

Scaling up zero-emission technologies: **Baden-Württemberg's approach to a hydrogen economy**



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Welcome to
THE LÄND

e-mobil BW – State Agency for New Mobility Solutions and Automotive Baden-Württemberg

1.

We are the **competence center** for new mobility solutions, **hydrogen technologies** and digital mobility solution.

2.

We are a **central point of contact** for all stakeholders.

3.

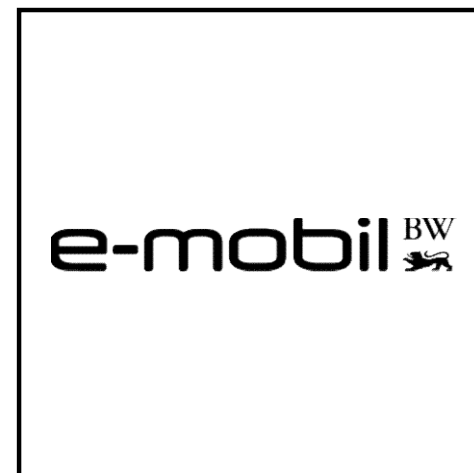
We strengthen and build **8 networks with over 1000 partners in economy and science.**

4.

We initiate **projects.**

5.

We promote THE LÄND as **business and technology location.**



Spotlight THE LÄND

- **Important industrial location in Europe**
33.7% of GDP by manufacturing industry
Export- and international-oriented business
- **Transformation in process**
e.g. until 2035 loss of approx. 60.000 employees in automotive industry
- **Focus on high-technologies:**
High innovative power. 5.6% of GDP for R&D
Growth in: Medtech, Greentech, Chip technologies, AI, Electric drivetrain, Connected and Autonomous Car



Hydrogen technology is one lever for industrial growth
In THE LÄND around 500 Mio. Euros in hydrogen projects have been invested
within the last 5 years

What really determines scaling?

The initial question



01

Production capacities

Electrolysis-GW, green energy sources



02

Infrastructure

Pipelines, petrol stations, ports



03

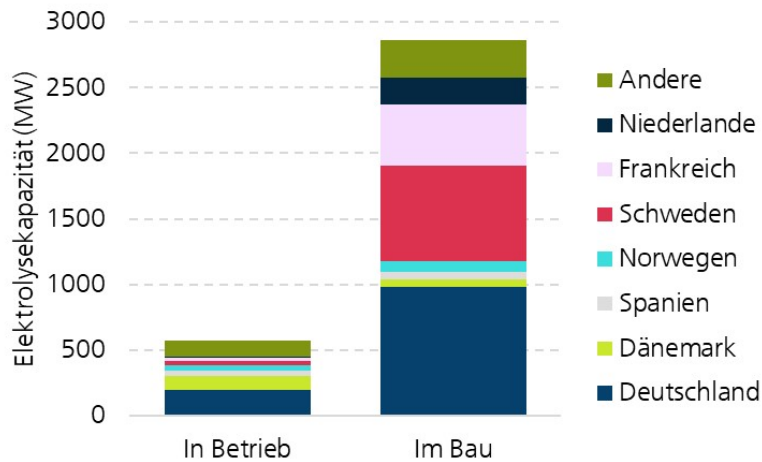
Technology development

Stacks, Systems, Components

How can we ensure that **production, infrastructure** and **real industrial demand** are synchronised and in an economically viable sequence?

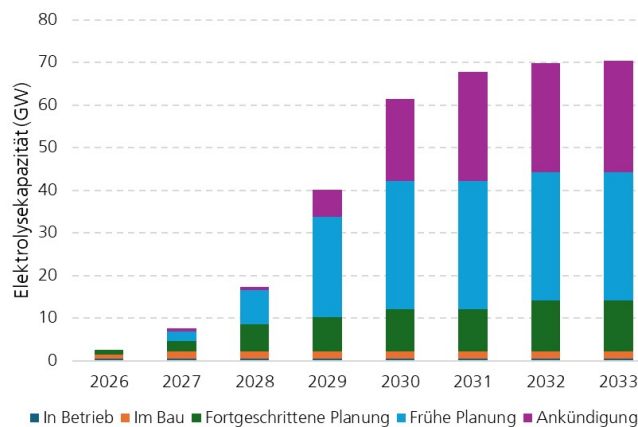
THE LÄND is part of Europe: EU-Capacities of electrolysis

Scaling only works in an integrated european set up



- Currently around 550 MW of electrolysis in operation in the EU, another 2.8 GW under construction.
- So far, development is focused on Germany, Sweden, France, the Netherlands, Spain.
- Numerous project announcements, but investment decisions are being delayed.

Main obstacles: high costs, regulations, willingness to pay, pipeline availability.



The development of H2 production capacities is stalling. Capacity targets for 2030 of the EU (40 GW), but also Germany's (10 GW), will be missed.

Three pre-conditions for scaling

Hydrogen is an competitor in the european energy system

1

Demanders are both solvent and willing to pay

Industrial consumers must be able to use hydrogen at competitive prices.
Demonstrators are no further a substitute for the market. Offtake (demand) is the real bottleneck.

2

Infrastructure has to be built in a synchronous manner

Reliable infrastructure is pre-condition for demand.
European transnational pipelines and german pipelines (Kernnetz) need a clear opening date to be reliable.

3

Investment conditions are stable and predictable

Market partners have to invest billions of Euros
Investment only takes place with long lasting reliable predictions.

Which market to be addressed

Willingness to pay doesn't meet the market prices

Heavy duty traffic

Long-distance trucks · high utilisation · time-critical logistics · cross-border freight routes

Why here:

Range, refuelling time and fleet efficiency as decision criteria (not purely emissions-driven)

Industrial processes / Energy

High-temperature processes · chemical feedstock production · process gas substitution, Power Plants

Why here:

Continuous demand and predictable consumption offer system-relevant applications with stable demand

Fuels & Derivatives

Sustainable Aviation Fuel · Methanol · Ammonia · Integration into existing infrastructure

Why here:

Derivatives increase transportability, enable global trade and make investments more attractive to banks.

No priority for mass market passenger cars, short-distance mobility & applications with efficient direct electrification potential

Will Europe follow Fit for 55?

- The climate transformation needs an energy change in electric current and molecules
- New technologies in the phase of scaling often are more expensive than fossile structures
- European Economy is under pressure because of the geopolitical situtation



It never was so important to synchronize our requirements in order to reduce green house gas emissions and strengthen the EU's long-term economic resilience, prosperity and strategic autonomy

Hydrogen technologies and all the co-working partners are crucial as never before to determine future solutions

Besides the national level: The cooperation of european regions is important to face the challenges: We thank our partner regions – In Sevilla: Thanks to the andalucian government for our joint activities!

**Thank you
for your your attention**

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