Uchelgais Gogledd Cymru
Ambition North Wales

North Wales Strategic Energy Investment Prospectus

ambitionnorth.wales

May 2026

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Foreward

Alwen Williams
Chief Executive,
Ambition North Wales

North Wales is entering a defining decade for energy, industry and place. With world-class natural assets, a proud industrial heritage and a strong culture of innovation, our region is uniquely positioned to lead the transition to a low-carbon economy whilst delivering inclusive growth for our communities.

This Strategic Energy Investment Prospectus sets out a clear and compelling case for investment in North Wales. Across renewable generation, low-carbon infrastructure, industrial decarbonisation and community energy, the opportunities presented here reflect both the scale of ambition in the region and the readiness of projects to progress. From tidal energy off the coast of Ynys Môn to offshore wind in the Irish Sea, from hydrogen and heat networks to advanced nuclear and grid-scale storage, North Wales is already demonstrating the breadth and depth of its clean-energy potential.

Ambition North Wales, as the Regional Economic Partnership for North Wales, is committed to unlocking this potential. Working alongside local authorities, industry partners, communities and academia, we are focused on turning opportunity into delivery accelerating projects, crowding in private investment and ensuring that the benefits of the energy transition are felt locally through high-quality jobs, skills development and resilient supply chains.

What makes North Wales distinctive is not just the scale of its energy resource, but the way it comes together as a system. Our energy assets are closely linked to advanced manufacturing clusters, major ports, strategic grid infrastructure and an increasingly coordinated approach to industrial decarbonisation. This creates the certainty, connectivity and long-term visibility that investors seek.

This prospectus is an invitation: to invest, to collaborate and to be part of shaping a net-zero future that is both economically strong and rooted in place. We welcome partners who share our ambition and who recognise that North Wales is ready to deliver.

About this Investment Prospectus

This Investment Prospectus has been developed by Ambition North Wales to showcase the opportunity for investment in renewable and low carbon energy in North Wales.

Whilst some of the projects featured in the prospectus are ready for immediate monetary investment, many of the case studies are examples of successful projects which could be replicated by others in North Wales, supported by the evidence of the opportunity. The prospectus has been written with both public and private investment in mind and with a focus on key low carbon and renewable technology sectors. Any investment values detailed in the prospectus should be treated as estimates.

This prospectus has been developed in collaboration with the following organisations:

Ambition North Wales

Ambition North Wales works as a partnership to deliver on the ambition to identify and deliver opportunities to develop the regional economy, create opportunities for people to gain new skills for the future and develop rewarding careers, and for businesses to grow and communities to prosper.

The partnership includes the six local authorities in North Wales, the region's two universities (Bangor and Wrexham) and further education institutions (Grŵp Llandrillo Menai which has sites across North-West Wales and Coleg Cambria which has sites in North East Wales). Ambition North Wales' Portfolio Management Office is responsible, along with other partners, for delivering the Growth Deal, and holding stewardship of the regional economic vision.

The Ambition North Wales Low Carbon Energy Programme supports the region's transition to a low-carbon, resilient economy by accelerating the development and deployment of clean energy projects across North Wales. The programme focuses on unlocking the region's significant renewable energy potential, strengthening the local supply chain, and supporting innovation, skills development, and investment in low-carbon technologies. The programme is further supported by Welsh Government to support delivery of the North Wales Regional Energy Strategy and the Local Area Energy Plans.

Uchelgais Gogledd Cymru
Ambition North Wales

Why North Wales?

North Wales is home to 3.28GW of operational renewable generative power produced by 10 technologies. 35 renewable energy projects are under or awaiting construction across the six counties, with a further 12 submitted applications*.

We want North Wales to continue to develop as a global leader in low carbon and renewable energy

supported by our world leading combination of a resilient and **hardworking workforce, unique geography and innovative research institutions.**

* Renewable Energy Planning Database | DESNZ & Barbour ABI

700,000
residents

£16.8bn
economic contribution to the Welsh and UK economy

22.5%
of Wales' total GVA

Our Ambitions

- £15 billion investment
- 4.6GW low carbon and renewable energy installed by 2035
- 87,800 jobs created

Figures taken from the North Wales Energy Strategy, 2021

Why North Wales?

We are

Connected

- Proximity to major cities: <2 hours by road/rail from Manchester and Liverpool.
- Direct rail links: 3 hours direct train from London.
- Strategic location: Ferry links with Ireland to multiple North Wales ports.
- Digital connectivity: Growing regional full fibre broadband coverage above the UK average (as of July 2024) with multiple network operators driving expansion.

Smart

- Excellent Education and Research Facilities.
- Universities: Bangor University and Wrexham University.
- Further education colleges: Coleg Cambria and Grŵp Llandrillo Menai.
- Research and innovation facilities: AMRC Cymru facility in Broughton, M-SParc in Anglesey.

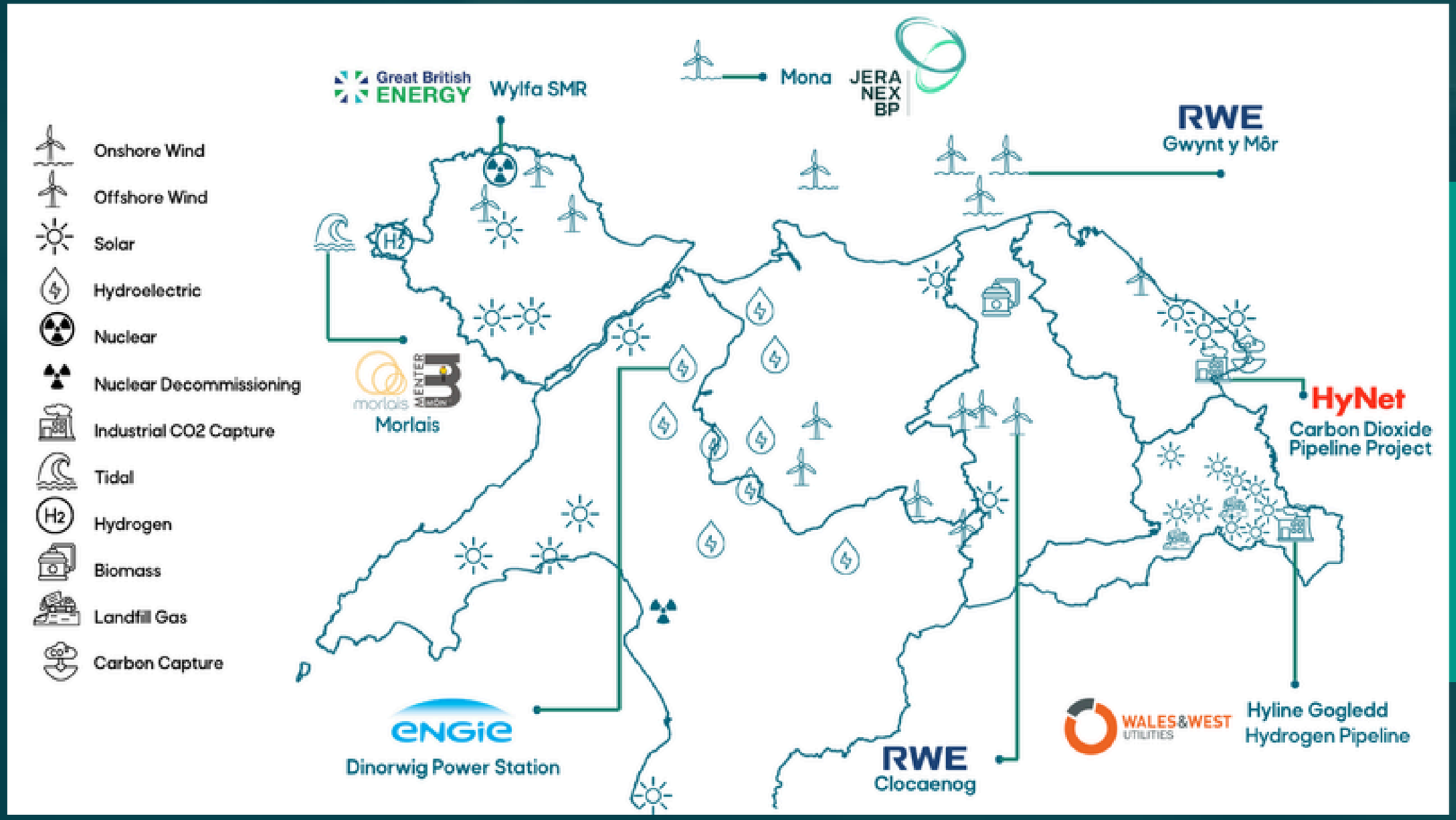
Resilient

- People are resilient, results-driven and loyal.
- Take pride in our culture and environment, welcoming new people and opportunities.
- Low-carbon energy expertise: Expertise in offshore and onshore wind, nuclear energy, and the developing tidal stream energy sector, including Morlais in Holyhead.
- Manufacturing expertise: 27.4% of Wales manufacturing industry based in NW.

Sustainable

- Diverse economy with strengths in manufacturing, energy, tourism, low carbon energy, the rural economy and the public sector.
- Home to companies in national leaders in the low carbon energy sector.
- Regional strengths : facilities and assets to attract investment, skills and collaborations to promote research, development and cutting-edge technologies.

Why North Wales?



North Wales has a wealth of low carbon and renewable energy projects in operation and under construction.

Figure 01: Existing and planned low carbon and renewable energy infrastructure projects in North Wales

Low Carbon and Renewable Energy Sector Opportunities

Nuclear Energy

Wylfa: A Defining New Chapter for North Wales

Nuclear energy is a dependable, low-carbon technology that provides a stable source of power. North Wales is uniquely positioned to lead the UK's next phase of nuclear development, with a strong legacy at Trawsfynydd, new opportunity at Wylfa, an experienced local skills base, and communities that are already supportive of the sector.

Since 2025, Wylfa has been formally confirmed as the home for the UK's first small modular reactor power station*. Our established expertise make it an ideal setting for deploying Rolls-Royce Small Modular Reactor technology, aligning the region with national clean-energy ambitions and strengthening the UK's long-term energy resilience.

Timeline	
2025	Confirmed for SMR
2026	Early work scheduled
Mid 2030's	First power

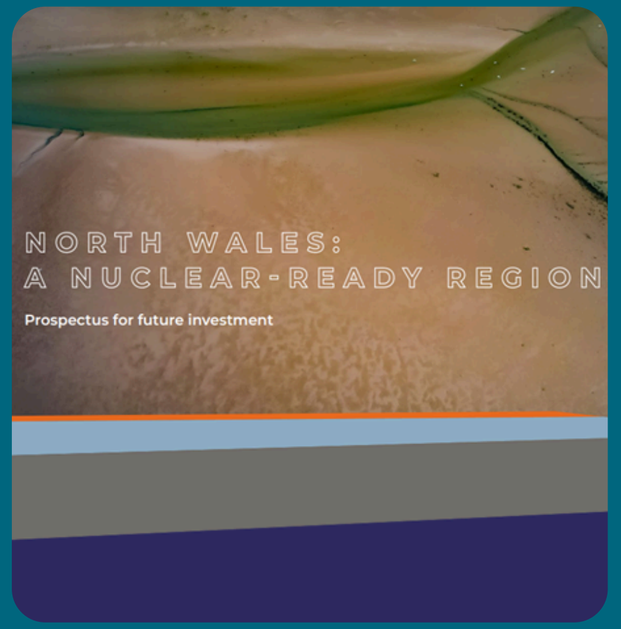
3,000 direct and indirect jobs

Each SMR expected to generate enough electricity to power around 1,000,000 homes

*UKs first Small Modular Reactor (SMR) nuclear power station (13 November 2025) | GOV.WALES

North Wales: A Nuclear-Ready Region

Cwmni Egino have produced an investment prospectus specific to the opportunity for nuclear energy investment in North Wales.



Source: Cwmni Egino – North Wales Nuclear Prospectus

cwmni Egino

Industrial Decarbonisation

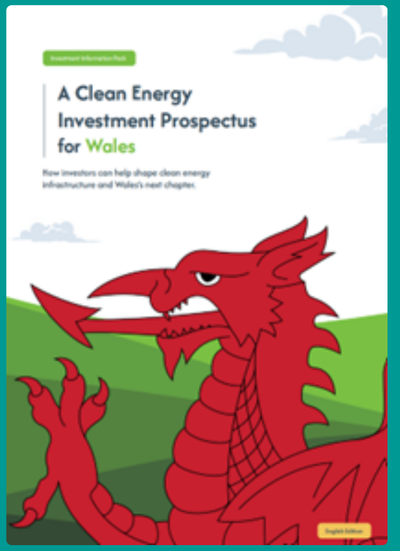
North Wales is committed to supporting industry not only to grow, but to thrive through the transition to net zero. This means securing existing strengths in manufacturing, energy and advanced engineering, attracting new clean-growth sectors, and creating high-quality, well-paid jobs that anchor prosperity locally.

NEWID Cluster : North-East Wales Industrial Decarbonisation Cluster

The NEWID Cluster provides the strategic framework for industrial decarbonisation across the Deeside and Wrexham cluster, aligning major emitters with the region's emerging low-carbon infrastructure. The programme maps industrial heat and energy demand, assesses fuel-switching potential, and identifies how hydrogen, electrification and improved industrial efficiency can be deployed at scale. By linking these with regional assets including offshore wind, nuclear, tidal and bioenergy, the NEWID cluster enables a coordinated, system-wide approach rather than isolated interventions.

The programme also establishes a clear pathway for integrating industrial processes with future energy vectors such as hydrogen and CO_2 transport. This positioning ensures that North Wales' industrial base can transition in line with UK-wide decarbonisation timelines, while maintaining competitiveness, operational resilience and access to emerging low-carbon markets.

Net Zero Industry Wales have published a prospectus for the clean energy industry across North Wales: A Clean Energy Investment Prospectus For Wales

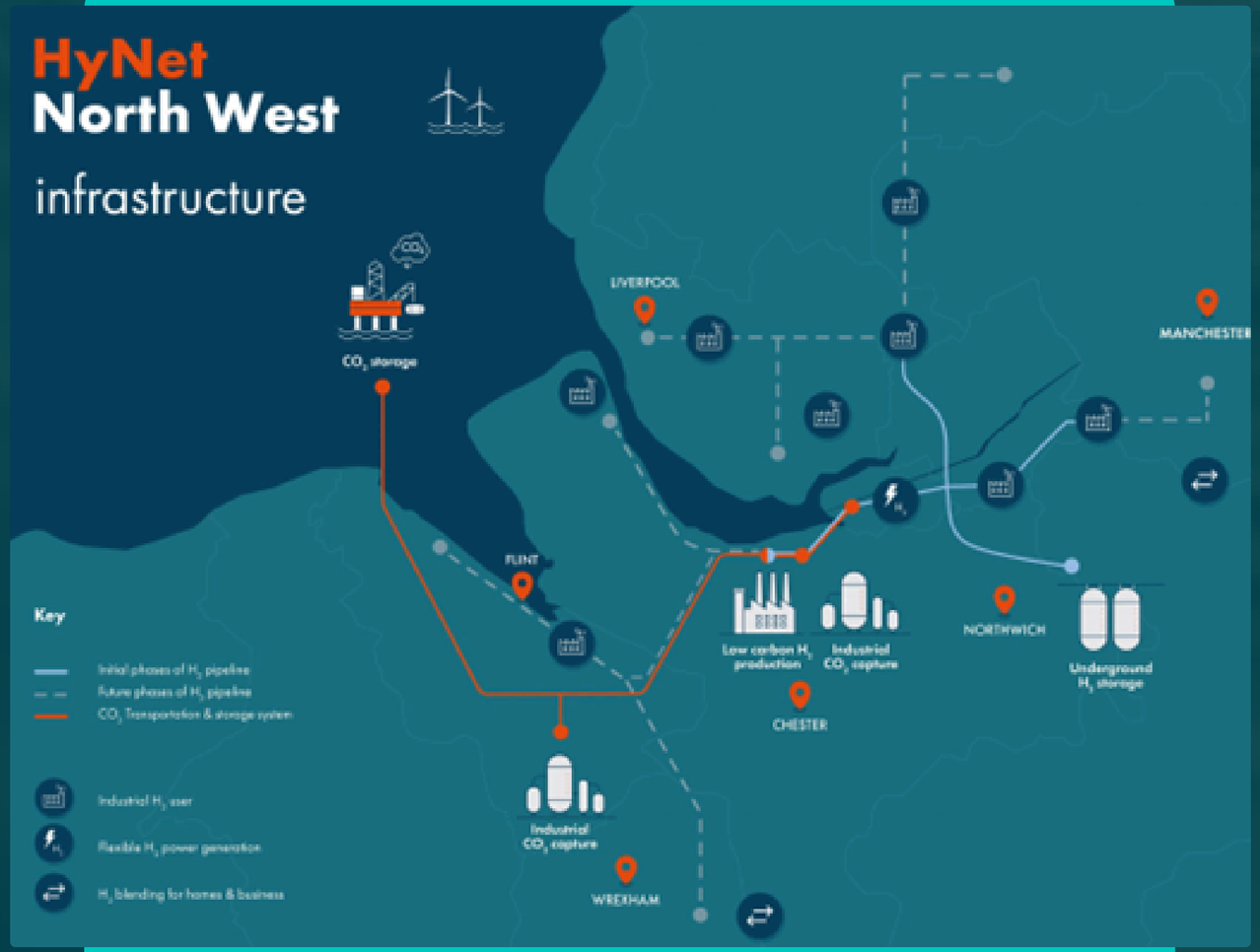


HyNet

HyNet: Catalysing Clean Growth Through Hydrogen and Carbon Capture

HyNet underpins the region's industrial decarbonisation trajectory. Through carbon capture and hydrogen technology, HyNet will project thousands of jobs and attract growth in a historic industrial heartland. A network of new and reused pipelines between industrial sites will drastically cut emissions. With multiple projects now in build, HyNet is the most advanced clean energy cluster in the country.

The core carbon dioxide pipeline is under construction and links Cheshire and North East Wales to underground storage in former gas fields beneath Liverpool Bay, with development led by Eni. To this pipeline, carbon capture projects at Heidelberg Materials' Padeswood Cement Works, Uniper's Connah Quay Power Station, and Enfinium's Parc Adfer Energy from Waste facility are planned to be connected.



HyNet
North West

The proximity of HyNet to Deeside provides a strategic advantage, with a future hydrogen pipeline extension from large-scale production in North West England. In time, this investment will catalyse interrelated projects, such as HyLine Gogledd.

Together, this infrastructure creates a decarbonisation route for high-value manufacturing, foundational industries and power generation across the region. Combined with NEWID Cluster's industrial mapping, HyNet makes North Wales part of a wider cross-border decarbonisation corridor, linking manufacturing, ports and clean-energy generation into a unified system.

HyLine Gogledd

HyLine Gogledd

Born out of the North East Wales Industrial Decarbonisation Cluster (NEWID Cluster), HyLine Gogledd seeks to deliver the first local hydrogen infrastructure in North Wales via a new-build ~40km pipeline, with the aim of supporting the decarbonisation and long-term economic growth of local industry. HyLine Gogledd is strategically positioned to connect to the HyNet Track-1 industrial cluster, facilitating a future hydrogen network across North West England and North Wales, alongside links to the UK's future hydrogen backbone, Project Union.

£13.5m
of investment

Primary Stakeholders

- National Energy System Operator (NESO)
- Net Zero Industry Wales (NZIW)
- Wales & West Utilities (WWU)

Timeline

2025	Feasibility (Completed)
2026	Front End Engineering Design (FEED) Ready
2027-2031	FEED and consenting
2032-2035	Engineering, Procurement, Construction and Commissioning
2036	Operational

For more information about this and other investment opportunities in hydrogen in North Wales, speak to Robert Pugh, Robert.Pugh@wwutilities.co.uk

Hydrogen

With energy demand expected to increase, there is a need to strengthen the ability to adjust supply and demand quickly and reliably.

Hydrogen, one way to strengthen this flexible capacity, has been an emerging sector in North Wales' energy sector for many years owing to the significant industrial presence in the east and growing generation opportunities in the west. Its primary uses are expected to be for intense, long-term uses like industrial heating and heavy transport.

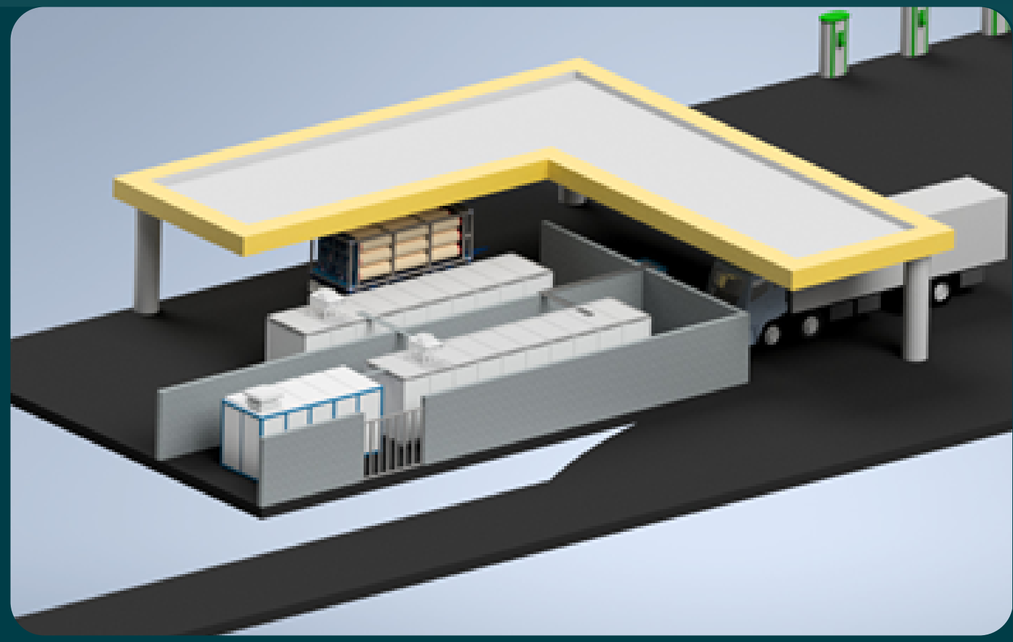
The most common forms of hydrogen production are:

Green hydrogen	Blue hydrogen	Grey hydrogen
Produced from electrolysis of water using renewable energy	Produced from natural gas alongside carbon capture and storage	Produced from natural gas without the use of carbon capture and storage (currently the most common)

Table 02: The three primary types of hydrogen production

Holyhead Hydrogen Hub

A flagship green hydrogen project in North Wales that will utilise tidal stream power from the Morlais tidal demonstration zone (see 'Tidal') - another Menter Môn led project - and other green energy sources It will produce 2,000kg of hydrogen per day from mid-2028, displacing 33 tonnes of CO_2 daily and 3.97 million litres of diesel annually. Holyhead Hydrogen Hub is strategically located near the UK's second busiest container port, ideally positioned to decarbonise heavy transport and port operations by providing fuel for buses, HGVs, and potentially rail, reducing emissions in hard-to-abate sectors.



Digital rendering of the proposed Holyhead Hydrogen Hub site ©Menter Môn (February, 2026)

HWB HYDROGEN CAERGYBI
HOLYHEAD HYDROGEN HUB

£20m of investment

Developed as a 50:50 Joint Venture between Menter Môn and EDF Hynamics. It represents a first-of-its-kind community ownership model, with half of the asset owned via Menter Môn Hydrogen Ltd.

Timeline

2026-27
Operational readiness aligned with RTFO legislative updates

2026
Final Investment Decision (Q3)

Mid 2028
Hydrogen production begins

Tidal Stream

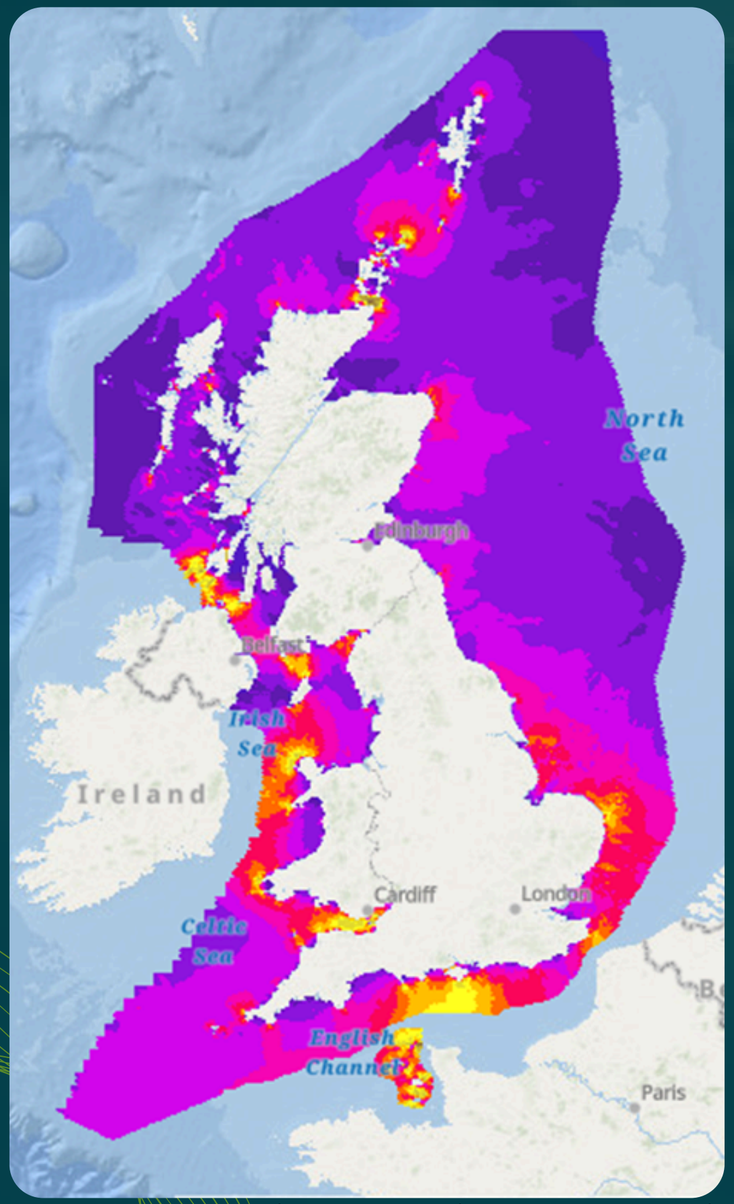


Figure 02: Tidal stream (soring peak flow) opportunity in the UK (source: Explore the ABPmer UK Renewables Atlas)

Electricity can be generated by capturing the kinetic energy of moving seawater by placing turbines in strategic locations in the sea. This is called tidal stream power and is considered a predictable renewable energy source due to the perpetual nature of tides (as opposed to the often-unpredictable nature of solar or wind generation).

North Wales has some of the best tidal energy opportunities in the UK, with some areas to the northwest of Anglesey reaching a mean peak spring flow of 2.51m/s.

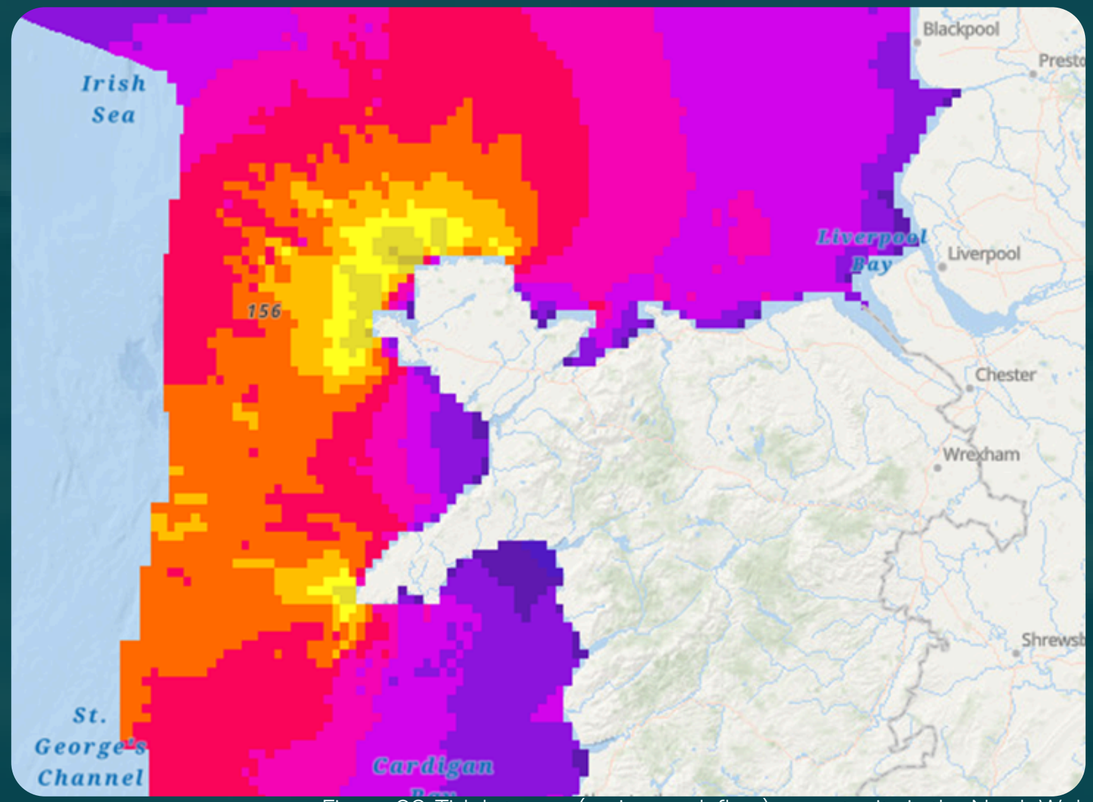


Figure 03: Tidal stream (soring peak flow) opportunity in the North Wales (source: Explore the ABPmer UK Renewables Atlas)

The global tidal energy market in 2026 is estimated to total approximately £1.28bn (rising over 20% from the previous year) and is forecasted to reach £2.75bn by 2030.
The UK currently hosts over half of the world's installed capacity at 19MW with pipeline projects in the UK and France expected to take the global capacity to 188MW by 2030.

Tidal Stream

The Department for Energy Security and Net Zero recently announced 4 tidal stream developers were successful in securing Contracts for Difference (CfD) Allocation in 2026 during Auction Round 7. Three of the developers are scheduled to connect into the Morlais tidal energy project off the coast of Anglesey.

Morlais

Once constructed, the project will be managed on a 35km2 area of seabed near Ynys Cybi (Holy Island) on Anglesey. Morlais will become the first 'plug and play' tidal stream demonstration zone where multiple tidal turbine developers will be able to connect side by side. With a maximum capacity of 240MW split into 8 berths for 8 developers, the project currently has 56.5MW from 3 developers planned for the scheme. Tidal stream developers are actively raising investment to support the phased deployment and expansion of tidal energy demonstrator projects.

Investment Opportunity

- £4m — 60MW-120MW expansion
- £4.12m — 120MW-180MW expansion
- £2.1m — 180MW-240MW expansion

Timeline

- March 2026 Onshore civils completion of works
- October 2027 Installation of electrical equipment
- March 2028 National Grid commissioning

Figure 04: Morlais substation near South Stack, Anglesey, was built in 2023 after securing consent in 2021.

For more information about this and other investment opportunities in tidal energy in North Wales, speak to Ian Hughes, Menter Môn: ian@mentermon.com

Wind: Onshore and Offshore

With high-exposure coastal and mountainous areas, North Wales is well suited to onshore and offshore wind developments. The region already hosts, 3 offshore wind farms and 12 onshore wind projects* currently in operation, Wind is and will continue to be a key contributor to the energy generation mix in North Wales.

Wind farms currently at submission and pre-construction phase in the North Wales region include:

- Gaerwen wind farm, a proposed 59.4MW wind farm in Denbighshire and Gwynedd, which submitted its planning application in July 2025
- Alwen Forest Wind Farm, a proposed 60MW wind farm in Denbighshire and Conwy, which secured planning consent in October 2025.

Operational wind farm	County	MW
Llanbabo	Anglesey	20.4
Ystgellog	Anglesey	4.6
Trysglywyn	Anglesey	5.6
Moel Maelogen	Conwy	11.7
Hafoty Ucha	Conwy	2.6
Botegir	Conwy	1.6
Clocaenog	Denbighshire	96
Brenig	Denbighshire	37.6
Tir Mostyn and Foel Goch	Denbighshire	21.3
Wern Ddu	Denbighshire	9.2
Kingspan	Flintshire	1.8
Braich Ddu	Gwynedd	3.9
	TOTAL	216.3

Table 01: Onshore Operational wind farms in North Wales

*Renewable Energy Planning Database | DESNZ & Barbour ABI

Wind: Onshore and Offshore

Map of offshore wind projects in the Irish Sea taken from the Offshore Energy Alliance Prospectus

the offshore energy alliance

The Offshore Energy Alliance have published a prospectus for offshore energy across North Wales and North West England:
Offshore Energy Alliance Prospectus

Solar

Solar energy is generated by converting sunlight into electricity using photovoltaic (PV) panels; higher levels of solar irradiation result in greater energy generation.

North Wales has:

- Average annual sunshine hours of 1,374* across parts of the region, confirming solar as a viable technology.
- An established market, with 22** solar projects over 100 kW currently in operation.
- Ample roof space and open land across homes, and public buildings, allowing flexible deployment

Together, this makes solar a key contributor to the energy generation mix in North Wales, complementing other renewable technologies and supporting regional decarbonisation.

800+ tonnes CO_2 saved each year

9,000 solar PV panels installed

*England NW & Wales N annual average, Met Office District England NW & Wales N Location-specific long-term averages

**Renewable Energy Planning Database REPD

Figure 05: Crumps Yard, Connah's Quay
Image: © SMA Solar Technology UK Ltd (Flintshire Solar Farm)

Ground Mounted Solar Case Study

3,487 MWh renewable energy generated annually

Repurposing brownfield land for renewable energy – Flintshire Landfill Solar Farm

Flintshire County Council has regenerated two long-disused brownfield sites - Crumps Yard in Connah's Quay and a former landfill in Flint - by converting them into productive solar energy assets. Both sites presented their own unique requirements to develop, including above-ground engineering solutions and specialist mounting systems. Delivered by Equans, the scheme employs remote monitoring to minimise operational costs and ensure high system reliability. The project showcases how previously unusable land can be brought back into beneficial use while supporting local environmental ambitions and long-term energy resilience.

CYNGOR Sir y Fflint Flintshire COUNTY COUNCIL

For more information about this, speak to the Energy Conservation Unit at Flintshire County Council energy.unit@flintsihre.gov.uk

Solar

Solar Car Ports Case Study

The first of its kind on the Isle of Anglesey, the 375kW solar array over the Isle of Anglesey's Council car park in Llangefni is expected to generate substantial environmental and economic benefits. With 852 photovoltaic panels, 11 inverters and 426 optimisers, the system is engineered for consistent year-round performance, supported by a 614.4 kWh battery installation capable of delivering 150 kW of power when demand requires.

£60,000 annual saving for the Council

58.03 tonnes of CO_2 saved annually

Total investment: £1,497,898
Ynni Cymru non-repayable grant: £781,337
Salix Energy Efficiency Loans Scheme (0% interest loan): £716,561

Figure 06: Solar car port in Llangefni

For more information about this project, speak to MeilirHughes@ynysmon.llyw.cymru

Biomethane

Anaerobic digestion (AD) presents significant and growing opportunities in North Wales, driven by agricultural needs, waste-management requirements, regional decarbonisation goals, and new private-sector investment. Evidence from recent projects and Welsh/UK policy trends highlights several specific areas where AD could expand or deliver value in the region.

North Wales has seven farm-fed AD plants. (see the NNFCC map (2023)). These facilities primarily use agricultural feedstocks such as manures, slurries, crops, and crop residues, and municipal, commercial, and industrial waste streams.

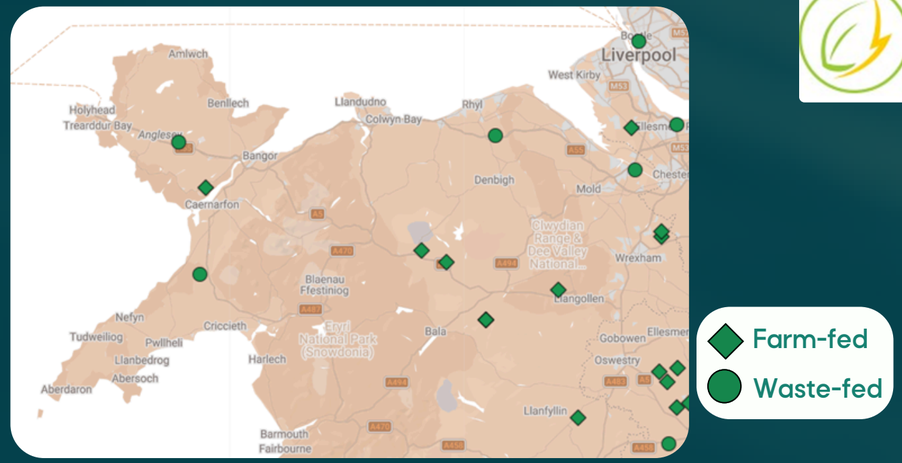


Figure 07: AD operational plants in North Wales

Source: Google My Maps - [UK Wide AD - April 2023 report] Screenshot © Google, accessed April 2026

Deeside Anaerobic Digestion

Image: Anaerobic digestion and composting facility, Sundern, Germany © Thzorro77, CC BY-SA 4.0 (Wikimedia Commons)

The Deeside Anaerobic Digestion Plant will process food waste and will accept food waste from local authorities and commercial sources in the region. The process produces biomethane which is upgraded and injected into the national gas grid, along with electricity via an on-site combined heat and power unit, captured CO_2, and digestate.

Ownership

The plant is being developed by The Circular Economy Development Ltd (TCED) in partnership with Funding Partners. TCED is responsible for design, construction, operation and long-term management.

Timeline

Construction began in 2024 and is expected to be running commercially by the end of 2026.

Benefits of AD as an investment opportunity

- Net zero energy
- Well-established technology.
- Food waste as a feedstock is stable and contractible.
- Output of fertiliser as well as energy

Hydroelectricity

Dinorwig Power Station (Electric Mountain)

Located near Llanberis, this is one of the most important power stations in Britain.

- Opened in 1984
- Built inside Elidir Fawr mountain with the water stored in Marchlyn Mawr upper reservoir and transferred to Llyn Peris lower reservoir when generating
- Uses pumped storage technology
- It can generate 1728MW of power in 12 seconds to stabilise demands on the national grid

Hydroelectricity is generated by the flow of water driving a turbine - the faster the flow, the greater the amount of energy generated.

North Wales has key geographical features which makes it well-suited to small and large scale hydroelectricity projects:

- Steep mountains (especially in Eryri National Park) allowing a large difference between the height of the water at the top of the system and the bottom which increases the flow rate of the water
- High rainfall ensuring that the minimum viable flow of water can be maintained
- Natural glacial valleys ideal for reservoirs

This combination makes it one of the best regions for hydroelectric generation in the UK. North Wales is already home to Dinorwig and Ffestiniog large scale hydroelectric power stations:

Ffestiniog Power Station

Near Blaenau Ffestiniog, this is the UK's first major pumped-storage station (opened 1963).

- Can generate 360MW of electricity
- Water is released from Llyn Stwlan upper reservoir and transferred to Tan-y-Grisiau

Together, these stations act like giant "water batteries" for the UK grid.

Hydroelectricity

Corwen Hydroelectric Project

Corwen Electricity Co-operative has a proven track record in small-scale hydroeletricity development, having successfully delivered two projects in the North Wales region: a 55 kW scheme commissioned in December 2016 and a 100 kW scheme commissioned in November 2023.

The company is now progressing detailed feasibility studies for two additional hydroelectric projects, expanding its local renewable generation portfolio.

In addition, alongside its own developments, Corwen Electricity Co-operative is providing consultancy and modelling expertise to two other hydroelectric schemes currently being developed in Wales.

Investment Opportunity

£1m 80MW-120MW installation

Timeline

2027 onwards

Corwen Electricity Co-operative
HARNESSING HYDRO POWER FOR CORWEN

For more information about this investment opportunity or the projects, contact Joel Scott, Corwen Electricity Co-operative, joel89scott@gmail.com

District Heat Networks

Community-Owned Low-Carbon Heat Infrastructure for North Wales

Ynni Ystradau is a phased, scalable Net Zero infrastructure programme delivering industrial decarbonisation, affordable low-carbon heat, and long-term community benefit in Tanygrisiau, Blaenau Ffestiniog. The project addresses severe fuel poverty whilst leveraging local renewable assets and strong multi-sector partnerships.

Phase 1 - Proof of Concept & Retrofit Pilot - A proof of concept network serving four historic terraced homes, powered by local solar and hydro generation from the Llechwedd Slate Mine. Demonstrates retrofit feasibility in older buildings and secures voluntary participation from private homeowners, thus providing evidence for scale-up.

Phase 2 - Network Spine & Industrial Anchor Load - A water-source heat pump in Llyn Ystradau will supply a strategic network linking Rehau as the industrial anchor load and Hafan Deg—one of the UK's most fuel-poor communities. Engagement from ENGIE, local housing associations, and strong public-sector alignment strengthens commercial credibility and de-risks investment.

Phase 3 - Network Completion & District-Scale Deployment - Extends the heat network across the remaining off-gas areas of Tanygrisiau, creating a fully integrated, district-scale system. Standardised retrofit and connection processes reduce cost and complexity, enabling delivery at scale. On completion, the network will serve over 200 homes plus community buildings and SMEs.

District Heat Networks (DHNs) are systems that distribute heat from a central source to multiple buildings through a network of insulated pipes. Heat is generated or extracted in one place and shared efficiently across a neighbourhood, town centre, or industrial cluster.

Timeline

- June 2026 — Phase 1 Proof of Concept Completed
- 2026/2027 — Phase 2 Infrastructure Installed £3m
- 2027/2028 — Phase 3 Retrofit/Domestic Network Completion £4.5m

£7.5m
of investment

For more information about this investment opportunity or the project, contact:
Kiki Rees-Stavros, Project Development Manager 'Ynni Ystradau', kiki@cwmnibro.cymru

District Heat Networks

Ynni Ystradau - A Community Model with a Business Approach

The Community Energy Service Company (CESCo) model ensures that procurement, skills, and operational spending remain local, building a regional supply chain for future low-carbon heat networks. A dedicated training programme at Rehau supports workforce development and long-term capability.

Partnership, Alignment and Delivery Confidence

While Ynni Ystradau is grounded in the community, the project is underpinned by strong multi-stakeholder alignment, bringing together:

- Industrial partners: Rehau
- Energy sector expertise: ENGIE
- Public sector leadership: Welsh Government programmes and Cyngor Gwynedd
- Infrastructure stakeholders: SP Energy Networks and Welsh Water
- Local delivery and stewardship: Cyd Innovation

This alignment between local need, national policy and private-sector capability significantly reduces delivery risk and underpins the project's scalability.

A Blueprint for a Net Zero North Wales

Building on Blaenau Ffestiniog's legacy of innovation, Ynni Ystradau establishes a community-owned energy platform for North Wales. It provides a replicable delivery model for local heat and retrofit networks, spreading development, infrastructure and operational costs to make low-carbon energy affordable at scale – tackling fuel poverty, supporting progress to Net Zero, and keeping skills, value and returns in the region.

Community Energy

£90m
of investment

Timeline ongoing

Community energy models are crucial tools which allow local people to come together to develop, own, and/or manage energy projects for the benefit of their area. These projects can generate power, reduce energy use, or support community resilience. They help communities cut carbon emissions, lower energy bills and keep economic value circulating locally.

WCVA CGGC

Ynni Cymunedol Cymru Community Energy Wales

North Wales is a leader in community energy, with a long-established culture of local co-operatives and locally-led enterprises (over 12,000 according to WCVA). Significant opportunities across hydro, solar, heat networks and rural energy resilience are helping to tackle fuel poverty, particularly in off-gas areas while building local skills, supporting good jobs, and strengthening community ownership of the transition to net zero.

£5-10m p.a. has been invested in Community Energy Projects over the last 4 years according to Welsh Council for Voluntary Action (WCVA), Energy Local, and Community Energy Wales.

Through the Clean Energy Fund (a project within the North Wales Growth Deal) expressions of interest have demonstrated a healthy pipeline of community-led projects across North Wales to the value of £90m.

These projects range from Community Sports Clubs to full Energy Clubs aspiring to large scale renewable installations to supply their community and combat fuel poverty.

For more information about opportunities to invest in community energy, contact:
Gwenith Elias, Clean Energy Investment Manager, WCVA gelias@wcva.cymru

People, Place and Partnerships

Connectivity & Infrastructure

North Wales is well connected, offering the infrastructure and transport links needed to support industrial growth, clean-energy deployment and inward investment at scale. The A55 North Wales Expressway provides a direct, high-capacity east-west artery linking the region to the North West of England, while strong rail connectivity connects North Wales to London, the Midlands and major UK city regions.

The region's ports, led by Holyhead, one of the UK's key gateways to Ireland, alongside Mostyn and access to the Mersey ports, play a strategic role in energy, manufacturing and offshore supply chains. Combined with proximity to major industrial centres, international airports and robust grid and digital infrastructure, North Wales offers investors speed, access and resilience across domestic and international markets.

nationalgrid

National Grid Electricity Transmission is responsible for the high voltage electricity transmission network, delivering and reinforcing the strategic backbone infrastructure required to connect large-scale renewable generation and transport bulk power across the region'

SP Energy Networks

SP Energy Networks, through its SP Manweb Licence, operates the distribution network, upgrading and managing local electricity networks to connect homes, businesses, EV charging, and distributed generation, while improving resilience and enabling smart, flexible, low-carbon energy systems so communities and the local economy can benefit from the energy transition.

Source: National Rail Enquiries (2026). National Rail Network Map [online]. Available at: https://railmap.nationalrail.co.uk (Accessed: 30 April 2026).

North Wales Clean Energy Collaboration Ecosystem

Collaboration between industry, academia and the public sector underpins North Wales' approach to clean energy and decarbonisation. By aligning private-sector investment and delivery capability with academic excellence in research, innovation and skills, and strong public-sector leadership, the region is able to accelerate project development while reducing risk. Together, these sectors create the confidence and capacity needed to deliver complex energy infrastructure at scale.

FfNC FFORWM NIWCLEAR CYMRU
RHAGORIAETH MEWN YNNI

WNF WALES NUCLEAR FORUM
EXCELLENCE IN ENERGY

Wales Nuclear Forum is a membership organisation representing the Welsh nuclear industry that fosters collaborations between members.

SPARC
gan Brifysgol Bangor
by Bangor University

M-SParc is key to the region's low carbon focus, linking to developments such as Anglesey Energy Island and Anglesey Freeport. The Egni team was established out of M-SParc to provide specialist support in the low carbon sector.

Llywodraeth Cymru Welsh Government
Gwasanaeth Ynni Energy Service

The Welsh Government Energy Service helps public sector bodies and community groups in Wales plan and deliver local energy projects.

the offshore energy alliance

The Offshore Energy Alliance (OAE) is a regional supply chain cluster supporting offshore wind and low-carbon energy across North Wales, Merseyside and Cumbria.

DDF

The Deeside Decarbonisation Forum brings together industry and public partners to coordinate and accelerate decarbonisation across the Deeside industrial cluster.

CATAPULT
Offshore Renewable Energy

Offshore Renewable Energy Catapult (ORE) is the UK's leading innovation centre for offshore renewable energy. ORE Catapult convenes the sector, delivering applied research, accelerating technology development, reducing risk and cost and enhancing UK-wide economic growth.

The University Of Sheffield. /AMRC Cymru

AMRC Cymru is an advanced manufacturing research centre that aims to boost Welsh manufacturing by giving companies access to cutting-edge digital manufacturing, automation, sustainable production, and supply chain innovation, supporting emerging sectors including tidal energy and the Floating Offshore Wind supply chain.

Prifysgol Wrecsam Wrexham University
Coleg Cambria
Prifysgol Bangor University
Grŵp Llandrillo Menai
Llywodraeth Cymru Welsh Government
Uchelgais Gogledd Cymru Ambition North Wales

Regional Strength in Skills, R&D and Supply Chain

North Wales offers an experienced workforce, strong skills infrastructure, and a collaborative, industry-led approach to delivering future energy projects.

The North Wales Regional Skills Partnership (RSP) plays a central role in aligning skills provision with employer demand, ensuring the region is well positioned to support current and future investment. It brings together employers and training providers to identify skills needs, broker partnerships, and develop solutions that strengthen the regional economy and support net zero ambitions.

Workforce and Skills Pipeline

North Wales has a growing workforce across engineering, environmental science, project management and digital skills, providing access to the talent needed to deliver major projects. A connected network of universities, including Bangor University, Wrexham University and the Open University, together with further education colleges such as Grŵp Llandrillo Menai and Coleg Cambria, and a range of independent training providers and employability services, delivers industry-aligned education and training, strengthening the regional talent pipeline.

Partneriaeth Sgiliau Rhanbarthol Gogledd Cymru
North Wales Regional Skills Partnership

Wrexham university contributes technical expertise in areas such as renewable energy systems, smart grids, and low-carbon heat, while also acting as a testbed for demonstrator projects like hydrogen, sustainable housing and local energy solutions.

The North Wales Tertiary Alliance

Bangor University, Wrexham University, Coleg Cambria, and Grŵp Llandrillo Menai have united to form the NWTA. A landmark partnership to strengthen education and skills development, fuel economic growth, and improve life opportunities across the region.

Future-Ready Skills

Skills development in North Wales is aligned with the transition to net zero, supporting a workforce equipped for long-term growth in the energy sector. Supported by the Regional Skills Partnership, the region offers a coordinated, industry-led skills ecosystem ready to meet the needs of major low-carbon energy projects, now and in the future.

North Wales Skills Portal

Through the North Wales Skills Portal, employers, individuals and developers can access clear, up-to-date information to understand skills availability, provision and support across North Wales, enabling informed workforce planning and project delivery.

NORTH WALES SKILLS portal SGILIAU GOGLEDD CYMRU

Summary of Opportunity

The opportunity is clear: North Wales has the resources, ambition and the readiness to deliver transformational clean-energy investment for decades to come.

The region is well-placed to deliver major projects that generate economic value, accelerate decarbonisation and contribute to the wider net-zero transition.

With committed public-sector partners, engaged communities and a highly skilled workforce, North Wales offers the certainty and long-term stability investors look for.

Uchelgais Gogledd Cymru
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