



H2 Digital

The digital backbone for the hydrogen economy

Challenges in the H2 market

The ramp-up of the hydrogen market requires
Transparency and Commitment



Lack of transparency about H2 supply and demand

Energy suppliers & DSOs need a clear planning basis for hydrogen

- Reliability and timeline to connect to the **TSOs' H2 backbone**
- **Hydrogen needs of industrial customers** (production and/or consumption)
- Inputs from other queries, such as municipal energy planning, can be used for this purpose



Industrial customers must **actively** participate in the transformation to H2



Traders would also benefit from greater transparency for the development of a liquid H2 **market**

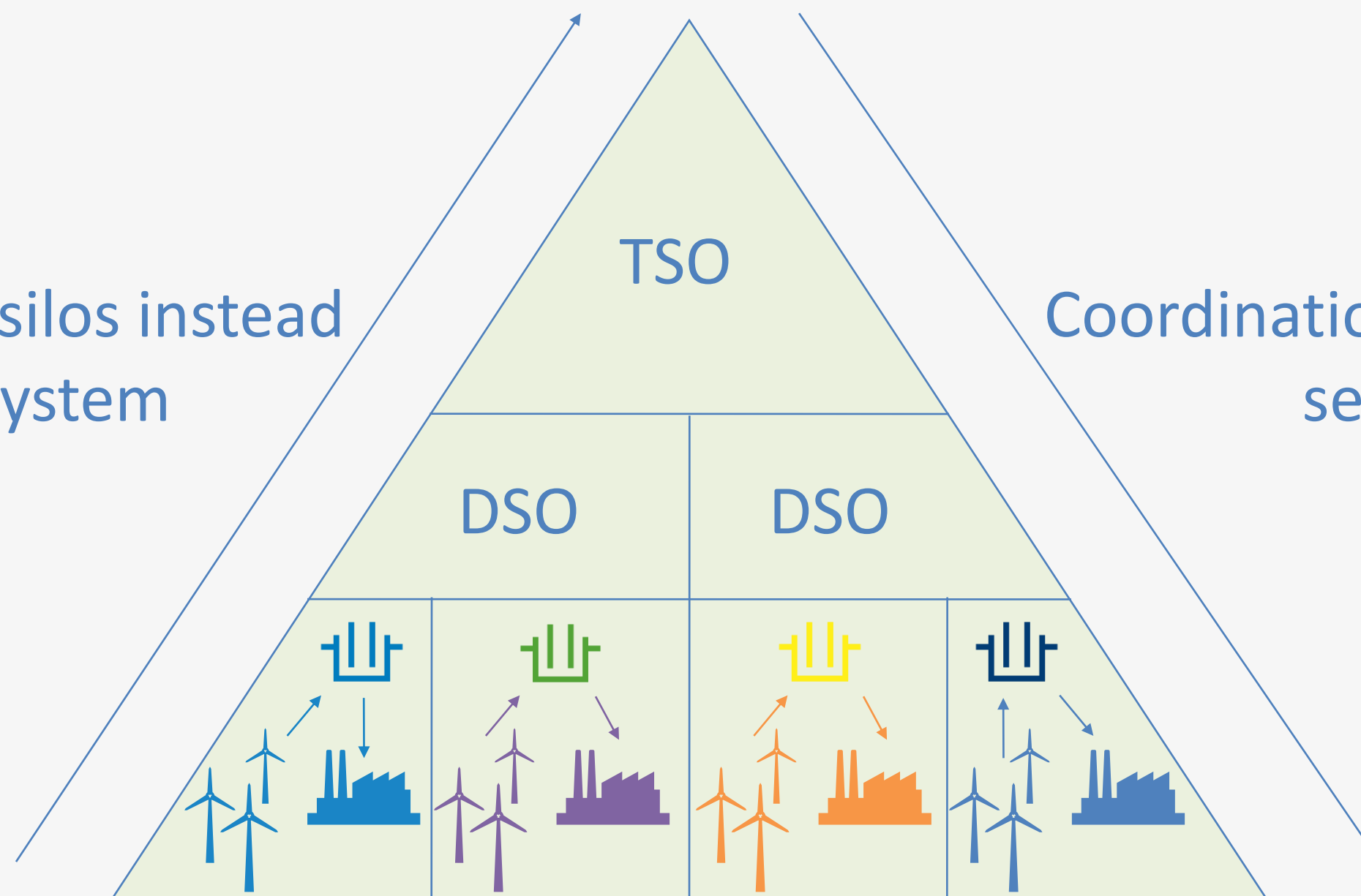
Green hydrogen capacity in EU announced as of 2023



One platform is needed to map the H2 market

Today: individual silos instead of an integrated system

Coordination is needed for security of supply



H2 Producers, Consumers, Storage

Vision: One H2 platform for all

 TSOs:
Network planning/construction


 DSOs & Utilities:
Market/Network Dev

 Industry:
H2 Sources & Sinks

 Traders:
Supply & Demand Matching



Large Energy Producers:
dynamic RE/H2 Production 

Certifiers:
Tracking of H2 Streams 

Hardware Providers:
Visibility & Sales 

Politics & Associations:
Strategies & Cooperation 

One "App Store" for Hydrogen




Apps


 Sizing & Costing	 Renewable Energies	 H2 Demand & Supply	 Certificates (CO2 etc.)	 H2 Network Planning	 Sales/CRM Connect
 Map Whitelabelling	 Content Management	 Analytics/Dashboards	 Collaboration	 Artificial Intelligence	 More

Platform

H2 Database:
Companies, Projects, Networks, Supply & Demand



Infrastructure on Microsoft Azure:
Security, Scalability, Multi-Languages



Die H2-Plattform für Deutschland und Europa

Die entstehende Wasserstoffwirtschaft besteht aus einer großen Anzahl von Marktteilnehmern: Erzeuger, Verbraucher und Verteiler von grünem Wasserstoff. H2 Digital digitalisiert und steuert H2 Erzeuger und Verbraucher in Deutschland und Europa. Wasserstoff braucht Teamwork. H2 Digital schafft Werte durch Sektor Kopplung und betriebswirtschaftliche Optimierung mit größter Datensicherheit

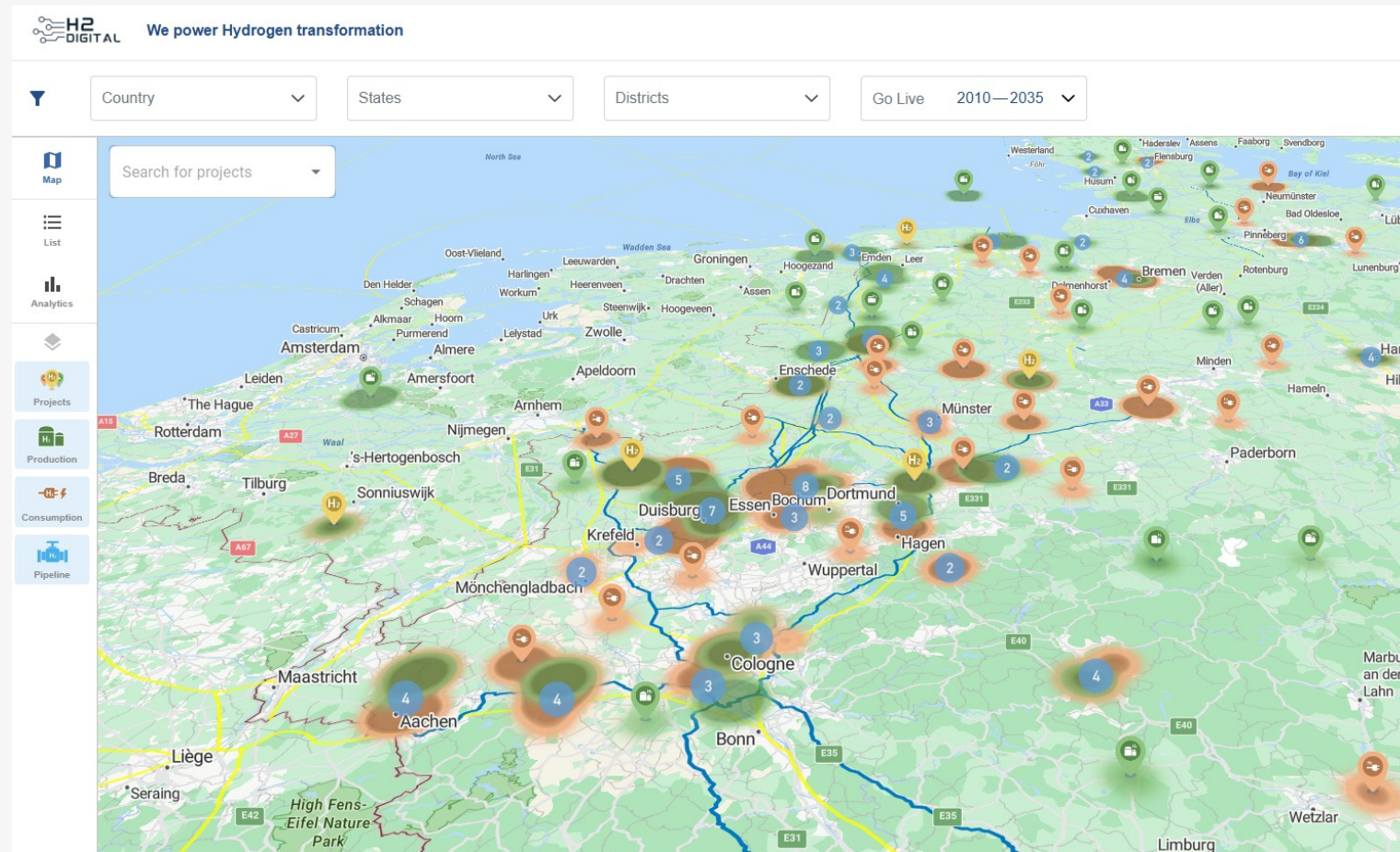
Entdecke
H2 DIGITAL

Overview H2 Digital

Existing solutions & added values of the platform

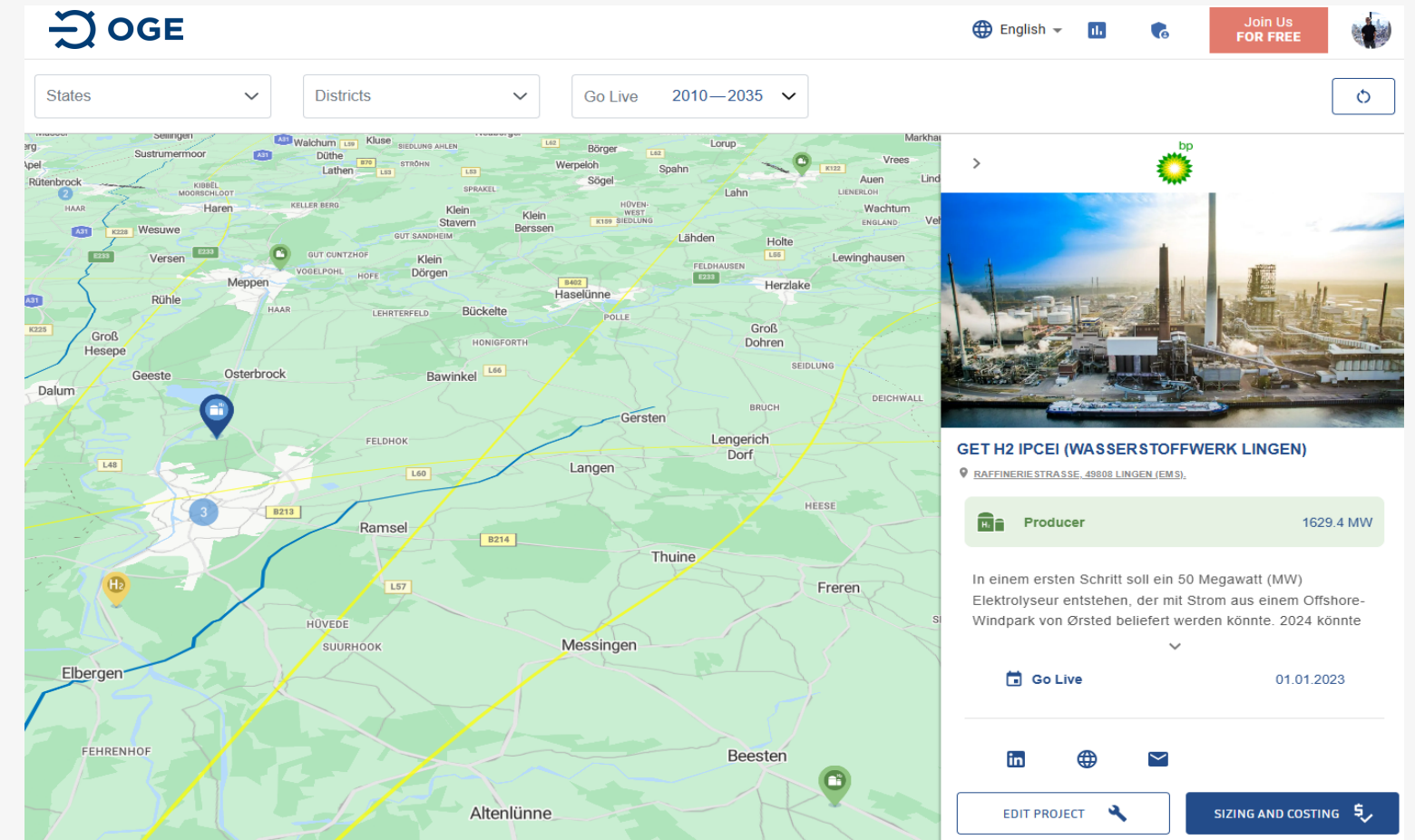
Platform Values

Public & Private on a single platform



Public

- Graphical overview of publicly registered H2 projects and pipelines over time
- Analytical evaluations of data on H2 production and consumption
- Filters and dynamic views of projects



Private

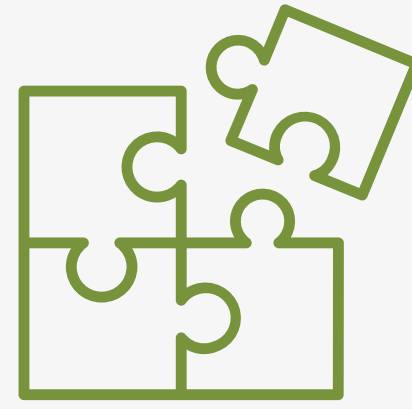
- Secure access via Microsoft User Management
- Access to your own database and services used: demand queries, analytics, network planning, content management, sales connectivity
- Optional: whitelabelling of the platform with embedding on your own website

Platform Values



Integrated

- Resources and cost savings through joint development
- Uniform data storage and data quality
- Everything for hydrogen in one system – no isolated solutions
- Integrated into existing IT system landscape



Modular

- Use the services you need to develop your market
- Provision of new services possible immediately with little training effort
- A central basis for managing and analyzing data
- Dynamic access for registered users and customers with Microsoft User Management



Future-proof

- Scalable architecture on Microsoft cloud infrastructure
- Further development of the H2 Digital platform by existing development team
- Partnership cooperation for lasting further development

Use of the platform to query DSOs and their customers

Willkommen bei H2 Digital!

Um Ihr Projekt hinzuzufügen, geben Sie bitte die folgenden Details ein.

Vorname* Nachname*

E-mail*

Firmenname*

Telefon Nummer*

Nachricht

OGE H2 Marktabfrage und Netzplanung

627 OGE-Kunden insgesamt

101 Aktive Kunden Netzplanung

3 Neue Projekte diesen Monat

8 Projekte in Planung

Neueste 3 Projekten NEW

Project Speyer

Wasserstoff Mannheim

Windwasserstoff Heidelberg

Neueste 3 Projekte in Planung NEW

Praise test

Praise test

Praise test

Monatliche Kennzahlen rund um H2 im Versorgungsgebiet - Letztes Update : 21.09.2023 10:23:49

Units in Kg

2023

H2 Produced H2 Consumed CO2 Reduced

3,85 Mio. Produzierte Menge H2(t) ▼ -1.38%

11,76 Mio. Verbrauchte Menge H2(t) ▼ -1.75%

4,00 Elektrolyse- Leistung(MW) ▲

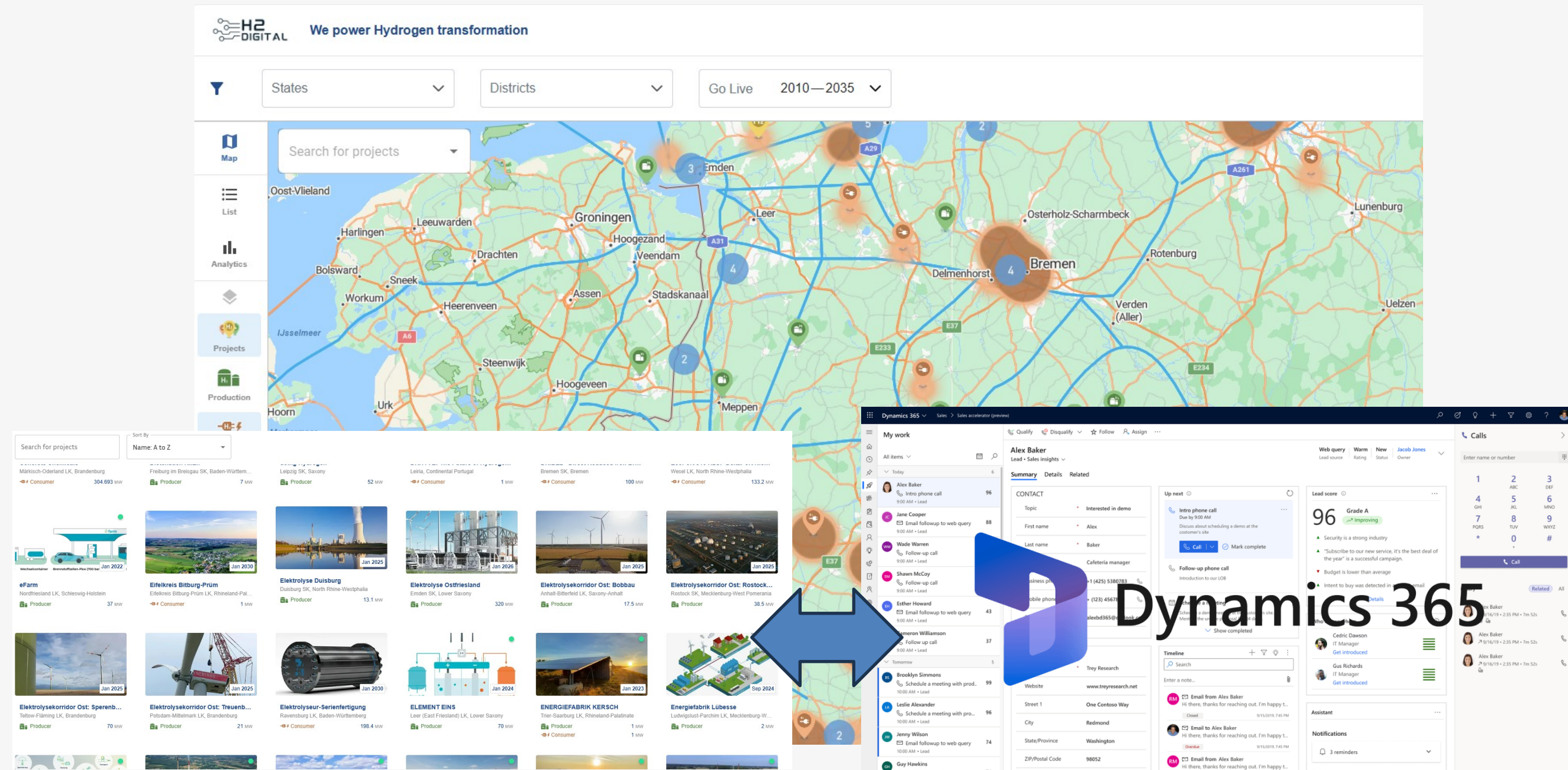
33,05 Mio. CO2- Reduktion (t) ▼ -1.38%

- Digital workflow for querying transport customers in hydrogen
- Replace existing separate queries and bundle them into one platform
- Central data management by a neutral service provider
- Control over the input and updating of the queried data by TSOs and DSOs

H2 Digital

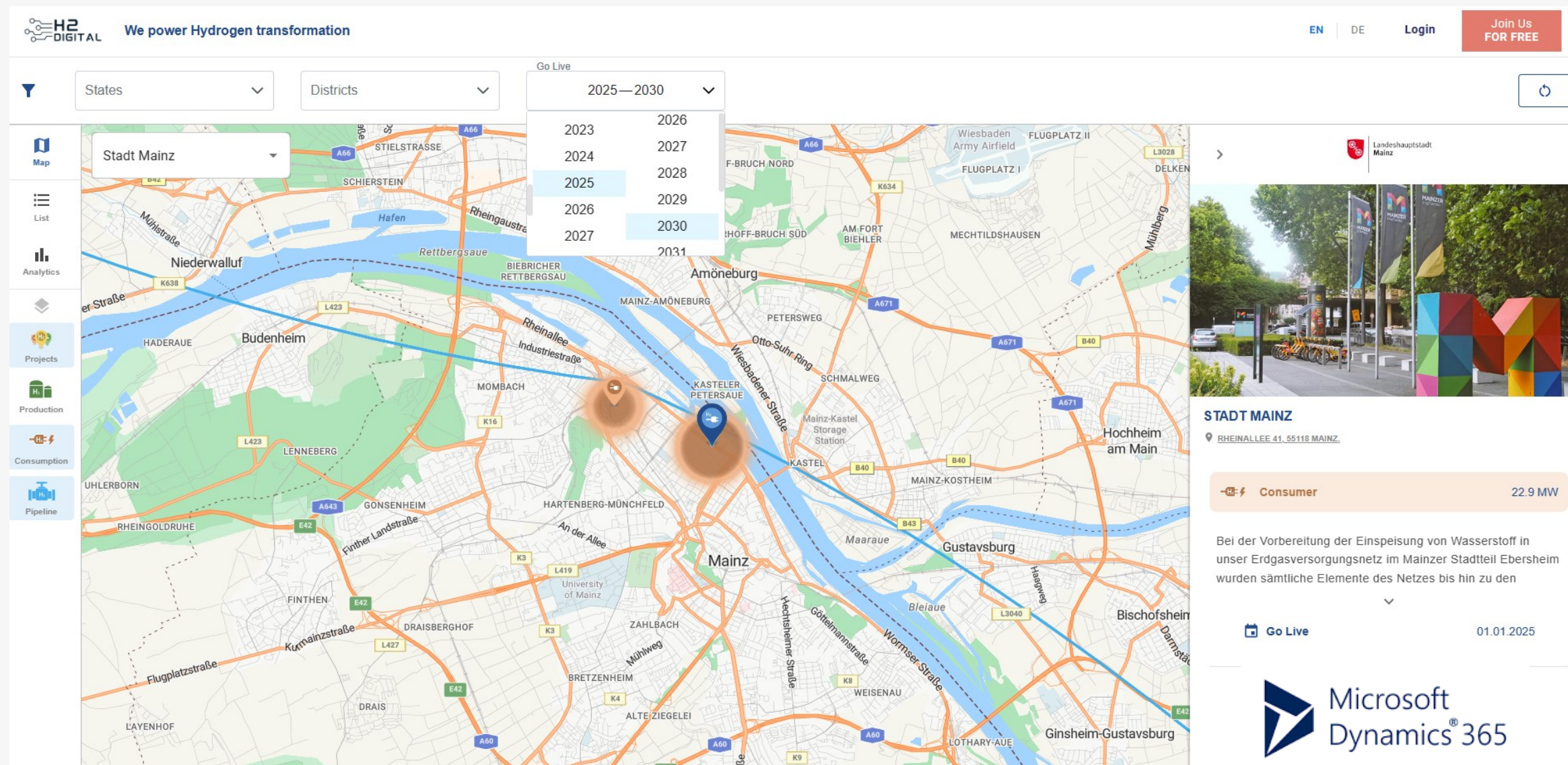
Targeted use of data for business development

- Support for transport customers in the transformation to hydrogen
- Advice on grid connection planning
- Synchronization of grid connections for hydrogen with core network planning
- Interface to your own CRM for seamless sales support



The image displays a composite interface for hydrogen project management. At the top, the H2 Digital logo and tagline "We power Hydrogen transformation" are visible. Below this, there are filters for "States" and "Districts", and a "Go Live" date range from 2010 to 2035. The main area is a map of Germany with various project locations marked by colored circles and icons. A search bar for projects is located on the left side of the map. Below the map, there is a grid of project cards, each with a title, location, and capacity. The cards include projects like "Märkisch-Oderland LK, Brandenburg", "Freiburg im Breisgau SK, Baden-Württemberg", "Leipzig SK, Saxony", "Leiria, Continental Portugal", "Bremen SK, Bremen", "Wesal LK, North Rhine-Westphalia", "Elektrolyse Duisburg", "Elektrolyse Ostfriesland", "Elektrolysekorridor Ost: Bobbau", "Elektrolysekorridor Ost: Rostock", "Elektrolysekorridor Ost: Spere...", "Elektrolysekorridor Ost: Treuen...", "Elektrolyseur-Serienfertigung", "ELEMENT EINS", "ENERGIEFABRIK KERSCH", and "Energiefabrik Lübsee". To the right of the map, there is a Dynamics 365 CRM interface showing a contact profile for Alex Baker, including a summary, details, and a list of activities. A large blue arrow points from the map area towards the Dynamics 365 interface, indicating data synchronization. The Dynamics 365 interface also shows a "My work" section with a list of tasks and a "Calls" section with a list of calls.

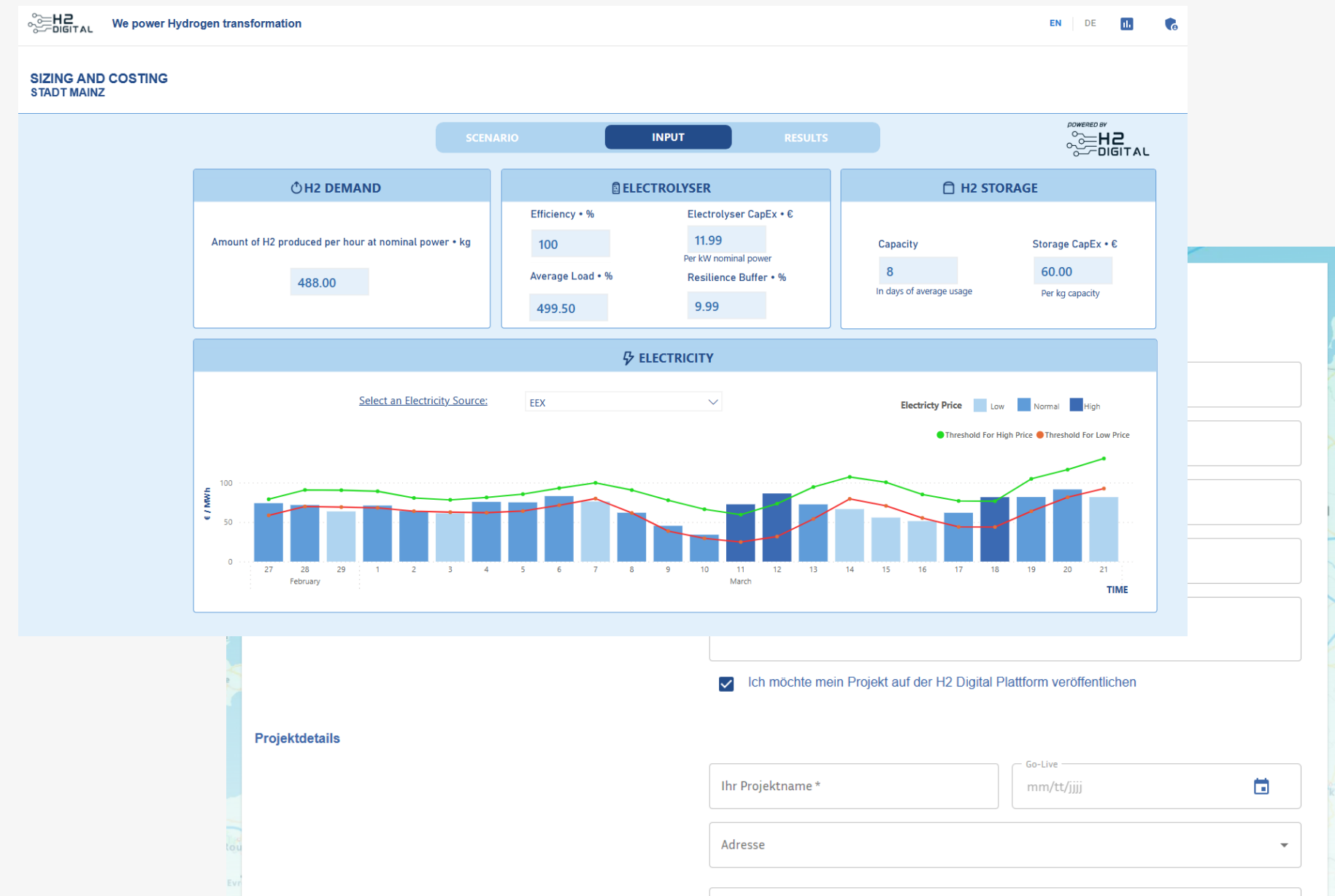
H2 Network Development and Planning



- Overview of your own network development over time
- Targeted sales planning of grid connections for efficient business development
- Different views of network planning for stakeholders
- Comparison with hydrogen core network planning
- Planning of transfer points to DSOs with aggregated transport requirements over time

Grid connection enquiry portal for transport customers

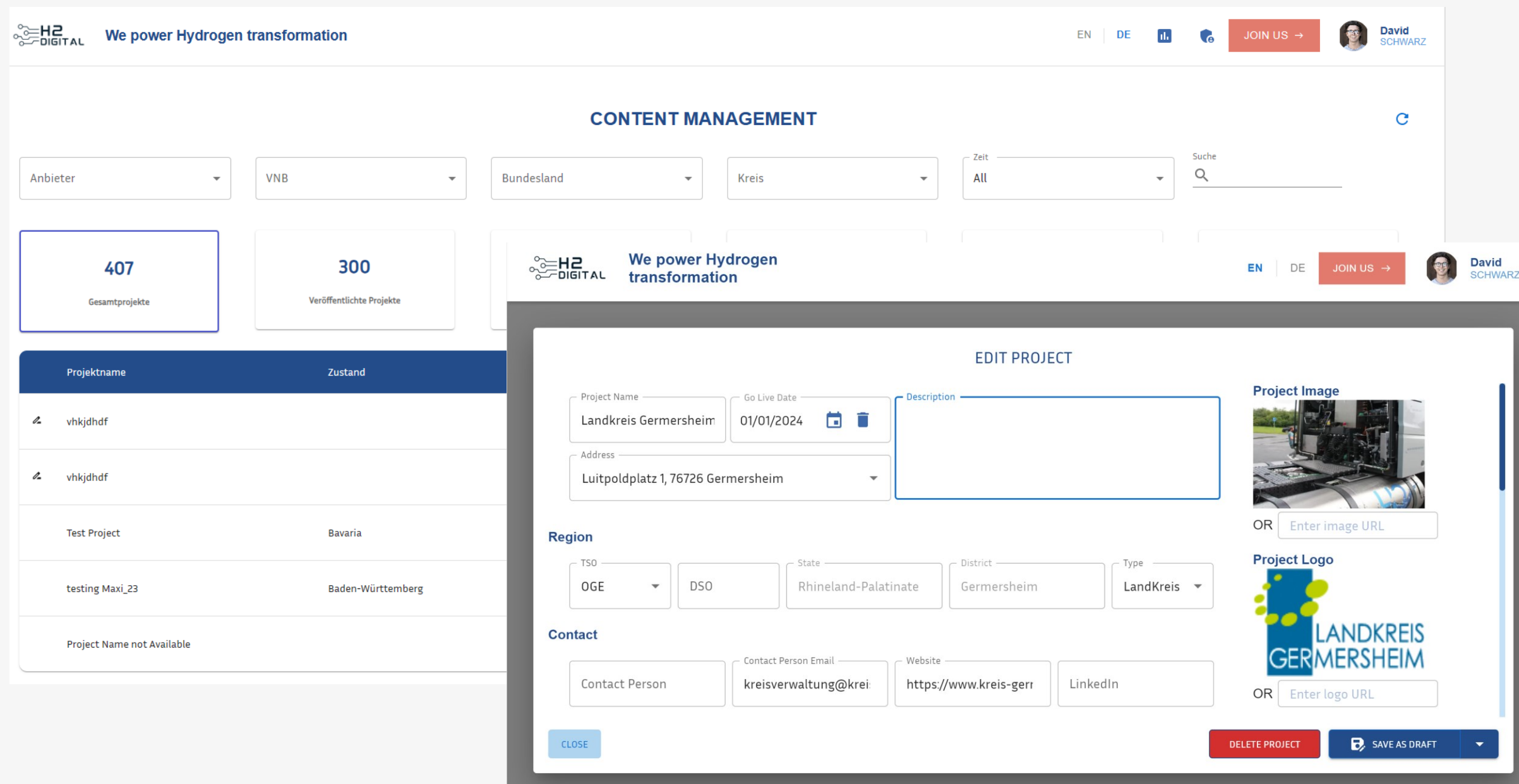
- Support in planning the transition to H2
- Site investigation for suitability for H2 supply
- Cost planning of connections based on real consumption and generation data
- Consideration of existing framework conditions (e.g. PPAs, consumption profiles,...)
- Integration of an enquiry portal for grid connection for hydrogen



State-of-the-art content management for all users

Easy user guidance to collect and modify data – without training effort

- No more separate isolated solutions necessary for business development in H2
- One central platform instead of many individual systems
- Setting up user groups to edit selected data



The screenshot displays the H2 Digital content management interface. At the top, the navigation bar includes the H2 Digital logo, the slogan "We power Hydrogen transformation", and user options for language (EN, DE), social media, and a "JOIN US" button. The main section is titled "CONTENT MANAGEMENT" and features a search bar and several filter dropdowns: "Anbieter", "VNB", "Bundesland", "Kreis", and "Zeit". Below the filters, two summary cards show "407 Gesamtprojekte" and "300 Veröffentlichte Projekte". A table lists projects with columns for "Projektname" and "Zustand".

An "EDIT PROJECT" modal form is overlaid on the table. It contains the following fields:

- Project Name:** Landkreis Gernersheim
- Go Live Date:** 01/01/2024
- Description:** (empty text area)
- Address:** Luitpoldplatz 1, 76726 Gernersheim
- Region:** TSO (OGE), DSO, State (Rhineland-Palatinate), District (Gernersheim), Type (LandKreis)
- Contact:** Contact Person, Contact Person Email (kreisverwaltung@krei), Website (https://www.kreis-gerr), LinkedIn
- Project Image:** (Image of a hydrogen station) OR Enter image URL
- Project Logo:** (Landkreis Gernersheim logo) OR Enter logo URL

At the bottom of the modal, there are buttons for "CLOSE", "DELETE PROJECT", and "SAVE AS DRAFT".

Data integration of various stand-alone solutions

The platform can easily integrate all relevant data sources from your previous network development

- Project databases based on previous market studies
- CRM data about H2 in your service area

H2Connect

H2CONNECT

Dashboard

Karte

Anmelden

SPRACHE / LANG

Sprache eins

WISSENSWERTES

Warum Wass

Über uns

FAQ

LINKS

Impressum

Datenschutz

Open Source

H2Connect App

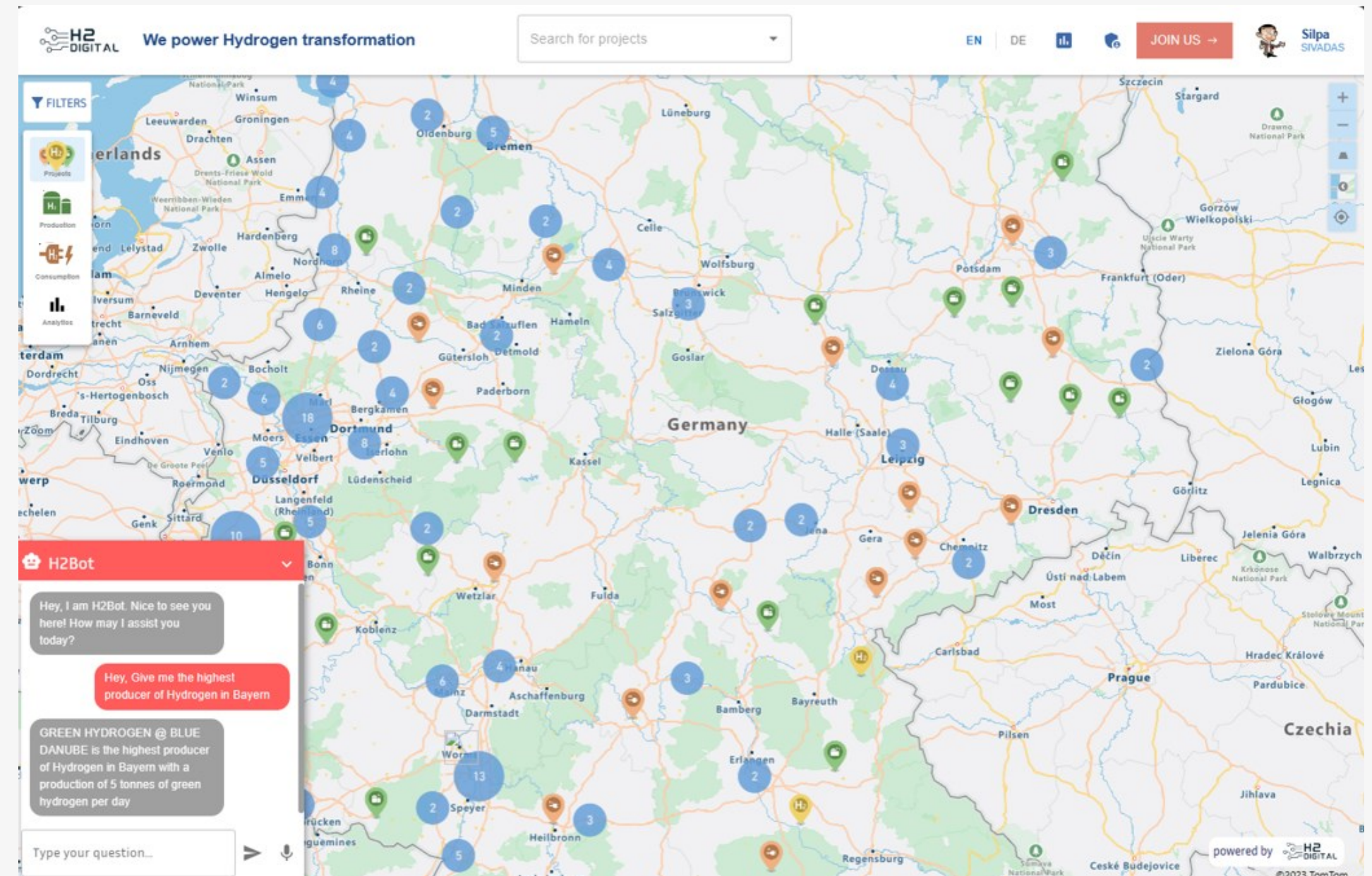
Project Name	State	District	Project Status	Date	Description
Landkreis Haßberge	Bavaria	Haßberge LK	Active	03/08/2023	So werden Bayern und Baden-Württemberg Vorreiter bei der Nutzung von Wasserstoff
H2 Süd	Bavaria	Munich SK	Active	03/08/2023	So werden Bayern und Baden-Württemberg Vorreiter bei der Nutzung von Wasserstoff

ID	Projektname	TSO	DSO	End-kunde	Inakti v	Projekt-Beschreibung	Adresse	TSO	DSO	Bundesland	Kreis	Link Logo	Links Bilder	Ansprechpartner	Website
001	H2 Süd				x	So werden Bayern und Baden-Württemberg Vorreiter bei der Nutzung von Wasserstoff für Mobilität und Energie der Zukunft. 0,0 Emissionen in Erzeugung und am Punkt der Nutzung, effiziente Speicherung und Transport, nahezu alle bestehenden Transport- und Nutzungssysteme können auf H2 umgerüstet werden. H2 wird durch Elektrolyse unter Einsatz von Strom aus dem Element Wasser gewonnen. Die Nutzung ist sicher und praxiserprobt!	Kaferstraße 4, 81241 München				SK München	https://th.bing.com/th/d/QIP-T3R8Muc3w3EE6i7Hhr248HaCr?pid=ImpDet&rsz=1	http://livinglab.de/wp-content/uploads/2021/11/210303_H2-LivingLab_Praesentation-1024x576.jpg	Dr. Andreas Seebach	http://livinglab.com/
002	H2 für A*				x	Für die Dekarbonisierung von Wirtschaft und Gesellschaft und für die Substituierung fossiler Rohstoffe von fragwürdigen Lieferländern werden in Zukunft erhebliche Mengen grünen Wasserstoffs notwendig sein. Vor allem für industrielle Prozesse und Verkehrsanwendungen wird er benötigt. Wasserstoff und die dazugehörigen Wasserstofftechnologien bilden die Grundlage für eine weitere industrielle Revolution.	Karlstraße 2, 86150 Augsburg	bayernets			SK Augsburg	https://www.region-a3.com/wp-content/themes/a3/public/images/logo-test.svg	https://www.region-a3.com/wp-content/uploads/2020/11/Standortkampagne_Leitmotiv_Regio.jpg		https://www.region-a3.com/standortregional-zukunftskonferenz-wasserstoff/
003	Gasmotorenkraftwerk Zolling				x	Durch die Vernetzung von H2-Produzenten und Verbrauchern kann bereits in naher Zukunft mit dem Aufbau einer leitungsgebundenen Wasserstoffinfrastruktur in Bayern begonnen werden. Diese Entwicklung soll zum überwiegenden Teil durch Umstellung bestehender Gasleitungen auf Wasserstoff erfolgen. Am Standort des Energieparks Zolling besteht die Möglichkeit des Anschlusses an einen zentralen Knotenpunkt des künftigen Wasserstoffnetzes in Bayern.	Leininger Str. 1, 85406 Zolling				LK Freising	https://th.bing.com/th/d/QIP-6MoskmuFBNfP28xf3VdRgghAFw?w=207&h=180&cs7&rsz=0&rsz=15&pid=ImpDet&rsz=1	https://www.oenge.com/wp-content/uploads/imagess/Kraftwerk_Block5-scaled-asset-ratio-733-530-1.jpg		Kraftwerk Zolling-Oenge Power (oenge.com)
004	Green Hydrogen @ Blue Danube 1				x	Dieses Projekt sieht die Produktion von 5 Tonnen grünem Wasserstoff pro Tag - in einem VERBUND-Wasserstoffwerk an der Donau oder dem Inn in Bayern - und dessen Einsatz in der regionalen Industrie und im Verkehrssektor vor.	Luise-Ullrich-Str. 20, 80636 München	OGE			SK München	https://th.bing.com/th/d/Fl-be3c44e901112218428a35d04b732fikaK200Sk6c4LgM0Qrlu:https://212logosandbrandsdirectory2/wp-content/uploads/2021/09/210303_H2-LivingLab_Praesentation-1024x576.jpg	https://projectgreenhydrogen.net/wp-content/uploads/Tra-ne-Europe-and-large-scale-hydrogen-infrastructure-project-Green-Hydrogen-Blue-Danube		VERBUND Wasserstoff-Projekt Green Hydrogen Blue Danube
005	RAAG Wasserstoff Strategie				x	Als Pionier in der Wasserstoffherzeugung betreiben wir seit 2015 die erste Wasser-Elektrolyse im Megawatt-Maßstab in Österreich. Darüber hinaus und gemeinsam mit verschiedenen Industriepartnern, Institutionen und universitären Einrichtungen	Schwarzenbergplatz 16, 1015 Wien				SK Wien	https://th.bing.com/th/d/QIP-nGV7UJFta4_D7VM:1s6Vw0h4E72nd-1m	crm_rag-grafiken-downloads:dt_Energiezukunft_wsb_58a0e7a135.jpg		RAAG Austria AG (rag-austria.at)

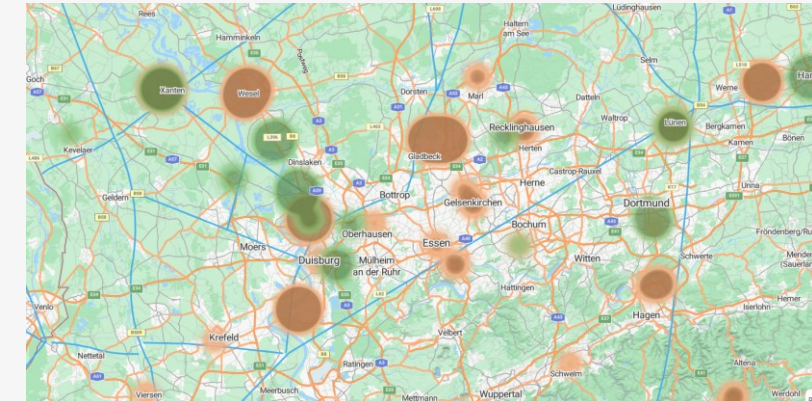
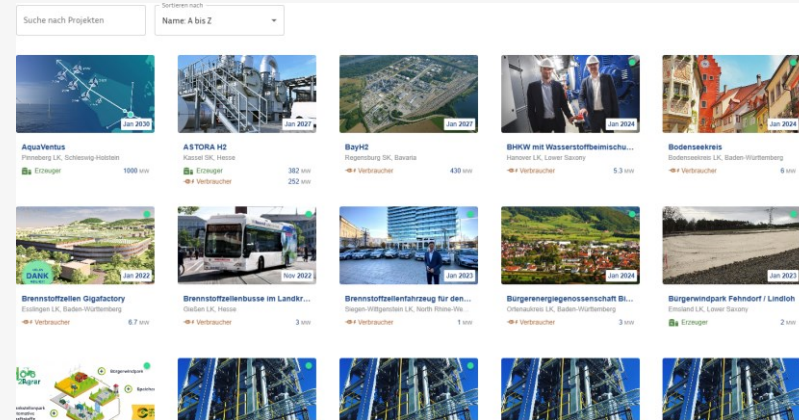
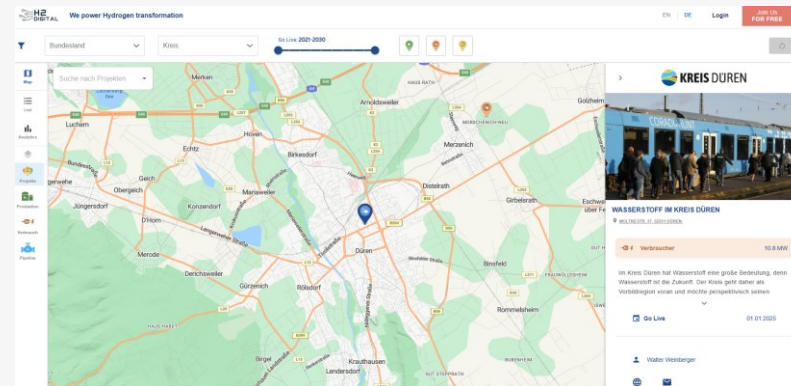
AI meets H2 Digital

Integrated AI solution for optimal usability

- Exemplary integration of AI: **ChatGPT H2Bot**
- Ability to process natural language in a wide range of applications
- Ability to respond quickly to natural language queries
- High precision in answering questions
- High scalability to communicate with a large number of users at the same time



Roadmap H2 Digital



Market Rollout

- Expansion in Europe: Projects and pipelines in the European H2 network
- Extension to CO2 Management (CCUS)
- Networking of H2 production and consumption with all forms of renewable energy

Market Development

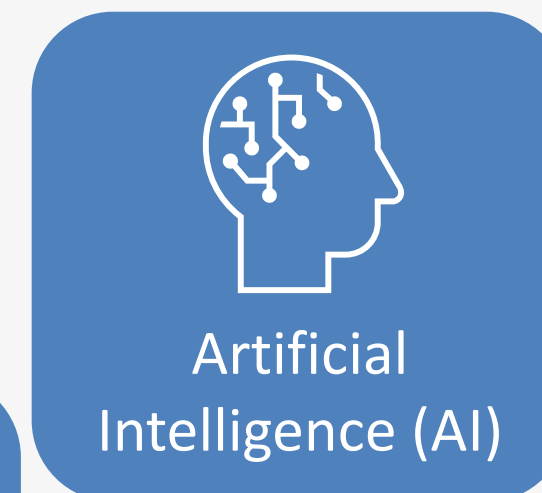
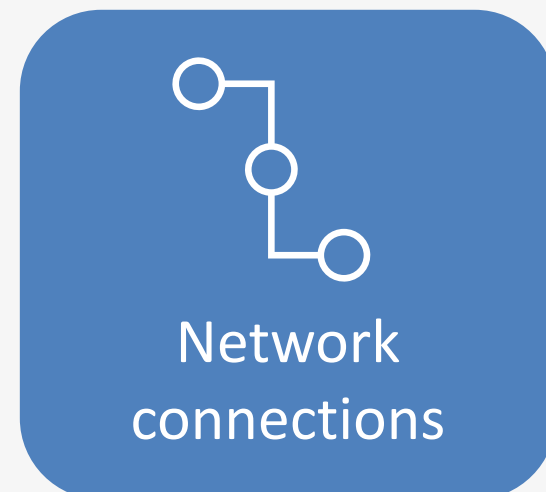
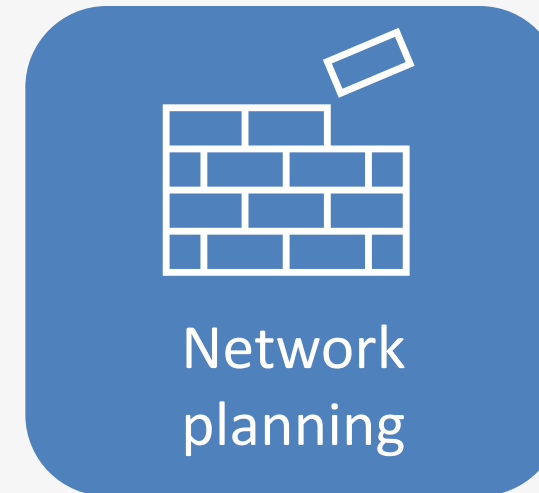
- H2 Demand & Supply Matching for Network Planning
- Digital site development for H2 projects
- Worldwide use of the H2 Digital platform – launch of the USA and other Lighthouse projects worldwide

Marketplace

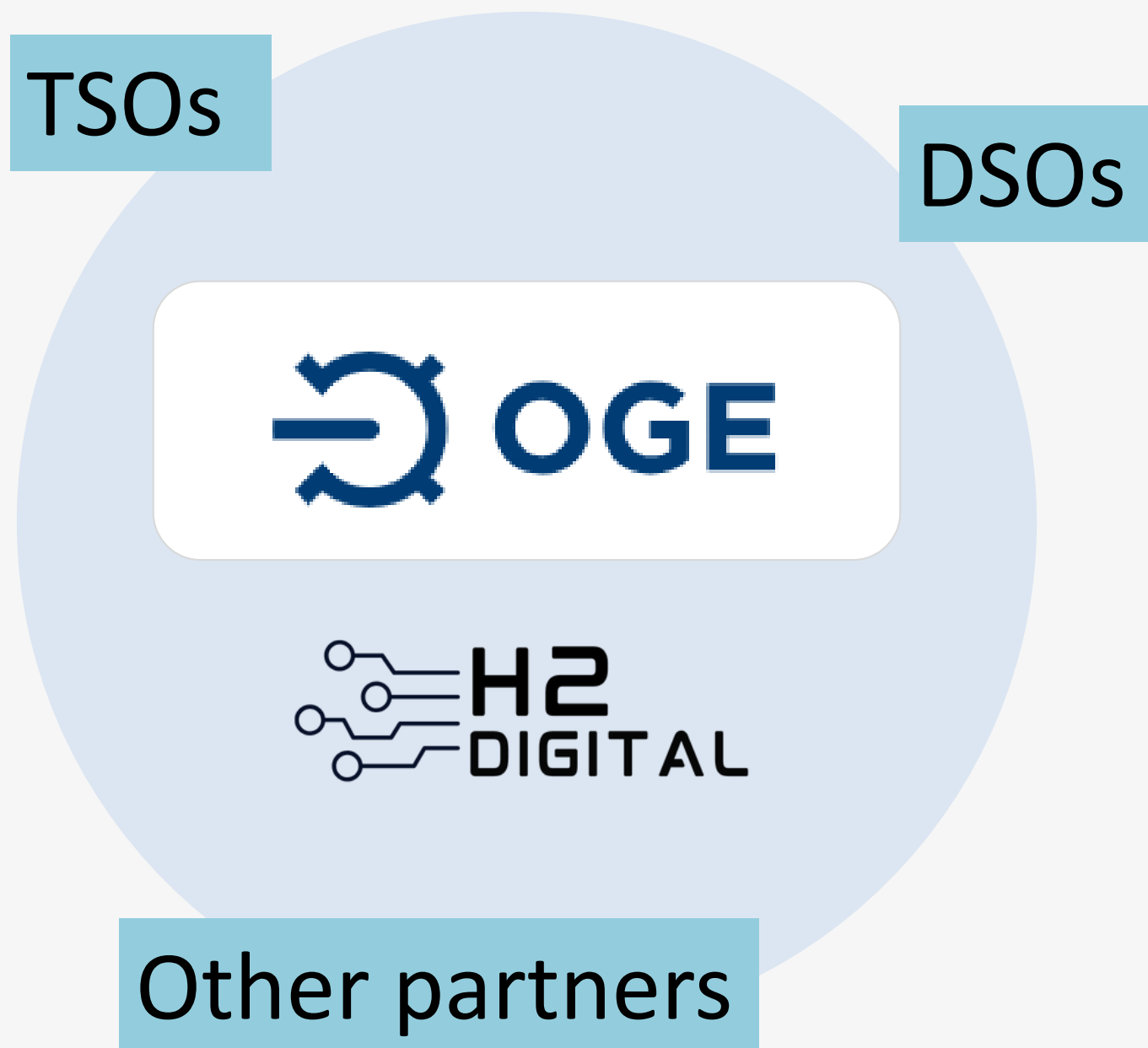
- Establishing H2 Digital as a marketplace based on demand and supply matching
- Certificate trading (H2 and CO2)
- Connection to network control in real-time
- Certificate processing according to renewable energy standards

H2 Digital as central platform for the networking of sustainable forms of energy

Modular structure & agile development



Hydrogen is teamwork



- We have know-how and market knowledge for the development of the physical infrastructure for the transformation into hydrogen
- This complements experience and know-how in the development of scalable and reliable software infrastructure
- H2 Digital builds on an active network of partners for the joint development of the platform

Contact Us

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