AZL Aachen GmbH
Excellence in Lightweight Production





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

Sources: [1] worldconstructiontoday.com; [2] coherentmarketinsights.com; [3] archivemarketresearch.com; [4] datainsightsmarket.com

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.

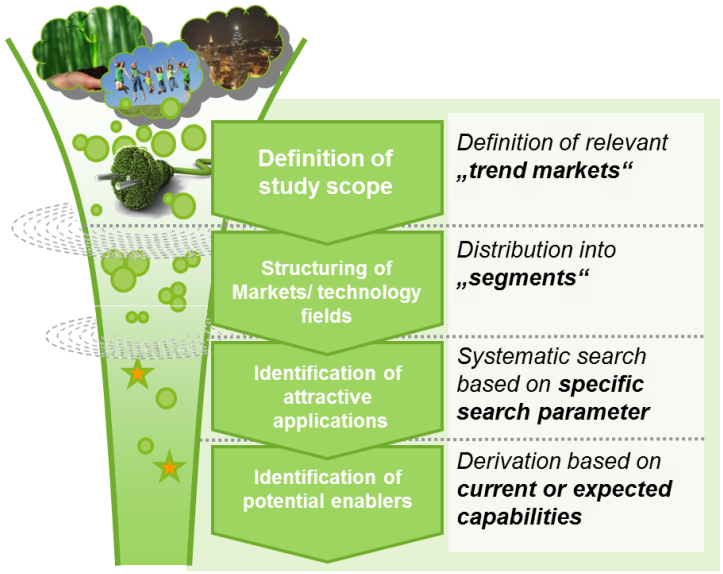
Your Results: An Actionable Toolkit for Growth

- **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.

CAGR: Compound Annual Growth Rate; LCA: Life Cycle Assessment; BIM: Building Information Modeling

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

Next Generation Composites in Buildings & Infrastructure
Systematic Approach of this Market & Technology Study

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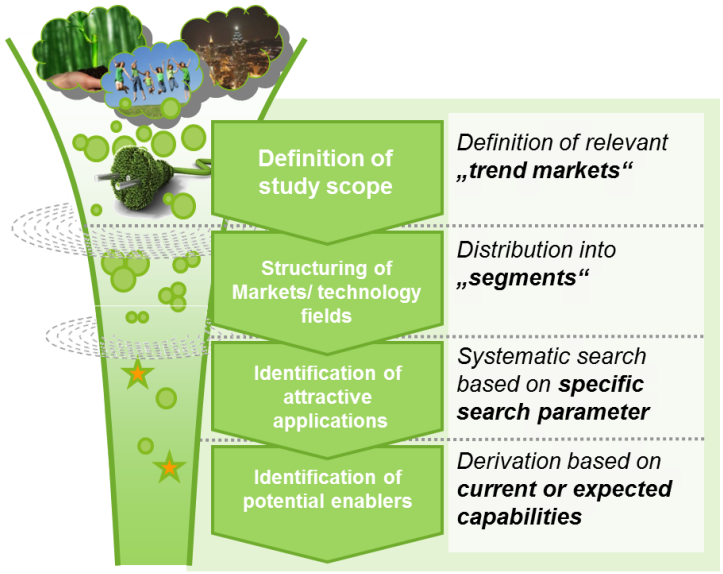

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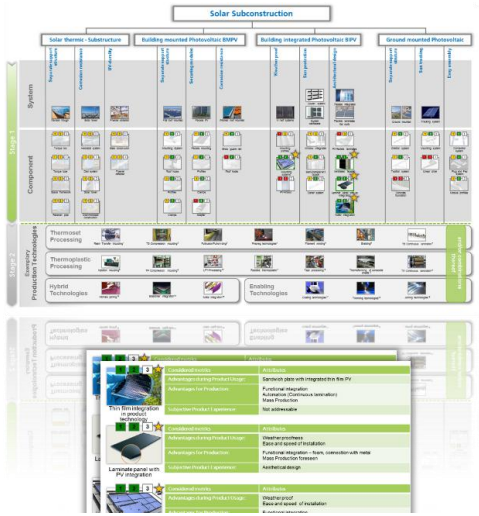

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- Technology trees
- Comprehensive list of specific challenges
- High-level information for the systems and applications to apply a rating and evaluation scheme
- Selection of applications for more detailed analysis according to the interests of the participating companies
- Detailed studies for selected applications

Next Generation Composites in Buildings & Infrastructure
Systematic Approach of this Market & Technology Study

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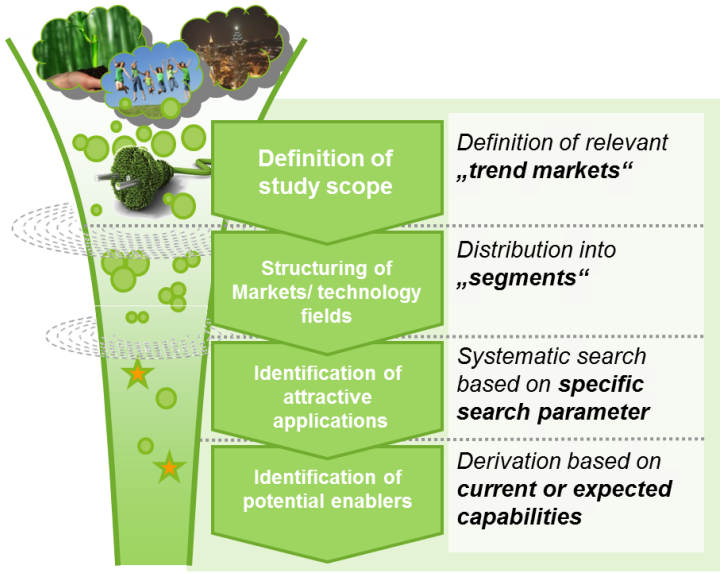

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- Technology fact-sheets related to materials and production technologies for parts including composite processing technologies, technologies for functionalizing, joining, post-processing, coating
- Identification of key players across the value chain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

Next Generation Composites in Buildings & Infrastructure
Systematic Approach of this Market & Technology Study

Open to join!





CONTACT US TO DISCUSS YOUR OPTIONS

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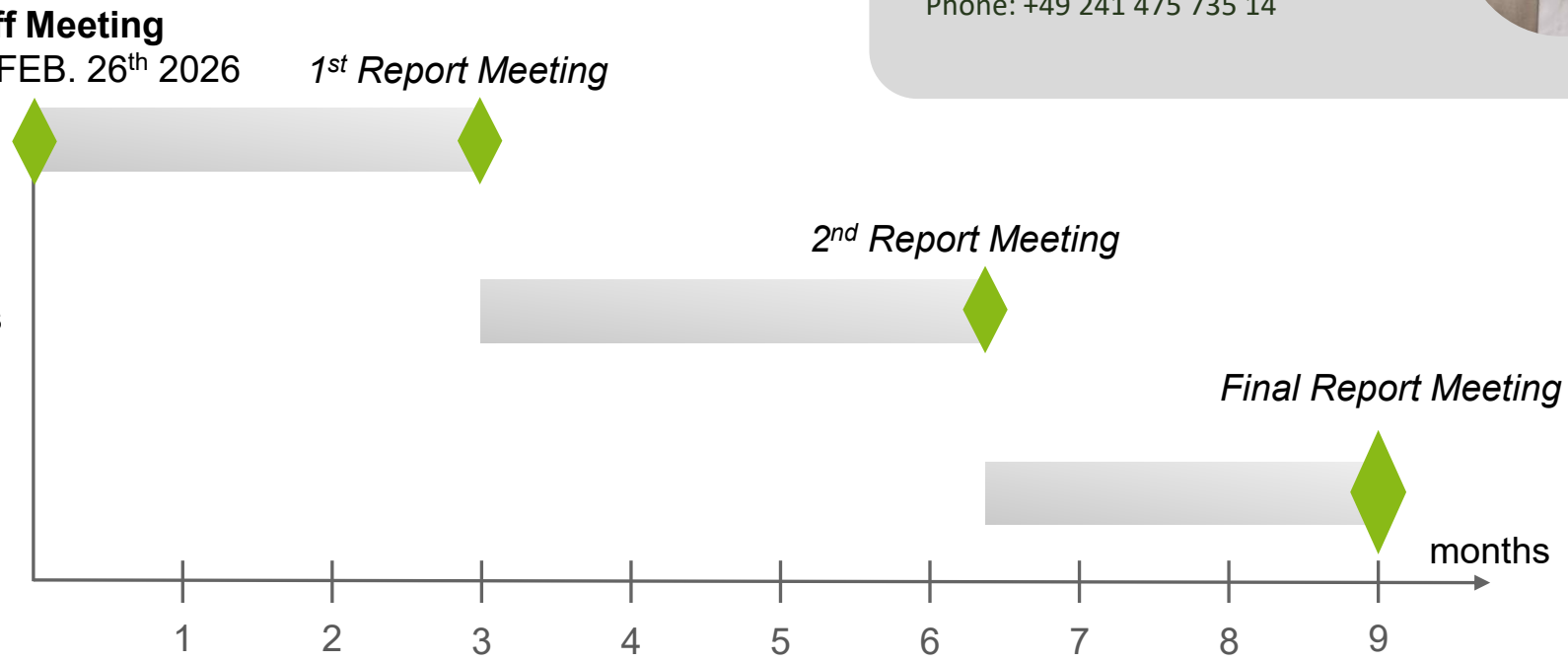
Stage 1:
Market Overview & Segmentation

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



€ Participation fee: 9.500 €

Contact

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Excellence in Lightweight Production




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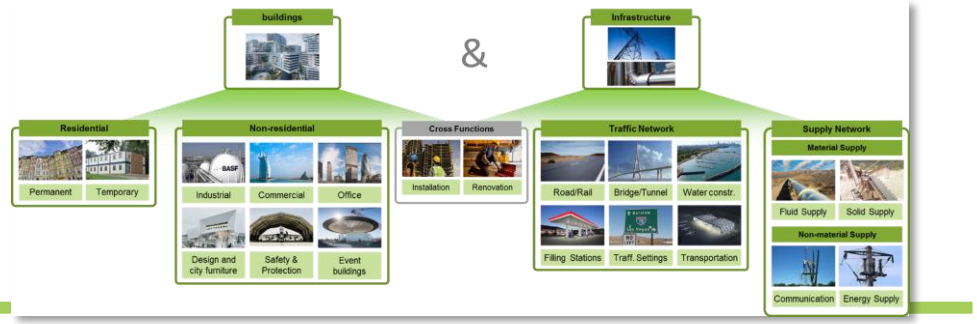
ANNEX A:
Exemplary Reference Study (2017):
“Composite Technologies in Buildings & Infrastructure”

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

Joint Partner Project
Trends & Design Factors for Hydrogen Pressure Vessles

Joint Partner Project
Thermal Propagation

Joint Partner Project
Rotor Sleeves for Electric Motors

Joint Partner Project
Emerging Battery Storage Technologies

Joint Partner Project
Propellers and Rotors

Joint Partner Project
Cost and CO2 Saving Lightweight Tailgate Concept Study

Joint Partner Project
Concept Study & Development of Cell-to-Pack Battery Casings

Joint Partner Project
Battery Casing Follow-Up: Bottom Impact Protection

Joint Partner Project
Battery Casing Follow-Up: Fire Protection

Joint Partner Project
Multi-Material Battery Casing

Joint Partner Project
Inductive Double Belt Press

Joint Partner Project
Ultra-Fast Manufacturing

Joint Market & Technology Study
New Potentials for Composite Technologies in Buildings & Infrastructure

Joint Market & Technology Study
Composites in the Furniture Industry

Joint Market & Technology Study
Potentials and Challenges of Thermoplastic Tapes for SME Injection Molders

Joint Market & Technology Study
Next Generation Mobility Solutions

Joint Market & Technology Study
Energy Storage Systems

Joint Market & Technology Study
High-Performance SMC

Joint Market & Technology Study
Bio-based Composites

Exemplary Refence Study „Buildings & Infrastructure“

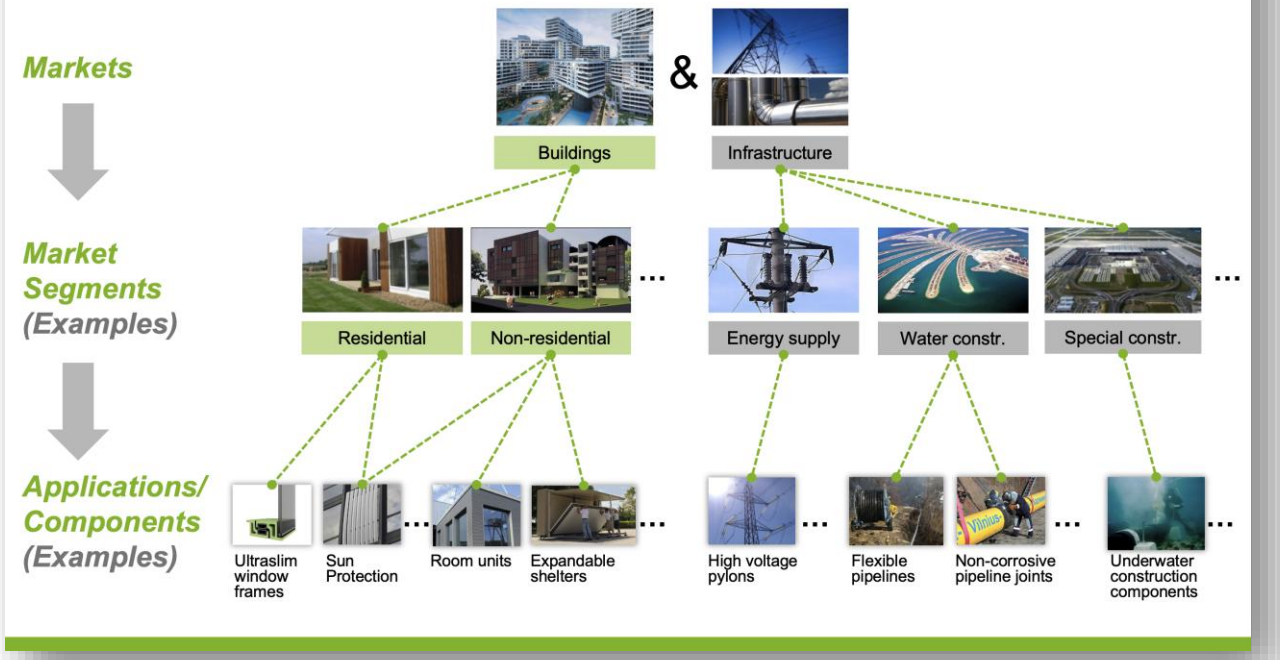
Get more details on completed activities!

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

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



Exemplary Proceeding
Stage 1 – Pilot Study

1 2 3

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

Market Segmentation

- Structured overview on market segments within „Buidlings & 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

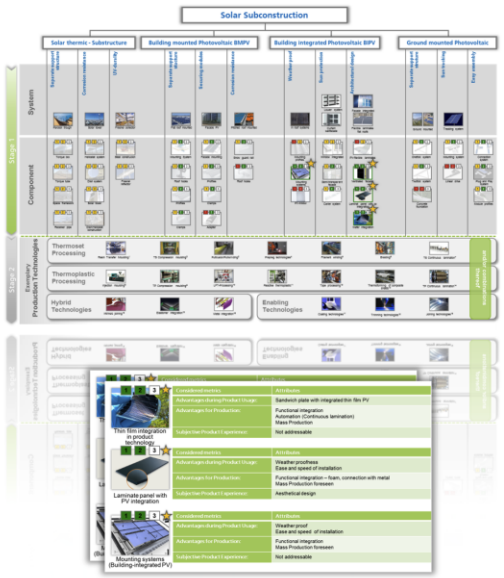
Exemplary Approach of a Reference Study
„Composite Technologies in Buildings & Infrastructure“

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

Exemplary Proceeding
1 2 3

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

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«

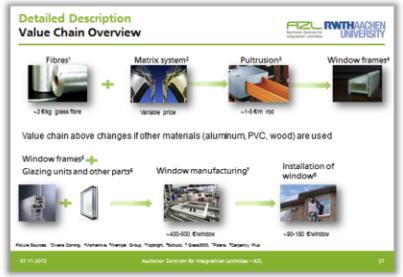
- Market requirement-based breakdown of relevant sub-segments into systems and components

➔ Criteria-based (market and technology) priorization of applications/ components

Exemplary Proceeding
1 2 3

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

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

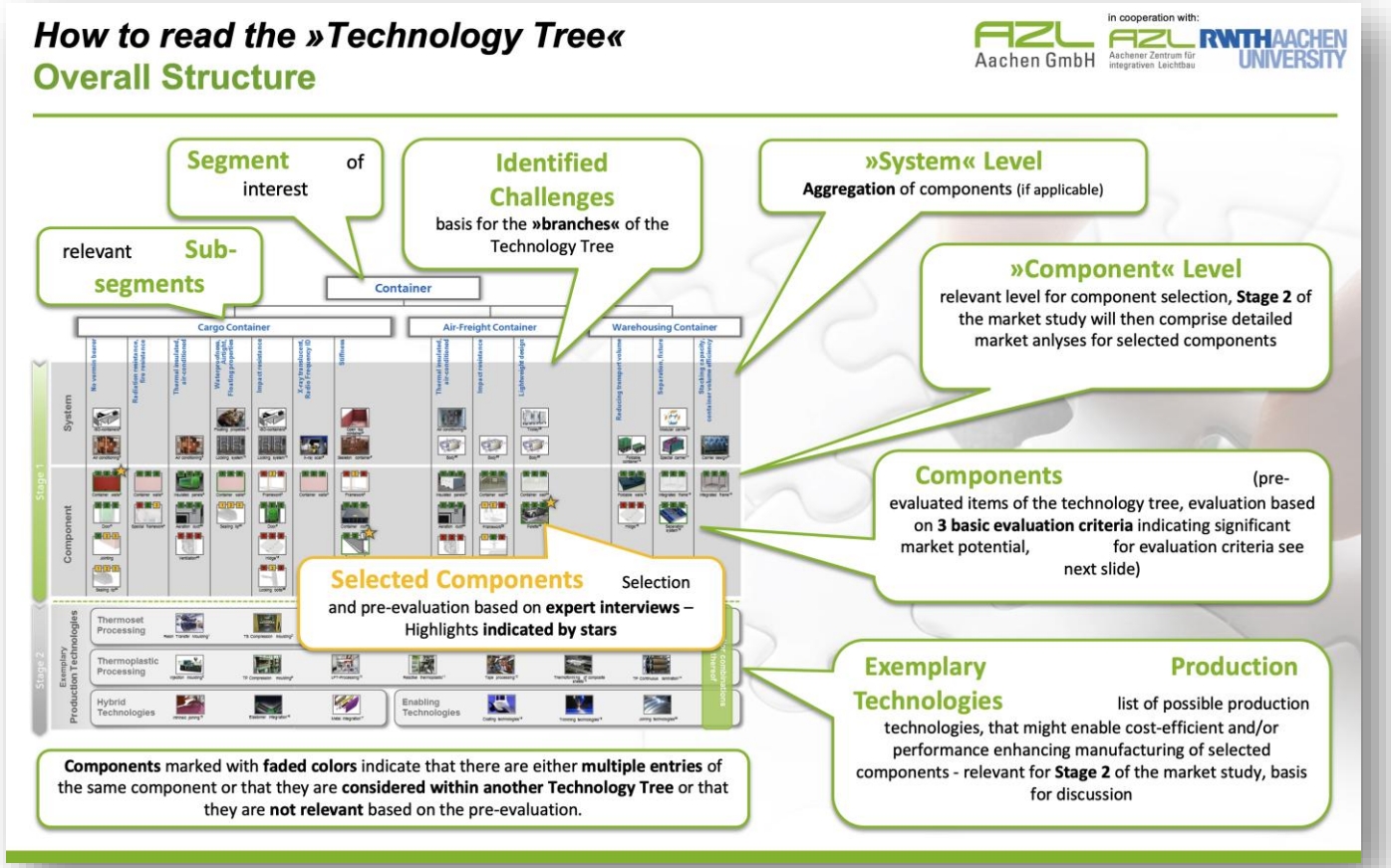
Detailed Technology and Market Analyses

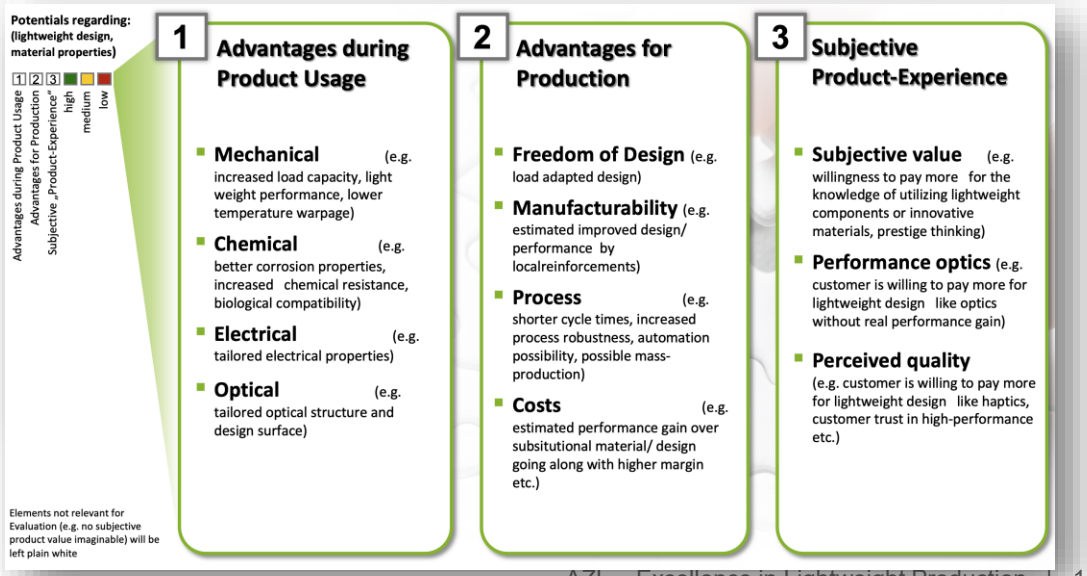
- Detailed Aggregation of relevant technology- and market-related information
- Executive Summary for quick evaluation

➔ Information basis for selection of highlight components/ applications

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

Technology Tree:

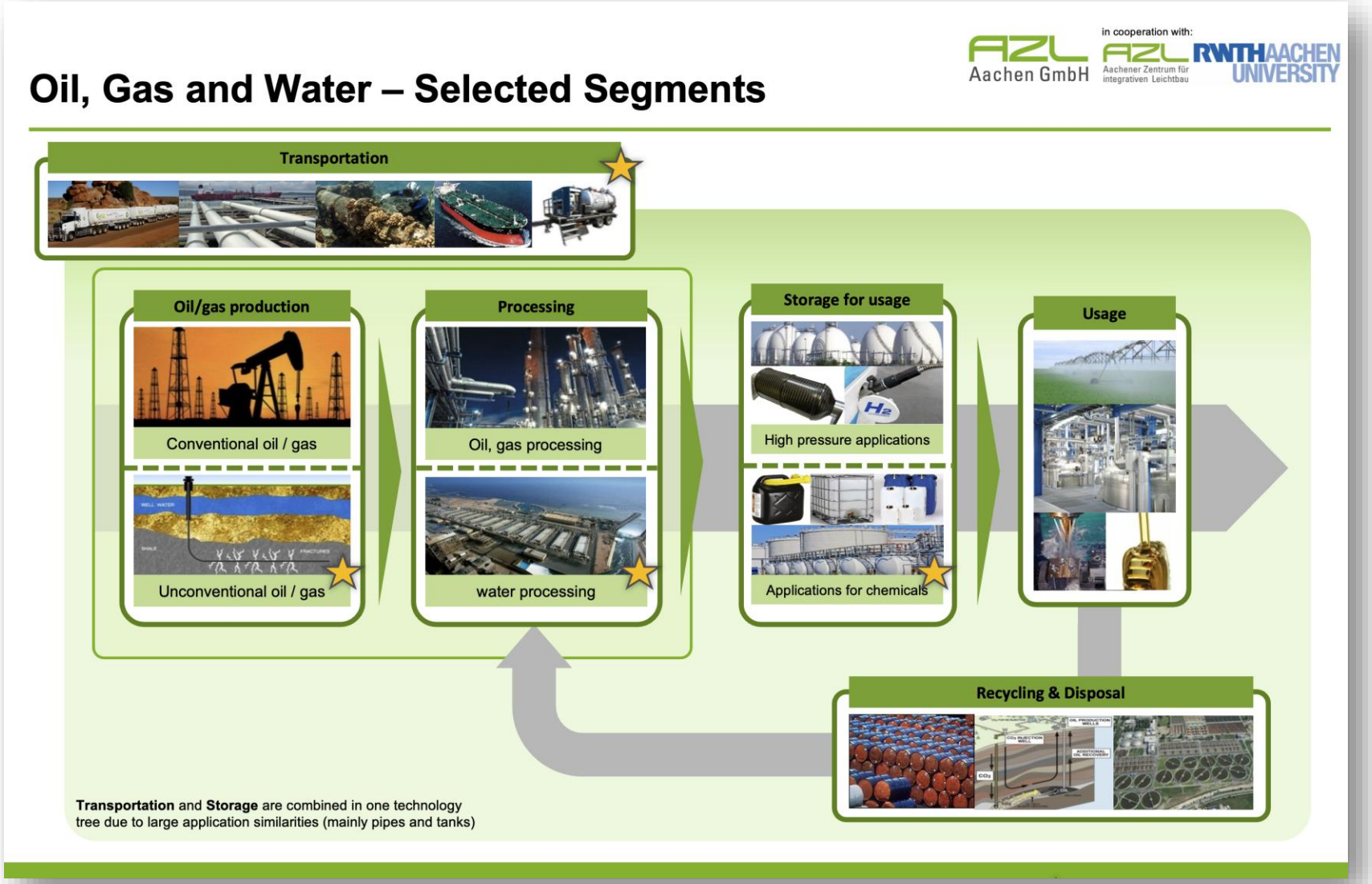




Exemplary Approach of a Reference Study

„Composite Technologies in Buildings & Infrastructure“

Technology Tree Example „Oil, Gas and Water“:



Exemplary Approach of a Reference Study

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Technology Tree Example „Oil, Gas and Water“: