

Agenda – Economy, Trade, and Rural Affairs Committee

Meeting Venue:

Committee room 5 – Tŷ Hywel
and video conference via Zoom

Meeting date: 5 December 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 session

09.30 – 14.45

1 Introductions, apologies, substitutions, and declarations of interest

09.30

2 Papers to note

09.30

2.1 Legislative consent: Product Regulation and Metrology Bill

(Pages 1 – 2)

Attached Documents:

Letter from the Chair to the Cabinet Secretary for Economy, Energy and
Planning – 20 November 2024



2.2 Tourism industry

(Page 3)

Attached Documents:

Letter from the Chair to the Cabinet Secretary for Economy, Energy and Planning – 20 November 2024

2.3 Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Amendment) (Extension to Switzerland and Miscellaneous Provisions) (Wales) Regulations 2024

(Pages 4 – 11)

Attached Documents:

Letter from the Minister for Culture, Skills and Social Partnership – 20 November 2024

2.4 Consultation on amendments to the Joint Fisheries Statement

(Pages 12 – 14)

Attached Documents:

Letter from the Chair to the Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs – 20 November 2024

Letter from the Chair to the Welsh Fishermen's Association (WFA) – 20 November 2024

2.5 Official Controls (Amendment) Regulations 2024

(Page 15)

Attached Documents:

Letter from the Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs – 21 November 2024

2.6 The Foundational Economy

(Pages 16 – 18)

Attached Documents:

Letter from the Chair to Ali Abdi, Cardiff University – 28 November 2024

Letter from the Chair to Sarah Simmonds, Aneurin Bevan University Health Board – 28 November 2024

3 AI and the Welsh Economy – Panel 1 – Independent experts

09.30 – 10.30

(Pages 19 – 51)

Matt Davies, Economic and Social Policy Lead, Ada Lovelace Institute

Professor Rossi Setchi, Professor in High-Value Manufacturing and Director of Research Centre in AI, Robotics and Human-Machine Systems (IROHMS), Cardiff University

Professor Alun Preece, Director, Hartree Centre Cardiff Hub, Cardiff University

Attached Documents:

Research brief

Evidence paper – Ada Lovelace Institute

Evidence paper – Professor Rossi Setchi

Break

10.30 – 10.40

4 AI and the Welsh Economy – Panel 2 – Business

10.40 – 11.40

(Pages 52 – 69)

Paul Teather, Chief Executive Officer, AMPLYFI

Klaire Tanner, Founder & Creative Director, CreuTech

Felix Milbank, Deputy Head of Policy (Wales), Federation of Small Businesses Wales (FSB)

Attached Documents:

Evidence paper – AMPLYFI

Evidence paper – Federation of Small Businesses Wales (FSB)

Break

11.40 – 11.50

5 AI and the Welsh Economy – Panel 3 – Workforce

11.50 – 12.50

(Pages 70 – 82)

Professor Lina Dencik, Research Leader in AI Justice, Goldsmiths University of London and Co-Founder of Data Justice Lab

Matt Buckley, Committee Member of United Tech and Allied Workers (CWU)

Ceri Williams, Policy Officer, TUC Cymru

Attached Documents:

Evidence paper – Professor Lina Dencik

Evidence paper – TUC Cymru

Break

12.50 – 13.30

6 General Ministerial Scrutiny – Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs

13.30 – 14.45

(Pages 83 – 108)

Huw Irranca-Davies MS, Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs, Welsh Government

Richard Irvine, Chief Veterinary Officer, Welsh Government

Gian Marco Currado, Director – Rural Affairs, Welsh Government

Attached Documents:

Research brief

Evidence paper – Welsh Government

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

14.45

Private session

14.45 – 15.25

8 Consideration of evidence following the meeting

14.45 – 15.00

9 Legislative Consent: Product Regulation and Metrology Bill – consideration of draft report

15.00 – 15.15

(Pages 109 – 117)

Attached Documents:

Legislative Consent: Product Regulation and Metrology Bill draft report

10 Forward work programme

15.15 – 15.25

(Pages 118 – 130)

Attached Documents:

Draft forward work programme – Spring term 2025

Scoping paper – Apprenticeship pathways

Rebecca Evans MS
Cabinet Secretary for Economy, Energy and Planning

20 November 2024

Dear Rebecca,

Legislative Consent: Product Regulation and Metrology Bill

The Economy, Trade and Rural Affairs Committee considered the Legislative Consent Memorandum on the Product Regulation and Metrology Bill ("the Bill") at its meetings on 16 October and 14 November. Following your appearance at the Legislation, Justice and Constitution Committee on 4 November, the Committee has agreed to seek more information on several important matters as it prepares its report.

I would therefore be grateful if you could respond to the points below:

- Does the Welsh Government have any concerns relating to the Bill's development, in light of its concerns relating to the former UK Government's regulatory proposals?
- What analysis has the Welsh Government carried out to enable you to come to the view that the Bill "should be positive for businesses", and could this analysis be shared with the Committee?¹
- Could you set out what steps the Welsh Government has taken to obtain the views of businesses, producers, and manufacturers on the Bill?

¹ Legislation, Justice and Constitution Committee, 4 November 2024, Record of Proceedings, paragraph 83

- Has the Welsh Government sought the views of its Trade Advisory Group members and if so, what was their view?
- Could you set out which EU regulations the Bill might extend to? Are there any that the Welsh Government believes would be particularly beneficial to Welsh exporters? Could you also confirm what conversations have been held with the UK Government on these matters?
- Should the Bill result in UK recognition of EU standards, could you set out how this might interact with other post-Brexit trade agreements? For example, could Welsh business be undercut by Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) imports producing to a lower standard than is required for the EU market?
- Could the Bill be used to safeguard the UK's domestic industries from import surges of goods made to a lower standard that cannot enter the EU market (i.e. dumping)?
- Could the Bill have differentiated effects across Welsh industries, and if so, how?

I would be grateful to receive your reply no later than 9 December 2024, so that we may take it into consideration when drafting our report.

I am copying this letter to the Chair of the Legislation, Justice and Constitution Committee.

Kind regards,



Paul Davies MS

Chair: Economy, Trade and Rural Affairs Committee

CC: Mike Hedges MS, Chair, Legislation, Justice and Constitution Committee

Rebecca Evans MS
Cabinet Secretary for Economy, Energy and Planning

20 November 2024

Dear Rebecca,

Tourism industry

Thank you for your letter of 11 November, which the Committee noted at its meeting on 20 November.

I note that your response points to the 12 November written statement regarding the registration and regulation of visitor accommodation. However, it remains unclear as to whether the Welsh Government established a voluntary registration scheme as part of the Dwyfor pilot. Please could you confirm if a voluntary registration scheme went ahead?

Secondly, while the written statement to which you refer notes that the Welsh Government intends to bring forward a Bill on a statutory licensing scheme, it does not provide any detail as regards the timescale for this Bill. A recent BBC article, however, suggests that it will be "within the Senedd term".¹ I would therefore be grateful if you could set out the expected timetable for introduction of the Bill.

Kind regards,



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

¹ [Wales pushes ahead with tourism tax plans, 12 November 2024](#)

Agenda Item 2.3

Y Gweinidog Diwylliant, Sgiliau a Phartneriaeth Gymdeithasol
Minister for Culture, Skills and Social Partnership



Llywodraeth Cymru
Welsh Government

Eich cyf/Your ref
Ein cyf/Our ref

Mike Hedges MS
Chair of Legislation, Justice and
Constitution Committee
SeneddLJC@senedd.wales

Paul Davies MS
Chair of Economy, Trade and Rural Affairs
Committee
SeneddEconomy@senedd.wales

20 November 2024

Dear Mike, Paul

I am writing to bring to the Committee's attention the Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Amendment) (Extension to Switzerland and Miscellaneous Provisions) (Wales) Regulations 2024 ("the Wales 2024 Regulations") which have today been laid before the Senedd.

The Wales 2024 Regulations are being made using the powers in the Professional Qualifications Act 2022.

In June 2023, the UK and Switzerland signed the UK-Switzerland Agreement on Recognition of Professional Qualifications ("the Swiss Agreement") regarding the arrangements for recognition of professional qualifications between both countries. The Swiss Agreement must be implemented by both parties by 1 January 2025.

The Wales 2024 Regulations amend the Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Wales) (Amendment etc.) Regulations 2023 (S.I. 2023/1294 (W. 230)) ("the Wales 2023 Regulations") to extend the application of the Wales 2023 Regulations to the Swiss Confederation and amend the Wales 2023 Regulations for the purpose of, and in connection with, implementing the Swiss Agreement in relation to the Welsh regulators.

The Wales 2024 Regulations also contain provisions to correct minor errors in the Wales 2023 Regulations

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Gohebiaeth.Jack.Sargeant@llyw.cymru
Correspondence.Jack.Sargeant@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.

I attach a copy of the Explanatory Memorandum which gives more detail about the Wales 2024 Regulations.

Yours sincerely

A handwritten signature in black ink that reads "JACK SARGEANT". The signature is written in a cursive style with a large, sweeping initial 'J'. A horizontal line is drawn underneath the signature, extending from the start of the 'J' to the end of the name.

Jack Sargeant AS/MS

Minister for Culture, Skills and Social Partnership

Y Gweinidog Diwylliant, Sgiliau a Phartneriaeth Gymdeithasol

Explanatory Memorandum to the Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Amendment) (Extension to Switzerland and Miscellaneous Provisions) (Wales) Regulations 2024

This Explanatory Memorandum has been prepared by officials in Social Partnership, Employability and Fair Work and is laid before Senedd Cymru in conjunction with the above subordinate legislation in accordance with Standing Order 27.1.

Minister's Declaration

In my view, this Explanatory Memorandum gives a fair and reasonable view of the expected impact of the Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Amendment) (Extension to Switzerland and Miscellaneous Provisions) (Wales) Regulations 2024. I am satisfied that the benefits justify the likely costs.

Jack Sargeant MS
Minister for Culture, Skills and Social Partnership

20 November 2024

PART 1

1. Description

The Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Amendment) (Extension to Switzerland and Miscellaneous Provisions) (Wales) Regulations 2024 (“the Wales 2024 Regulations”) implement provisions relating to the recognition of professional qualifications contained in the Agreement between the United Kingdom of Great Britain and Northern Ireland and the Swiss Confederation on Recognition of Professional Qualifications (“the Swiss Agreement”) in relation to matters devolved to Wales.

The Wales 2024 Regulations amend the Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Wales) (Amendment etc.) Regulations 2023 (S.I. 2023/1294 (W. 230)) (“the Wales 2023 Regulations”) to extend the application of the 2023 Wales Regulations to the Swiss Confederation and amend the 2023 Wales Regulations for the purpose of, and in connection with, implementing the Swiss Agreement in relation to the Welsh regulators. The Wales 2024 Regulations also contain provisions to correct minor errors in the Wales 2023 Regulations

2. Matters of special interest to the Legislation, Justice and Constitution Committee

Under the terms of the Swiss Agreement, each party must have measures in place to ensure compliance with its terms by 1 January 2025. The Wales 2024 Regulations will therefore come into force on 1 January 2025 to ensure the Welsh regulators have a clear statutory duty to comply with the requirements of the Swiss Agreement from that date.

The Wales 2024 Regulations also provide legal clarity to the Welsh regulators and associated professionals by ensuring Welsh sectoral legislation reflects the new arrangements for the recognition of Swiss qualifications in a timely manner.

3. Legislative background

Paragraph 10 (foreign affairs etc.) of Schedule 7A (reserved matters) to the Government of Wales Act 2006 provides that whilst international relations and the regulation of international trade is reserved, observing and implementing international obligations is not. The Welsh Ministers therefore have the legislative competence to implement international obligations in matters which are devolved.

The Professional Qualifications Act 2022 ended the interim system for recognition of professional qualifications that derived from the UK’s membership

of the EU and created a new framework for the recognition of overseas professional qualifications and experience in the UK, or a part of the UK.

Section 3(1) of the Professional Qualifications Act 2022 includes concurrent powers under which the appropriate national authority may by regulations make such provision as they consider appropriate for the purpose of, or in connection with, implementing any international recognition agreement to which the United Kingdom is a party. "Appropriate national authority" is defined as either the Secretary of State or the Lord Chancellor, or the Welsh Ministers in relation to regulations under the Act which contain only provision which would be within the legislative competence of Senedd Cymru if contained in an Act of the Senedd. The Welsh Ministers opposed the inclusion of the concurrent powers in the Professional Qualifications Act 2022 as these enable the UK Government to legislate in subject areas devolved to Wales without having to secure the consent of the Senedd to do so.

In November 2023 the UK Government used their powers under the Professional Qualifications Act 2022 to lay the draft Recognition of Professional Qualifications and Implementation of International Recognition Agreements (Amendment) Regulations 2023 ("UKG 2023 Regulations"). The UKG 2023 Regulations made provision to implement Chapter 12 of the European Economic Area European Free Trade Associate Free Trade Agreement (EEA EFTA FTA) which established a framework for recognition of professional qualifications gained in Norway, Iceland and Liechtenstein.

The draft UKG 2023 Regulations extended to England and Wales (as well as Scotland and Northern Ireland), not only for professions where regulation is reserved for the UK Government, but also for professions where regulation is devolved to the Welsh Ministers. The Welsh Ministers opposed this approach and therefore exercised their powers under the Professional Qualifications Act 2022 to legislate in relation to professions whose regulation is devolved and make the Wales 2023 Regulations.

The Wales 2023 Regulations disapplied the UKG 2023 Regulations so far as they applied to Welsh regulators (as defined in the Wales 2023 Regulations) and made separate provision to implement the EEA EFTA FTA in Wales. The Wales 2023 Regulations also made amendments to existing Welsh sectoral legislation to reflect the implementation of the EEA EFTA FTA in Wales.

It is now necessary to amend the Wales 2023 Regulations so that its provisions also apply to Switzerland, as required by the terms of the Swiss Agreement. As a result, the Wales 2023 Regulations will apply to applications from professionals with Swiss qualifications as well as to those with qualifications from Norway, Liechtenstein and Iceland.

The Wales 2024 Regulations are being made under the negative resolution procedure as provided for by section 18 of the Professional Qualifications Act 2022.

4. Purpose and intended effect of the legislation

In June 2023, the UK Government and the Swiss Confederation signed the Swiss Agreement providing for the continued recognition of professional qualifications between both countries¹.

The Wales 2024 Regulations will require Welsh regulators to operate accessible routes to recognition, as prescribed under the Swiss Agreement, for Swiss-qualified professionals to practise their profession in Wales. Similar recognition arrangements are already in place for professionals holding qualifications from Norway, Iceland and Lichtenstein, pursuant to the EEA EFTA FTA.

As with the EEA EFTA FTA, the Swiss Agreement requires the Welsh regulators to recognise the professional qualifications of applicants from Swiss Confederation where those qualifications are comparable to the qualifications required to access and pursue the same profession in Wales or any other part of the UK. The Swiss Agreement also sets out the way in which applications for recognition of qualifications must be handled and requires the Welsh regulators to offer adaptation periods and aptitude tests where necessary.

The Wales Regulations apply only to the Welsh regulators responsible for regulating in Wales the professions listed in Schedule 1 to the Wales 2023 Regulations. The regulators are the Welsh Ministers, Education Workforce Council, Social Care Wales, the Food Standards Agency and the Animal Plant and Health Agency.

5. Consultation

Section 15 of the Professional Qualifications Act 2022 requires the appropriate national authority, when making regulations under section 3 of the Act, to consult regulators likely to be affected by the regulations, or where it is otherwise appropriate to consult them. The Welsh Government held a targeted consultation on the draft Wales 2024 Regulations with each of the Welsh regulators in September 2024.

Following consideration of the consultation responses, no amendments were considered necessary to be made to the draft Wales 2024 Regulations.

As the consultation was targeted to the specific group of Welsh regulators, the consultation documents were not published, but a copy of the consultation and summary of the responses are available on request, by emailing EmployabilityAndSkillsPolicy@gov.wales

¹ On 25 February 2019, the Agreement between the Swiss Confederation and the United Kingdom of Great Britain and Northern Ireland on Citizens' Rights was agreed ("the CRA"). The CRA contains provisions on the mutual recognition of professional qualifications which apply to UK and Swiss nationals. However, these arrangements expire on 31 December 2024.

6. Regulatory Impact Assessment (RIA)

Two options have been considered in this assessment:

Option 1. Do nothing

The Swiss Agreement requires regulators in Wales and the rest of the UK to have processes in place UK by 1 January 2025 to recognise Swiss qualifications or experience should a professional apply to practice a profession regulated by law in the. The Swiss Agreement does not specify that those processes must be implemented by way of legislation.

Under this option, no legislation would be made to place the Welsh regulators under a clear statutory duty to recognise professional qualifications as required under the Swiss Agreement. Instead, each Welsh regulator would have individual responsibility for ensuring they have appropriate measures in place to meet the requirements of the Swiss Agreement.

This would risk an inconsistency of approach amongst the Welsh regulators. There could also be confusion amongst professional applicants and regulators, particularly those who operate in both England and Wales, if there was a statutory approach taken in England and a non-statutory approach in Wales. A failure to provide a clear statutory duty for Welsh regulators to follow in relation to the recognition of professional qualifications may also increase the risk of a Welsh regulator inadvertently acting in breach of the terms of the Swiss Agreement. Also, if the Welsh Ministers decided not to legislate in relation to Wales, the UK Government may decide to use the concurrent powers in the Professional Qualifications Act 2022 to implement the Swiss Agreement in areas which are devolved.

Option 2. Lay Welsh legislation to ensure clear and consistent compliance with the terms of the Swiss Agreement in devolved areas. This is the preferred option.

The Wales 2024 Regulations ensure that the Welsh regulators understand that they have a statutory duty to meet their obligations under the Swiss Agreement. The Wales 2024 Regulations provide consistency and clarity for both regulators who operate in England as well as Wales, and for professionals holding Swiss qualifications or experience when applying to practice regulated professions in different parts of the UK.

Costs and benefits

The Welsh regulators will be under a duty to comply with the terms of the Swiss Agreement from 1 January 2025, even if no legislation is made to expressly implement these requirements into domestic law.

There are no direct costs to businesses, charities or voluntary bodies as a result of these measures under either option 1 or option 2. The costs incurred

under either option would be administrative costs which fall on the Welsh regulators, who may need to adjust their current recognition processes to meet the requirements of the Swiss Agreement. However, as the Welsh regulators are already required to have routes in place to recognise professional qualifications awarded in Norway, Iceland and Lichtenstein, extending those processes for holders of Swiss qualifications is anticipated to incur limited additional costs.

There is potentially a limited administrative cost to Welsh regulators associated with complying with the requirements in the Swiss Agreement to offer compensatory measures to an applicant with professional qualifications obtained in Switzerland where there is a substantial difference between the applicant's professional qualifications and the essential knowledge or skills required to practise the Welsh regulated profession, or the Welsh regulated profession comprises one or more professional activities that cover substantially different matters from those covered by the applicant's professional qualifications. The regulator may offer an aptitude test or require the professional to complete an adaption period.

The best estimate of this potential cost is around £500 per applicant. However, between 2015 and 2024 the Welsh regulators did not receive any applications for the recognition of professional qualifications obtained in Switzerland and they do not expect there to be an increase in the number of applicants seeking to join the professions they are responsible for regulating as a result of the Wales 2024 Regulations. Therefore, the Welsh regulators may never ultimately incur the administrative costs associated with the requirement to offer compensatory measures where necessary.

There is an indirect risk of costs being incurred by the public sector under option 1 if any Welsh regulator failed to meet their duties under the Swiss Agreement and infraction proceedings were brought against the UK. It is considered that the risk of such proceedings is reduced if the Welsh regulators have clear statutory provisions to follow, as is the case with option 2.

Huw Irranca-Davies MS
Deputy First Minister and Cabinet Secretary for
Climate Change and Rural Affairs

20 November 2024

Dear Huw,

Response to consultation on amendments to the Joint Fisheries Statement

Thank you for your letter of 6 November 2024 in response to our queries on the joint UK consultation on amendments to the Joint Fisheries Statement. We were grateful for your comprehensive replies, and we acknowledge the reasoning set out for the decisions being made, particularly in relation to the removal of Welsh Ministers as a responsible authority for a number of Fisheries Management Plans (FMPs).

We note that you will ask your officials, through their engagement in the UK FMP Working Group, to recommend that the consideration of responsible authorities should be a standard part of a review of each FMP. We believe that this would be an important change and we would be grateful, therefore, if you could confirm when this is taken forward.

As part of our consideration of the consultation, we reached out to seek stakeholders' views. We received one response, from the Welsh Fisherman's Association (WFA).¹ In its letter, the WFA details its responses to the consultation, which we note are broadly supportive of the proposed amendments.

Separately, we have noted that the minutes for the Ministerial Advisory Group for Welsh Fisheries have not been updated since 9 November 2023. In order to improve transparency, and to assist our

¹ Letter from the Welsh Fishermen's Association - Cymdeithas Pysgotwyr Cymru (WFA-CPC), November 2024

ability to effectively monitor and scrutinise work in this area, we would be grateful if the site could be updated at the earliest opportunity.

Kind regards,

A handwritten signature in black ink, appearing to read 'Paul Davies'.

Paul Davies MS

Chair: Economy, Trade and Rural Affairs Committee

We welcome correspondence in Welsh or English

Jim Evans

Welsh Fishermen's Association (WFA)

20 November 2024

Dear Jim,

Joint consultation on amendments to the Joint Fisheries Statement (JFS)

Thank you for letter regarding the joint consultation on amendments to the Joint Fisheries Statement (JFS), which we considered at our meeting on 20 November.

We were grateful for your input to our consideration of the consultation, and we noted it in our response to the Welsh Government, which is attached for your information.

We are also grateful for the supplementary point you raised, which we will look to take forward through our general and budget scrutiny. You can follow both of these workstreams through the Committee website.

Kind regards,



Paul Davies MS

Chair: Economy, Trade and Rural Affairs Committee

We welcome correspondence in Welsh or English

Huw Irranca-Davies AS/MS
Y Dirprwy Brif Weinidog ac Ysgrifennydd y Cabinet dros
Newid Hinsawdd a Materion Gwledig
Deputy First Minister and Cabinet Secretary for Climate
Change and Rural Affairs

Ein cyf/Our ref: MA/HIDCC/5295/24

Paul Davies MS
Chair
Economy, Trade and Rural Affairs Committee
Welsh Parliament
Cardiff Bay
Cardiff
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21 November 2024

Dear Paul,

Further to my letter of 31 October 2024. I am writing to inform the Committee that I have given my consent to the Minister of State to lay the Official Controls (Amendment) Regulations 2024 in relation to Wales. I have laid a Written Statement which can be found at: <https://senedd.wales/media/gbylghoo/ws-ld16803-e.pdf>

Consent has been given for the UK Government to make these Regulations in order to implement the milestones of the Borders Target Operating Model (BTOM). The Regulations intersect with devolved policy and will apply to Wales. The Statutory Instrument (SI) is subject to the affirmative procedure and was laid before Parliament on 19 November 2024 with a commencement date which will be subject to the SIs approval by resolution of each House of Parliament.

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

Yours sincerely,



Huw Irranca-Davies AS/MS
Y Dirprwy Brif Weinidog ac Ysgrifennydd y Cabinet dros Newid Hinsawdd
a Materion Gwledig
Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs

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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.

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**Economy, Trade, and
Rural Affairs Committee**

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Ali Abdi
Community Gateway Partnerships Manager
Cardiff University

28 November 2024

Dear Ali,

Follow up to meeting of 14 November 2024

Thank you for giving evidence to our Foundational Economy inquiry on 14 November. It was an interesting session and Members found it very useful.

In consideration of the evidence session, Members identified one area of the discussion they would appreciate further detail on, if you are able to provide this.

We would therefore like to request any further information you could supply on the academic selection process which led to Cardiff University choosing Grangetown as the area of Cardiff to form a relationship with, beyond that which was discussed in the session.

If possible, I would be grateful if you could give us a written response to this request by 20 December.

Thank you again for your time and support with this inquiry.

Kind regards,



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

We welcome correspondence in Welsh or English



Sarah Simmonds

Director of Workforce and Organisational Development

Aneurin Bevan University Health Board

28 November 2024

Dear Sarah,

Follow up to meeting of 14 November 2024

Thank you for giving evidence to our Foundational Economy inquiry on 14 November. It was an interesting session and Members found it very useful.

In consideration of the evidence session and subsequent discussion, Members identified one area of interest they would appreciate further detail on, if you are able to provide this.

We would therefore like to ask if you could please supply any data you currently already capture regarding the rate of employment of people with disabilities you have of those who have entered the workforce to allow the Committee to fully understand how your approach to the foundational economy impacts all individuals. We would be particularly keen to see any data related to those recruited via the health boards 'grow your own Workforce' initiatives.

If possible, I would be grateful if you could give us a written response to this request by 20 December.

Thank you again for your time and support with this inquiry.

Kind regards,

A handwritten signature in black ink that reads "Paul Davies". The signature is fluid and cursive, with a long horizontal stroke at the end.

Paul Davies MS

Chair: Economy, Trade and Rural Affairs Committee

We welcome correspondence in Welsh or English



Agenda Item 3

Document is Restricted



AI and the Welsh economy

Submission to Senedd Economy, Trade, and Rural Affairs
Committee

About Ada

The Ada Lovelace Institute ('Ada') is an independent research institute with a mission to make data and AI work for people and society. We work primarily in the UK and EU, supporting officials and institutions in both jurisdictions with evidence on the impacts of AI and its effective governance.

This document contains Ada's response to the Senedd's Economy, Trade, and Rural Affairs Committee inquiry on 'AI and the Welsh economy'. While Ada has not conducted detailed empirical research on Wales specifically, many of our research findings are of relevance to the Welsh context. Our submission summarises some of these findings, and offers suggestions for how the devolved institutions in Cardiff could enable responsible uptake of AI across the public and private sectors in Wales.

For more information on any of the information contained in this briefing, please contact Ada's Economic and Social Policy Lead (mdavies@adalovelaceinstitute.org).

A note on terminology

There is no commonly accepted scientific definition of 'AI' and it is used to refer to a wide range of computational techniques like machine learning, natural language processing, and deep learning that are considered capable of performing tasks that might traditionally require human intelligence to complete.¹ This includes 'narrow' AI systems such as analytics systems used to make predictions and judgements about individuals, as well as so-called 'general purpose' AI systems or foundation models.² Some of these technologies are already in widespread use across the economy, while others are less widely deployed, or are being considered for future use. In the remainder of this briefing, we will indicate the type of technology we are referring to. References to 'AI' without any other modifier should be understood as references to the wide variety of these systems.

¹ See for instance the UK Government Central Data and Digital Office's [definition](#) of AI as "the use of digital technology to create systems capable of performing tasks commonly thought to require intelligence."

² For more information on foundation models, see our [explainer](#).

Introduction

The UK's AI ambitions are at a formative stage. We enjoy several major advantages on AI relative to our peers: a high number of AI startups, several world-leading academic centres of expertise in computing and data science, and a consistently high number of academic citations contributed to advanced AI research. AI is already widely deployed in all parts of the public and private sectors, in domains ranging from health, education and criminal justice to retail and customer services.

However, AI development is highly capital- and skills-intensive, rewarding agglomeration effects. As such, within the UK, it has been clustered in London and the south east of England, where access to talent and capital is more abundant. The UK's other nations and regions, including Wales, are however well-placed to seek competitive advantages in AI *adoption*. This submission discusses two levers for achieving this: pioneering higher standards for responsible deployment, and improving transparency and governance of AI used in the Welsh public sector.

Standards for the responsible deployment of AI

The vast majority of AI systems used today in critical sectors like healthcare, finance, education, criminal justice, and public service delivery are not evaluated or assessed for their safety or efficacy. Currently, there are no requirements on AI systems used in our schools, our local authorities, or our hospitals – let alone in the private sector – to ensure they are effective, reliable, and safe. Too often, as a consequence, both public and private sector organisations lack the appropriate assurance that the AI products and services sold to them are safe and effective. This limits adoption, and risks compromising public trust.

Determinations of safety and efficacy are needed to provide appropriate assurance to businesses and consumers that AI products and services they're being sold will work safely and effectively. In other sectors like pharmaceuticals or car safety, [pre-market assessment](#) by empowered regulators helps to provide these determinations and reduce informational asymmetries. The history of these other high-tech, socially-important industries suggests that creating the right standards, incentives and accountability mechanisms can shape industry practice for the better and benefit innovation in the long-run.

The new UK Government at Westminster made a manifesto commitment – subsequently reiterated in the King's Speech – to 'ensure the safe development and use of AI models by introducing binding regulation on the handful of companies developing the most powerful AI models'. This is a significant move, but it is only the first step towards delivering the comprehensive regulatory framework that will be necessary to maximise the benefits of AI for all of the UK's constituent nations and regions.

Achieving this will mean introducing new powers, resources and statutory underpinning for regulators and their supporting institutional architecture (such as the AI Safety Institute and the central risk assessment function). It will also require the preservation of existing 'horizontal' regulation such as the UK GDPR and the Equality Act 2010, which provide [important protections](#) to people affected by AI.

Much of this will require legislative intervention at the Westminster level, given that the areas of regulation that apply most directly to AI are reserved matters (including for instance data protection law, intellectual property law, competition law and – with some exceptions – equality law).

However, non-regulatory tools such as voluntary self-assessment schemes, third party assessment and internal oversight boards will play an important role in complementing the work of regulators, and there is an opportunity for devolved administrations to support the development of these tools in the public

and private sectors. An important lever for this will be driving up standards in public sector organisations over which devolved Government has direct control, a topic which the next section attends to.

Improving transparency and governance of public sector AI

The public sector is an important context for AI adoption in its own right, and can also serve to model best practice, supporting uptake in the private sector. Between June and July 2023, as part of our research on [foundation models in the public sector](#), we identified a list of potential use cases for AI (and specifically foundation models) in government:³

- Government communication and public enquiries, e.g. powering chatbots and virtual assistants, addressing basic questions and issues from the public round-the-clock
- Document and text analysis, e.g. identifying key information in complex documents such as legal contracts, to reduce review times
- Data analysis e.g. real-time data analysis about service provision, changes in take-up, impact assessments and fraud monitoring
- Decision support e.g. triaging casework by summarising and suggesting categorisation of cases to assign them to appropriate specialists
- Coding assistance e.g. assisting in interpreting legacy code in government systems
- Human resources e.g. screening CVs and matching candidates for recruitment
- Knowledge management, search and retrieval e.g. semantic search as an interface to a Corporate Memory Bank, looking for similar previous work to prevent duplication
- Policy explanation and drafting, e.g. an adversarial drafting tool highlighting possible flaws, omissions and counterarguments for policy paper drafts

These use cases could potentially benefit public services by improving service *efficiency* or *productivity*, or by improving the *quality* of a service. However, most estimates of the potential cost savings from AI use should be treated with caution. Some studies are compromised by flawed methodological approaches, and all are limited by our poor understanding of the impacts of existing AI use in the public sector.

To enable the widespread use of AI across Government and public services, we need to tackle this ‘information gap’. At present, there exists no common obligation to monitor where and how AI tools are being used across the public sector, even within central government. We lack the basic information and evaluation of ‘what works’ in public sector AI use that we would expect of any other major public service intervention.

We have argued that an urgent priority for the new UK Government should therefore be to develop a more detailed understanding of where and how AI is being used in public services, and what is currently working to improve outcomes and services for the public. As part of this, we have argued that the Algorithmic Transparency Recording Standard (ATRS) should be rolled out across the public sector. Since it was launched more than three years ago it has hardly been used: at time of writing the Government’s own repository of published algorithmic transparency records only included 8 entries.

Mandatory adoption was belatedly promised by the former UK Government in February 2024, but the delay in requiring wider adoption has sharply limited our understanding of how AI tools are used across the public sector. Until this is achieved at a UK-wide level, devolved administrations have an opportunity to seize the initiative on this issue by working to ensure that mandatory adoption is translated into reality

³ See Appendix 1: Examples of potential public sector applications of foundation models, <https://www.adalovelaceinstitute.org/evidence-review/foundation-models-public-sector/#appendix-1-examples-of-potential-public-sector-applications-of-foundation-models-59>

within devolved public services: ensuring that teams complete the recording standard, that records are promptly uploaded to the repository once a tool enters piloting or production, and those records are kept up-to-date as the tool is updated, refined, or decommissioned. Successfully achieving this should benefit public services in Wales, while also creating opportunities for private sector organisations to learn and to innovate.

Written evidence

to the Economy, Trade, and Rural Affairs Committee, Welsh Government
As part of the consultations on AI and the Welsh Economy

Professor Rossi Setchi, Professor of High-Value Manufacturing at Cardiff University,
Director of a Research Centre in AI, Robotics and Human-Machine Systems (IROHMS)

1. To what extent are businesses in Wales making use of AI and planning to do so in the future?
 - 1.1 Many companies in Wales are both excited by the opportunities presented by AI and robotics and concerned about the future of their businesses. This sentiment aligns with findings from a recent survey conducted across 14 countries (Achelpohl, 2024), which revealed widespread enthusiasm for digital transformation. Among the 508 industrial operators interviewed, 90% were already utilizing AI, yet 38% felt they were lagging behind their peers.
 - 1.2 Advancements in the 4th Industrial Revolution (Industry 4.0) have enabled many Welsh manufacturing companies to adopt AI for various applications, including design optimisation, quality inspection, predictive analytics, inventory management, predictive maintenance, process monitoring and control, and supply chain optimisation. These implementations have led to lower costs, enhanced operational efficiency, and real-time quality control.
 - 1.3 The rapid advancements of Artificial Intelligence (AI), particularly Generative AI (GenAI), have gained significant attention among businesses in Wales, driven by the virality of platforms capable of creating human-like text and image content. While these businesses actively participate in discussions with leaders and academia through business groups, leadership forums, and professional networks, their primary focus remains on understanding AI technologies and identifying opportunities where AI can enhance their operations.
 - 1.4 Businesses have begun experimenting with AI technologies, making gradual advancements in areas such as marketing, communication, translation, rapid testing, and coding, with many companies reporting notable productivity gains. Efforts are concentrated on skill-building, developing expertise, and recognising the need for investments in both people and technology. These improvements are largely driven by GenAI's remarkable capabilities, including summarising complex topics, answering questions in a human-like manner, and offering translation and editorial assistance.
 - 1.5 A growing number of high-tech businesses in Wales are leveraging AI extensively across their operations and supply chains, unlocking new revenue streams. Investments have been directed toward customer services, sales, inventory management, and business analytics. Notable uses of GenAI include drafting

customer service responses, generating code for rapid testing, and creating images for marketing purposes. These efforts are aimed at building competitive advantages and exploring new business opportunities.

1.6 A study by McKinsey (Chui et al., 2023) estimates that GenAI could contribute trillions of dollars in value to global productivity. Despite its transformative impact in life sciences—advancing protein structure research, genomics, and pathogen studies through access to large datasets and open resources—similar breakthroughs in the manufacturing sector have yet to materialise. Furthermore, GenAI currently falls short in generating hypotheses, posing critical questions, explaining its decisions and recommendations, and delivering the trustworthiness and reproducibility, which is essential in many social and business contexts.

2. What are the potential economic opportunities and risks that AI may present for Wales, and how might these vary across different parts of Wales and different sectors?

2.1 A small-scale survey by Gartner (2023) revealed that 45% of the organisations interviewed have increased their AI investments following the release of ChatGPT. Additionally, 68% of executives expressed the belief that the benefits of Generative AI outweigh its associated risks.

2.2 The greatest opportunity for Wales lies in tackling the productivity gap, marked by a persistently low economic activity rate (jobs per head of population) and low labour productivity (value added per job). Over the past 20 years, these metrics have remained steady at approximately 80%-90% of the UK average (Henley, 2021).

2.3 GenAI offers faster development cycles compared to traditional AI methods, presenting a significant opportunity to drive productivity growth by reaching higher operational targets and lowering costs. This transformative shift can help align businesses in Wales with the principles of public value manufacturing, fostering economic and societal benefits.

2.4 Public value manufacturing focuses on generating both economic and social value by upskilling workers and creating better jobs that benefit individuals, organisations, and society as a whole. This innovative concept integrates the principles of prosperity, sustainability, and well-being, and can be realised through the transformative capabilities of GenAI.

2.5 Open access to data and expertise has the potential to generate significant public value, particularly in fields like life sciences and healthcare. As one of the 2024 Nobel Laureates in Chemistry recently stated, the real business opportunity lies in using the same data as others but extracting more insights from it. However, not all businesses have the resources to develop their own AI applications. The key is to

offer businesses equal opportunities by supporting them in taking the initial steps toward AI adoption.

2.6 One of the most exciting opportunities for Wales lies in promoting the use of the Welsh language through enhanced translation services. As noted by the co-founder of a company offering bilingual services, Welsh is a smaller dataset compared to languages like German or Spanish. This area has been highlighted by the Welsh Government Minister responsible for the Welsh language as particularly important. It serves as a prime example of how GenAI can help create significant public value by supporting the preservation and growth of the Welsh language.

2.7 Research has demonstrated a clear link between the skills gap and lower productivity, with this effect being more pronounced in industries that rely on a knowledge-intensive skill base (Morris et al., 2020). For Wales, the main risk lies in exacerbating the productivity gap between high and low-performing companies due to underinvestment in human capital, tangible assets like sensors and connectivity, and intangible assets such as domain knowledge and datasets.

2.8 The generic risks associated with AI, which apply beyond just Wales, include overreliance on AI systems, biases in training datasets, data leakage (such as the use of private, proprietary, sensitive, or confidential information during training), privacy and security concerns, developing applications without engaging end-users or conducting thorough validation, and misinterpreting AI hallucinations as legitimate insights. As highlighted by the same Nobel Prize winner, we must prepare for the possibility of an AI "Fukushima event" during our lifetime.

3. How is AI likely to affect jobs and workers in Wales, and what actions might the Welsh and UK governments need to take in response?

3.1 Similar to the disruptive technologies of early industrialization, AI and robotics present both promising opportunities and concerns about job security. A few years ago, the concept of Industry 4.0 caused significant uncertainty, yet there is little evidence to suggest that a large number of jobs have disappeared as a result.

3.2 Experts (Chui et al., 2023) predict that AI could enable technology to reach human-level performance in certain technical capabilities sooner than previously anticipated. A recent report by Goldman Sachs (Hatzius et al., 2023) suggests that GenAI could potentially automate the equivalent of 300 million full-time jobs. Another influential study analysed 19,265 tasks across 19 major industries, finding that 44% of working hours could be impacted by GenAI. This includes 72% in banking, 68% in insurance, and 67% in capital markets. The study also revealed that almost all job categories analysed are expected to be affected by Large Language Models (LLMs), with impacts ranging from 9% to 63% at the high end (Ghosh et al., 2023).

- 3.3 Traditionally, automation has primarily replaced low-skilled labour. However, recent advances in AI pose a significant threat to higher-level workers, including data analysts, media content creators, project managers, and certain types of designers. Activities exposed to automation include processing and evaluating information, scheduling, planning and prioritising work, documenting and recording information, interpreting information for others, and performing administrative tasks. Automating these functions offers substantial potential for productivity gains, as many roles across various sectors—beyond just industry—involve such activities.
- 3.4 AI's impact on jobs will differ across sectors and skill sets. Based on an informed understanding of GenAI's capabilities, job replacements are most likely to occur in administrative roles, banking, and the legal profession. AI is expected to complement, rather than replace, workers in fields such as education, finance, computing, sales, management, healthcare, farming, engineering, arts, and media, enhancing their productivity. Little impact is anticipated in sectors like construction, cleaning, maintenance, and transportation.
- 3.5 Technological progress often leads to the creation of new types of jobs. As anticipated, many of the new roles will be focused on working with foundational AI models. Examples include prompt engineers, content auditors to ensure quality, accuracy, and appropriateness, security specialists, AI literacy educators, and AI ethics officers. Additionally, there will be an increased demand for data scientists to customise and fine-tune foundational models using company-specific proprietary data and knowledge repositories.
- 3.6 As part of the workplace transformation, there will be a shift towards thinking about tasks rather than jobs, focusing on the knowledge required to perform specific tasks. While many routine tasks can be automated, others demand creative reasoning and the ability to reach mutual understanding through collaboration and discussions with experts and colleagues within the same organisation.
- 3.7 The expected impact of GenAI on jobs will be transformative not because jobs will vanish, but because many roles will be redefined, and talent will be redirected. As a result of the analytical breakdown of existing jobs, new high-value human tasks are expected to emerge. This shift will need to be managed thoughtfully, using the process as an opportunity to foster creativity and the development of new AI-related skills.
- 3.8 Central to this transformation is the development of human-centred approaches to AI that prioritise well-being and integrate human factors and social dynamics with AI capabilities.
- 3.9 The Welsh Government's response can acknowledge the challenges faced by the business community, support the development of pilot projects, and foster a dynamic innovation ecosystem that involves all stakeholders.

4. What skills are likely to be needed as a result of increased use of AI in the workplace, and how well placed is Wales to deliver these?

4.1 Wales has made significant strides in digital transformation. The Digital Strategy for Wales (2021) has successfully improved digital services across the country, while also enhancing digital skills, capabilities, and confidence to engage with the digital world. There have been notable advancements in digital connectivity, providing fast and reliable infrastructure. Public confidence in e-commerce is strong, and digital skills are now prioritised alongside literacy and numeracy. Employers increasingly recognize the value of digitalisation and are supportive of meeting the evolving needs of their workforce.

4.2 The Welsh Government and Welsh universities have made significant investments in data science and AI through multimillion-pound initiatives, including the Wales Data Nation Accelerator (in Cardiff, Swansea, Aberystwyth, and Bangor), the National Software Academy at Cardiff, the Computational Foundry at Swansea, and the Research Centre in AI, Robotics, and Human-Machine Systems (IROHMS) at Cardiff, among others. These efforts have strengthened the country's expertise and capabilities in emerging technologies.

4.3 However, the complexity of GenAI adds new layers to the existing digital divide. It has exacerbated disparities, not only in technical skills but also in the ability to critically evaluate AI, understand how algorithms are trained and generate content, and address ethical concerns regarding authorship, authenticity, and misinformation. The widening digital divide due to GenAI has profound implications. For instance, in the job market, the lack of GenAI skills goes beyond mere disadvantage; it actively excludes individuals, as many companies now use AI for resume screening (Hendawy, 2024).

4.4 AI upskilling must be tailored to specific roles. For instance, employees with clerical responsibilities should be educated not to use GenAI for editing meeting transcripts and sensitive company information. Those in analytical roles need to learn how to use AI-powered tools, interpret algorithm-generated content, and integrate AI insights with their own judgment. Software developers must be trained in conducting rigorous testing and evaluations, as well as implementing explainability features in the applications they develop. Business leaders require training in scientific methods and a structured framework to navigate the broad landscape of opportunities and risks for their companies. In manufacturing, employees must acquire new skills for collecting real-time data, optimising workflows, and using algorithms for predictive analytics. Additionally, all stakeholders should be trained in ethical AI practices that emphasize fairness, inclusivity, transparency in decision-making, accountability for outcomes, and ensuring safety and security.

4.5 The business community requires more support during this transformational change. While on-the-job training can be a viable option, it may only be feasible for high-tech companies that have already made substantial investments in human

capital. Providing additional support for higher skill levels and addressing region-specific skill gaps would create synergies for further productivity growth, driving additional investment and enhancing competitiveness across diverse regions (Morris et al., 2020).

- 4.6 Additional funding is required to support flexible AI upskilling. The recently introduced DSIT pilot scheme is a promising initiative, offering support for up to 50% of training costs. However, the allocated funding is insufficient to meet the growing demand. Further resources for AI projects are available through UKRI/Innovate UK and Knowledge Transfer Partnerships (KTPs) in collaboration with academia, which can help fill this gap.
- 4.7 Leadership programs and networks are valuable tools for raising AI awareness, promoting action learning, and fostering mentoring through the sharing of tacit knowledge. Additionally, the GenAI community of practice requires easy access to AI tools, such as digital makerspaces, similar to those used for 2D printing and prototyping. For example, Georgia Tech has already pioneered the concept of instructor-led bootcamps for software engineers to enhance their GenAI skills and knowledge.
- 4.8 There is a need for a broader public discussion on AI. A recent study by the Office for National Statistics (ONS) (Harris et al., 2023) examined UK adults' awareness of AI and their perceptions of its benefits and risks. The study revealed significant differences across population groups and highlighted potential inequalities. For instance, only 14% of the public believe that AI offers more benefits than risks, a stark contrast to the 68% of business leaders who view the benefits of GenAI as outweighing its risks (Gartner, 2023).
- 4.9 AI holds immense potential to drive prosperity and enhance productivity. To fully harness this potential, it is crucial to deepen our understanding of the opportunities AI presents, as well as its intended and unintended consequences. By bringing together diverse perspectives, we can create holistic strategies that prioritise human-centric development of AI technologies. Establishing an innovation system that supports the business community is vital, as is implementing effective policy instruments and interventions to address unethical practices related to AI.

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Agenda Item 4

AMPLIFYFI

AI and the Welsh Economy

November 2024

AMPLIFYFI is an AI company based in Wales providing world-leading market intelligence services to NATO, the UN, US Govt, E.ON, Bayer, HSBC, Deloitte, PwC and many other organisations. Throughout this response, we apply our tools and services to provide similar insight to “AI and the Welsh Economy” Consultation that we provide to the aforementioned firms.

Our analysis of Wales & AI suggests that there are more opportunities than threats, but these quickly diminish as the world invests in AI transformation. In response to the panel's questions, our recommendation is that Wales should double down on existing strategies and better connect them through an “AI Supply Chain” lens. Through this process, Wales should seek to facilitate specialisms in the AI supply chain that attract investors and partners and provide a platform that enables Welsh businesses to win in foreign markets. To facilitate this we recommend a collaborative, focused and agile approach - using national UK strategies as a platform for more specifically focused Welsh programmes and recognising that while Wales has a disadvantage in scale to larger regions, this facilitates an advantage in its ability to act and change faster.

The AI supply chain is made of the following:

- **AI Infrastructure** - Semiconductors, data centres, high-performance computing and the physical infrastructure required to train and deploy AI models
- **Foundational AI Models** - a type of machine learning model that is designed to perform a wide range of tasks and can be adapted for various specific applications
- **Renewable Power** - integral to the processing requirements of AI models both at training and deployment, without scaling the environmental impact
- **AI Solutions** - technology companies capable of solving specific market needs beyond Wales that attract investment, employment and tax revenues for Wales
- **AI Consumption** - use cases, training data for models and integration with workflows from Welsh companies around AI

To deliver this ecosystem, we propose that the Welsh government continues to invest but better connects disparate areas of strategy around the AI-Supply Chain theme:

- **Build on the Semiconductor Cluster** - there is an ongoing shortage of AI chips globally¹ driving the need an opportunity for ongoing supply chain diversification; we suggest following up on the UK National Semiconductor Strategy with more specific programmes to establish AI-Infrastructure IP & Capacity across Wales, leveraging the existing specialisms² in South Wales around compound semiconductors and partnerships³ with semiconductor leaders, but expanding this to explore next-generation AI-server architectures. Where current capabilities are not directly aligned with AI-Infrastructure requirements use knowledge transfer strategies to rapidly pivot capabilities and attract, invest and grow new focused, but world leading expertise in AI-infrastructure-niche areas.
- **Align the National Energy Plan** - The Electric Power Research Institute forecasts that data centres may see their electricity consumption more than double by 2030, reaching 9% of total electricity demand in the US⁴; we suggest aligning parts of the new National Energy Plan with the AI Infrastructure Programme through developing a specialism around “Sustainable AI Infrastructure”.
- **Catalyse an AI Solutions Cluster in Wales**⁵ - Global spending on AI is projected to reach \$235bn in 2024, tripling to \$630 billion by 2028⁶. To capture this market growth, we suggest rapidly aligning relevant parts of the Digital Transformation Strategy and better-connecting budgets from Cardiff Capital Region (Innovation Investment Fund), Development Bank of Wales Technology Fund, Fintech Wales, Life Sciences Hub to more AI-specific Seed & Scale support to build an AI-Cluster in Wales, as well as connecting and aligning with the new UK Governments emerging AI Opportunities Action Plan⁷
- **Rapidly Facilitate Welsh Organisations to Adopt Proven AI** - AI adoption in industry - defined as “using AI for a core process, or at scale” jumped to 72% in early 2024 up from 50% for the previous 6 years⁸. We suggest

¹ <https://www.bain.com/insights/prepare-for-the-coming-ai-chip-shortage-tech-report-2024/>

²

<https://www.cardiff.ac.uk/news/view/2848410-compound-semiconductor-consortium-announced-as-a-finalist-for-prestigious-award>

³ https://itritoday.itri.org/114/content/en/unit_01-3.html

⁴

<https://iea.blob.core.windows.net/assets/18f3ed24-4b26-4c83-a3d2-8a1be51c8cc8/Electricity2024-Analysisandforecastto2026.pdf>

⁵

<https://amplyfi.com/wp-content/uploads/2024/11/A-Technology-Catalyst-to-Fuel-the-Cardiff-Phenomenon-vNo2024.pdf>

⁶ <https://blogs.idc.com/2024/08/16/a-deep-dive-into-idcs-global-ai-and-generative-ai-spending/>

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<https://www.gov.uk/government/news/ai-expert-to-lead-action-plan-to-ensure-uk-reaps-the-benefits-of-artificial-intelligence>

⁸ www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai

considering tax and procurement incentives for Welsh businesses to consume from the AI-Supply Chain as part of the Digital Transformation Strategy

- **Drive Global Market Access for Welsh AI Firms** - 69% of failed startups attributed marketing and specifically “product market fit” as the reason for failure⁹. As Wales has a smaller¹⁰ (GVA per head in Wales in 2022 was 72.1% the second lowest of the UK countries and English regions), public sector dominant market¹¹ (7.6% higher public sector employment than the UK average of 24%), it is critical that growing commercial organisations are supported to sell outside of Wales. We recommend driving market access for Welsh businesses for revenue, but also talent and investment. Explore more AI-focused trade missions - aligning with national post-Brexit trade strategies, drive the Development Bank of Wales to become a platform to attract investors into the Wales AI Cluster mentioned above and lobby the UK Government for more access to special talent visas that align with this strategy.

In conclusion, Wales once positioned itself as the beating heart of a technological revolution¹² - pouring value out of its ports to drive industrial dreams. This was facilitated by a combination of natural resources, capability, investment and ambition. Underpinned by strategic vision and timing. With AI as the catalyst for the Industrial Revolution 4.0 our analysis suggests that several of these factors are already in play and if correctly aligned could see Wales once again able to lead the transformation of global industries.

⁹ <https://www.failory.com/blog/startup-mistakes>

¹⁰ <https://www.gov.wales/regional-gross-domestic-product-1998-2022>

¹¹

<https://statswales.gov.wales/Catalogue/Business-Economy-and-Labour-Market/People-and-Work/Employment/Persons-Employed/PublicPrivateSectorEmployment-by-WelshLocalAuthority-Status>

¹²

<https://amplyfi.com/wp-content/uploads/2024/11/Industrial-Revolutions-Impact-on-Wales-Economic-and-Social-Dynamics.pdf>

To what extent are businesses in Wales making use of AI and planning to do so in the future?

Specific data about Wales is not easy to access. However, the more significant trends are instructive. The UK (and Wales) are well placed in Europe¹³¹⁴, generally behind the two major players (US & China)¹⁵, but Wales ranked 8th most attractive European region for AI investment and Cardiff, in particular, has seen a 35% CAGR growth in the digital technologies sector (2016-2022), outpacing London by 13%.

Most businesses in Wales will already be using some form of AI, most commonly AI will be embedded in “off the shelf” software they use, e.g. spell checking, translation, data analysis, or more rarely building their own bespoke AI solutions use cases.

Off The Shelf Examples:

Some common use cases for AI in business that all Welsh companies could adopt:

- Improving information access with smart search and summarisation
- Streamlines coding tasks
- Run analysis on large data sets
- Proof read content and suggest grammar improvements
- Act as a creative partner - generating marketing images and copy in seconds, that would have taken hours to produce

The benefits of embedding AI are numerous; it has been shown to [improve productivity](#) by 80% and improve corporate profits by 45%. Furthermore, it is evidenced that around 75% of companies waste time on manual tasks that AI can automate.

Bespoke AI Solutions Example:

AMPLYFI helps global organisations leverage AI in their workflows, for example:

- Supporting major oil company Aker build a Carbon Capture IP portfolio
- Helping consulting firm Deloitte reduce its project effort by 88%
- Mapping c.10m AI Jobs in China for Georgetown University, Center for Security & Emerging Technology

AMPLYFI has delivered several projects aligned with Wales through the Innovation Advisory Council and Cluster¹⁶, but nothing to the scale and ambition of the projects mentioned above.

¹³ <https://techtour.com/news/2024/ai-landscape-in-europe-2024.html>

¹⁴ <https://palife.co.uk/news/technology/ai-investments-by-country/>

¹⁵ <https://www.pwc.com/gx/en/issues/artificial-intelligence/publications/artificial-intelligence-study.html>

¹⁶ clwstwr.org.uk

What are the potential economic opportunities and risks that AI may present for Wales, and how might these vary across different parts of Wales and across different sectors?

The Economic Opportunity

The greatest economic gains from AI are expected in China, with a 26% boost to GDP by 2030, and North America, with a 14.5% boost¹⁷. To capture these kinds of commercial advantages our analysis suggest that Wales should:

- Move rapidly to align existing programmes around an AI Supply Chain as documented in the opening statement
- Develop specialisms in the AI Supply Chain that are world leading, for example:
 - AI Infrastructure - look to next generation AI data centre requirements and chip architectures such as [Water Cooling](#) and [Compound Semiconductors](#)
 - Renewable Power - combine the properties of renewables such as wind/hydro with cooling properties required by data centres as mentioned above
 - Policies - build a [set of data-centre specific policies](#) to promote energy efficiency, such as permitting schemes, Minimum Energy Performance Standard (MEPS), consolidation policies, public sector procurement policies, incentive schemes, voluntary agreements, labels and certification schemes
 - AI Solutions - focus on rapidly scaling, niche global applications that drive export potential, such as Open Source Intelligence, Small Language Models and Representative AI
 - AI Consumption - look to drive base adoption of AI tools across Wales, but also catalyse more transformational projects
- Leverage this to attract talent, investment and economic growth

Initially the benefits would be concentrated in the Digital Technology sector, moving swiftly to generally support innovation across other sectors. We suggest considering a more sector by sector and region by region approach as the process and impact matures, however, this should not preclude moving rapidly to

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<https://www.pwc.com/gx/en/issues/artificial-intelligence/publications/artificial-intelligence-study.html>

capture the value, as Wales is likely competing with other regions keen to execute the same strategy.

An interesting success story is that of Norway who has risen as a [leader](#) in green data centres, now running 100% on renewable energy. Government incentives such as tax breaks and grants for technological innovation attracted tech giants and start-ups. These companies capitalised on the natural strategic advantages of the country's rainy and cool climate (similar to Wales) which fuels the country's vast hydropower production and is able to keep data centres naturally cool, to drive the production of energy-efficient data centres. New policies are being put in place to maintain the sustainable data centre industry, including discouraging [cryptomining](#) and [ending tax breaks](#) for power-intensive industries. These data centres support the growth of [AI technologies](#).

The Economic Risks

Our analysis suggests that economic risks are mainly driven by the slower or less effective adoption of AI in Wales, specifically:

- Reacting slowly and missing the opportunity - the world is rapidly adopting and investing in AI at scale, therefore advantages are fleeting, but disadvantages grow as these efficiencies become "the norm"
- Not finding an edge over other regions - AI is too broad a field for Wales to compete in many areas, instead finding specialisms across the supply chain that build on existing capabilities are key
- Lack of connection across programmes - ensuring that every pound spent is supportive of the whole supply chain, as opposed to being siloed - this is a key advantage for Wales as a smaller player in the space
- Not driving market access, e.g. Brexit eroding the ability for Welsh firms to access markets or deterring inbound investors and customers, limiting the speed and value of the investment.

How is AI likely to affect jobs and workers in Wales, and what actions might the Welsh and UK governments need to take in response?

AI has the potential to make all knowledge workers more efficient. 85% of British knowledge workers who use AI tools say it's already improving their productivity¹⁸. In this sense adoption, rather than retraining is key, as this drives short term efficiencies that would allow for greater value capture.

However, AI is available almost universally to organisations who wish to adopt it and there is a global race for efficiency. For example, AMPLYFI supported the Deloitte Centre of Research Excellence in India to reduce the effort to product analysis by 88% without compromising the quality of the outputs. A task that took 4 hours previously now takes less than an hour. This technology is increasingly being adopted globally, if Welsh organisations do not leverage these efficiencies, other organisations are.

To frame this bluntly, our analysis shows that the early adopters of AI tools are already seeing benefits. Laggards will suffer and developing programmes that facilitate Welsh organisations to rapidly adopt proven AI technologies are required merely to keep pace with the rest of the market.

Beyond this we suggest that the most significant advantage the Welsh & UK governments can provide to protect economic value is to support innovation, investment and partnership across the AI-supply chain, incentivising consumption of locally built solutions and providing market access as defined in our opening section. This facilitates locally retained benefits, similar to what we see with the Welsh Government's establishment of renewable energy ventures, [Ynni Cymru](#).

¹⁸ <https://d34u8crftukxnk.cloudfront.net/slackpress/prod/sites/6/Slack-Workforce-Lab-UK-report-1.pdf>

What skills are likely to be needed as a result of increased use of AI in the workplace, and how well placed is Wales to deliver these?

Skills across the AI Supply Chain will be varied and specific - growing, attracting and retaining Science, Technology, Engineering & Mathematics (STEM) skills will be critical for Wales ability to innovate and private sector organisations, as well as higher and further education programmes should be aligned to deliver Knowledge Transfer without inhibiting the ability of organisations to generate and use new Intellectual Property.

Outside of the AI Supply Chain it is also worth noting the potential for disruption to all other forms of work and thus skills. One major AI disruption that should be considered is Generative AI. Generative AI allows machines to create and interpret unstructured data formats such as text, images, sound and video. Generative AI currently accounts for 17.2% of global AI spending¹⁹ but is a key technology as it could be considered a “universal interface” allowing anyone to create, control or analyse complex digital information with simple instructions. This can lower barriers to entry, supercharge productivity and reduce our dependency on existing skills such as Computer and Data Science.

Our analysis suggests that key to a successful skills strategy for Wales is to drive access to Generative AI and other AI solutions at a broader level - empowering existing workers in Wales to do more/harder types of work with less effort. Whilst tangentially seeking to grow, attract and retain more specialised STEM skills to Wales and associated businesses.

¹⁹ <https://blogs.idc.com/2024/08/16/a-deep-dive-into-idcs-global-ai-and-generative-ai-spending/>

Federation of Small Businesses Wales

Consultation Response to the AI and the Welsh Economy Inquiry

About FSB Wales

Celebrating its 50th anniversary, FSB is the authoritative voice of businesses in Wales. It campaigns for a better social, political, and economic environment in which to work and do business. With a strong grassroots structure, a Wales Policy Unit, and dedicated Welsh staff to deal with Welsh institutions, media and politicians, FSB Wales makes its members' voices heard at the heart of the decision-making process.

Introduction

Artificial Intelligence (AI) has seamlessly integrated itself into many aspects of our everyday lives. Early examples of generative AI, such as predictive text, are now commonplace, while more advanced applications like Spotify use AI to analyse our listening patterns to recommend music. In transportation, platforms like Uber leverage AI to match drivers with customers based on proximity, while adjusting prices dynamically based on demand. Whether you're a private citizen or an SME, AI is increasingly shaping how we navigate our daily routines.

There is no single, universally agreed definition of AI. The House of Commons Research briefing on AI and employment law, published in August 2023, defined AI as 'technologies that enable computers to simulate elements of human intelligence, such as perception, learning, and reasoning. To achieve this, AI systems rely upon large data sets from which they can decipher patterns and correlations, thereby enabling the system to 'learn' how to predict future events. They do this by creating rules – algorithms – in response to the data, turning it into actionable information.'

In our UK report 'Redefining Intelligence'¹ published in March 2024, FSB refer to AI as: generative AI (including chatbots); machine learning; predictive AI; robotics; computer vision; natural learning processing; deep learning. FSB figures used in this evidence are mostly drawn from this report.

To what extent are businesses in Wales making use of AI and planning to do so in the future?

There are 5.5million small businesses in the UK, with 20 per cent already using AI, their role in AI's trajectory is undeniable². Small firms are agile and can make quick changes to their operations, so with the right framework, they will be able to embrace AI at pace. Forgetting them when looking at the opportunities – and risks – AI will bring would be a grave error. Developing digital leadership should be a continuous endeavour that demands substantial investment in advanced data processing, analytics, and cybersecurity capabilities.

We know through our 2023 UK report on innovation, 'The Tech-Tonic'³, that the larger a business, the more likely they are to have innovated, particularly when looking at size of turnover and number of

¹ Federation of Small Businesses. *Redefining Intelligence: The Transformative Potential of AI for Small Businesses*. Accessed November 25, 2024. <https://www.fsb.org.uk/resource-report/redefining-intelligence.html>.

² ibid

³ Federation of Small Businesses. (n.d.). *The Tech Tonic: How Small Businesses are Adopting and Adapting to New Technologies*. Retrieved from <https://www.fsb.org.uk/resource-report/the-tech-tonic.htm>

employees. Small businesses that plan to grow (*increase their turnover/sales by over 20% per annum in the next 12 months*) are more likely to be planning to use AI in the next two years. Of the businesses we interviewed for the purpose of this report, that are planning high growth, only 32 per cent said either that AI is not appropriate for their business, or they are not planning on undertaking any measures in relation to AI. This is compared to 51 per cent of all small businesses who said that AI was involved in their growth plans. This evidence provides an interesting snapshot, indicating higher adoption of AI could lead to high small business growth.

To understand the take up of AI in SMEs, it is useful to see the data from our 'Redefining Intelligence' report in more granular detail. 20 per cent of small businesses say they use one or more of the below technologies within their business:

- Generative AI (12%)
- Machine learning (3%)
- Predictive AI (5%)
- Robotics (1%)
- Computer vision (2%)
- Natural language processing (5%)
- Deep learning (2%)
- Other technology related to AI (2%)

However, this varies by sector:

- 37 per cent of small businesses in professional, scientific, and technical activities -
- 34 per cent of small businesses in information and communication -
- 14 per cent of small businesses in manufacturing -
- 12 per cent of small businesses in accommodation and food services -
- 11 per cent of small businesses in wholesale and retail -
- 1 per cent of small businesses in construction benefits

For the small businesses who currently use AI:

- 37 per cent say that large businesses have more resources to better utilise AI.
- 35 per cent have concerns about abuse of IP rights.
- 31 per cent are concerned about the commercial impact of deepfake technology.

When broken down further, we see that 40 per cent of small businesses in manufacturing say that large businesses have more resources to better utilise AI. This suggests that support will be needed to ensure the dissemination of this process innovation and support for businesses to take advantage of technological changes. While small businesses are agile, innovative and resilient by nature, there are undeniable barriers that are holding them back from tech adoption and innovation. The challenges faced by small business owners looking to grow their business or work more efficiently range from the lack of capital to the lack of understanding of implementation. This varies depending on the firm's sector, size, years in business and region as well as the small business owner's age and gender⁴.

What are the potential economic opportunities and risks that AI may present for Wales, and how might these vary across different parts of Wales and across different sectors?

⁴ Federation of Small Businesses. The Tech Tonic: How Small Businesses are Adopting and Adapting to New Technologies. Accessed November 25, 2024. <https://www.fsb.org.uk/resource-report/the-tech-tonic.htm>.

Our UK survey around the 'Redefining Intelligence' provides useful data to look at this area. However, we do not have data by geographical location to look at take up in different parts of Wales. In terms of potential growth, it is to be noted that AI take up is linked to growth in firms. Of the small businesses that are planning to grow rapidly in the next 12 months (increase turnover/sales by more than 20%), 60 per cent have plans to make use of AI within their business. 55 per cent of small businesses state AI could provide their business with potential benefits. These include:

- Working more efficiently (40%)
- Being able to automate tasks (29%)
- Developing / improving products and services (24%)
- Improving customer experience (22%)
- Providing cost / budget savings (21%)
- Gaining insights into their customer base (18%)
- Eliminating administrative tasks (15%) - Initiating new business models (13%)
- 73 per cent of small businesses still have concerns as to how AI might potentially impact their business.
- 46 per cent of small business owners say they or their workforce lack the knowledge and/or skills to utilise AI successfully. -
- 31 per cent of small businesses are concerned about their ability to manage AI securely / manage security risks. -
- 29 per cent of small businesses say that large businesses have more resources to better utilise AI. -
- 24 per cent of small businesses are concerned over the impact of deepfakes on their business brand / reputation. -
- 20 per cent of small businesses are concerned about the abuse of their Intellectual Property (IP) rights.
- 12 per cent of small businesses are concerned that AI will reduce the long-term viability of their business.

Over a quarter (26%) of small businesses do not believe that AI is appropriate for their business. This varies by sector:

- 51 per cent of small businesses in construction
- 45 per cent of small businesses in accommodation and food services
- 34 per cent of small businesses in wholesale and retail
- 25 per cent of small businesses in manufacturing
- 10 per cent of small businesses in professional, scientific and technical activities
- 5 per cent of small businesses in information and communications

This suggests there is a need to show the different uses of AI and targeted interventions need to show how it may be relevant in different ways to different sectors.

In July 2023, Google estimated AI tools could generate over £400 billion for the UK economy by 2030⁵ and save the average worker over 100 hours a year and it is important that SMEs benefit from this growth. Our research⁶ shows that over two thirds (69%) of small businesses have introduced some

⁵ Google. The UK AI Opportunity Agenda: A Pathway to Economic Growth and Responsible Innovation. Google, 2023.

⁶ ibid

form of innovation over the past three years with there being a significant number of small firms carrying out several different types of innovation, with 25 per cent of small businesses who introduced new products almost a third (31%) have introduced new or significantly improved processes. Some small businesses are more likely than others to have made innovative changes to their business in the last three years either to maintain a competitive edge over bigger companies or to simply improve efficiency and administrative systems that reduce labour intensive tasks such as data analysis and monitoring which allows the business to focus more on interacting with their customers.

Specialised and advanced digital/AI skills will be increasingly important to certain sectors looking to scale and remain ahead of innovation curbs. However, we should view digital skills more broadly. 46 per cent of all small businesses say that they are concerned that they lack the knowledge and/or skills or that their workforce needs to utilise AI successfully. 20 per cent of small businesses are concerned that their workforce lacks sufficient skills to utilise AI.

Bigger companies have the scalability and recourse to invest in advanced technology methods and have already started heavily investing in AI to reduce cost and remain agile against major competition. One of the most important priorities for policymakers in Wales is to address the opportunities that come with Digital Strategy Wales and to work towards clear objectives that maximise the potential to improve access to business support, healthcare provisions and education. The emergence of AI cannot be reversed, and so public bodies have a social responsibility to demonstrate the value of its uses.

This will require Welsh Government to avoid working in isolation of the private sector and research institutions who are developing tools and systems to be adopted by individuals and businesses. We need to ensure we're creating the right environment for small firms and while many associate 'digital first' as replacing human functionality in a business, the focus is on improving front facing roles by reducing the impact of back-office admin or labour-intensive maintenance through digital infrastructure already in use by businesses and organisations of all sizes.

Taking inspiration from best practice - It should be noted that the ability to take advantage of AI will be shaped by how effective introduction of digital infrastructure has already happened, with other small countries currently in a better position due to historical investment. This persistent gap in Wales puts at risk the potential for growth in the Welsh economy alongside other small nations such as Estonia and Denmark who have directly worked on frameworks such as government led digital strategies that lay an elementary level of digital infrastructure for both private citizens and businesses. Denmark have been a leader in providing this digital infrastructure, using it to shape e-governance and public sector delivery since 2006, and this means the digital architecture in place already means they are able to add on new tech and functionalities in an integrated way. Wales needs to look to long term digital infrastructure with a greater strategic lens in a similar way.

Estonia's e-Residency program provides us an excellent example of how to remain innovative in the face of competitive challenges on the international stage, whereby non-Estonian entrepreneurs are permitted to register and manage EU-based businesses online without being physically present in Estonia. Launched in 2014, the e-Residency visa grants access to Estonian digital services, such as company registration, banking, and tax filing, helping streamline international business operations. While not a residence or travel permit; it's aimed at enabling global entrepreneurs to operate in the EU's single market remotely. The direct economic impact of the e-Residency programme for the state budget amounted to 31 million euros in the first half of 2024. In addition, e-resident entrepreneurs

reportedly contributed over 11 million euros to Estonia's economy annually by using local business services⁷.

In this case, where small EU countries are re-thinking their digital economies, Business Wales and the Development Bank of Wales should remain strongly capitalised to support SMEs in innovation and to help connect firms with potential partners in tested economies for which could share knowledge and experience to further help develop the Welsh tech space. Alongside countries such as Denmark, who have established a specific Digital Agency to oversee the implementation of the Danish Government's policies for developing the digital public sector as well as large parts of the Danish digital service infrastructure, serious consideration should be given to how a similar function could exist within a newly established Economic Development Agency for Wales. We know through our research that 49 per cent of small businesses in Wales would go to Business Wales for advice if they were looking to grow their business. Apart from FSB, this is the highest percentage out of all business support services in the UK. This finding is similar to results of previous surveys, which confirms that Business Wales is well known and regarded by small businesses as a one stop shop for business support. It is currently a competitive advantage for the Welsh business environment however if digital infrastructure, which includes AI, is to be truly unlocked, the business support infrastructure needs to be better geared towards many of the challenges firms continue to face which have otherwise been overcome in other countries.

Wales has already shown its ability to lead on some of this through its universities and colleges. Cardiff University's Centre for Cyber Security Research (CCSR) is a leading UK academic research unit for cyber security analytics, focussing on the fusion of data science and artificial intelligence methods with interdisciplinary insights into cyber risk, threat intelligence, attack detection and situational awareness. A primary focus for businesses in the coming years will be to either implement research based solutions into their firms or to expand AI implementation across their organisation that directly improves human-to-human interaction rather than to replace it. Emerging technologies are crucial for the evolution of the SME sector. Especially when working to remain at pace with major competitors in their industries.

Business Support - AI can have the greatest impact on the way in which data is collected, analysed and translated for the end user(s). In this respect, financial services and business support providers have the most to gain from deep integration. Enhancing Information Management System (IMS) will help bodies such as the Development Bank of Wales (DBW) streamline informed decisions which offer end-user reports, data extraction reports and dynamic reporting capabilities. These basic functions are important foundations in building DBW capabilities to evolve and remain dynamic for its customers and to start delivering on commercially significant investment opportunities. The fundamental goal should be in gearing the Welsh economy towards being continuously agile, and efficient by using existing digital infrastructure alongside other global economies.

To do this, investing in IMAS (Internal Model Investigation and Analysis System) and EDRA (Electronic Data Reporting Framework Analysis) models will allow business support providers, including DBW to continue making human judgment calls that seek to improve the end user's outcome and thus access to business support, but through less labour-intensive monitoring methods.

The European Investment Bank has already adopted similar models to hold to account executives and decision-making processes, with cost savings being one of the main drivers, allowing for

⁷ e-residency applications and company incorporation increased 7% in first half of 2024 Katrin Vaga, <https://www.e-resident.gov.ee/blog/posts/e-residency-applications-and-company-incorporationincreased-7-in-first-half-of-2024/>

customer facing roles to be more effective and even more accessible with time being spent on the end user rather than systems and maintenance processes.

Nordea, a Scandinavian based SME bank have demonstrated the value of investing heavily in proprietary AI tools through their own developed 'Wisdom Engine' system that improves decision making processes, actionable insight and improved strategic decision making. In a bid to drive forward with capital intensive investment projects, the bank has also invested heavily in other systems such as 'Open Banking' to improve end user experience through improved exchange of data.

Efficiency is key to driving productivity and thus economic growth. The Development Bank of Wales sits in a unique position where they can potentially pioneer alongside other international development and investment banks due to both the eco-system it sits in and the support it receives from Welsh government. Harnessing Digital Strategy Wales, to support institutional overhauls of digital infrastructure is an opportunity that cannot be missed. As seen with other countries around the world, digital infrastructure within public bodies is key to strengthening transparency and government-based business support. Welsh Government should look at prioritising its digital strategy, acknowledging the broad benefits it could bring to public bodies in helping them remain agile and efficient alongside the private sector.

How is AI likely to effect jobs and workers in Wales, and what actions might the Welsh and UK governments need to take in response?

FSB research suggests use of AI by small businesses could eliminate jobs with routine tasks. In total, 15 per cent of small businesses state AI could eliminate administrative jobs, and this figure rises to 20 per cent for those small businesses already using AI. We should note that this allows for productivity gains, and space for other jobs based on different tasks, rather than necessarily loss of jobs wholesale.

35 per cent of small businesses have plans to make further use of AI within their business in the next two years. Specifically, they plan to:

- Undertake a course to improve their skills / knowledge in AI tools / technology (16%) -
- Explore new AI technologies to initiate new business models (13%) -
- Use AI to improve customer experience (13%) -
- Review internal / customer facing processes to see what could be automated (12%) -
- Use AI to drive cost / budget savings (9%) -
- Use AI to gain insights into their customer base (8%) -
- Invest in workforce training to upskill their staff to use AI tools / technology (8%) -
- Hire a consultant to enable their business to make better use of AI (2%)

Significantly, plans for such skills development are much higher in firms who have already adopted AI. As such support for AI take up will also lead to demand for skills.

It is nevertheless important to note that SMEs thrive too on their personal relationships with staff and others – people skills will remain vital, and AI should be introduced in a way that is complementary and augments these strengths. In our 'Redefining Intelligence' report, many FSB small employers report that their staff are empowered to share ideas and influence key decisions. Previous FSB research from 2018 found a "high willingness amongst small business innovative employers (86%) to take up innovations suggested by employees, which is a key indicator of employee engagement". The growth in AI should not impede small business employee engagement.

In the case of employment decisions there needs to be a human between the outcomes generated from AI and the final decision made by the employer.

There are undoubtedly concerns across sectors and in the wider economy about potential threats to roles in the adoption of AI and these can be felt at a granular level in individual businesses among employees. As with the wider conversation about certain productivity measures, smaller businesses and networks need to be supported in the communication of the intention and opportunity to adopt new technologies and need to be supported in understanding opportunities to redeploy or upskill staff to support retention.

So too will there be concern among self-employed and other micro businesses in areas such as accountancy and book-keeping about the potential impact of AI on their specialism, their professional input and a market need for that. As AI impacts functions develop across the marketplace, it will be necessary for business support systems to help guide small and micro businesses and help them adapt to new products and services which help them retain their competitiveness.

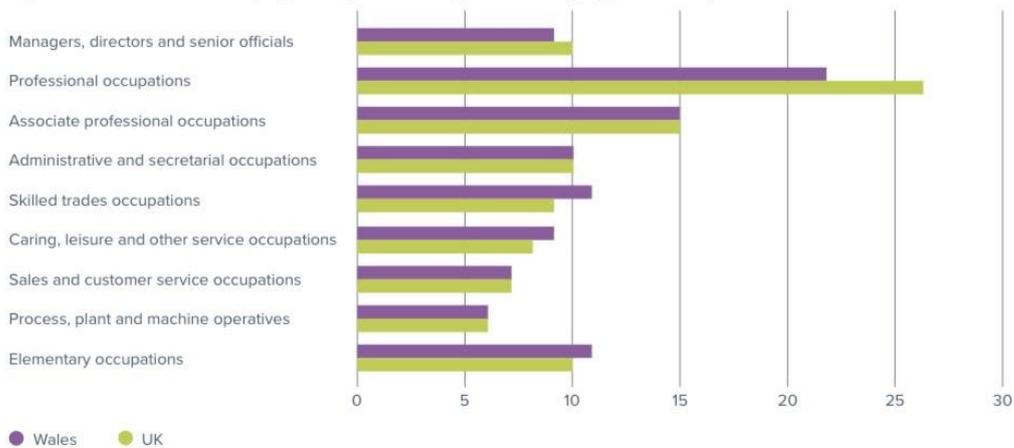
The skills of the population are an important component of labour productivity with improvements in skills estimated to have accounted for 20% of the UK's productivity growth before the financial crisis⁸. Compared to the UK average, Wales has a higher concentration of low-skilled adults (NVQ 2 and below), and a lower concentration of adults educated to degree level or above (NVQ 4+).

There have been improvements over the last decade, with a substantial reduction in the proportion with no educational qualifications. However, while there has been growth in higher-level qualifications, this has not kept pace with the UK average:

- The proportion of working-age residents with no qualifications has fallen from 12% in 2011 to 8% in 2020. This represented a fall of 34% in the total number of working aged residents without any qualifications against a decline of 37% across the UK as a whole.
- The proportion of adults educated to NVQ Level 4 and above has increased from 29% in 2011 to 39% in 2021. This represented an increase of 31% in the total number of working aged residents qualified to degree level and above, this was below the UK-wide figure of a 37% increase. Wales has fewer 'high skill' jobs compared to the UK average.

⁸ BIS (2015) 'UK skills and productivity in an international context'
(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/486500/BIS-15-704-UK-skills-and-productivity-in-an-international_context.pdf)

Figure 4: Skills demand – employment by broad occupational category (SOC 2020)



Source: ONS/Annual Population Survey Oct 2021-Sep 2022

In 2022 46% of employment in Wales was in the top 3 occupational categories compared to a UK average of 51%. This was almost entirely driven by lower levels of employment in professional occupations (22% vs 26%). Figure 4 shows how the occupational structure of Wales has changed over the past decade. The pattern has largely followed that of the wider UK economy, with growth concentrated amongst the top three occupational categories. However, there are several important differences to note:

- Wales has seen much greater growth in the number of people employed in caring, leisure and service occupations
- Growth in professional occupations has been considerably lower than the UK average
- Wales has experienced a higher rate of growth in the number of people employed in associate professional and technical roles.

Despite these trends, there is a growing mismatch between the demand for professional roles and the available workforce. This gap exists even though Wales has shown remarkable growth in its FinTech sector. In 2023 Wales had one of the fastest growing FinTech sectors in the UK and in 2024, Cardiff had the highest GVA performance outside of London⁹. In a recent report from FinTech Wales, the industry currently employs 16,000 people and has seen investment grow by 300% since 2022. In the 12 months up to October 2023, Welsh fintech firms raised £53m in publicly announced funding rounds, demonstrating Cardiff's vibrant and rapidly growing tech sector, particularly Fintech, which is supported by university-led incubators and has fostered a world class start-up culture. In H1 2024 alone, there was £25m of venture capital invested in Cardiff for these start-ups, making up 19 deals in total. The tech sector accounted for 47% of these deals, consequently raising £8m of venture capital, and further enhancing the tech sectors presence within Cardiff¹⁰.

Exploring the potential of AI in Wales' emerging and established industries could improve productivity and commercial viability. This should include examining specific tasks where AI can add

⁹ PwC. Good Growth for Cities 2024. Accessed November 25, 2024. <https://www.pwc.co.uk/government-public-sector/good-growth/assets/pdf/good-growth-2024.pdf>.

¹⁰ Savills. *The Growth and Transformation of Cardiff*. September 2024. Accessed November 25, 2024. <https://pdf.savills.com/documents/The-Growth-and-Transformation-of-Cardiff-Sept-2024.pdf>.

value, particularly for SMEs who have the most to gain from cross sector collaboration. As seen in FSB Wales' recent report 'The Power of Creativity'¹¹ uncertainty around the significance of AI and its use generally among the SME community is reflected in the creative industries. Given the uncertainty around its significance and potential for exploitation, it's perhaps unsurprising that it was the question on 'what AI means for your business' that drew the most varied response, with a spectrum of 'techno-pessimists' through to 'techno-optimists' and most places in between. This reflects the recent findings of FSB's Redefining Intelligence report for the wider SME community, with 55% seeing opportunities for their business whilst 73% of SMEs expressed concerns.

It was notable that those most concerned were those in the music industry who feared the potential impact on the market for their skills. This section of the conversation broadly reflected the general uncertainty and confirms what FSB have found in our report on AI and SMEs which is that an AI strategy is needed which looks at how its practical use for firms and good practice can be disseminated. Many would benefit from practical training to reduce admin time and costs. Specifically for creatives, there are potential uses of AI for creative events, performances and products, and these could be facilitated through proactive development of networks of AI experts that other creatives can access.

In general, governments should follow FSB's recommendations from its Redefining Intelligence report, including issues around copyright and enforcement. This regulation is a vital part of providing a fair level playing field and that creative work is valued properly.

- UK and Welsh Government should include AI information and training across support programmes emphasising its practical and creative use at the firm level.
- Creative Wales should work with the clusters to proactively develop networks of AI experts that other creatives can access to explore new ways of using tech in creative products and events for creative SMEs in a way that levels the playing field.
- FSB's 'Redefining Intelligence' report's recommendations on AI should be adopted, including:
 - Legislation that ensures that all AI created output clearly outlines that the content has been AI generated and a review into the use of AI and copyright and establishing auditing of AI use.
 - AI skills and tech adoption should be encouraged among SMEs through an independent UK body that provides policy recommendations, an Automation Fund, and a section on the successful use of AI within businesses within management courses (such as Help to Grow).

What skills are likely to be needed because of increased use of AI in the workplace, and how well placed is Wales to deliver these?

Digital literacy remains a significant barrier in terms of being able to implement AI tools that everyone, of all professions and background can effectively use. Researchers at Northeastern University have extensively invested in this, exploring AI's global economic impact by studying how generative AI will reshape labour markets and require new regulatory frameworks to improve productivity¹². Analysing policy shifts to anticipate AI-driven changes across various sectors and economies, will ensure insight leads to a balance of innovation with societal benefits. So far, the

¹¹ Federation of Small Businesses. The Power of Creativity. Accessed November 25, 2024.

<https://www.fsb.org.uk/resources-page/the-power-of-creativity.html>.

¹² Northeastern University. *Northeastern Researcher Creates AI Tools That Help Gig Workers Solve Problems*. Accessed November 25, 2024. <https://phd.northeastern.edu/news/northeastern-researcher-creates-ai-tools-that-help-gig-workers-solve-problems/>.

University have been successful in creating artificial intelligence tools to help freelancers organise, collect their own job-related data, analyse their work problems and develop strategies that can be adopted into everyday challenges. The tools currently draw on large language models and social theories to create “intelligent assistants” that help freelance workers understand their collective problems.

There is a need for deeper analysis of the growth ceiling being reached by certain sectors in the Welsh economy, such as FinTech, its relationship with higher education (HE) and further education (FE) institutions, and how improved methods can ensure supply and demand is met.

Addressing economic needs is a vital foundation for providing firms and learners with the opportunities available in a growing economy. Putting them at the heart of the system, and ensuring we identify SME needs is vital for knowing the skills needed to succeed. Small businesses typically find navigating the skills and training system more difficult than larger firms. For those that don’t invest in external training, a lack of awareness of the availability of provision as well as the benefits of investing are key barriers to overcome.

FSB Wales has continuously advocated for better alignment between skills support and business support that could help overcome obstacles alongside the increased availability of more suitable training opportunities, that are bespoke and flexible. The aims set out MEDR’s strategy has the potential to develop a structured approach that provides a central knowledgeable contact point to work with matching skills with SMEs. However, the lack of a robust business plan and identifiable KPIs, across several areas, suggests that this level of coordination has yet to take place within MEDR, putting at a disadvantage Wales’s opportunity to capitalise on the FinTech sector and the jobs created around it.

To better understand the potential for AI technology to be a driver in the Welsh economy, Welsh Government need to address the R&D gap that persists in this field.

- Academic research needs to be tested in areas of society that most of us understand and encounter every day.
- Welsh Government should consider what available recourses are available to attract major tech firms to HQ in Wales, thus helping feed a broader and more extensive eco-system that supports academic research and industry piloting projects.

Final Recommendations:

- Alongside the UK Government, Welsh Government should ensure that funding and capacity for Business Wales is retained after 2025, and that the Development Bank of Wales remains strongly capitalised to support SMEs in innovation.
- Welsh Government should acknowledge the opportunity that comes with Digital Strategy Wales and work proactively with business organisations, academic institutions, public bodies and the private sector to develop and deliver at pace its objectives.
- Welsh Government should support initiatives that improve SME access to finance through bodies such as Development Bank of Wales, working proactively with other institutions that have already adopted best practice.

Evidence from Professor Lina Dencik (Goldsmiths, University of London, UK)

My evidence is based on research carried out independently and as part of the Data Justice Lab across a number of different projects. Although most of my research is not specifically focused on Wales, the evidence I am providing is relevant for Wales in light of a) the acceleration of AI innovation taking place in Wales; and b) the nature of the largest sectors in Wales that have experienced some of the fastest rises in uses of AI.

My evidence is focused primarily on the Committee's orientation towards:

- How is AI likely to affect jobs and workers in Wales, and what actions might the Welsh and UK governments need to take in response?

Based on my research I want to highlight 4 areas of interest regarding this question: 1) Quality of Work; 2) (In)Equalities; 3) Accountability; and 4) Responses

1) Quality of Work

Much focus on AI and the future of work has been oriented towards job losses with less focus on how AI might impact quality of work. However, research on algorithmic management has shown that the growing reliance on data-driven technologies has implications for increased surveillance, job intensification and working conditions. Although AI does not feature in all aspects of algorithmic management, AI is likely to further uses of data-driven direction and performance assessment at work. In our own research with postal workers working for Royal Mail and call centre workers working for Teleperformance and BT in Wales and South West England, we found new automated systems to be routinely introduced in the management of workers. These tend to be oriented towards enhanced forms of monitoring by tracking worker activity and further assessments of productivity.

Our research showcases the extent to which the introduction of new automated systems is often perceived by workers to worsen working conditions. Call centre workers, for example, spoke of excessive forms of surveillance and an increased pressure to perform to faster call handling times with systems that often are not able to account for context and nuance, such as different client behaviours. They also spoke of new technologies being used to reward and discipline workers by attaching bonuses to data-driven performance assessments, including behavioural data such as tone of voice, which they often found arbitrary and unfair. In research with postal workers, we found that the growing reliance on automation, including new digital tracking devices, for managing and evaluating postal work was experienced by workers as undermining the dignity and social value of postal work. In particular, in a trend that we refer to as the 'Amazonification' of Royal Mail, workers considered the growing use of automation, including AI, to be central to the transformation of postal work from being a public service to mimicking the work of private couriers.

Research from others has highlighted how the impact of AI on the quality of work is particularly pressing in other sectors as well that are of key significance for the Welsh economy, such as retail and warehouses, and hospitality and service industries, including cleaning.

2) (In)Equalities

A significant area relating to AI and work is the issue of (in)equality. The use of AI in processes such as recruitment and hiring, for example, is overwhelmingly premised on not just increased efficiency, but also more objective decision-making. In research we have carried out with providers of automated hiring systems (some, but not all relying on AI), we found that the up-take of these systems is in part based on the claim that tools can address organisational and human bias in decision-making by relying on other sources of information than conventional sources (e.g. resumés) that have been shown to (unfairly) disadvantage some groups. Instead, AI in hiring relies on a range of data sources, including both Open Source Intelligence, social media, games and assessment questionnaires, to profile and predict candidates based on cognitive skills and personality traits for optimal fit. However, our research has also shown that (new) forms of discrimination and inequalities emerge with the use of AI in hiring. For example, so-called 'proxy' data can be used, either intentionally or unintentionally, to advantage or disadvantage groups with protected characteristics, such as age or gender. Furthermore, assessments may not account for diverse lived experiences, such as using completion time as a variable in the profiling of candidates that will tend to discriminate against certain forms of disability. Moreover, we found that optimising for fit based on behavioural data tends to consolidate stereotyped versions of the 'ideal candidate' that risks reinforcing historical patterns of discrimination and disadvantages those with unconventional career trajectories.

Within management, the use of AI has also been shown to have the potential to entrench or create inequalities. A prominent example is the use of facial recognition technologies by Uber to track drivers checking in and out of the platform that is unable to properly identify workers with darker skin tones. In our own research, including with both call centre workers and postal workers, we found that the advancement of data-driven technology within workplaces has been used to 'manage out' older workers, in particular, who struggle to adapt as easily to new systems or to meet targets based on younger bodies. Research has also shown that AI tools introduced in the workplace are particularly prone to exclude workers with disabilities that struggle to access platforms in the same way as able-bodied workers.

With the advent of so-called Generative AI, some of these inequalities are set to become even more pressing, and may have particularly harmful impact on workers with

neurodiversity and those speaking minority languages as it becomes more widespread within workplaces.

3) Accountability

Finally, our research has shown that issues of accountability are significant in the advancement of AI in workplaces. In hiring, for example, we have found that there is a lack of transparency regarding how AI systems work and how they might be challenged. Managers at workplaces that make use of AI systems are often not aware of the way models work and what variables are included in the design. This means that it may therefore be more difficult to identify and address possible forms of discrimination. The question of accountability in AI systems used in workplaces is particularly pertinent in light of the scale of impact they may have. Rather than impacting one worker because of a managerial decision, AI systems can potentially exclude entire groups of people, often at very early stages of the recruitment process (e.g. at the point of targeting candidates or when filtering CVs), that are likely to impact significantly more people. Moreover, we have found that hiring tools tend to be imported from other national and legal contexts, most notably the United States, that do not share the same legal definitions for issues like discrimination for example. This means that they are designed to accommodate regulation that is alien in a Welsh/UK context.

A key effort in addressing issues of accountability with the increased reliance on AI in employment is to focus on auditing mechanisms. In planned research, I have found that auditing processes are overwhelmingly carried out by private entities (e.g. consultancies) without proper scrutiny over what constitutes appropriate auditing methods. Moreover, auditing tools tend to rely on computational definitions of fairness (debiasing) which have been shown to be widely variable and contentious, in particular with regards to their limitations in accounting for diverse lived experiences, including people with disabilities. There is, therefore, a significant gap in how providers of AI technologies within workplaces can be held accountable.

Another issue of accountability refers to research we have done on the growing use of AI within the public sector. This research is significant in light of the recently announced partnership between the Welsh Government and OpenAI to leverage AI ‘to solve complex challenges and improve public services.’ In research we have done with public sector workers across the UK, we have found that the introduction of data-driven technologies often obscures relations between the state and citizens, and has implications for democracy, trust and the possibility for redress. Moreover, we have found there to be significant concerns amongst civil society organisations working with impacted communities about the potential for these technologies to further stigmatisation, stereotyping and discrimination within the public sector, particularly in light of the lack of transparency regarding when and where algorithmic systems, including AI, are in use.

4) Responses

Throughout my work, I have, together with colleagues, sought to highlight a number of potential responses to concerns about AI evident from our research. In research carried out with trade unions in the UK, for example, we have found that there has been a general lack of involvement by worker representatives in debates on the governance of AI. This also translates to the workplace where unions have pointed out that workers in many organisations have had little say over the introduction of new technological systems that have an impact on their work. A significant area for further action is therefore to identify avenues for consultation with workers and worker representatives about the implementation of AI technology in workplaces, before the point of implementation. This also includes ensuring better conditions for workplace democracy so that formal avenues are in place for workers to be consulted and to challenge the implementation of AI tools, and throughout the AI lifecycle (e.g. New Technology Agreements as part of collective bargaining).

In research we carried out on the potential of the Wellbeing of Future Generations (Wales) Act to address issues of data justice, we found that although the Act provides a robust framework for engaging with well-being objectives and practical steps to achieve those objectives, a significant limitation with regards to technology is the advancement of a digital policy largely in isolation from the Wellbeing of Future Generations (Wales) Act. We found that this left a governance gap of digital transformations that could be addressed with a closer synergy between the two. For example, we found there to be scope for developing procurement processes of digital services in line with the Act that places greater onus on AI providers to uphold standards of accountability, inclusion and diversity. This can include exploring enforceable contract conditions for the procurement of digital and AI technologies, which, if legally binding, would give professionals more leverage to make demands, helping to embed the Act's values into contracts and facilitate fairer governance of technologies. In particular, the Procurement Centre for Excellence could be responsible for this.

A further point of action refers to the auditing of AI tools in employment. As a rapidly growing industry, AI auditing needs more oversight and more rigorous standards established for methods of auditing. This also includes investment into alternative methods for auditing that go beyond the narrow confines of computational definitions of fairness and equality to ensure diverse lived experiences are accounted for. Auditing needs to be more closely aligned with regulatory requirements across data protection, employment and equality law.

Generally, greater demand can be made of organisations to provide transparency regarding the implementation of AI tools within workplaces. Currently, we lack

systematic reviews of where and how AI is used, making it difficult to gather a clear picture about its impact on work and workers.



AI and the Welsh Economy

TUC Cymru's written submission to a short exploratory inquiry by the Senedd's Economy, Trade and Rural Affairs Committee

Authors: Ceri Williams (TUC Cymru), Dr Philippa Collins (University of Bristol) and Adam Cantwell-Corn (Connected by Data).

About TUC Cymru and this submission

TUC Cymru is the voice of Wales at work. We're creating a Wales where everyone has a voice through their union and an income they can build a life on. We believe that every worker has the right to be safe, valued and respected. When workers act collectively, we have the power to create positive change in society. We bring workers together through 48 unions to fight for better jobs and a more equal and prosperous country.

This document was prepared by TUC Cymru's AI Reference Group on behalf of all our affiliated unions. The group includes representatives of the following unions: CWU, FDA, GMB, PCS and UNISON; representatives of the following bodies: [Connected by Data](#), [Fairwork project](#), [Institute for the Future of Work](#) and Dr Philippa Collins.

Summary

The use of AI by businesses is increasing rapidly. AI offers opportunities to the Welsh economy, including potential productivity gains, but we must ensure that the benefits are shared equitably with workers and across Wales. It is clear that AI also entails some risks to the Welsh economy and the workforce particularly. Here, we focus on the inevitable transformation of many jobs – an estimated two-thirds of jobs could be impacted by AI automation – and the possibility of job displacement. In addition, TUC Cymru's research has already found evidence of management by AI leading to work intensification, surveillance and threats to human rights.

Introducing a regulatory framework that strikes a balance between enabling organisations to take advantage of AI and other emerging technologies and guaranteeing an effective range of safeguards, rights and responsibilities for working people is urgently needed. Wales – with our structures of social dialogue – can make a significant contribution to realising this need. The Workforce Partnership Council has already demonstrated our potential through its recent adoption of important guidance: *Managing Technology that Manages People: A Social Partnership Approach to Algorithmic Management Systems in the Welsh Public Sector*.

The roll out of AI requires significant investment in skills and capability building to enable workers from across Wales to interact responsibly with AI and share in its benefits. However, research indicates that traditional skills in customer service, office management and communication will remain vital.

To mitigate against the risks that AI generates when deployed in the work context, we call for:

1. Limits to be placed on the development and use of systems, including those based upon AI, that infringe upon the fundamental rights of working people.
2. Enhanced rights to information and consultation for workers and their representatives from the earliest stages of decision-making regarding AI.
3. Guarantees that new technologies will not infringe upon the rights of working people.
4. Updates and amendments to existing regulatory frameworks to take into account the capacities and risks of new technologies.

To what extent are businesses in Wales making use of AI and planning to do so in the future?

The use of AI by businesses to support, enhance or conduct aspects of their work is increasing rapidly. An [ONS survey](#) undertaken in April 2023 reported that 16% of businesses across the UK were using artificial intelligence technologies. Uses such as spam filters (11%), chatbots (4%) and facial recognition (3%) were highlighted. 13% of businesses reported at least one planned use of artificial intelligence. This survey, as well as [others that relate to the UK](#), indicate that AI use is very dependent upon the size of a business and its sector. A 2022 [DCMS survey](#) highlighted IT and tele-communications and legal sectors showing high adoption rates (close to 30%) and hospitality, health and retail the lowest at around 11% of firms. This UK-wide evidence shows that the use of AI has increased within organisations and will continue to do so. Establishing safeguards and responsibilities that protect the rights and values that we hold in Wales in this fast-moving context is a pressing concern.

Recent [research by TUC Cymru](#) supports these UK-wide findings. TUC Cymru spoke to groups of workers across Wales who reported that some sectors are already deeply affected by the use of AI. For example, Generative AI has a strong effect on journalism; education and creative industries such as TV, film, drama and photography. AI can also be deployed to manage the performance of work or to support a variety of worker-management functions (for example, setting targets or deadlines, or allocating workloads). Respondents to our focus groups from the following sectors had experienced this: logistics and retail, manufacturing, call centres and the civil service.

What are the potential economic opportunities and risks that AI may present for Wales, and how might these vary across different parts of Wales and across different sectors?

There are various levels at which AI presents economic opportunities or potential to create prosperity in Wales, although – we would argue – only if this process is managed inclusively and with the participation of a range of stakeholders, including workers. For example, investment from major technology firms could be attracted into Wales. Recently, the Prime Minister [announced](#) a US company will invest in an AI data centre in the North East of England. In this case, the deal secured included a commitment to training and skills development in the local area although [scepticism has been expressed](#) about the effect of this form of investment upon local economies. Generally, however, AI could lead to investment, new jobs and the creation of different types of jobs and opportunities in Wales.

At an organisational level, AI provides opportunities if it is developed, adopted and implemented fairly and responsibly, for example by new firms or existing businesses developing AI-related products and services to increase customer base and revenue. Within organisations, AI has the potential to boost productivity, by automating repetitive tasks, processing large quantities of data very quickly or detecting patterns in data that would be imperceptible to humans. Some research and analysis [argues](#) that generative AI could have a levelling effect, by enabling wider access to knowledge and skills that is currently reserved for elite professions, such as law, computer programming and professional services.

However, the benefits of AI must not be assumed and AI adoption must not be undertaken at the expense of workers' pay, terms or conditions. Data should be made available to unions about the intended – and actual – impact of automation and AI upon jobs and workers to inform unions' response and employers and unions should work together to ensure that any gains are shared with workers through – for example – shortened working hours and an improved work-life balance. The Welsh Government's economic strategy will need to consider how the potential productivity gains of AI are shared equitably between companies and workers.

The impact of AI is also likely to be highly specific to sectors and types of work, as mentioned above. This creates the possibility that the advantages and benefits of working with AI will be seen in a small section of the Welsh economy, whereas the negative effects will be felt more strongly elsewhere. For example, a technology company and its workers will benefit from the profit gained by developing and marketing a new AI tool for resolving customer queries but the use of this tool in organisations would have a negative effect on the job qualities and quantities available to customer-facing administrative staff. For example, in 2023 [BT announced plans](#) to cut 55,000 jobs by 2030 with the intention to reduce headcount through the use of AI.

The main economic risks that AI presents for Wales are:

- Transformation of jobs and job displacement (discussed below).
- Risks associated with particular uses of AI, e.g. to manage workers (discussed below).
- [Poor working conditions](#) of those doing upstream data work, primarily in the Global South but also in the UK.
- [High levels of concentration of power and resource in the advanced AI market](#), which may reduce competition and lead to a small number of large firms dictating the terms of service, prices and functionality of AI systems to firms, workers and public authorities.

Navigating this will require developing public sector capabilities to challenge tech companies and uphold the public interest, rigorous policy and practise within the private and public sectors as indicated in the skills section below.

How is AI likely to affect jobs and workers in Wales, and what actions might the Welsh and UK governments need to take in response?

AI has the potential to transform how jobs are performed. There are two main consequences of this transformation, dependent upon the sector, job role and AI adopted. One consequence of AI adoption is full automation of tasks, or aspects of processes, leading to the loss of roles entirely. The second consequence is a fundamental change in how a person performs their work, relying on AI to enhance their decision making or undertake processes on their behalf. The extent and speed of these transformations is very difficult to predict and there are differing views.

In a recent [report](#), The Tony Blair Institute for Global Change estimated

“that full and effective adoption of AI by UK firms could save almost a quarter of private-sector workforce time – equivalent to the annual output of 6 million workers ...occupations and sectors that involve complex manual work such as the skilled trades or construction are likely to be less exposed to AI. By contrast, those workers who perform routine cognitive tasks, particularly in administrative occupations, and those who work in data-intensive industries where it is easier to train new AI models (such as banking and finance), are likely to be more exposed.”

In contrast, however, experts [observe](#) that any predictions must be taken with ‘a pinch of salt’. Carl Benedickt Frey (Oxford University) [told the BBC](#): “The only thing I am sure of is that there is no way of knowing how many jobs will be replaced by generative AI... Consider the introduction of GPS technology and platforms like Uber. Suddenly, knowing all the streets in London had much less value - and so incumbent drivers experienced large wage cuts in response, of around 10% according to our research. The result was lower wages, not fewer drivers.”

As an automation technology, AI can lead to deskilling of workers, and therefore their replaceability. This can [reduce the individual and collective bargaining power](#) of workers, which may lead to a greater share of economic gains from AI adoption gravitating to the already wealthier sections of the population and deepening inequality.

TUC Cymru’s [report](#) shows that workers in Wales are already experiencing change in their work and workplaces as a result of the use of AI. Respondents reported the following consequences of the integration of AI into their work processes:

- Office workers experiencing monitoring and intensification of work through a new approach to scheduling.

- Drivers and delivery workers managed by AI systems, including systems that establish unrealistic targets for performance that workers struggle to meet.
- Creative workers fear their work will be used to generate supposedly new work by generative AI without their consent.
- Energy sector workers being made redundant after decisions made by AI.

Research into the use of AI, particularly in the context of managing staff, has shown that a wide range of risks are created. [Recent work](#) by Philippa Collins highlights that the use of AI and other technologies to support or undertake management functions generates three central concerns:

1. a threat to a range of human rights (privacy, data protection, freedom of association) and workers' rights where systems are not implemented responsibly and fairly;
2. difficulties in enforcing rights and achieving transparency, consultation and accountability regarding the use of AI/algorithmic management, and
3. the sidelining of human connection between managers and staff, as well as the decline in the exercise of human judgment and decision-making in the management relationship.

A [report](#) by Fairwork, based on case-study research at UK-based Amazon warehouses, supports this analysis. Harms are associated with algorithmic management and AI-integrated robotics, including work-intensification; pervasive workplace surveillance; an inability to change rigid labour process systems set by omnipresent and opaque algorithms; and a greater loss of control in the ability of workers to understand and intervene in the decision-making processes that affect and govern their day-to-day work.

Dr Collins argues that introducing a regulatory framework that strikes a balance between enabling organisations to take advantage of AI and other emerging technologies and guaranteeing an effective range of safeguards, rights and responsibilities for working people is urgently needed. The UK is well-placed to devise such a framework.

In addition, Wales – with its unique structures of social dialogue – can make a significant contribution to the process of regulation by gathering evidence from social partners and seeking agreement on shared principles regarding the fair and responsible design, development and adoption of AI across Wales. The Workforce Partnership Council has already undertaken important steps here by adopting guidance entitled *Managing Technology that Manages People: A Social Partnership Approach to Algorithmic Management Systems in the Welsh Public Sector* on 18 November 2024.

To mitigate against the risks that AI generates when deployed in the work context, we call for:

1. Limits to be placed on the development and use of systems, including those based upon AI, that infringe upon the fundamental rights of working people.
2. Enhanced rights to information and consultation for workers and their representatives from the earliest stages of decision-making regarding AI, throughout adoption, and during oversight and evaluation of AI/automated decision-making systems. This should include a statutory duty to consult worker representatives where an organisation intends to use technology (including AI) to undertake or support tasks in the workplace.
3. Guarantees that new technologies will not infringe upon the rights of working people, including their workplace rights and their human rights, or be implemented in a manner that leads to a deterioration in their terms and conditions at work. Employers should be required to undertake a detailed risk assessment, in consultation with workers and their representatives, before introducing new technology or making changes to any existing technology.
4. Updates and amendments to existing regulatory frameworks to take into account the use of new technologies, particularly in relation to the Equality Act 2010, trade union regulation, data protection law, health and safety regulations, working time, minimum wage and unfair dismissal law.

These recommendations draw upon the TUC's [proposals](#), as well as research conducted by [Collins](#) and the [Institute for the Future of Work](#).

Further, the Welsh Government should consider how other policy tools and institutional arrangements can be used to incentivise the development of socially useful AI. The Welsh Government could, for example, encourage universities and research institutions to collaborate with workers, trade unions and communities in the design and development of AI and incentivise businesses to adopt best practice in terms of worker participation and AI governance.

What skills are likely to be needed as a result of increased use of AI in the workplace, and how well placed is Wales to deliver these?

Recent research conducted by the Workforce Partnership Council, as well as by the Institute for the Future of Work, show a significant need for investment in the development of skills and capability regarding AI. Without this investment, three consequences are likely. First, the Welsh economy will not be well-positioned to take advantage of the economic opportunities outlined above. Second, where AI is used, it will not be used responsibly and fairly with a full understanding of its operation and its limits. Third, existing inequalities between groups and regions in Wales will be further entrenched as some communities continue to be disadvantaged by a lack of access to education, capability and skills development opportunities.

The Institute for the Future of Work [reports](#) that competencies in IT and data analytics are commonly required by businesses, but they must be combined with other skills such as communication, client service, office management and customer relations. There is a need for ‘continuous skill development in this constantly evolving market’, but this must be matched with capacity in these other areas to lead to success in an organisation.

It is vital to ensure that other aspects of the labour market and its regulation are sufficiently equipped. For example, employers, managers, directors and corporate boards often do not have adequate knowledge, skills and processes to introduce or appropriately manage AI systems. This is particularly pertinent given the ‘hype’ and aggressive marketing of AI tools and a resultant rush to introduce AI. If managers and executives are not appropriately skilled, there may be negative impacts for workers, the business and the wider economy.

Relatedly, trade union representatives and officials play a key role in identifying and redressing potential harms and other negative impacts of AI in the workplace. As such, continued and expanded support for workers and unions to understand and negotiate AI is an investment in the skills needs to enable a positive AI future.

Similarly, a lack of resource or skills for the Welsh Government and public agencies to understand and uphold best practise and legal requirements on the use of AI may lead to negative legal, economic and social outcomes. This includes leveraging the power of public sector procurement as envisioned within the Social Partnership and Procurement Act to apply to data and AI systems. TUC Cymru currently [has a project underway with Connected by Data](#) on incorporating worker voices into these systems as a means to advance work quality, protect rights and effective AI implementation in public service delivery.

Agenda Item 6

Document is Restricted



Evidence paper for Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs for General Scrutiny at Economy, Trade and Rural Affairs Committee

14/11/24

Information provided to aid the Committee in advance of the Deputy First Minister's attendance for General Scrutiny on 5 December.

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1. Sustainable Farming Scheme

1. I am due to update the Senedd on 25 and 26 November on an updated Scheme Outline for the SFS and publish an updated Scheme Outline.
2. The Scheme Outline is based on the culmination of extensive engagement with the Ministerial Roundtable, Officials Group and the Carbon Sequestration Evidence Review Panel. This has included reviewing the technical aspects of each Universal Action and the scheme requirements individually and as a whole based on the framework of a Universal layer for all, with additional Optional and Collaborative Actions for those who choose to do more. The Carbon Panel were responsible for considering the evidence on additional and alternative actions to sequester carbon which could be included in the Scheme.
3. This Scheme Outline will set out an interim position that is the result of discussions and agreement with the Roundtable so far. This is not the final Scheme. The changes made address the needs of farmers, while meeting the Sustainable Land Management objectives from the Agriculture (Wales) Act, as well as climate and nature commitments.
4. The Scheme Outline will be used to undertake an updated economic analysis and impact assessment to determine impacts on a range of agricultural, environmental and social aspects.
5. The Ministerial Roundtable and Officials Working Group will continue to review additional detail of the Actions, scheme requirements and administrative processes.
6. Ministers will make final scheme decisions next summer, based on evidence including the economic analysis and impact assessment once it has been considered by the Roundtable.

2. Animal diseases

Bovine TB.

7. The TB Technical Advisory Group has met regularly since its establishment in April, including a meeting with stakeholders at the Royal Welsh Agricultural Show in July. At their October meeting, the TAG reviewed inconclusive reactor policies and heard from farming unions, veterinary delivery partners and the Animal and Plant Health Agency (APHA). A forward work programme is in development.
8. Following advice from the TAG, changes to on-farm slaughter were announced in April and monitoring this alongside industry.
9. In September, a [Written Statement](#) announced the membership of the TB Eradication Programme Board. The Board has a wealth of practical expertise and first-hand experience of bovine TB. Also represented are the farming unions and the British Veterinary Association (BVA). The Board will hold its first meeting in December. An immediate priority will be reviewing improvements to communications and engagement with farmers and vets. The TAG and Programme Board will work together to provide strategic advice to the Welsh Government.
10. The long-term bovine TB statistics from across Wales as a whole show positive progress in tackling TB, with new herd incidents decreasing. We recognise the situation varies across the different regions and this is why we are taking a targeted approach.

Bluetongue Virus (BTV-3).

11. On 23 September 2024, [‘The Exotic Disease \(Application and Amendment of Enactments\) \(Wales\) Order 2024’](#) came into force making amendments to key pieces of legislation. This provides a more flexible, proportionate, and risk-based approach to disease control in Wales, which will allow industry to continue to operate in a safe manner.
12. A Written Statement was issued in November confirming Bluetongue restrictions were lifted from the affected farms in Gwynedd and Ynys Môn. We continue to work closely with APHA, the Pirbright Institute, other UK administrations and industry stakeholders to ensure we are prepared to deal with the threat of Bluetongue, including important decisions such as the role of livestock vaccination.

Highly Pathogenic Avian Influenza (HPAI) risk levels.

13. Due to the increasing number of wild bird cases in Great Britain and the start of migration season, the risk of HPAI incursion in wild birds and poultry have been increased with risk levels anticipated to increase further

over the winter. Given we are in the bird migration season, risk levels are subject to change and will be assessed on a regular basis.

African Swine Fever (ASF) - Exercise Whitebeam (GB Wide)

14. Welsh Government officials took part in a tabletop exercise to test government preparedness for an ASF incursion on a large-scale commercial pig premises. To identify gaps and strengthen governments' contingency plans for handling a significant outbreak of animal disease, a lesson learned document will be created.

3. Animal welfare

Animal Health and Welfare Plan for Wales 2021-26:

15. We continue to progress our 5-Year Animal Welfare Plan, including Programme for Government commitments. Reports on progress are published here: [Animal Welfare Plan for Wales 2021 to 2026 | GOV.WALES](#). A report on year three will be published early 2025.

CCTV in slaughterhouses

16. [The Mandatory Use of Closed Circuit Television in Slaughterhouses \(Wales\) Regulations 2024](#) were laid on 30 April. Requirements to install and operate a CCTV system came into force on 1 June. The offences and powers to inspect, seize and enforce the Regulations will come into force on 1 December 2024.

Live Exports

17. [The Animal Welfare \(Livestock Exports\) Act 2004](#) bans the export of live cattle, sheep, goats, pigs and equines for slaughter and fattening from GB. We support the ban because the export of animals for slaughter or fattening is unnecessary, and they could be slaughtered or fattened domestically. [The Animal Welfare \(Livestock Exports\) Enforcement Regulations 2024](#) are another milestone and supplement the Act by establishing enforcement powers, offences, and penalties relating to the prohibition on export. The Regulations are scheduled to come into force on 1 January 2025.

Responsible Dog Breeding and Ownership

18. The second Responsible Dog Ownership Summit took place on 24 October with a [Written Statement](#) issued in November. A series of events have been held throughout 2024 that have promoted and embedded multi-agency partnership working and actions, in particular, with local authorities, police forces and charities.

National Model for the regulation of animal welfare, a Programme for Government commitment

19. The consultation on the licensing of animal welfare establishments, activities and exhibits closed in March. Over 1100 responses and evidence were received. The summary of responses will be published by the end of the year.

Animal Licensing Wales:

20.A Welsh Government funded [Animal Licensing Wales](#) project has introduced a new website and portal for local authorities, breeders, and the public. This development goes hand in hand with efforts to combat illegal breeding and the raising of standards and conditions. The project has supported 161 investigations relating to unlicensed dog breeding and 9 Local authorities in executing 145 warrants. Their important work was recently recognised with a prestigious RSPCA 'PawPrint' Special Recognition Award.

4. Community food strategy

21. The Programme for Government 2021 – 2026 includes a commitment to ‘Develop a Wales Community Food Strategy (CFS) to encourage the production and supply of locally-sourced food in Wales’.

22. The vision of the CFS is ‘to create a strong, vibrant and more prominent, grass roots, local element to the food system, rooted in communities and benefitting communities.’ This will start to recreate a lost local element to the food system, strengthening local food supply activity and connectivity and to meet local food demand. Building a richer web of local food activities and connections can only help strengthen food system resilience to adapt to the modern challenges of the wider UK and international food system.

CFS Development Approach:

23. The following principles are guiding the development of the CFS:

- To focus on forming new ways of working by creating an ongoing joined-up partnership approach across Welsh Government and with the key local level actors, including local authorities, public bodies and third sector organisations.
- To provide enabling solutions that will support local level direction setting and action. The CFS will avoid a ‘top down’ directive approach and instead stimulate the creation of local initiatives that have been designed to address local needs.
- For the priorities and goals of the Strategy to be developed and refreshed through an ongoing process of engagement and collaboration to ensure the focus and direction remains pragmatic and relevant.
- For the inclusion of relevant key performance indicators to provide the CFS with credibility and accountability, and to help measure impact.

5. Agricultural pollution regulations

24. The Welsh Government continues to support farmers to deliver improvements in our water, soil and air quality, by enhancing nutrient management, and to reach compliance with the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 (the Regulations), including the slurry storage requirements. Slurry mismanagement, linked to slurry storage issues, is one of the main causes of agricultural pollution, which itself is one of the main causes of water pollution in Wales.

25. In April 2024, £20m was committed for two schemes to support farmers reach compliance with the Regulations. The Nutrient Management Investment Scheme and the Small Grants – Yard Coverings scheme application windows opened during the summer. This brings our total offer to £52m to support on-farm infrastructure investments since the Regulations were introduced. Over 800 farmers applied for support in the latest application windows. Grant Awards with a value of £1.06m have already been accepted under the Yard Coverings scheme and more than 700 farmers, all eligible applicants, have been invited to progress to the next stage of NMIS and will need to submit their full applications by 9 December 2024.

26. The Regulations require a minimum level of slurry storage to help farms manage slurry appropriately to prevent agricultural pollution. The issues being faced by farmers in respect of the closed periods highlight the importance of manure management in preventing pollution. The closed periods are evidence based and their purpose is to prevent excessive losses of nitrogen and phosphorus to water following application of manures during those periods, when crop growth is limited. During the closed periods, when crop need for nutrients is limited and rainfall is greater, leaching and run-off risks are increased and significant nutrient losses can occur.

27. The guidance accompanying the regulations makes it clear that additional storage may be needed to comply with the other requirements of the Regulations, to prevent pollution. The guidance states the slurry storage calculation “*provides the statutory minimum only and does not take into account all factors relevant to your ability to comply with the other requirements of the Regulations. Relevant factors should be taken into account, such as whether the store will be completely empty prior to the closed periods and the provision of additional storage to address the risk of poor weather preventing spreading of slurry following a late autumn silage cut and future rainfall predictions.*” The amount of storage needed will be highly dependent on the farming practices of individual farm businesses. Hence the regulations do not unnecessarily burden farms

which may be able to operate with a lower level of storage (the statutory minimum).

28. Whilst some farms may have faced difficulties with planning for slurry stores, local planning authorities have advised that planning is usually taking around 10-18 weeks. A transitional period of 174 weeks was provided in relation to slurry storage and the closed periods, meaning most farms will have had sufficient time to adapt. However, in recognition of the difficulties farms have faced since the regulations were introduced, the Welsh Government introduced changes to the Cross Compliance Verifiable Standards to provide a more proportional approach, balancing the risk of pollution to the environment and the administrative and technical requirements of the Regulations.

29. These changes were announced in a Written Statement: [The Water Resources \(Control of Agricultural Pollution\) \(Wales\) Regulations 2021 Closed Periods and changes to the Cross Compliance Verifiable Standards SMR1: Water Protection](#). The revised Cross Compliance Verifiable Standards have been published [here](#).

30. Where breaches of the slurry storage requirements occur, the closed periods and the restrictions which apply following the closed periods will be reduced where the breach is identified before 1 August 2025. This will only be the case where the pre-existing regulatory storage capacity is met (as introduced by the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991 and carried forward in the Water Resources (Control of Pollution) (Silage and Slurry) (Wales) Regulations 2010) and evidence of having taken reasonable steps to achieve compliance is available.

31. The review of the effectiveness of the Regulations to prevent or reduce pollution is due to be completed by the end of March 2025.

6. Fisheries

Strategic Approach to Welsh Fisheries and Aquaculture

32.I confirmed in the Senedd on 13 November my intention to set out a strategic approach to Welsh fisheries and aquaculture within the next few weeks.

33.In the meantime, I expect our future direction to remain as previously set out, with the delivery of sustainable management at its core, and a focus on delivery of Fisheries Management Plans and adaptive management measures. All supported by science and evidence and engagement with stakeholders. We will continue to deliver in line with our statutory duties and seek opportunities and initiatives to support the industry to develop and grow. Our regular funding rounds through the Welsh Marine and Fisheries Scheme will be designed to underpin all the priorities to help deliver the outcomes we all want to see.

Fisheries Management Plans (FMPs)

34.Significant progress has been made with FMPs. The joint England and Wales plans for Bass and King Scallop were published in December 2023 and work is underway to develop the Crab and Lobster FMP for Wales. The latest position on these plans is given below.

35.Bass - The Wales Sea bass Advisory Group (WSBAG) was established in January to advise officials and the Cabinet Secretary on the prioritisation and implementation of the FMP actions in Wales. So far, the group has met six times this year and agreed the following priority actions for Wales, aligned with the bass FMP goals:

- Strengthen our evidence base to inform how we manage the bass fishery i.e. data on discarding and recreational removals in the Welsh zone.
- Understanding the social, cultural and economic benefits of bass fishing in local coastal communities in Wales and how they can be maximised.
- Reviewing the most appropriate closed season for the stock.
- Consider the current authorisation system for all removals of Bass in Wales.
- Reviewing the regulation of shallow inshore and shore-based netting to ensure sufficient protection is in place for migratory fish.

36.The group has already begun to review the practice of shore-based netting and officials are developing an implementation plan based on the agreed priority actions for Wales.

37. King Scallop - The Wales King Scallop Advisory Group (WKSAG) was also established in January to advise officials and the Cabinet Secretary on the prioritisation and implementation of the FMP actions in Wales. To date the group has met five times and agreed the priority FMP actions for Wales:

- Build on current king scallop monitoring data set in Wales to inform management and assess stock status against MSY or a proxy.
- Address evidence gaps of importance to Wales to inform FMP actions and the development of measures.
- Review the current regulation of scallop fishing in Wales before developing a new framework of adaptive management measures. It may be necessary to take a phased approach considering measures such as:
 - Broad alignment of measures across administrative boundaries.
 - Preventing over-exploitation in the short term before developing harvest control rules responsive to stock status.
 - Mitigation of negative environmental effects of scallop dredging.
 - Climate change mitigation and adaptation.

38. The group has discussed the data available on king scallop stocks in Wales and, whilst it is improving, it is not yet sufficient to provide an assessment of the stock's status relative to its maximum sustainable yield (MSY) or a proxy measure. The actions from the FMP therefore necessarily lead towards gathering additional scientific data to assess the stock against MSY and inform a new framework of management measures to ensure the stock is fished sustainably.

39. The group has reviewed the regulatory framework for king scallop fishing in the Welsh EEZ. Potential changes to regulations have been identified with a view to create a new fishery management framework of measures and deliver FMP actions. The additional environmental impacts of scallop fishing will also need to be considered in relation to seafloor integrity and effects on climate change.

40. Officials are developing an implementation plan to deliver the short-term and longer-term actions necessary to manage the King scallop stock in the Welsh EEZ.

41. Crab and Lobster - The Welsh Government commissioned Seafish to carry out public consultations for the commercial and recreational fisheries. Over the spring and summer this year, stakeholders were asked what the strengths and weaknesses existed of the current management approaches in Wales. Developing a strong understanding of what our stakeholders felt important put us in a strong position to start developing the first Wales only fisheries management plan for crab and lobster.

42. We expect from this autumn to summer 2025 we will draw together the information on the fishery, including scientific evidence to help us produce a draft Fisheries Management Plan.⁵²

43. The first meeting of the Crab and Lobster Advisory Group was held in October. Through the engagement and advice from the group we will be in a position to produce a draft plan and formally consult on the plan. We aim to publish the plan in 2026, in line with the Joint Fisheries Statement.

Wales Marine and Fisheries Scheme

44. Funding round four closed to applications on 24 May 2024 with 34 applications being submitted. Following stage 1 assessment, 22 applications were selected to progress to the second and final stage of assessment. Of these, 15 applications were successful and were awarded contracts totalling £493,036.59.

45. Evaluation of the initial three rounds has been procured and is underway with the final report expected in December 2024.

Agenda Item 9

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Agenda Item 10

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