Sero Net
Diwydiant Cymru

Net Zero
Industry Wales

“Wales - A leading Clean Energy transition hub and a Cornerstone of the UK industrial base”

Sero Net Diwydiant Cymru | Net Zero Industry Wales

"Rhoi'r pŵer i fusnesau greu dyfodol gwyrdd"
"Empowering businesses to build greener futures"

What's Net Zero Industry Wales?

- Not-for-profit umbrella organisation that supports Welsh Industrial Clusters and their partners in their Journey to Net Zero
- Membership organisation, reporting to an industry led board
- Core funded by Welsh Government

SWIC
SOUTH WALES INDUSTRIAL CLUSTER

NEWID
DATGARBONEIDDIO DIWYDIANNOL GOGLEDD DDWYRAIN CYMRU
NORTH EAST WALES INDUSTRIAL DECARBONISATION

Mission statement

Make Wales the country of choice for producing sustainable goods & services

By supporting a trusted, sustainable, prosperous & resilient Welsh industry that leads the transition to a healthier, equal & cohesive Wales

Resulting in an industry that the citizens of Wales are proud off, is globally responsible and builds on its industrial heritage

Single voice | **Build partnerships** | **Support policy development** | **Access funding**

Producing sustainable goods and services

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Background (Manufacturing & energy sector):

- Contribute to ~20% of Wales's Gross Value Added
- Emit ~50% of Wales's total carbon footprint
- Critical source of high value employment
- Wales's emissions are 2 times higher per capita, than UK average
- Wales receives significantly less than population equivalent on decarbonisation funding

The opportunity:

"Wales, A leading clean energy transition hub and cornerstone of the UK industrial base"

- Use the Wellbeing Goals (Wellbeing of Future Generations Act 2015), as our North Star
- Build on our strong industrial heritage & foundation and its skilled workforce
- Maximise energy generation from its abundant natural resources, to produce low carbon energy
- Retain & grow existing industrial hubs within the Welsh clusters using this low carbon energy
- Strong pipeline of projects & programs have been developed and are "oven-ready"

Decarbonisation Pathway

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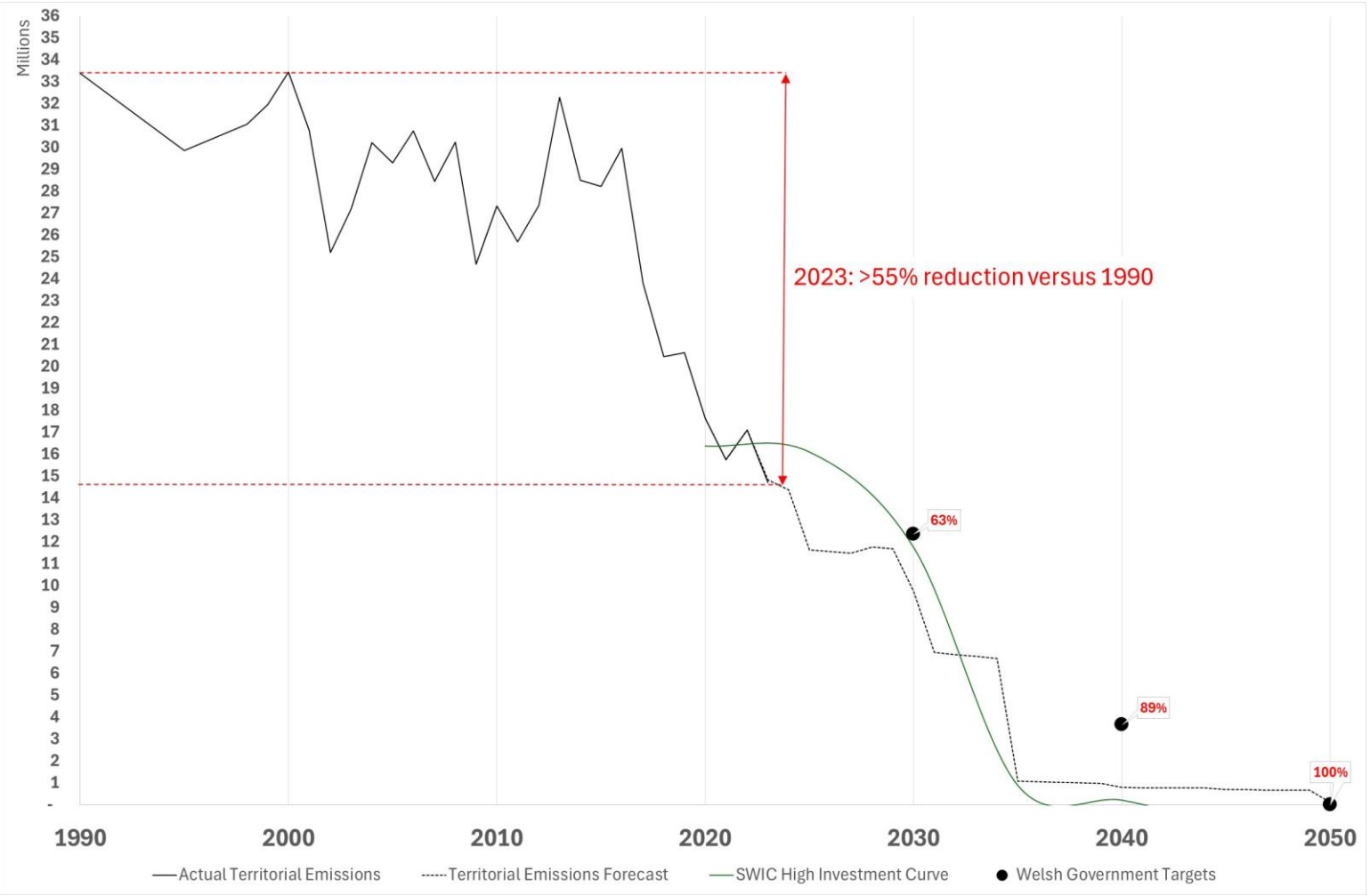

55% reduction in emissions (scope 1) between 1990–now

- De-industrialisation of Wales (steelmaking, etc.)
- Aberthaw power station closure

Remaining emissions (2019):

- South Wales Industrial Cluster - 16 MT CO_2
- North-East Wales Industrial Decarbonisation - 2MT CO_2

5 "COGS" that drive industrial decarbonisation in Wales

1. Energy and Resource Efficiency	19%
2. Fuel Switching	H_2 38% Elec. 23%
3. Clean Growth Hubs	Enabler
4. Carbon Capture and Utilisation	1%
5. Carbon Capture and Storage	19%

Making the opportunity a reality

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Strategic goals:

- **Energy Industries (E):** Generate an abundant source of local, globally competitive, low carbon energy that predominantly uses Wales’s abundant natural resources. Supplemented by fossil fuels, where possible abated (using Carbon Capture & Storage technology), to minimise emissions to the atmosphere.

- **Energy Infrastructure (I):** Build the infrastructure needed to transport and/or enable the generation & offtake of the energy produced in Wales.

- **Foundation Industry & advanced manufacturing (F):** Retain & grow Welsh industry by supporting investment in decarbonisation technologies, benefit from the low carbon energy that is produced in Wales and regain global competitiveness.

13 strategies & 20+ anchor projects have been identified across Wales to deliver these goals

Economic Impact Assessment – Findings

Assessment of the 20+ anchor projects that support the delivery of these strategic goals (25 years project life cyle)

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Benefit		Detail	Present value of the benefit (billionGBP)			
			E	I	F	Total
B1	Direct, Indirect GVA	Economic value generated by both the upfront capital investments (CAPEX) and the ongoing operational expenditures (OPEX) associated with a project	134.8	13.5	6.0	**154.3**
*B2**	*Avoided Cost of Carbon Pricing (not in*	*Economic value achieved by reducing carbon emissions compared to the counterfactual scenario*	*24.5*	*0.7*	*4.8*	***29.9***
B3	Avoided Social Costs of Carbon	Economic value that society places on 1 tonne of carbon dioxide equivalent (£/tCO2e)	47.4	0.9	9.8	**58.1**
B4	Economic Value preserved	Economic value preserved by preventing or delaying the shutdown of existing assets during the energy transition.	6.0	Not applicable	46.0	**52.0**
B5	Replicability Benefits	Economic value generated when the successful implementation of an intervention catalyses wider industry adoption	2.0	Not applicable	1.5	**3.5**
B6	Technology Learning Curve Benefits	Economic value generated as increased adoption drives cost reductions and efficiency gains through learning curves and economies of scale-technologies	0.0	Not applicable	Not applicable	**0.0**
B7	Green Premium Benefits	Economic value generated when low-carbon products command a price premium compared to conventional alternatives	21.6	Not applicable	Not applicable	**21.6**
		Total Benefit	**211.9**	**14.4**	**63.3**	**289.6**
		Total Cost	**31.0**	**3.0**	**2.7**	**36.8**
		Total Net Present Value	**180.9**	**11.4**	**60.6**	**252.8**

Unlocking the potential & economic impact

Urgent Interventions needed as part of the UK Industrial Strategy:

- Non-Pipeline-Transport of CO2 (shipping) – Kickstart the industrial decarbonisation of South Wales by allowing non-pipeline connected Carbon Capture & Storage projects to bid for CO2 business model support.

- Floating Offshore Wind (FLOW) – Anchoring the “once in a lifetime” economic growth opportunity to Wales by granting Contracts for Difference (CfD) support for Test & Demonstrator projects and make the use of a UK port a requirement, to access future CfD support for FLOW projects.

- North to South Wales electricity transmission interconnector (PSNC) — unlock the significant onshore wind pipeline and additional 12 GW of FLOW capacity by accelerating the development of the PSNC project and commence construction of the interconnector within the current price review period (RIIO-T3).

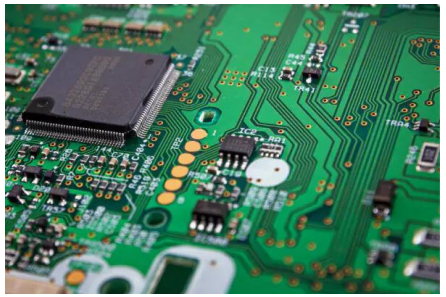
Cross sector growth opportunities:

Artificial Intelligence in the foundation industry & advanced manufacturing

The AI infrastructure and the associated technology that is developed in the UK, have a significant potential to improve productivity, save operational costs in the Foundation Industries (steel, metals refining, cement, chemical, oil refining etc.). These industries are increasingly recruiting people with a diverse range of skills to meet this demand; bringing in those with expertise in data analytics, programming, problem solving and video game industry knowledge

Materials recovery industries

The nascent materials recovery industry, supported with AI and enabled by the production of low carbon energy on its doorstep, is a significant economic growth opportunity in Wales and allow the UK to decrease its independence on imported raw materials; some of which are increasingly scarce. It not only makes best use of Wales's leading position in recycling rates of waste, but also allow it to potentially deal with its industrial legacy, i.e. mine waste and other industrial waste that has been landfilled across the nation, during the original industrial



Compound semi-conductors for the renewables industries

Semiconductors are a foundational technology for growth across the eight sectors which have been identified in the Industrial Strategy. The UK has a particular expertise and advantage in developing compound semiconductors through the cluster in South Wales, enabling industries to decarbonise and support the Net Zero transition. Compound semiconductors are the future - far better energy conversion / thermal performance to support industries such as floating offshore wind

Empower Cymru to realise its potential

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In summary:

- Welsh Industry plays a pivotal role in the UK industrial strategy
- It has a clear strategy & plan to transition to net zero
- Do deliver this plan it has strong portfolio of projects that are value for money

To deliver economic impact in the next 5 years, Welsh Industry needs:

- Appropriate UK Government financial support – eq. to emission burden
- Welsh Government using its powers to create attractive investment climate
- Joint UK & Welsh Government action to realise the three urgent interventions

"Now is the time to be more ambitious & bolder, to bring us a step closer to achieving Wales's Wellbeing Goals"

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