

Agenda – Economy, Trade, and Rural Affairs Committee

Meeting Venue:

Committee room 2 – Senedd
and video conference via Zoom

Meeting date: 29 February 2024

Meeting time: 09.30

For further information contact:

Robert Donovan

Committee Clerk

0300 200 6565

SeneddEconomy@senedd.wales

Hybrid

Private pre-meeting

(09.15–09.30)

Public meeting

(09.30–12.30)

1 Introductions, apologies, substitutions, and declarations of interest

(09.30)

2 Papers to note

(09.30)

2.1 Economy, Trade and Rural Affairs Committee meeting – 7 February 2024: Further information following the Tata Steel UK session

(Pages 1 – 2)

Attached Documents:

Letter from the Chief Executive Officer, Tata Steel UK – 16 February 2024



2.2 Inter-Institutional Relations Agreement: Inter-Ministerial Standing Committee

(Page 3)

Attached Documents:

Letter from the Counsel General & Minister for the Constitution – 16 February 2024

2.3 Economy, Trade and Rural Affairs Committee meeting – 7 February 2024: Further information following the Border Target Operating Model session

(Pages 4 – 6)

Attached Documents:

Letter from Baroness Neville-Rolfe, Minister of State – 20 February 2024

2.4 Sustainable Farming Scheme

(Pages 7 – 12)

Attached Documents:

Letter from the Chair of the Climate Change, Environment and Infrastructure Committee to the Chair – 21 February 2024

Letter from the Chair of the Climate Change, Environment and Infrastructure Committee to the Minister for Rural Affairs and North Wales, and Trefnydd – 21 February 2024

Letter from the Chair of the Petitions Committee to the Chair – 20 February 2024

2.5 The Official Controls (Extension of Transitional Periods) (Miscellaneous Amendments) Regulations 2024

(Pages 13 – 15)

Attached Documents:

Letter from the Minister for Rural Affairs and North Wales, and Trefnydd – 20 February 2024

2.6 The Official Controls (Fees and Charges) (Amendment) Regulations 2024

(Pages 16 – 17)

Attached Documents:

Letter from the Minister for Rural Affairs and North Wales, and Trefnydd – 21 February 2024

3 Future of Welsh Steel: Steel Unions

(09.30–10.15)

(Pages 18 – 36)

Alasdair McDiarmid, Assistant General Secretary, Community Union

Tom Hoyles, Press Administration and Research, GMB Union

Peter Hughes, Unite Wales Regional Secretary, Unite the Union

Attached Documents:

Research brief

Break

(10.15–10.20)

4 Future of Welsh Steel: Expert panel

(10.20–11.20)

(Pages 37 – 55)

Ben Burggraaf, Chief Executive Officer, Net Zero Industry Wales

Professor Dave Worsley, Faculty of Science and Engineering, Swansea University

Dr Clare Richardson-Barlow, University of Leeds

Attached Documents:

Evidence paper – Net Zero Industry Wales

Evidence paper – Dr Clare Richardson-Barlow

Break

(11.20–11.30)

5 Future of Welsh Steel: Expert panel 2

(11.30–12.30)

(Pages 56 – 59)

Dr Dean Stroud, Cardiff University

Professor Vera Trappmann, Comparative Employment Relations, University of Leeds

Attached Documents:

Additional paper – Karen Turner Centre for Energy Policy, Strathclyde University & Max Munday, Welsh Economy Research unit, Cardiff Business School

6 Motion under Standing Order 17.42(ix) to resolve to exclude the public from the remainder of the meeting

(12.30)

Private

(12.30–12.45)

7 Consideration of evidence following the meeting

(12.30–12.45)



TATA STEEL

Mr. Rajesh Nair
Chief Executive Officer
Tata Steel UK Ltd
Port Talbot
SA13 2NG

Paul Davies MS
Chair, Senedd Economy, Trade and Rural Affairs Committee
Welsh Parliament
Cardiff Bay
Cardiff
CF99 1SN

16 February 2024

Dear Paul Davies MS,

Thank you for providing Tata Steel UK with the opportunity to give evidence to the Senedd Economy, Trade and Rural Affairs Committee last week.

I am writing to provide the Committee with a breakdown of the proposed role reductions across Tata Steel UK's sites, following our announcement on 19 January, as requested during the evidence session.

I have attached this separately for your information.

If there are any follow up queries, or I can be of any further help, please do not hesitate to contact me.

Best wishes,

Rajesh Nair
Chief Executive Officer

Mr Rajesh Nair, Chief Executive Officer, Tata Steel UK Ltd
Port Talbot Works • Port Talbot • SA13 2NG

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Tata Steel UK Limited • 18 Grosvenor Place • London SW1X 7HS • Registered in England No. 2280000

Overview of Proposed TSUK Role Reductions by Location

Location	Grade	Managerial	Clerical, Technical, Professional	Manual	Others	Totals
Port Talbot		58	623	1247	0	1929
Llanwern		6	38	69	0	113
Shotton		0	15	17	0	32
Corby		2	3	25	0	30
Swansea		3	19	0	0	22
Coventry		4	17	0	0	21
Wednesfield		2	16	1	0	19
Homeworker		4	9	1	0	13
Caerphilly		1	2	10	0	13
Trostre		1	0	11	0	12
Others/Homeworkers/TBC		2	14	0	200	218
Totals		84	758	1381	200	2423

Tables show proposed impact where proposed role reductions are greater than 10

The potential role reductions are as a consequence of the proposed restructuring of TSUK and the asset configuration changes.

For proposed functional and commercial role reductions, as the positions are less location specific and support may be provided from various locations across TSUK the assumed role reductions for across these parts of the business have been allocated to locations on the same proportion as our existing FTE distribution.

Mick Antoniw AS/MS
Y Cwnsler Cyffredinol a Gweinidog y Cyfansoddiad
Counsel General and Minister for the Constitution

Agenda Item 2.2



Llywodraeth Cymru
Welsh Government

Ein cyf/Our ref: CG/PO/50/2024

Huw Irranca-Davies MS
Chair
Legislation, Justice and Constitution Committee
Senedd Cymru

16 February 2024

Inter-Institutional Relations Agreement: Inter-Ministerial Standing Committee

I am writing in accordance with the inter-institutional relations agreement to notify you of the sixth meeting of the Inter-Ministerial Standing Committee (IMSC), which will take place on 20 February 2024.

I will be chairing the meeting, which will be the first IMSC meeting since the re-establishment of the Northern Ireland Executive. I anticipate that this virtual meeting will provide an opportunity to discuss intergovernmental relations as a whole following the return of Northern Ireland Ministers, as well as UK legislation and also community cohesion. I will also be highlighting the recent final report from the Independent Commission on the Constitutional Future of Wales.

I have copied this letter to the the Llywydd, and to the Chairs of the Finance Committee, the Economy, Trade and Rural Affairs Committee, the Equality and Social Justice Committee, and the Culture, Communications, Welsh Language, Sport, and International Relations Committee.

I will provide an update after the meeting.

Mick Antoniw AS/MS
Y Cwnsler Cyffredinol a Gweinidog y Cyfansoddiad
Counsel General and Minister for the Constitution

Canolfan Cyswllt Cyntaf / First Point of Contact Centre:
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Gohebiaeth.Mick.Antoniw@llyw.cymru
Correspondence.Mick.Antoniw@gov.Wales

Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

Agenda Item 2.3



Baroness Neville-Rolfe DBE CMG
Minister of State
Cabinet Office 70 Whitehall London
SW1A 2AS

Paul Davies MS
Chair, Economy, Trade and Rural Affairs Committee
Senedd Cymru

20 February 2024

Dear Chair,

BORDER TARGET OPERATING MODEL

Thank you for the invitation to attend the Economy, Trade and Rural Affairs Committee on Wednesday 7 February. I enjoyed speaking to you and your members, and continuing the spirit of cooperation that I believe has defined our work with the Welsh Government.

Thank you also for your letter of Tuesday 13 February. I agreed to write and I am happy to provide clarity on the points you raised.

Landbridge Movements

You and Samuel Kurtz MS asked if the UK Government would set up further easements on the biosecurity controls for landbridge movements via Welsh ports, whereby EU goods enter GB from Ireland and continue through to the European Union.

Through the Border Target Operating Model (BTOM), we are introducing a simplified and effective system of biosecurity controls to manage the risk of landbridge movements of these goods through Great Britain. In line with the BTOM, we have already introduced pre-notification and health certification for SPS goods and will introduce physical and ID checks. Our approach minimises friction at the border and the administrative burden to traders. We are taking a pragmatic approach and will only undertake checks where they are required to protect biosecurity. However I will continue to discuss further how we make trade flow as freely as possible whilst protecting human, plant and animal health with Ministerial colleagues. I note your concerns around the potential for trade diversion.

UK Government Engagement with Welsh Organisations

We ran a comprehensive programme of engagement following the draft publication of the BTOM in April 2023. There was a series of online and physical events to which all affected parties were invited. This included major trade bodies, including the British Chamber of Commerce and the Fresh Produce Consortium, who have a Welsh contingent in their membership. These organisations were included in our engagement leading up to the implementation of the January 31st BTOM milestone and will be included in engagement

ahead of the April 30th milestone. We have also supported the Welsh Government with materials and information on the co-designed model to support their own engagement with industry. We continue to support colleagues in the Welsh government on the construction of BCP facilities in south west Wales and Holyhead which includes working closely with port operators at these sites.

Common User Charge

We expect to publish the Government's response to the '[Charging arrangements at government-run border control posts](#)' public consultation in the coming weeks. This will confirm the final policy and rates.

UK-EU Discussions

I attended and opened the joint UK / EU Domestic Advisory Group (DAG) session at the start of January. This session focused on the BTOM including a session for stakeholders which was led by Directors from the Cabinet Office and Defra. This was a good opportunity for UK and EU trade associations to engage directly with the UK Government on their outstanding queries ahead of the BTOM implementation dates.

The UK Chief Veterinary Officer has engaged with counterparts across the EU in order to resolve issues such as ensuring availability of translated Export Health Certificates ahead of the first Border Target Operating Model milestone.

Officials are continuing to engage with top trading partners across the EU having already visited Belgium, the Netherlands, Denmark and Ireland. Further engagement is planned for Italy, Spain, Poland and Germany in 2024. Cabinet Office officials will also work with EU traders and stakeholders as part of our operational testing which will be starting in February.

Indirect movements of QNIGs

Thanks to the Windsor Framework, qualifying Northern Ireland goods will benefit from full unfettered access, regardless of whether they move directly or indirectly via Ireland. Legislation amending the definition of qualifying Northern Ireland goods was laid on 31 January alongside the publication of the [Safeguarding the Union](#) command paper—on which further guidance will be published shortly.

UK-EU Discussions on Windsor Framework

We engage regularly with the EU on the Windsor Framework arrangements. Under the Windsor Framework, we have established a number of joint UK-EU fora aimed at managing implementation as well as to consider proposed upcoming EU legislation. These include five new Joint Consultative Working Group structured sub-groups, as well as the new Special Goods Body.

Samuel Kurtz MS asked in particular about involvement of the Welsh Government at the Withdrawal Agreement Joint Committee. As I touched on, in line with the devolution settlement, the United Kingdom Government is responsible for international relations and attends the Joint Committee in that capacity. Ministers in the UK Government ensure that the Welsh Government, as well as the Scottish Government and the Northern Ireland Executive, are consulted as necessary in advance. The Review of Intergovernmental Relations established, among other groups, an Interministerial Group (IMG) on UK-EU TCA implementation that has been expanded to also cover Withdrawal Agreement

implementation and wider UK-EU relations. The IMG usually meets before each TCA Partnership Council and WA Joint Committee session to give ministers from the devolved administrations the opportunity to comment on and contribute to the agenda.

Data Gathering

Overall, industry have adapted successfully to post-Brexit regimes, including the introduction of full controls on GB exports to the EU in January 2021, the subsequent staged introduction of customs controls on EU imports to GB, and the introduction of Sanitary and Phytosanitary pre-notification and health certification requirements on EU imports to GB in January 2024. I acknowledge that businesses have had to work hard to adapt to new processes and that the Covid-19 pandemic and the war in Ukraine added supply chain pressures. However, we are not aware of any businesses that have ceased trading as a consequence of the BTOM.

Looking forward, the UK Government has made comprehensive plans to monitor the impact of the implementation of the BTOM. This includes monitoring Roll-on Roll-off freight volumes across all ports, customs declarations to understand changes to commodity imports, as well as the data on pre-notification and certification, which I mentioned. This is in addition to the monitoring of issues and resolutions regarding the BTOM implementation to ensure that emerging themes which would adversely affect trade flows are identified and mitigated.

Finally, I should also explain that since our conversation my colleague The Rt Hon Steve Baker MP has assumed responsibilities for the Windsor Framework within the Cabinet Office. He is now a joint Minister of State in both the Cabinet Office and at the Northern Ireland Office. I shall be working closely with him to ensure the BTOM and Windsor Framework are well aligned and we will continue working in lockstep to deliver a trading regime that works for the whole of the UK including Wales. I would be grateful if he could be included in our future correspondence as it relates to the Windsor Framework.

I am copying this letter to Rt Hon Steve Baker MP.

Warm regards

Lory Neville-Rolfe

Baroness Neville-Rolfe DBE CMG

Paul Davies MS
Chair, Economy, Trade and Rural Affairs
Committee

21 February 2024

Dear Paul,

Consideration of proposals for Sustainable Farming Scheme

The Climate Change, Environment and Infrastructure Committee (the Committee) has agreed to undertake a short piece of work on the Welsh Government's **proposals for a Sustainable Farming Scheme** (SFS).

The Committee will be holding a stakeholder event on Wednesday 13 March to gather views on the proposals from a range of organisations and individuals. Given your Committee's shared interest in the SFS, I would like to invite your Committee to take part in the event.

To further inform our work, we will be holding oral evidence sessions with representatives from the farming and environmental sectors, among others, at our meeting on 21 March. The sessions will focus on the environmental aspects of the proposals as they relate to the Committee's remit. Should any of your Members wish to participate in the sessions, they are, of course, welcome to do so.

If you or your Committee's members require any further details, I would be happy to meet to discuss. Alternatively, the Clerking team will be available to answer any queries from you or your Clerking team.

Regards,

A handwritten signature in black ink, appearing to read 'Llyr', is centered within a light yellow rectangular box.

Llyr Gruffydd MS,
Chair, Climate Change, Environment and Infrastructure Committee

Croesewir gohebiaeth yn Gymraeg neu Saesneg.

We welcome correspondence in Welsh or English.

Lesley Griffiths MS

Minister for Rural Affairs and North Wales, and
Trefnydd

21 February 2024

Dear Lesley,

Consideration of proposals for Sustainable Farming Scheme

I thought it would be helpful to notify you that the Climate Change, Environment and Infrastructure Committee has agreed to undertake work on the proposed Sustainable Farming Scheme (SFS) insofar as it relates to the Committee's remit.

The Committee intends to complete evidence gathering by the end of March, with a view to reporting in May. I trust this will provide sufficient time for you to take account of the Committee's recommendations before finalising the SFS.

We do not anticipate inviting you to give evidence at this stage, but should this change I will ask the Clerking team to contact your office.

I am copying this letter to Julie James MS, Minister for Climate Change, and Paul Davies MS, Chair of the Economy, Trade and Rural Affairs Committee.

Regards,



Llyr Gruffydd MS,
Chair, Climate Change, Environment and Infrastructure Committee

Croesewir gohebiaeth yn Gymraeg neu Saesneg.

We welcome correspondence in Welsh or English.



Paul Davies, MS
Chair
Economy, Trade and Rural Affairs Committee
Tŷ Hywel
Cardiff Bay
CF99 1SN

20 February 2024

Dear Paul,

P-06-1388 Remove the requirement for farmers to have at least 10% tree cover to access the new Sustainable Farming Scheme

The Petitions Committee considered this petition at our meeting on 29 January 2024. It was agreed to write to request whether the issues raised can be considered as part of any future work undertaken by your Committee on the Sustainable Farming Scheme.

We are also writing to the Chair of the Climate Change, Environment and Infrastructure Committee.

In light of the work that is likely to be undertaken by other Committees on this issue, Members agreed to close the petition and thank the petitioner.

You may also wish to note that a petition calling to [scrap the Universal Actions in the Sustainable Farming Scheme](#) has amassed 10,000 signatures since it was started earlier this month. You may also be interested that another petition created this week calls to [Scrap all Welsh Government policies from Agenda 21/Agenda 2030/Sustainable Development including Net Zero](#)

Further information about the petition, including related correspondence, is available on our website at: <https://business.senedd.wales/mglIssueHistoryHome.aspx?lId=42610>

If you have any queries, please contact the Committee clerking team.

Yours Sincerely,



Jack Sargeant MS

Chair

Croesewir gohebiaeth yn Gymraeg neu Saesneg.

We welcome correspondence in Welsh or English.



Lesley Griffiths AS/MS
Y Gweinidog Materion Gwledig a Gogledd Cymru, a'r Trefnydd
Minister for Rural Affairs and North Wales, and Trefnydd



Llywodraeth Cymru
Welsh Government

Huw Irranca-Davies MS
Chair
Legislation, Justice and Constitution Committee
Senedd Cymru
Cardiff Bay
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20th February 2024

Dear Huw

Further to your letter of the 31 January 2024 regarding The Official Controls (Extension of Transitional Periods) (Miscellaneous Amendments) Regulations 2024 which were laid by the UK Government on the 9 January and came into force on the 31 January 2024, please see my response to your questions at Annex 1.

Yours sincerely,

Lesley Griffiths AS/MS
Y Gweinidog Materion Gwledig a Gogledd Cymru, a'r Trefnydd
Minister for Rural Affairs and North Wales, and Trefnydd

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Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

Annex 1

- 1. You state in your letter that the statutory instrument will be the first piece of legislation to implement the first milestone of the TOM from 31 January 2024. Could you provide further information in respect of legislation anticipated to be required to reach future milestones?**

There will be further legislation to implement the policy changes outlined in the Border Target Operating Model which are due to take effect from April 2024 and legislation over a longer timeframe to implement provisions originally scheduled for a bill in the UK Parliament. Amongst the former will be a further extension to the Transitional Staging Period to delay the application of controls in relation to goods moving to Great Britain from Ireland until a date yet to be agreed. I anticipate that many of these will be made on a GB-wide basis but will seek advice on any new legislation and inform the relevant Senedd Committees. Please see Annex 2 for further information.

There will also be changes to the Qualifying Northern Ireland Goods legislation to ensure the benefit is more squarely focused on Northern Ireland and afford Qualifying Goods unfettered access to the GB market via Ireland. Conversely, there will need to be legislation to ensure that non-qualifying goods such as Irish or EU goods which are routed through Northern Ireland are subject to checks.

- 2. You state in your letter that it was not possible to give my Committee advance notice of your intention to consent to the Regulations as the statutory instrument was received during recess. Could you indicate whether you were given advance notice by the UK Government of the proposed scope of these regulations, and if so, when you were provided with this notice?**

The Welsh Government was aware of the need to bring forward this statutory instrument as Welsh Ministers agreed the publication of the BTOM on 29 August 2023, which set out the expected timeline for introducing the TOM. However, my officials then had to ensure the relevant statutory instrument was fit for purpose and that the instrument did not impact on the Senedd's legislative competence, or the Welsh Ministers' executive competence. This was only possible once they had received sight of the final draft instrument. Whilst we will consider each piece of legislation on its merits, I anticipate going forward we will take a GB-wide approach to the remaining legislation to implement the Border Target Operating Model.

- 3. You have previously exchanged correspondence with my Committee on the relationship between official controls regulations and international obligations, particularly to WTO rules and the UK-EU Trade and Cooperation Agreement. You raised concerns that the current position may be incompatible with the UK's obligations but that this was a temporary position and that the risks of this incompatibility did not fall to the Welsh Ministers. Could you provide an update on whether and how these regulations develop this position?**

The UKG has submitted several notifications in relation to the BTOM to WTO members and, to date, no specific trade concerns have been raised. The UK Government continues to engage with WTO and EU members on matters relating to the Border Target Operating Model and we have not been made aware of any specific concerns about this legislation but will continue to notify and engage with WTO and EU members on plans for the implementation of the BTOM.

Annex 2

Expected legislative approach.

The UK Govt expects to deliver the majority of the BTOM (subject to the consent of Welsh Ministers) using six cross policy SIs (including the SI you are corresponding over) to be laid in sequence as below (list may be subject to change, including additional statutory instruments).

SI	Timing	Content
Made Negative	Laying 9 January 2024 CIF 31 January 2024	The Official Controls (Extension of Transitional Periods) (Miscellaneous Amendments) Regulations 2023 This SI will introduce certificates on certain medium risk goods from the EU, end the exemption of goods moving from the island of Ireland to GB from prenotification requirements and extend the TSP until 29 April 2024.
PH/050 Made Negative	Laying 4 April 2024 CIF 30 April 2024	The Official Controls and Phytosanitary Conditions (Amendment) Regulations 2024 (TBC) TOM applies to RoW goods and identity and physical checks are applied to EU goods based on risk. This is done through use of the TSP and pre-existing powers until amendments have been made to the OCR.
OFC/016 Draft Affirmative	Laying 26 February CIF 30 April 2024	The draft Official Controls (Fees and Charges) (Amendment) Regulations 2024 (TBC) This SI uses sections 14(2) and (3) of the REUL Act to amend the OCR. It introduces greater flexibility on the application and composition of fees and charges, whilst maintaining the requirement of cost-recovery. It enables competent authorities to administer a consistent charging model across government-run BCPs in GB.
OFC/017 Draft Affirmative	Laying 20 May 2024 CIF 8 July 2024	The Official Controls (Border Target Operating Model) Regulations 2024 Amends OCR to ensure powers are available to deliver the TOM on a long term basis and update over time, allowing for risk categorisation for animal products, checks away from the border etc.
AH/055 Made Negative	Laying 9 Oct 2024 CIF 31 October 2024	The Official Controls (Animals, Feed and Food, Plant Health etc.) (Amendment) (No.1) Regulations 2024 (TBC) Regulations are made using amended powers in the OCR following OFC/017.
OFC/011 Made Negative	TBC end 2024/early 2025	The Official Controls (Animals, Feed and Food, Plant Health etc.) (Amendment) (No.2) Regulations 2024 (TBC) Regulations are made using amended powers in the OCR following OFC/017.



Llywodraeth Cymru
Welsh Government

Paul Davies MS
Chair
Economy, Trade and Rural Affairs Committee
Senedd Cymru
Cardiff Bay
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SeneddEconomy@senedd.wales

21st February 2024

The Official Controls (Fees and Charges) (Amendment) Regulations 2024.

Dear Paul,

I am writing to inform the Committee of my intention to consent to the UK Government making and laying the Official Controls (Fees and Charges) (Amendment) Regulations 2024.

I have received a letter from the Minister of State for Biosecurity, Animal Health and Welfare, Lord Douglas-Miller, asking for consent to these Regulations. The Regulations intersect with devolved policy and will apply to Wales. The Regulations will extend to England, Scotland, and Wales and a similar request for consent has been sent to Scottish Ministers.

The Regulations will be made in exercise of the powers conferred under section 14(2) and (3) of the Retained EU Law (Revocation and Reform) Act 2023. The Regulations relate to the implementation of changes to the SPS border official controls regime, which were published in the BTOM in August 2023. They facilitate amendments needed to enable charges and fees for official controls on SPS goods in a way which reflects the new regime.

The Regulations will implement the milestones of the BTOM. The Regulations facilitate amendments needed to enable charges and fees for official controls on SPS goods in a way which reflects the new regime.

The 2024 Regulations do not commit Welsh Ministers to adopting any future UK Government position on biosecurity. The Regulations do not diminish or undermine the powers of Welsh Ministers in any way.

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Correspondence.Lesley.Griffiths@gov.wales

Rydym yn croesawu derbyn gohebiaeth yn Gymraeg. Byddwn yn ateb gohebiaeth a dderbynnir yn Gymraeg yn Gymraeg ac ni fydd gohebu yn Gymraeg yn arwain at oedi.

We welcome receiving correspondence in Welsh. Any correspondence received in Welsh will be answered in Welsh and corresponding in Welsh will not lead to a delay in responding.

Although the Welsh Government's general principle is that the law relating to devolved matters should be made and amended in Wales, on this occasion, it is considered appropriate for this instrument to apply to Wales as there is no policy divergence between the Welsh and UK Government in this matter. This ensures a coherent and consistent statute book with the regulations being accessible in a single instrument. I consider that legislating separately for Wales would be neither the most appropriate way to give effect to the necessary changes nor a prudent use of Welsh Government resources given other important priorities.

I am writing in similar terms to Huw Irranca Davies MS, Chair of the Legislation, Justice and Constitution Committee.

Yours sincerely,

A handwritten signature in cursive script that reads "Lesley Griffiths". The signature is written in black ink and is positioned above the printed name and title.

Lesley Griffiths AS/MS
Y Gweinidog Materion Gwledig a Gogledd Cymru, a'r Trefnydd
Minister for Rural Affairs and North Wales, and Trefnydd

Agenda Item 3

Document is Restricted

Empowering businesses to build green futures

Author: Ben Burggraaf, Chief Executive Officer, Net Zero Industry Wales

1. Introduction to Net Zero Industry Wales

Net Zero Industry Wales (NZIW) is a not-for-profit body which provides independent guidance and support to Welsh industries in their transition to delivering net zero.

Established in 2022, with support from Welsh Government & Welsh Industry, it aims to provide a neutral & trusted voice, whilst empowering industry to play an active role in the delivery of net zero through the uptake of low carbon technologies.

Net Zero Industry Wales seeks to foster collaboration (private & public sector) and helps to unlock investment, with the ultimate aim of making Wales the country of choice for sustainable goods and services.

2. Background

Welsh manufacturing & power sectors contribute up to 50% of the nation's carbon footprint¹. Since the closure of the coal mines, these sectors have struggled to gain access to competitively priced energy in the region and wider UK.

Welsh Coal drove the original industrial revolution and played a substantial role in shaping Wales's proud industrial & cultural heritage. Wales could be at the heart of the next Industrial Revolution.

But the path toward this, is not an easy one. The recent announcement by Tata Steel regarding the Port Talbot Steelworks will have a significant impact on not just their workforce, but their families and the surrounding communities.

But contrary to these recent events, the historical trend of industrial decline and the wider belief that decarbonisation of industry leads to job losses, there is actually a bright future for industry in Wales, if only the opportunity is unlocked now.

During the UK Parliament Welsh Affairs Committee meeting on Wednesday the 31st January 2024, Tata Steel's Global CEO & Managing Director (TV Narendran) clearly stated that if the right infrastructure (gas and/or hydrogen) were available at the Port Talbot site, there would be an opportunity to continue primary steelmaking in South Wales. The absence of an appropriately sized gas and/or hydrogen supply locally, which is available at their Dutch plant in IJmuiden, prevented Tata Steel from incorporating a DRI (Direct Reduced Iron) plant in their decarbonisation plan for the Port Talbot site.

The latter statement shows the incomplete understanding amongst stakeholders, of the current and planned infrastructure around the Tata Steel site. For example, the

¹ Source: Climate Change Committee – Progress report Reducing emissions in Wales – 2020 emission level (industry & power sectors combined value) – published June 2023

decommissioned Baglan Bay power station, which has a direct connection to the natural gas transmission network, which was able to support the generation of 500 MW of electricity, which is equivalent to ~1 GW thermal.

This currently unused connection, roughly 5 miles away from the Tata Steel site, should be large enough to support a 3 million ton per annum DRI plant (assuming ~10 GJ per ton).

The same connection is planned to link up in the long term with the UK hydrogen transmission network (Project Union) and Project HyLine Cymru, which is the proposed hydrogen pipeline between Milford Haven and Port Talbot, two Clean Growth Hubs at the heart of industry in Wales.

This pipeline, alongside the proposed CO₂ Infrastructure and the Celtic Freeport, form the backbone to the successful delivery of the South Wales Industrial Cluster Plan.

3. The South Wales Industrial Cluster (SWIC) Plan

Over the last 5 years, the manufacturing & power sectors in the South Wales region, which contributes to the overall majority of Wales's industrial emission and is one of the largest industrial clusters in the UK, has worked together to create the South Wales Industrial Cluster plan. This plan was published in March 2023².

Tata Steel's site in Port Talbot is an integral part of SWIC and they are an active partner in the Cluster Plan project and subsequent Deployment Project. Both these projects were supported by Innovate UK, as part of its Industrial Decarbonisation Challenge program.

This plan outlines an ambitious pathway, to reduce 16 million tons of CO₂ by 2040, requiring £30 billion of mainly private investment, to make this a reality. This pathway not only ensures that industry in Wales continues to produce high value goods & services, but also provides a quicker route to decarbonise, compared to the counterfactual, i.e. the continued de-industrialisation of the energy intensive industry in Wales.

A significant proportion of the emissions reduction achieved since 1990 (54% since 1990) was achieved by de-industrialisation, as manufacturing & associated emissions were offshored over this period. This isn't only globally irresponsible, but also makes the nation's supply chain less resilient and removes well paid jobs from our economy, demonstrated by the 47% reduction in manufacturing jobs over the same period³.

Wales has significant renewable energy generation potential, which is an important source of new energy and it's expected to become globally cost competitive in the long term. This will drive a new “green” industrial revolution and enable Welsh industries to prosper, be more resilient & sustainable and contribute to a more equal & globally responsible Wales.

² SWIC: A plan for green growth – March 2023

³ Aldersgate Group Report: Economic benefits of industrial decarbonisation – September 2023

4. Industrial decarbonisation pathway for South Wales

The South Wales Industrial Cluster plan outlines a decarbonisation framework that provides a pathway for the manufacturing & power sector to decarbonise.

This pathway revolves around “Five Cogs” of decarbonisation that drive the Green Industrial Revolution (see figure 1).

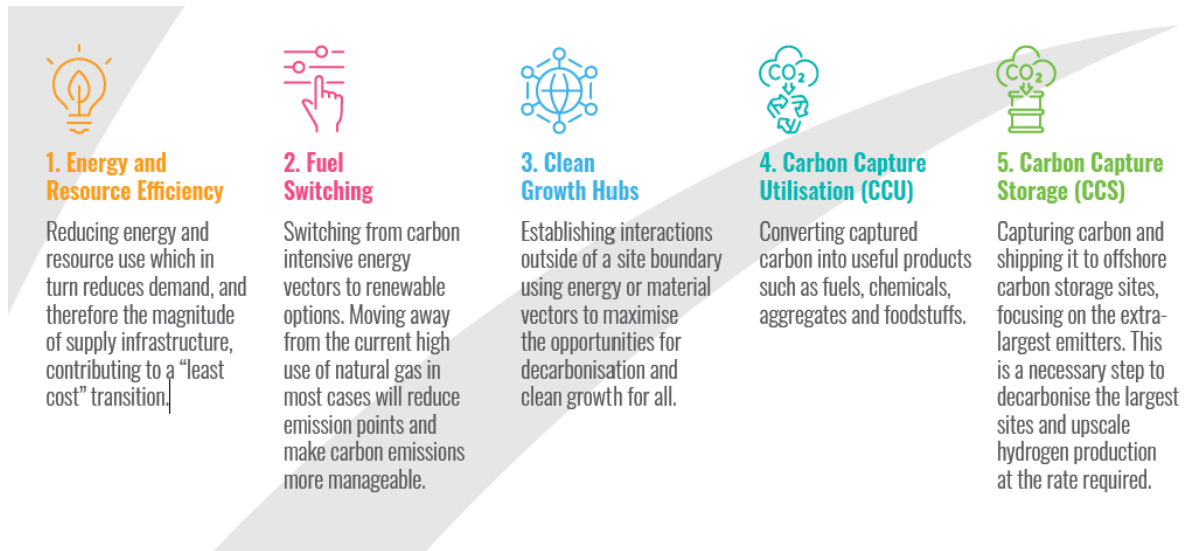


Figure 1 The five cogs of decarbonisation (source SWIC: A plan for green growth)

The detailed analysis undertaken within the SWIC cluster plan project, to develop this framework also provides a breakdown on how each of the “Five Cogs” contributes towards reducing the 16 million tonnes of CO₂ emissions (see figure 2).

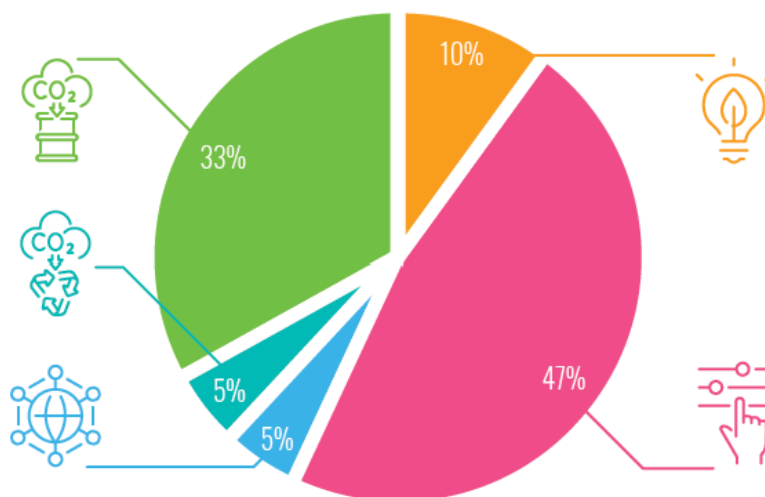


Figure 2 the contribution of each of the Five Cogs towards reducing the 16 million tonnes of CO₂ (source SWIC: A plan for green growth)

Figure 2 shows that there is a key role for the deployment of Carbon Capture & Storage (CCS) technology and Fuel Switching (enabled by hydrogen and/or electrification), which combined contribute toward meeting 80% of the targeted emission reduction.

In the case of the Port Talbot steelworks, this includes incorporating an Electric Arc Furnace and continuing the production of iron through a Direct Reduction Iron or similar technology route, as an alternative to the “traditional” Blast Furnace – Basic Oxygen Steelmaking route, currently deployed at Port Talbot.

The remaining 20% will be delivered through the other three “Cogs”, i.e. Energy & Resource Efficiency, Clean Growth Hubs and Carbon Capture & Utilisation (CCU). In the case of the Port Talbot steelworks, this includes the increase of steel scrap enabled by the Electric Arc Furnace, as well as the use of CO₂ to produce Sustainable Aviation Fuel, like implemented at a commercial scale in Ghent, Belgium and China.

The sequencing & pace of the deployment of the required port, CO₂, hydrogen and electricity infrastructure which support the realisation of the emission reduction for each of the cogs, determines the way the manufacturing & power sector in South Wales, is likely to decarbonise.

The high level sequencing between now and 2040, i.e. “the transition period”, is as follows:

Step 1. Carbon Capture & Storage combined with CO₂ shipping

Deployment of carbon capture & storage technology, which captures the CO₂ from large emitters. In the absence of an adjacent CO₂ store, these emissions need to be liquified and shipped to a store in the East coast of England (Viking cluster) or Scotland (Acorn cluster). The current projects developed in the Milford Haven Clean Growth Hub, show a potential to deploy this technology at scale, from 2030 onwards (subject to CO₂ business model support).

Step 2. Hydrogen distribution pipeline

Construction of a hydrogen pipeline (Project HyLine Cymru) between Milford Haven and Port Talbot Clean Growth Hubs, of which the Steelworks is an integral part. This pipeline is enabled by step 1, i.e. the CO₂ shipping infrastructure and allows the development of a “blue” hydrogen production facility, which needs carbon capture & storage infrastructure (step 3). The work that has been undertaken within the SWIC Deployment project shows that a pipeline could be in place from 2032 onwards (subject to regulatory approvals). The ultimate aim of this dedicated pipeline, is to link with the proposed hydrogen “back bone” for the UK, also known as Project Union (developed by National Gas Transmission).

Step 3. Blue hydrogen production

Construction of blue hydrogen plants enabled by the proposed hydrogen pipeline and UK Government's hydrogen business model support. These blue hydrogen plants produce low carbon hydrogen at a scale & consistency, needed to allow industry to “fuel switch” in the Milford Haven and Port Talbot Clean Growth Hubs (if appropriate), which sit within the Celtic Freeport area. The pre-feasibility studies of the blue hydrogen project have been completed as part of the SWIC deployment project and further work on this is on hold, until the CO₂ and hydrogen infrastructure projects have acquired more certainty (step 1&2).

Step 4. Industrial emitters switch to hydrogen, where electrification isn't an option

Fuel switch industrial emitters to hydrogen, to minimise the use of unabated fossil fuels and associated CO₂ emissions. The large-scale low carbon hydrogen generation in the Milford Haven Clean Growth Hub, will allow industry in this hub to further decarbonise using hydrogen, as well as hydrogen to be blended into the natural gas transmission system (up to 20%). The proposed pipeline between Milford Haven and Port Talbot, will also enable the further decarbonisation of the Port Talbot steelworks, port and the production of sustainable aviation fuel from captured CO₂. The hydrogen business model support, ensures that the cost of hydrogen for the end user, will be the same as the cost of natural gas.

Step 5. Industrial emitters switch to electricity

Electrify industrial processes where hydrogen isn't the best solution for businesses in the medium & long term or is not appropriate. The electrification and the associated emission reduction is enabled by the required electricity grid re-enforcement work, the proposed electrification business models, and full decarbonisation of the electricity grid by 2035. It is anticipated that any significant electrification of industrial processes will not take place before 2035, based on the current timescales for grid investments (10 years+). The proposed construction of an Electric Arc Furnace at Port Talbot steelworks would be an exception to this. The aforementioned business model support is needed, to ensure that businesses that don't get financially penalised, as the cost of electricity per unit of energy is still significantly larger than the equivalent fossil fuel energy source.

In parallel to the 5 steps outlined above, the deployment of the Floating Offshore Wind projects will commence, of which the first seabed lease round has been launched by the Crown Estate (in total 4.5GW), with at least, a further 12GW in the pipeline beyond that. The 16.5 GW of wind energy is enough to displace at least 50% of the fossil fuels used in industry (2020 levels) and reduce Wales's dependence on fossil fuels, in line with the Climate Change Committee's balanced pathway.

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

It's important to note that fossil fuels still play an important role during the transition period and beyond 2040, given the fact that the UK is dependent on fossil fuels for 78% of its energy needs⁴ and in the ambitious, Balanced Pathway to net zero, oil and fossil gas are forecasted to still play a significant role in the UK's energy mix in 2050, to ensure it's affordable, resilient as well as sustainable (also known as the Energy trilemma).

The floating offshore wind developers and their partners are not only planning to supply the wind energy into the electricity grid, but also looking to produce green hydrogen. The production of green hydrogen at GW scale is unlocked by the proposed hydrogen pipeline between Milford Haven & Port Talbot, the connection into the national hydrogen backbone (project Union) and is complementary to the blue hydrogen production.

This two “energy vector” (electricity & hydrogen) approach, will ensure that curtailing of wind energy is minimised (i.e. stopping wind farms from generating when there isn't enough electricity demand to match the generation), as well as the deployment rate of Floating Offshore Wind technology isn't determined and/or limited by the development of the electricity grid.

It's well documented that there is also a significant potential for Welsh industry to play a key role in the supply chain of the construction of the Floating Offshore Wind (FLOW) farms, deployed in the Celtic Sea.

This could not only ensure that a lot of the social value associated with the development of these wind farms, is retained in Wales, but if Welsh industry is decarbonising in parallel with the deployment of FLOW in the Celtic Sea and increasingly is using this energy source to power Welsh Industry, it would also decrease the “embedded carbon” associated with the construction of these wind farms. This will accelerate the impact these wind farms will have on Welsh, UK and global emissions.

⁴ House of commons Environmental Audit committee, Accelerating the transition from fossil fuels and securing energy supplies, December 2022

5. Making the South Wales Industrial Cluster plan a reality

The SWIC plan outlined in the previous paragraphs, requires £30 billion of private investment⁵, over a period between 2025 – 2040. This equating to an average investment rate of £2 billion per annum.

Alongside this, there is the deployment of the Floating Offshore Wind (FLOW) technology in the Celtic Sea, with each GW requiring ca. £3 billion of investment. With 16.5GW in the pipeline, this would need at least a further £50 billion of investment to deliver.

This level of investment in industrial decarbonisation, alongside the deployment of FLOW is unprecedented and requires a high level of coordination & planning, delivered through private-public sector partnerships, to ensure that:

- The private investment can be attracted with the appropriate level of UK Government revenue support (CO₂, hydrogen, electricity business models, Contracts for Difference, etc.);
- Planning and environmental consents can be secured in a timely fashion, to reach financial investment decisions;
- Wales has the capability to manufacture materials & sub-components and people to construct, build & maintain the assets, which ensures that the social value is retained in Wales.

In recognition of this need to coordinate and plan, Net Zero Industry Wales (NZIW) has been tasked, to lead & support the delivery of the decarbonisation plans of the Welsh Industrial Clusters (SWIC & NEWID) and its partners.

Each of its NZIW's members have signed up to the following pledge:

“The Net Zero Industry Wales members are committed to transition towards producing more sustainable goods & services in Wales, as set out in the cluster plan(s), at a pace needed to meet the legally binding targets.

However, in a globally competitive environment, Welsh Industry needs the active support of UK, as well as Welsh Government, to create the Supportive Culture, Policy & Regulatory frameworks and Attractive Infrastructure that creates a level playing field, encourages the significant investment needed to make the transition to Net Zero and prevents carbon leakage.

This investment will build on Wales's Industrial Heritage and power the Green Industrial Revolution needed, to create a trusted, sustainable, prosperous & resilient industry that the citizens of Wales can continue to be proud off.”

⁵ SWIC: A plan for green growth – March 2023

5.1 UK Government support

From its inception, NZIW has been working in collaboration with UK & Welsh Government and its members, supported by Innovate UK grant support, to develop a credible solution to liquify & ship CO₂ from South Wales to one of the industrial clusters that are either part of Track 1 or 2 of the cluster sequencing program led by the Department of Energy Security & Net Zero (DESNZ).

This is a priority because without local geological carbon storage opportunities, the shipping of CO₂ is the only way that emitters in SWIC can access storage for captured CO₂.

To date Innovate UK has committed roughly £20 million of investment to develop these solutions. This grant funding has been matched by private sector investment as part of the Industrial Decarbonisation Cluster program.

As outlined in the South Wales Industrial Cluster plan, deployment of Carbon Capture & Storage technology is the first main step in the delivery of this plan. Therefore, developing a credible solution & demonstrating that UK Government revenue support through the CO₂ business models, represents “Value for Money” for the UK tax payer, will enable one of the largest industrial clusters in the UK, to access the £20 billion of financial support to deploy Carbon Capture & Storage technology and hence enable a just transition.

In the summer of 2023, NZIW commissioned an economic study to investigate whether liquifying & shipping CO₂ represents value for money for the UK tax payer and therefore justifies UK treasury support.

The report published in December 2023 concluded that there is a strong economic case for CO₂ shipping, as the deployment of a shipping solution, is forecasted to deliver £18.9 billion of GVA contribution over 20 years compared to the counter narrative, i.e. continued de-industrialisation of South Wales.

To unlock this social value and £8.6 billion of private investment, £2.4 billion of revenue support is forecasted to be needed over 20 years. This equates to 12% of the £20 billion of support that the UK treasury has already committed to support the deployment of carbon capture & storage technology in the UK and equivalent to Wales's proportional contribution to the total UK emissions covered by the UK Emissions Trading Scheme.

To date, non-pipeline-transport (NPT) solutions, i.e. the shipping of CO₂ hasn't secured, firm support of the UK Government. However DESNZ has announced in its CCUS vision that subject to certain conditions, it's planning to support NPT solutions from 2025 onwards following a consultation in 2024, with the aim to deploy the at scale beyond 2030.

Given the significance of the South Wales Industrial Cluster and that it has no geological storage for CO₂ within pipeline range, the cluster needs access to storage via ship, in order to support the delivery of Welsh and UK Governments legally binding decarbonisation targets for 2030 and beyond.

To unlock the opportunity of shipping CO₂, the UK Government needs to allow emitters that can only access geological storage by ship, like those in South Wales, to access business model support. More specifically the ask is to allow existing Track 2 clusters like the Scottish (Acorn) and/or Humber (Viking) clusters, to include NPT solutions in their Anchor Plans, which DESNZ requests the Track 2 clusters to produce, in December 2023, alongside the CCUS vision announcement.

Furthermore, UK Government should support the development of a CO₂ liquefaction port infrastructure in South Wales and select SWIC as the pioneer pilot project in the UK, both as part of the Celtic Freeport development and demonstrate CO₂ shipping at scale, ahead of full deployment from 2030 onwards.

Delivering this will help unlock the shipping of CO₂ as a national opportunity and support the hydrogen economy in Wales (Step 2). Both of which are key enablers of a future decarbonised electricity system.

To enable the development of a hydrogen pipeline between Milford Haven and Port Talbot, (connecting the two Celtic Freeport ports) and attract the necessary investment, Wales & West Utilities need approval from the energy market regulator OFGEM. This to allow them to recover the significant investment in this pipeline, through their customer's bills, over its asset life (45 years).

The study “Future Energy Grids for Wales”⁶ commissioned and published by the Welsh Government, clearly outlines a need for a hydrogen transmission & distribution network to transport the hydrogen generated in Wales. To that end, NZIW would like to see OFGEM making the necessarily changes in gas licencing regulations, in order to allow companies like Wales & West Utilities to recover the investment, in the same way as investments into natural gas infrastructure for the next Price Control period (2026-2031).

Further delays in providing clarity on whether the South Wales Industrial Cluster can access the CO₂ business model support and whether investment's in hydrogen infrastructure can be recovered through customer's bills, will risk the economic impact to be delayed at best, at worst to be unrealised, as allocated investment is committed to other parts of the UK, Europe and or the world.

⁶ Future Energy Grids for Wales – Q2 2023

5.2 Planning and environmental consents

Once private investment is committed and, enabled by estimated £2.4 billion of UK Government revenue support over 20 years, it's important that the planning and environmental consenting process is delivered in a timely fashion to meet the DESNZ milestones to govern the cluster sequencing program and reach financial investment decision by the private sector.

The investment programme could reach a size of approximately £6 billion per annum and includes the deployment of Floating Offshore Wind at a rate of 1GW per annum. This requires an appropriate level of resource to be available for public bodies to undertake their statutory duties. Currently, it is likely that the planning & environmental consenting process is on the critical path for delivering decarbonisation & renewable projects.

Net Zero Industry Wales welcomes open, transparent and collaborative engagement with public bodies (e.g. Natural Resources Wales, Planning & Environment Decisions Wales and local authorities), to support delivery of the planning & consenting process in a timely way. The latter would in many cases require additional resources to be brought in, which could potentially be privately funded, if the respective governments can provide policy certainty for such a transformative and unprecedented investment program.

5.3 Skills and capability to deliver the large investment program

Wales may struggle to deliver the scale of investment, outlined in the previous paragraphs, once the financial commitment are made by the companies, without further forward planning and anticipatory investment, to maximise the potential social value it can create within Wales's communities.

On the backdrop of decades of industrial decline, the unprecedented scale of investment needed to turn this around, Wales's capability to construct, operate & maintain the assets and associated infrastructure, is likely to be severely challenged, without intervention.

It's not easy and straight forward, to deliver investment programs of £300-£400million per year. This is of comparable size to Tata Steel's investment plan, which aims to deliver a £1.2 billion investment in 36 months. If the scale is increased to multiple billions of pounds per year, as outlined in the previous paragraphs, the challenge is greater still.

To deliver this unprecedented level of transformation, Wales will need skilled workers. So, there are huge opportunities for up-skilling people ahead of these investments over the next couple of years in anticipation of this demand, while creating well-paid, quality jobs for our future generations.

Net Zero Industry Wales would advocate to train and support the individuals, families and wider communities affected by Tata Steel's announcement and get them ready & trained to

construct, operate and maintain the new low carbon facilities and infrastructure that are planned to be built over the next five years.

A starting point for this would be to create an individual skills “passport”, which is externally accredited & verified and recognises the knowledge & skills acquired by learning on the job or internal courses, which aren't necessarily covered by accredited qualifications. This would allow these skills to be more easily transferred between employers across Wales & beyond.

6. Final comments

As Net Zero Industry Wales's Chief Executive Officer, one of my main priorities is ensuring that this unprecedented level of investment becomes a reality, whilst ensuring that Wales has the right investment environment and skilled people to deliver these projects.

It's my firm belief that maintaining the current momentum or even accelerating the implementation of the South Wales Industrial Cluster plan, will enable the economic impact of Tata Steel's announcement to be mitigated in the medium to long term, as well as, shorten the period that the impact has in the short term.

Wales has the potential to become the country of choice for sustainable goods and services.

We can do this, if the resources available & urgency, matches the scale of the ambition!

Evidence Paper: Decarbonisation in the UK Steel Industry and Tata Steel's Port Talbot Decision

Dr. Clare Richardson-Barlow, University of Leeds

Dr. Clare Richardson-Barlow is a Lecturer at the University of Leeds and a Co-Investigator at the UK Greenhouse Gas Removal Centre. With 15 years of experience researching and working as a political economist, Clare specialises in climate justice, energy transitions, and industrial decarbonisation. Her interdisciplinary expertise spans the Asia-Pacific, Europe, and North America. Clare previously worked for the Centre for Research into Energy Demand Solutions (CREDS) where she researched steel industry decarbonisation. Prior to entering academia, for many years Clare worked at internationally focused policy research organisations in Washington, D.C. Clare has contributed to multiple publications and engages with government and media on global energy transitions. She holds a PhD from the University of Leeds (UK), an MA from Tsinghua University (PRC), and a BA from Pacific University (USA).

Introduction

The planned job cuts at Tata Steel's Port Talbot facility mark a significant moment in the UK's steel industry, underscoring the complexities of societal decarbonisation. While Tata Steel's collaboration with trade unions and the government, including the £130 million support package, indicates an awareness of transition complexities, there is room for a more structured approach. The historical context of steel plant closures brings to light the profound socio-economic impacts on workers and communities. Addressing the broader impacts on jobs and the local economy requires a comprehensive and considerate strategy that aligns with both decarbonisation goals and the needs of affected communities. The transition to societal decarbonisation, propelled by environmental imperatives, places a spotlight on the tension between job preservation and environmental sustainability, emphasising the importance of a just transition that protects workers and communities. This can be achieved through collaborative planning, social interventions, and retraining programs, as evidenced by successful models in Europe.

Energy justice and just transitions are vital in the context of the UK steel industry's decarbonisation. This paper examines these concepts in relation to Tata Steel's decision to close the Port Talbot plant and the broader decarbonisation efforts in the steel sector.

Decarbonising in a Just Manner

In the context of the Tata Steel case and its implications for Wales, energy justice and just transitions are crucial concepts. Energy justice ensures equitable access to energy and fair sharing of both benefits and burdens, involving public participation in decision-making. Just transitions focus on equitable societal shifts towards sustainable energy, particularly protecting the rights and needs of affected workers and communities.¹ For government representatives, these concepts are vital in ensuring that environmental strategies, like those affecting Tata Steel and Port Talbot, are balanced with the social and economic welfare of the local communities and workforce.

A just transition to decarbonisation in the steel industry involves more than just technological shifts; it is about ensuring social equity and sustainability. This means actively involving workers and communities in decision-making processes and ensuring that the transition does not disproportionately impact vulnerable groups. It is about creating opportunities for retraining and new employment within emerging green industries, thus safeguarding livelihoods and community stability.

Furthermore, this transition requires aligning with broader sustainability goals, such as reducing environmental impact while promoting economic development and public health. Transparency in policymaking and implementation is key to building trust and ensuring accountability. For Tata Steel, this would involve clear communication and collaboration with stakeholders, from government representatives to local communities, ensuring that the shift to greener steel production is both environmentally beneficial and socially responsible. The involvement of Unions in this process is vital, as are government and public consultations.

Tata Steel's Decision: A Just Transition Perspective

Tata Steel's decision to close blast furnaces at Port Talbot, shifting towards Direct Reduced Iron (DRI) and Electric Arc Furnace (EAF) technologies, is a significant step towards decarbonising steel production and aligning with net zero carbon emission goals. The move to greener steel production methods aligns with the industry's decarbonisation goals, reducing the domestic demand for coking coal.² The Tata Steel-Port Talbot situation underscores the dynamic changes in industry needs and the importance of aligning with environmental objectives.

Expanding on the just transition perspective, Tata Steel's strategy reflects a broader global trend in the industry towards sustainable practices. This transition, while environmentally necessary, raises critical questions about the future of steelworkers and the communities that have grown around these industries. The challenges are not just about job losses, but also about preserving the identity and heritage of these communities, deeply intertwined with the steel industry over the last century.

In this regard, Tata's commitment to future investments and collaboration with stakeholders going forward is crucial. There is an important opportunity here to illustrate a model for how industries can navigate the complex terrain of economic, environmental, and social responsibilities while undergoing these significant transformations. This sets a precedent for other companies facing similar challenges and highlights the importance of a comprehensive approach to industry-wide changes.

Criticisms from a Justice Perspective

Critics of Tata Steel's decision to transition towards greener technologies have raised significant concerns about the socio-economic impacts, particularly job losses and the inadequacy of job replacements. Critics emphasise the need for a comprehensive approach that includes effective retraining programs, financial assistance, and the creation of new opportunities in emerging green sectors.³ These concerns underscore the importance of balancing environmental goals with social implications, advocating for a just transition that considers the workforce's needs and community stability.

Furthermore, the criticism extends to the strategic aspects of this transition. There is a belief that more proactive investment and state support could mitigate the projected job losses. The move away from primary steelmaking in the UK and increased reliance on imported steel, potentially with higher carbon footprints, is seen by some as a strategic misstep. Further, Tata Steel's decision to close two blast furnaces while simultaneously opening a new blast furnace in India, has sparked accusations of hypocrisy.⁴ Critics argue that Tata's actions contradict its stated commitment to reducing carbon emissions; but this decision also underscores the differing approaches to carbon emissions globally, with the UK focusing on stricter emission controls and transitioning to greener steel production methods compared to some emerging markets.

Unite, a major union representing workers at Tata Steel's Port Talbot, has criticised the proposed closure of the plant's blast furnaces and the shift to electric arc furnaces. They argue that the decision jeopardises jobs and the UK's steel self-sufficiency, emphasising the importance of the steel industry for national security and the economy.⁵ Unite further advocates for government intervention and investment to support the industry's transition to green steel, insisting on job guarantees and a focus on growth. They highlight the market potential for low-carbon steel and call for a more robust strategy to preserve the UK steel industry and its workers.

Under Unite's alternative proposed plan⁶, the UK government would invest £12bn over 12 years in the steel industry, with the aim of self-funding through increased tax receipts within a decade. The proposal includes maintaining blast furnaces during a transition to decarbonised steelmaking using electric arc and direct reduced iron furnaces, which could utilise green hydrogen. Additionally, the plan emphasises the need for government subsidies to offset high energy costs in the UK steel industry and calls for prioritising the sector for enhanced National Grid connections to facilitate the move to green steel production.

In response to these many criticisms, it is vital to recognise the need for a balanced approach in decarbonisation efforts. There is a real need for a sustainable industrial strategy that harmonises job preservation with environmental objectives. The transition to environmentally friendly technologies should be integrated with dedicated support systems for the affected communities. This means not only focusing on environmental targets but also ensuring robust mechanisms for retraining, financial support, and job creation in green sectors, ensuring that the transition is both environmentally and socially responsible.

Utilising justice in decarbonisation efforts does not stop there, however. The role of both Tata and the National government highlight the challenge of balancing these sorts of strategic decisions with local realities: The handling of Tata Steel's decision could have been improved by both the company and the government with more proactive and collaborative strategies. Tata could have engaged more deeply with stakeholders, including unions and local communities, to develop a more comprehensive transition plan that addresses job losses and economic impacts. Greater transparency and communication about the decision-making process and future plans might have mitigated some early concerns and debates. On the UK government's side, stronger support in terms of funding and policies⁷ to facilitate a just transition, focusing on retraining programs and economic redevelopment of affected areas,

would have been beneficial. There are also deeper structural issues impacting the steel industry, such as high electricity prices, which will continue to have negative impacts until they are adequately addressed. A more holistic, 'all of the above' approach would have helped balance the environmental objectives with socio-economic needs.

European Adaptation to Decarbonisation

European steel manufacturers, including British Steel and Tata Steel UK, are actively adapting to decarbonisation through various strategies.⁸ These strategies collectively represent a comprehensive approach to reducing the environmental impact of steel manufacturing in Europe. For instance:

1. **Hydrogen-based Steelmaking:** SSAB in Sweden is pioneering the HYBRIT⁹ project, aiming to replace coking coal, traditionally used in iron ore-based steel making, with hydrogen. This project is a collaboration between SSAB, LKAB (a mining company), and Vattenfall (an energy company). This facility produced the world's first fossil fuel-free steel pellets in 2021, displaying a significant leap in sustainable steel production. Scheduled to supply low emission steel by 2026, the plant's products have already attracted buyers like Volvo Cars and Volvo Group, which underscores the growing market demand for environmentally responsible steel.
2. **Energy Efficiency:** ArcelorMittal¹⁰, one of the largest steelmakers in the world, has initiated various projects across its European plants to enhance energy efficiency, including the use of waste gases to generate electricity.
3. **Circular Economy Practices:** Tata Steel in the Netherlands¹¹ is focusing on recycling and sustainable production practices, aiming to create a more circular economy in their operations.
4. **Carbon Capture & Storage:** Elsewhere in the UK, British Steel is investigating the implementation of Carbon Capture and Storage (CCS) technology at its Scunthorpe facility, aiming to notably reduce its carbon emissions as part of a wider environmental initiative.¹²

These examples illustrate the diverse approaches being taken regionally to address the challenges of decarbonising the steel industry. Adopting a diverse range of methods for steel industry decarbonisation, like practices seen in Europe, could be beneficial for the UK. This approach would include various technologies and strategies, such as electric arc furnaces, direct reduced iron furnaces using green hydrogen, and enhanced recycling methods. A multipronged strategy allows for flexibility and adaptability, catering to different operational needs and market conditions, which could be crucial in successfully transitioning the industry to more sustainable practices.

Implications of UK's Strategy on Tata Steel

The UK's strategy for achieving net zero by 2050 prioritises decarbonising industry, supported by national policy measures like the "Ten Point Plan for a Green Industrial Revolution"¹³ and £100 billion infrastructure spending.¹⁴ These efforts complement UK Steel's roadmap to net zero¹⁵ and the UK Net Zero Strategy.¹⁶ In heavy industries, engagement with national policies

is evident through decarbonisation roadmaps and action plans. The Climate Change Committee's recommendations for a 78% reduction in emissions by 2035¹⁷ are central to this strategy, which is a long-term process needing sustained financial, political, and social commitment.

The UK government's Industrial Decarbonisation Strategy¹⁸, with its 2050 net-zero emissions target, emphasises investing in low-carbon technologies and enhancing energy efficiency across industries.¹⁹ It particularly focuses on transitioning to electric and hydrogen-based processes, backed by carbon capture, utilisation, and storage (CCUS) technologies. This strategic blueprint aims to foster innovation in low-carbon industrial solutions and encourage private investment, while also building a supportive policy framework while simultaneously enhancing industrial clusters around the country.

For sectors like steel—that are critical to achieving the UK's net-zero ambition—the strategy outlines specific plans for reducing their carbon footprint. This includes support for transitioning to low-carbon production methods, promoting energy efficiency, and investing in sector-specific technologies. Additionally, the strategy recognises the vital role of carbon capture and storage in mitigating emissions from heavy industries, necessitating substantial investments and compliance with environmental regulations for companies like Tata Steel. This approach presents both challenges and opportunities, necessitating strategic adaptation to new production methodologies and market demands, reflecting the complex nature of aligning the steel industry with national environmental objectives.

The financial investments required for adapting to the UK's decarbonisation strategy involve significant capital for developing and implementing cleaner technologies, such as electric arc furnaces or hydrogen-based steelmaking. These investments are substantial as they often involve overhauling existing infrastructure or building new facilities. Strategic adaptation includes rethinking production processes, supply chains, and market strategies to align with environmental goals and evolving market demands. Tata Steel's decision, while economically challenging, reflects a response to these requirements, balancing long-term environmental sustainability with the immediate financial implications of transitioning to green steel production. This alignment with the UK's decarbonisation goals, despite economic consequences, highlights a commitment to environmental responsibility, potentially setting a precedent in the industry.

Domestically there are other challenges to steel industry decarbonisation, beyond the financial investment and jobs impacts discussed. Techno-economic analyses²⁰ indicate that steel scrap recycling in the UK is the most cost-effective and low-emission option for green steelmaking until the early 2030s. Hydrogen-based steelmaking offers lower emissions and costs compared to CCS methods, aligning with global decarbonisation priorities. However, UK steel's competitiveness is challenged by high electricity prices and uneven carbon costs. Therefore, addressing these cost challenges and adopting coordinated international actions, like market creation for green steel and export tariffs on scrap, is essential for a competitive, decarbonised UK steel industry.

The UK steel industry's future hinges on its decarbonisation strategy, which requires government support to align with the net zero pledge while addressing the knock-on impacts of factors like electricity pricing. The EU and Sweden's support for the HYBRIT steel plant, producing fossil fuel-free steel, exemplifies leading efforts in this domain. The UK faces a crucial opportunity to become a front runner in net-zero steel production, backed by government investment and strategic alignment with industry standards. This transition will not only position the UK as a climate leader but also catalyse renewable energy infrastructure, supporting a broader energy transition and creating new job opportunities in green industries. The economic and social stakes are high, emphasising the necessity of decisive and supportive government actions for the steel industry's future.

Global Impacts

In the context of Tata Steel's transition plans, the concern of carbon leakage²¹ is significant among critics. Carbon leakage occurs when efforts to reduce emissions in one country result in an increase in emissions in another, often due to the relocation of industry or the importation of products from less regulated regions. For Tata Steel, transitioning to greener production methods in the UK could potentially lead to reliance on steel imports with higher emissions, potentially undermining the overall environmental benefits. To address this, implementing global standards, conducting comprehensive life-cycle assessments, and employing carbon pricing mechanisms are crucial. These measures ensure that carbon reduction efforts are genuinely global and not counteracted by increased emissions elsewhere, thereby maintaining the integrity and effectiveness of decarbonisation initiatives.

The UK's carbon pricing mechanism can play a pivotal role in addressing carbon leakage related to Tata Steel's transition, as well as to broader industrial transitions. This mechanism imposes a cost on carbon emissions, incentivising companies to reduce their carbon footprint. In the context of Tata Steel, it encourages the adoption of cleaner production methods domestically rather than offshoring high-emission activities. This system also ensures that imported steel, potentially with higher carbon content, is less economically attractive compared to locally produced, lower-emission steel. Thus, carbon pricing can effectively align financial incentives with environmental goals, promoting sustainable practices within the steel industry.

The UK's planned implementation of a Carbon Border Adjustment Mechanism (CBAM) by 2027²² is a significant step in supporting its decarbonisation drive. This mechanism will apply a comparable carbon price to imports like steel and aluminium, addressing carbon leakage by ensuring emissions reductions in the UK are not offset by higher emissions from imported goods. This approach underlines the UK's commitment to both environmental integrity and industrial competitiveness in the transition to net zero. The CBAM will consider the carbon emitted during production and the carbon price gap between the UK and the exporting country, reinforcing the UK's position in reducing global emissions and promoting investment in decarbonisation technologies.

Tata Steel's decisions in the UK are also likely to have widespread implications for the global steel market, prompting adjustments in supply chains and influencing material sourcing and distribution strategies. Such strategic shifts could lead to new partnerships and coordination

strategies, impacting suppliers and consumers globally. This reflects the broad impact of decarbonisation efforts in various industries, where changes in production strategies often ripple through global supply chains, altering sourcing, logistics, and market dynamics. This scenario underscores the interconnectedness of industries worldwide and the inevitable adjustments required in the transition to a greener economy.

Conclusion

The transition to green steel, exemplified by Tata Steel's decision to close Port Talbot, is pivotal for the UK steel industry. Balancing environmental sustainability with social equity and economic viability is crucial. Government support and industry collaboration will play significant roles in this transition.

Tata Steel's initiative to transition to green steel, while challenging, is a commendable step towards decarbonisation. This decision not only addresses environmental concerns but also sets a precedent for industry-wide transformation. It is important to recognise the complexities involved in balancing environmental goals with the social and economic impacts on workers and communities. Navigating the challenges of industry decarbonisation requires vital support from the government and active collaboration within the industry. Enhancing these aspects can lead to a significant transformation in the industry and demonstrate a strong commitment to decarbonisation goals. Tata Steel's commitment to this difficult yet necessary change underscores the importance of prioritising long-term sustainability alongside immediate economic considerations.

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² Pimm, A., Garvey, A., Norman, J., Gale, W., Richardson-Barlow, C. 2022. "Cumbria mine: is there a technical need for new coal mines in the UK?" CREDs Blog. Available from: <https://www.creds.ac.uk/cumbria-mine-is-there-a-technical-need-for-new-coal-mines-in-the-uk/>

³ McLachlan, C. 2024. "What a fair deal for ex-steelworkers would look like as the industry decarbonises." *The Conversation*. Available from: <https://theconversation.com/what-a-fair-deal-for-ex-steelworkers-would-look-like-as-the-industry-decarbonises-221797>

⁴ Lawson, A. 2024. "'Hypocrisy': Tata builds vast India furnace despite Port Talbot emissions claims". *The Guardian*. Available from: <https://www.theguardian.com/business/2024/jan/24/unions-accuse-tata-of-hypocrisy-over-port-talbot-closure-green-claims#:~:text=The%20owner%20of%20the%20Port,Wales%2C%20costing%20thousands%20of%20jobs.>

⁵ Davies, R. 2024. "'A golden opportunity': Port Talbot fights to keep its steelmaking tradition alive." *The Guardian*. Available from: <https://www.theguardian.com/business/2024/jan/07/port-talbot-fights-to-keep-furnaces-burning>

⁶ Unite. 2024. "A Workers' Plan for Port Talbot." Available from: <https://www.unitetheunion.org/campaigns/the-fight-for-steel/unites-workers-plan-for-steel>

⁷ Richardson-Barlow, C., Pimm, A., Ambrosio-Albala, P. 2022. "High fossil fuel prices mean UK cannot delay transition to low emissions steel." *The Conversation*. Available from: <https://theconversation.com/high-fossil-fuel-prices-mean-uk-cannot-delay-transition-to-low-emissions-steel-183307>

⁸ Taylor, B. 2023. "British Steel seeks buy-in on EAF Conversion." *Recycling Today*. Available from: <https://www.recyclingtoday.com/news/british-steel-jingye-bof-eaf-conversion-recycling-informational-meetings-decarbonization/>

⁹ See more on SSAB: <https://www.ssab.com/en-gb/fossil-free-steel/insights/hybrit-a-new-revolutionary-steelmaking-technology>

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- ¹⁰ See more: <https://europe.arcelormittal.com/sustainability/xcarb/RRP/flat/aranja-decarbonising-steel#:~:text=ArcelorMittal%20has%20set%20a%202030,Scope%201%20and%202%20basis>.
- ¹¹ Tata Steel Netherlands: <https://www.tatasteelnederland.com/nieuws/en/tata-steel-nederland-submits-green-steel-plan-with-emphasis-on-reducing-emissions#:~:text=Circular%3A%20Tata%20Steel%20Nederland%20is,dependent%20on%20primary%20raw%20materials>.
- ¹² British Steel: <https://britishsteel.co.uk/news/british-steel-forges-partnership-with-drax-to-support-world-leading-carbon-capture-project/>
- ¹³ HM Government. 2020. "The Ten Point Plan for a Green Industrial Revolution." Available from: <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>
- ¹⁴ HM Government. 2020. "National Infrastructure Strategy." Available from: <https://www.gov.uk/government/publications/national-infrastructure-strategy>
- ¹⁵ British Construction Steelwork Association. 2021. "UK Structural Steelwork: 2050 Decarbonisation Roadmap." BCSA: London. Available from: <https://bcsa.org.uk/resources/sustainability/steelwork-decarbonisation-roadmap/>
- ¹⁶ Department for Business. 2021. Energy & Industrial Strategy, Net Zero Strategy: Build Back Greener. Available from: <https://www.gov.uk/government/publications/net-zero-strategy>
- ¹⁷ Department for Business, Energy & Industrial Strategy. 2021. "UK enshrines new target in law to slash emissions by 78% by 2035." Available from: <https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>
- ¹⁸ HM Government. 2021. "Industrial Decarbonisation Strategy." Available from: https://assets.publishing.service.gov.uk/media/6051cd04e90e07527f645f1e/Industrial_Decarbonisation_Strategy_March_2021.pdf
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- ²⁰ Richardson-Barlow, C., Pimm, A.J., Taylor, P.G., and Gale, W.F. 2022. "Policy and pricing barriers to steel industry decarbonisation: A UK case study." *Energy Policy*. Volume 168. Available from: <https://doi.org/10.1016/j.enpol.2022.113100>
- ²¹ Eveleigh, R. 2024. "'It's a betrayal': Port Talbot anger over Tata Steel's decision to close furnaces." *The Guardian*. Available from: <https://www.theguardian.com/business/2024/jan/19/port-talbot-anger-over-tata-steel-decision-close-furnaces>
- ²² HM Treasury and The Rt Hon Jeremy Hunt MP. 2023. "New UK levy to level carbon pricing." Available from: <https://www.gov.uk/government/news/new-uk-levy-to-level-carbon-pricing>

Agenda Item 5

Future of Welsh Steel

Evidence from Karen Turner Centre for Energy Policy, Strathclyde University & Max Munday, Welsh Economy Research unit, Cardiff Business School to the Welsh Parliament, Economy, Trade and Rural Affairs Committee.

20th February 2024

In a [2020 CEP policy briefing](#) we considered the contribution of steel manufacturing to the Welsh economy and how new technological opportunities around decarbonising steel production – with opportunities to service the transitioning economy - might affect this contribution and the pattern of environmental effects connected to the industry. We addressed a series of factors at the time in connection with the future evolution of steelmaking in Wales. We set these in terms of considering the current economic contribution of the industry's primary steel production with focus on Port Talbot, setting this contribution against the associated point source emissions. This enabled consideration of the potential impacts and trade-offs in considering both the domestic impacts of industry change on jobs, incomes and regional unemployment challenges, and increased reliance on imported steel and its associated carbon emissions. We then considered potential options for, and implications of, decarbonising and/or change in the production profile of the Welsh industry, set in the context of potential market opportunities as economies move through the net zero transition.

The full Centre for Energy Policy briefing is available at <https://doi.org/10.17868/74541>.

Here we summarise some key points arising from this earlier briefing in context of current plans for Tata in Wales:

Several technological options were being 'discussed' in 2020 in the context of the future of the Welsh industry. These included decarbonisation of material inputs (including potential use of hydrogen) and/or the deployment of CCS in primary steel production¹, but potentially also a shift to secondary steel production involving the use of electric arc furnaces.² The original briefing considered how such options might impact on the levels and nature of activity supported by the sites currently owned and operated by Tata in Wales. Furthermore, what might be the expected role of the Welsh steel industry in servicing markets to support evolving demands for greener steel in industries such as electric vehicles and

renewable energy technologies? Crucially in this context, if manufacturers begin to demand greener steel, will this effectively split demands between green and 'fossil' steel and how far might green steel attract a premium price? Even where opportunities to shift to green steel production can be exploited, to what extent will reliance on imported primary steel continue, and what are the net implications for jobs, incomes and global carbon footprints? Can competitive and sustainable green primary production be realised through on-site carbon capture or use of decarbonised hydrogen fuel? These questions are difficult to answer. However, it is valuable at the outset to consider the likely direction of travel on key steel industry indicators.

Future routes for steelmaking in Wales – some simple scenarios

Key factors	Continuation with current technology	Replacement of Blast furnaces with Electric Arc	Primary production decarbonisation (CCS or Hydrogen feedstocks)
Tata physical output kt steel and resulting GVA	↓	↓	↑
Tata Port Talbot and other company employment in Wales	↓	↓	↓
Indirect employment supported in Wales in supply chain and supported through wage spending	↓	↓	↑
Wales steel exports	↓	↓	↑
UK trade balance in iron and steel	↓	↓	↑
Production point carbon emissions – Wales	↓	↓	↓
Imported carbon emissions associated with Wales & UK steel consumption	↑	↓	↓

The figure above shows some first steps considered in our earlier briefing, in developing a 'scoreboard' linked to different technology options pursued in the heavy end of steel production in Wales. These are extremely broad scenarios and we accepted that the direction of travel in indicators of interest will be a contested issue, and that a fuller set of refined and more specific indicators would ultimately be required. At the very least we hoped the Figure would alert readers to some central variables that might be considered as the industry evolves around three possible pathways. We coded these pathways as (i) 'current technology'; (ii) replacement of blast furnaces with electric arc furnaces and (iii) decarbonisation of primary steel production, potentially using perhaps hydrogen fuels or elements of carbon capture and storage on site.

Current technology... a possible scenario

Current technology embraces the continuation of the current blast furnace/basic oxygen process. At a Wales level, it was expected that continuation along these lines will lead to a continuation of existing trends. That is, a longer-term reduction in Welsh steel industry output, associated with falling direct and indirect employment supported. Clearly, existing steel quality might be maintained, but with the likelihood of falling market demand for such steel from new industries. Overcapacity and competitive pressures will remain prevalent in the industry, and one cannot discount swifter

innovative advances from steel makers overseas, which will further erode UK and overseas market potential. A result could be falling Welsh steel exports, and potentially a worsening UK trade balance in iron and steel. This could be combined with more subtle socio-economic effects as new investment opportunities fall, accompanied by reduced contracting opportunities for the Welsh construction industry.

Critically, as the UK moves through the low/net zero carbon transition, markets for different transportation, energy and other goods/services will change and these will cause final and intermediate markets for steel to change. Were production to be maintained along current methods then an opportunity could be lost to play a role in servicing new markets.

BUT what of emissions? Clearly any depreciation of the scale of the Welsh industry will result in falling PAP/territorial emissions *within* both Wales and the UK. There would be secondary effects associated with this, not least negating health issues in the areas around heavy steel making, but, at the same time, one cannot discount the heavy social and health costs on any employees displaced through time from the plant. Moreover, there is the equally depressing prospect that consumption accounted emissions are maintained – or even increased – with domestic firms sourcing and transporting greener or, worse, cheaper 'old technology' steel from overseas with the implication that the

global emissions that are the central concern of international UNFCCC agreements may rise. In many ways it might be argued that more polluting processes around steel are better carried out where regulatory mechanisms are stricter and, thus, closer to where value added is gained from the process.

In short, any displacement of emissions to other states could be an important issue for Welsh Government with its sustainable development duty. In this context, we note that among the Welsh SD indicators are ones that link to consumption such as the ecological footprint.

Electric arc steel making

While electric arc steel making may have the effect of producing 'greener' steel, we showed that this depends in part on how that electricity is generated, and more generally on the supply chain and lifecycle emissions involved.

Moreover, we showed that a move to electric arc furnaces might secure the future for the Port Talbot plant but might in practice lead to falling output and employment simply because volumes of steel produced would be lower, and with, consequently, lower exports. There are also quality issues associated with steel made from scrap steel that could limit domestic and export markets for such steel downstream. Potentially, the productivity (simply measured) of the Port Talbot mill might increase. However, high demands for scrap could cause indirect effects for other industries as prices rise, while still leaving a problem of the scrap resource still being connected to basic iron production 'elsewhere'.

In summary, electric arc production may give rise to new steel markets with some exports maintained but with a fine balance between quality, volumes and trade expected with a move to electric arc technology. The new opportunities brought by different technology may also require new skills and new research, particularly around maintaining steel quality. On the other hand, the key benefit would be a large fall in production

point emissions (assuming electricity use is in large part connected to renewables), and potentially some reduction in aggregate Wales and UK steel consumption related emissions, even where some firms are obliged to source raw steel from elsewhere.

Decarbonisation of primary production

Decarbonisation of basic iron and steel production might work to secure output and gross value added generated by the steel industry in Wales if this can be done in ways that ensure continued competitiveness. It would require significant levels of new investment in adapting production methods and in decarbonised energy supply and/or carbon management infrastructure. Ensuring competitiveness may require at least transitory public support, but over time would carry the implicit assumption that there are growing markets for greener steel, thus incentivising similar costly decarbonisation activity in other steel producing nations.

Notwithstanding, it is difficult to see any significant direct employment growth under such a scenario as productivity in integrated steel mills continues to improve, and new developments are expected to involve more capital-intensive production involving fewer workers. Even so, here there is a route to higher levels of safeguarding of direct and indirect employment, particularly if greener steels also find their way into secondary steel processing and metal goods production activity in Wales.

In terms of trade, the implication of adopting new decarbonisation technology may provide a route to safeguarding of Welsh steel exports (and extending to metal products made from decarbonised steel in the region), and, thus, an improved trade balance for the UK in the iron and steel sector. As importantly, decarbonisation of primary production is a route to both falling production and consumption emissions, particularly of greener steel displaces imports.

4. Conclusions

The aim of our [original briefing note](#) was to alert the reader to questions that needed to be asked about the future of steel production in Wales. Clearly any technology pathway will not be costless in environmental terms, but the steel case is connected to subtle issues over responsibility for carbon emissions, and indeed reveals that depreciation in production point emissions would potentially link through to a growth in consumption accounted emissions.

Thus, there is a challenge for policymakers of not merely focusing on the regional employment contribution of steel but also in terms of:

- Awareness of more subtle economic, social and environmental factors connected to changing or maintaining technology in Welsh and UK steel making. Here, it is critical to

understand how a focus on production accounting emissions ignores both global emissions and regional economic transition problems associated with an offshoring of carbon intensive elements of steel production.

- Understanding that, in terms of a global net zero standpoint, steel making might be better placed in a more regulated context where there is more scope for technological innovation to reduce the industry's carbon footprint, while improving the quality of the product for evolving new industry and greener market demands.
- Attention to changing traditional political economy narratives associated with steel production in Wales/UK, which have tended to be focused primarily on employment issues.

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¹ See for example the [£35m Sustain Research hub involving Swansea, Sheffield and Warwick Universities seeking to assist the iron and steel industry become carbon neutral by 2040](#)

² See [Tata Steel: Job fears at Port Talbot over furnace plan 19th July 2020](#).