



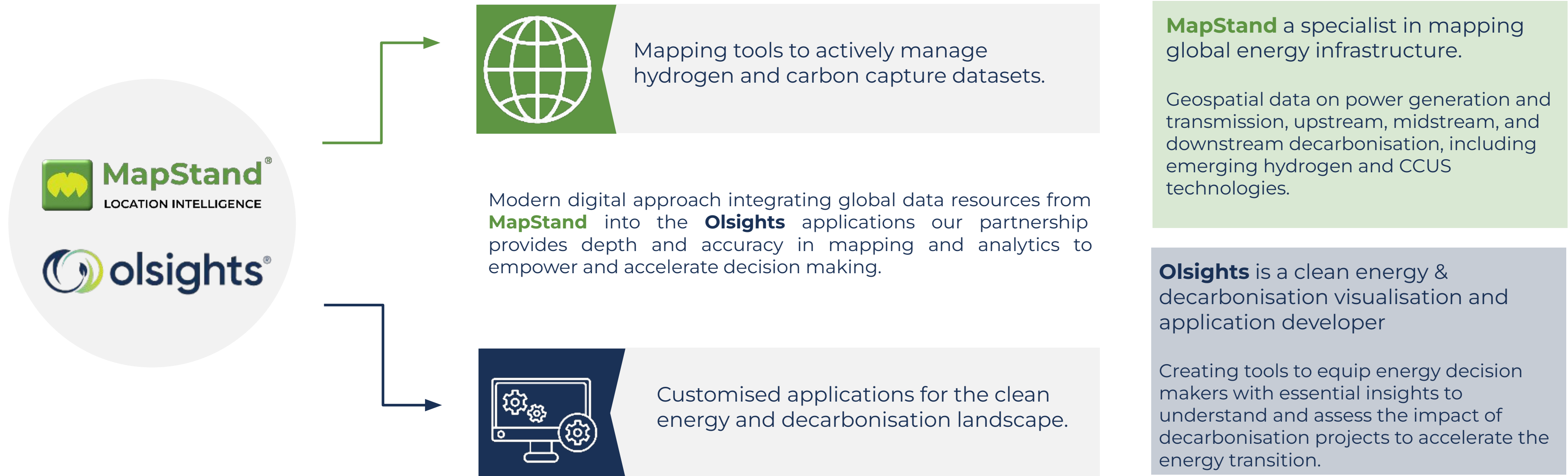
# Hydrogen VALUE CHAIN INSIGHTS

A [MapStand](#) & [Olsights](#) Joint Solution

April 2024


# MapStand & Olsights

A collaboration delivering global energy insights in an ever-changing landscape.




# Integrated Energy Infrastructure

Created by **Olsights** using **MapStand** datasets The Olsights Eye is a unique visual spatial analytic app to enable informed decisions that accelerates decision making for energy transition and decarbonisation projects.



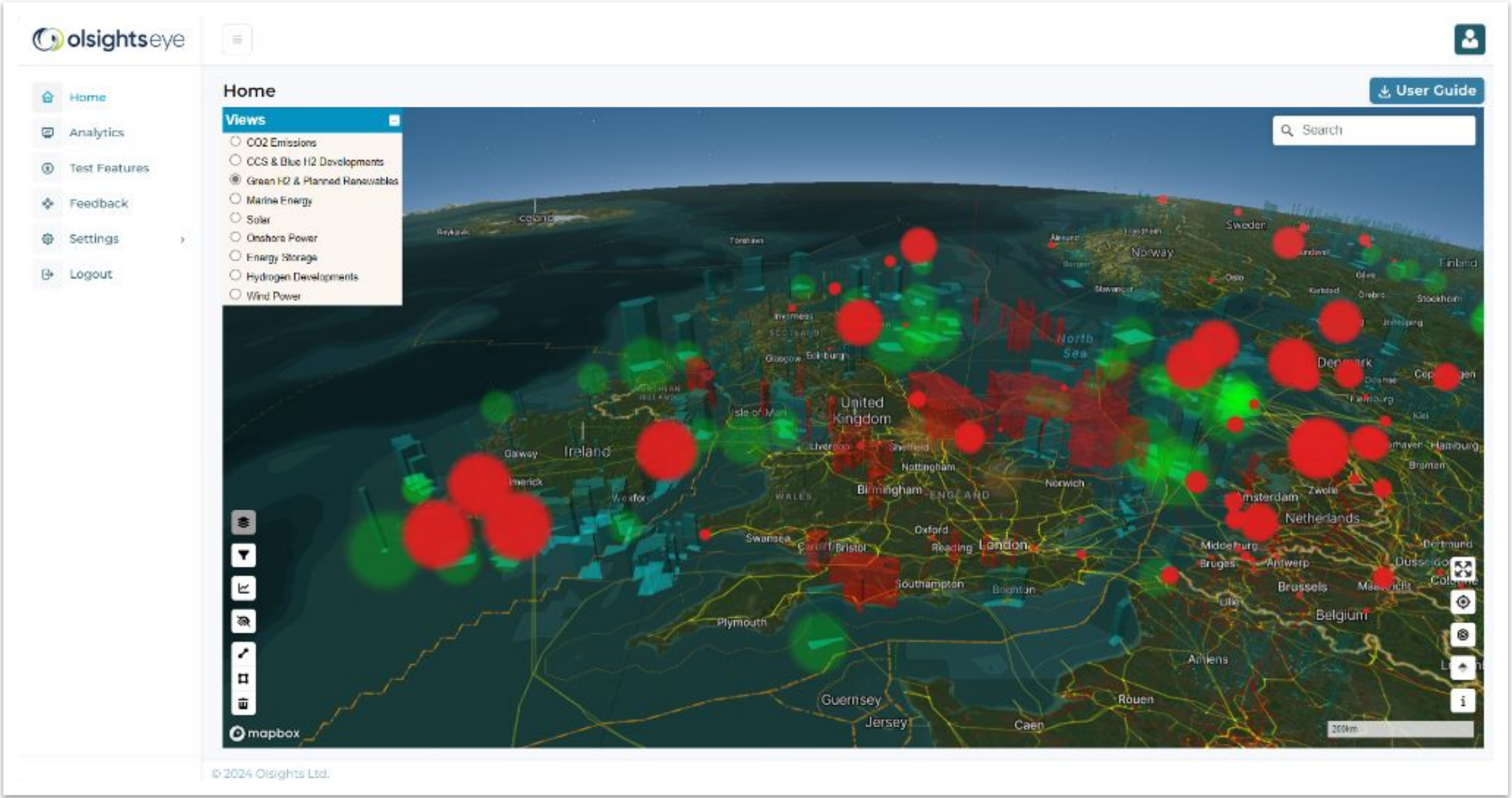
### Benefits

- Multiple opportunity/ scenario screening
- Interconnected energy systems
- Whole system analysis
- Global datasets, dynamically updated
- Competitor project analysis
- **Accelerates project decision making**



### Features

- Mapping visualisations of energy supply chains
- CO<sub>2</sub> emission characterisation
- Heat maps & cluster analysis
- Geographical lasso aggregation
- Gas, terminals & power infrastructure analysis
- CSV downloads



The Olsights Eye an Energy Infrastructure Screening Visualisation



# Detailed Energy Insights Dashboards

Dynamic assessment dashboards created by **Olsights** using **MapStand** datasets allow multiple project scenario comparison to identify strategic opportunities.

### Hydrogen Resource Assessment - Development Sites

**Total H2 Gen (MW)**  
**10,814**

**Number of Dev. Sites**  
**118**

Min-Max Cap. Range (MW)  
0.00 - 20,000.00

**Creaming Curve for Hydrogen Generation Ranked by Development Size**

**Breakdown of Projects by Colour**

GREEN 10814 (100%)

**Hydrogen Gen Plant Locations for Selected Countries**

name	owner	owner_group	hydrogen_colour	h2_production_method	technology_partner	h2_production	status123
ABERDEEN HYDROGEN PRODUCTION FACILITY PHASE 2	BP ABERDEEN HYDROGEN ENERGY LIMITED	BP PLC (GROUP)	GREEN		BP ABERDEEN HYDROGEN ENERGY LIMITED	3.62	2.EARLY_PLANNING
CARRINGTON H2	FIRST HYDROGEN LIMITED	FIRST HYDROGEN CORP. (GROUP)	GREEN	UNKNOWN		20.00	2.EARLY_PLANNING
CHESHIRE GREEN HYDROGEN PROJECT	GRENIAN HYDROGEN LIMITED	GRENIAN HYDROGEN LIMITED (GROUP)	GREEN	ELECTROLYSIS	CUMMINS INC.	28.00	2.EARLY_PLANNING
CROMARTY FIRTH H2 PHASE 1	SCOTTISH POWER LIMITED	IBERDROLA S.A. (GROUP)	GREEN	ELECTROLYSIS		35.00	2.EARLY_PLANNING
CROMARTY FIRTH H2 PHASE 2	SCOTTISH POWER LIMITED	IBERDROLA S.A. (GROUP)	GREEN	ELECTROLYSIS		265.00	2.EARLY_PLANNING
DYLAN H2 PHASE 1	ERM DOLPHYN HOLDCO LIMITED	ERM LIMITED (GROUP)	GREEN	UNKNOWN		0.10	2.EARLY_PLANNING
DYLAN H2 PHASE 2	ERM DOLPHYN HOLDCO LIMITED	ERM LIMITED (GROUP)	GREEN	UNKNOWN		1.00	2.EARLY_PLANNING
EDEN MILL HYDROGEN ELECTROLYSIS	EDEN MILL DISTILLERS LTD	EDEN MILL DISTILLERS LTD (GROUP)	GREEN	ALKALINE WATER ELECTROLYSIS		0.10	2.EARLY_PLANNING
FIRST HYDROGEN - LIVERPOOL	FIRST HYDROGEN LIMITED	FIRST HYDROGEN CORP. (GROUP)	GREEN	UNKNOWN		30.00	2.EARLY_PLANNING
FIRST HYDROGEN - LONDON	FIRST HYDROGEN LIMITED	FIRST HYDROGEN CORP. (GROUP)	GREEN	UNKNOWN		30.00	2.EARLY_PLANNING
FLORA WIND POWER	OFFSHORE WIND POWER LIMITED	OFFSHORE WIND POWER LIMITED	GREEN	UNKNOWN		200.00	2.EARLY_PLANNING
<b>Total</b>						<b>10,814.05</b>	

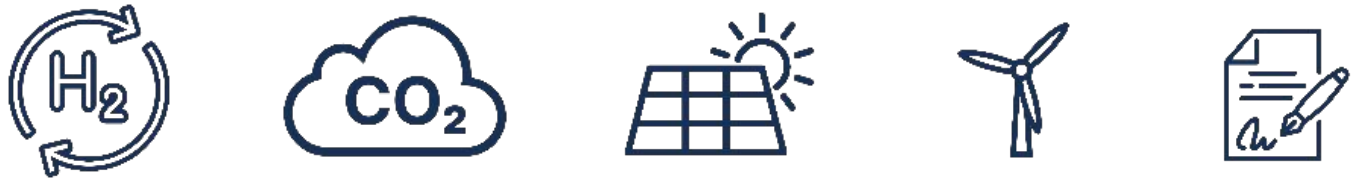
### Benefits

- Multiple scenario screening
- Customisable to your needs
- Interactive cross referencing by relationship
- Global datasets
- Dynamically updated
- Zoom into specific area of interest

### Features

- Site locations
- Development capacity
- Demand vs Capacity
- Development Pipelines
- CO2 emissions by industry
- Filter by Government subsidy support

H2 Landscape, analysis of opportunities and risks Insights Dashboard



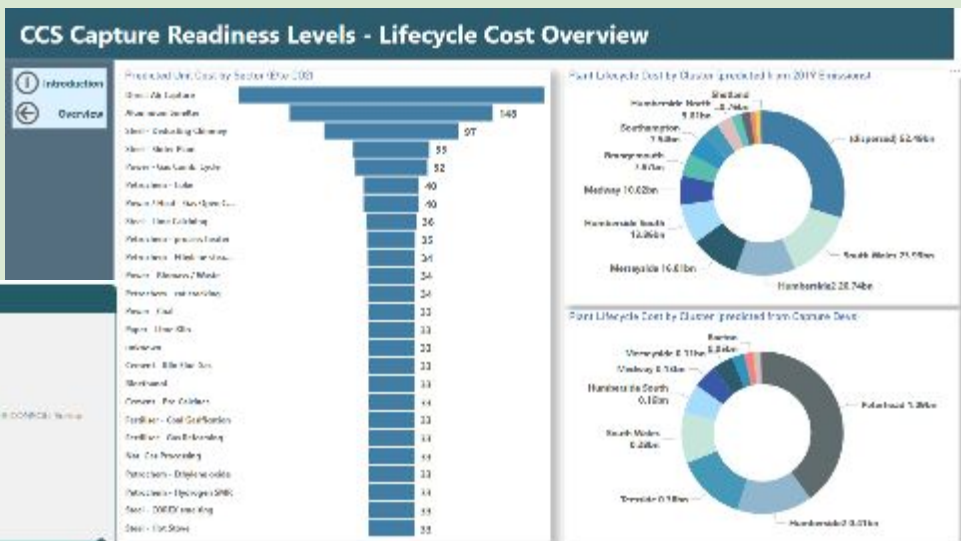
# Energy Project Economics

Unit cost analysis tools allow screening of multiple project scenarios from source to transmission.

## Cost Indicator Screening

Interactive calculators and analytics to quickly review and compare summary project and unit costs:

- Opportunity Screening
- Validation against alternatives
- Verification



**Cost Estimates for CCUS (CCSI)**

Cost estimate for CCUS

Project type:  Operational years (yr):

Pipeline option:

Cost of Capture:  \$/t CO2

Cost of Storage:  \$/t CO2

Cost of transport and storage per tonne CO2:  \$/t CO2

Net result:

Costs:

Revenue:

Net result:

## In Dev. - Lifecycle Economic Simulator

Development lifecycle 'flight simulator' for predicting project outcomes and impact of changing variables, showing:

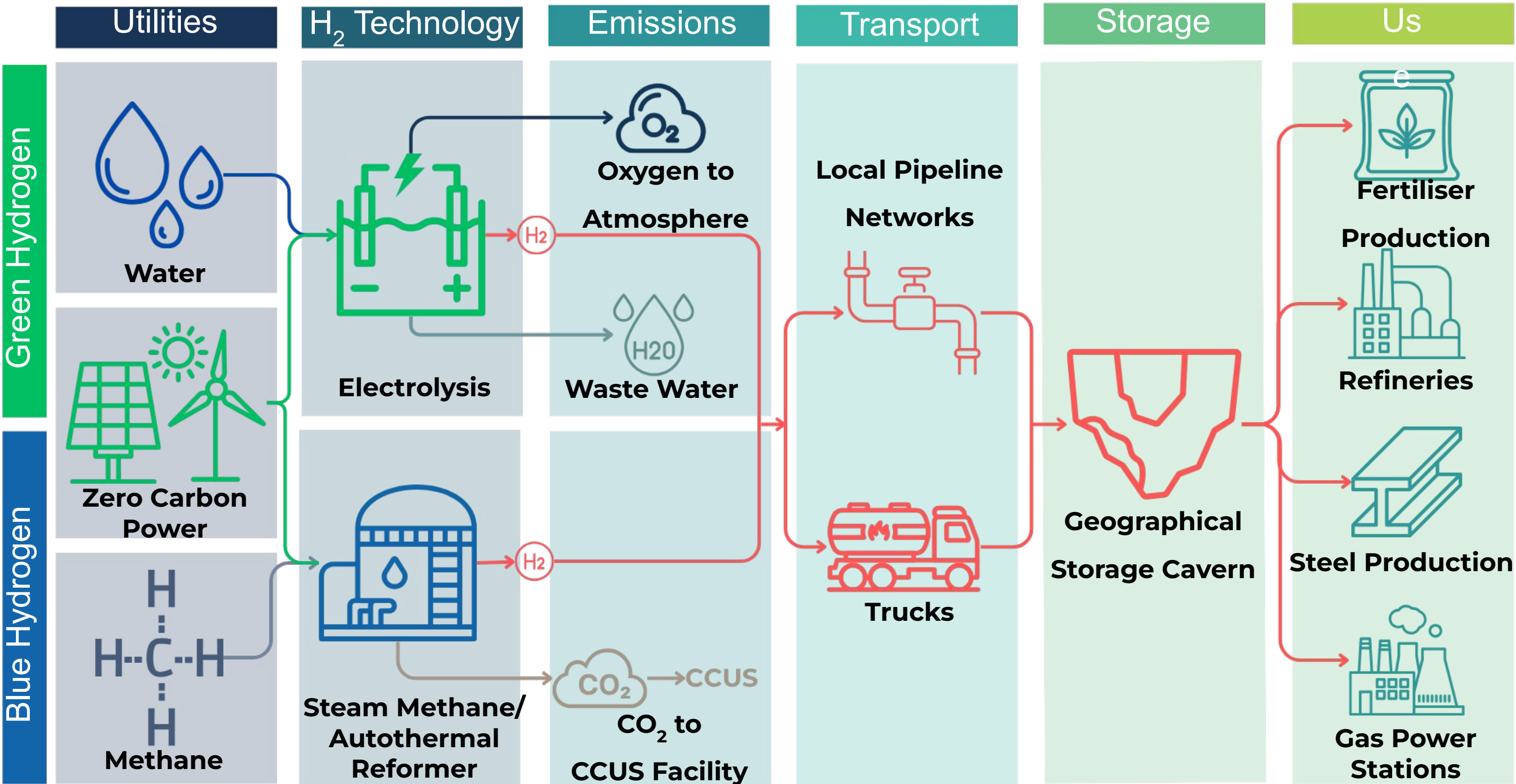
- Discounted economic Indicators
- Energy efficiency
- Discounted carbon Indicators (in development)
- Selection of technology/ cost datasets
- Unit conversion (rates, costs)
- Option for modelling risked & probabilistic ranges

Indicator	Unit	Value
Pre-CAPEx	\$/t CO2	0.00
Pre-OPEx	\$/t CO2	0.00
Capital Cost	\$/t CO2	0.00
Operating Cost	\$/t CO2	0.00
Discounted Cashflow	\$/t CO2	0.00
Profitability Index	-	0.00
Minimum Capture	\$/t CO2	0.00
Hydrogen Price	\$/t H2	1.00



# Hydrogen Production Overview

Hydrogen production is classified **Green**, **Blue**, **Pink**, **Grey** & **Brown** depending on hydrogen source. **Olsights** and **MapStand** offer focuses on the whole value chain of Green and Blue Hydrogen Production as these are considered the lower carbon solutions.



# Utilities > Production > Emissions >Transport > Storage > Use

How is this chain connected and who are the key players?

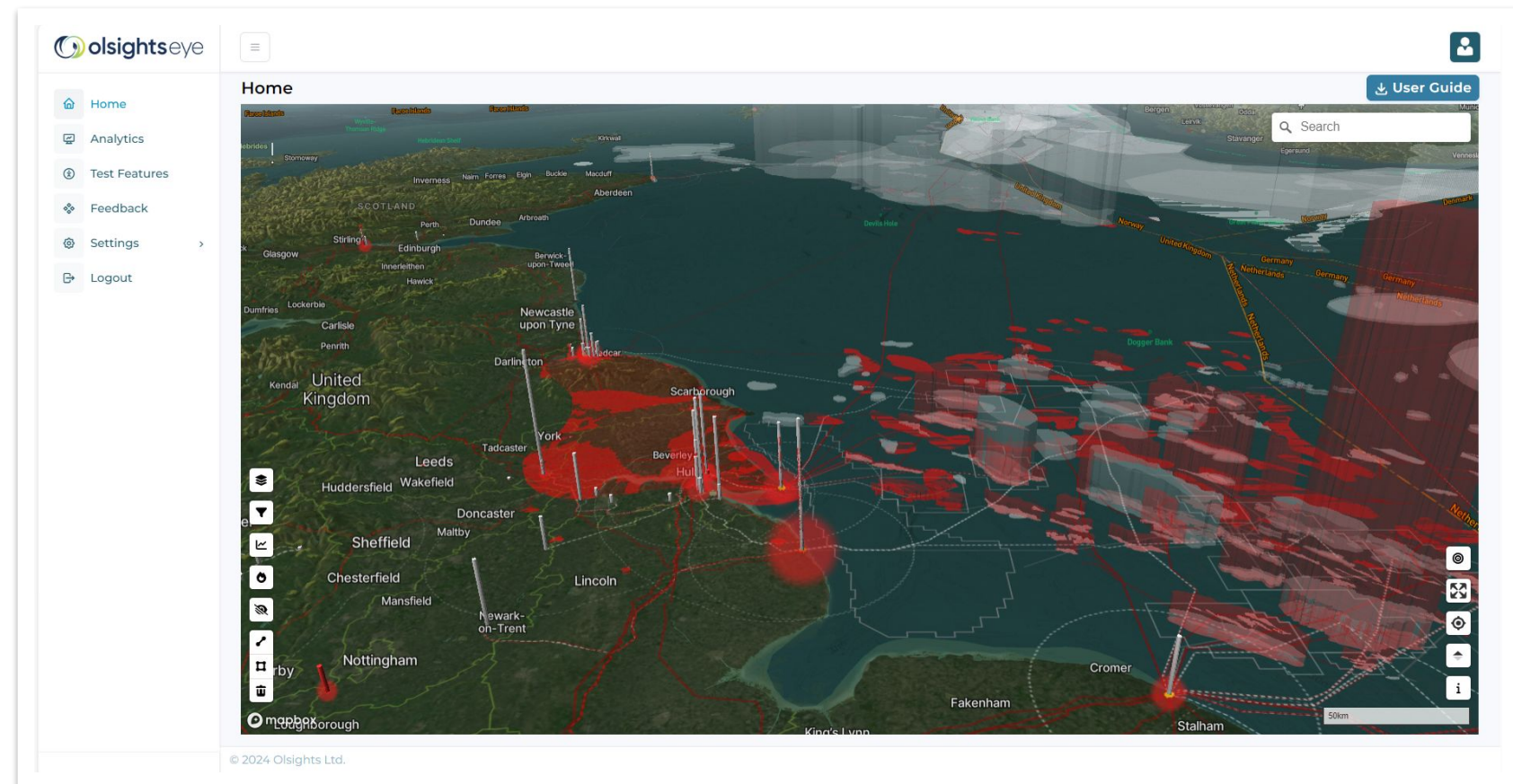


# H<sub>2</sub> Production & CCUS Projects

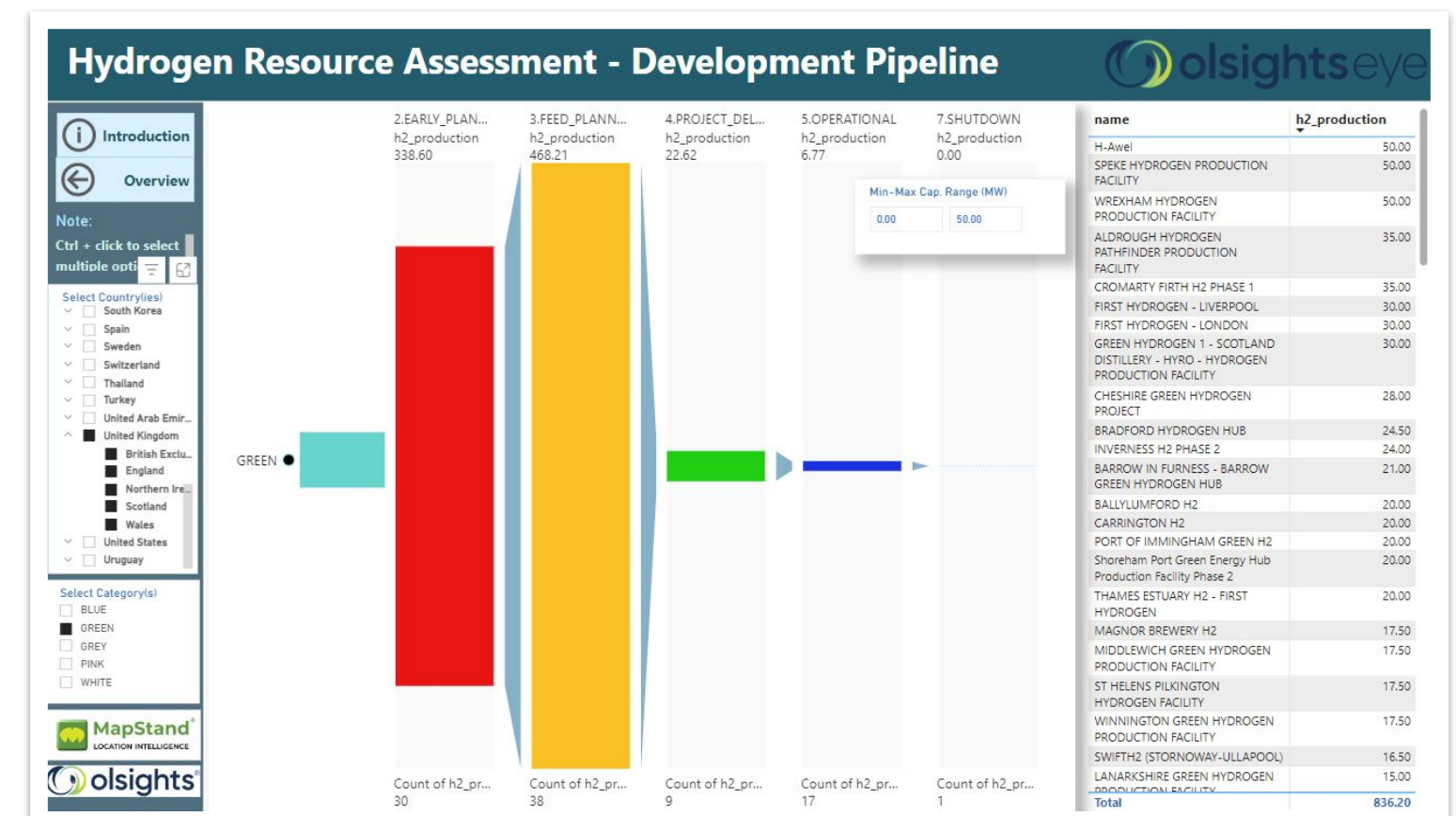
## Where and who are the largest hydrogen producers?

**Olsights** and **MapStand** provide a global overview of hydrogen production and active stakeholders, highlighting key changes, opportunities and risk.

- ✓ Global database of ongoing projects
- ✓ Project screening, verification and validation
- ✓ Stakeholder partnership opportunities
- ✓ Existing and planned key stakeholders, infrastructure, license agreements, and capacity
- ✓ Project sequencing and timelines
- ✓ Overview of key risks and opportunities to projects and cluster hubs



CO<sub>2</sub> Cluster Heat Map (UK)



CCUS Development Pipeline Insight (UK)





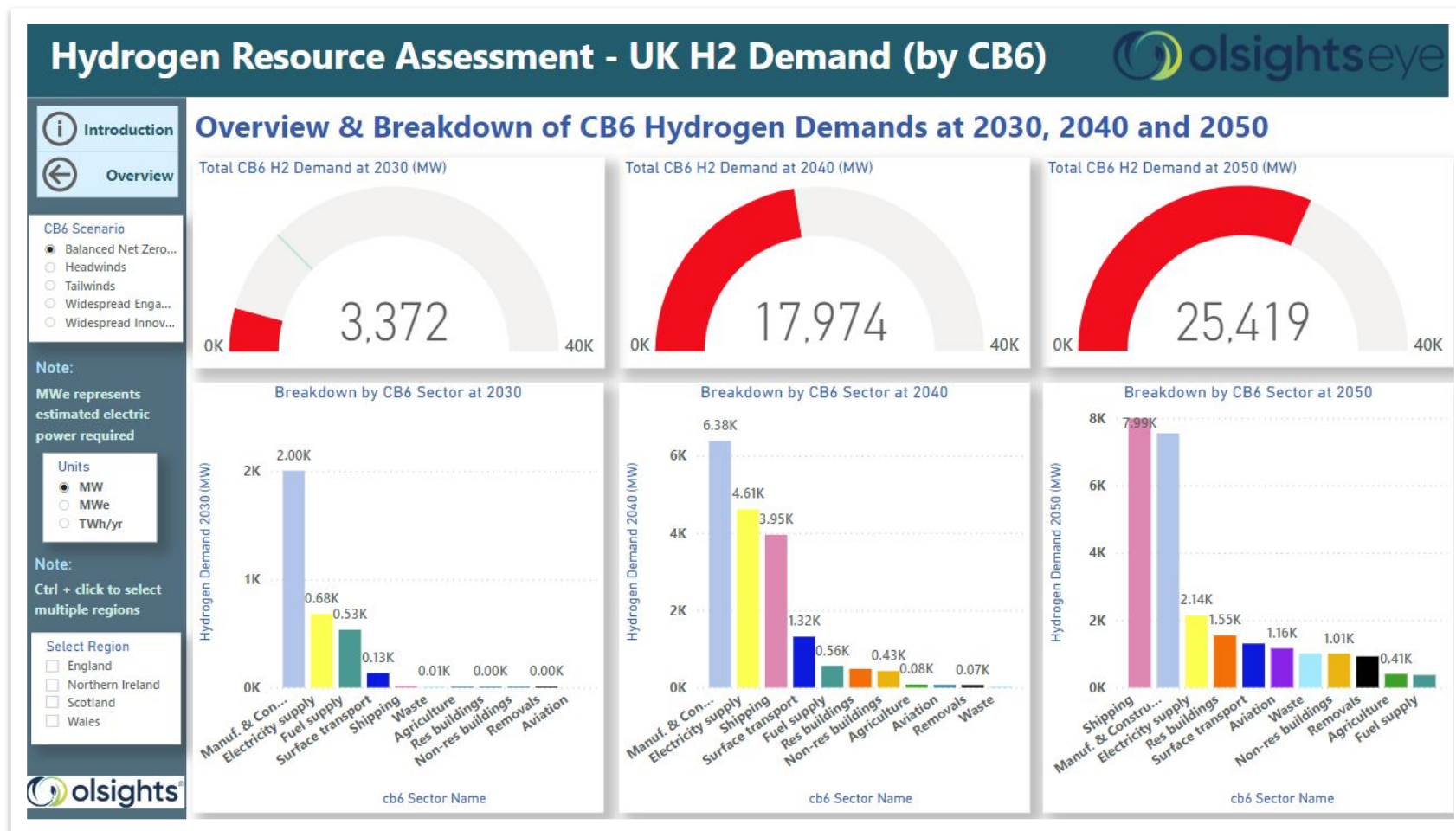
# H<sub>2</sub> Demand

## What changes will be seen in Hydrogen Demand?

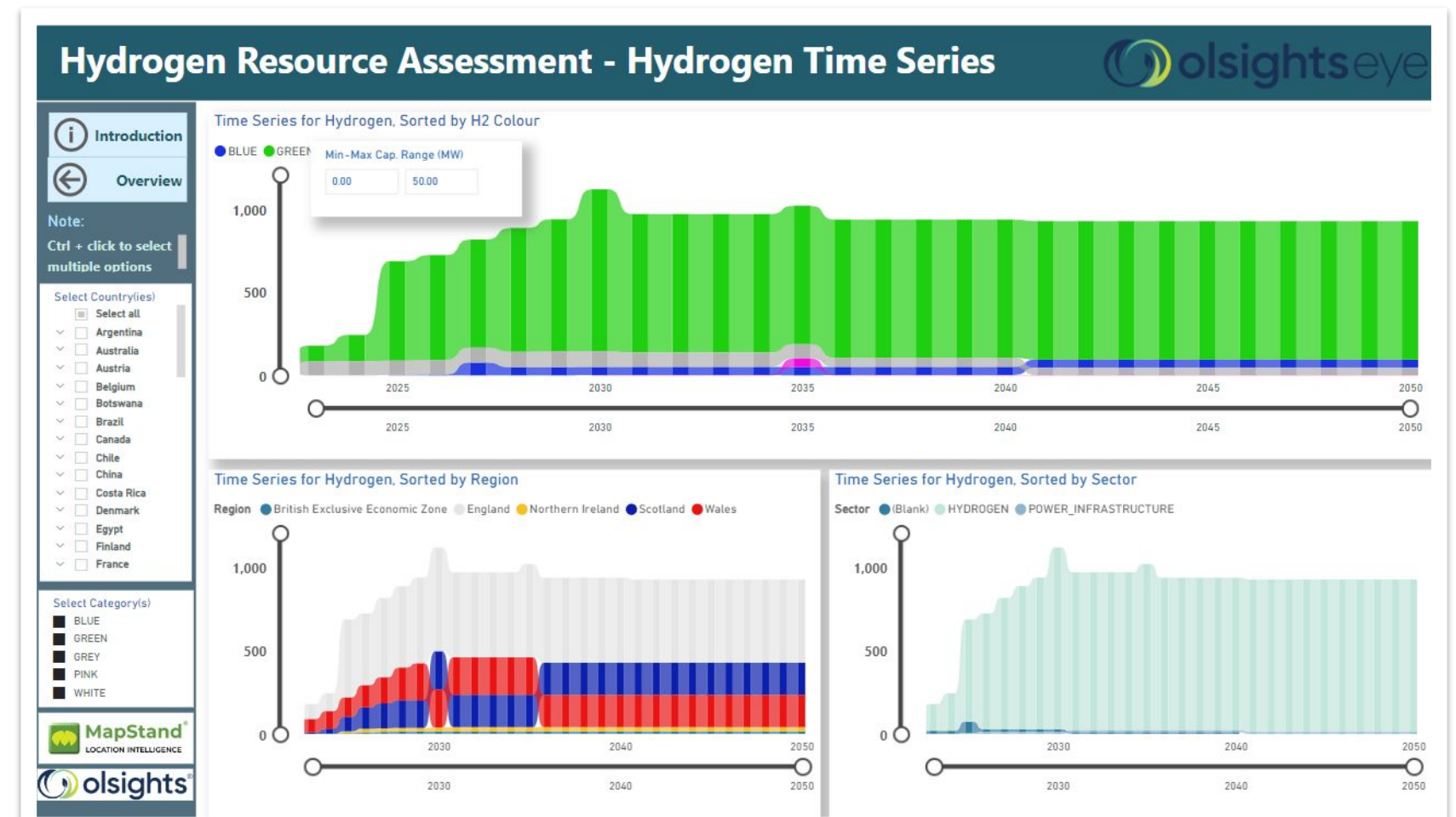
**Insights** using **MapStand** datasets can provide regional and national overviews of hydrogen demand and exploration highlighting shortfall opportunities & oversupply risks.

✓ Exploration hydrogen demand, with associated sector breakdown

✓ Understanding of build-up of hydrogen production over time



UK H2 Demand by CB6 Insights Dashboard



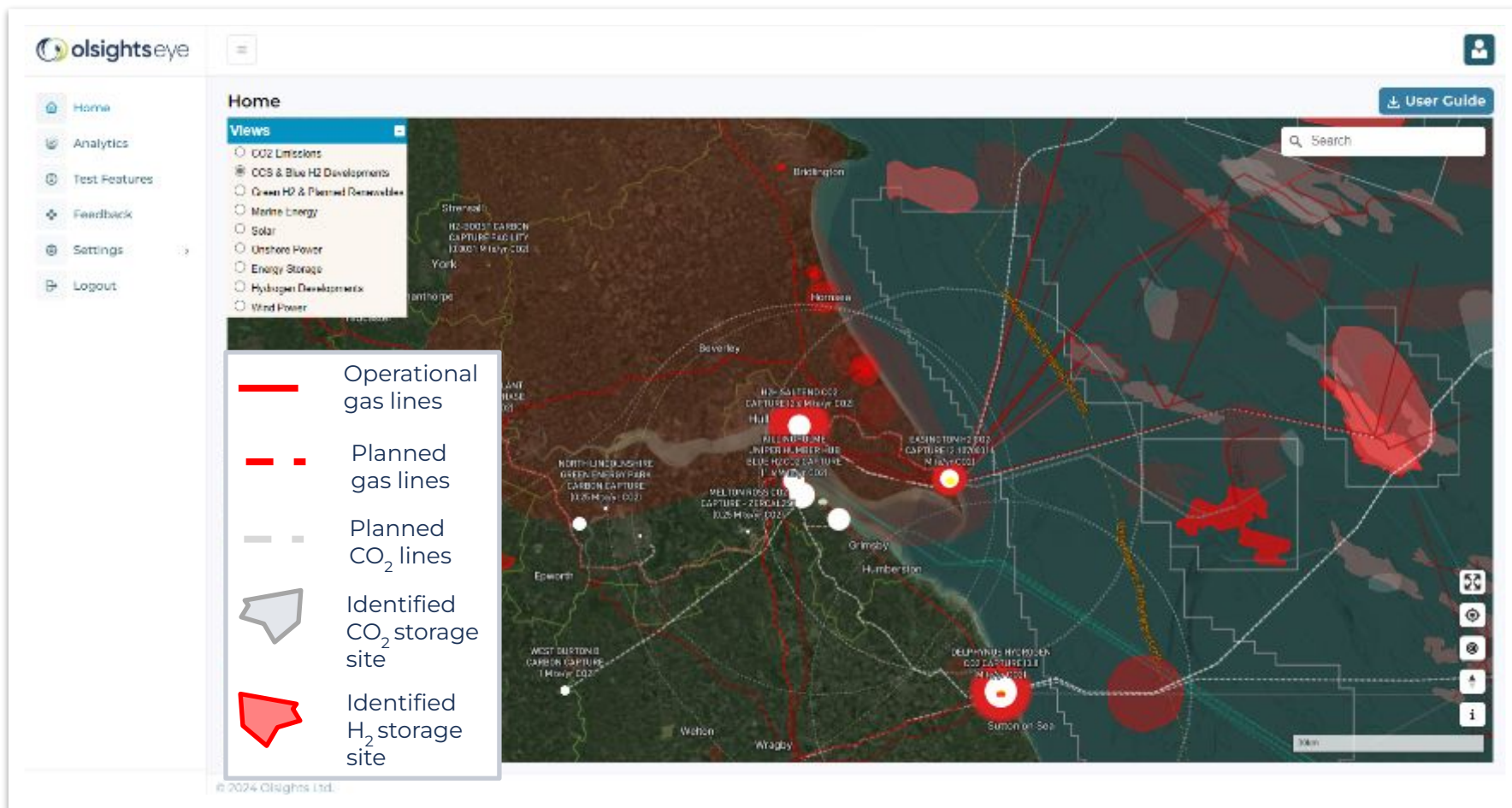
H2 Predicted Production Rates Insights Dashboard

# H<sub>2</sub> Storage Hub Locations

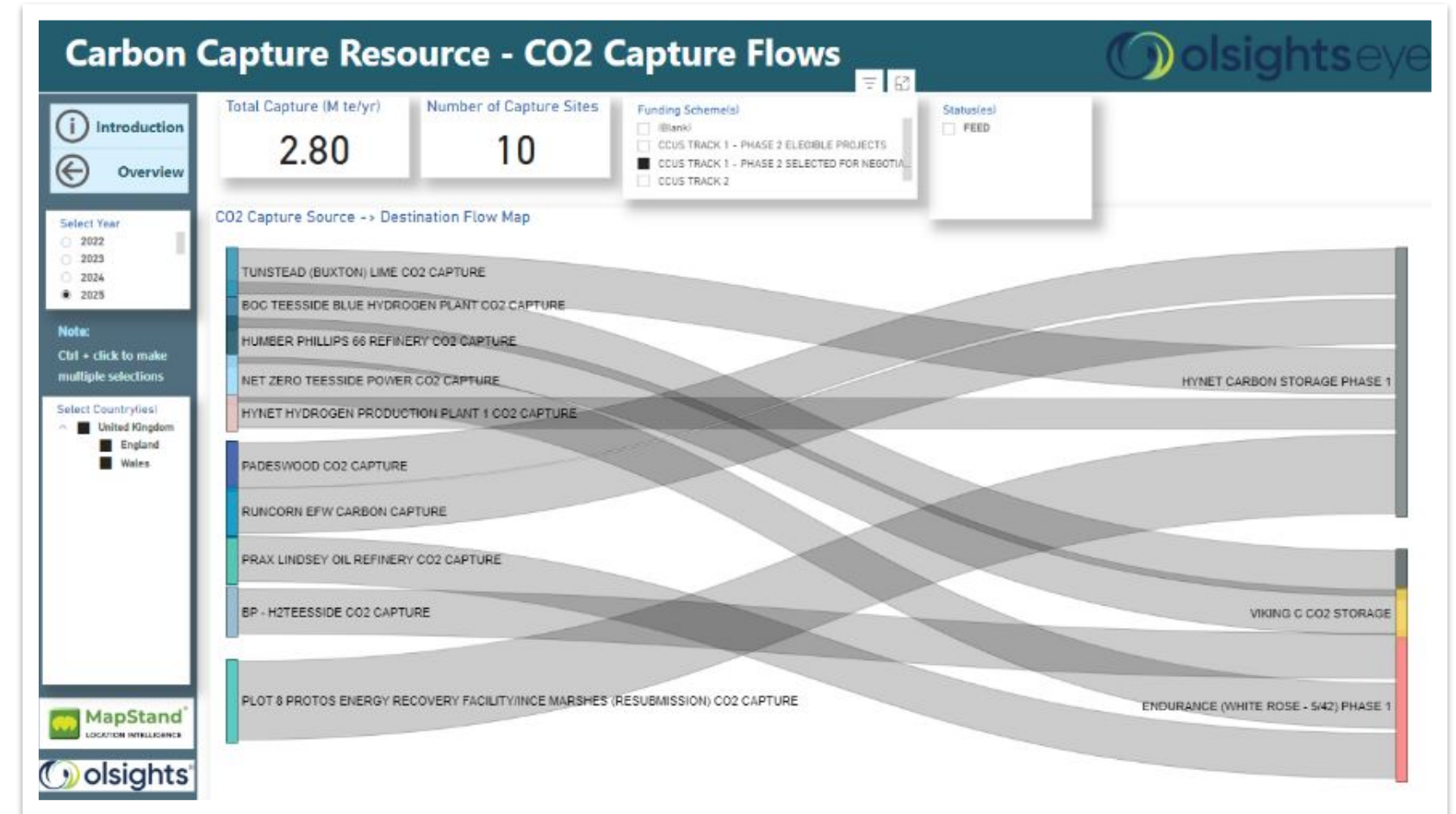
Where are the storage hubs for H<sub>2</sub> Produced and how is it transported?

**Olsights** using **MapStand** detailed mapping visualisations show areas identified as potential CO<sub>2</sub> or H<sub>2</sub> storage locations

- ✓ Global database of saline aquifers, salt marshes and depleted fields identified as potential CO<sub>2</sub> or H<sub>2</sub> storage locations
- ✓ Field capacities
- ✓ Information on existing and planned infrastructure
- ✓ Owners and operators, licence agreements.
- ✓ Global database of operational & planned CO<sub>2</sub> pipelines; line size, capacity, operator
- ✓ Global database of operation & planned gas pipelines
- ✓ Identification of planned CO<sub>2</sub> storage site and infrastructure connecting capture site to storage



Visualisation of Interconnectivity of Identified Storage Hubs and Transportation Lines



Strategic Relationships Insights Operating Within the CCUS Value Chain.

# How will our data and insights help?

**Olsights** and **MapStand** deliver:

- ✓ Live data feed to allow adjustments to business case due to market landscape changing.
- ✓ Integrated data allows us to visually represent hubs and tie in opportunities local to hubs.
- ✓ Collaboration information on developers, technology providers and storage operators to identify partnership opportunities.
- ✓ Ready-made and bespoke dashboards and visualisation builds to answer specific questions with the relevant data to clearly identify opportunities.

## Who we work with

We work with all project developers and decision makers who are looking for a deeper understanding of how all energy technologies connect and the potential impact of developments.



# Sign up today

## Premium Subscription to the Olsights Eye gives you access to:

- ✓ Ready to use dashboards for global insights include:
  - Hydrogen Developments
  - CCUS Developments
  - Wind Developments
  - Solar Developments
  - New dashboards frequently added and can be quickly customised to specific areas of interest or project need
- ✓ Digital mapping datasets & APIs
- ✓ Training
- ✓ Customer Support



**Francis Cram | CEO**



“I am delighted to be working with Olsights to bring intuitive analytics and insights to a wide range of customers across energy. Olsights agile approach puts the customer first, delivering bespoke solutions that bring our global datasets to life and enable new insights to support decision making in CCS, H<sub>2</sub> and Renewable Energy.”

## Contact us for more information or to arrange a demo:

**Olsights:** [www.olsights.com](http://www.olsights.com)

Tony Griffiths | CEO

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**MapStand:** [www.mapstand.com](http://www.mapstand.com)

Francis Cram | CEO

Email: [francis@mapstand.com](mailto:francis@mapstand.com)

“MapStand is a snug fit with our culture and purpose – and co-creating will allow us to offer next-level global location intelligence and high-velocity agile deployment. “Our first iteration of a whole-world visualisation app using MapStand data has enabled customers to ask new questions of cluster evolution, work towards clarity and test new innovative use cases. With some of these now proven, I can’t wait to take this to the next level of integration and visual insight””!



**Tony Griffiths | CEO**

