ZINQ: A full circular business model (CST)

07 october 2022 | Rob Ikink

Every **Steel** has the
Right to ZINQ

ZINQ®

ZINQ in numbers

→ **Europe´s #1 service provider in HDG**
(in capacity and in technology development)

Applying ZINQ brand coatings in

→ 27 plants in Germany (**ZINQ Germany**)

→ 8 plants in Benelux (**ZINQ Belgium/Netherlands**)

→ 12 plants* in France (**ZINQ France**)

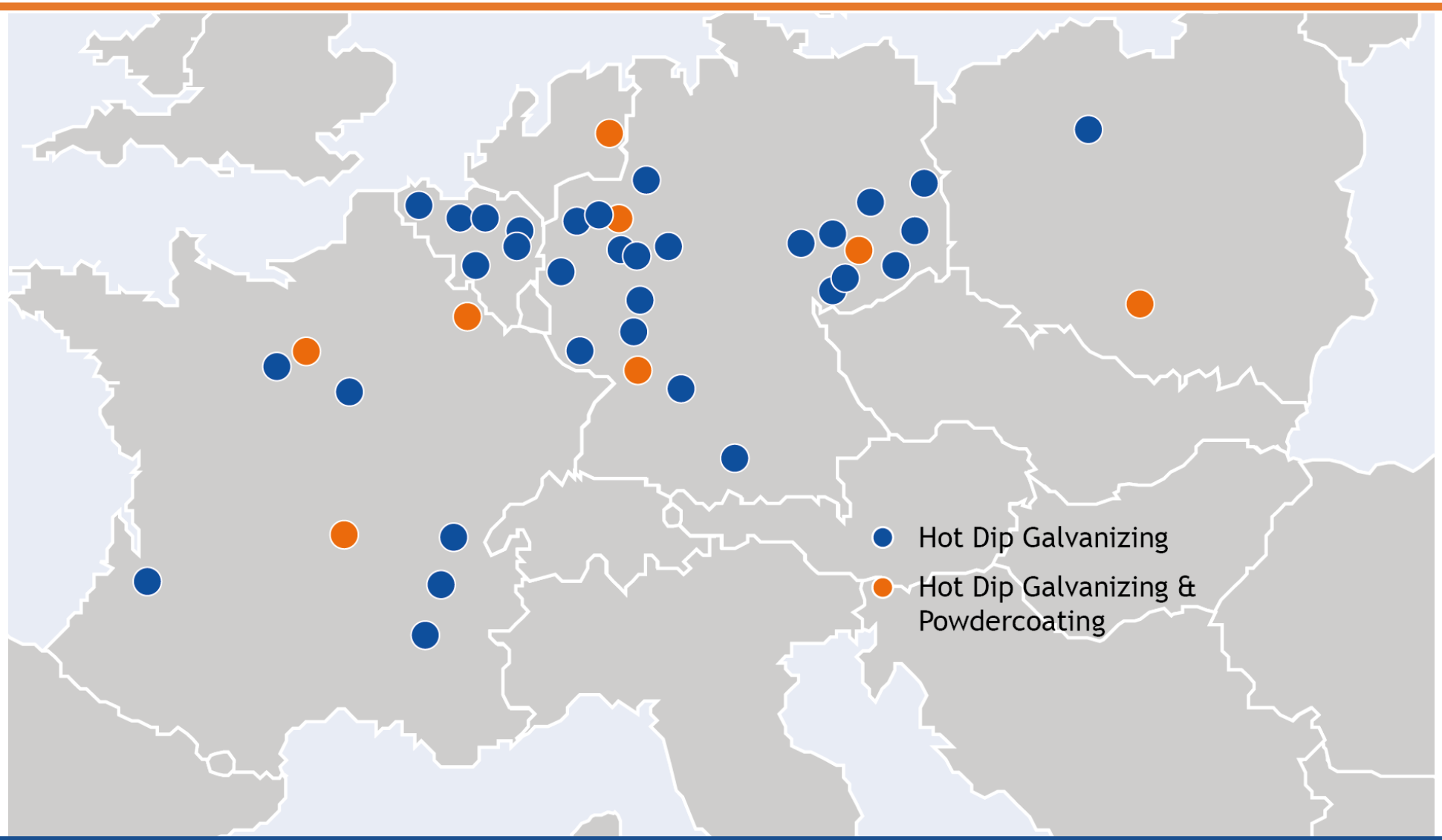
→ 3 plants in Poland (**ZINQ Poland**)

→ Operator of HDG's largest R&D & Business development center **(ZINQ® Technologie)**

→ **For further Info: ZINQ.com**

→ ***includes ZINQ Normandie as per 1-1-2022**

A strong network serving major European markets



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ZINQ: a future proof business model ?
Energy-intensive process
Sustainable products
>100
Mio. kWh
>10.000
to. Zinc
>100
yrs of maintenance free use
∞
reuse cycles
>95%
recycled
100
Mrd. € pa savings from avoided corrosion damage
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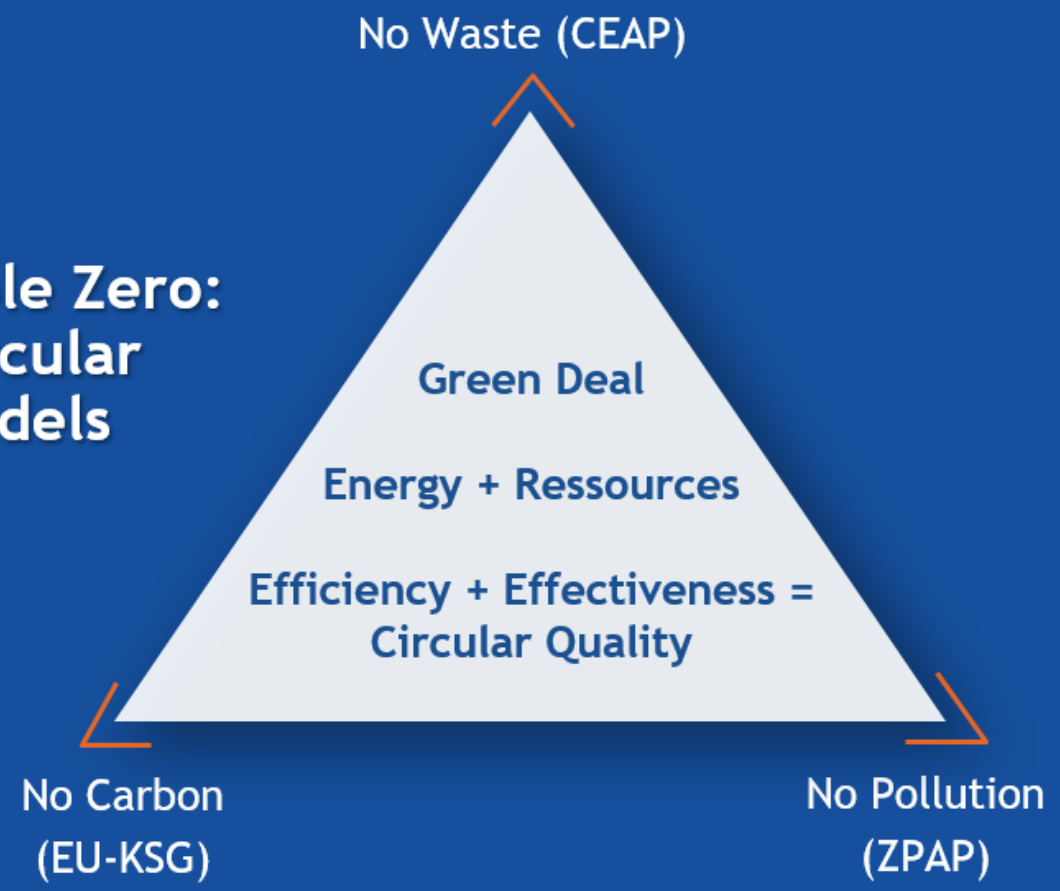
Race to Triple Zero: a call for circular business models



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EU Green Deal:

- Zero carbon (no CO_2 emissions)
- Zero waste (no waste)
- Zero pollution (reduce soil contamination to levels that are not harmful)

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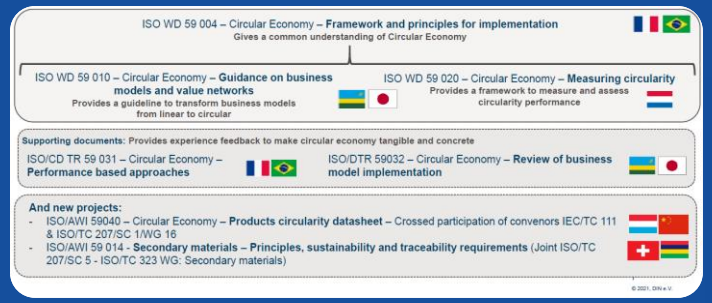
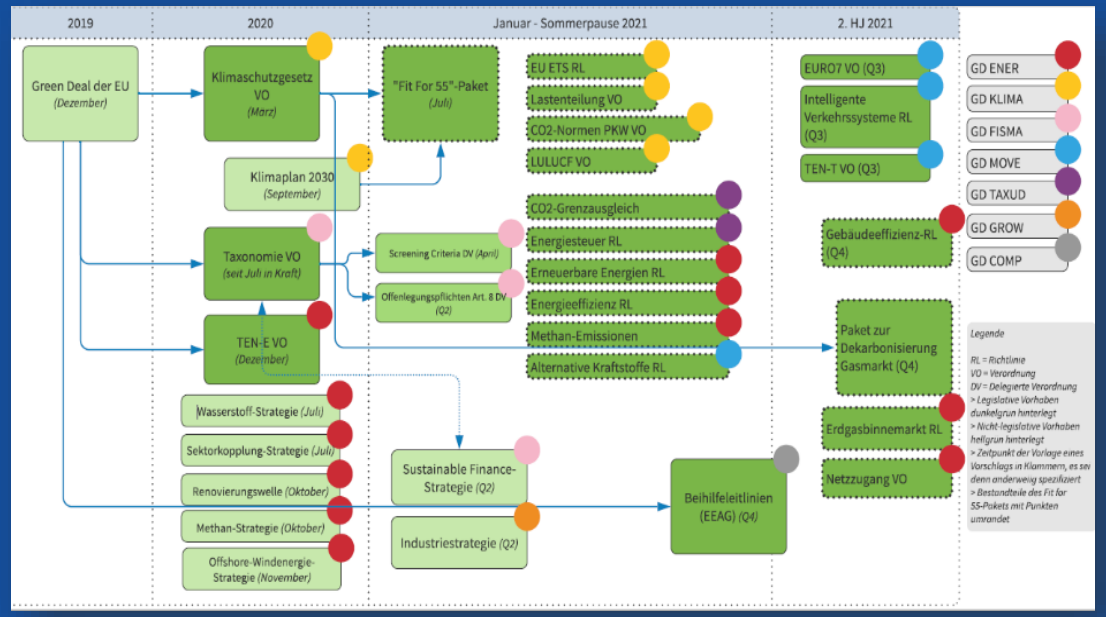
Triple Zero Green Deal

Legal & normative background for circular business models



STANDARD AND/OR PROJECT UNDER THE DIRECT RESPONSIBILITY OF ISO/TC 207/SC 7 SECRETARIAT (19)	STAGE	ICS
ISO 14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals	60.60	13.020.40
ISO 14064-2:2019 Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements	60.60	13.020.40
ISO 14064-3:2019 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements	60.60	13.020.40
ISO 14065:2020 General principles and requirements for bodies validating and verifying environmental information	60.60	13.020.40
ISO 14066:2011 Greenhouse gases — Competence requirements for greenhouse gas validation teams and verification teams	90.92	13.020.40
ISO/AWI 14066 Greenhouse gases — Competence requirements for greenhouse gas validation teams and verification teams	20.00	
ISO 14067:2018 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification	60.60	13.020.40
ISO/WD 14068 Greenhouse gas management and related activities — Carbon neutrality	20.20	



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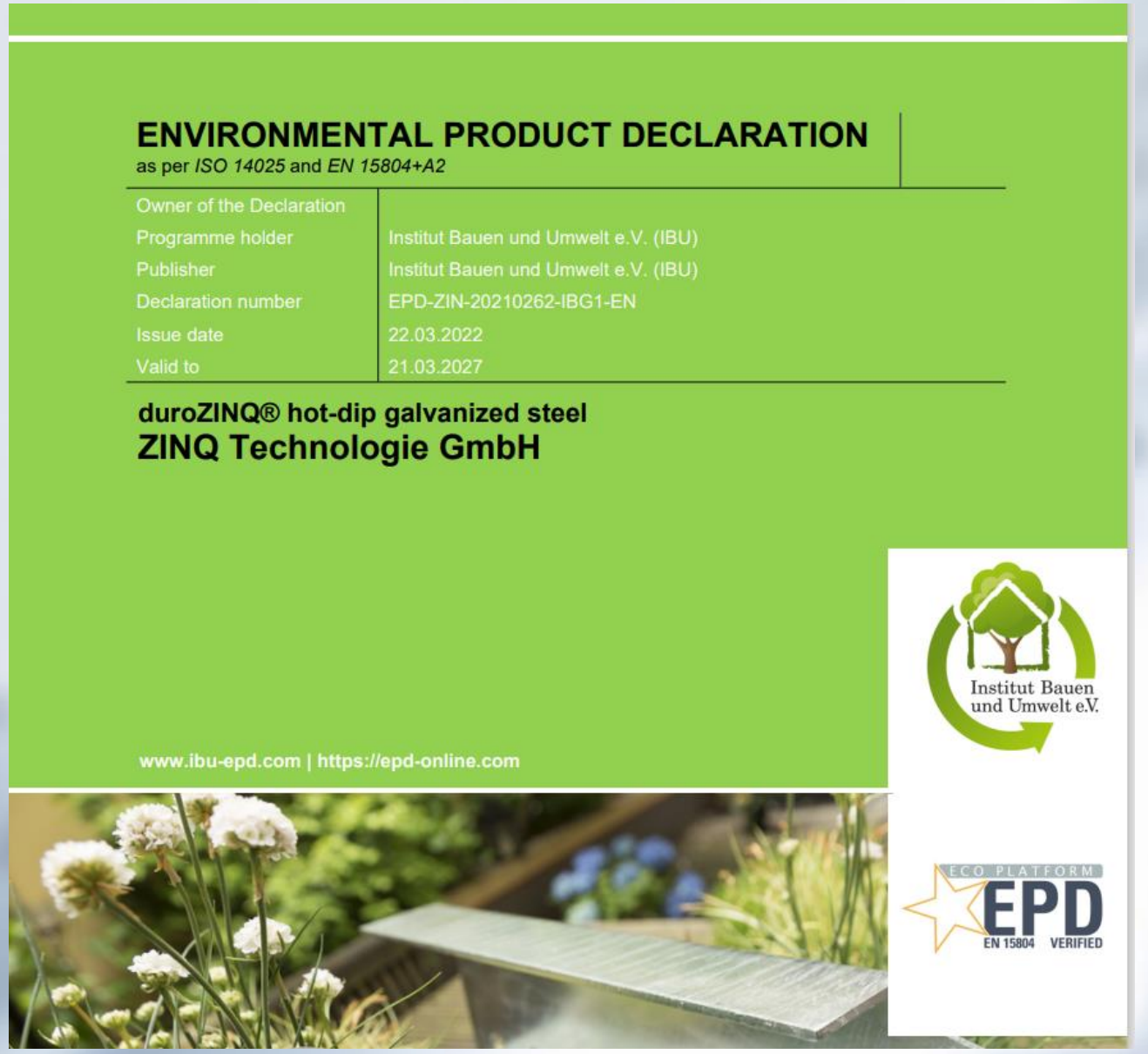
The circular business model

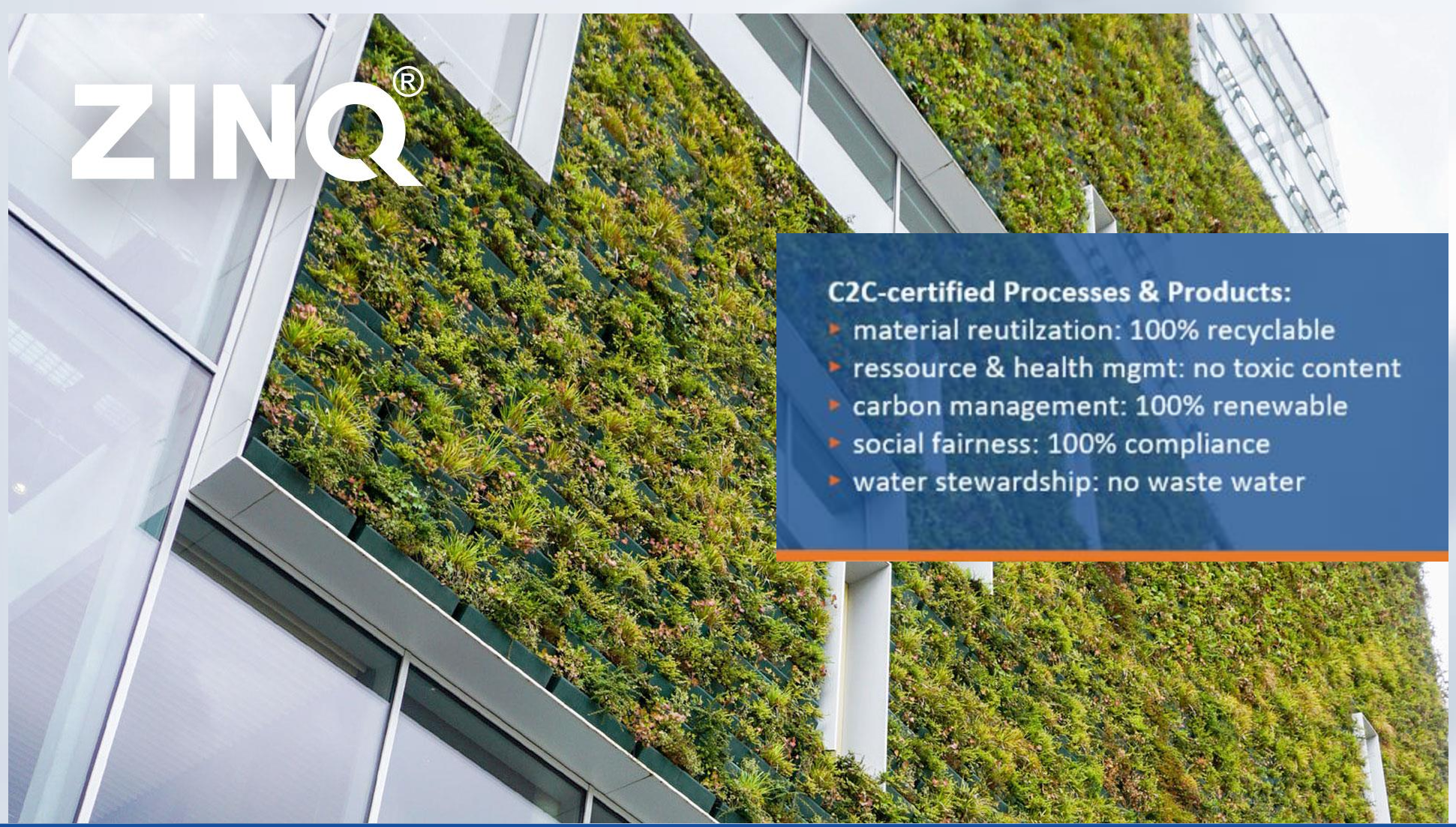
Planet ZINQ – a circular business model

- An innovative and sustainability strategy consisting of ten elements:

  - ✓ ZINQ Futurium
  - ✓ Power2ZINQ
  - ✓ ZINQ CO_2-Bank
  - ✓ Low Carbon ZINQ
  - ✓ ReZINQ
  - ✓ Product passports (EPD, HPD, C2CC)
  - ✓ Increasing energy efficiency
  - ✓ microZINQ (80% material saving)
  - ✓ C2C
  - ✓ Doe Je ZINQ | Soyez ZINQ


ENVIRONMENTAL PRODUCT DECLARATION
as per ISO 14025 and EN 15804+A2
Owner of the Declaration
Programme holder
Institut Bauen und Umwelt e.V. (IBU)
Publisher
Institut Bauen und Umwelt e.V. (IBU)
Declaration number
EPD-ZIN-20210262-IBG1-EN
Issue date
22.03.2022
Valid to
21.03.2027
duroZINQ® hot-dip galvanized steel
ZINQ Technologie GmbH
www.ibu-epd.com | https://epd-online.com
Institut Bauen und Umwelt e.V.
ECO PLATFORM
EPD
EN 15804 VERIFIED

Basis: EPD


ZINQ®
C2C-certified Processes & Products:
material reutilzation: 100% recyclable
ressource & health mgmt: no toxic content
carbon management: 100% renewable
social fairness: 100% compliance
water stewardship: no waste water

EUROPEAN COMMISSION

Brussels, 30.3.2022
COM(2022) 144 final

2022/0094 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

laying down harmonised conditions for the marketing of construction products, amending Regulation (EU) 2019/1020 and repealing Regulation (EU) 305/2011

Standards by ISO/TC 323
Circular economy

(Annex Document)

1.8. Sustainable use of natural resources of construction works

The construction works and any part of them shall be designed, constructed, used, maintained and demolished in such a way that, throughout their life cycle, the use of natural resources is sustainable and ensures the following:

(a) **use of** raw and **secondary materials of high environmental sustainability** and thus with a low environmental footprint;
(b) **minimizing** the overall amount of **raw materials** used;
(c) minimizing the overall amount of embodied energy;
(d) minimizing the overall use of drinking and brown water;
(e) **reuse** or **recyclability** of the construction works, parts of them and their materials after demolition.

2.1. Products shall be designed, manufactured, and packaged in such a way that the following inherent product environmental aspects are addressed in accordance with the state of the art:

(a) maximising durability in terms of the expected average life span, the expected minimum life span under worst but still realistic conditions, and in terms of the minimum life span requirements;
(b) minimising whole-life-cycle greenhouse gas emissions;
(c) **maximising recycled content** wherever possible without safety loss or outweighing negative environmental impact;
(d) selection of safe, environmentally benign substances; (e) energy use and energy efficiency;
(f) resource efficiency;
(g) identification which product or parts thereof and in what quantity can be **reused after de-installation** (reusability);
(h) **upgradability**;
(i) **reparability** during the expected life span;
(j) possibility of maintenance and refurbishment during the expected life span;
(k) **recyclability** and the capability to be **remanufactured**;
(l) capability of different materials or substances to be separated and recovered during dismantling or recycling procedures.

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Standards by ISO/TC 323
Circular economy

Standard and/or project under the direct responsibility of ISO/TC 323 Secretariat (6) ↑	Stage	ICS
ISO/CD 59004 Circular Economy – Terminology, Principles and Guidance for Implementation	30.60	01.040.03 01.040.13 03.100.01 13.020.20
ISO/CD 59010 Circular Economy — Guidance on the transition of business models and value networks	30.60	03.100.01 13.020.20
ISO/CD 59020 Circular Economy — Measuring and assessing circularity	30.60	03.100.01 13.020.20
ISO/CD TR 59031 Circular economy – Performance-based approach – Analysis of cases studies	30.00	
ISO/CD TR 59032.2 Circular economy - Review of business model implementation	30.60	03.100.01 13.020.20
ISO/WD 59040 Circular Economy — Product Circularity Data Sheet	20.60	

See➔ WWW.ISO.ORG

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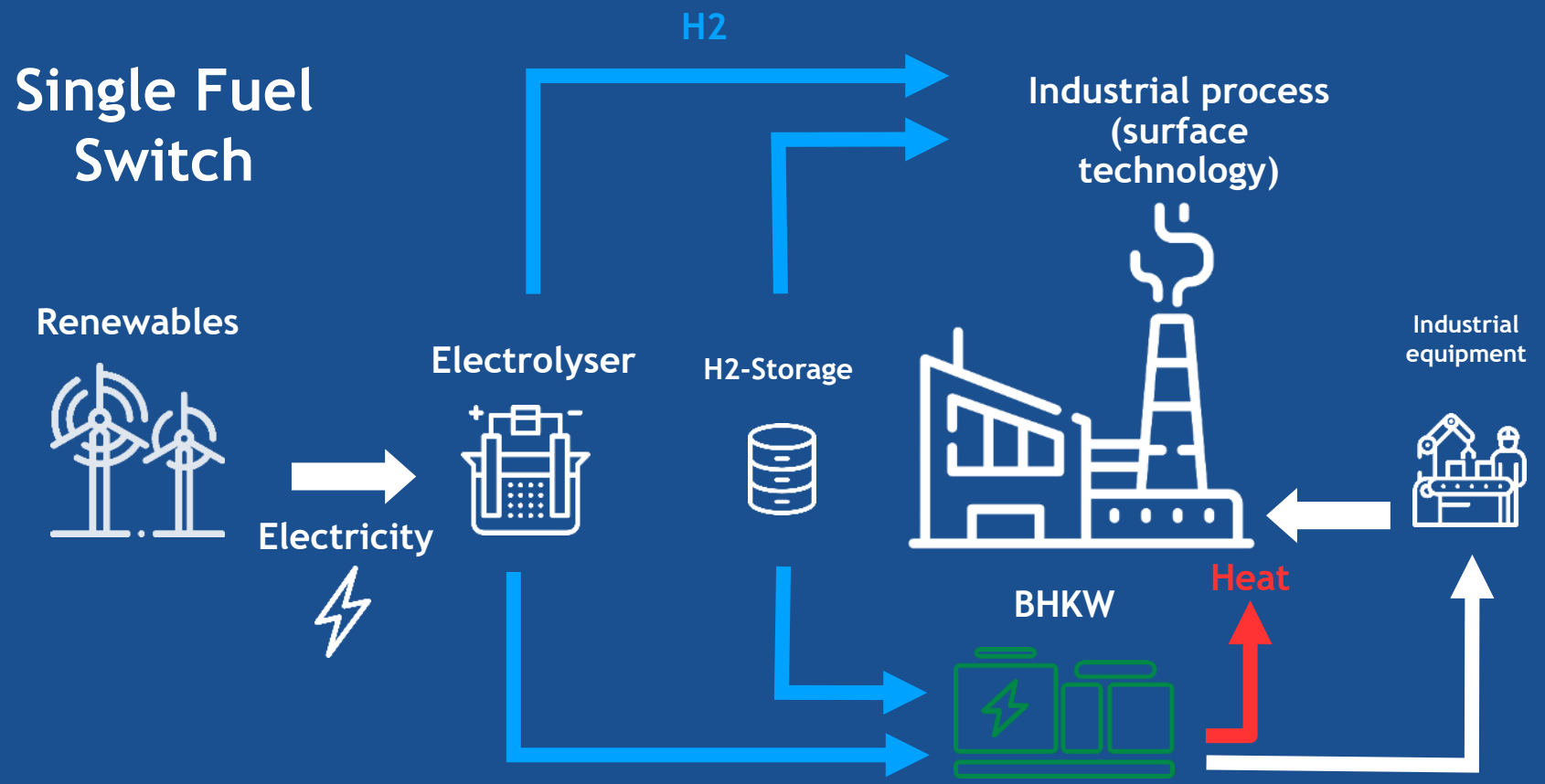
Decarbonising process heat: P2ZINQ/P2Z (Green H2/2025)



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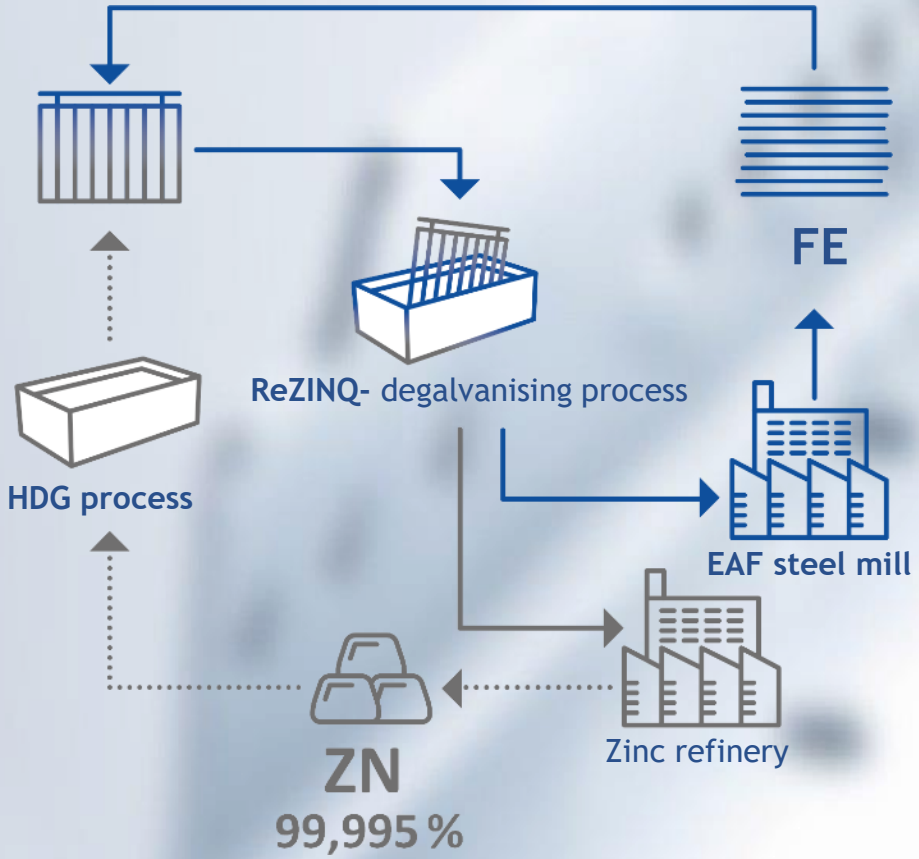
Closing the material loop in circular quality (ReZINQ)



Objective:
Take back of all HDG steel scrap

How to:
Closing the material loop and improving the circular quality of the steel scrap recycling by a (new) degalvanizing process for allowing to recycle zinc and steel separate.
Take back offer to some clients from 01.01.2021.After test: all (4/2024)

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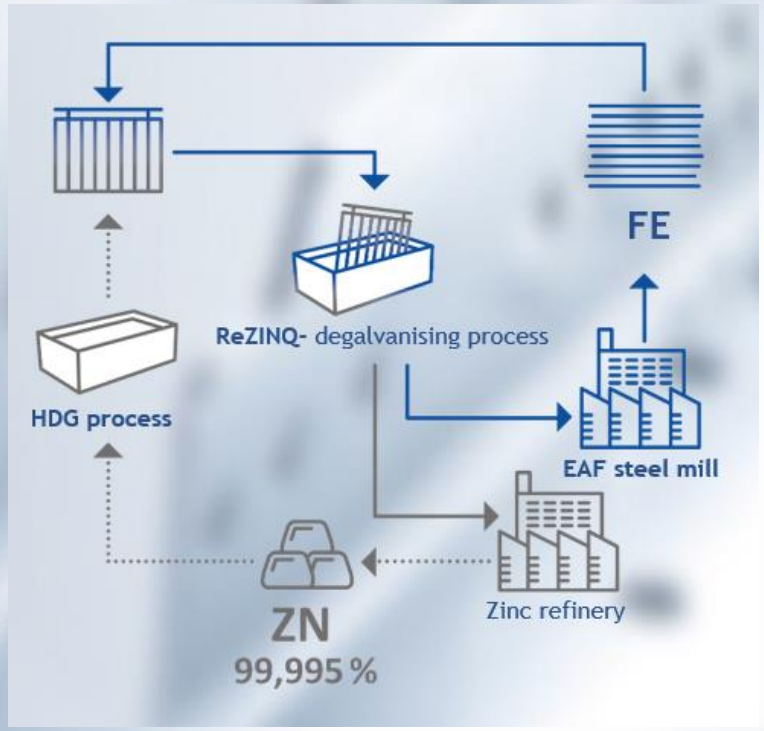
ReZINQ

- Closing the material loop for duroZINQ galvanised material.
- The recycling of zinc and steel is done in separate cycles so the circularity of resources is maintained.



ZINQ CO2 Bank & CO2 credits

Objective:

Establish a CO2 cedit accounting system for clients based on EPD‘s.

How to:

Net CO2-savings by using duroZINQ and microZINQ to protect steel products are credited to CO2 accounts per client and based on the EPD savings factor per ton of steel. The CO2 credits are communicated to the clients by (and on) the invoices.

Test in Germany since 01/2022

Circular **Product Passes**

A (circular) product passport serves to transparently and completely record all positive and negative environmental impacts of a product over its entire life cycle.

This includes all significant impacts from corporate processes (production/scope 1,2)) from upstream and downstream process chains and use phases (scope 3, including recycling in circular quality).

For the product passport, the product reference must be as complete as possible: a corporate environmental footprint (e.g. CCF) is converted into a product environmental footprint (e.g. PCF).

External compensation of environmental impacts, i.e. not directly related to the product, are voluntary contributions by companies, but are not included in the Product Passport.

Relevant environmental impacts are those that are directly related to the threefold objective of the EU Green Deal:
zero carbon, zero waste and zero pollution.

Data collection may be narrowed down according to a generally agreed and applicable materiality limit to allow SMEs to create product passports as well.

Decisive parameters and key figures for a standardized universally applicable product passport are:

- the net life cycle CO2 emissions (with reference to EU-KSG/Fit for 55 as well as CEAP/SPI),
- the (proven) recycling rate (with reference to CEAP/SPI), and
- Material health and natural resource stewardship data (with reference to ZPAP/CEAP).

All data are to be standardized, validated and audited e.g. via iso-compliant certifications like C2C or audited declarations like EPD or HPD).

The product passport logic of a generally valid, standardized product passport (like an identity card) is to be implemented bottom up (analogous to PCDS, see website PCDS).

The product passports are stored in (sector-related) product databases such as Madaster or Catena X, which collect or evaluate all product passports for a process chain or an end product in dataspaces.

The product passport defines the manufacturer's responsibility for its product over its entire life cycle, including use and recycling with regard to the triple objective of the Green Deal.

It can be used as a basis for transferring (from regulatory and political contexts) costs that were previously externalized, i.e. borne by the general public, to products and their manufacturers.

The aim is to convert the economy to a circular and climate-neutral economy with the aim of supplementing or replacing quantitative growth as a parameter with parameters for qualitative growth.

At the same time, the "true costs" of products (true pricing) can be disclosed, allocated and balanced through the corresponding accompanying regulatory and political measures, so that distortions of competition vis-à-vis products of circular quality are largely eliminated.

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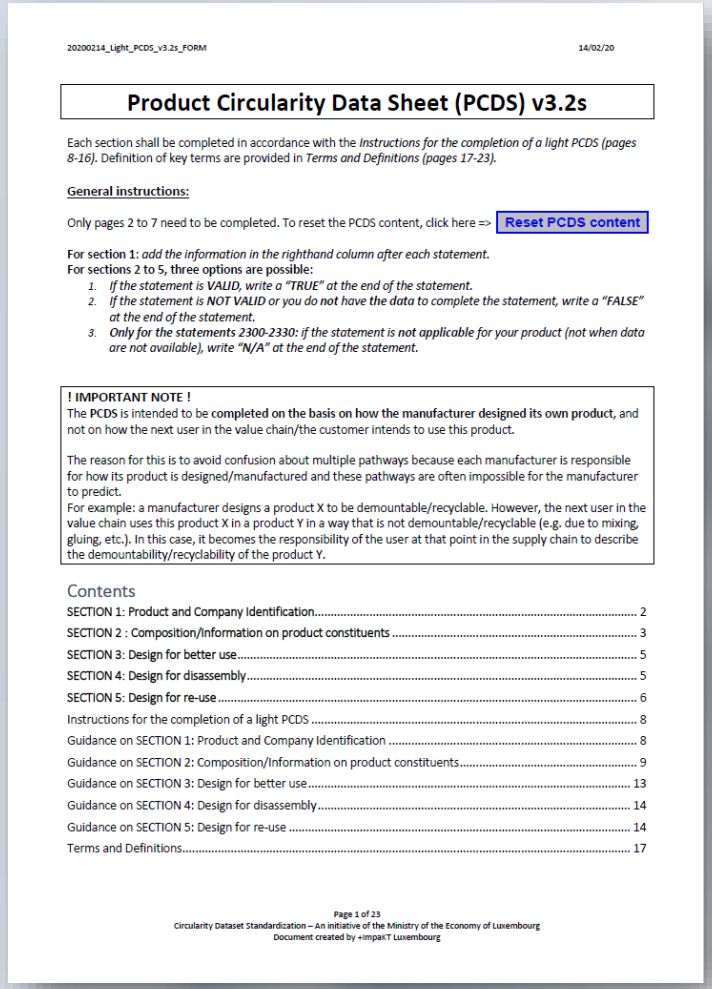
Digital product pass (PCDS)



20200214_Light_PCDS_v3.2s_FORM 14/02/20

Product Circularity Data Sheet (PCDS) v3.2s

Each section shall be completed in accordance with the *Instructions for the completion of a light PCDS (pages 8-16)*. Definition of key terms are provided in *Terms and Definitions (pages 17-23)*.

General instructions:

Only pages 2 to 7 need to be completed. To reset the PCDS content, click here => **Reset PCDS content**

For section 1: *add the information in the righthand column after each statement.*
For sections 2 to 5, three options are possible:

1. *If the statement is **VALID**, write a "TRUE" at the end of the statement.*
2. *If the statement is **NOT VALID** or you do **not have the data** to complete the statement, write a "FALSE" at the end of the statement.*
3. ***Only for the statements 2300-2330:** if the statement is **not applicable** for your product (not when data are not available), write "**N/A**" at the end of the statement.*

! IMPORTANT NOTE !
The **PCDS** is intended to be **completed on the basis on how the manufacturer designed its own product**, and not on how the next user in the value chain/the customer intends to use this product.

The reason for this is to avoid confusion about multiple pathways because each manufacturer is responsible for how its product is designed/manufactured and these pathways are often impossible for the manufacturer to predict.
For example: a manufacturer designs a product X to be demountable/recyclable. However, the next user in the value chain uses this product X in a product Y in a way that is not demountable/recyclable (e.g. due to mixing, gluing, etc.). In this case, it becomes the responsibility of the user at that point in the supply chain to describe the demountability/recyclability of the product Y.

Contents

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Passport for products (PCDS, EPD…)

- Serves to transparently and comprehensively capture all positive and negative environmental impacts of a product across its life cycle.
- Relevant environmental impacts are those directly related to the 3 objectives of the EU Green Deal.
- Parameters + key figures of PCDS.

  - ✓ **net CO_2 emissions over the life cycle**
  - ✓ **proven recycling rate**
  - ✓ **materials life cycle data + natural resource monitoring**

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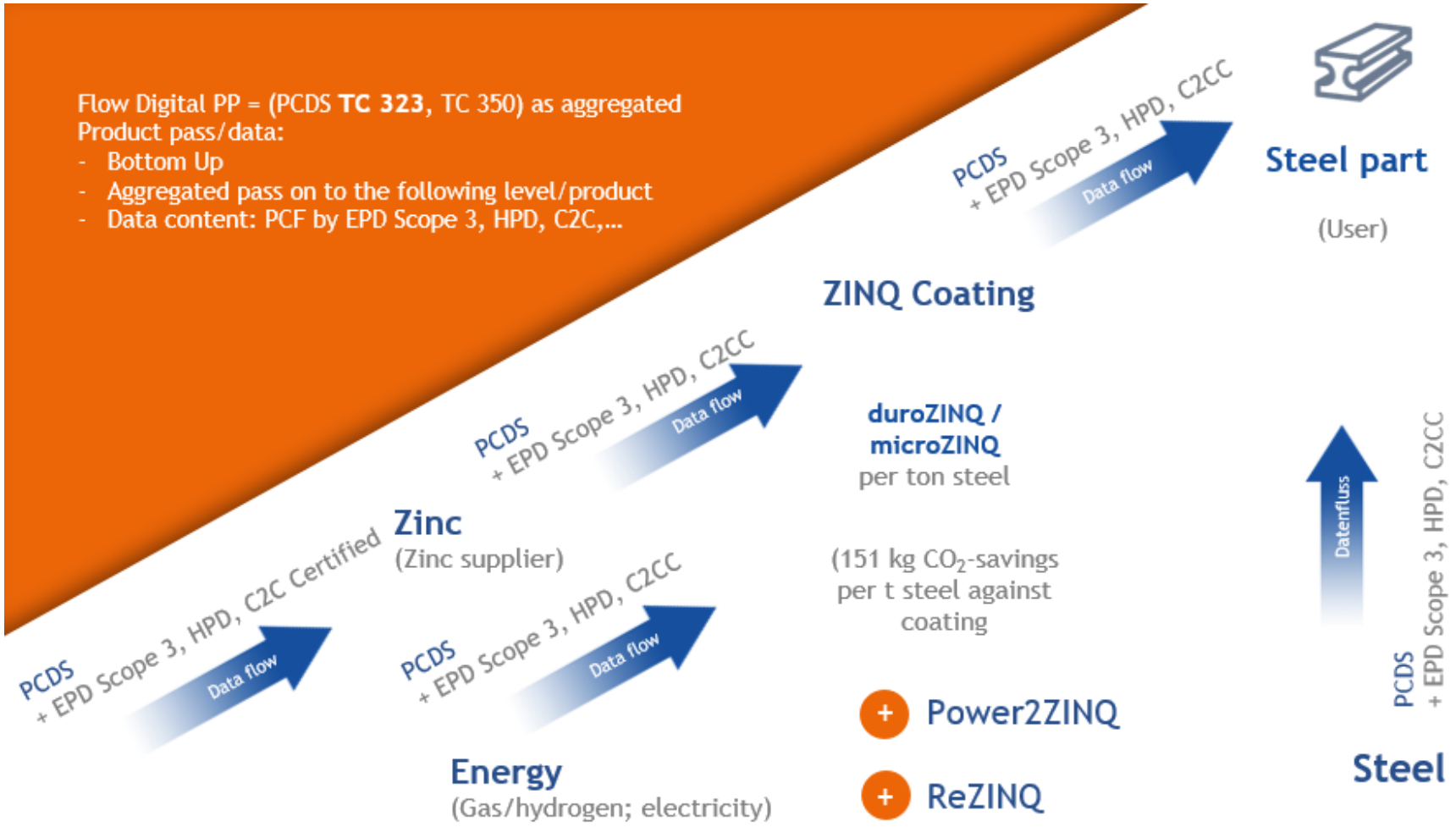
Bottom-up product pass



Sustainable Innovations.
Sustainability requires Innovation

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ZINQ® Futurium

The place where the future is being made.

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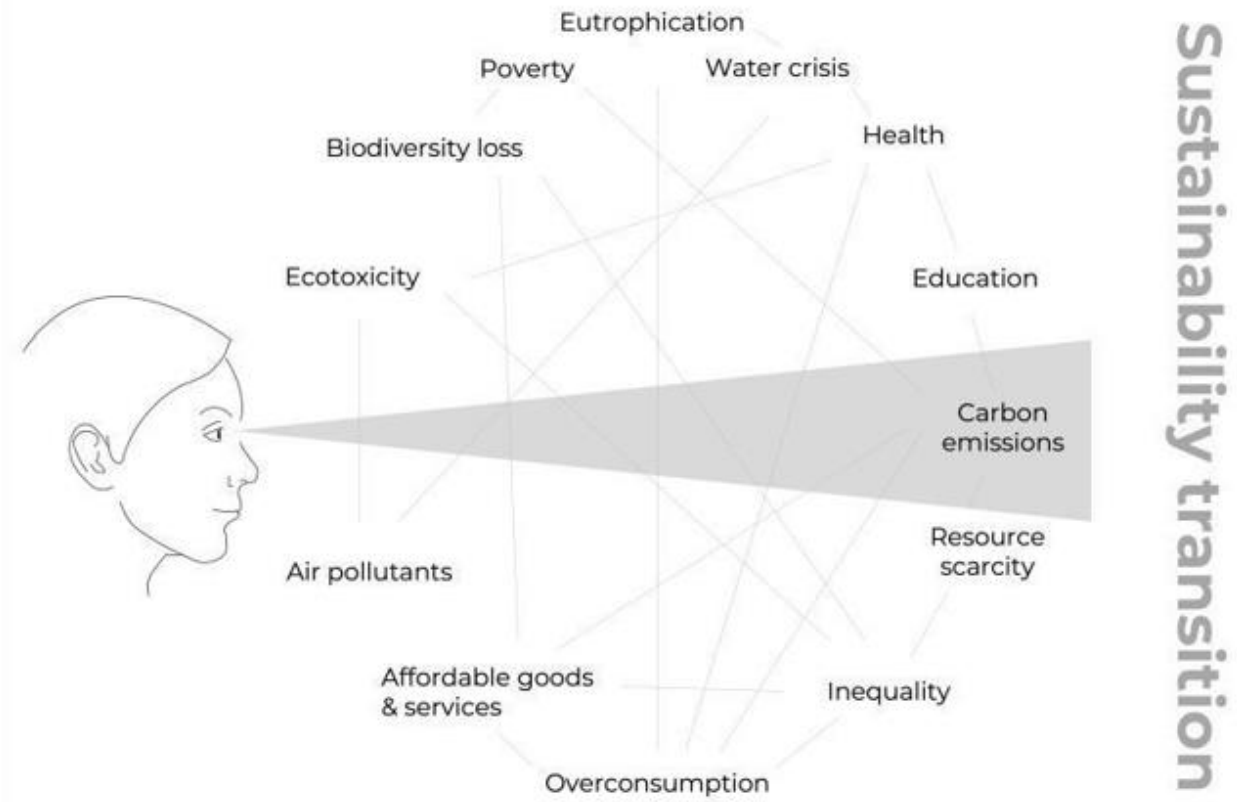
Carbon Tunnel Vision



ZINQ®

ZINQ Groep - België
Centrum Zuid 2037
B-3530 Houthalen

Tel: +32 11 510 210
Fax: +32 11 510 211

zinq@galvapower.com
www.zinq.com

Title Slide: Philippe Van Gelooven ©