



Introduction

The South Wales Industrial Cluster (SWIC) is pleased to respond to the invitation from the newly-established Climate Change, Environment and Infrastructure Committee, to contribute to its consultation on priorities for the next five years. No part of this response is confidential.

SWIC is the representative body for the major Industry and Power GHG emitters and other interested organisations in South Wales. We are one of six Industry Clusters identified in the UK Industrial Strategy. We currently have two projects funded by the Industrial Challenge Strategy Fund (ISCF) Industrial Decarbonisation Challenge (IDC). These projects are Cluster Plan and Deployment Phase 2 – between the two projects, we have secured c£40m of grant and industry match funding. 35 Partners are involved in the projects, including most of the South Wales sites recorded in the UKETS (total 2020 verified emissions 13.317 mtCO₂e).

SWIC is working to secure over 100,000 current manufacturing jobs in Wales and create as many as 30,000 new, skilled jobs in developing, enabling and operating new Clean Energy infrastructure.

Our current projects include Hydrogen production, Carbon Capture Use & Storage, Transport & Shipping. In addition to these energy-efficiency schemes, we also continue to develop proposals for:

- Mass Blue hydrogen production at Milford and South-East Wales,
- Carbon Capture, Utilisation and Storage technologies along the South Wales Coast,
- CO₂ transportation and shipping,
- Solar energy to Green H₂ and Ammonia production,
- Imported LNG to Blue H₂ with CO₂ capture,
- Large Industry Decarbonisation through fuel-switching and process efficiencies,
- Cleaner Electricity Production through use of blended Blue H₂,
- Production of Cleaner Transportation Fuels



The Minister and Deputy Minister's Priorities for the next 18 months

We are concerned to note very limited reference to Industry in the Minister's letter to the committee. In south Wales, industry employs over 100,000 people and is a significant contributor to Wales GVA.

At 14.0 MtCO₂e, the industry sector accounted for 29% of Welsh emissions in 2016¹ and, in the same year, the Power sector emitted 16.2 MtCO₂e, although this has reduced significantly since the closure of Aberthaw and other coalfired stations². However, the potential for inward investment linked to the decarbonisation of Welsh industry is estimated at tens of £billions over the next 29 years, leading up to 2050. We therefore believe that the efforts to decarbonise Industry, and the role that Industry can play in the Net Zero target, should have a more prominent focus in the Minister's Priorities.

Climate Change

As stated in the Minister's letter, Welsh Government is dependent on funding for innovation from UKG / BEIS and Europe. SWIC has already secured tens of £millions of Innovation Funding through our Partners' successful participation in the ISCF IDC, Transforming Foundation Industries (TFI) Industry Energy Transformation Fund (IETF) Projects. Our Academic Partners have also secured significant funding through the Industry Decarbonisation Research & Innovation Centre (IDRIC) for work with, and alongside, SWIC and the other Industrial Clusters.

In addition to the c£40million of grant funding, over c£25million has been provided through Industry match-funding, whilst other SWIC decarbonisation activities have been carried out by industry Partners pro bono.

We believe that this collaboration through SWIC illustrates a) how industry is prepared to work together (within the bounds of competition and anti-trust law) and b) make significant financial investments in the pursuit of decarbonisation.

Whilst we are proud of our achievements to date, a more joined-up, holistic, partnership approach with WG would help to secure further Innovation funding and yet more projects to support decarbonisation of Wales and help to tackle the impacts of Climate Change for both current and future generations.

Energy

Within SWIC, partners are working towards decarbonisation of their sites, including RWE Pembroke Net Zero Centre³ and Simec Atlantis Energy Ltd at Uskmouth Power station site.

SWIC Partners are also working on at-scale production of Blue and Green Hydrogen which, alongside the work being carried out by Wales & West Utilities, would provide a hydrogen supply to industry, commercial, public sector and domestic users across the whole of South Wales... as well as offering potential for supplying a significant portion of the South and Southwest of England.

¹ [industry-sector-emission-pathway-factsheet.pdf \(gov.wales\)](#)

² [power-sector-emission-pathway-factsheet.pdf \(gov.wales\)](#)

³ [RWE launches its Pembroke Net Zero Centre to help drive decarbonisation in South Wales](#)



SWIC believes that a balanced approach to the use of hydrogen, alongside electrification, is the solution to the decarbonisation of Wales. This includes using hydrogen for domestic heating and industrial fuel switching.

Marine Energy Programme

SWIC is not directly engaged in marine energy infrastructure. However, we are creating new opportunities to use marine energy in the decarbonisation activities of industry in the region.

Through local collaboration groups, SWIC continues to engage with developing projects

We recognise that the recent consultation on the Welsh Tidal Lagoon Challenge may add detail to this focus area, but we are unclear as to the extent of the Minister's involvement in this consultation or its outcomes.

Net Zero

As contained in the Minister's letter, SWIC agrees that a holistic approach to decarbonisation is the only way to achieve Net Zero. The Minister's letter says WG is developing the policies and projects that will drive decarbonisation in transport. It also says that the approach to tackling climate change must be Wales-wide and that WG must engage every person, community, business and public servant.

SWIC believes that industry can play a significant part in this holistic approach and we are concerned that industry is not currently reflected in WG plans.

SWIC is not just working on the reduction of its own emissions, but providing solutions to commercial, public sector and domestic users through our concept of the Mini-cluster and Clean Growth Hubs (CGH). This includes the consideration of the decarbonisation of smaller carbon emitting organisations in the Valleys and other rural areas. We continue to engage with several south Wales Local Authorities and Regions in developing these concepts.

These CGH have the potential to support existing businesses in their transition to Net Zero, whilst also encouraging inward investment, business relocation and the establishment of new SMEs and innovative start-ups.

SWIC also believes that our concept is scalable and transferable to North and Mid Wales – it could also create an export market.

We therefore recommend that these concepts are considered within the Minister's holistic approach.

A viable CO₂ shipping industry is a key enabler for industrial decarbonisation to occur, clear support from the Minister is required.

We recognize that the Welsh Government has a significant role in the management of the UK Emissions Trading Scheme (ETS) through the joint four-nation Authority

Industry is keen to see a link to the EU ETS. We encourage the Minister to help ensure that the UK ETS is helping businesses to make the changes required to decarbonise, rather than being overly punitive. There is a risk that international businesses consider closing their Welsh premises and relocating elsewhere, which will undoubtedly be to the detriment of the Welsh economy and those communities who are reliant on industrial employers.



Tree planting

SWIC industries own considerable swathes of land and are very interested in supporting the Welsh Government tree planting programme, providing land for planting and processing of waste wood for optimum circular economy and environmental outcomes. This again demonstrates the potential contribution industry can make to an holistic approach.

Further information would be welcome on how Welsh Government intend to “learn from community” including transparency on which communities and which tree species will be the focus. It is also encouraged that protection of indigenous species will be maintained, and existing woodland areas be protected, for the benefit and enjoyment of future generations.

Circular Economy

SWIC has recently completed a TFI-funded Circular Economy project and will be reporting its findings shortly.

SWIC agrees with the Minister that implementing a truly circular economy is critical to decarbonisation – this means that materials continue to circulate for as long as possible and needs are increasingly met by more sustainable alternatives. SWIC is also supporting development of technologies that will recycle end-of-waste-products back into the circular economy.

It is considered the scope for Life Cycle Assessment (LCA) should be broadened. We welcome the inclusion of this tool by NRW, however its use should not only focus on lower carbon construction materials. LCA can drive sustainability at a strategic level, aid the decision-making process, improve engineering design, assess scenarios, etc.

Circular economy theory applies to more than material products. It’s important to consider the resource redistribution and jobs.

Environment

SWIC industries are committed to improving air quality through our decarbonisation developments. By developing industrial sites and cleaner transport fuels, industry can and will support WG objectives

Some of the processes associated with decarbonisation and the production of clean fuels will require large quantities of water (i.e. electrolysis of water to gain hydrogen). We encourage this to be considered by the Minister and to work with industry to identify solutions given we are already seeing strains on our natural water systems and reservoirs.

Transport

SWIC Partners are currently developing plans for at-scale production of clean transportation fuels for road, rail and aviation transport sectors.

Recent and current work demonstrates that a balanced approach to transportation decarbonisation is the most appropriate. We are concerned that the recent Llwybr Newydd – The Wales Transport Strategy (WTS) 2021 includes reference to significant transformation to electric vehicles (EVs).



EVs can use either batteries or hydrogen fuel cells (HFC) as the power source. We are concerned that the WG view of EVs prioritises the use of battery vehicles, rather than a more-balanced approach that includes HFCs.

WG, as arm's length owner of Cardiff Airport, can encourage the airport to become one of the first users of clean aviation fuel (hydrogen and ethanol-based jet fuels) and one of the first zero-GHG emissions airport facility in the UK. This would be a significant message that Wales is prepared to lead in the production and use of clean aviation fuels.

Housing

Through development of infrastructure and potential district heating schemes, SWIC can support decarbonisation of houses and other residential property. More importantly, SWIC offers the opportunity to support clean growth, thereby increasing employment levels and lifting people out of the fuel poverty trap.

We welcome the attention given to be given to retrofitting existing social housing stock, as well as the construction of new more energy efficient stock and support its acceleration.

We encourage the Minister to work closely with housing providers/building contractors who are already using/implementing sustainable construction methods and the integration of ground source heat pumps, solar panels, smart energy consumption/meters etc. within the homes. We also encourage the transparent publication of technologies deployed by the Optimised Retrofit Programme.

We encourage the Minister to consider the unintended consequences of area "gentrification" which can lead to local youth/ families with lower income being unable to afford housing in their own hometowns. This issue is a sustainable living issue and could contribute to the loss of generational knowledge of localities and displacing generations of local families.

Town Centre Regeneration

With consideration of the number of homeless persons, in temporary accommodation and living rough in increasingly wet winters and as climate refugees increase globally, will the Minister encourage the use of the "neglected properties" to serve as affordable, low-carbon green housing for the low-income, un-housed and refugees?

Other Considerations

Collaboration is key to the success of many decarbonisation projects especially those related to a holistic solution. Planning conditions and environmental permitting may need to apply to more than one organisation working in together. Therefore, will consideration be given to the appropriateness of current planning and permitting to accommodate holistic decarbonisation and collaborative projects.

The climate change section of the letter has little mention beyond increased rainfall in winter and warmer, drier summers. Are other changes such as increased sun exposure, changes in humidity etc. taken into account, and is consideration given to how those changes impact local agriculture and living conditions?



There is a concern about changing attitudes towards local ownership of energy assets. Will the Minister ensure that Welsh Government policy towards local ownership arrangements help prevent private investment moving outside Wales.

The ambition to have a net-zero public sector by 2030 is recognised and welcomed, however, the challenge to meet this target is significant. We believe a joint effort with industry and the private sector will help to stimulate the development of technology. Public and private shouldn't be segregated in our net-zero efforts.

We would encourage the Minister promote the use of low carbon natural materials in Wales for construction projects, and give consideration to discouraging the use of materials with significant carbon footprint as a result of shipping from distant global locations.