

4th International Workshop on Innovation and Production Management in the Process Industries

„Good morning everybody 😊“

Hannes Utikal and Janine Heck | Building D607
Frankfurt am Main | 12th-13th May 2022



**Process₄
Sustainability**

**Cluster for climate-neutral
process industries in Hesse**



Welcome



provadis
Hochschule

Prof. Dr.
Hannes Utikal



provadis
Hochschule

Janine Heck



 **WWU**
MÜNSTER

Prof. Dr. Jens
Leker



MD
Mälardalen
University **U**

Prof. Dr. Dr.
Thomas Lager



Our regional challenge





ZIN: Center for Industry and Sustainability

(Think and do tank for a sustainable industry)

Provadis Group 2020:

60 Mio. Euro in revenue, 1.200 students,
1.000 participants in vocational training



- Founded in 2016
- Cumulated budget 15+ Million Euro
- Interdisciplinary applied research and professional education projects
- Sustainable Entrepreneurship: 350 + start-ups in Europe supported
- Sustainable Education: 2500+ Persons trained
- Applied Research & Cluster Process4sustainability.eu



Our cluster: Process4Sustainability.eu



Process4
Sustainability

Cluster für eine klimaneutrale
Prozessindustrie in Hessen

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gefördert durch:



EUROPAISCHE UNION:
Investition in Ihre Zukunft
Europäischer Fonds für regionale Entwicklung



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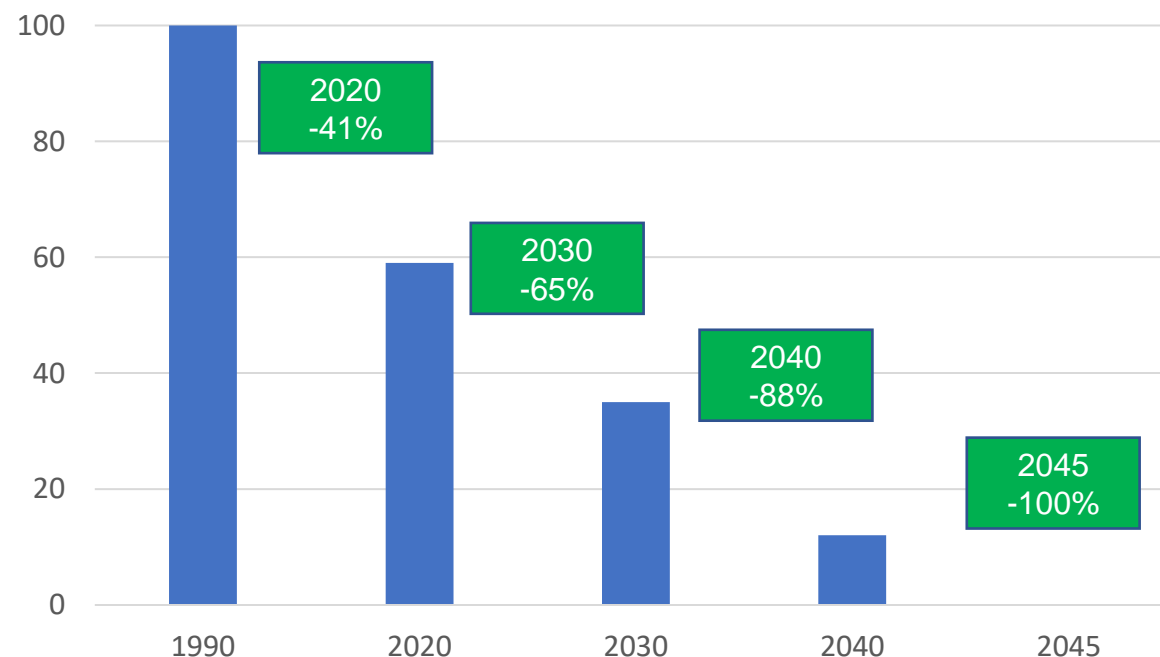


Goals:

- Translate the goal of CO₂-neutrality for the individual company and the industrial park
- Identify relevant technologies and bring them to the park
- Cooperate with innovation and solution providers as well as with policy and civil society

CO₂ reduction targets: The challenge for companies at Industriepark Höchst

CO₂ emissions in Germany in %.




Focus Topics

- Green energy supply
- Green raw materials
- Circular economy and new business models
- CCU & CCS
- Chemical recycling

Source: Federal Environment Agency; Climate Protection Act 2021

Multi-Level-Perspective



 12 – 13 May
2022

 Industrial Park Höchst,
Frankfurt, Germany

 Workshop
by invitation only
(75 participants)

provadis
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 **WWU**
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 **infraserv**
höchst

 **Process4
Sustainability**

 EUROPÄISCHE UNION
Investition in Ihre Zukunft
Europäischer Fonds für regionale Entwicklung

 HESSEN

 **MDU**
Mälardalen
University

 **VCW**
GDCh

Systems level ■ How do different countries translate the EU Green Deal to their national contexts?

Company level ■ How can companies transform their activities to achieve CO₂-neutrality in 2045? (scenarios, pathways, business models, technologies)

Innovation and production management ■ What innovation methods are suitable to handle the challenge?
■ What are the latest technological developments in the fields of energy transformation and defossilisation of feedstock for the process industries (CCU, CCS, hydrogen)?

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What are your take-away messages so far?

Some spotlights

- **Multiple perspectives are needed**
- **Industry-level roadmaps for the transformation exist – Processes4Planet as a vehicle for the transformation of the eleven process industries**
- **Transformation pathways are context specific:
Steel industry in Sweden;
amonia production in Europe depend on availability and prices for renewable energy (and regulation for CCS)**
- **Industrial parks can be seen as „hubs4transformation“:
places for innovation and upscaling**
- **What are the new business models?**
- **...**



Thank you to:

- All participants and guests
- All facilitators of roundtables and working groups
- All involved universities



- Our sponsors and partners



- All our Cluster partners and European Union and the state of Hesse



Please contact us



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