

Berlin | 08. November 2021

# HyLand Regions – Hydrogen economies at the local and IPCEI projects in the mobility sector

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# PORTFOLIO FOR CLIMATE-NEUTRAL SOCIETY & MOBILITY

Coordination of support programmes, technology advice, networking



## National Innovation Programme

for Hydrogen and Fuel Cell Technology (NIP)



## Electric Mobility on Site



## National Center for Charging Infrastructure



## Mobility and Fuels Strategy



## National Hydrogen Coordination Office



## Promotion of Commercial Vehicles with Alternative Drives

within the Energy and Climate Fund



## National Network of Competence

for Sustainable Mobility (NaKoMo)



## Improving mobility in rural areas

to create equivalent living conditions (MogLeb)



## Digitalisation of local transport systems



## Export Initiative for Environmental Technologies

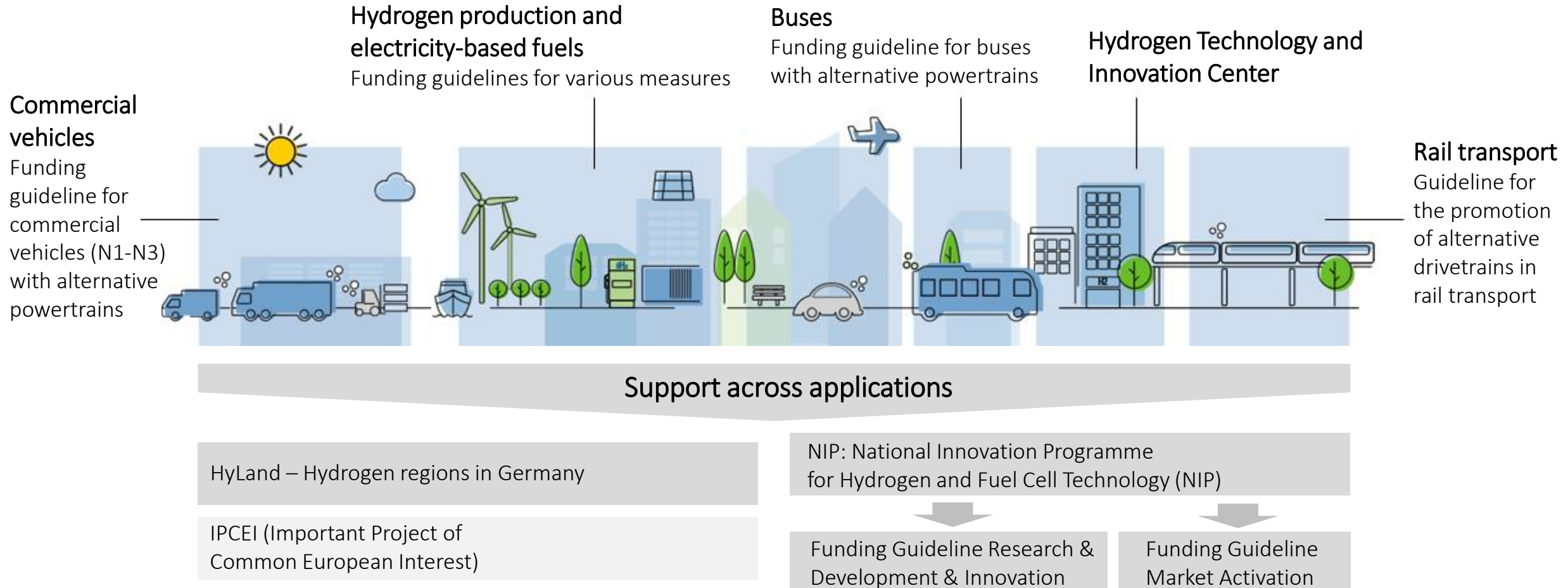


## Mission Innovation – Hydrogen Mission



# WE MAKE HYDROGEN MOBILITY HAPPEN

At NOW we focus on transport aspects of the National Hydrogen Strategy





# HYLAND REGIONS

# HYLAND I & II

Support for initiation, planning and implementation of integrated H2 concepts

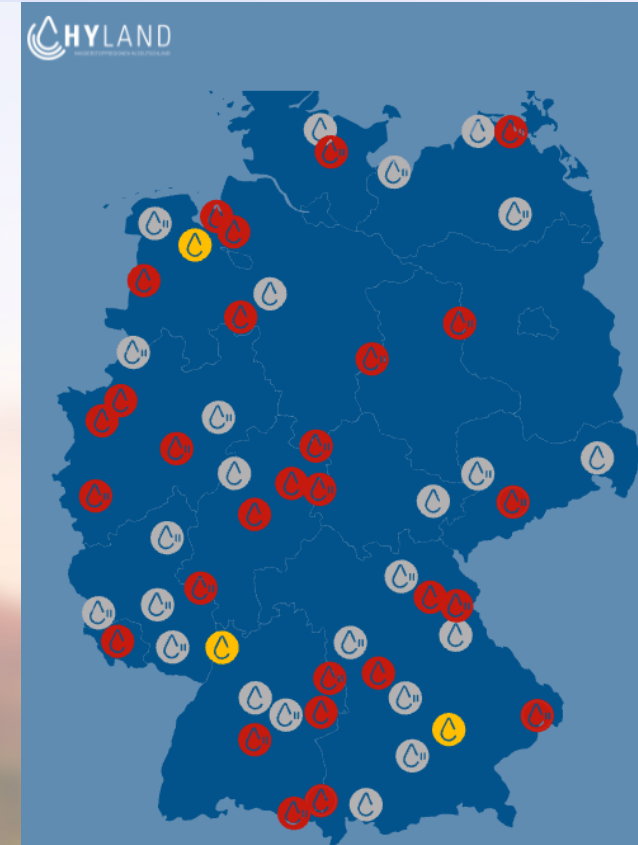
With the HyLand concept, municipalities are accompanied on their way to the hydrogen economy as **HyStarters, HyExperts or HyPerformers**, depending on their level of knowledge.

From 2019 to 2021 **25** regions in Germany have been supported with ca. **67 Mio. €**

**30** more regions have just been chosen for HyStarters and HyExperts



[www.hy.land](http://www.hy.land)



# **HYDROGEN VALUE CHAIN**

An integrated approach includes projects along every step of the value chain



Electricity  
Production



Hydrogen  
Production



Storage /  
Transport



Distribution



Application

**Integrated approaches are needed to reduce risks and initiate broad deployment**

# HYLAND – HYDROGEN REGIONS OF THE FIRST PHASE

HyLand Phase I (2019 – 2021)



**H<sub>2</sub>BrakeCO<sub>2</sub>** **HyAllgäu**

**H<sub>2</sub>Region** EMSLAND

**M+2Regio**

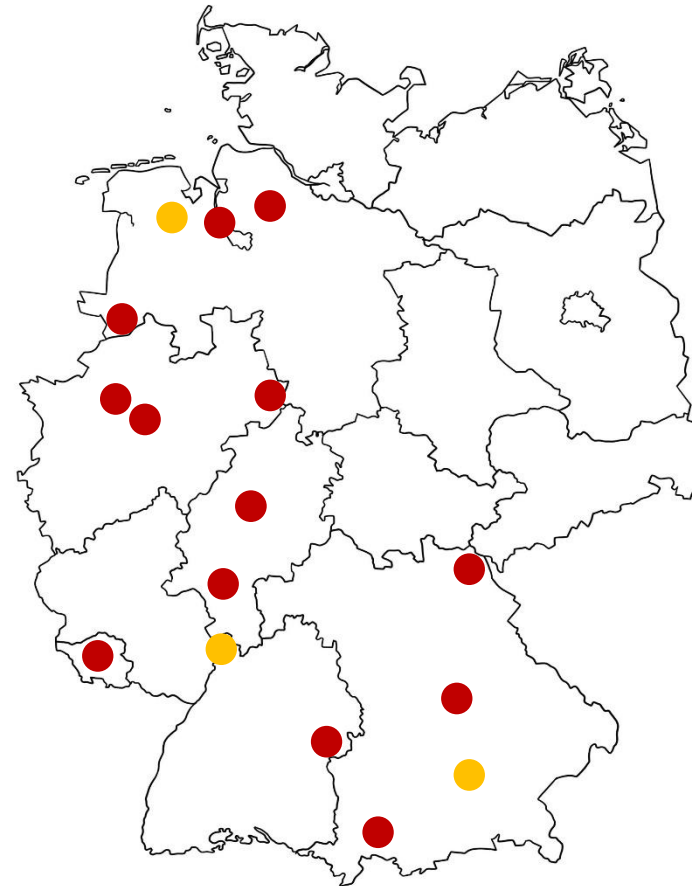
**CHY EXPERTS** REGION EMSCHER LIPPE

**IN2H<sub>2</sub>** Wasserstoffregion Ingolstadt

**#freiraum** für macher

**HyDrive OWL**

Stadt Ulm – H<sub>2</sub> PURE  
Stadt Fulda – HyWheels  
Stadt Essen – E-GoH<sub>2</sub>  
Landkreis Osterholz – H<sub>2</sub>Lastverkehr



**EWE**

**HY WAYS** FOR FUTURE

**H<sub>2</sub> RIVERS**

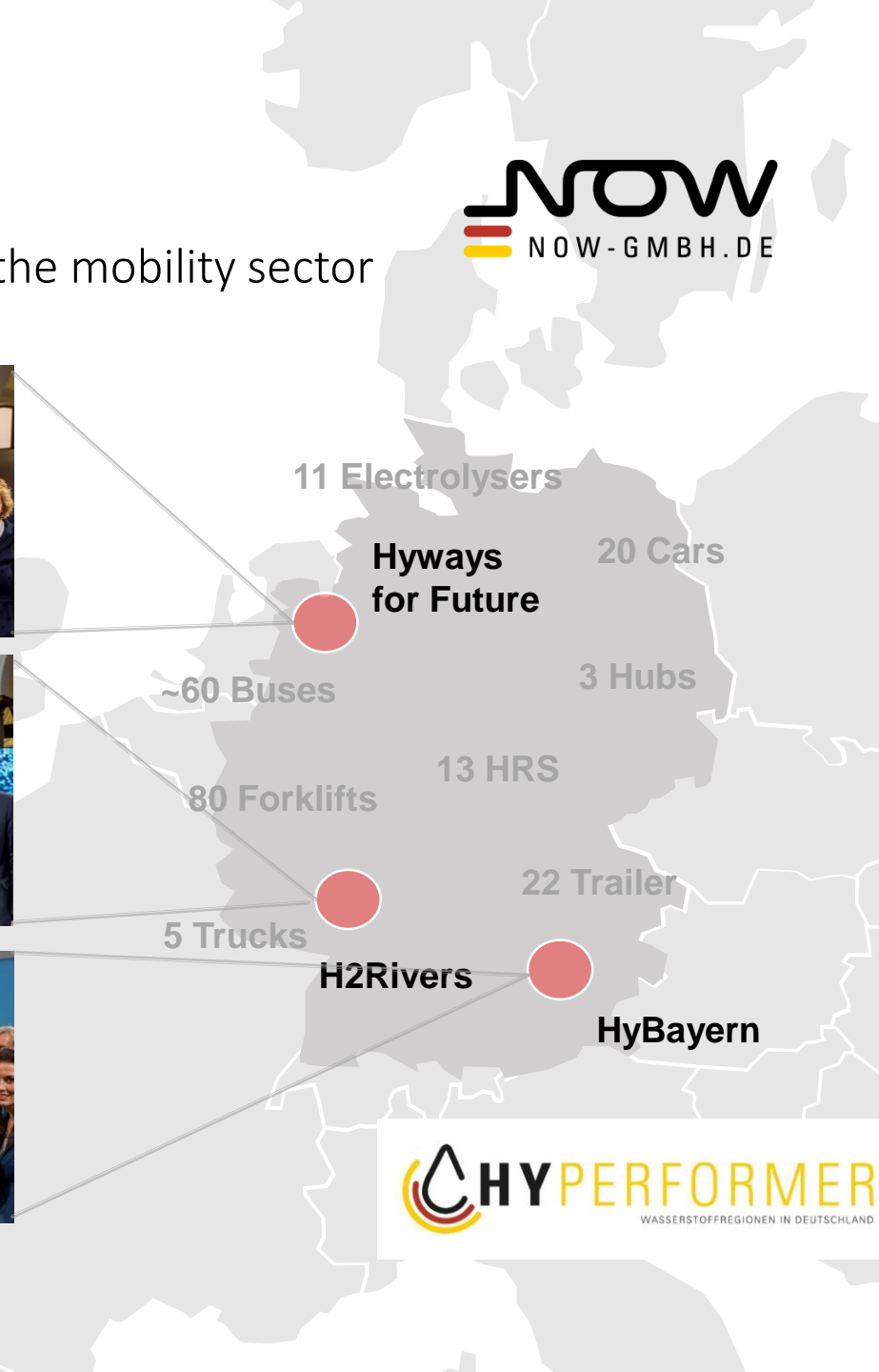
**HyBayern** Wasserstoff Modellregion

# HYPERFORMER – THREE REGIONS IMPLEMENT

60 Mio. € in the form of investment grants for integrated concepts in the mobility sector



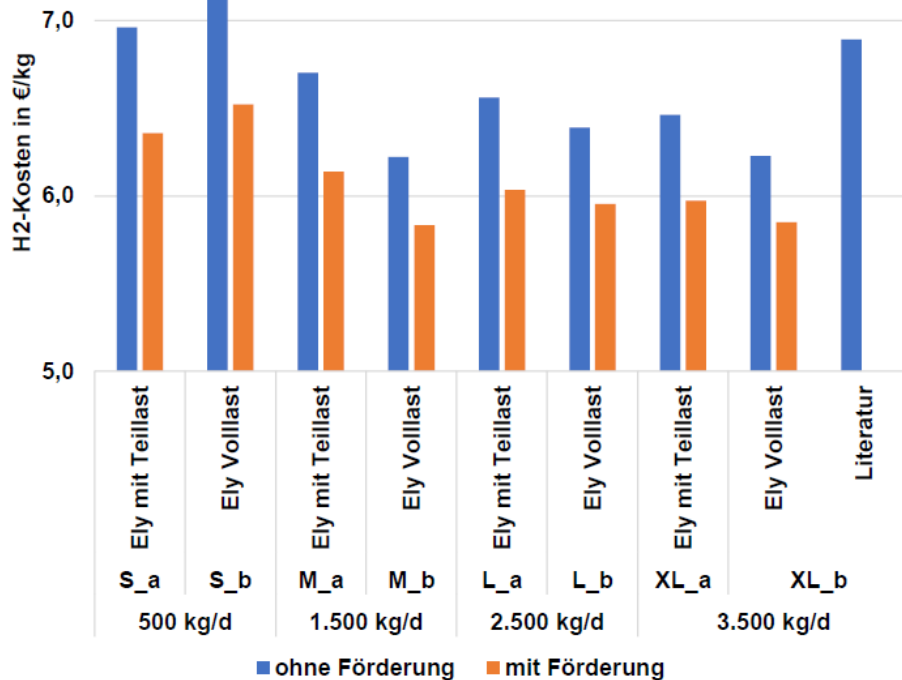
- **Hyways for Future**, EWE Gasspeicher GmbH, Oldenburg: *Hydrogen ways for future mobility*  
*Project budget: 89,3 Mio. €, Funding: 20 Mio. €, Start Q4/2020, End Q1/2024*
- **H2Rivers**, Metropolregion Rhein-Neckar: *Hydrogen applications at the Rhine and Neckar*  
*Project budget: 52,2 Mio. €, Funding: 20 Mio. €, Start Q3/2020, End Q3/2023*
- **HyBayern**, Districts Landshut, Ebersberg, München: *Green hydrogen modelregion of the districts of Landshut, Ebersberg und München*  
*Project budget: 42 Mio €, Funding: 20 Mio. €, Start Q4/2020, Ende Q4/2025*



# HYEXPERT FULDA – PROJECT „HYWHEELS“

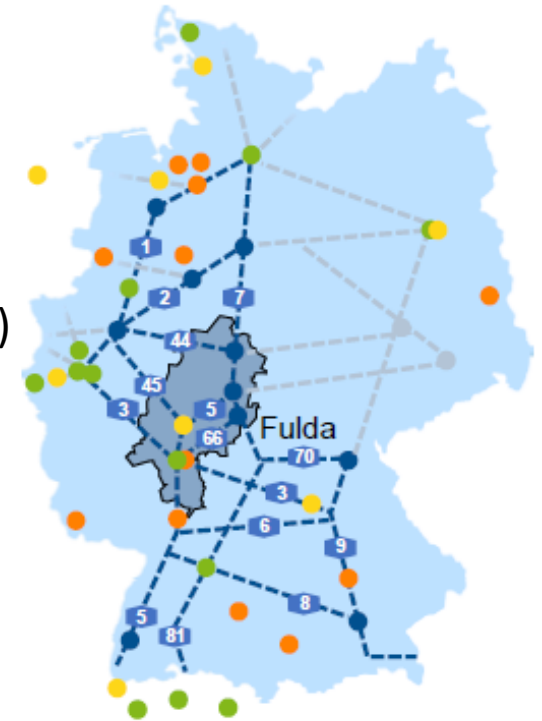
Regional concept preparing the broad deployment of fuel cell trucks

The city of Fulda was the recipient of the grant for the study. Due to its central location, the region is a national hotspot for logistics operations. Initially supported by more than 80 actors, the support grew to 125 actors during the project.



### Key:

- Currently available 350 bar HRS for heavy duty vehicles
- Planned 350 bar HRS (in 2021)
- Possible 350 bar HRS of other hydrogen regions
- Important locations for HRS
- Identified Main routes
- Probable routes



<b>Goals until 2026</b>	1,000 FC vehicles	Min. 10-15 HRS	7,500 tons of H2 annually	Up to 35% decrease in OPEX
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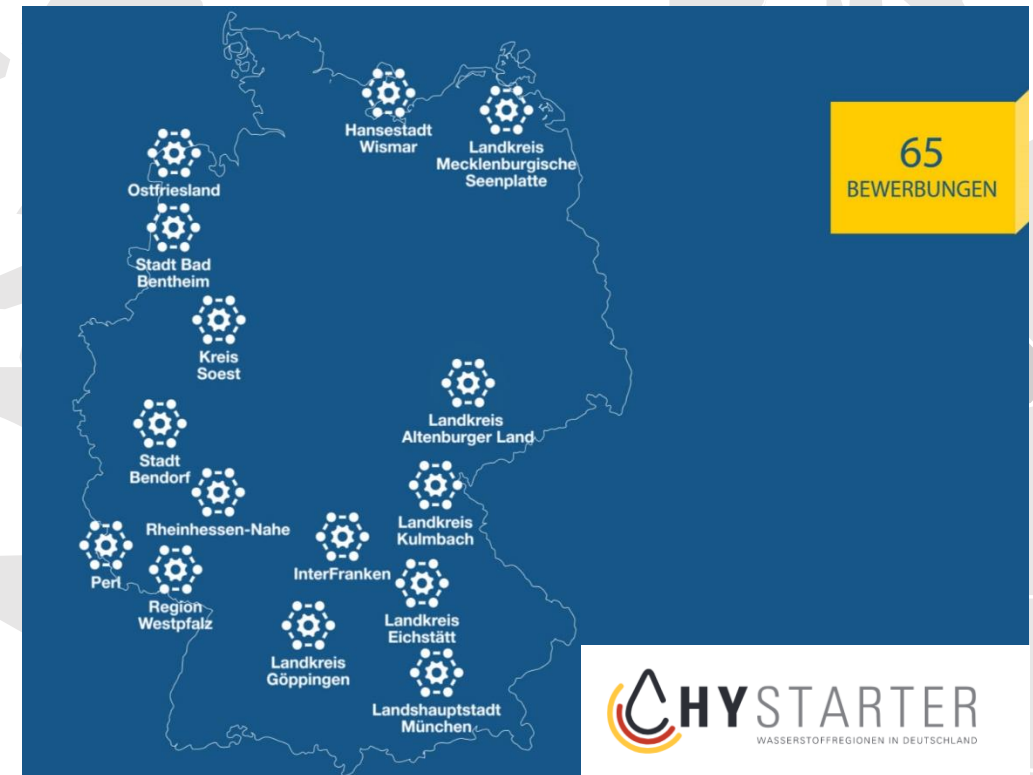
# HYSTARTER II – FIFTEEN REGIONS STARTING

Development of networks, knowledge and concepts in the regions

- 65 applicants in the period from March until May 2021
- Regions are supported in the founding of multi actor networks and the organisation of strategic dialogues during one year (2021 – 2023)
- The goal is to increase the knowledge about, and the visibility and acceptance of hydrogen and fuel cell technologies with a focus on mobility applications
- The output is a regional hydrogen concept

Similar to the FCH JU's „PDA - Project Development Assistance“ ([Final report phase I](#)) – Second Phase coming soon

*Charged with the support of the HyStarter II regions, is a consortia of **Energy Engineers GmbH, Nuts One GmbH and Spilett new technologies GmbH.***



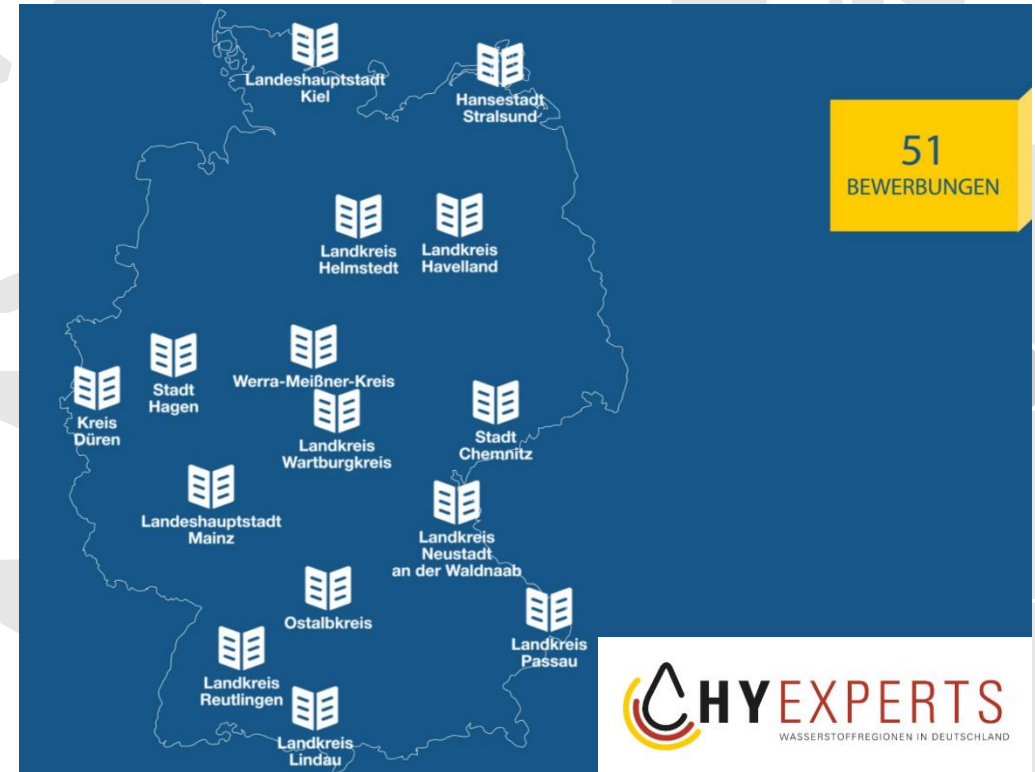
**Conclusion: Q3/2023**

**Funding ca. 200.000 € per Region**

# HYEXPERTS II – FIFTEEN REGIONS CONDUCT STUDIES

Consultation and planning services to prepare implementation

- Preexisting ideas and approaches and specified and analyzed in order to enable the implementation in the future
- The goal is the implementation of hydrogen and fuel cell technologies with a focus on mobility applications, and strengthening local economies
- Funding of expenses for the conduction of analysis by external experts
- Active participation during workshops and networking events



*The regional focus of the funding makes the regions **hotspots for innovation** and enables them to develop a **national and international role model function** so they act as **blueprints for other regions.***

**Conclusion:** Q1/2023

**Funding:** 400.000 € per HyExpert

# THE HYLAND NETWORK

The network as a central platform for exchange and publicity



## Spread the word

- Generate interest and acceptance for the topic of hydrogen and regional activities

HyLand Webseite:

The screenshot shows the HyLand website interface. At the top, there's a navigation bar with 'HYLAND' logo and menu items: 'HyStarte', 'HyExperts', 'HyPerformer', 'Projektfinder', and social media icons. The main content area features a map of Germany with colored dots representing hydrogen regions. The title is 'HyLand - Wasserstoffregionen in Deutschland'. Below the map, there's introductory text: '„HyLand - Wasserstoffregionen in Deutschland“ ist ein 2019 vom Bundesministerium für Verkehr und digitale Infrastruktur (BMVI) gegründeter Netzwerk, das sich bereits in der zweiten Phase befindet. HyLand fördert Akteure in allen Regionen Deutschlands Konzepte mit Wasserstoffregio zu initiieren, zu planen und umzusetzen. Ziel des Netzwerks ist es, die Innovationen und Pilotprojekte verschiedener regionaler Konzepte zu identifizieren und zu fördern.' Below this, there are sections for 'HyStarte, HyExperts und HyPerformer - Potentiale von Wasserstoff entdecken und umsetzen' and 'Aus über 200 Konzeptanträgen aus ganz Deutschland wurden in der ersten Runde von HyLand (HyLand 1) Konzepte in drei Kategorien mit unterschiedlichen Zielsetzungen und Förderpotenzialen ausgewählt. Im Rahmen von HyLand 2 werden voraussichtlich 20 weitere Kommunen und Regionen als HyStarte bzw. HyExperts ausgewählt und mit dem entsprechenden Förderpotenzial und Maßnahmen für die Bewältigung von regional integrierten Konzepten zur Einführung von Wasserstoff und Brennstoffzellentechnologien im Verkehr unterstützt und begleitet. Auf der HyLand-Karte gelangen Sie direkt zu den jeweiligen HyLand-Partnern und Regionen. Hier erhalten Sie Informationen und Materialien zu Partnern, Zielen und Inhalten der HyLand-Projekte. Machen Sie sich ein Bild von den vielfältigen Einsatzmöglichkeiten von Wasserstofftechnologien in der Praxis.'

## Connect the regions

Connecting the actors and the regions to exchange experiences and uncover synergies:

- Networking events twice per year
- Specialist workshops twice per year

## Make networks visible

- Many networks exist at different levels
- Create transparency and accessibility

Map of hydrogen networks:

The map shows Germany with various colored dots representing hydrogen networks. To the left of the map is a detailed 'Inhaltsverzeichnis' (Table of Contents) listing regional initiatives across Germany:

- SCHLESWIG-HOLSTEIN** Seite 50
  - Landeskooperationsstelle Wasserstoffwirtschaft SH
  - ENTIS 100
  - Watt 2.0
  - Kraftgas GmbH
  - Energreen Energy and Speicher e.V.
- NIEDERSACHSEN** Seite 20
  - Energie-Forschungs-Zentrum Niedersachsen EFCZ
  - EEEC e.V. - Abwasser Wasserstoff Niedersachsen
  - 102 MW Wasserstoffwerk Nordfriesland
  - 102 Region Lüneburg
  - Intern Fuel Cluster Sea-Matrix
  - Wasserstoffcampus Salzgitter
  - Innovationscluster HyPerformer Olsberg
- HESSEN** Seite 26
  - 102 Initiative Hessen e.V.
  - 102 Landeskooperations-Hessen
- SAARLAND** Seite 44
  - Innovationszentrum Saarland - Staats
- BADEN-WÜRTTEMBERG** Seite 12
  - modell BW GmbH - Cluster Innovationsforde BW
  - Metropolregion Rhein-Neckar - Clusterwerk Energie und Umwelt
  - Stuttgart.eco
- HAMBURG** Seite 24
  - HySoltech GmbH
  - Wasserstoff Gesellschaft Hamburg e.V.
  - Erneuerbare Energien Hamburg Wasserstoff GmbH - E3H2
- BRUNNEN** Seite 22
  - 102K - Wasserstoff für die Region Brunnens e.V.
- RODARUM WESTFALEN** Seite 26
  - Energiepark NRW
  - 102Network Ruhr
  - HyCologne - 102 Wasserstoff Rheinland
  - EnergieLand 2024 e.V. Staßfurt
  - Kompetenzregion District Rhein-Wupper e.V.
  - Industrielle Wasserstoff
  - 102 Rheinland Initiative
- REINLAND-PFALZ** Seite 42
  - 102/ Rheinland Pfalz e.V.
- MECKLENBURG-VORPOMMERN** Seite 28
  - HyFlowTech
  - Wasserstoffkooperations- Mecklenburg Vorpommern e.V.
- BRANDENBURG** Seite 18
  - Cluster AdMitt, Völkler, Agria (Bitter Brunnensch)
  - Cluster Energiepark Bitter Brunnensch
  - Centra für Energietechnische Brandenbur
  - Clara e.V.
  - EastCluster - Wasserstoffwerk Land
- BERLIN** Seite 16
  - 102Initiative e.V.
  - Berlin Hydrogen Energy Network e.V.
- SACHSEN-ANHALT** Seite 48
  - HyPro - Hydrogen Power Storage & Solutions East Germany e.V.
- THÜRINGEN** Seite 54
  - 102GEM - Erdgasnetz Institut für Angewandte Wasserstoff- forschung Sonneberg e.V.
  - Thüringer Innovations Energy Network THIN e.V.
- SACHSEN** Seite 46
  - 102Pro - Antrieb für Sachsen
  - Energy Storage e.V.
  - HyPro - Hydrogen Power Storage & Solutions East Germany e.V.
- BAYERN** Seite 14
  - Zentrum Wasserstoff Bayern (Z2B)
  - 102 204 e.V. - Das Wasserstoff Initiative Bayern & Baden Württemberg
  - 1. Industrielle Region Bayern



# IPCEI PROJECTS

# IPCEI (IMPORTANT PROJECTS OF COMMON EUROPEAN INTEREST)

Hydrogen technologies and systems are one of six strategic value chains

Projects that:

- ❑ contribute to a strategic objective of the EU
- ❑ are carried out jointly by several member states
- ❑ provide for co-financing by the participating companies
- ❑ involve a positive spill-over effect for the whole EU
- ❑ go beyond the international state of the art and have very ambitious R&D&I objectives

# IPCEI LOCATIONS GERMANY



## Usage mobility

1. SENECA, Germany-wide – H2 MOBILITY DE
2. BMW Produkt, München – Bayerische Motoren Werke
3. Brennstoffzellen Gigafactory, Kirchheim-Teck – cellcentric GmbH & Co KG
4. PEGASUS, Wörth – Daimler Truck
5. NextGen HD-Stack, Dettingen/Erms – ElingKlinger
6. Clean Hydrogen Coastline, Northern Germany – FAUN Umwelttechnik
7. NextGadila, Weinheim – Freudenberg Performance Materials
8. WIPLiN, Hamburg – Airbus Operations  
H2LoAD, Hamburg – Hamburger Hafen und Logistik  
HyPA, Hamburg – Hamburg Port Authority  
H2 HADAG, Hamburg – HADAG  
H2SB, Hamburg – Green Plug





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NOW - G M B H . D E

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