



The big 3 Transformations

Technological megatrends as perspective for manufacturing companies

• 1.

The big 3 Transformations

**The industry sectors are facing
3 radical transformations in 1 decade**

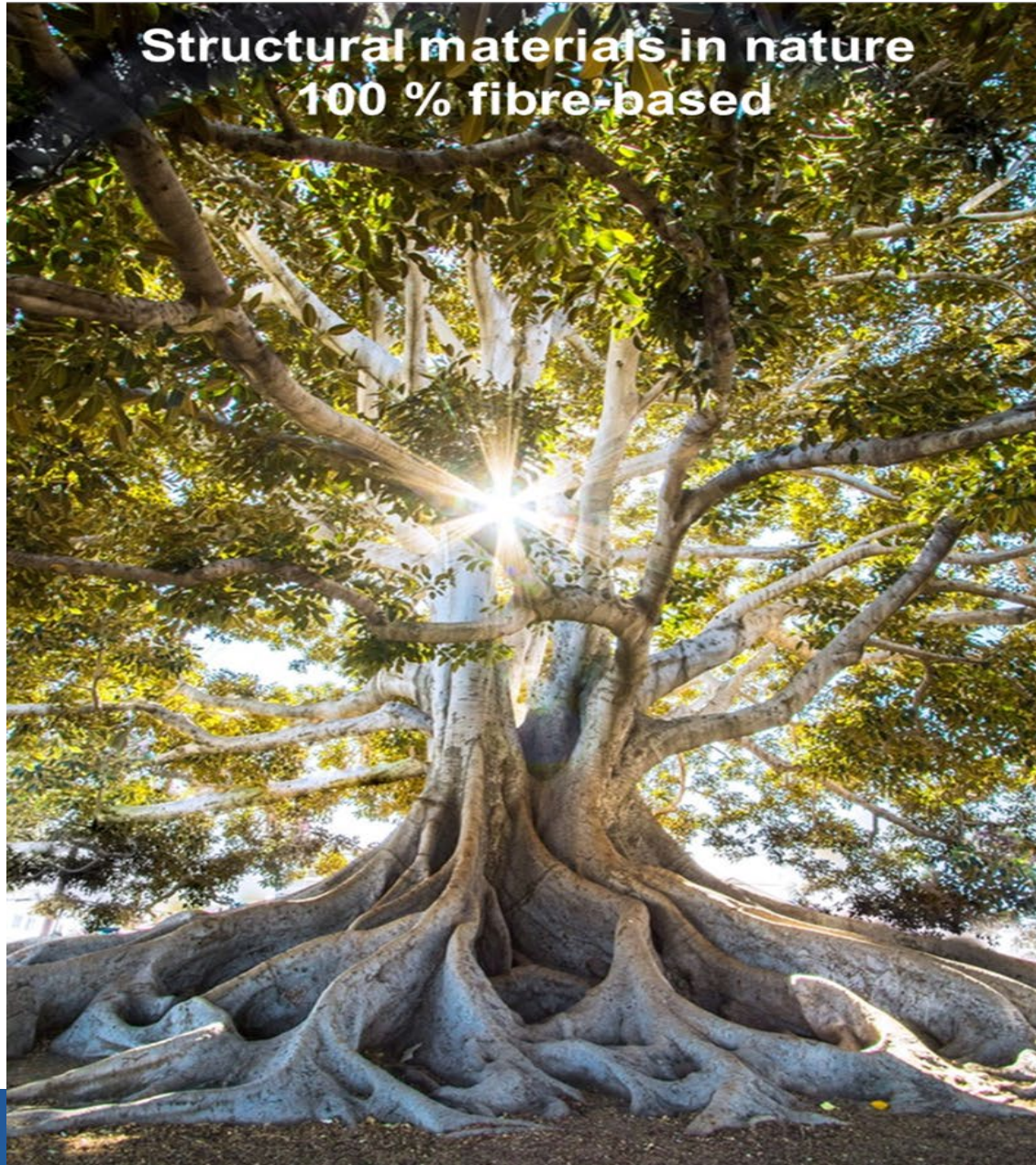
- **Industrial Transformation**
- **Sustainability and Defossilisation**
- **Digitalisation and Automation**

1. Industry Transformation

Textiles? Textiles. Textiles!

**Why fibre-based materials offer a huge technical potential,
why the textile sector is utmost economical relevant
and why textile technology has been and is a innovation pacemaker.**

Textile? Textile. Textile! Potential and Relevance



Our materials: up to 10 % fibre-based



High potential to use more fibres

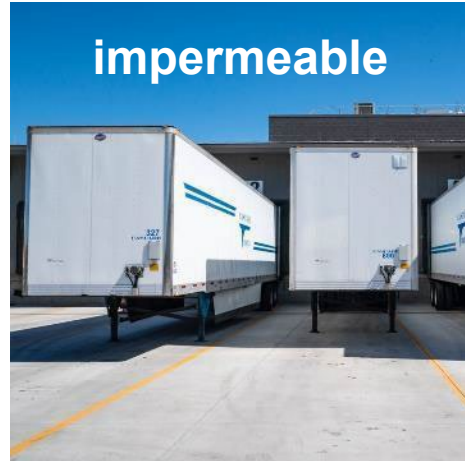
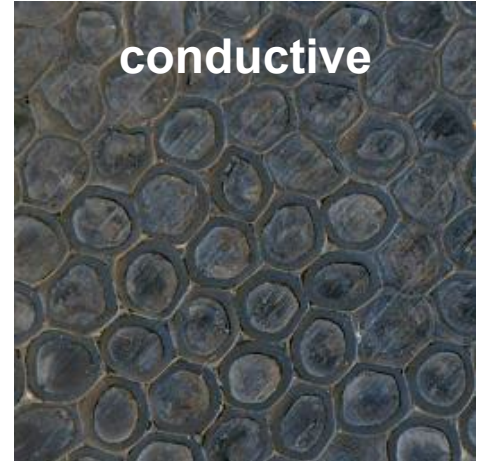
Carbon, glass, polymer, metal, ceramic...

~ 100 mio. t/a Fibres consumption world-wide

#2 Consumer sector in Germany

#3 Economical sector world-wide

Fibre-based Materials – highest Performance and largest Variety



Example: Product Development Car Interior of the future

**The Interior is
the exterior of
the future**

**Light is the
new chrome**

**Interior for
self-driving
automobile**



Exam

Media

Software

Climatisation

Mechantronics

Textile/Leather

Electronics



Comfort

Price

Sustainability

Safety

Hygiene

A close-up, high-magnification photograph of a green fabric, likely a woven textile. The image shows the intricate texture of the fibers and the way they are interlaced. The lighting is soft, highlighting the three-dimensional quality of the weave. The overall color is a vibrant, slightly muted green.

2. Biotransformation

• 1.

Accelerating the transformation to sustainability in the textile industry

Endemic



<1800

Colonial



1800

Wood



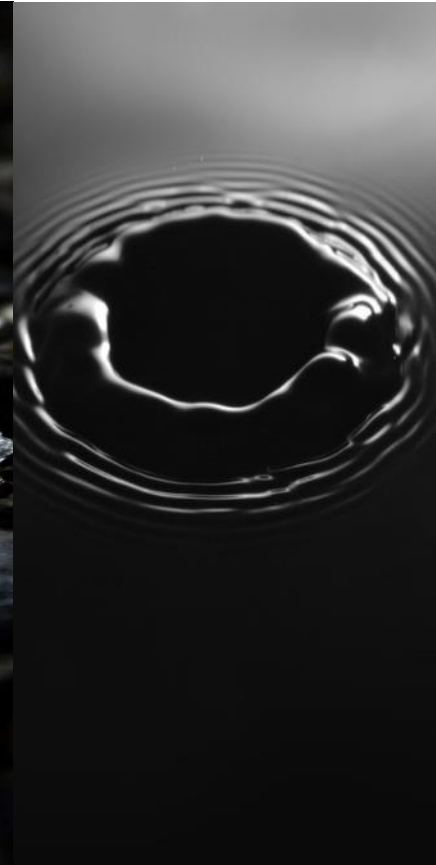
1897

Coal



1935

Petro



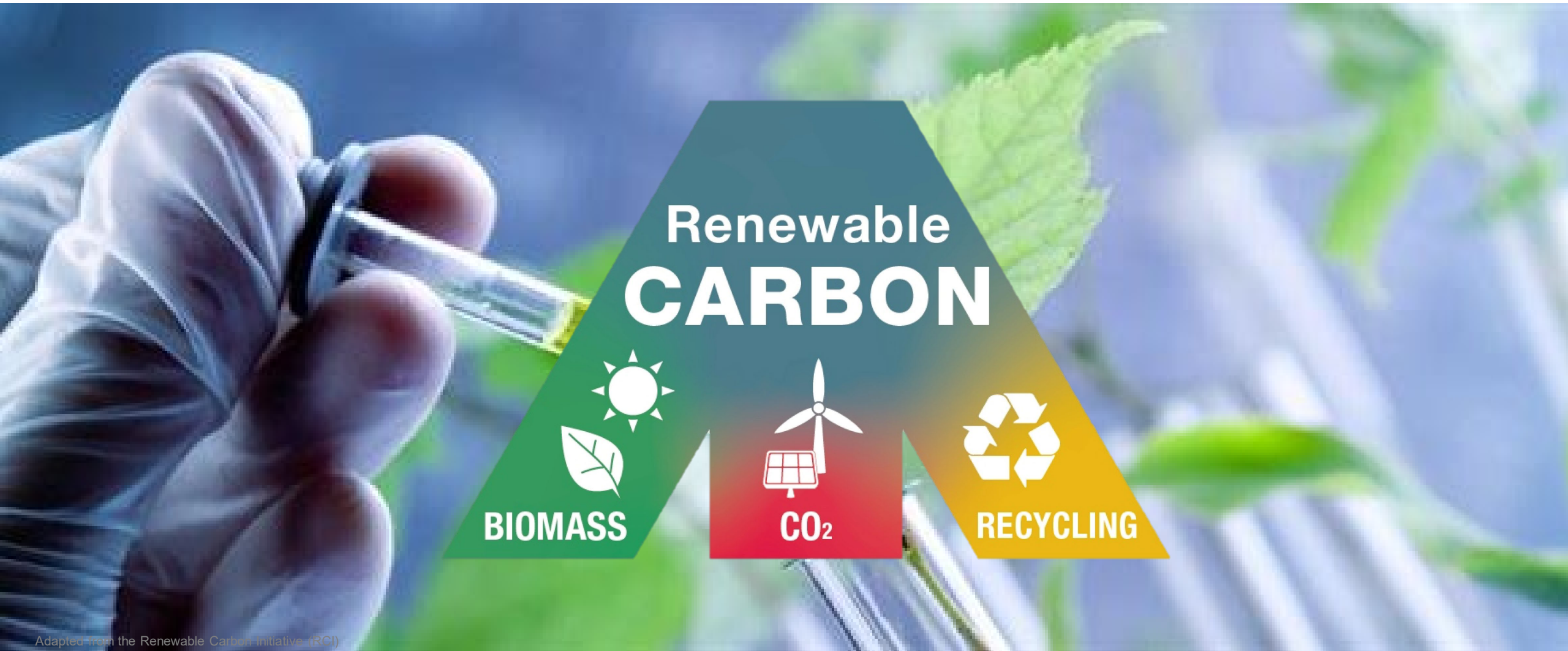
1950

Bioeconomy



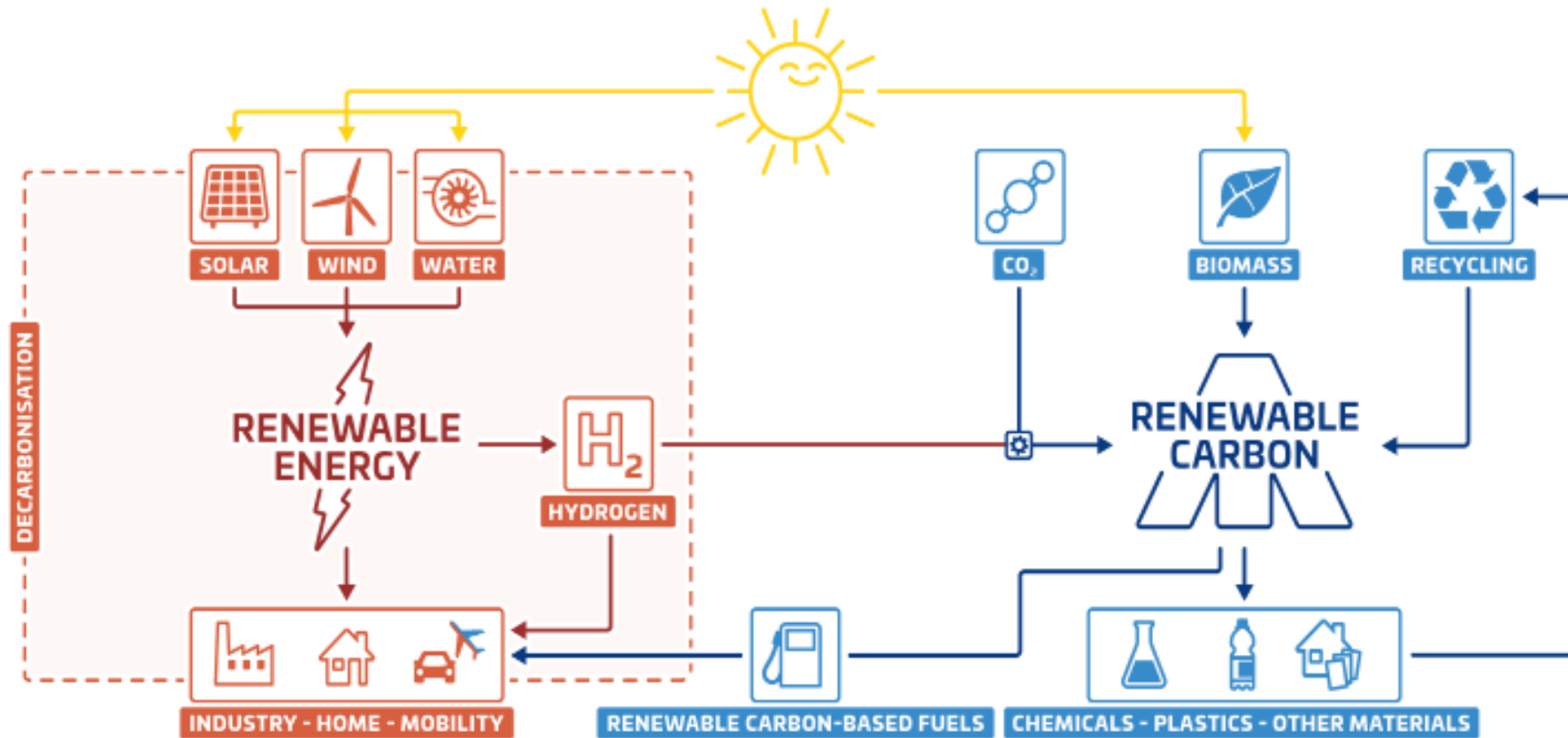
>2020?

Renewable Carbon Strategy - 3 pathways towards defossilisation



Mission Statement – Textile Bioeconomy at ITA

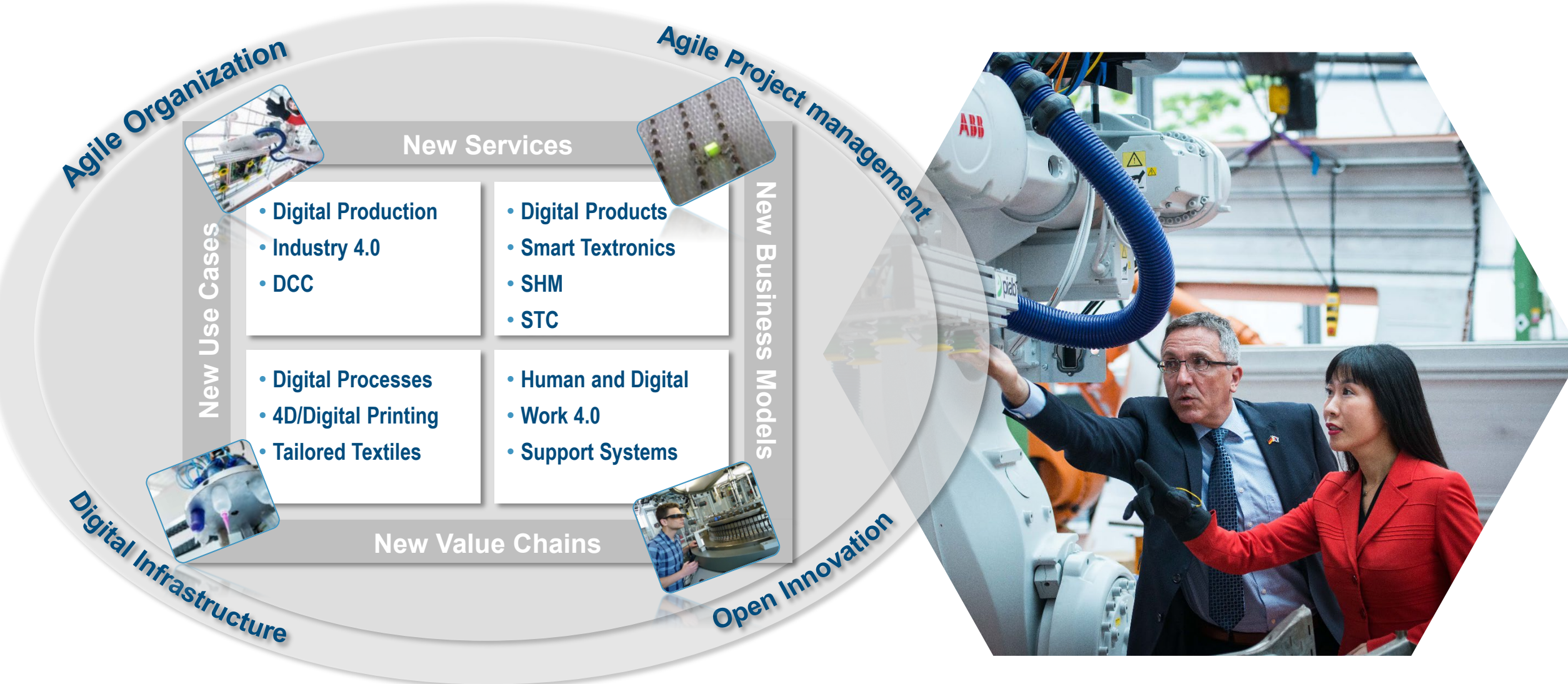
Renewable Energy and Renewable Carbon for a Sustainable Future



3. Digital Transformation



ITA - Digital Oriented Institute



ITA ACADEMY - CONSULTANCY FOR THE INDUSTRY



ITA Academy GmbH is a renowned **training & consulting company** specialized in the provision of textile training and digitization workshops. With its many years of experience in the textile industry, the ITA Academy has earned an excellent reputation for providing **high-quality consulting services**. The ITA Academy is a spin-off of RWTH Aachen University, with a **large network of professionals and experts**. Since 2017, the ITA Academy has been operating the **Innovation & Learning Center Aachen**, founded with McKinsey & Company. The ILC Aachen is one of the world's five **leading learning factories for the digital transformation** of production. In a realistic factory environment, specialists and managers from manufacturing companies are given the tools they need to **drive forward the digital transformation** in their own company. The ILC Aachen is a cooperation between the management consultancy McKinsey & Company Inc., the ITA Academy GmbH and leading technology providers.



A vibrant community



Customized
DIGITIZATION-WORKSHOPS

OPEN
FOR VISITORS FROM ALL SECTORS

7 YEARS EXPERIENCE
IN CAPABILITY BUILDING

50 SOLUTIONS AROUND DIGITAL
& SUSTAINABLE MANUFACTURING

INNOVATION
CONSULTANCY & R&D PROJECTS

- www.ita-academy.de
- ITA Academy GmbH
- ita.academy.aachen
- itaacademyaachen
- Itaacademyaachen
- post@ita-academy.de

Mittelstand-Digital Zentrum Smarte Kreisläufe

Circular Economy

- Supply chain transparency, Carbon Footprint, Policies

Economic Efficiency

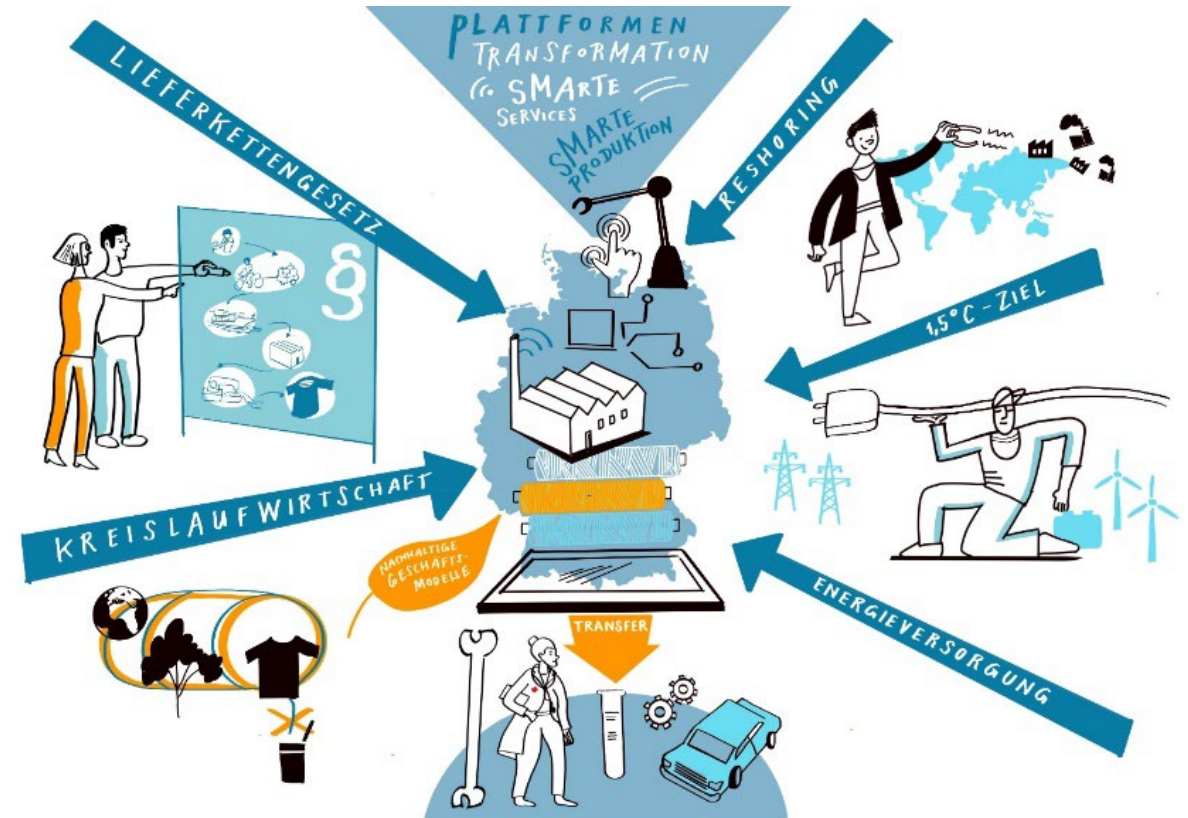
- Business models, AI, Productivity

Qualification and Work 4.0

- Demographic change, Attractiveness for employees

Offers of the MDZ Smarte Kreisläufe for SMEs

- Information provision and needs assessment
- Qualifying workshops and learning units
- Digitalisation roadmaps for strategy development
- Development projects

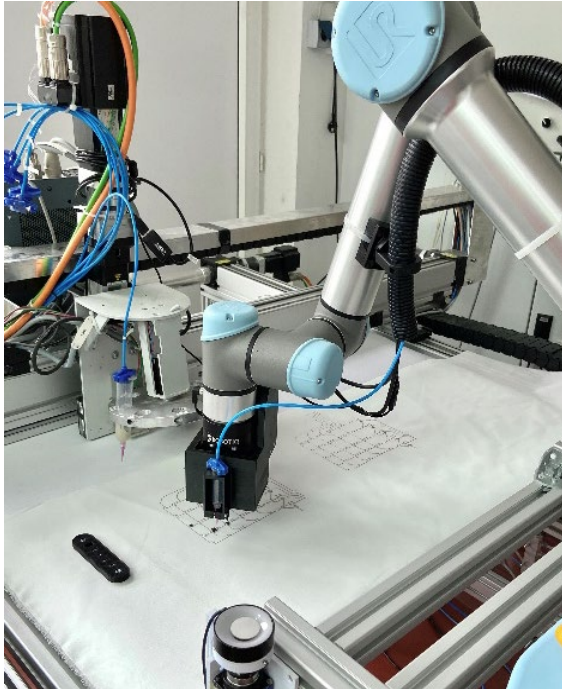


Success of the Smart Textronics Center STC in cooperation with South Korea



Success of the STC

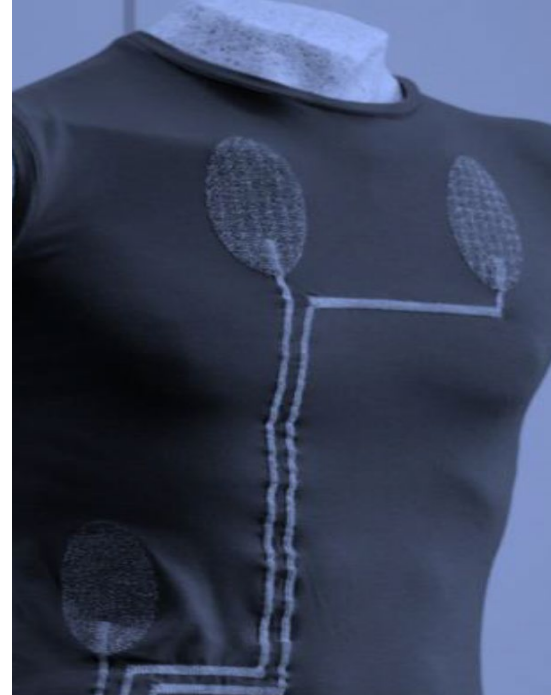
Realized end Products and Production Technologies



CREATIF

Smart fabrics by printing active electronic materials in the form of inks/pastes.

Digital Printing and Robot-Pick&Place



CAST

Cardiac Measuring Shirt for Telemedicine

Stitching



GeniusTex

Intelligent textile products by means of digital networking

Roll-2-Roll Printing and Pick&Place



SurfTexAntenna

Textile antenna for the localization and communication

Weaving

Robotics

Smart Textronics Center

Incubator Area

Accelerator Area

Digitalisation of textile machines

Key principles



User research and testing



Usability and user experience design



Open Innovation



Continuous improvement

Benefits

Future envisioned by research and Innovation

Bringing Ideas to life- from a functional prototype to full production.

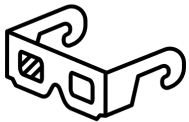


Creation

- Consumer oriented
- Collaboration

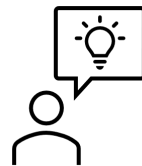


- Digital demonstrators

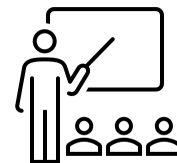


Innovation

- Incubator

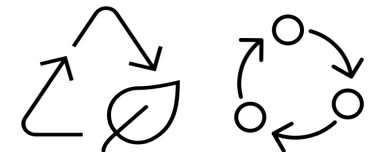


- Education



Digital

- Industry 4.0 & 5.0



- Accelerator



Work 4.0: WIRKsam – Regional Centre of Excellence for Work Research

- Participatory development of work systems and use of artificial intelligence (AI) as a tool for employees
- Innovative work and processes with AI offer potential for ecological, economic and social sustainability
- Employees are more highly qualified and relieved of monotonous and harmful tasks in their work
- Jobs will be retained and become more attractive
- Companies increase their product quality

WIRKsam

WISSEN

sichern &
transferieren

PROZESSE

planen &
flexibilisieren

QUALITÄT

sichern &
steigern



ifaa
Institut für
angewandte Arbeitswissenschaft



intex
consulting group

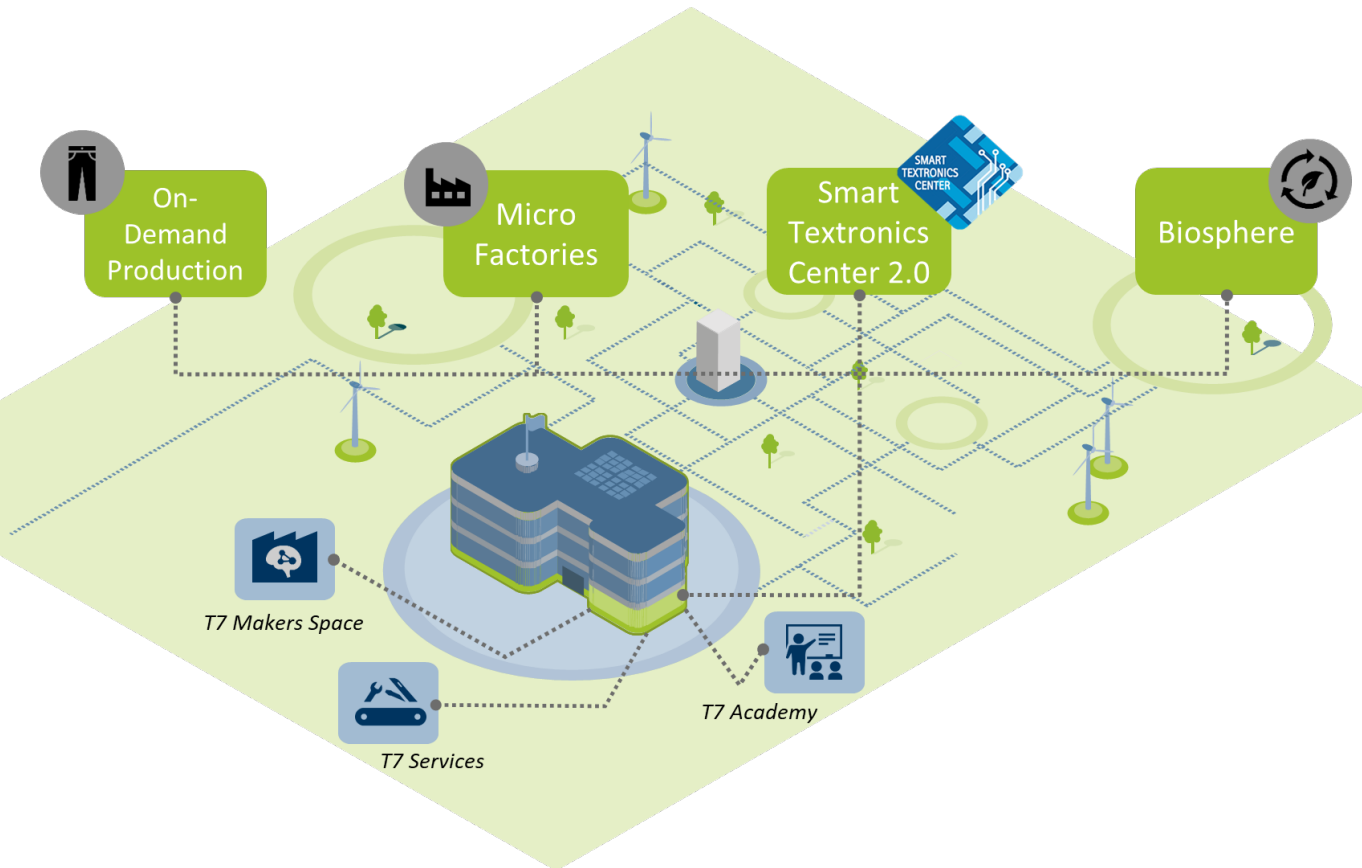
MASKOR
Mobile Autonome Systeme
und Kognitive Robotik

ii solutions
intelligent growth



Gefördert durch das Bundesministerium für Bildung und Forschung im Rahmen der Fördermaßnahme „Regionale Kompetenzzentren der Arbeitsforschung“ (Förderkennzeichen: 02L19C600) und betreut vom Projektträger Karlsruhe (PTKA).

Outlook for the future - Textilfabrik 7.0 – the Textile Production Park of the future!



- T7 is an **application-oriented** model project and stands for the industrial workplace of the future
- It is individual, **sustainable**, networked, **digital** and transparent business park
- T7 is modeling **industrial production in 2035** that generates new jobs in the Rhenish mining region and
- It is equally **competitive in a global context.**



**Managing
the 3 big Transformations
through Cooperation.**

**Let's join all our forces
for our mutual success!**

Final Call for Cooperation

- The ITA group is leading in thriving on transformation
- National and international projects for a sustainable and digital future
- We foster cross domain collaboration with new formats
- Interested in collaborating? Get in touch!

Contact



Univ.-Prof. Prof. h.c. Dr.-Ing. Dipl.-Wirt. Ing. Thomas Gries

Institut für Textiltechnik (ITA) der RWTH Aachen University
Otto-Blumenthal-Straße 1, 52074 Aachen

Phone: +49 241 80-23401

Fax: +49 241 80-22422

E-Mail: thomas.gries@ita.rwth-aachen.de

www: www.ita.rwth-aachen.de

Events: www.ita.rwth-aachen.de/events

Social Media: 

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www.ita.rwth-aachen.de

