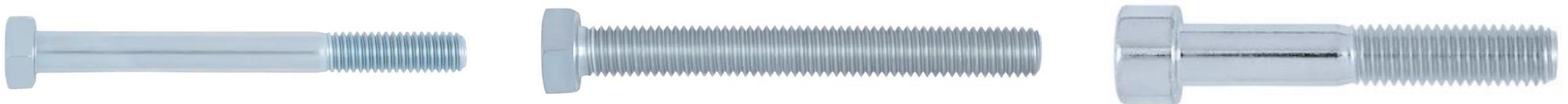


DETECTING ENVIRONMENTAL HOTSPOTS IN EXTENSIVE PORTFOLIOS THROUGH LCA & DATA SCIENCE



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WÜRTH

THE SUCCESS IN FIGURES



2.214

Mio. Euro turnover (YTD December 2020)



204

Mio. Euro turnover operating result (YTD December 2020)



7.477

Employees



3.270

Sales representatives

STRATEGY & MEASURES

OUR VISION 2025



2025

3.500.000.000 TURNOVER

**FROM DEALER TO
MANUFACTURER**



**PLATFORM
ECONOMY**



SUSTAINABILITY



**MULTICHANNEL
STRATEGY**



**PICK UP-SHOP
DEVELOPMENT**



**FUTURE
LOGISTICS**



**EMPLOYER
BRANDING**



WHAT DOES THIS MEAN FOR **WÜRTH**?

“With four million customers worldwide, small things can result in BIG changes”

FROM A LINEAR TO



CIRCULAR ECONOMY

ENVIRONMENTAL HOTSPOTS IN EXTENSIVE PORTFOLIOS

GOAL AND SCOPE

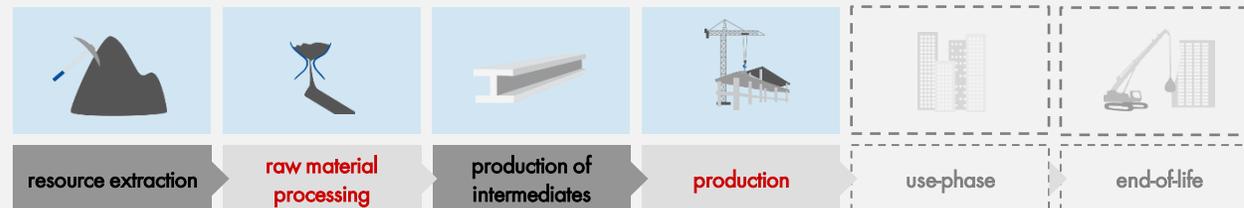


GOALS

- Hotspot-analysis
- Transparency
- Data management
- Innovation

SCOPE

cradle-to-gate LCA of the production of selected screws
within the product portfolio regarding their carbon footprint
(EF3.0 climate change)



© Illustration: Fraunhofer IBP

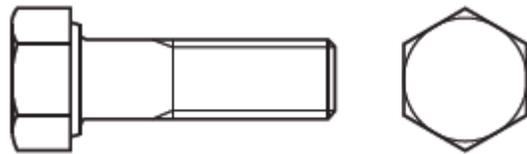


REFERENCE UNIT

production of 1 piece of screw

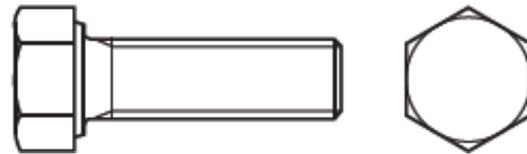
ENVIRONMENTAL HOTSPOTS IN EXTENSIVE PORTFOLIOS

SELECTED PORTFOLIO ELEMENTS



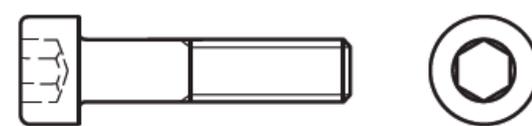
Hexagon head bolts

ISO 4014 / DIN 931
11.282 products



Hexagon head bolts
with thread up to head

ISO 4017 / DIN 933
11.339 products



Hexagon socket head
cap screws

ISO 4762 / DIN 912
11.996 products



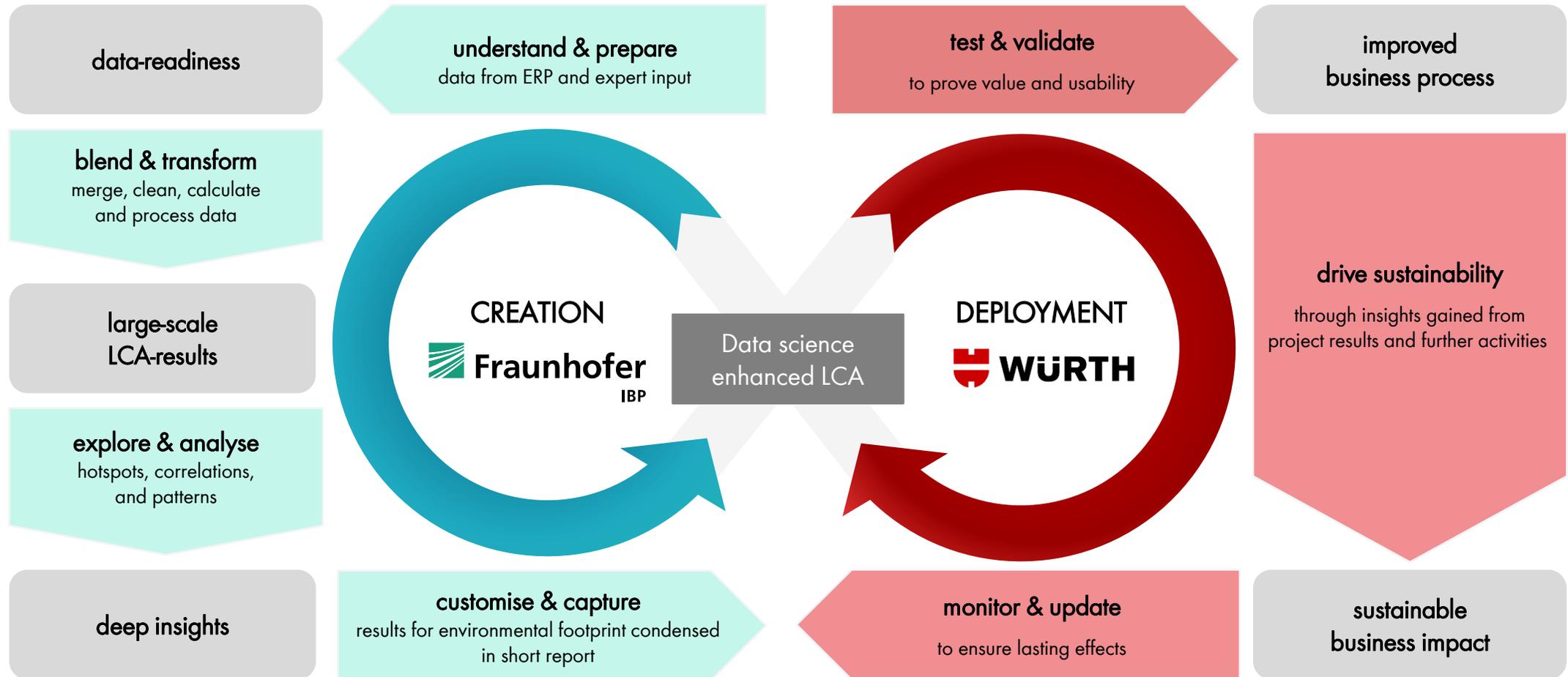
KEY LCA CHALLENGE

large number of products with only
minor deviations in design and specifications

ENVIRONMENTAL HOTSPOTS IN EXTENSIVE PORTFOLIOS

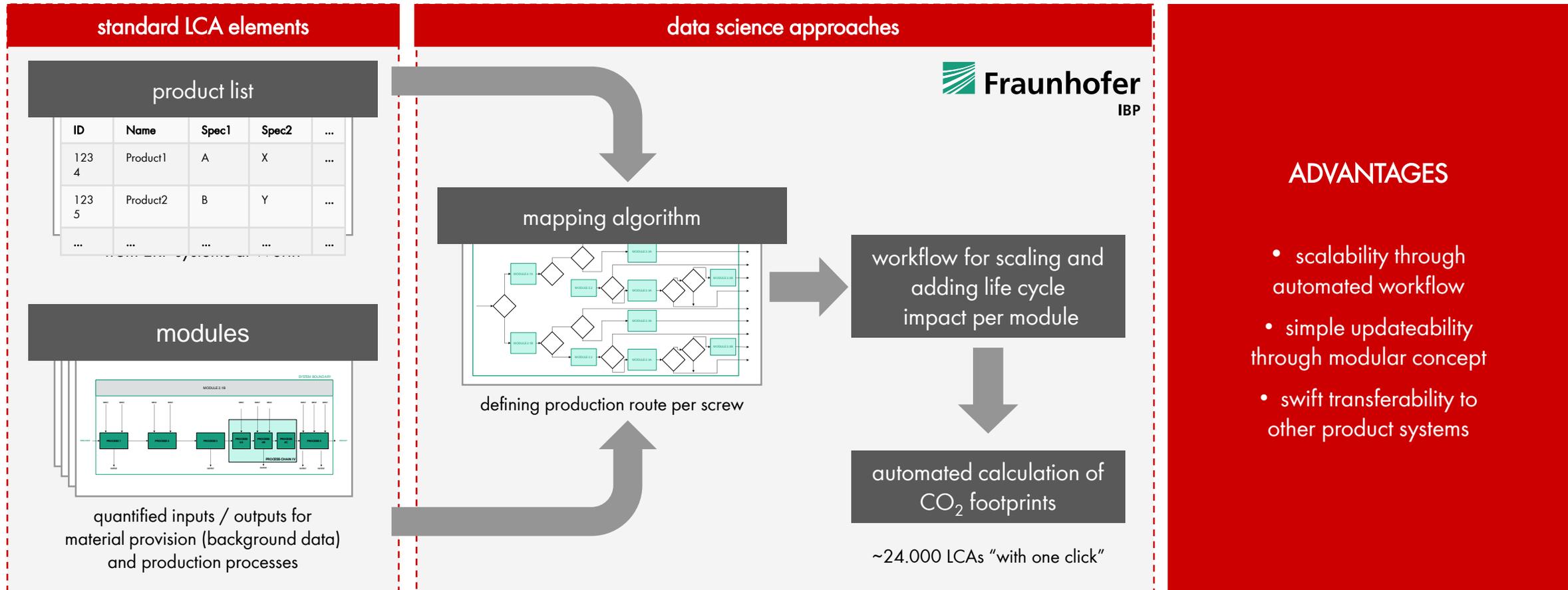


DATA SCIENCE ENHANCED LCA FOR WÜRTH BY FRAUNHOFER IBP



ENVIRONMENTAL HOTSPOTS IN EXTENSIVE PORTFOLIOS

MODULAR AND SCALABLE APPROACH

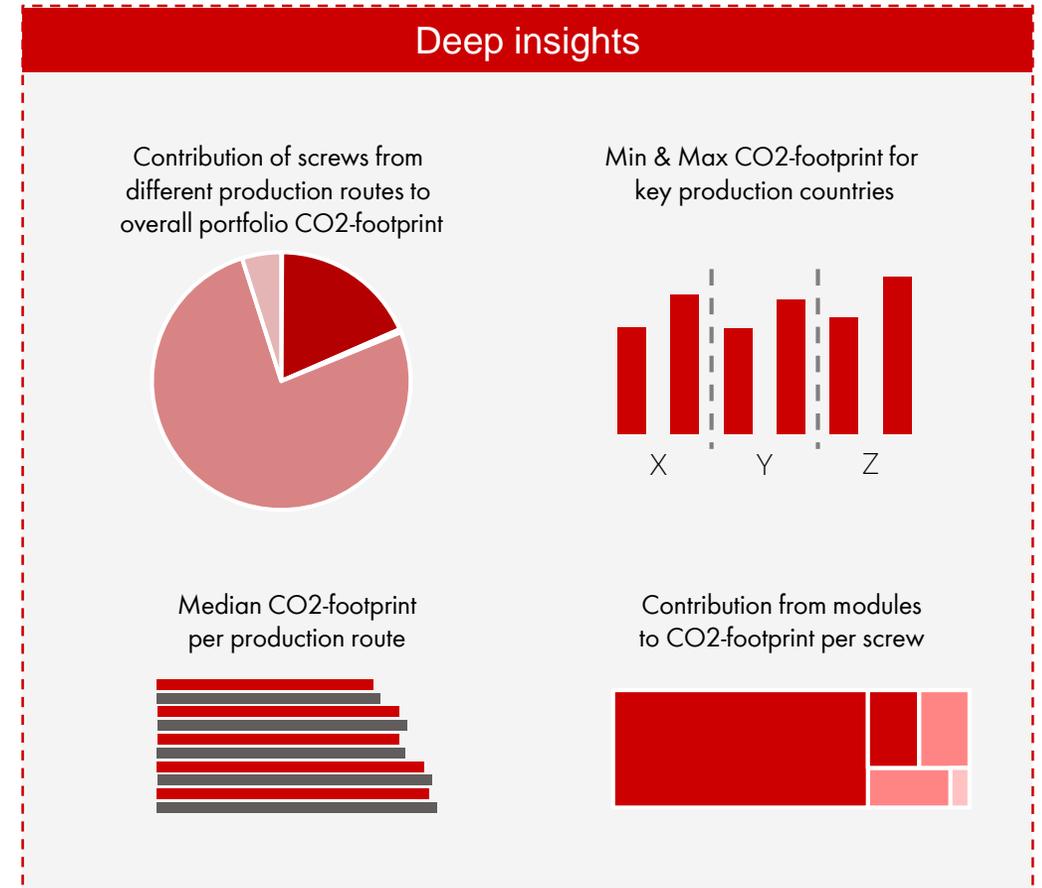


ENVIRONMENTAL HOTSPOTS IN EXTENSIVE PORTFOLIOS

PROJECT OUTCOME

- **Individual CO₂-footprints calculated for ~24 000 screws** (EF3.0 climate change in kg CO₂/kg screw)
 - results allow identification of hotspots on portfolio and process level through high-quality estimates on product level
 - modelling includes 10 typical production routes, each including a unique set of processing steps (modules)
 - regarded product parameters: material, mass, diameter, surface, hardness class, applying standard
- **Relevant data gaps identified**
 - In ERP database
 - Regarding relevant LCI data

→ either already closed during project or measures identified



ENVIRONMENTAL HOTSPOTS IN EXTENSIVE PORTFOLIOS

IMPLEMENTATION INTO BUSINESS PRACTISE



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