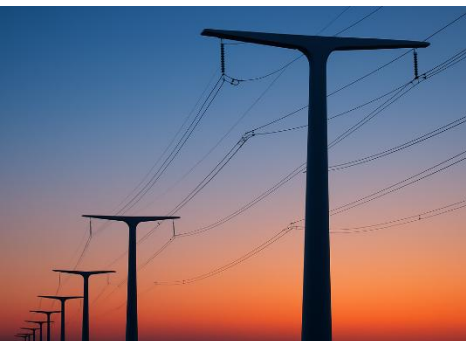




AZL Joint Partner Market & Technology Study

Next Generation Composites in Buildings & Infrastructure

A 2026 Global Outlook on Growth, Sustainability, and Digitalization

Markets and Applications | Materials | Production Technologies | Business Opportunities

Project Start (Kick-Off): February 26th 2026

Next Generation Composites in Buildings & Infrastructure

The New Market Imperative: Why We Must Act Now

The Market for Composites in B&I is expanding rapidly, driven by demands for sustainability, lower maintenance, and better performance.

Market Growth

- Composite building materials market could exceed **\$21 billion in 2025, 12% annual growth** [1]
- Market forecasts indicate continued expansion, with a **CAGR of 5.8% from 2025 to 2032**, reaching \$11.38 billion by 2032 [2]

Benefits and Trends

- **Lightweight, corrosion-resistant, and high-strength** composites are replacing steel and concrete, leading to cost savings over the project lifecycle from lower maintenance and repair [1]
- Composites uniquely support **energy-efficient, sustainable building practices** and help governments and firms meet climate action targets and net-zero emissions goals [3]

Competitive and Innovation Advantages

- Advanced composites deliver **improved fire resistance, durability, and insulation**, with rising integration of smart sensors and self-healing capabilities. [4]
- Regulatory standards for composites have broadened in 2025, boosting confidence among developers and insurers and facilitating wider adoption through updated codes (ISO, ASTM, CEN) [1]
- Governments now offer tax incentives and funding mandates for composites in public projects, making participation more attractive for construction firms. [2]



This study provides the critical data to give you a strategic advantage to enter or enlarge the B&I markets

Next Generation Composites in Buildings & Infrastructure

Project Objectives and Results

Our Objectives: A Strategic Update & Upgrade

- **UPDATE:** Re-evaluate the 25 core applications from our 2017 B&I study with fresh 2025 market data, growth forecasts (CAGR), and competitive analysis.
- **UPGRADE:** Identify and quantify new growth engines driven by:
 - **Sustainability:** Circular Economy, LCA-driven material choice, bio-composites.
 - **Digitalization:** Integration with BIM, sensor-equipped "smart" components.
 - **New Applications:** Hydrogen infrastructure, modular data centers, and more.

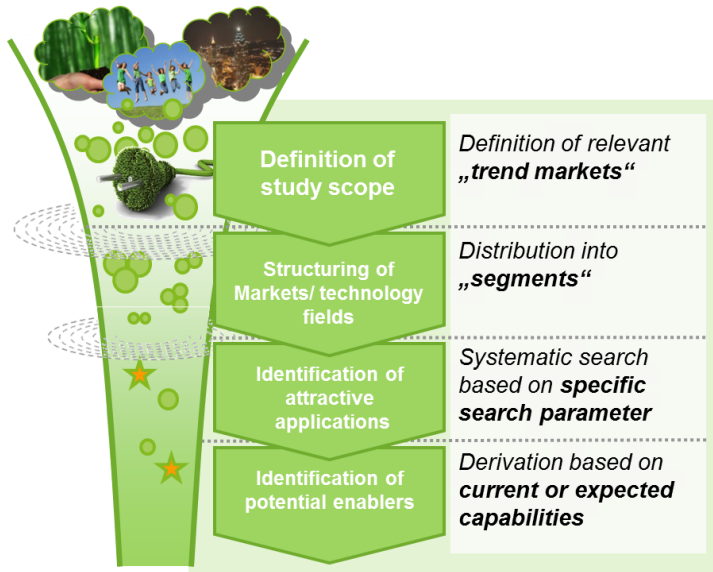
Your Results: An Actionable Toolkit for Growth

- **Comprehensive Study & Executive Summary:** The definitive guide to the market.
- **Actionable Application Factsheets and Deep-Tech Insights into Materials and Technologies:** At-a-glance data on Market Size (\$/€), CAGR, & Competitive Intensity for every key application.
- **Exclusive Data Package:** Full data access for your internal business cases.
- **Strategic Roadmap:** Clear recommendations on where to invest and innovate.
- **Exclusive Partner Workshops:** Discuss results and network with industry leaders.

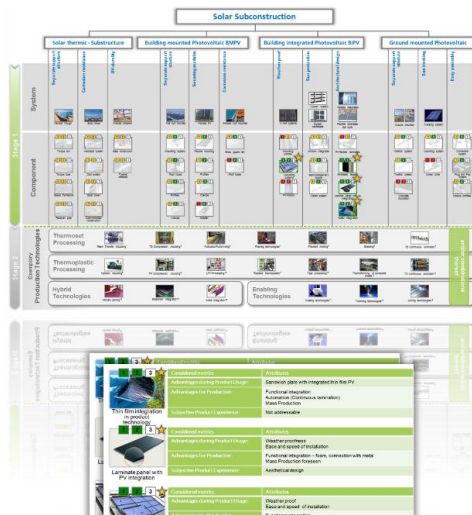
Next Generation Composites in Buildings & Infrastructure

Systematic Approach of this Market & Technology Study

Exemplary Approach of
a Reference Study:
see Annex A



Structured analysis and evaluation of technologies & applications in technology trees:



Market Overview & Segmentation

- Composites in Buildings & Infrastructure
- Energy storage and Renovation

Application & Technology Insights

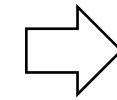
- Comparative screening of relevant applications within identified sub-segments

Technology Insights and Value Chain Mapping

- Technology overviews
- Overview on value chains incl. key players

Results will be prepared as:

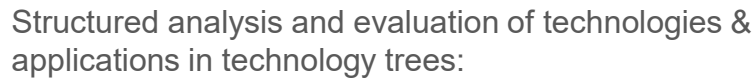
- Comparative KPI matrices
- Technology trees
- Value maps and fact sheets
- Technology fact sheets and providers



Segment Profiles (incl.)

- Segment description
- Market intelligence
- Drivers and hurdles and constraints (e.g. regulatory, functional, operational)
- Potentials for composite related technologies
- Sub-segments

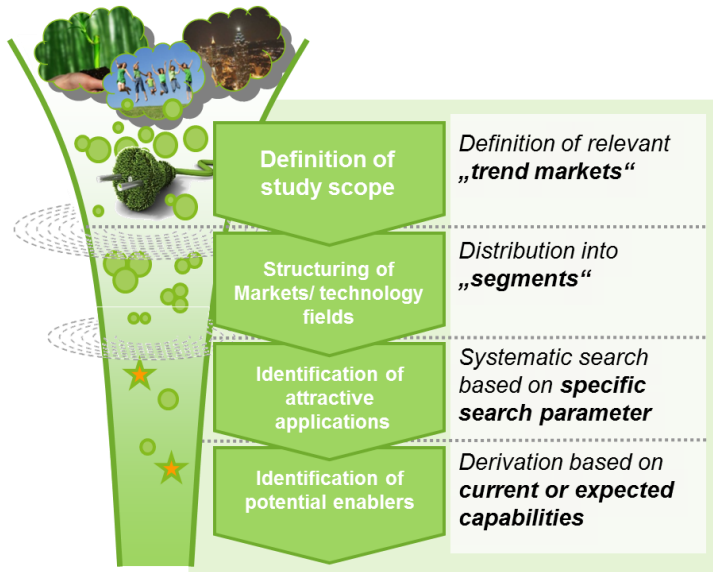
**Exemplary Approach of
a Reference Study:
see Annex A**



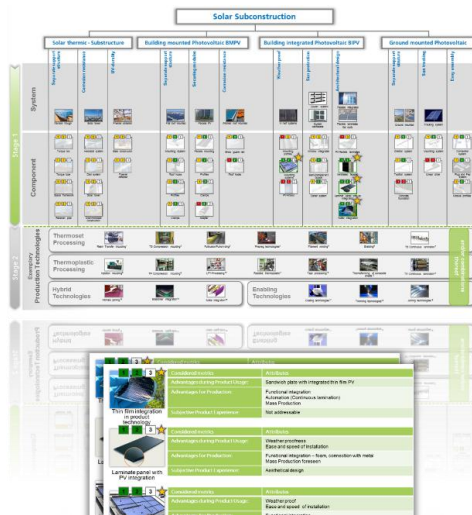
Next Generation Composites in Buildings & Infrastructure

Systematic Approach of this Market & Technology Study

Exemplary Approach of
a Reference Study:
see Annex A



Structured analysis and evaluation of technologies & applications in technology trees:



Market Overview & Segmentation

- Composites in Buildings & Infrastructure
- Energy storage and Renovation

Application & Technology Insights

- Comparative screening of relevant applications within identified sub-segments

Technology Insights and Value Chain Mapping

- Technology overviews
- Overview on value chains incl. key players

Results will be prepared as:

- Comparative KPI matrices
- Technology trees
- Value maps and fact sheets
- Technology fact sheets and providers

- Technology fact-sheets related to materials and production technologies for parts including composite processing technologies, technologies for functionalizing, joining, post-processing, coating
- Identification of key players across the value chain
- Strategic positioning and business opportunities are visualized.

Next Generation Composites in Buildings & Infrastructure

Systematic Approach of this Market & Technology Study

Open
to
join!



Participation fee: 14.500 €

CONTACT US TO DISCUSS YOUR OPTIONS

Philipp Fröhlig

Head of Industrial Services

philipp.froehlig@azl-aachen-gmbh.de

Phone: +49 241 475 735 14



Stage 1:
Market Overview & Segmentation

Stage 2:
Application & Technology Insights
Comparative screening of relevant applications
within identified sub-segments

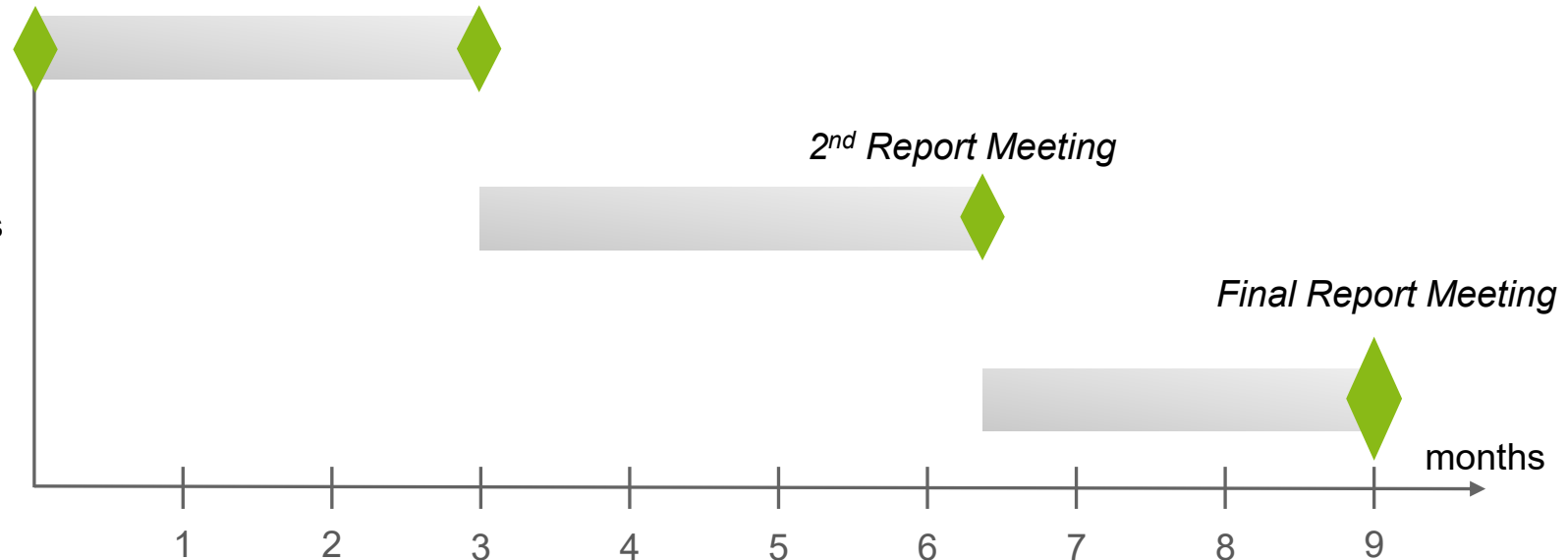
Stage 3:
Technology Insights and Value Chain Mapping
Detailed studies on technologies and value
chains

Kick-Off Meeting
THUR, FEB. 26th 2026

1st Report Meeting

2nd Report Meeting

Final Report Meeting



Contact



Dr.-Ing. Michael Emonts

Managing Partner

michael.emonts@azl-aachen-gmbh.de

Mobile: +49 172 720 7681



Dr.-Ing. Kai Fischer

Managing Partner

kai.fischer@azl-aachen-gmbh.de

Mobile: +49 176 728 23 544



Philipp Fröhlig

Head of Industrial Services

Philipp.froehlig@azl-aachen-gmbh.de

Mobile: +49 176 80 488 799

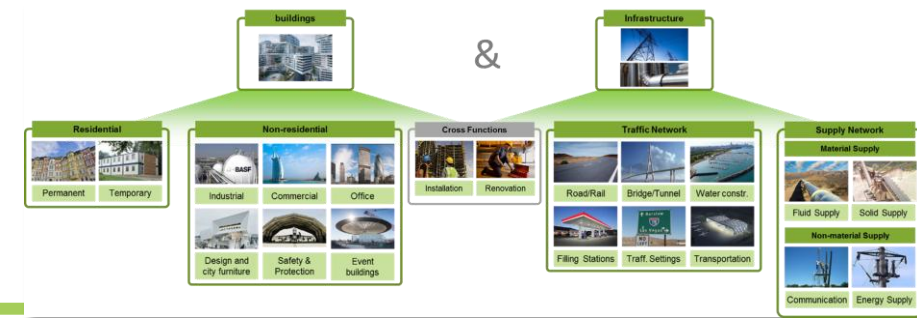


ANNEX A:
Exemplary Reference Study (2017):
“Composite Technologies in Buildings & Infrastructure”

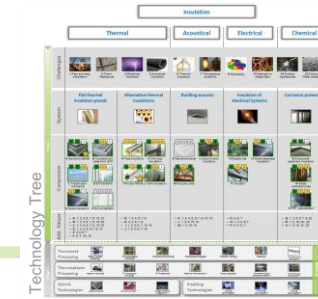
Market and Business Opportunity Identification

AZL Market and Technology Studies

Structuring and analysis of
trend markets and market segments



Systematic analysis of
attractive applications



Identification and benchmarking of
technologies and enablers



Analysis of
business cases



Systematic and
established approach

Market analysis
through the eyes of
technology experts

Market and Business Opportunity Identification

Examples of Joint Market and Technology Studies

Example joint studies:

- Mass Production for Lightweight Composite Structures
- Composites in Buildings and Infrastructure
- Energy Storage Systems
- Composites in the Furniture Industry
- Next Generation Mobility Solutions
- High-Performance SMC
- Potentials and Challenges of Thermoplastic Tapes for SME Injection Molders
- Bio-based Composites



“The AZL study on Buildings and Infrastructure provided us a **great networking with key players** and gave us a **proper market understanding** including market size/volume in numbers to prove the value of this technology to building industry.”

Justin Jin, CEO of AXIA Materials



Joint Technology Development through Cost-Sharing

Previous Activities



Exemplary Reference Study



Get more details on completed activities!

Exemplary Approach of a Reference Study

„Composite Technologies in Buildings & Infrastructure“

Structuring of Applications based on Market and Product Segments:

AZL – Market and Technology Study

„Lightweight Composite Structures for Buildings & Infrastructure“: Application Examples

AZL Aachen GmbH in cooperation with: RWTH AACHEN UNIVERSITY
Aachener Zentrum für integrativen Leichtbau

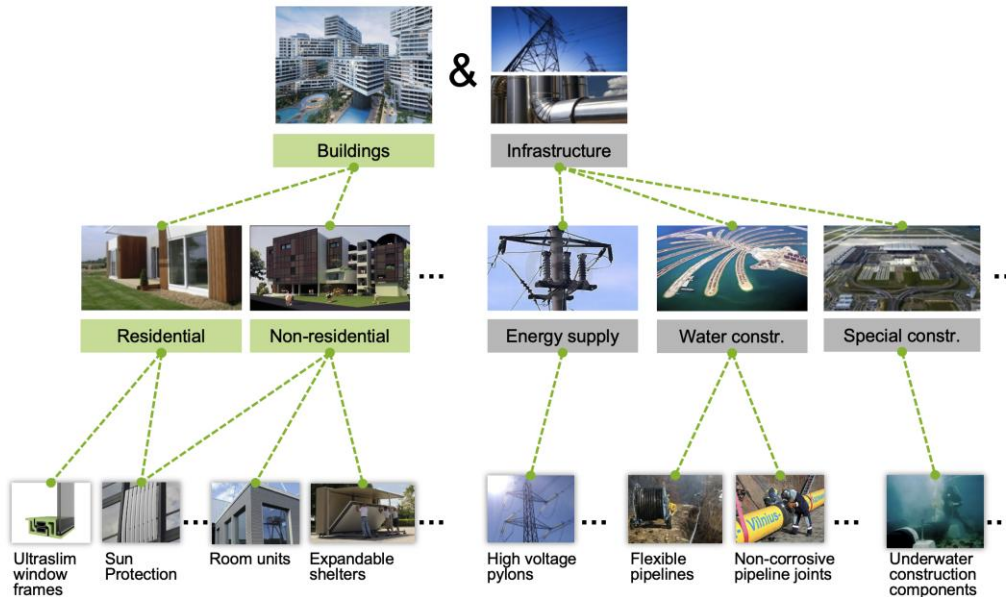
Markets



Market Segments (Examples)



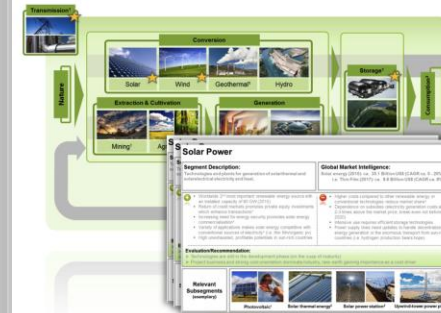
Applications/Components (Examples)



Exemplary Proceeding Stage 1 – Pilot Study

1 2 3

AZL Aachen GmbH in cooperation with: RWTH AACHEN UNIVERSITY
Aachener Zentrum für integrativen Leichtbau



Market Segmentation

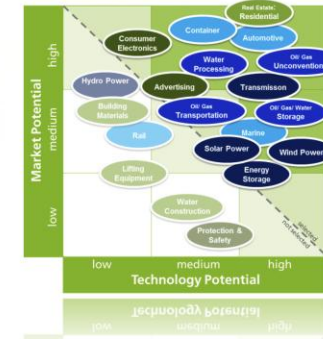
- Structured overview on market segments within „Buildings & Infrastructure“, market structure and overall market volume

Segment Analysis

- Overview on high level chances, risks
- Technology and market trends

Segment Evaluation

- High level aggregation of market and technology intelligence
- Selection of most promising segments based on expert knowledge (interviews) and appraisal of the steering committee

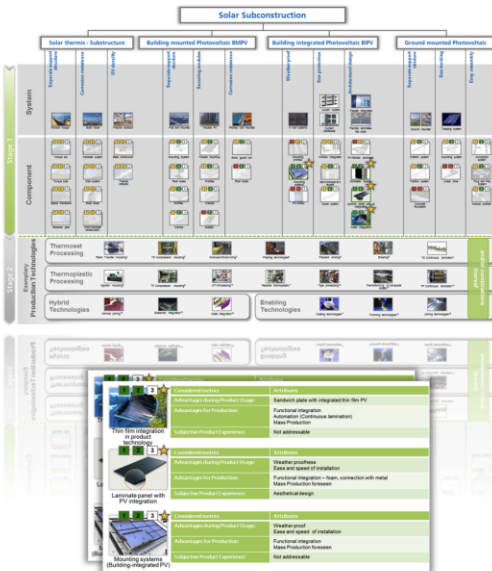


Exemplary Approach of a Reference Study „Composite Technologies in Buildings & Infrastructure“

Technology Trees

(including sub-segments with value chain overview, technology overview and market analyses):

Exemplary Proceeding Stage 1 – Pilot Study



Segment Sub-structure

- Overview on technology fields within the market segment at hand

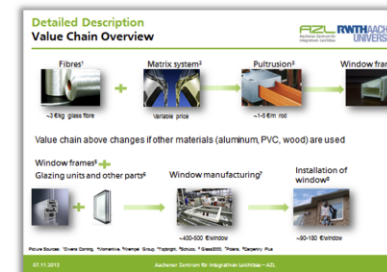
Detailed Segment Analysis

- Derivation of major challenges within these sub-segments in order to enable a focussed selection of growing or developing marketsegments

»Technology Tree«

- Market requirement-based breakdown of relevant sub-segments into systems and components
- Criteria-based (market and technology) prioritization of applications/ components

Exemplary Proceeding Stage 2 – Detailed Analysis



Value-Chain Overview

- Connected and/or synergetic technologies within the value-chain of the component at hand
- Visualization and quantification of added value steps and derivation of future requirements regarding material, process chains and production systems



Detailed Technology and Market Analyses

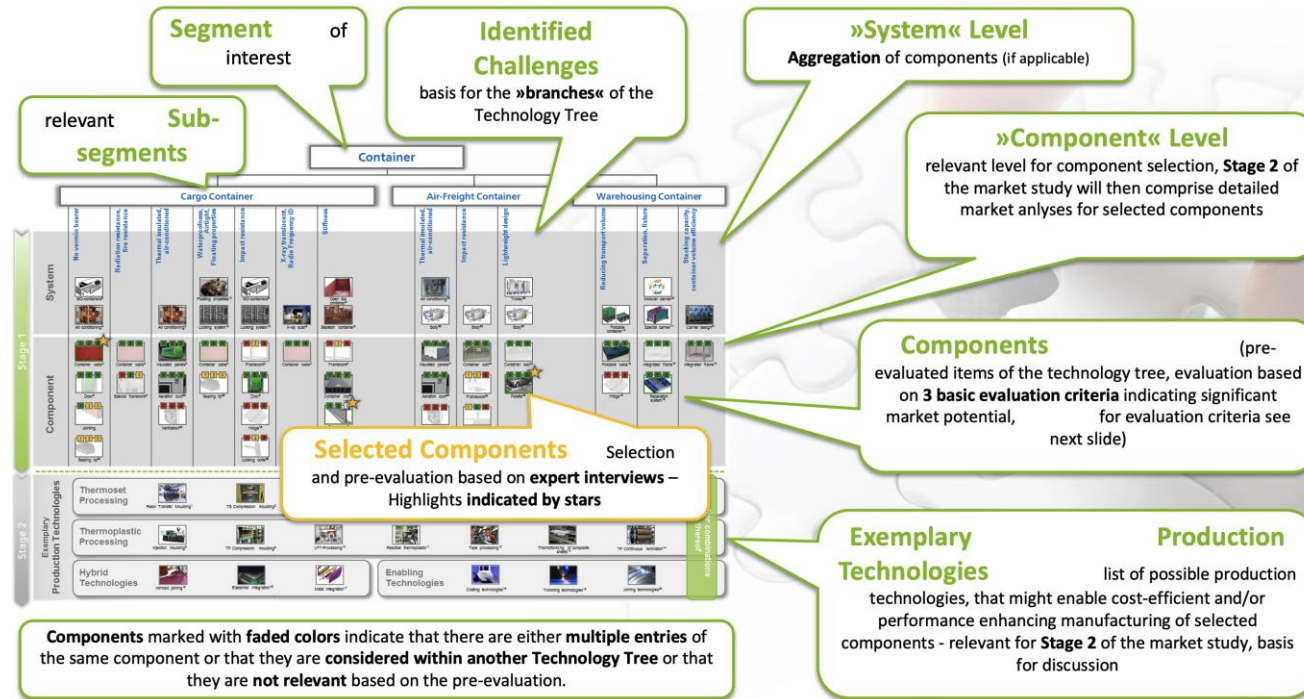
- Detailed Aggregation of relevant technology- and market-related information
- Executive Summary for quick evaluation
- Information basis for selection of highlight components/ applications

Exemplary Approach of a Reference Study „Composite Technologies in Buildings & Infrastructure“

Technology Tree:

How to read the »Technology Tree« Overall Structure

in cooperation with:
AZL Aachen GmbH
AZL Aachener Zentrum für
integrativen Leichtbau
RWTH AACHEN
UNIVERSITY



Potentials regarding:
(lightweight design, material properties)

1 2 3
Advantages during Product Usage
Advantages for Production
Subjective »Product-Experience«
high medium low

1 Advantages during Product Usage

- Mechanical** (e.g. increased load capacity, light weight performance, lower temperature warpage)
- Chemical** (e.g. better corrosion properties, increased chemical resistance, biological compatibility)
- Electrical** (e.g. tailored electrical properties)
- Optical** (e.g. tailored optical structure and design surface)

2 Advantages for Production

- Freedom of Design** (e.g. load adapted design)
- Manufacturability** (e.g. estimated improved design/performance by local reinforcements)
- Process** (e.g. shorter cycle times, increased process robustness, automation possibility, possible mass-production)
- Costs** (e.g. estimated performance gain over substitutional material/ design going along with higher margin etc.)

3 Subjective Product-Experience

- Subjective value** (e.g. willingness to pay more for the knowledge of utilizing lightweight components or innovative materials, prestige thinking)
- Performance optics** (e.g. customer is willing to pay more for lightweight design like optics without real performance gain)
- Perceived quality** (e.g. customer is willing to pay more for lightweight design like haptics, customer trust in high-performance etc.)

Elements not relevant for Evaluation (e.g. no subjective product value imaginable) will be left plain white

Exemplary Approach of a Reference Study

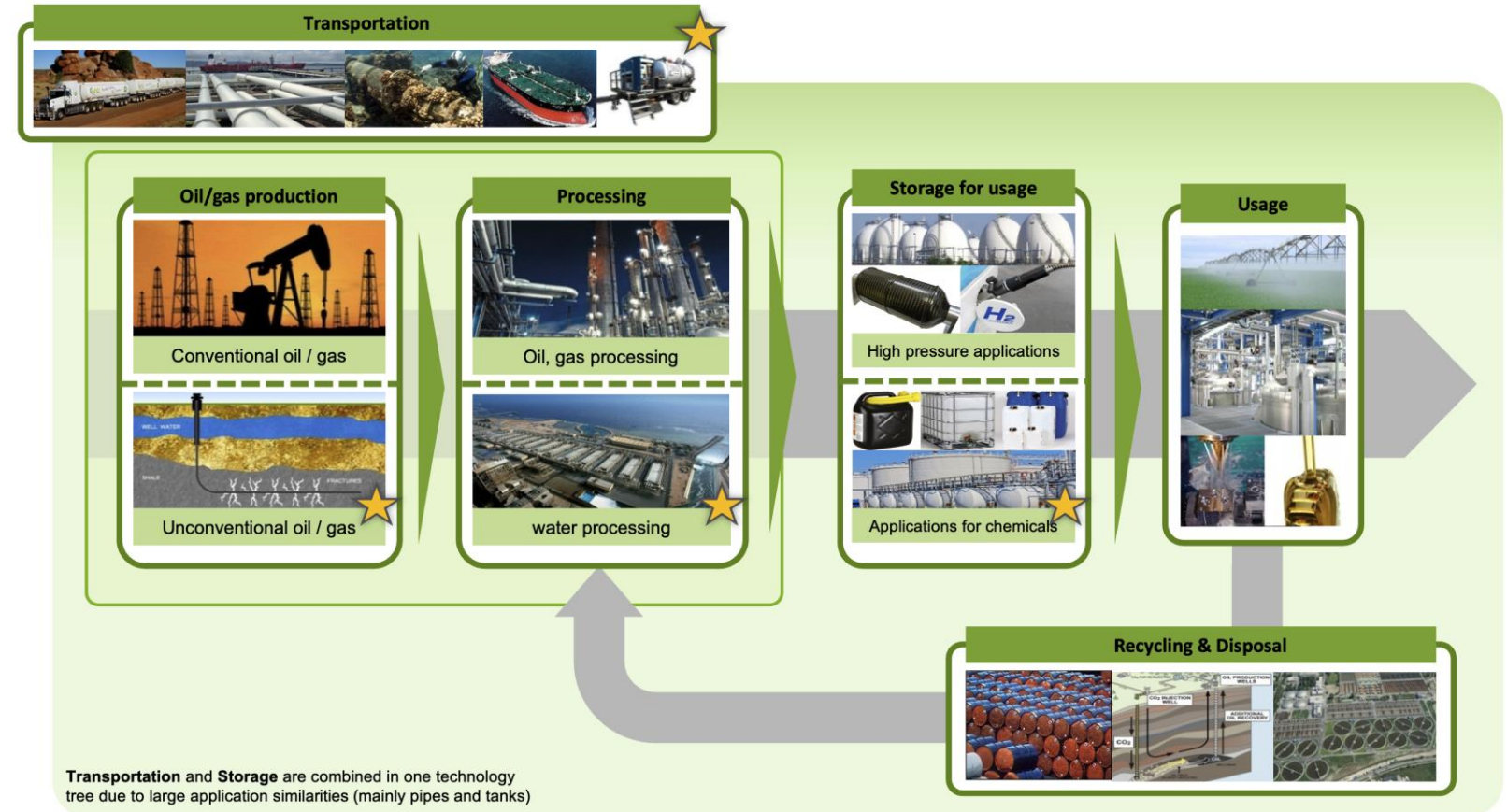
„Composite Technologies in Buildings & Infrastructure“

Technology Tree Example

„Oil, Gas and Water“:

Oil, Gas and Water – Selected Segments

AZL Aachen GmbH in cooperation with:
AZL Aachen University
Aachener Zentrum für integrativen Leichtbau



Exemplary Approach of a Reference Study

„Composite Technologies in Buildings & Infrastructure“

Technology Tree Example

„Oil, Gas and Water“:

Transportation and Storage of Oil, Gas and Water

in cooperation with:

AZL Aachen GmbH
Aachener Zentrum für integrativen Leichtbau

RWTH AACHEN UNIVERSITY

Evaluation Logic:
Potentials regarding:
(lightweight design, material properties)

1 2 3

Advantages during Product Usage
Advantages for Production
Subjective „Value-Experience“

high
medium
low

Technology Tree

Stage 1

Components/ Systems

Stage 2

Exemplary Production Technologies

