

PLM GREEN ALLIANCE



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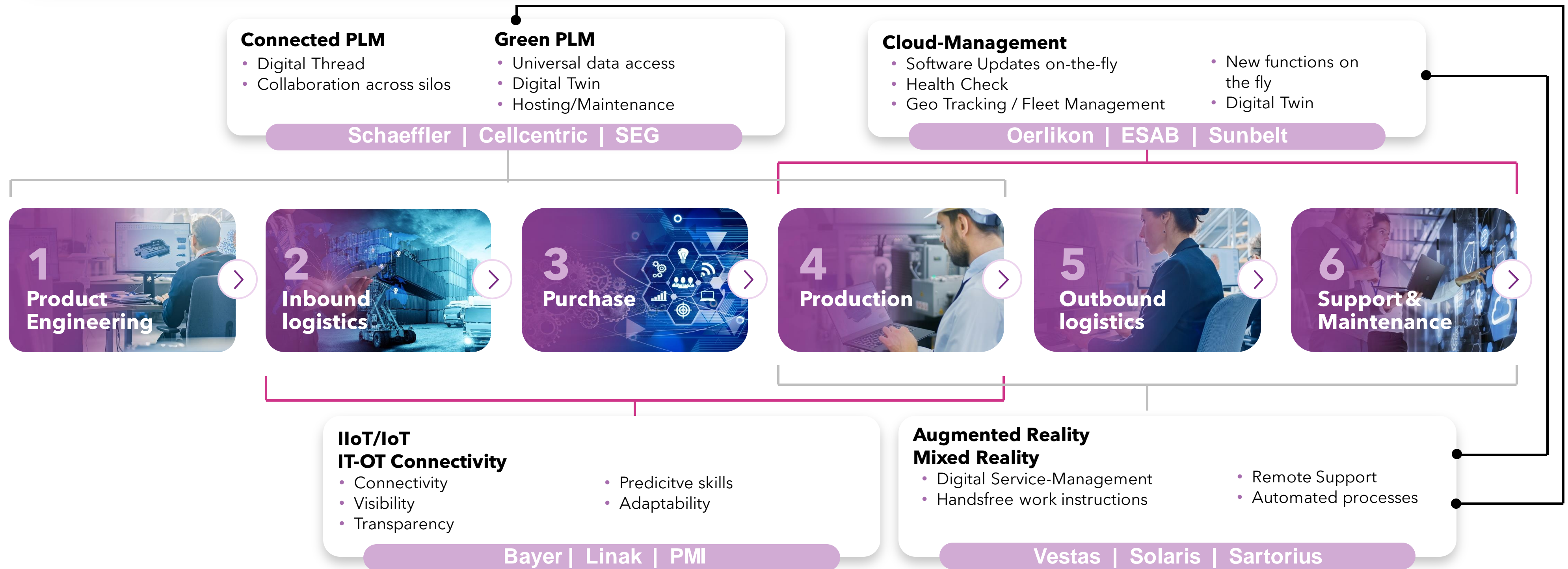
**\_Green PLM**



**TRANSITION**  
TECHNOLOGIES

# We accompany you in the digitization of your value chain

How does digital transformation make your company more successful with us?





# \_ Environmental pressure for ECO design - EU example

General framework imposing **Ecodesign** requirements on products intended for sale on EU markets



Source: EU

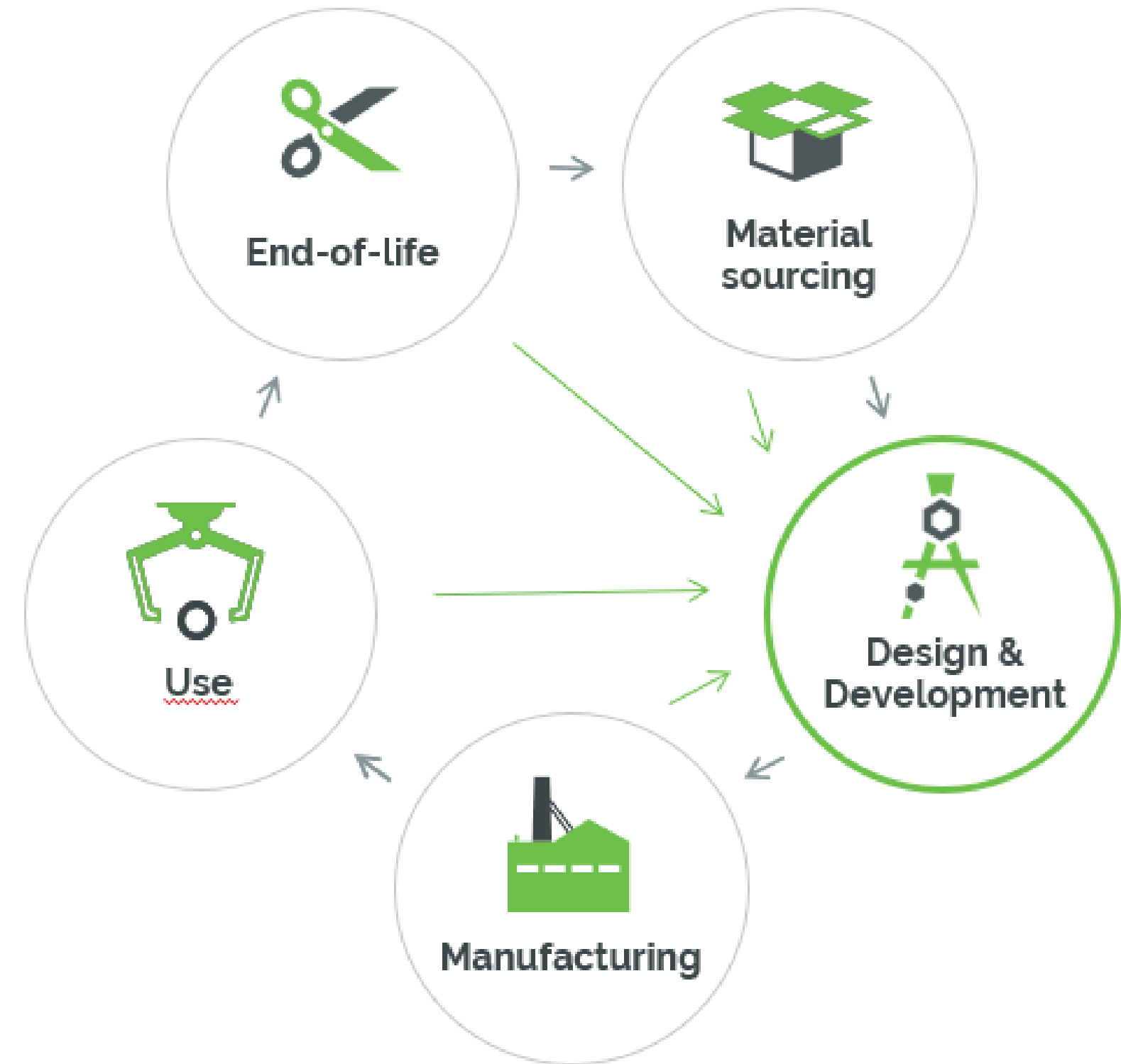
## Key aspects:

- Emphasize on **circularity aspects** of products
- Life-cycle **environmental impact of products**, including their carbon and environmental footprints;
- Incorporating **Digital Product Passport**



# \_ Product design drives environmental impact

~80% of product's environmental impact is determined at design stage.



# \_GreenPLM - environmental footprint toolbox

## Capabilities

- **Define** environmental targets
- **Calculate** environmental footprint of product design decisions
- **Compare** environmental impact between product versions and variants
- **Collaborate** between product design, manufacturing and environmental departments in one common place
- **Manage** bottom-up carbon footprint calculation and roll-up for entire product

The screenshot displays the GreenPLM environmental footprint toolbox interface. At the top, there are navigation tabs: "Product structure" (selected), "Human activities", "Impact indicators", and "User settings". Below the tabs, the "Part structure" section shows a 3D model of a robotic arm with a green section. A table below the model lists the parts in the structure:

| Number  | Name                | Part Mass | Part Volume | Part Surface Area | Quantity | CO2 emission |
|---------|---------------------|-----------|-------------|-------------------|----------|--------------|
| 0000002 | Robotic_arm.asm     |           | 0.0640      | 5.2822            | 1 each   | 0.00         |
| 0000002 | Pneumatical_cup.prt | 505651.10 | 0.34        | 4.22              | 1 each   | 0.00         |
| 0000002 | Pneumatical.asm     | 3531.95   | 0.7563      | 1.33              | 1 each   | 0.00         |
| 0000002 | 810.00              | 7373.6    | 0.4927      | 1.56              | 12 each  | 0.00         |
| 0000002 | 810.00              | 7373.6    | 0.4927      | 1.56              | 12 each  | 0.00         |
| 0000002 | 810.00              | 7373.6    | 0.4927      | 1.56              | 12 each  | 0.00         |

Below the table, there is a "Status of part(s)" panel for the selected part "Pneumatical\_cup.prt". The panel shows the following details:

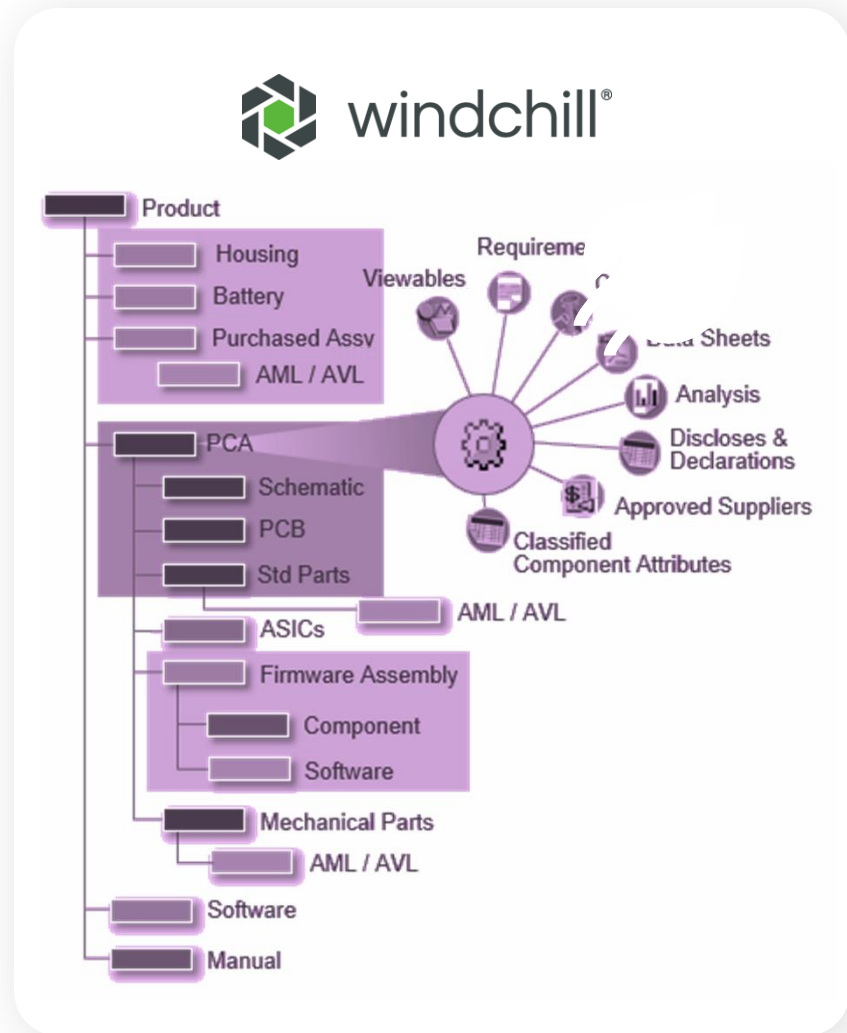
- Name: Pneumatical\_cup.prt
- Number: 0000002
- Version: B.1 (Design)
- State: in Work
- Last Modified: 2023-04-19 10:05:51 UTC
- Mass: 13.61 g
- Volume: 0.000002 m3
- Surface Area: 0.001175 m2

The "Status of part(s)" panel also displays a grid of impact indicators with their values and a "Target Emission" button. The indicators include:

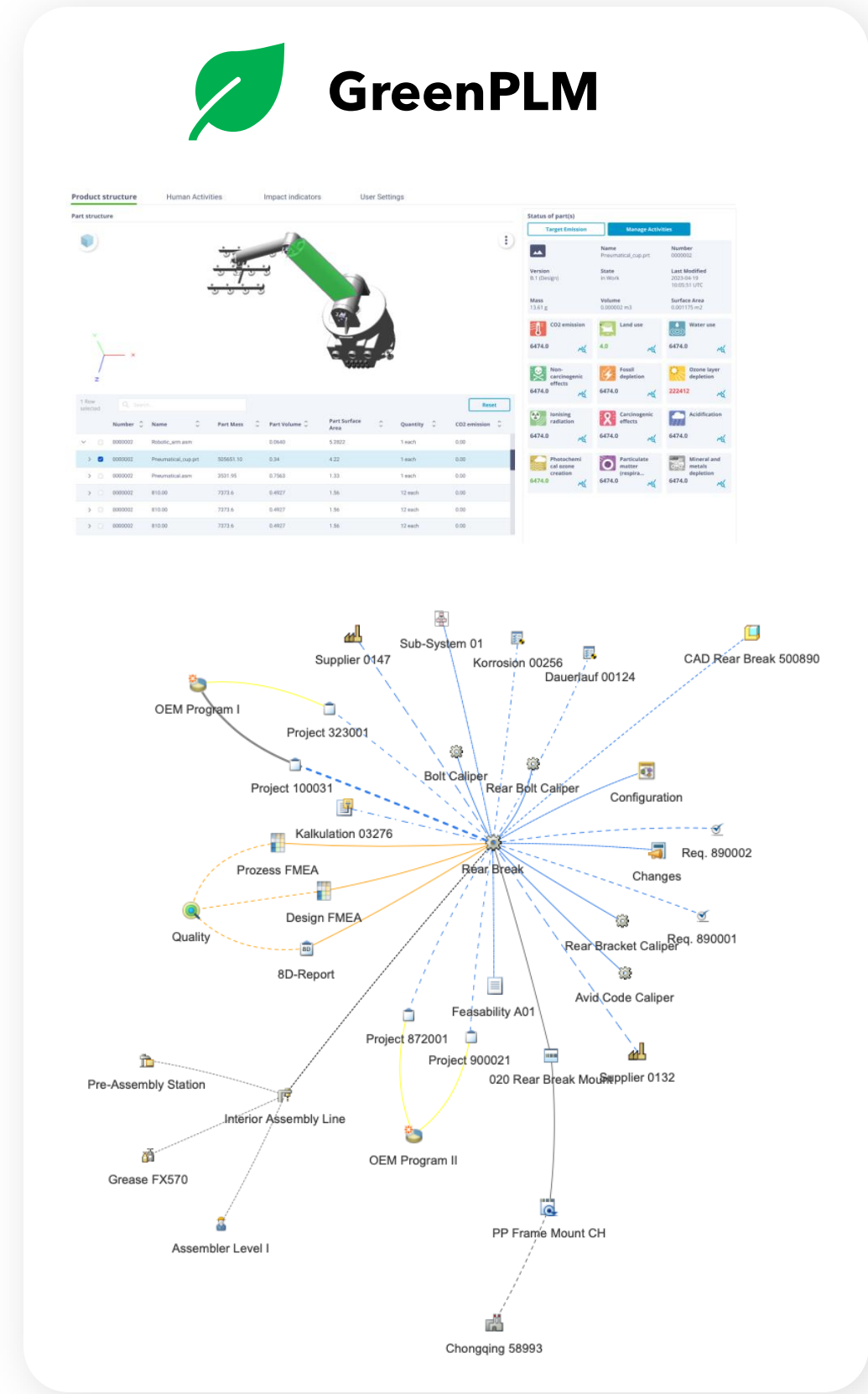
- CO2 emission: 6474.0
- Land use: 4.0
- Water use: 6474.0
- Non-carcinogenic effects: 6474.0
- Fossil depletion: 6474.0
- Ozone layer depletion: 222412
- Ionising radiation: 6474.0
- Carcinogenic effects: 6474.0
- Acidification: 6474.0
- Photochemical ozone creation: 6474.0
- Particulate matter (respira...): 6474.0
- Mineral and metals depletion: 6474.0



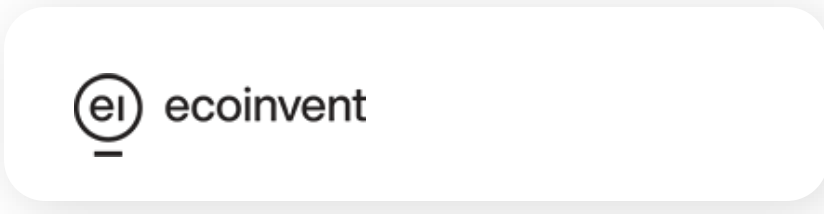
# GreenPLM - integrated sustainability toolbox



Product Engineer



Environmental Leader



Material compliance

ERP

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**Digital traceability of sustainability data** from multiple sources

**Product data**



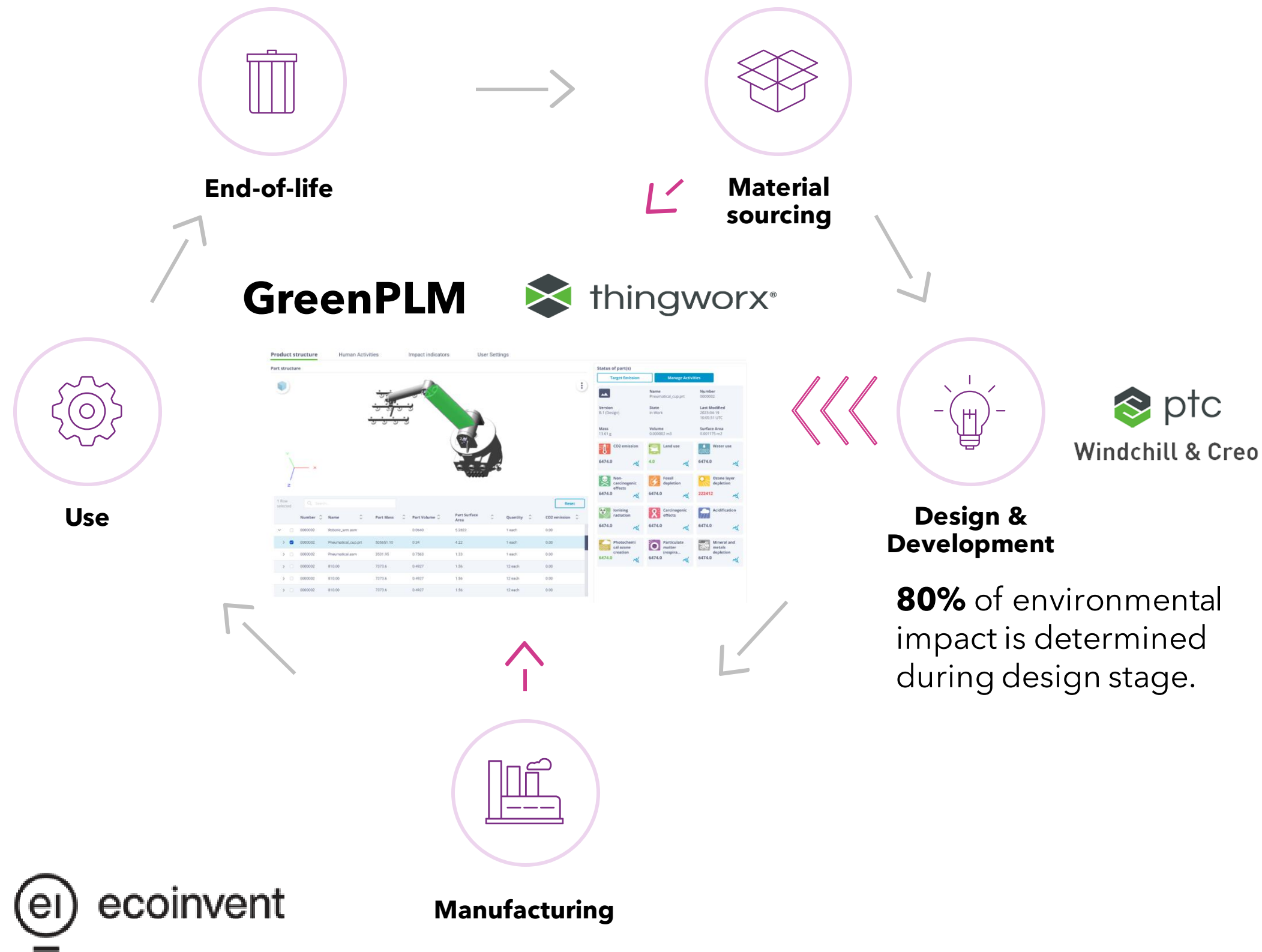
Material Type/Mass, Volume, Quantity (BOM)

**Environmental processes**



Production, Treatment, Construction, Service, Transport

# GreenPLM - sustainability platform across digital thread



Outlook of product engineering decisions on environment.

## Benefits:

- Use **existing product data** from your **Windchill PDMLink** for environmental footprint calculation
- Connect with other systems using OSLC to get **comprehensive sustainability information**
- **Integrate** with environmental/LCI databases (**ecoinvent**) to calculate footprint for unknown parts
- Build on existing infrastructure and data with **brownfield approach**

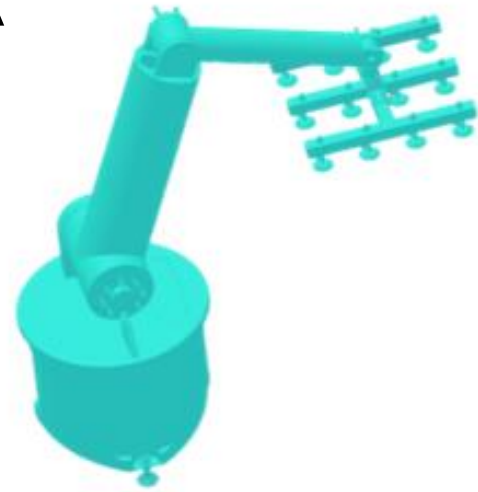


# \_GreenPLM - environmental footprint comparison

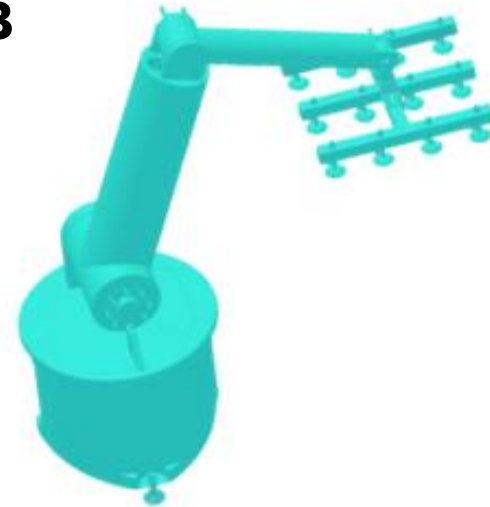
Product engineer understands holistic **environmental effect difference** between product versions.



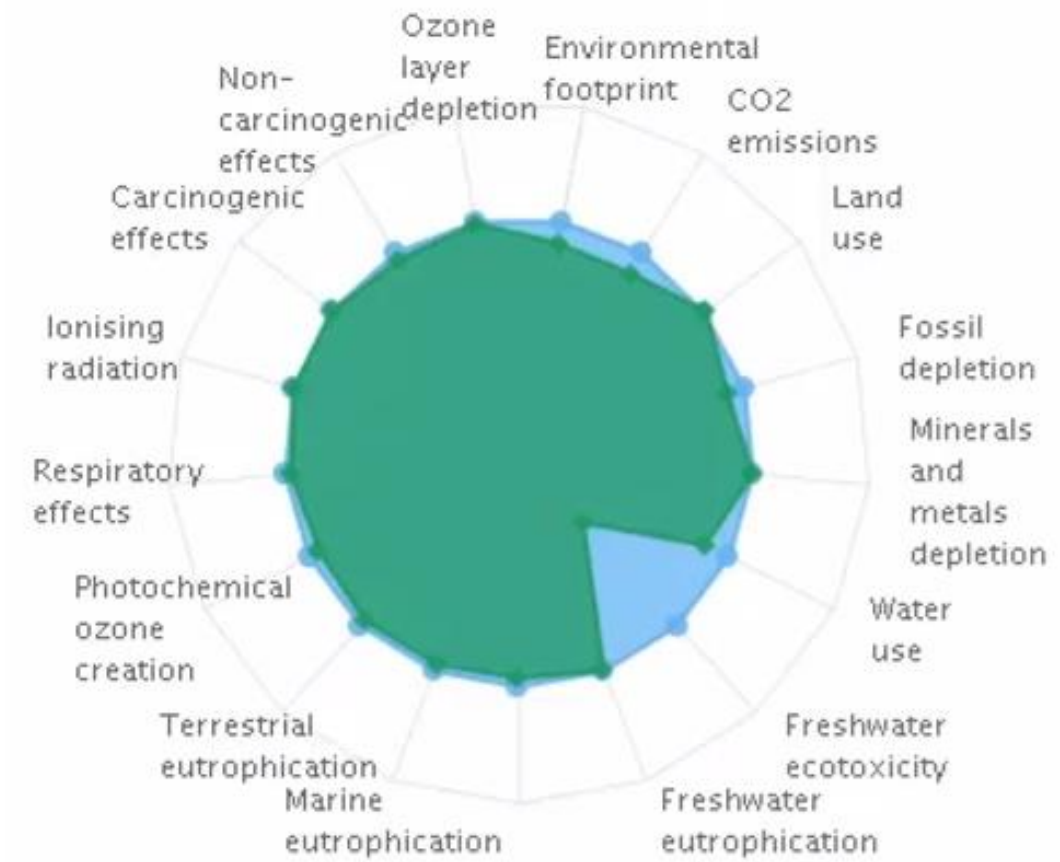
Version A



Version B



## Environmental Footprint Comparison



● Version A  
● Version B



# Do you have questions ?

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<https://ttpsc.com/en/solutions/green-plm/>

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