



Western Porth y
Gateway Gorllewin

The Western Gateway Partnership

Your powerhouse working together for
greener, fairer growth

Hydrogen Ecosystem

Debby Skellern, 7 December 2022



Western
Gateway

Porth y
Gorllewin

Who we are

Your pan-regional partnership. An economic Powerhouse that:

- Spans **two countries**
- Includes up of **8 cities, 3 city regions**
- Is home to **4.4 million** people
- Led by a board that made up of business, academic and local leaders.





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Our missions

Bring together business, research and governments to work together to create greener, fairer future for all



Add £34bn to the economy



Attract investment and grow exports by £4bn



Decarbonise our economy



Connect communities



Unlock innovation



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Convene: Energy in the Severn

We have announced plans to lead an independent commission to examine the potential to harness the sustainable power of the Severn Estuary.



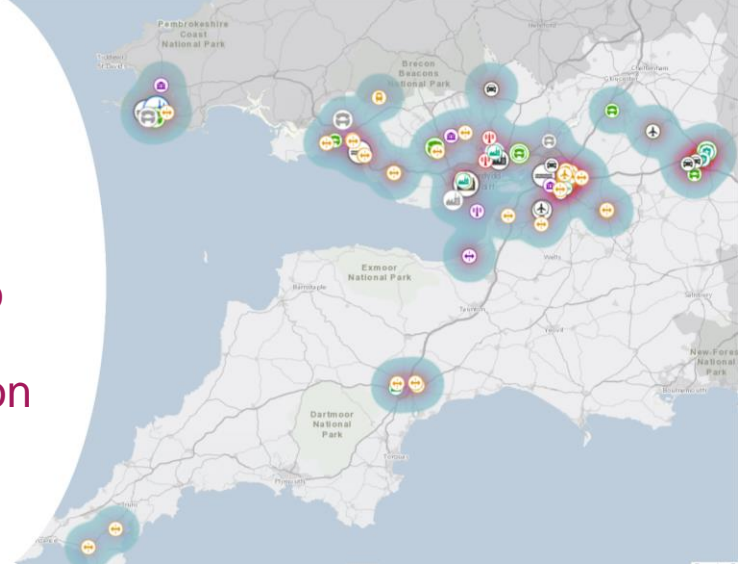
Lead: Strategic Rail Vision

We are mapping what an 'ideal' national and regional rail network might look like by 2050.



Collaborate: Hydrogen

We have launched the **Western Gateway Hydrogen Ecosystem** to turbocharge the development of low carbon energy to help reach net zero goals.



Advocate: Innovation

- We want to attract greater investment in the area
- Support innovation strengths to drive growth.
- We create opportunities for partners to connect with influencers and bring together talent.



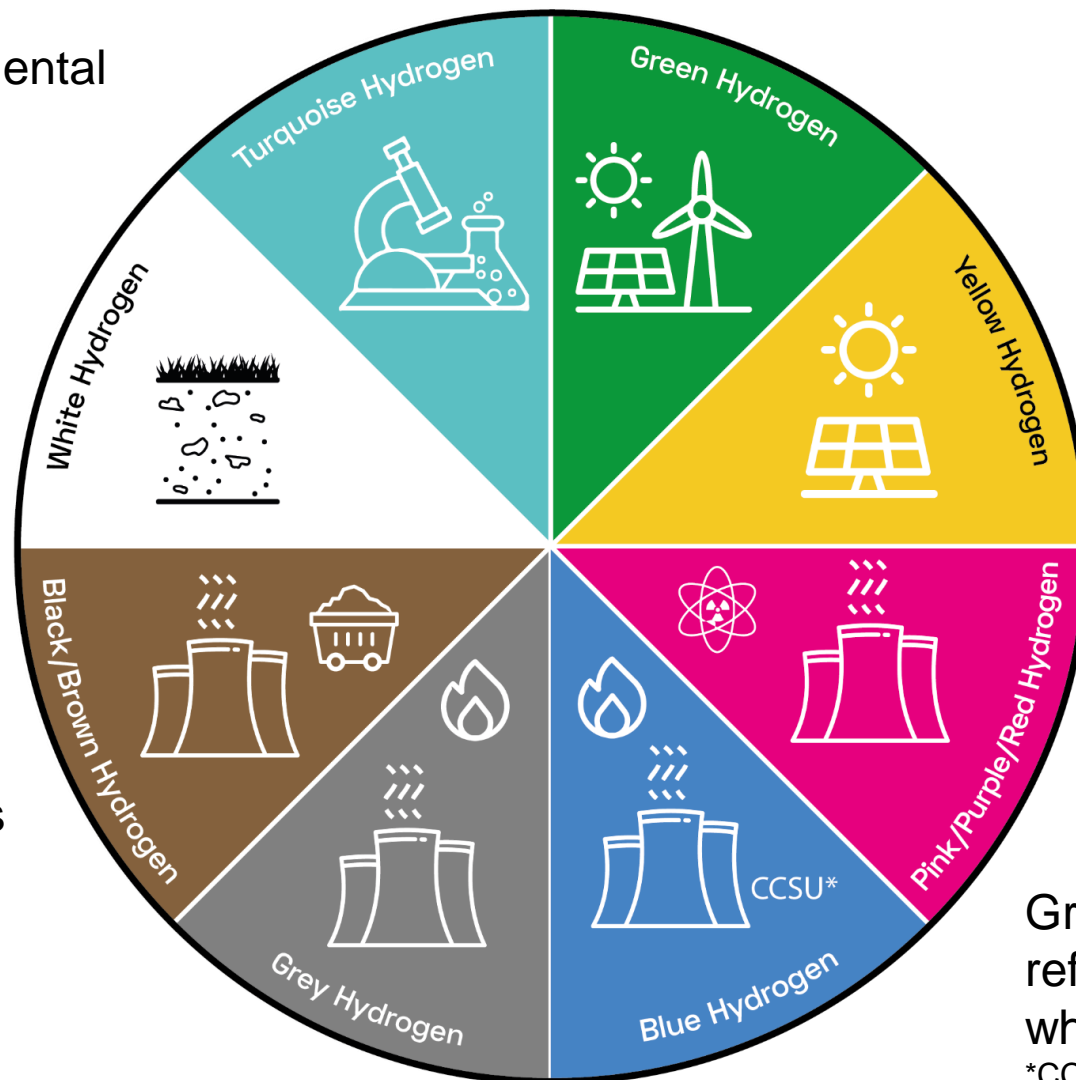


Hydrogen 'colours'

Turquoise: experimental pyrolysis

White: naturally occurring underground

Black and brown: from coal, releases carbon



Green, yellow, pink, purple and red: all **low carbon hydrogen** production methods using electrolysis

Grey and blue: methane gas stream reformation, both release carbon, blue is where it is captured and stored or used.

*CCSU: Carbon capture, utilisation and storage



Collaborate: Western Gateway Hydrogen Ecosystem



Aviation: Airbus, ZeroAvia, Dragonfly



Maritime: Bristol Port, Associated British Ports



Rail and Road: Riversimple, hydrogen refuelling



Heating: WWU and ABSL, Science Museum Group



Industry and industrial processes: South Wales Industrial Cluster, Johnson Matthey



Research and Innovation: Universities, IAAPS, NCC

Turbocharging the development of low carbon energy to help reach net zero goals.



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The Western Gateway Hydrogen Ecosystem

Providing the nation with a testbed for developing the UK hydrogen economy.

Powering a greener, fairer future

The Western Gateway Hydrogen Ecosystem

The Rt Hon. Greg Hands MP Minister of State for Energy, Clean Growth and Climate Change

"Developing a thriving UK low carbon hydrogen sector is a key part of our government's plan to build back better with a cleaner, greener energy system. It's great to see the Western Gateway leading the way, developing a Hydrogen Ecosystem to highlight investable assets, encourage collaboration and drive innovation across the many areas of our economy that could decarbonise through use of this abundant fuel."

"This pan-regional partnership between south Wales and western England is a key part of our plans to create growth across the union whilst working together to reach net zero. I look forward to working with them to help reach our climate change targets and capitalise on their ambition to build a Green Energy Super Cluster."



The Rt Hon. Greg Hands MP

The Western Gateway Hydrogen Ecosystem

The Rt Hon. Robert Buckland KBE QC MP Secretary of State for Wales

"South Wales and Western England are already leading the way in developing Hydrogen as a clean fuel to help the world decarbonise to reach Net Zero. Through the Western Gateway Partnership, this new Hydrogen Ecosystem is helping to bring together the best of what these areas have to offer across the wide range of potential uses and helping to supercharge this work to meet the challenges we face."

"The Western Gateway Partnership is a key part of the government's plans to level up communities, using cross-border collaboration to deliver those big opportunities which can transform lives. I look forward to working with them to take this work to the next level in the future."



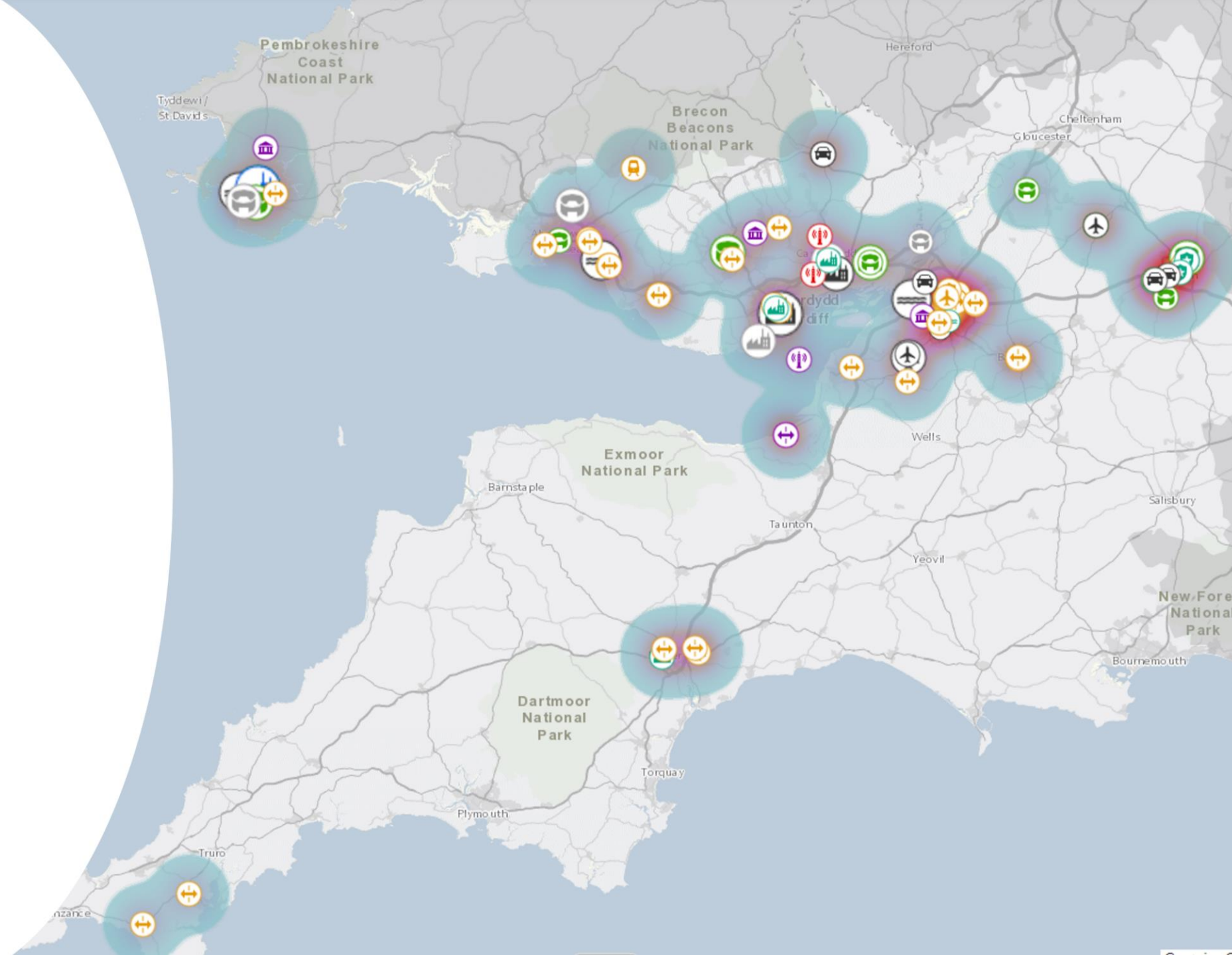
The Rt Hon. Robert Buckland KBE QC MP



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[The Western Gateway's Hydrogen Ecosystem interactive map](#) brings to life the scale of our rapidly evolving Hydrogen Ecosystem.

Our area is perfectly placed to deliver on the Government's ambition for at least half of the 10GW 2030 hydrogen production target to be from electrolytic hydrogen



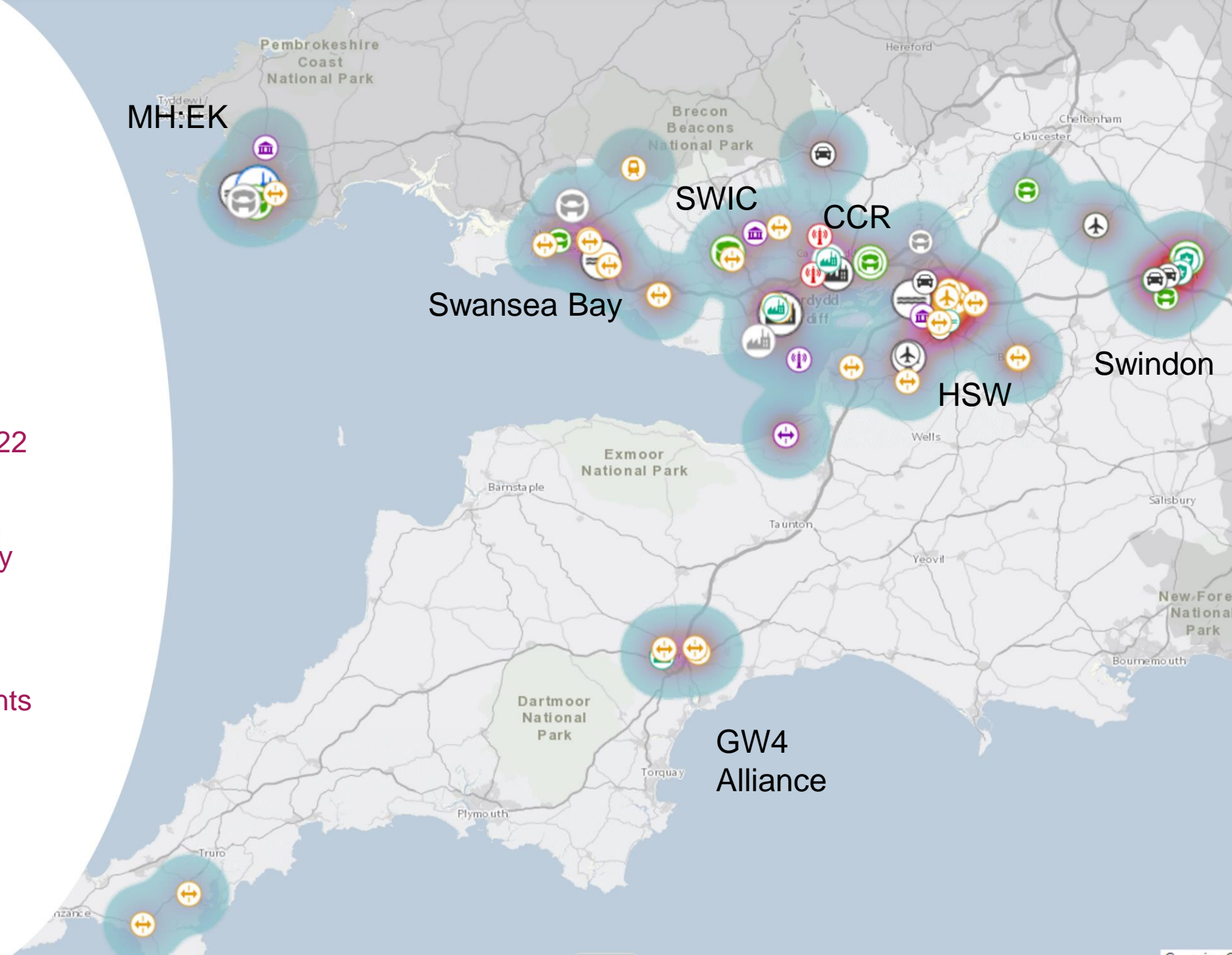


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Hydrogen Workstream 2022/23

- Launched Western Gateway Hydrogen Ecosystem in Aug '22 with the support GW4 and SWLEP
- Development of the Hydrogen Strategy and Delivery Pathway to 2050
- Share best practice amongst partners.
- Signpost information, thought leadership, webinars and events
- Foster networking and collaboration

Aims: decarbonisation, attracting investment, innovation, GVA and new jobs





Find address or place

ABSL is working with Wales and West Utilities to deliver the UK's first hydrogen blend in to the gas system. Plans to trial 20% blend

CCM technology used to produce green hydrogen. Use in electrolyzers could reduce the cost of the stack by up to 25%

Refuelling station
Arval

Pebley Beach

Siemens' industrial hydrogen fuel cell system for the National Grid's Viking Link construction project. Potential regional benefits.

Science Museum's Science & Innovation Park. Renewable energy generation and feasibility for green hydrogen production, Net Zero 2033

SMG Feasibility study

Info Summary



Regional Hydrogen Assets

11

- ABSL Limited Swindon - Hydrogen production
- Arval Swindon - Road
- CCm Technologies Swindon - Industrial
- Hyundai Pebley Beach - Road
- ITM - Equipment manufacturer
- Johnson Matthey - Equipment manufacturer
- Johnson Matthey (Refueling) - Hydrogen production
- Panattoni - Road
- Science Museum Wroughton - Hydrogen production
- Siemens - Equipment manufacturer
- Wales and West Utilities (Swindon) - Utilities

Loss of two refuelling stations at the Panattoni and Johnson Matthey sites impacting lease cars at Arval, Pebley Beach and the Science Museum Group



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Western Gateway Hydrogen Strategy and Delivery Pathway to 2050

- Produce hydrogen supply and demand scenarios to 2030, 2035, 2040, 2050 for all use cases
- Consider: distributed low carbon hydrogen production, distribution and supply; under-utilised of renewables, energy from waste, CCUS capacity
- Identify capital investment requirements: public and private sector as well as where there are funding gaps
- Identify R&D opportunities to accelerate the pathway
- Identify skills development needs
- Calculate economic and social value metrics
- Identify opportunities, barriers and gaps for the development of the hydrogen economy
- Develop a detailed pathway and priority actions for the Western Gateway, partners and the private sector



Western Gateway: Hydrogen Interface

Overarching Strategy

Working with partners and stakeholders to develop of the Hydrogen Strategy and Delivery Pathway to 2030, 2035, 2040 and 2050 and liaise with neighbouring areas.

Hydrogen Scheme Delivery

Stakeholder support: raise awareness of programmes and consortia as well as individual members' activity to develop and deliver hydrogen demonstrators on the ground. Offer letters of support, facilitate ministerial visits.

Business awareness

Convene and signpost partners and businesses to materials, such as webinars and thought leadership pieces which partners produce and are freely available.

Community

Celebrate good news and success stories. Champion issues which need to be addressed which fit with our remit.



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Contact us



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**Bath & North East
Somerset Council**
Improving People's Lives



gfirst LEP
growing gloucestershire



Wiltshire Council