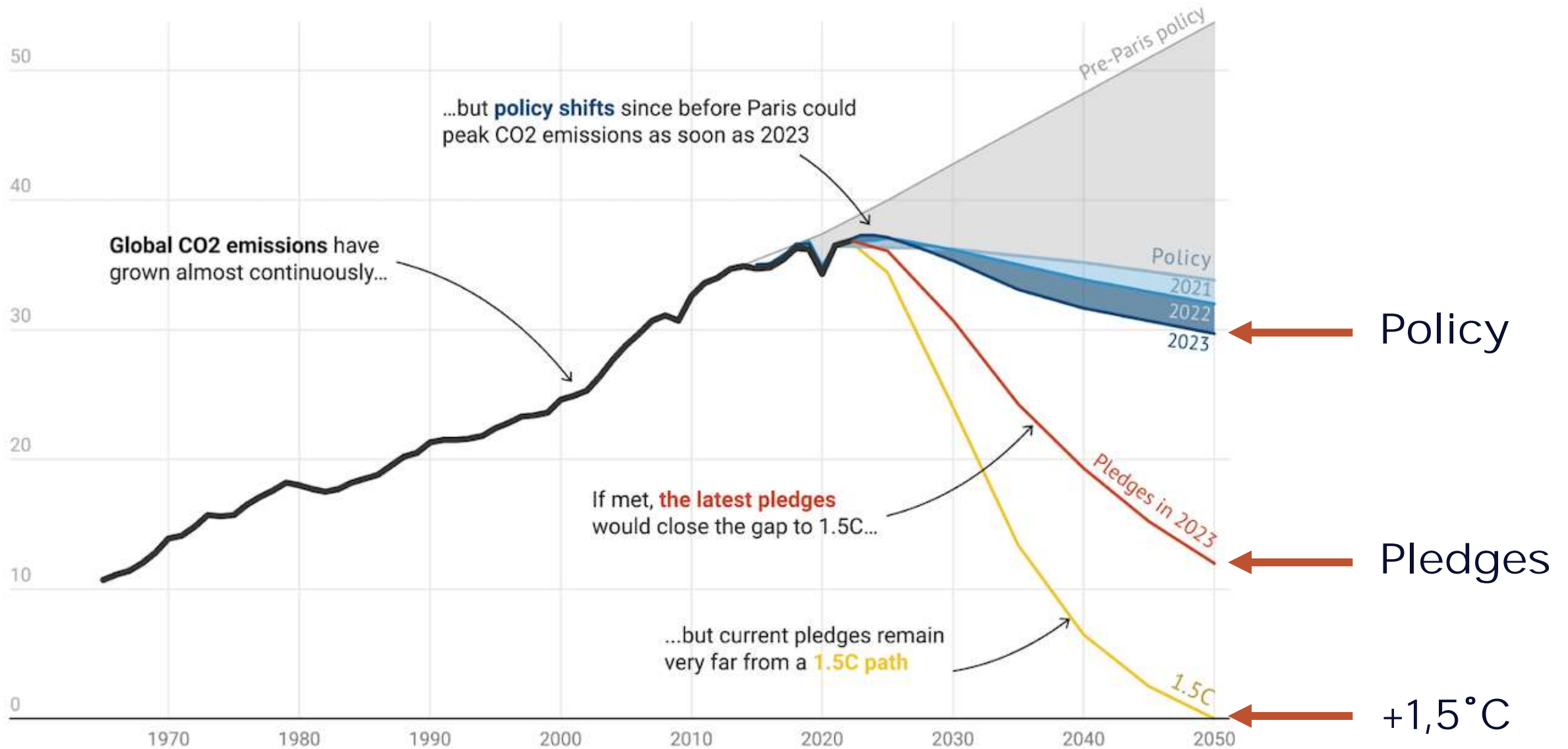
No,  
Way  
off



# Global CO2 emissions could peak as soon as 2023, IEA reveals

Global energy-related CO2 emissions, billion tonnes

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# Biodiversity



**Is current change in biodiversity  
within planetary boundaries**

Is current change in biodiversity within planetary boundaries

**Yes**

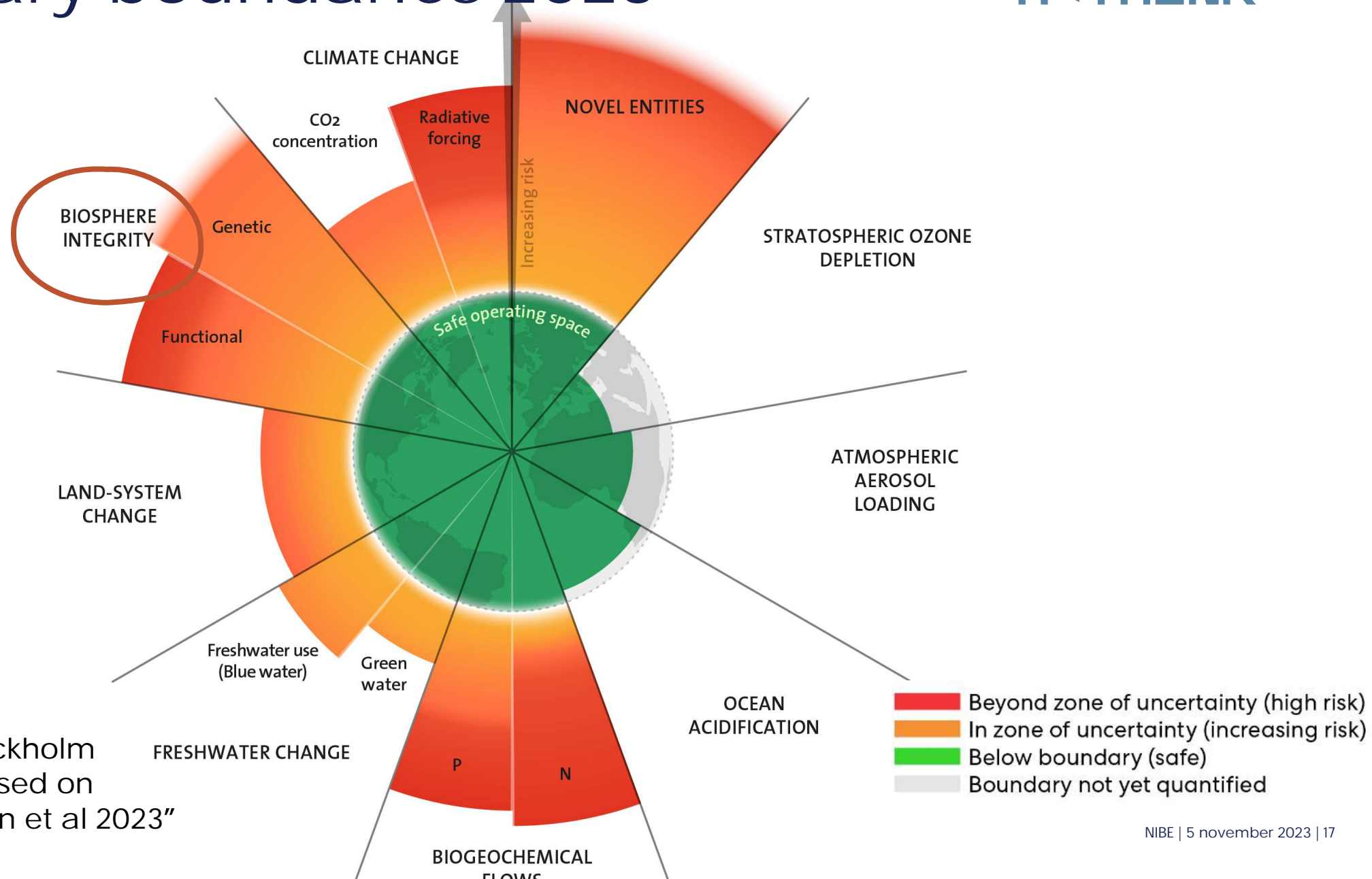


**No,  
Way  
off**



# Planetary boundaries 2023

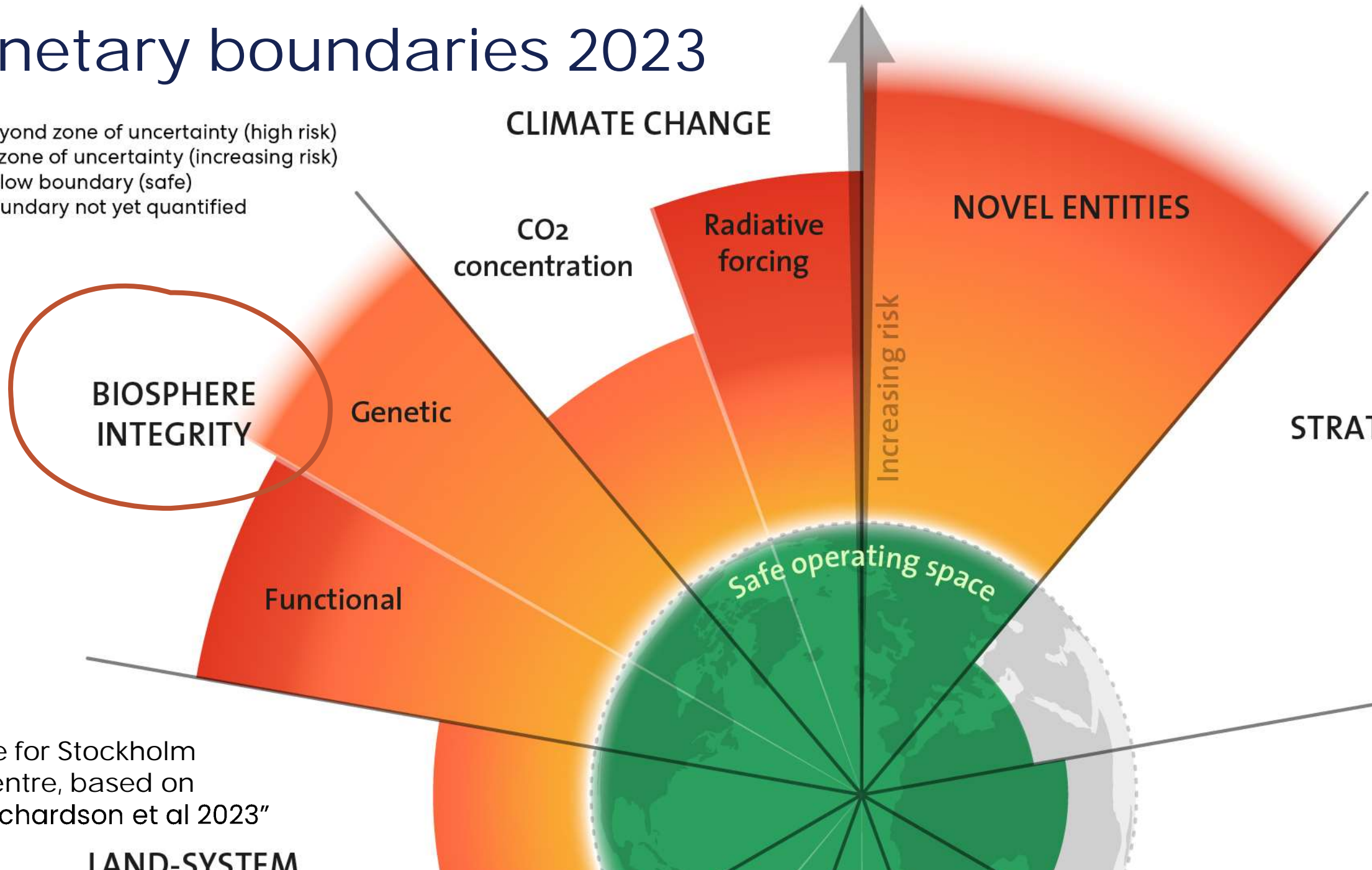
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Credit: "Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023"

# Planetary boundaries 2023

- █ Beyond zone of uncertainty (high risk)
- █ In zone of uncertainty (increasing risk)
- █ Below boundary (safe)
- █ Boundary not yet quantified



Credit: "Azote for Stockholm Resilience Centre, based on analysis in Richardson et al 2023"



# The European Green Deal

#EUGreenDeal

# EU Green Deal | frame work





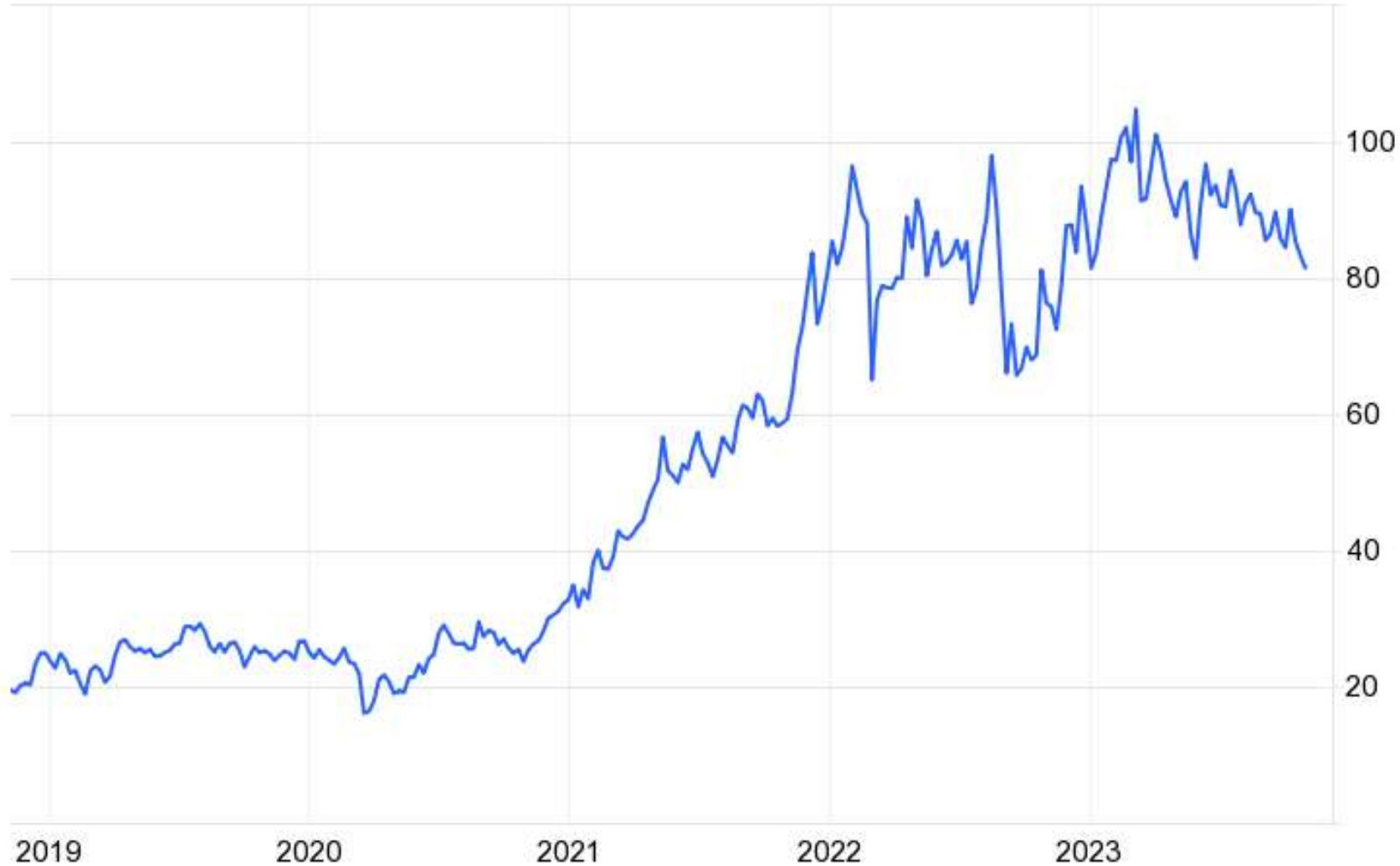
# European directives / regulations

Amongst others:

- Environmental performance part of Concrete Product Regulations (CPR)
- Ecodesign for Sustainable Products Regulation (ESPR)
- Green Claims Directive (GSD)
- EU Nature Restoration Law
- Carbon Border Adjustment Mechanism (CBAM)
- Corporate Sustainability Reporting Directive (CSRD)
- corporate sustainability due diligence (CSDD)

# EU Carbon Permits

EU Carbon Permits



source: [tradingeconomics.com](https://tradingeconomics.com)

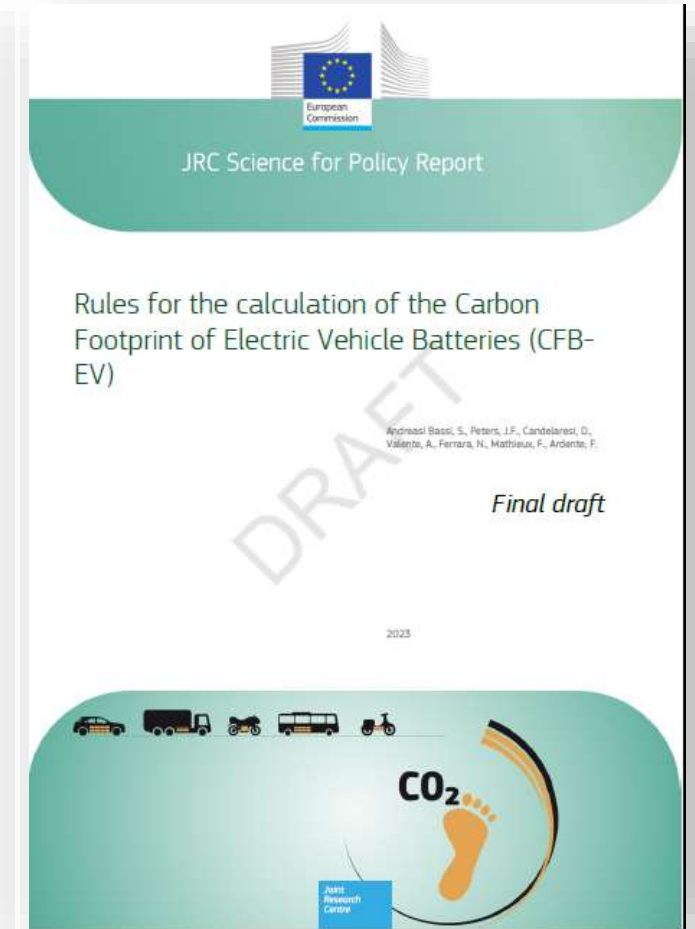
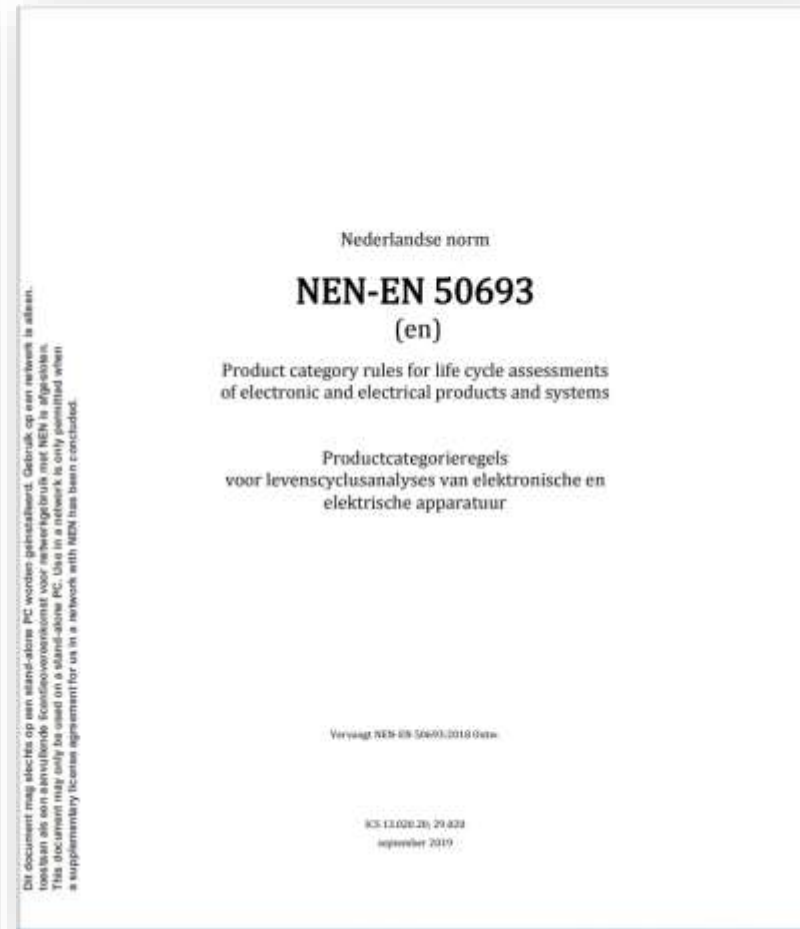


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Regulations/directives pointing out the use of an Life Cycle Analyses (LCA)

# Where is an LCA based upon?

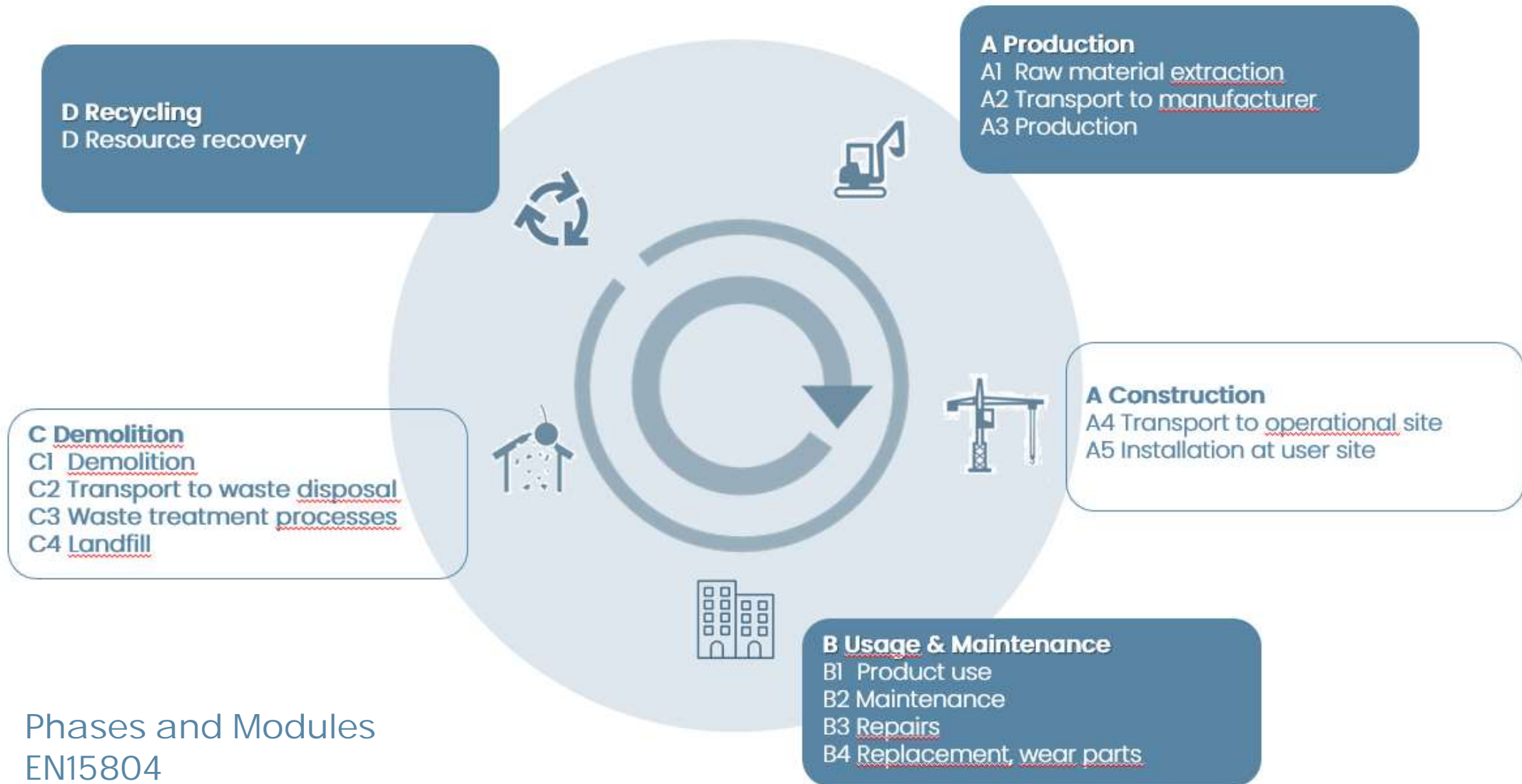
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Some of the standards for performing an LCA



# What is included in an LCA?



Phases and Modules  
EN15804

# What is the result of an LCA?

The collage includes:

- A photograph of a modern glass building at night.
- A screenshot of a report titled "Verification of the life cycle assessment" with text: "CPN awarded the EN15026-1:2020 award as the sole PCR for compliance with EN15026-1 and EN15026-2. EN15026-1 is a standard for the verification of the declaration according to EN ISO 14040:2006. Internal finding."
- A screenshot of a report titled "7 Results" showing a table of environmental impacts. The table has columns for impact categories (GWP, AP, POCP, etc.) and values. A large "NO VERIFIED" watermark is overlaid on this section.
- A screenshot of a "Table of content" listing various sections of the report, such as "Verification of the life cycle assessment", "Life Cycle Inventory", "Interpretation", and "Conclusions".

LCA background report

Environmental Product Declaration (EPD)



(Public) communication format based on NIBE | 5 november 2023 | 26



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# Our vision on LCA

# Demand for LCA will increase sharply

1. Public opinion is changing
2. Environmental Performance in CPR\* (European) and DoP\*
3. Green Claim Directive
4. National threshold values for buildings
5. Green Public Procurement
6. Producers outside Europe: CBAM

**No capacity to meet growing demand | shortage of experienced, knowledgeable personnel**

\* CPR = Construction Products Regulation; DoP = Declaration of Performance;



# We should not be bottleneck

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1. We envision manufacturers to make LCA and EPD *themselves*, with limited expert support
2. In all our prognosis the *# of LCA experts* is the limiting factor. Thus, we focus on education of our customers to make them as much self supporting as possible.

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CUSTOMER LCA ONBOARDING



*via Learning Management System  
(LMS) in 2024*

A close-up photograph of a kiwi seed head, showing the intricate, textured surface of the seeds. The image is rendered in a monochromatic blue-grey tone, matching the overall aesthetic of the slide.

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# Kiwa's EPD Approach

# Kiwa's (unique) EPD approach

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Training in LCA  
and software of  
customers  
(Onboarding)



Easy to use  
software



Verification and  
publishing EPDs\*

Backbone of local support by  
LCA experts (e.g. NIBE, Kiwa GmbH, Vincotte)

Kiwa GmbH

*\*Europe except NL, BE, FR due to local demands. R<THiNK LCA background report accepted in NL, BE and FR, EPDs via local program operator*

# Troughout an Agency network

## Current local agents:

NIBE BV	- Netherlands
Kiwa GmbH	- Germany
Vinçotte	- Belgium

-  R<THiNK organisation
-  Local R<THiNK Agency, reselling R<THiNK and performing LCA
-  Consultants (currently) Trained by Kiwa International Sustainability Platform







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Our Software R<THiNK

# R<THiNK

[www.rethink-epd.com](http://www.rethink-epd.com)

- Cloud-based
- Easy to use
- EN 15804+A2 compliant\* (3<sup>rd</sup> party verified)
- Multiple European Program Operators (EU, NL, BE, DE, ...)
- generates full EPD and LCA background report in PDF format
- Generic template for reporting acc. EN 15804+A2
- Auto generates formats for Kiwa Ecobility Experts

>2000 verified LCAs

50.000 LCA calculations made

*\*Electronical Equipment (EN 50693) and Carbon Footprinting EV Battery (CF-EVB) reporting intended to follow in 2024*

# Quick tour | Dashboard

+ Add    🔍 Search all calculations    Calculations    Locations & Suppliers    Environmental Profiles    Waste Scenarios    Manage Company    Gert Jan van Beijnum    RETHINK training | Company Admin    ?

## Recent calculations

All Calculations

Products  
**Session 6 | LCA onboarding**  
a few seconds ago  
ReTHINK-39828    **In progress**

Products  
**Interior door | Honey comb core | as in assignment**  
4 minutes ago  
EPD-NIBE-20211004-21875    **Valid**

Products  
**Reinforced precast concrete C45/55 (m3)**  
5 minutes ago  
EPD-NIBE-20220508-27105    **Valid**

## Announcements

See more Announcements

- NEW FEATURE: LCA Modules can be switched on/off  
5 months ago
- Search and Filter improvements  
5 months ago
- [SOLVED] Background jobs not working -> normal function restored  
7 months ago

## Updates

All Updates

- Global database update  
3 months ago
- Global database update  
10 months ago
- Global database update  
a year ago

# Quick tour | Suppliers & locations

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+ Add    🔍 Search all calculations    Calculations    **Locations & Suppliers**    Environmental Profiles    Waste Scenarios    Manage Company    Gert Jan van Beijnum    RETHiNK training | Company Admin    ⌵    ⓘ

Dashboard > Locations & Suppliers > Locations > RETHiNK TRAINING

### RETHiNK TRAINING

ID: Training\_door

Nijverheidsweg 16G  
3435AM Utrecht  
Netherlands

[Edit Location](#)

Name

Country

City

41 results found.

Name ↓	ID
<b>Cascade member</b> -, -, Roermond, NL <div>Lorry (Truck), unspecified ... 143 km    +</div>	Concrete2
<b>ENCI, Maastricht</b> Lange Kanaaldijk 115, 6212 NA, Maastricht, NL <div>Lorry (Truck), unspecified ... 184 km    +</div>	Concrete1
<b>Lecot Diest</b> Nieuwe Dijkstraat 105A, 3290, Diest, BE <div>light commercial vehicle ... 165 km    +</div>	lecot_Diest
<b>Lotte Versalis Elastomers Co. Ltd</b> Yeosu sandan Iro 474, 59610, Yeosu, KR	100000

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[sustainability-experts.com](https://www.nbbe.com/sustainability-experts.com)

# Quick tour | Environmental profiles

+ Add    🔍 Search all calculations    Calculations    Locations & Suppliers    **Environmental Profiles**    Waste Scenarios    Manage Company    Gert Jan van Beljnum    RETHiNK training | Company Admin

Dashboard > Environmental Profiles > Aluminium, wrought alloy | market for (EU) > Basic information

<b>Aluminium, wrought alloy   market for (EU)</b> ID: 841	Basic information		Extra information	Environmental effects
	<b>Id</b> 841	<b>Unit</b> kg		
	<b>Process used</b> NIBE Aluminium, Wrought alloy   market for (EU)	<b>Source</b> Ecolinvent 3.6 (2019)		
	<b>Third party verified</b> No	<b>Valid until</b> n.a.		
	<b>Transport applicable</b> Yes	<b>Waste scenario applicable</b> Yes		
	<b>Environ. Cost Indicator</b> 1.950968021316245	<b>Last change date</b> 2023-08-13T23:54:17+02:00		
	<b>Secondary content</b> 0.3041	<b>Primary equivalent</b> 842		
	<b>Lower heating value</b> n.a.	<b>Comments</b> Input for primary aluminum ingot adjusted to 1 kg Aluminium, primary, ingot ( AI Area, EU27 & EFTA  market for   Cut-off, U. This process is representative for the aluminum ingot market in Europe, including the correct share of production of aluminum ingot in europe and the imported		



# Quick tour | Environmental profiles

+ Add  Calculations Locations & Suppliers Environmental Profiles Waste Scenarios Manage Company Gert Jan van Beijnum RETHINK training | Company Admin

Dashboard > Waste Scenarios > General

Waste Scenarios		Name ↓	Last changed
→ General		Asphalt road constructions, ZOAB (Benefits 70%/30%) [Asphalt PCR NL v2.0] <small>ID: WNL0159</small>	13-08-2023 23:52
Company		bitumen (i.a. roofing material) (NMD ID 16) <small>ID: WNL0004</small>	13-08-2023 23:52
Name / ID	<input type="text" value="Filter by name or ID"/>	board material 'clean' (large parts i.a. covering)   (u=10%, glue=12%) corr. acc. EN16449 <small>ID: WNL0027</small>	13-08-2023 23:52
	<div style="border: 1px solid green; padding: 2px;">118 results found.</div>	board material, 'contaminated' (large parts i.a. covering) (NMD ID 56)   (u=10%, glue=12%) corr. acc. EN16449 <small>ID: WNL0028</small>	13-08-2023 23:52
		coarse ceramic (i.a. brickwork, tiles) (NMD ID 32) <small>ID: WNL0015</small>	13-08-2023 23:52
		Coatings (coatings) in civil constructions (NMD ID 17) <small>ID: WNL0154</small>	13-08-2023 23:52
		concrete (i.a. elements, brickwork, reinforced concrete) (NMD ID 9) <small>ID: WNL0003</small>	13-08-2023 23:52
		Concrete and stone pavement (paving) [benefits reuse not defined] (NMD ID 14) <small>ID: WNL0137</small>	13-08-2023 23:52
		Concrete, contaminated (NMD ID 15)	13-08-2023 23:52

# Quick tour | Modelling

Dashboard > Calculations > old tests > Interior door | Honey comb core | as in assignment > Inputs > List

## Interior door | Honey comb core | as in assignment

Declared unit: m<sup>2</sup>

Valid

Home

Calculation basics

Advanced settings

→ Inputs

Information for report

Expert functions

Weight  
kg / m<sup>2</sup>  
**7.446**

ED HL  
€  
**1.608**

To real time results

### Input

View mode

Add new

#### A1 - Raw Material 4 items

Raw materials needed for the production of the product. Auxiliary materials that are ultimately transported to the customer as water in paint and concrete mortar, should be listed here.

European softwood   Softwood, planed, dried (460kg/m <sup>3</sup> , u=10%)   production (EU)   corr. acc. EN16449   for. European softwood   1.725 kg	...	▼
HDF covering   High density fibre board (HDF) (900kg/m <sup>3</sup> )   production (EU)   corr. acc. EN16449   for. HDF   5.375 kg	...	▼
Honey comb inner core   Core board   production (EU)   corr. acc. EN16449   for. Honeycomb padding   0.167 kg	...	▼
Poly vinyl acetate glue   Polyvinylacetate (PVA)   production (EU)   for. Polyvinyl acetate glue   0.179 kg	...	▼

Add new



# Quick tour | Realtime results

## Interior door | Honey comb core | as in assignment

Declared unit: m2

Valid

Home

Calculation basics

Advanced settings

Inputs

Information for report

Expert functions

Weight  
kg / m2  
**7.446**

ECIM  
€  
**1.608**

[To real time results](#)

Realtime results Progress

### Material

HDF covering   High density fibre board (HDF) (900kg/m3)   production (EU)   corr. acc. EN16449   for. HDF   5.375	0.737
Lacquer maintenance   Paint, acrylate dispersion (interior) [NMD, VVVF]   for. Paint   0.263	0.323
Electricity use for producing 1 m2   Electricity (NL) - low voltage (max 1kV)   4.73	0.233
Lacquer maintenance, layer 2   Paint, acrylate dispersion (interior) [NMD, VVVF]   for. Paint   0.613	0.121
European softwood   Softwood, planed, dried (450kg/m3, u=10%)   production (EU)   corr. acc. EN16449   for. European softwood   1.725	0.06
Poly vinyl acetate glue   Polyvinylacetate (PVA)   production (EU)   for. Polyvinyl acetate glue   0.179	0.058
Remaining materials	0.08

### Additional Information

A1-A3 Production	1.185
A4-5 Construction	0.085
B1-3 Use stage	0.47
C1-C4 + D End of life	-0.331
Weight <sup>kg</sup> / m2	7.446
<b>Environmental Cost Indicator NL 1.608 (€)</b>	

Material	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	TOTAL
HDF covering   High density fibre board (HDF) (900kg/m3)   production (EU)   corr. acc. EN16449   for. HDF   5.375	0.712	0.041	0.021	0.018	0.025	-	-	-	-	0.013	0.022	0.002	-0.313	0.737
Lacquer maintenance   Paint, acrylate dispersion (interior) [NMD, VVVF]   for. Paint   0.263	-	-	-	-	-	-	0.342	-	-	-	-	-	-0.018	0.323





# Quick tour - integrated verification option R<THiNK

The screenshot displays the R<THiNK software interface. At the top, there is a navigation bar with a dark background containing a '+ Add' button, a search bar for calculations, and several menu items: Calculations, Locations & Suppliers, Environmental Profiles, Waste Scenarios, Manage Company, and Gert Jan van Beijnum. On the right side of the navigation bar, it shows 'RETHINK training | Company Admin' and a user profile icon.

Below the navigation bar, the breadcrumb 'Dashboard > Calculations' is visible. The main content area is titled 'Calculations' and features a search bar and a 'Status' dropdown menu. The status dropdown is highlighted with a red rounded rectangle and shows the following options: 'In progress', 'Valid', 'Submitted', 'In review', 'Verified', 'Rejected', and 'Not Deleted'. Below the dropdown, it indicates '5 results found'.

The main table lists several calculations with columns for Name, Last changed, and Status. The table data is as follows:

Name	Last changed	Status
<input type="checkbox"/> Interior door   Honey comb core NMD Det. Meth. v1.0   set 1 / SBK Det. Meth. v3.0	14-02-2021 22:07	
<input type="checkbox"/> Interior door   solid 4-panels NMD Det. Meth. v1.0   set 1 / SBK Det. Meth. v3.0	19-02-2021 00:36	
<input type="checkbox"/> Interior door   solid 4-panels (copy) NMD Det. Meth. v1.0   set 1 / SBK Det. Meth. v3.0	19-02-2021 08:04	
<input type="checkbox"/> Interior door   solid 4-panels II NMD Det. Meth. v1.0   set 1 / SBK Det. Meth. v3.0	19-02-2021 08:03	
<input type="checkbox"/> Interior door   solid plywood core NMD Det. Meth. v1.0   set 1 / SBK Det. Meth. v3.0	14-02-2021 22:58	

At the bottom left, the NIBE logo and 'Copyright © 2021 Nibe | nibe.org' are visible. A back arrow icon is located at the bottom center of the interface.

## Modelling

- Centralised modelling of suppliers, locations and transport
- Model Semi Finished Products (recipes, product component, etc) for reuse in final products
- Pre-modelled waste scenario design EoL (NMD, B-EPD, etc)
- Auto calculation End-of-life and module D

## Professional license

- Centralised modelling of inputs (e.g. raw materials, energy, etc) for use in LCA calculations (easy update)
- Import of Products and recipes/components via Excel
- Reporting templates



[www.rethink-epd.com](http://www.rethink-epd.com)

## Featured 2024

- Corporate carbon footprinting (Q4'23)
- Digital sharing platform of machine readable content (Q1'24)
- Digital learning platform (LMS)

Full list of features attached as appendix

# Relevante Kiwa Trainingen

R<THiNK

Introductie Energietransitie en duurzame energie

Opleiding duurzame energie en warmtedistributie

R<THiNK Customer LCA Onboarding



# Let's connect

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experts in  
sustainability

**nibe**

**Gert Jan van Beijnum**

Senior consultant

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+31 (06) 30 97 54 21



**Gert Jan van Beijnum**

Business manager Saas | Senior Consultant |  
NMD approved LCA expert



# Appendix Costs

## Business License € 2,800 / year

### Yearly Maintenance: 4 hours

- Create calculations
- View realtime results
- Compare two calculations
- Create LCA report and EPD
- Download report (in pdf or csv format)
- Start verification process
- Import company location(s) details (including validation)
- Import company supplier(s) details (including validation)
- Set-up user rights (admin)
- Set-up | create company account (admin)
- Set-up | create temporary project accounts (admin)

## Professional License € 5,050 / year

### Yearly Maintenance: 8 hours

- Create calculations
- View realtime results
- Compare two calculations
- Create LCA report and EPD
- Download report (in pdf or csv format)
- Start verification process
- Import company location(s) details (including validation)
- Import company supplier(s) details (including validation)
- Pre-defined input sets (matching company raw material data to R<THiNK databases)
- Import pre-defined input sets
- Import product compositions (recipes)
- Calculation templates for product groups

On-boarding (+ LCA) 6.500 euro:

- ❑ 6 online sessions (à 2,5 h), 2 participants
- ❑ Preparation of R<THiNK account by consultant
- ❑ Creation of 1<sup>st</sup> LCA ready for verification by customer with support by consultant
- ❑ 20 weeks to completion

Expert support\*: 152 euro per hour  
Multiple license discount structure.

Customers spent ~2 hours per week on maintenance of their account in R<THiNK

\* Customers request ~4-12 hour support per year

# Appendix features R<THiNK



INPUT DATA ENTRY	Business	Professional
Input data in a web interface	✓	✓
Create, copy & edit alternatives	✓	✓
Model Semi Finished Products (recipes, product component, etc) for reuse in final products	✓	✓
RESULT VISUALISATION		
Impact analysis charts	✓	✓
Detailed overview of impact per module per input	✓	✓
Sidebar results for direct feedback on impact and weight	✓	✓
CALCULATION CORE		
Verified calculation model and results mapping acc.to EN15804+A2 and Ecoplatform LCA tool verification	✓	✓
Environmental impact indicators	EN 15804+A1 & A2 / INIES (CN15804+A1) / NMD (set 1+2)	EN 15804+A1 & A2 / INIES (CN15804+A1) / NMD (set 1+2)

# Appendix features R<THiNK

CREATE EPD		
Generic template for reporting acc EN15804+A2	✓	✓
Generic template reporting acc. EN50693 (Elec. equipment)	Featured 2024	Featured 2024
Generic template reporting acc. Carbon Footprint EV batteries (CFB-EV)	Featured 2024	Featured 2024
Generate complete LCA Background report in PDF format*	✓	✓
Generate complete EPD for self declaration in PDF format*	✓	✓
Auto generate EPD for Kiwa Ecobility Experts EPD program*	✓	✓
Automatic adaption of reporting based on declared modules and used LCA method	✓	✓
* <i>Currently meets the requirements of the EN15804+A2</i>		
CREATE MACHINE READABLE FORMAT		
Machine readable format (XML) acc. ILCD+EPD	Featured 2024	Featured 2024
Machine readable format (JSON) acc. ISO 22057:2022		Featured 2024
Machine readable format (XML) acc. CWA 17316		Featured 2024



# Appendix features R<THiNK

VERIFY & PUBLISH		
3rd party verification portal	✓	✓
Automated 3rd party verification, generation of formats and publishing for Kiwa Ecobility Experts*	✓	✓
<i>* additional verification &amp; publication cost by Kiwa Ecobility Experts</i>		
MODELING FEATURES		
Modelling of Suppliers, Locations and Transports movement at centralised place, for reuse in LCA calculations	✓	✓
Pre-modelled Waste scenario design (NMD / B-EPD / etc)	✓	✓
Auto calculated impacts End-of-Life and Module D	✓	✓
Auto calculation of values for transport to construction site / amount of cycles for use stage	✓	✓
Mass Balance for correct results	✓	✓
Biogenic Carbon Content acc. EN16449	✓	✓
Biogenic Carbon Balance for correct results	✓	✓

# Appendix features R<THiNK

INTEGRATIONS & AUTOMATION		
Import of Suppliers, locations and Transport movements via Excel	✓	✓
Centralised modeling and import of calculation inputs with substantiations (e.g. raw materials, energy use). Dynamically connected to LCA calculations		✓
Centralised reporting templates, dynamically connected to LCA calculations		✓
Import Product composition, recipes and descriptions via Excel for automated LCA background report and EPD generation		✓
Automatic mapping of imported data to databases of R<THiNK		✓

# Appendix features R<THiNK

DATABASES		
Environmental profiles on the basis of generic databases (e.g. EcolInvent)	✓	✓
Environmental profiles on the basis of EPDs of raw materials for the construction sector	✓	✓
Environmental Profiles provided with substantiations to enable generation of complete reporting	✓	✓
Environmental Profiles provided with parameters to calculate module D and parameters automatically	✓	✓
Pre-modelled Waste scenario design (NMD / B-EPD / etc)	✓	✓
PRIVATE DATA MANAGEMENT		
Private Environmental Profiles and waste scenario libraries	✓	✓
Import of your private LCA data and waste scenarios	✓	✓

# Appendix features R<THiNK



ORGANIZING		
Folders for project grouping	✓	✓
Archive function		Featured 2024
Lock calculation and results		Featured 2024
EPiC DATA SHARING (add-on)		
Store and share machine readable EPDs via API (ISO22057 / ILCD+EPD / CWA 17316)	Featured 2024	Featured 2024
SUPPORT & TRAINING*		
Customer Support	✓	✓
Extensive onboarding and training by local LCA experts	✓	✓
Learning management platform	Featured 2024	Featured 2024
Knowledge sharing platform	Featured 2024	Featured 2024
* <i>additional fee for professional support and trainings</i>		