Welsh Government
Consultation – summary of response

Innovation Strategy for Wales Consultation Analysis

Final Report

November 2022

Overview

This document provides a summary of the responses to the consultation on the draft innovation strategy for Wales.

Action Required

This document is for information only.

Further information and related documents

Mae'r ddogfen hon ar gael yn Gymraeg hefyd / This document is also available in Welsh. Please click here to access the report in Welsh.

Large print, Braille and alternative language versions of this document are available on request.

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Additional copies

This summary of response and copies of all the consultation documentation are published in electronic form only and can be accessed on the Welsh Government's website.

Link to the consultation documentation: https://gov.wales/innovation-strategy-wales

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Glossary

Acronym/Key word	Definition
CJC	South West Wales Corporate Joint Committee
ICT	Information and Communications Technologies
ERDF	European Regional Development Fund
ESG	Environmental, Social, and Governance
NHS	National Health Service
RD&I	Research, Development, and Innovation
SME	Small to Medium sized Enterprises
WBFGA	Well-Being of Future Generations Act
HEFCW	Higher Education Funding Council for Wales
CTER	Commission for Tertiary Education and Research
WCVA	Welsh Council for Voluntary Action

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Executive Summary

i. Miller Research was commissioned by the Welsh Government to carry out the analysis for the consultation on a new integrated Innovation Strategy for Wales.

ii. The consultation on the Innovation Strategy for Wales proposal went live on the 20th of July 2022. The consultation sought views on Welsh Governments' development of a new strategy for Wales which aims to develop a vibrant innovation culture in a stronger, fairer, and greener Wales. The consultation asked respondents their views on what they believe needs to happen in order for more people in Wales to innovate, and for more people in Wales to benefit from innovation.

iii. Specifically, the consultation asked respondents to comment on the Innovation Strategy Goals, the strategies alignment with the WBFGA priorities, the effects that the Innovation Strategy would have on the Welsh language, and the opportunities innovation provides to deliver a more equal Wales.

iv. Separately, the consultation asked respondents to provide demographic data for the purposes of equality measures.

v. The consultation closed on the 30th of September 2022.This report presents the final findings on the consultation responses. As of the 30th of September, there have been 153 unique responses submitted to the consultation. Responses to the consultation were independently analysed and summarised to form the basis of this report.

Below are the themes that were consistently highlighted within the responses

Key Themes

- Digital technology
- Transport infrastructure
- Equal innovation opportunities within Wales
- Inclusion of SMEs and Entrepreneurs
- Developing a skilled workforce

vi.   Section 1: Innovation Strategy Goals (Q2-4)

Key findings:

- Desire to see consistent growth which is comparable to similar nations at an EU level
- Sector specific training opportunities that encourage innovation
- Identifying and addressing environmental issues on a local basis
- Funding provisions that encourage innovation opportunities
- Invest in a sustainable economy that is built on the latest technology
- Evidence of new products and services across industries
- A sustained programme where skills can be shifted into life-long learning opportunities
- Addition of a highly skilled and flexible workforce which are able to deliver the products, services, and technologies necessary for Wales' future economy
- increase in SMEs and start-ups that have benefited from the implementation of the Innovation Strategy

vii.   Section 2: Draft Strategy Comments

Key findings:

- Wales can achieve global recognition as a leader in innovation, decarbonisation, and renewable technologies
- The strategy will assist in driving forward economic growth, and provide opportunities for people living in Wales through collaborative approaches to innovation
- Smart and Sensor technology, healthcare, and higher education should be a key focus for Wales
- Wales is well placed to implement a place based innovation approach
- Greener and more energy efficient businesses

viii.   Section 3: Alignment with WBFGA priorities

Key findings:

- Ensuring that innovation opportunities are provided within all areas of Wales
- Travel and accessibility concerns in certain areas of Wales due to poor infrastructure
- Focus on sourcing alternative partnerships and opportunities with countries and businesses around the world
- Concern over the future political implications of the proposed strategy
- Support for a place-based, tailored approach
- Champion both digital and in-person connectivity
- Appreciation of a focus on collaboration, with calls for further coproduction
- Clarify specific desired outcomes and objectives
- Consider incentivisation for businesses and organisations to change from business-as-usual approach
- More on skills and careers information for green jobs and health/social care capacity

- Opportunities for innovation in procurement should be explored

ix.   Section 4 – Equality and Levelling up

Key findings:
- Concerns about the strategy being urban and South Wales focused
- Respondents want to see the inclusion of more underrepresented groups including (but not limited to) LGBTQ+ people, Black, Asian, and Minority Ethnic, older people, and disabled people
- There needs to be equal access across for everyone to participate and benefit from innovation opportunities
- Consider Welsh regional diversity within the development of the strategy
- Ensure consistent and regular communication with UK government and other UK bodies.

x.   Section 5 – Views on Innovation

Key findings:
- A culture of innovation is one where ideas can flourish, be tested, and be improved
- To develop innovation culture there is a need for supportive leadership
- Barriers to innovation in Wales include demographic factors, costs, and skills
- Most respondents do not feel supported in participating in innovation due to limited opportunities
- Greater collaboration is needed between the 'triple-helix'
- Establish and promote accessible innovation hubs at the community-level and encourage novel approaches.

Section 6 – Welsh Language

Key findings:

- Promote the Welsh language through technological and software development

- Invest in indigenous Welsh companies to develop language software

- Welsh needs to be more embedded across the strategy

- The place of Welsh in the Innovation Strategy very much intersects with the need to develop accessible, affordable language software, and address digital exclusion.

xi.   Section 7– Final comments

Key findings:

- Financial support for disabled people

- More support needed for job seekers

- Increased accessibility of the survey for those with learning difficulties.

- A summary of glossary of terms

- The inclusion of social care perspectives

1.   Overview of Consultation Responses

1.1   In total, there were 153 unique responses submitted to the consultation and 2 duplicate responses. 53 of these responses were submitted by email, 99 responses were submitted responses were submitted through the online survey platform. One hardcopy response has been received for this consultation. 17 of these responses did not respond directly to the consultation questions.

1.2   In addition to submitted consultation responses, the analysis in this report includes analyses from the insight reports from the Co-Production Network for Wales, feedback from one online event, in person events held in Swansea, Aberystwyth, Anglesey, and Cardiff, and comments from the external stakeholder group.

1.3   A breakdown of the number of responses receives by stakeholder group is outline in Table 1.1

Table 1.1 Summary of stakeholder type responses to the consultation

Stakeholder type	Number of responses
Mixed	2
Other	7
Citizen	9
Third sector	11
Research Organisations/ Academic Institutions	21
Private Sector	25
Public Sector	46
Undisclosed	32
Total	**153**

Table 1.2 key of the different stakeholder types that responded to the consultation

Stakeholder key	
Mixed	Respondents who have stated that they identify as multiple stakeholders
Citizen	Respondents responding to the consultation as an individual
Third Sector	The third sector includes community groups, voluntary organisations, charities, social enterprises, co-operatives, community interest companies, and housing associations
Research Organisation	Legal bodies who are involved in scientific research and providing educational services
Academic Institution	Education institutions such as universities that offer post-secondary academic education
Private Sector	Businesses that are for-profit and are not owned or operated by the Government
Public Sector	Businesses which are owned and run on behalf of the public
Other	Respondents who identify as a different type of stakeholder

1.4   Further information concerning the demographics of the respondents is found in Annex A.

Approach to analysing consultation responses

xii.   All substantive responses submitted which aligned directly to the consultation questions were collated into a central database. Each was reviewed against the relevant question to draw out the dominant and alternative views that were expressed.

xiii.   Given the extremely wide range of views and points made, the approach has been to draw out themes where possible and include a range of views within these.

xiv.   Where possible, responses have been separated by stakeholder type. However, due to the amount of undisclosed stakeholder responses, responses have been grouped by theme or agreement.

xv.   General responses which did not directly reference the consultation questions have been analysed and attributed to the relevant question, where appropriate. This inevitably meant drawing some inferences from the content, and also required some assumptions on the part of the authors with regard to the question being addressed.

xvi.   The following sections of the report present the responses to each consultation question by key theme and sector, and attributed to stakeholders type when possible.

2.   Section 1 – Innovation Strategy Goals (Q2-4)

> **Key findings:**
> - Desire to see consistent growth which is comparable to similar nations at an EU level
> - Sector specific training opportunities that encourage innovation
> - Identifying and addressing environmental issues on a local basis
> - Funding provisions that encourage innovation opportunities
> - invest in a sustainable economy that is built on the latest technology
> - Evidence of new products and services across industries
> - A sustained programme where skills can be shifted into life-long learning opportunities
> - Addition of a highly skilled and flexible workforce which are able to deliver the products, services, and technologies necessary for Wales' future economy
> - increase in SMEs and start-ups that have benefited from the implementation of the Innovation Strategy

Question 2

What would you like the Innovation Strategy to achieve in the short (1 year) term in relation to: economic growth skills development social equity climate and environment

2.1   This chapter considers consultation responses received for Question 2 in the consultation document: *'What would you like the Innovation Strategy to achieve in the short (1 year) term in relation to: economic growth skills development social equity climate and environment.'* The section is divided into four sections discussing the following headings: opportunities for economic growth, the development of skills, addressing social equity measures, and climate and environment factors within Wales.

Economic Growth

2.2   The majority of respondents expressed their desire for the Innovation Strategy to result in growth that "exceeds current levels" and is at a comparable level to similar nations at a national and EU level. To

achieve this, respondents recommended investing in businesses and industries that focus on growing digital and green infrastructure to create a true innovation ecosystem. This will be the foundation for up-skilling and improving social conditions, training, and work opportunities for the younger generation, and for older generations who wish to start up a business.

2.3　One private sector respondent stressed the need to fully understand the barriers to innovation and commercialisation in Wales, in terms of skills, finance and expertise. Then to devise a clearly articulated roadmap for delivery, with quick wins and longer-term goals, possibly with a focus on key sectors (such as compound semiconductors), the creative sector, and data.

2.4　Another felt that a short-term response would be to encourage the adoption of existing technologies to boost innovation and productivity, whilst in the longer-term supporting technologies to increase energy efficiency, reduce waste, and incentivise recycling, sustainable packaging, and circular economy. However, one business group felt that the current operating cost difficulties faced by employers had eclipsed a focus on innovation. Current inflation on industrial inputs was said to be running at more than 20 per cent, business confidence was said to be low, and it was felt that this was not reflected in the consultation document.

2.5　The need for cross-sector collaboration was a key message from many respondents. Several noted the lack of communication and collaboration between the private and public sectors in Wales and felt that an innovation strategy which facilitated this could lead to financial and efficiency savings in the public sector.

2.6　There was support for SBRI competitions in Wales, with a call to roll these out to allow local authorities to manage multiple competitions. Some respondents called for greater alignment between UK and Welsh Government initiatives to maximise the impact on Welsh

innovators. Application rates for Innovate UK funding, for example, remain low in Wales.

2.7   As well as digital infrastructure, one respondent called for a transport policy to focus on enabling business development and social mobility. Respondents also noted the need for stability within the innovation funding landscape, and the importance in developing mechanisms to facilitate cross-sector funding and cooperation on innovation measures. A public sector respondent was clear that infrastructure to manage innovation was needed, such as leadership on commercial direction, frameworks for innovation that could support IP management and sharing, and support for exploitation of assets, and risk and reward sharing. An all-Wales IP policy could encompass access to university IP knowhow as part of a wider "innovation commons."

2.8   Public and private sector respondents were concerned about Covid-19 recovery and community resilience in the face of high inflation and energy costs.

2.9   One public sector respondent stressed the importance of mapping key areas of innovation and stakeholders such as innovative companies, by location and then providing promotion and support for innovation to start-ups, the self-employed and SMEs.

2.10   Another felt that the strategy could help to position Wales to lead the world in developing a regenerative economy, based on principles of sustainable development, natural resource management and ecological restoration.

2.11   The rural economy was seen as important, requiring action to promote inclusion (including digital inclusion), carbon reduction and circular economy to create a prosperous green economy. It was also felt that there was scope for more support for rural innovation – such as crop resilience, climate change adaptation and environmentally friendly agriculture, along with new uses for traditional products such as wool.

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2.12   A third sector respondent felt strongly that a social enterprise model should be the business model of choice for Wales, citing the increased retention of wealth that this enables. The sector should be prioritised, with appropriate and impactful incentives created to ensure that investment in innovation by partners is encouraged. One example of this would be a voluntary sector innovation lab to build skills and provide space for collaboration on innovation.

Skills Development

2.13   Several respondents highlighted skills and labour shortages in the workforce, which were affecting productivity gains. There was a strong message that innovation requires better support for skills and training. Respondents highlighted the need for a skills review to establish a baseline understanding of where there are current skills gaps, and what skills will be needed in the future through Future trends reports, for example. The point was made that demand signals from employers need to be understood and responded to quickly, to feed growth industries.

2.14   Respondents noted that there should be a review of skills shortages in industries such as:

- Life Sciences and Health
- Low carbon
- Energy and Environment
- Advanced Engineering and Materials
- Information and Communications Technology (ICT) and the Digital Economy

2.15   Respondents from both the public and private sectors highlighted the need to continue to build on European Structural Fund (ESF/ERDF) and Horizon 2020-funded work, and the importance of continuing to develop skills and innovation infrastructures in Wales. It was suggested that a coherent framework is needed to allow a systemic approach to linking RD&I funding, skills development, sustainable

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employment, and a Net Zero Wales. The role played by WEFO (and the need for a funded successor body) was said to be vital, providing sector-based funding for innovation projects.

2.16 One private sector respondent called for targeted and rapid skills interventions for priority growth sectors. These should include intrapreneurial skills and capacity building to develop innovation growth. The food and drink sector was cited as having the potential to support the adoption of automation and digital technologies to increase productivity and deliver growth.

2.17 Public sector respondents stressed that there is currently a shortage of skilled workers in Digital, Data, and Technology fields, with this shortage being seen in both the private and public sectors. In some cases, businesses were said to have invested in new technology, but then lacked the skilled staff to optimise it to achieve the full potential benefits. Other sectors experiencing skills gaps included social care, hospitality, and construction.

2.18 One public sector respondent suggested that education institutions and R&D facilities could be used to train the existing workforce in new areas of technology, collaborating with both HE and FE to deliver apprenticeships and running outreach activities in schools to inspire younger people and create a pipeline of skills for the future. The Wales Data Nation Accelerator was cited as an asset which could be operationalised to provide digital transformation capacity and leadership for Wales at scale, including support to develop the skills agenda.

2.19 Another respondent highlighted the need for innovation to be entrenched as a behaviour in the whole workforce, along with the space to allow innovation to be developed at all levels.

2.20 Many respondents expressed concern regarding the possibility of young people leaving Wales, and Wales not retaining skills and people. Respondents stressed the importance of providing sustainable and valuable employment that gives people purpose,

pride, and desire to create value for their own communities. However, in order to increase skills and attract the best candidates for roles in Wales, respondents noted that the government must address the issues surrounding wages. Respondents highlighted that many skilled workers in Wales leave the country and work elsewhere due to insufficient pay. One public sector respondent noted that the low salaries offered were making it harder for potential employees to stay in Wales and raise their families. Without skilled people in these roles, the respondent stated that it will be harder for Wales to attract big businesses that rely on skilled workers.

2.21   The need for more apprenticeships in Wales was raised by individual respondents, as these would encourage young people to stay near their home communities.

Social Equity

2.22   Respondents from both the public and private sector highlighted the importance of addressing wealth disparities in Wales and engaging with those who were the most disadvantaged to identify priorities. Private sector respondents highlighted that the disparity of wealth is becoming more prevalent from a global, national, regional, and local perspective. To ensure that Wales continues to have an inclusive and effective government, it is important to understand the areas of known inequality, which include gender, ethnicity, sexual orientation, age, and hidden disabilities. Respondents recommended engaging with the most deprived areas in Wales to identify priorities for co-production projects aimed at "levelling-up" the most challenged areas in Wales. One respondent suggested a change of approach from Smart Cities to "wise, wealthy and healthy" communities.

2.23   Public sector respondents suggested community funding for foundational economy innovation, showcasing examples of best practice. Others highlighted that more businesses need to provide work experience opportunities and reasonable adjustments for

disabled people. Respondents also recommended a review and evaluation of current social policies within the education, housing, health, and health care services, to ensure that they currently fit in line with the Innovation Strategy targets. It was recommended that progress can be achieved by implementing KPI's to ensure current processes are performing adequately.

2.24   Key areas for attention here were the integration of health and social care and improving the ways in which people can be signposted and better connected to the services they need. One respondent suggested that early adoption and implementation of innovative technologies into health and social care services offers an opportunity to realise quick impact and value extraction. It was pointed out that Wales can learn from other countries that prioritise health innovation such as the Netherlands which allocates more than 10 per cent of its health budget to RD&I.

2.25   A third sector respondent stressed the value of volunteering, especially amongst older people, to capitalise on their experience and skills and to contribute to wealth creation. Another pointed out that people with learning difficulties had suffered disproportionately through the Covid-19 pandemic, face greater cost of living challenges, and need to be prioritised, including being involved in decisions around innovation support through co-production with end users.

Climate and Environment

2.26   The majority of respondents noted that it was important to identify and address environmental issues on a more local and regional level. One private sector respondent stressed the innovation opportunities implicit in achieving the Net Zero 2030 targets and the potential benefits of greater public private collaboration. Another stressed the importance of continuing to prioritise investments aligned to Net Zero. Respondents from the private sector highlighted the importance of supporting new and existing businesses in undertaking assessments

and setting targets to accelerate their transition into decarbonisation. Respondents emphasised the need to engage with industry, HE institutions and communities to be incentivised to build an integrated approach to research, innovation and planning for the economy and environment.

2.27   One public sector respondent suggested that year 1 of a new innovation strategy needs to urgently put the dual crisis of climate and the nature front and centre of thinking and resourcing on innovation. Another said that mechanisms to scale floating wind at pace are required and innovation around consents are needed to enable growth in the sector.

2.28   In addition, innovation and social change have a role in meeting the interconnected challenges of nature and climate emergencies. Another suggested that all Welsh Government funded pilot innovation projects should be required to include life cycle assessments for carbon as a requirement. Providing tax incentives for carbon negative businesses, and encouraging citizens to adopt sustainable energy sources, were also highlighted by public sector respondents as priority areas.

2.29   An academic institution respondent referred to R&D underway in the energy sector and in supporting industrial decarbonisation through catalysis techniques and the rapidly accelerating area of ammonia technologies for the hydrogen economy, within which Cardiff is a national leader.

2.30   An individual respondent stressed the potential for more innovation around energy generation, especially in relation to tides. They also emphasised the importance of integrated, low carbon public transport and the need for more transport infrastructure in North Wales.

Question 3

What would you like the Innovation Strategy to achieve in the medium (2 to 5 years) term in relation to: economic growth skills development social equity climate and environment other

2.31　This question considers consultation responses received for Question 3 in the consultation document: *'What would you like the Innovation Strategy to achieve in the medium (2 to 5 years) term in relation to: economic growth skills development social equity climate and environment.'* As above, responses to this question are divided into into four sections, discussing: opportunities for economic growth, the development of skills, addressing social equity measures, and climate and environment factors within Wales. Many of the responses to this question reiterated those put forward for Q2. Hence, we have focused on additional proposals in the analysis below.

Economic growth

2.32　There was widespread support from respondents for a clear strategy and delivery plan for innovation in the medium term, with measurable outcomes in terms of economic growth, skills development, levels of collaboration, social inclusion, climate impact and long-term jobs which are embedded into the local area. These last outcomes should be measured not just in terms of number of people employed, but also the quality of the employment on a wages scale which would indicate that the skills level and retention are likely to be high. The plan should outline clear sources of funding and opportunities to progress innovation, with supporting infrastructure and a framework for culture change. One respondent felt that there should be a core plan to begin with, before moving to a more granular focus on specific high-growth sectors and businesses over time.

2.33　Public sector respondents noted a variety of measures that they would like the Innovation Strategy to achieve in the medium term, these included:

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- Funding provisions to encourage new innovation opportunities targeted at micro, small businesses, start-ups, and self-employed businesses

- Establishing innovation labs to help support new innovation ideals and proposals

- Implementation of Impact Reporting Tools which can evaluate success over the medium term

- New models of public service delivery prototypes, iterated, implemented, evaluated, and improved.

2.34 Following the end of EU funding, there was a need identified from respondents to link to regional and UK strategies and support mechanisms, such as the City deals, Levelling Up and Shared Prosperity Fund, as well as available Welsh Government domestic funding streams. Successful bids in this context include namely Media.Cymru (creative sector) and CSConnected (semi-conductors) as examples of what can be achieved at scale for prosperity. Other examples include Cardiff being recognised by Innovate UK as one of five UK centres of excellence for precision medicine.

2.35 Private sector respondents were again keen to see greater collaboration between public and private sectors to enable a more agile approach to addressing key societal problems. One also recognised the contribution of the university sector in Wales, suggesting that the Welsh Government could collaborate with the Wales Innovation Network to create a strong narrative and identity for Welsh university research.

2.36 An aerospace industry respondent felt that innovation should focus on industry "pull" to convert research into private sector innovation and subsequent commercialisation. University technology centres and industry catapults were seen as good mechanisms for doing this. The international dimension of research and collaboration was also stressed and new supply chains beyond the EU need to be identified post-Brexit.

2.37   There was a call to use areas of devolved competence such as environmental or product standards, transport policy and environment policy to drive innovation.

2.38   One health sector respondent wanted to see an innovation pathway to provide a lifecycle approach to development and implementation of innovation in health and social care. They aimed to establish a horizon scanning function to inform the pathway but felt there is a need to identify new funding opportunities and approaches to commercialisation, simplified innovation funding processes, and incentives for adopting evidence-based, innovative processes and technology. Another agreed the need for widespread, cross-sector collaboration to drive innovation, but stressed that innovation has to be truly transformational and incorporate adoption of technology to deliver patient benefits.

2.39   There was also a call to digitise the food and drink supply chain in the medium term to build long-term sustainable and productivity.

2.40   One third sector respondent identified target sectors for innovation support, such as marine and community renewables, green hydrogen, and agri-tech. In addition, there are extensive opportunities for retrofitting homes, rollout of heat pumps and green financing to make them happen.

Skills Development

2.41   There was support for a clear, targeted delivery plan for innovation, bringing together universities, colleges, schools and training providers with industry and the public sector to establish an innovation syllabus supported by a range of courses at all levels. The role of the Commission for Tertiary Education and Research (CTER) was acknowledged as being increasingly important in delivering the objectives of the strategy. One respondent called for a skills plan to illustrate the decline of fossil fuel-based jobs and where new jobs/skills will be needed e.g., powering a just transition. Another

suggested a cross-sector skills framework for innovation to recognise learning needs and opportunities for innovation. STEM and creative sector learning were cited as critical to take advantage of opportunities in digital, creative, and technological innovation.

2.42   Respondents from both the public and private sectors highlighted the need for bespoke sector specific training opportunities administered by local colleges and universities that encourage innovation. Respondents highlighted that these training opportunities should be within the Advanced Materials & Engineering, ICT and Digital Economy sectors. Furthermore, there is a need for skills specific grants for businesses in Life Sciences and Health, Low carbon, and the Energy and Environment industry. One respondent wanted to see the development of Net Zero skills academies across Wales, with targets for training retrofit specialists and low carbon heating engineers.

2.43   One respondent emphasised the need for change in delivery of apprenticeships and technical education to render it more agile, employer-centric, and decentralised. One employer expressed frustration at the poor links between industry and schools and the difficulty of offering placements, experiential visits, or employment for pupils.

2.44   Respondents also highlighted the potential benefits in detailing ambitious targets in relation to the number of skilled workers employed, number of new businesses created, and carbon emissions saved. With performance measures it is important that these are developmental and not "punitive."

2.45   Several public and private sector respondents stressed the importance in the need for more higher skilled and well paid workers. This was particularly highlighted in sectors such as Digital Economy and ICT, and within the Advanced Materials & Engineering where it is important to identify skills needed in such industries to ensure job skills are developed. One private sector respondent called for better

interaction between universities, colleges and the private sector, and support for long-term, paid placements as part of the student experience.

Social Equity

2.46 Respondents noted that in the medium term they would like the Innovation Strategy to inspire generations of innovators in industry, across schools and universities, and across the regions of Wales. In order for this to occur, respondents stressed the importance of addressing the widening wealth gap, and continuing to identify and resource long-term priorities for "co-production projects" that are aimed at "levelling up" deprived areas in Wales and reducing income and health inequalities. This should include funding for pilot projects arising from community innovation and foundational economy.

2.47 Respondents also recommended that following the review of social policies, changes should be implemented and should have a focus on innovation within Education, Housing, Health and Healthcare services. There should also be a review of the KPI's that were implemented, which should also include a focus on innovation within the sectors mentioned above.

2.48 One aspect of social equality related to healthcare data – allowing patient access and sharing with collaborative partners. These will require new Governance structures to enable sharing and collaboration.

2.49 One private sector respondent raised the issue of engaging communities with government, industry, commerce, and education as part of a systems thinking approach to securing a sustainable environment and sustainable economy. Another wanted to see closer ties between the innovation strategy and the Wellbeing of Future Generations Act.

2.50 An academic institution respondent was clear that the strategy should also seek to address any gaps in equality and support for innovation

from groups with specific protected characteristics, including ethnic minorities and disabled people.

Climate and Environment

2.51   There was a general welcome for the commitment to facilitate a transition to a greener future in the Strategy. One respondent felt that this could be accelerated by improvements to recycling facilities, investment in green energy and insultation, along with effective public transport.

2.52   There was consensus amongst public sector respondents that there needs to be funding made available for areas of environmental concern. One particular focus should be on delivering healthcare closer to home to support climate and environmental benefits, including community diagnostic tools and preventative technology.

2.53   Respondents stressed the need for a programme which can identify progress made towards carbon neutrality set targets, and to review businesses decarbonisation targets to ensure that they remain on track to becoming Net Zero.

2.54   One public sector respondent felt that Wales is well placed to be an innovator around climate-focused behaviour change.

2.55   Private sector respondents noted the need to continue maintaining open communication and dialogue with environmental agencies and continue to conduct independent studies to review and address potential environmental improvements in the identified areas of concern. One wanted to see more support for manufacturers to become more sustainable and achieve their Net Zero goals – not just through reducing GHGs, but crucially through innovative products and services to support a green industrial revolution. AI and machine learning are already said to be driving sustainability and energy efficiency in business.

2.56   One called for grants and incentives for decarbonising private rented properties, as this is currently very underserved.

2.57   Several respondents also noted the importance in having a green economy that works for all. This includes reducing dependency on cars by having reliable public transport throughout the regions of Wales, and the growth of public sector research establishments, national labs, and energy efficiency buildings. A private sector respondent called for better connections between high streets and commuter communities to reduce car use. More support for community energy schemes was also called for, in terms of funding, planning and shared administrative resources.

Question 4

What would you like the Innovation Strategy to achieve in the long (5+ years) term in relation to: economic growth skills development social equity climate and environment

2.58   This question considers consultation responses received for Question 4 in the consultation document: *'What would you like the Innovation Strategy to achieve in the long (5+ years) term in relation to: economic growth skills development social equity climate and environment.'* Responses to this question are divided into into four sections, discussing: opportunities for economic growth, the development of skills, addressing social equity measures, and climate and environment factors within Wales.

Economic Growth

Public Sector

2.59   Respondents noted that they would like to see the UK outperform the growth of peer group nations in chosen sectors of focus. In order to achieve this, Wales needs to invest in a sustainable economy that is built on the latest technology. One public sector respondent noted that *Cwm Silicon* in South Wales should be looked at again, with a focus on technologies such as Smart Sensor Technology which is seen to be increasingly valuable and needed in the future. Another public sector respondent noted that throughout Wales there needs to be a hub of well-connected and sustainable businesses which have a wide range of operating models (i.e., companies, trusts, community, and social enterprises) that contribute to Wales reaching Net Zero targets by 2030.

Private Sector

2.60   Private sector respondents noted that in the longer term, the economic growth strategy should be mindful of the substantial impacts forecasted due to changing climate conditions and climate

migration. It was noted that due to the impact of the conflict in Ukraine, increased levels of migration are occurring. Furthermore, due to climate change it is expected that within the not so distant future, many areas around the world will not be able to continue to sustain their current levels of inhabitants. Due to factors such as these, respondents highlighted that Wales has an opportunity within this space, as the climate is attractive, and the natural beauty and authentic nature of its population can attract many highly skilled workers. Furthermore, this assists in providing sustainable, more diverse, and well-paid employment in higher paid and skilled sectors, such as businesses in the professional, scientific, and technical sectors.

2.61   Respondents stressed that in order for this to occur, political attention would need to be paid to social equality, as an influx of wealthy, highly skilled migrants could threaten the social structure due to an impact on house prices. In order to combat this, respondents recommended strategic taxation planning, and a "point-based system" to evaluate those who are looking to settle in Wales[1].

2.62   There was consensus amongst private sector respondents that they would like to see evidence of new products and services across industries with case studies and impact reports to ensure that outcomes have been met, and evaluation surveys sent out to all relevant stakeholders to obtain feedback about the new products and services. One respondent noted that in the longer term, they hope to see an increase in SMEs and start-ups that have benefited from the implementation of the Innovation Strategy.

2.63   It was recommended that the strategy should focus on the underlying processes and conditions that enable innovation, and the building of a

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[1] It is important to note that Welsh Government does not have all of the powers to deliver on some of the common themes that respondents suggested within their responses. Members of the Senedd make laws that shape life in Wales. However, Wales can only make a law within the areas it has responsibility for. Areas that sit outside of devolved responsibility include Defence, Immigration, Justice, and Policing.

culture of innovation, commercialisation, and enterprise across the ecosystem. It was suggested that an Innovation Strategy should:

- Support and encourage cutting-edge research across the innovation ecosystem
- Provide avenues for the flow of knowledge and expertise across the different sectors
- Encourage an "outcome focused, commercial mindset"
- Engage with the wider UK and international innovation ecosystem
- Include evidenced tangible positive outcomes showing the level of economic, social, and environmental development which has been created through an innovation driven approach.

2.64   In agreeance with private sector respondents, several third sector respondents noted that the long-term impacts of the Innovation Strategy should form a healthy SME innovation landscape. Welsh Government action can boost innovative SMEs, particularly when tailored to their business stage, from foundation to scale-up and commercialisation. There should be an established roadmap of SME growth in Wales. Success stories from these companies should be attracting skilled workers to Wales.

Research Organisations and Academic Institutions

2.65   One academic institution noted that in the long term they would like to see that Wales is able to demonstrate that innovation has been mainstreamed and is at the "heart of Wales' economic transformation" whilst accelerating progress in delivering a Net Zero Wales. It was further mentioned that such an economic transformation will be underpinned by an "embedded approach" to innovation and a mature ecosystem across the public and private sectors.

2.66   Cardiff University recommended that in the long term it is necessary to maintain a "live strategy", which is updated frequently and has an

"ethos of refinement and agility, reflecting on both the successes and lessons learnt, and supported by benchmarking. In addition to open consultations, it was noted that they would welcome mechanisms

Skills Development

Public Sector

2.67   Respondents from both the public sectors highlighted the need to deliver a sustained programme where skills can be shifted into life-long learning opportunities. This establishes a culture of self-development throughout peoples careers and uses recognised and transferable workplace skills that are accepted in all sectors.

2.68   Several public sector respondents agreed that they would want to see innovation skills embedded across the public sector, including strong collaboration and leadership. This would have less focus on specific challenges but focus instead on having the skills within the workforce to enable, lead and deliver innovation that provides value. Furthermore, respondents noted that after 5 years they would like to see a highly skilled and flexible workforce which are able to deliver the products, services, and technologies necessary for Wales' future economy. This includes the addition of innovative development platforms that are stable and specific to industrial demands and skills delivery.

2.69   Public sector respondents also stated that they want to see innovation skills embedded across the public sector, including strong collaboration and leadership. This would have less focus on specific challenges but focus instead on having the skills within the workforce to enable, lead and deliver innovation that provides value.

2.70   Several other public sector respondents noted that in the long term, the strategy should:

- Continue to invest in centres of excellence, where businesses with compatible interests can help to foster a circular economy and encourage innovative collaboration between industry and academia

- Continue cultivating the next generation of innovators, by providing schools with the resources and training necessary to inspire children to pursue STEM careers
- Continue developing independent learning skills for lifelong learning to reflect the changing nature of work and to support innovation and creativity
- Teach people how to think innovatively and creatively

2.71   It was further noted that it is important to provide education and training for individuals up to the age of 25. However, momentum needs to be maintained beyond this to ensure that innovation is sustained. It is important that innovation is visible throughout the education pathway so that opportunities are not missed with incentives for the next generation to embrace innovation.

2.72   There was general agreement that in the long term, the strategy should have a greater focus on the role of CTER and the alignment it can achieve across the whole post-compulsory education sector and with other public bodies' priorities. The strategy should support closer relationships with the institutions and organisations so that they can better deliver on its objectives.

2.73   It was suggested by third sector respondent Learning Disability Wales that accessibility should be integrated in every aspect of society in Wales in the long term. This includes accessible training, apprenticeships and generally, equal opportunity in education. This also means having specific measures integrated into every stage of innovation to make sure that people from all backgrounds and different protected characteristics can have significant impact in the process.

Research Organisations and Academic Institutions

2.74   Academic institution respondents noted that HEIs should offer more degrees focusing on Digital Technology fields. One respondent also noted that HEIs in Wales should develop a wider range of degree

apprenticeships to assist with photonics, social mobility, and development. An additional research organisation noted that opportunities for the HE and FE sectors to be "even more responsive" should be embedded at this stage. This might take the form of "smaller unit qualifications", quicker approval of curriculum content or changes, increased ability to bring in people from industry to support teaching, and knowledge transfer.

2.75   Respondents also noted that there should be an independent report published at the end of the Strategy that evidences improvements in industries such as Life Sciences and Health, Low Carbon, Energy and the Environment, Advanced Engineering and Materials, and the Digital Economy and ICT. The report should also include data gathered from HEIs to review the impact of the Innovation Strategy on enrolment figures.

Private Sector

2.76   Private and third sector respondents highlighted that although innovation is often achieved, the routine sharing of innovation does not occur throughout wider industries. To resolve this, the strategy should focus on establishing regional hubs throughout Wales that mainly focus on developing new and innovative services and products, training opportunities and promote knowledge exchange.

Social Equity

Public Sector

2.77   Several public sector respondents noted that they wanted the strategy to not only invest in schemes across the most challenged areas within Wales, but also commit to growth and investment strategies across the region and within all local communities.

2.78   Public Health Wales NHS Trust stated that although the strategy references innovation capability building through delivered opportunities, this needs to be matched with sufficient investment to

secure longer term innovation leadership roles. Furthermore, it was noted that more detail is needed around the consolidated innovation programme for health and care, as discussed in the strategy, to show how this will be supported.

2.79   Additionally, the Welsh NHS Confederation suggested that in the long term, the strategy should support the service through addressing issues which extend beyond the reach of the NHS, but have a tangible impact on population health and wellbeing. It was highlighted that there are opportunities to address economic growth, climate change, preventative activities, and workforce shortages. To achieve these benefits, the strategy needs to be stronger on reporting, evidencing impact and the appropriate governance structures which would allow innovations to develop at pace. It will be important that the strategy "actively simplifies the innovation landscape" in Wales, with clear accountability and ownership across all sectors and Government departments.

2.80   One third sector respondent noted that they would like the Innovation Strategy to enable real systemic changes and radical new approaches to deep-rooted systems challenges in health and social care, the workforce, and the unsustainable model of long-term care.

Research Organisations and Academic Institutions

2.81   One research organisation noted that the strategy should aim to address longer term challenges and opportunities such as renewable/sustainable energy technologies, digital transformation, improved health and wellbeing, and creating a circular economy.

2.82   Furthermore, in the long term, economic growth should be spread evenly across groups and geographical areas in Wales with evidence of enhanced innovation activity across a range of places, not just concentrated in traditional areas such as large cities. This, in turn, would contribute to increasing social equity. It was noted that innovation has the potential to help rebalance industries that are

heavily skewed towards women or men and after five or more year. It was recommended that the contribution of the innovation strategy to narrowing gaps such as these should be assessed.

Private sector

2.83   Private sector respondents discussed issues concerning further investment and noted that the most important long-term goal in the health and care sectors is to secure improvements in outcomes for the people of Wales. Furthermore, it was noted that it is important to retain regulatory support for simulated practice learning which promotes innovative healthcare education. During the pandemic, healthcare regulators strived to create an environment with flexibility for universities and respondents stressed that this agility should not be lost. It was suggested that Welsh Government should strive to keep regulatory support for simulated learning, supporting sector growth and a sustainable workforce.

2.84   Regarding the high-level objective of 'effective and sustainable healthcare' respondents suggested that the missions, activities, and resources should be concentrated on:

- Progressing innovation activities coherently to realise benefits
- Developing strong partnerships with academia, health, commercial, and research organisations in any relevant sectors
- Investing in staff and facilities and building a coherent infrastructure across Wales
- Improving the quality and impact of our activities, with a holistic population health approach that includes engaging the public in their own health and wellbeing.

2.85   It was also highlighted by ABPI that the Life Sciences sector and the pharmaceutical industry, should be central to Welsh Governments plans to increase innovation, R&D investment, and to achieving more sustainable health and well-being as part of the wider UK ambitions for a stronger economy.

Climate and Environment

Respondents reiterated the need for energy efficient buildings that not only protect the structure of the buildings, but also limit greenhouse gases. One respondent noted that it is important that the strategy continues to re-invest in climate and environmental policies past the 5-year strategy period.

Public Sector

2.86   One public sector respondent stressed the importance of climate and environmental considerations, as they will only grow over the next five years. Hence the focus on environmental concerns in the strategy was widely welcomed. Several respondents stressed that any innovation project supported should demonstrate climate and environmental benefits and several suggested life cycle carbon assessments being compulsory for Welsh Government funded projects. This latter would allow more rapid identification of whole life carbon implications of innovations and build understanding of carbon flows and skills with R&D in carbon assessment.

2.87   It was noted by National Resource Wales that after five years, the strategy should be able to evidence a culture of experimentation and evaluation which is focused on tackling the nature and climate emergencies. It has created a supportive innovation environment across Wales, which is rising to the challenge of delivering a regenerative economy, restoring our ecosystems, and delivering health & wellbeing benefits equitably across society.

2.88   The key sectors identified in the Strategy should be seeing demonstrable progress, with positive impacts for Wales; a pipeline of new climate solutions being installed across Wales, advances in health and care, and benefits to food and agriculture. Adoption of these solutions should have extended beyond Wales, demonstrating Wales's position as a leading nation in fostering innovation for global improvement. There are already examples of this, such as the Swansea University-led Sunrise Network that works to address global

energy poverty, and the Innovation Strategy should result in growing this portfolio of broader impacts.

2.89   The Strategy should be evaluated to understand its impacts, successes and next steps. This should examine not only the companies and sectors that have seen progress over the course of the Strategy, but also the range of people who have participated in and benefited from innovation activities. Key metrics will include gender and ethnicity representation, and pay gaps in science and tech-driven sectors.

Research Organisations and Academic Institutions

2.90   One respondent suggested a mission focus on climate and the environment, to ensure that no one gets left behind and to enable delivery of the other four priorities.

2.91   Decarbonisation of transport will require innovation in batteries and hydrogen, and this can bring investment into Wales to support growth. Development of a supply chain for floating wind in the Celtic Sea, accompanied by innovation in consenting and planning, can deliver skills and jobs. Upgrading recycling technologies to encompass a wider range of products was also identified as an area for innovation – including electronic equipment. These will require an increase in training courses to support the sector.

Individual respondents

2.92   Climate and environment were seen as issues that are so important that they underpin all other activities. One respondent wanted to see more innovation in adaptation, including the use of river management for slowing water flow and building biodiversity.

2.93   Innovation in resource use was also mentioned, with scope for funding for local community projects to reduce waste, encourage active travel and build healthy living.

3.   Section 2 – Draft Strategy Comments

> **Key findings:**
> - Wales can achieve global recognition as a leader in innovation, decarbonisation, and renewable technologies
> - The strategy will assist in driving forward economic growth, and provide opportunities for people living in Wales through collaborative approaches to innovation
> - Smart and Sensor technology, healthcare, and higher education should be a key focus for Wales
> - Wales is well placed to implement a place based innovation approach
> - Greener and more energy efficient businesses

Question 5

We set out some high-level objectives that underpin our vision in the draft strategy. We recognise that Wales cannot be a global leader of innovation in all areas. Is there a specific mission or missions, linked to economic sectors or areas of social outcome where you think activity and resources should be concentrated?

3.1   Respondents highlighted several key activities and resources that they thought should be focused on. Respondents noted that the mission that the strategy should focus on is the aim to be the global leader in achieving decarbonisation through renewable energy innovative measures. One respondent highlighted the use of renewable technologies to reduce fuel poverty and provide greater opportunities for Wales to lead the way in reducing energy consumption through innovative approaches.

3.2   Respondents also noted that in line with Net Zero Wales and its pledge to tackle the climate emergency, it is imperative that the government acts now to try and reverse the environmental damage. Green targets and outcomes should also form part of the other challenge areas as they all have elements that can be addressed. Respondents highlighted that activities and resources should be

concentrated in areas such as: Life Sciences and Health, Advanced Engineering and Materials, the Digital Economy and ICT, as these can all assist in addressing decarbonisation.

Individual Respondents

3.3   Individual respondents noted the importance of innovation being used to improve the health and wealth of the nation. There was consensus that innovation needs to be effective and efficient. Such types of innovations will lead to economic successes and contribute to Wales establishing itself as a leader within the global stage. For this to occur, several respondents noted that further investment in areas such as power production, wind and wave systems, solar power, technology, and skills development are needed. It was further noted by individual respondents that through the strategy, the Welsh Government should encourage people in Wales to care for their health, the environment, and each other.

Private Sector Respondents

3.4   Alongside individual respondents, there was general agreement amongst private sector respondents that the key areas where resources should be linked include healthcare and life sciences, higher education, advanced manufacturing, and high tech industries such as medical technology, FinTech, cyber security, agri-tech, and food production. As the draft strategy sets out, Wales has created clusters around MedTech, FinTech, and compound semiconductors. It has natural advantages in terms of placement of green technology in wind, hydro, solar, and marine. It was noted that these, and other successful technologies all need continued support. However, one respondent highlighted that the strategy needs to retain flexibility to invest or support new technologies and innovations regardless of sector, as they may offer high growth potential. In the case of green technology, it was noted that the Welsh Government should look at

innovative ownership models for power generation that retain profits to "support communities and deliver further sustainable investment."

3.5 It was further highlighted that healthcare and higher education should be a focus of any new activity and resources. With focused resources and funding for innovative technologies and simulated learning experiences, universities can continue to create the quality healthcare workforce Wales needs in order to meet the needs of the population.

3.6 It was also noted that Wales should aim to build on the success of the life sciences sector and within that, the pharmaceutical industry, as there are many opportunities for the UK to lead in this space and for Wales to benefit substantially. It was stated that there needs to be a solution-based product design type of innovation that focuses on digital technology, health, and social care, and one that will drive the objective of a stronger more resilient economy. Furthermore, private sector respondents stressed that there needs to be a complete roadmap of the innovation system to fully understand everyone's priorities and the deliverables.

3.7 One private sector company highlighted the importance in investing in the transport sector, specifically in aerospace and automotive sectors. It was noted that in the future, the aerospace and automotive sectors could become some of the dominant sectors in Wales. This industry has already reported a resurgence in demand as passenger flights have begun to return to pre-pandemic levels. To support this sector the strategy needs to address the many barriers to growth, such as supply chain challenges that are preventing access to "critical components and raw materials." It was noted that a potential solution to these barriers is the use of digital technologies which can assist in monitoring global supply chains.

Third Sector respondents

3.8 Third sector respondents welcomed this focus, and several agreed that pursuing innovative technologies, approaches and business

models geared towards achieving a just transition to Net Zero must be the "overarching priority." It was noted by one third sector respondent that although digital technology is important in innovation, the strategy should also focus on the notion of social innovation, as both are necessary if Wales is to achieve sustainable development through the seven well-being goals set out in the WBFGA. It was highlighted that currently the strategy is based on STEM (Science, Technology, Engineering, and Mathematics), as opposed to STEAM (Science, Technology, Engineering, Arts, and Mathematics. With this "narrow focus," the strategy "misses" the key role of design in technological innovation, and the innovation needed to act against climate change and the biodiversity crisis which will crucially require both technological and social innovation.

3.9   It was further noted by third sector respondents that Wales already has an existing innovation ecosystem with strength and expertise in chemical sciences, and particularly in advanced manufacturing. Within Cardiff and the Vale of Glamorgan region, there is a particular concentration of chemistry strength. It was highlighted that building on this will strengthen many sectors that are dependent on chemical technologies, including those critical to the UK economy and to solving global challenges. These include green technologies, sustainable energy generation and storage, life sciences and pharmaceuticals, and food security. It was suggested that Wales currently has local advantages that could be further exploited to incentivise chemistry clusters such as significant renewable energy resources. It was noted that by adding facilities that are needed to grow existing deep tech companies, such as "scale-up laboratories", this potentially can bring in additional investment and expertise. It was also highlighted that whichever missions are chosen, voluntary organisations should have an important role to play in achieving them, as they can reach individuals and grassroot communities that other sectors are not able to. However, it was noted that the voluntary sector needs to be able to access resources and support in order to

conduct its role effectively. Furthermore, the sector needs to be viewed as an "equal partner" alongside the other sectors.

Research organisations

3.10   The majority of the research and academic organisations supported many of the high-level objectives within the strategy. Their views were that innovation priorities need to reflect areas of current strength, but also horizon scanning to adapt to future demands. Key sectors recognised included manufacturing, agriculture and environment, circular economy and sustainability, renewable energy and improved power systems, health and social care, and the creative industries. It was suggested that it would be beneficial for the strategy to tie in all of these together to see if there are overt linkages with the WBFGA. It was also suggested that a tighter focus on where areas of strength are located, and how these meet Welsh Government plans for regeneration in different regions could provide clarity for stakeholders to "determine longer term investment in particular technologies."

3.11   It was suggested by Innovate UK that some consideration should be given as to how UK-wide bodies are prioritising investment. It was also noted that the Innovation Strategy should include a number of areas of alignment with these domains which should be capitalised on. However, it is important that when setting missions, the Innovation Strategy is wary of how it seeks to 'concentrate' resources.

3.12   In addition to private sector respondents, research organisation noted that Wales is well placed to engage successfully in a "place based innovation approach" which brings together clusters of expertise, industry, and environmental assets in unique areas. The South Wales Compound Semiconductor cluster is a powerful example of this, and north Wales has several developments which build upon this approach. Furthermore, Wales has a strong track record in life sciences and healthcare, with "excellent" links between university research and the NHS, and a strong portfolio of work in clinical trials,

and scientific research. It was noted that all of these areas have very strong commercial sectors and can clearly benefit the health and wellbeing of society. However, one academic institution highlighted that in order for the entirety of Wales to benefit as a whole, there is a definite need for the concentration of resources in the rural communities to offset the "initial effects" of reduced European support for these communities.

3.13   It was highlighted a few times by research and academic institutions that the draft strategy is too long, and it is difficult for the various missions to "stand out." Whilst the emphasis on the WBFGA is understandable, it was noted that some of the missions seem "artificial" and would perhaps fit better as key themes throughout the strategy, or should be combined with other missions. It was further highlighted that fewer missions and a narrower focus would make the strategy more "effective and likely to have impact." A focus on where Wales has existing strengths with regard to innovation and economic activity is a more "sensible" approach, rather than looking to develop areas where there is currently little or no activity.

Public Sector Respondents

3.14   In addition to the research and academic institutions, it was also noted by public sector respondents that that high-level objectives in the strategy are "too broad", and that it will be "difficult to measure the impact of the Innovation Strategy in achieving these objectives." In particular, it was mentioned that the section on south-east Wales within the Regional Dimension chapter does not provide an accurate representation of the innovation activities that are taking place. Within the Cardiff Capital Region, there is a focus on existing industry strengths on national cluster-scale industries such as compound semiconductors, MedTech, FinTech, and cyber security. It was noted that the strategy has missed the opportunity to adopt "complementary

approaches to enhance and scale innovation activities within these priority clusters."

3.15   Public sector respondents noted that Smart and Sensor technology should also be a key focus for Wales. Wales has an opportunity to become a world leader in the promotion and use of "Open Data" which can be used to stimulate and further grow innovation. Although "curated data sources" are available, building publicly accessible APIs would allow "Big Data to be used educationally, and to support public interest bodies." In order for this to occur, the strategy should support and build on "existing functioning networks" which will deliver a fast return on investment, and grow skills and talent within Wales. An example of a functioning network mentioned is in St Asaph, North Wales where there are world leading Photonics and Optics companies, who along with over 60 other companies within Wales are currently supported by the Centre for Photonics expertise. This programme delivers and supports companies across all sectors to grow and develop their businesses.

3.16   It was noted that as Wales enters the 'Fourth Industrial Revolution' and technologies like "artificial intelligence and quantum computing" become more prevalent, the Welsh Government must ensure that these technologies are used to provide a basis for a transition to a "low resource use economy" that would curtail the depletion and degradation of natural resources, and the flows of goods and services they support.

3.17   It was also noted that Wales has a clear comparative advantage in life sciences. The relatively small size of Wales can be an advantage in this area since innovators often see it as a "lower risk 'test bed' for innovation prior to wider adoption." The system as a whole also seems to be better interconnected in a way that larger countries may be unable to achieve. This leads to a clarity of thought across organisations, and "coherence and consistency" in their vision and strategies which should be capitalised on.

3.18   Wales has the foundations to be world leaders in innovative health and care solutions. Health Technology Wales noted that it is important to identify, adapt, and expand innovative processes which lead to effective, sustainable, and equitable health and care which can further enhance Wales' value based health and care system.

3.19   Alongside third sector respondents, several public sector respondents highlighted the strengths within the advanced manufacturing. Therefore, it was suggested that activity and resources should be concentrated on this area.

3.20   There also needs to a focus on making businesses greener and more energy efficient. Agriculture is a large sector that has had significant impact on the environment. Therefore, it was noted that focus should be placed on how Wales can farm in more sustainable and greener approaches that continue to support farmers and the environment. It was also highlighted that there should be a focus on the natural resources within Wales, such as renewable energy regeneration, wood, wool, and how we can use them in a more sustainable way.

3.21   In line with 'Net Zero Wales' and its pledge to tackle the climate emergency, public sector respondents stressed the importance of immediate action to try and reverse the damage to the environment. It was noted several times that this theme should be reflected throughout the missions. Although one of the four grand challenge areas is 'Low Carbon, Energy and Environment', this still needs to be an integral part of the other three. It was further noted that green targets and outcomes should still form part of the other challenge areas as they all have elements that can be addressed. Activities and resources should be concentrated in life Sciences and Health, Advanced Engineering and Materials, and ICT and the Digital Economy can all address decarbonisation in one form or another.

Question 6

What impact, positive or negative, do you think the Innovation Strategy will have on Wales?

Public Sector positive impact

3.22   The majority of public sector respondents felt that the Innovation Strategy will have a positive impact on Wales. Respondents highlighted several positive benefits the strategy will have on Wales including:

- Wales achieving global recognition as a global leader in innovation, and ensuring that Wales is on the cutting edge of new developments
- Regional hubs coordinating health and social care innovation
- Increased collaboration, knowledge sharing, and the creation of ideas
- Providing a general guide for RD&I across all economic sectors both public and private.

3.23   Other public sector respondents highlighted that the impact from the strategy will be positive and will assist in driving forward economic growth and will provide opportunities for people living in Wales through the use of collaborative approaches to innovation. Furthermore, the strategy will help to prioritise academic R&D funding, infrastructure planning, workplace training, and employment resilience. One respondent noted that if the strategy is delivered "correctly", it can also have a positive impact on people's self-esteem and wellbeing. It was also highlighted that as long as social care is given as much importance as health care, it will continue to have a positive impact on Wales.

3.24   At the local level, several public sector respondents such as Newport County Council agreed that the Innovation Strategy will have a highly positive impact within the various localities, provided that there is a consistent approach to co-designing policy and partnership working. It

was mentioned that the strategy should be emphasising the role that local stakeholders with a strong knowledge of micro-economic considerations must play in contributing to and investing in the development of innovation.

3.25 One public sector respondent highlighted that the Innovation Strategy should have a positive impact on Wales. Entrepreneurship will be encouraged, and this should result in an increase in SMEs, which will in turn help to increase economic regeneration. This was further corroborated by FSB Wales, who recognised that the strategy has the potential for positive impact if it "drives activity that builds SMEs to innovate for future trends." Higher education would also be boosted by the need for new skills programmes, traineeships, and apprenticeships. It was emphasised that young people should be at the heart of the strategy as Wales looks towards a "productive low carbon society," and develops a skilled and well-educated population. A successful Innovation Strategy would further lead to an increase in job opportunities in Wales.

Public Sector negative impacts

3.26 A few respondents stated that they believed that the strategy might have a negative impact on Wales. One respondent noted that it will negatively impact Wales in the short term as they believed that the strategy does not recognise or build on existing innovation support platforms and networks, and "appears to create new ones instead." The respondent added that the strategy should aim to strengthen the existing innovation support operations with a revised scope which is in line with the outlined future strategy. This would provide additional benefit for both economic growth and skills impact.

3.27 The innovation strategy has the potential to have a significant positive impact if a culture of innovation can be established in support of the WBFGA goals. It was noted that although this draft iteration of the innovation strategy is high level, it is too broad. One public sector respondent stated that there is "insufficient detail" to inform how the

strategy will be implemented and the level of impact it strives to achieve. Furthermore, it was stated that it is unclear how this strategy will be resourced, as some of the leading groups and organisations named in the strategy are yet to be established.

3.28   It was also noted that the objectives in the strategy are "too broad and not SMART," with no timelines on the development of activities. As a result of this, one respondent noted that it was "difficult" to understand the positive impacts or unintended negative consequences.

Research Organisations and Academic Institutions positive impacts

3.29   Several research organisations and academic institutions stated that they believed that an Innovation Strategy that is focused on a set of key missions, underpinned by an understanding of actors, assets, and programmes of work, would undoubtedly positively impact Wales.

3.30   Positive impacts noted by research organisations and academic institutions included:

- Greater economic prosperity in Wales
- Establishing and sustaining innovative practices and approaches outside of the confines of the strategy
- Increasing existing strengths and stimulating further innovation.

3.31   It was noted that the benefits of such an approach would be far-reaching, encompassing direct and indirect economic benefits, improvements in public services, tangible benefits on people's lives as a result of innovation finding solutions to the problems society faces, and strengthening Wales' place in the world. Furthermore, it was highlighted that there is an opportunity to help promote a culture of innovation and one that recognises that there should be a tolerance for failure in an innovative ecosystem. However, it was noted that there are underpinning risks to this approach. It was highlighted by Universities Wales that the Innovation Strategy could focus either "too narrowly on what activity should be supported, or too broadly across a range of goals". Both of these approaches could lessen the success

of the strategy. It was recommended that to mitigate this risk, co-production with partners across the research and innovation ecosystem should be implemented, as well as establishing a clear picture of the role that different parts of the Welsh Government will play in the delivery.

Research Organisations and Academic Institutions negative impacts

3.32 Several academic institutions raised concerns and potential negative impacts that the strategy could have on Wales. It was noted several times that the current strategy has no timeframe, no clear priorities or frameworks, no definition of innovation, no cross-cutting themes on the different ways of innovating and is "too long." It was also mentioned that the strategy does not recognise or build on existing innovation support platforms and networks, but instead appears to "create new ones. If the strategy aims to strengthen the existing funded operations with an improved remit in line with the outlined future Innovation Strategy, then additional benefits will be felt for both economic growth and skills impact.

3.33 Additionally, it was highlighted that there is the potential for sectors and rural communities that are not explicitly mentioned or prioritised to not benefit from the strategy. One research organisation noted that there is a risk of not "levelling up" rural areas in Wales which will need assistance in building capacity. The strategy should recognise that all areas are not equal and that there is "structural inequality" within the Welsh economy, as well as the wider UK economy. An additional respondent noted that some cities in south Wales were mentioned more than 10 times throughout the document, however, cities in north Wales were only mentioned a few times. For the Innovation Strategy to have a positive impact on Wales, it must reflect these regional variations and ensure that the delivery is distributed equally.

Third and Private Sector positive impacts

3.34 Positive impacts noted by both the third and private sector included:

- Increased public and private investment in Wales

- Increased R&D funding flowing into Wales

- High-skilled individuals coming to Wales to work in sectors and contribute to the innovation ecosystem.

- A strengthened and innovative SME sector

- An increase in UK government fund in which g is likely to leverage additional private investment and inject vitality into the innovative SME sector in Wales.

- Achieving global recognition in innovative practices

3.35   It was recommended that if the strategy is to have a positive impact on research in Wales it is vital that Welsh Government addresses funding gaps which have historically held back R&D in Wales.

Third and Private Sector negative impacts

3.36   There was general agreement that in order to maximise its impact, the strategy needs to strongly convey why this is important now. One respondent stated that we are living in what many have described as an "Age of Crisis" with multiple crises happening concurrently, including the cost of living and economic crises, the climate and nature crises, and a crisis in the health and social care systems. 'Business as usual' is not an option and cannot solve these issues. It was noted that Wales as a whole urgently need to come together across sectors to develop innovative solutions that meet people's needs now and for the longer term.

3.37   It was noted by a third sector respondent that whilst recognising the work done within Wales on innovation since 2014, the nature, relevance, and quality of this approach needs to be reviewed. A more broad-based approach to include systems should be embraced. One third sector respondent noted that there is a lack of recognition that this also needs to happen at policy-making level, political level, and within government organisations. It was stated that the culture attributed to public servants and government agencies across the UK as "innovation killing rooms" must change, they should be seen as

"innovation engine rooms." Innovation is not a given, it is a skill that needs to be developed in individuals. It is a culture which needs to be built into all aspects of the public and private sector, particularly in policy-making and funding bodies/agencies. With innovation comes risk, and both are inextricably linked. It was highlighted that unless the strategy makes it clear that this is risk is understood and accepted as integral to innovation, "innovation with impact will elude us."

3.38   It was further highlighted by a third sector respondent that there needs to be strong commitment from all partners to ensure the outcomes from innovation have a long-term positive impact. Otherwise, the strategy runs the risk of innovating without direction or consideration. It was recommended that "citizen involvement in co-designing and delivering innovative services, as well as community-led innovation, has a big role to play in creating the solutions Wales needs. However, it was noted that it is important that there is transparency and accountability in monitoring the Strategy, as this will enable us to learn what works most effectively, as well as to hold government to account on spend of public money.

Question 7

What new actions are needed from the Innovation Strategy?

Public Sector

3.39   Innovation has the potential to result in an increase in jobs and opportunities which can further enhance and develop local communities and provide legacy opportunities. For this to take place, public sector respondents noted that the strategy should focus on measurable and meaningful outcomes, strong commitments, transparency, strong political leadership, and the inclusion of local engagement at all levels. One public sector respondent noted that the strategy should address where there is currently a skills gap, and what jobs and skills will be needed in the future.

3.40   It was noted that a new Innovation Strategy for Wales needs to be founded on a compelling and inclusive narrative that can act as a catalyst for activity, promoting the innovation agenda, and the nation. Furthermore, new actions needed for the strategy should include:

- A focus on investment in the skills, capabilities, and resources needed to support innovation for all, including SMEs
- More specific and measurable missions that respond to the needs of the Welsh Government's existing strategies, rather than sitting alongside them
- Increased emphasis on research and innovative practice in social care, and for social care to be given as much importance as health care
- Implementation of the Reid review
- Longer-term commitments to STEM outreach programmes
- Supported development of greater capacity for mission orientated innovation that engages all sectors and tackles societal challenges.

3.41   It was also recommended that under each of the missions, equal consideration is given to R&D and the diffusion of proven innovations and specific goals should be put in place to demonstrate how Wales is reducing the time it takes for proven ideas to be adopted at scale. It was also recommended that a specific resource is put in place with the right skills, expertise, and knowledge to support diffusion across each mission.

3.42   The importance of narrative and the projection of an "authentic and distinctive" identity was also mentioned by a public sector respondent and highlighted as a key aspect of the strategy. It was noted that this narrative should both draw on, and inform, the values and aspirations at the heart of an Innovation Strategy for Wales. The innovation strategy for Wales needs to capture some of the potential ways in which actors beyond Welsh Government might contribute to this national agenda. For example, it was noted that the triple helix

framing, or the MIT REAP approach both identify the key roles played by a variety of actors in innovation ecosystems. Wales could project itself as a crucible of innovation in its broadest sense, to better secure investment and to encourage and support innovation activity. The narrative would thus need to recognise the wide range of actors – and potential actors – and demonstrate the impact of innovation. This would contribute to an increased awareness of the potential of innovation, and engender a sense of belonging and inclusion. Wales's narrative of innovation should be grounded in reality and reflect the values and level of ambition needed to see a step change in Wales' innovation culture and innovation activity.

3.43   Respondents also stressed the importance of collaboration. Several respondents suggested putting in place structures that foster collaborative approaches by which academia, entrepreneurs, Government, SMEs, and industry are driving forward an ambitious strategy that is not only inclusive, but also assists in driving forward new growth opportunities within Wales.

Private Sector

3.44   Private sector respondents noted that there are several new actions needed for the strategy. Several respondents noted that the strategy needs to encourage higher risk innovation. With regard to the many discussions concerning the creation of the Advanced Research and Invention Agency Act 2022 (ARIA), there is a role for higher risk R&D that can enable game changing shifts in technology capability across multiple sectors in Wales. It was suggested by the Advanced Manufacturing Research Organisation (AMRC) organisation, that it would be beneficial to begin a dialogue with ARIA in conjunction with leading Welsh Universities and the wider ecosystem to develop programmes that could benefit Wales and this Innovation Strategy.

3.45   It was also highlighted that the strategy should provide additional support to the SME community, and that more weight should be given to "encourage the innovation capabilities and competencies" of the

innovative Micro and SME community in Wales. It was suggested by one respondent that focusing on the growth and support of existing small "endogenous" businesses would be mutually beneficial, as these businesses are likely to have deep roots in Wales, and if nurtured, are likely to become long term successes for the Welsh economy. Furthermore, these home grown businesses are also likely to encourage the next generation of innovators and entrepreneurs.

3.46   It was suggested by one private sector respondent that rather than using the Future Generations Act as the framework for the whole strategy, Welsh Government may want to look at presenting the strategy in the form of the innovation journey or the innovation ecosystem, as this might assist in the development of a more coherent strategy document.

Research Organisations and Academic Institutions

3.47   Several academic institutions noted that they had seen significant under-investment in research in Wales in comparison to elsewhere in the UK. This has led to significant loss of staff and research capacity and has resulted in a reduction in grant income. It was highlighted that in order for innovation to be successful, this trend needs to be reversed. Universities play a large role in the delivery of RD&I goals. Supporting activity across all of these institutions is important in terms of the different skills sectors and research / innovation expertise, and also in helping to increase regional prosperity and engagement. Support is needed to build and facilitate a research culture outside of universities, but in collaboration with HEIs. It was further noted that "discreet" RD&I funding for Wales is critical to its success in order to influence behaviours and drive adoption, as well as support the transition away from EU funding.

3.48   It was noted that through the missions, there is scope for the Innovation Strategy to better articulate the problems that Wales is facing, and how the strategy will organise resources to address those problems. There is scope to consider challenges including energy,

advanced manufacturing, digital, media and culture, population health, and Net Zero. It was noted that the Innovation Strategy should set up funding mechanisms that will provide support to build on existing programmes and capabilities that have a clear role in driving a green economy and achieving Net Zero. This is essential, as these areas of research have relied heavily on EU support.

3.49   In agreeance with private sector respondents, academic respondents noted that the strategy should expand upon support for SME innovation. This includes the role of partners such as universities in facilitating that activity through multi-SME clusters.

Third Sector

3.50   Third sector respondents stated that the new actions that are needed for the innovation strategy should include:

- A definition of what is meant by innovation, and how it is accurately measured
- Continued focus on innovative approaches to decarbonisation
- Understanding of the importance of innovation, and why it is the "single most stimulant of sustaining exceptional growth"
- A clearer understanding of what Wales is trying to achieve in each sector, and where the nation sees itself in the global arena
- Practical support to build the skills, capacity, and networks to increase innovation across the voluntary sector
- Clear aspirations of impact (it was suggested that a risk driven spiral timeline model could be used in order to "future-proof" the strategy)
- A clear timeline of when the measures will be implemented.

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Question 8

Which aspects of the innovation strategy should remain the same?

3.51 Respondents noted that the current strategy is comprehensive and widely covers areas that encourage skills development, and knowledge transfer. Respondents praised the Smart innovation Programme for its work, and its familiarity with local business communities. Two respondents suggested that the Programme should continue to provide structured funding for small to medium innovative projects within local areas which would otherwise miss out on such opportunities due to larger organisations within the same local area having greater resources.

Public sector respondents

3.52 Public sector respondents noted that the areas that should remain the same include the focus on the WBFGA, the improvements and positive outcomes from the RD&I, skills, and the STEM enrichment funded programme. One respondent noted that they welcomed the commitment to new STEM outreach programmes, as enhancements of existing, and creation of new STEM activity is vital for Wales to continue being innovative. It was further noted that collaboration should continue to occur between the public sector research facilities, such as AMRC and M-SParc, and the private design facilities such as Design Reality.

Research Organisations and Academic Institutions

3.53 Research organisations agreed that overall, the commitment to innovation and the recognition that this is a means to enhance Wales is evidenced well in the strategy. It was noted that the strategy recognises the link between innovation, economic growth, and protection of social equality and the environment. This integrated approach fosters collaboration and shares responsibility across government, businesses, third sector, academia, and the rest of civil society. It was recommended that Welsh Government should continue

to prioritise collaboration and ensure collaborative working is incentivised across the R&D fields.

3.54   In agreeance with research organisations, third sector respondents noted that they were pleased to see a strong focus on digital inclusion in the proposal, including the issue of data poverty being addressed and the need to build solid digital infrastructure in Wales.

Question 24

Do you think this Innovation Strategy would positively impact you? If not, how could this be changed?

Private Sector Respondents

3.55   The majority of private sector respondents agreed that the Innovation Strategy would have a positive influence on themselves and their businesses. However, it was noted by several respondents that there is a significant risk that the Innovation Strategy could negatively impact SMEs delivering innovation products and services in Wales. Respondents highlighted that more detail is needed on support for SMEs, and tailored support for start-ups. It was also noted that the strategy needs to go further regarding specific funding for simulated learning, alongside a consideration of the "regulatory requirements surrounding simulated learning."

Public Sector Respondents

3.56   There was consensus amongst public sector respondents that the strategy would have a positive influence. A national Innovation Strategy for Wales would create a common direction for innovation across partnerships and organisations that many of the public sector respondents work with. It was further noted that the strategy will help to set national priorities and targets that innovation delivery partners and businesses can work towards. Health Technology Wales highlighted that they currently have the opportunity to be a "central and fundamental force" in the success of the Innovation Strategy, and

through playing a key role in its implementation in collaboration with others, has the potential to "grow in size and influence". The importance of evidence assessment in planning, delivering, and evaluating the impact of innovation on the health and wellbeing of people in Wales is key to demonstrating value and impact.

3.57   Another respondent noted that aligning key messaging surrounding innovation across Wales can positively impact the north Wales region by creating the understanding that "innovation should be celebrated within the foundational economy." However, it was also highlighted that in order for this to occur, a wide range of partners and organisations will need to support the implantation of this strategy. Co-producing next steps, and supporting key partners to collaborate, would enable Welsh Government to effectively respond to the expectations of its partners, identify in which area should resources be focused to support achievement of the strategy ambitions, and identify a clear understanding of anticipated outcomes and impacts.

Research Organisations and Academic Institutions

3.58   There were mixed responses from those within the research and academic disciplines. Many of the scientists working in academia noted that they believed that the strategy would have a positive impact on them. This was further corroborated by the University of South Wales (USW) who stated that as a university they are community focused, impact driven, and want their research to have "a real-world benefit." Increased engagement, funding, and opportunities in an accessible and inclusive environment of innovation are all potential benefits. However, USW noted that achieving this in practice is the "greatest challenge" as smaller areas of development are often overlooked. The university stressed the importance in genuinely building capacity and capability across all areas, not just in those that excel at innovation.

3.59   To improve the strategy Cardiff University suggested the following issues could be further considered:

- The draft strategy should define the scope of innovation, sharpening the scope for delivery, and making clear the added value that the innovation is seeking achieve on top of existing activities

- The strategy needs to align with the resources that are likely available in a transparent way so that it is authentic

- Developing a new form of "Innovation outcome agreements" may be a useful framework linking achievement of ambitions within the strategy with funding to support it

- Refining and simplifying the progress measures/objectives in the strategy would also be advantageous

- The linkage to UK activity should be further considered, particularly with respect to incentivising the leverage of Welsh Government spending to ensure the country is able to additionally capture resources, such as UKRI funding, for the benefit of innovation in Wales.

Question 25

Alongside the final strategy we plan to publish an action plan which will address resourcing and implementation of the strategy. The Commission for Tertiary Education and Research will have a leading role to play in the implementation of the strategy, as will the Welsh Government and other bodies and partners. Wales currently does not have one lead body responsible for the coordination and delivery of our innovation system. Turning to implementation, how would you like to see this strategy implemented?

Individual respondents

3.60   The majority of respondents stated that they believed it would be beneficial to have a leady body and/or the implementation of a governance structure. Respondents noted that this could include a board of members from an assortment of sectors and regions within Wales who are held accountable by the general public. Private business is fundamental to many key components of this strategy being created and implemented successfully. Respondents agreed that as this lead body should be independent from the Welsh Government, a group made up of the key drivers of innovation in Wales should be assembled. This includes the education, academia, public and private sector organisations, and representatives from charity groups

3.61   Respondents stressed that the roles and responsibilities of the lead body need to be clear and concise, and also noted that the monitoring and evaluation procedures such as the timescales, responsibilities, budgets, and agenda should be published and accessible to the general public.

Private Sector Respondents

3.62   There was consensus amongst private sector respondents that the implementation of a lead body would be a useful mechanism to oversee the finalisation of this strategy. It was noted that Welsh

Government should identify a lead delivery partner in each region to co-ordinate industrial innovation and digitalisation activities under a common brand. One private sector respondent suggested that the strategy should establish regional boards that involve all relevant stakeholders to "oversee and co-ordinate" delivery efforts. It was noted that such a model has already been established in the north-west of England.

3.63   It was highlighted that a national innovation body could help to:

- Actively support public and private sector organisations to develop "intrapreneurial capabilities" and build innovation capacity to capitalise on new ideas and opportunities
- Provide advice and guidance concerning the benefits and incentives of undertaking innovation including R&D tax credits, grant equity, and debt based funding
- Create the "connective tissue" between sectors, organisations, and government, to align innovation efforts to solve common societal problems within the scope of the WBFGA.

3.64   There was concern expressed by a few respondents that there was no mention of industry representation in the implementation of the strategy. Respondents agreed that a group made up of the key drivers of innovation in Wales should be assembled. This includes the education, academia, public and private sector organisations, SMEs, entrepreneurs, and representatives from charity groups.

Public Sector Respondents

3.65   There was general agreement amongst public sector respondents that a central body responsible for innovation within Wales could offer greater cohesion and support in terms of establishing greater collaboration throughout Wales. In agreeance with private sector respondents, one respondent highlighted that the creation of a single body, inclusive of all regions in Wales, councils, universities, businesses, SMEs, charities, and government, all aligned in their

aims, would ensure maximum benefit for Welsh communities. However, one size does not fit all, and the implementation of such a body presents a real challenge. The objectives of central bodies must be co-ordinated to ensure resources are used efficiently to meet compatible goals, and share effective practices. It was suggested that great care needs to be exercises in order to avoid another layer of management and "bureaucracy and expense", and unfair appropriation of resources by the larger and more vocal partners.

3.66   It was noted that the Regional Economic Framework for the south-west, published by the Welsh Government in 2021, calls for a "co-production approach for governance and delivery." This would entail collaboration between the key stakeholders from all public, private, and third sector sectors on a regional basis. It was suggested that the south-west Wales Corporate Joint Committee (CJC) could be the "conduit" for this co-delivery approach for a new innovation system, as they will work collectively with partners across the region in order to ensure a sustainable and successful south-west Wales.

3.67   It was also mentioned several times that it is critical to identify an action plan for engaging with SMEs, entrepreneurs, and those who might not see innovation as being relevant to them, and to connect with them. Communication and key messages should play a key role in action plans. Understanding how innovation is communicated is important in creating the ecosystem for innovation and entrepreneurialism.

3.68   Public sector respondents agreed that the role of the Commission for Tertiary Education and Research (CTER) to oversee a robust research and innovation base and the delivery of the skills needs of Wales will be fundamental to the delivery of this strategy. One respondent suggested that the strategy should not set out an action plan, but instead provide CTER with "appropriate levels of strategic priorities and funding" to enable it to demonstrate how tertiary education providers are delivering on the Welsh Government's statement of priorities for tertiary education.

Research Organisations and Academic Institutions

3.69   Several research and academic institutions noted that the main requirement for the implementation of the innovation system is that the partner organisations in the lead body must have experience within the sectors that they are targeting, so that schemes have the greatest possible chance of working. Implementation of the strategy will be challenging. Without central coordination and with many decisions being made locally, its value could easily be undermined. It was highlighted that a national innovation body may be useful for identifying opportunities, communicating ideas, and coordinating and supporting the development of larger scale initiatives.

3.70   It was also noted that CTER should play an important convening role for the broad range of stakeholders identified in the strategy. It was suggested that an annual innovation statement to document progress should also be implemented. A lead body would need to provide "equitable regional representation" to ensure that there is no imbalance it its delivery, and that the needs, experience, and new ideas from all parts of the country are captured. It was suggested that the Welsh Language Technology Action Plan is an effective model that could be emulated as it has been instrumental in delivering on the technology parts of the Welsh Government's Cymraeg 2050 Welsh Language Strategy.

4.   Section 3 - Alignment with WBFGA priorities

> **Key findings:**
> - Ensuring that innovation opportunities are provided within all areas of Wales
> - Travel and accessibility concerns in certain areas of Wales due to poor infrastructure
> - Focus on sourcing alternative partnerships and opportunities with countries and businesses around the world
> - Concern over the future political implications of the proposed strategy
> - Support for a place-based, tailored approach
> - Champion both digital and in-person connectivity
> - Appreciation of a focus on collaboration, with calls for further coproduction
> - Clarify specific desired outcomes and objectives
> - Consider incentivisation for businesses and organisations to change from business-as-usual approach
> - More on skills and careers information for green jobs and health/social care capacity

Question 10

The Innovation Strategy aims to achieve a more prosperous Wales through introducing new products and services, job creation, spend in the Welsh economy and productivity. An ecosystem where innovation becomes everyone's responsibility.

Do you believe the proposed Innovation Strategy has set out clear objectives to achieve this outcome? If not, what is missing?

4.1   There was a range of opinions expressed by respondents. Some public and private sector respondents noted that the strategy lacked detail, clarity, and methodology.

4.2   A noticeable concern amongst respondents was the need to recognise and accommodate the varying needs of specific groups, particularly within the rural economy. Respondents noted that it is

important to ensure that equal opportunities are provided to all, as some people require more assistance than others.

4.3 Additionally, travelling throughout Wales was highlighted as an area requiring attention, and one that is hindering the tourism and occupational mobility within Wales due to travel and accessibility concerns due to the infrastructure.

4.4 It was noted by a respondent the need to emphasise the importance of skills and training to achieve the objectives, and to ensure the training opportunities are both desirable and accessible. Another stated that "it is not the case that innovation is everyone's responsibility – but that innovation can and should belong to everybody."

Private Sector

4.5 Private sector respondents noted that they believed that the Welsh Government is risk-adverse in nature and thus needs to become more adept in making investment decisions and taking managed risks. Innovation was described as becoming everyone's responsibility, therefore standards need to be raised in every aspect to ensure innovation is delivered across all applicable areas.

4.6 There were concerns about the lack of detail in this section of the strategy by private sector respondents, who asked for clarification on the development of policy, funding, engagement, and evaluation. This section of the strategy was described by one respondent as "a collection of thoughts/ambitions without a clearly articulated narrative."

4.7 A private sector respondent answered that the current strategy does not set out clear objectives around gaining new products, jobs, and productivity. It was also felt by another respondent that "jobs created" is an outdated metric for prosperity, and that the strategy should consider more innovative ways of measuring the economic

contribution organisations make and what losses are made elsewhere from innovation.

Public Sector

4.8   Two public sector respondents described the objectives as "clear," however some respondents detailed that the objectives set out in the strategy had not been clearly outlined, and recommended a detailed implementation plan involving consultation with the private sector. One respondent suggested providing tax incentives for carbon negative and neutral businesses, and/or businesses that are in the process of becoming carbon neutral or negative. A more concise strategic direction that defines the ambition for a prosperous Wales was recommended.

4.9   A public sector respondent commented that the vision for the strategy refers to a wellbeing economy, but that it appears to set prosperity apart from the overall vision of a wellbeing economy. Another respondent noted how social care delivers significant social and economic benefits that need to be further acknowledged as playing a strong role in supporting local economies. Also noted was the opportunity for the strategy to respond to the Future Generations Commissioner's recommendations to ensure secure employment and support inclusive local economies, emphasising both their social and financial benefits.

Research Sector

4.10   It was recognised that there is a visionary approach in this part of the strategy but that there could be some detail on measuring the outcomes to support maximising the strategic alignment among partners. Cardiff University and others felt the objectives set are at a very high level and require significant further definition so that it is clear how innovation can take hold and to what effect.

4.11   Specific recommendations for this section of the strategy included a greater emphasis on co-production and co-creation with service users, and incentivization of small innovative steps where there is a notable improvement in a product or process/service. One research sector respondent suggested championing the creative sector, with its long tradition of imagination that could be a part of an ecosystem that sees new products, processes, and services.

Third Sector

4.12   Wales Council for Voluntary Action (WCVA) would like to see more detail on the how stakeholders are to be incentivised to engage in innovation with a social value focus. One respondent encouraged Wales to use STEM, and chemistry in particular, to drive prosperity gains, as the chemistry sector is a key economic contributor across the UK.

Citizen

4.13   There were only two citizen responses to this question, with one calling for a strong focus on reducing, adapting to, and mitigating the effects of climate change, and the other for greater self-sufficiency and capacity for food, travel resources and energy.

Question 11

What impact, positive or negative, do you think innovation can have on helping improve the economic prospects and well-being of the people of Wales?

4.14   The majority of respondents stated that they believe that innovation can have a great, positive impact on Wales, given that it is sufficiently implemented and is driven by the culture of needs. Respondents expressed that for an innovation programme to be successful, it must be embedded in everyone's mindset and plans.

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4.15   An issue that was raised by several respondents was the potential for advancements in innovation to be solely focused on economic measures. Some impacts suggested by respondents include:

- Sustainable living

- Increased wellbeing

- Renewable technology investment

- Sustainable long term employment and growth opportunities

- Engendering a sense of belief in change

- Skills and experiences contributing to community and social value, i.e., recognition of unpaid carers/volunteer efforts as rewarding and as a source of essential innovation.

Private Sector

4.16   Private sector respondents suggested that positive impacts of the strategy could be new jobs and accessible, high quality health/social services that will have a widespread positive impact on the well-being of people in Wales. It was also believed that investment in innovation will create a healthcare workforce with a better mix of skills, subsequently increasing the quality of care and cost efficiency.

4.17   However, private sector respondents argued that to make a real difference to productivity, resilience, and jobs, innovation needs to be further encouraged across all sectors, and all sizes of business with a tailored and advanced approach that brings together support for innovation and support for skills. For example, Make UK felt that while support is growing for early-stage research, at the lower Technology Readiness Levels (TRLs), support for adoption and diffusion is lacking.

Public Sector

4.18   Public sector respondents believed that innovation could have a positive impact for Wales as it can lead to sustainable economic growth and secure job outcomes which can lead the country to achieve higher levels of performance and well-being for our citizens. However, a respondent noted that it is critical that the strategy and decision makers promote innovation on all levels.

4.19   To further achieve this positive impact, there is a need for further engagement with education. Grwp Llandrillo Menai (GLLM) articulated that the sustainable future for the food and drink industry requires the engagement of school children and students in STEM subjects. The Higher Education Funding Council for Wales (HECFW) also suggested that with the culture of innovation in schools, colleges and universities, the strategy should go further to acknowledge the role that the Commission for Tertiary Education and Research (CTER) will play in fostering the skills to master new knowledge and digital skills.

4.20   Public sector respondents also recommended more reference to social care, or a broader overarching approach to supporting innovation in this space to increase the impact in social care and avoid alienating a sector that often feels devalued.

4.21   Another positive impact recognised by public sector respondents is recognising – and putting to use – the significant role innovation has in the transition to a low carbon economy. A specific example provided by a respondent was the access to ever increasing amounts of data and digital tools for optimising decision making to reduce carbon emissions and minimise environmental footprints.

4.22   Public sector respondents felt that the strategy could have the positive impact of providing the basis for local and regional partnerships to enable innovation via a targeted approach to collaboration. It was believed that this in turn could contribute to the improvement of standards of living across through inclusive growth by providing opportunities and reducing inequality and deprivation. To further achieve this impact, a respondent argued that it is key that the

innovation strategy is in line with "High Value Manufacturing" - manufacturing activities which have a positive social, economic, and environmental impact on the well-being of citizens.

Research Organisations and Academic Institutions

4.23   Research organisations noted several positive impacts that the strategy has potential to deliver on. For example, simply finding quicker, better, and more effective ways of doing things, as well as a growth of skills, social equity, the economy, and climate mitigation activity. It was stated that "innovation is the mother of economic growth", and that support for manufacturing and product development is vital to achieving this impact. Developing specialisms and building on excellence in areas that exist in Wales was said to be a pathway to initial and more rapid growth.

4.24   A respondent in the public sector appreciated that the report recognised that innovation within one sector can have a negative impact on others. To avoid this negative impact, it was suggested the strategy should have significant provision for achievable lifelong learning and workplace training to ensure that individuals across the whole community can see future opportunities.

Third Sector

4.25   One respondent from the third sector noted there could potentially be a negative impact on disabled people who have more pronounced challenges in reducing their carbon footprint. It was also a concern that the strategy needed to ensure that those that have disabilities / chronic illness are recognized as productive and valuable citizens even if they are not in full time employment. In this respect, the strategy needs to factor in equality and access considerations to mitigate negative impacts that disable people through barriers in society and foster positive impacts.

4.26 The potential economic impacts of creating jobs, and developing and exporting skills, and were seen very positively by respondents. As were opportunities within medical research. However, for Wales to prosper, one respondent recommended that the Welsh Government must commit funds for vital infrastructure without which research bodies/universities cannot compete for funding.

Question 12

The Strategy aims to grow a more Resilient Wales which aims to improve a healthy natural environment, adopt circular economy principles and increase our capacity and capability in adapting to change.

> *Do you believe the proposed Innovation Strategy has set out clear objectives to achieve these outcomes? If not, what is missing?*

4.27 There were mixed opinions amongst respondents. Those who questioned the clarity of objectives expressed that the proposal was lacking a coherent method for organisations to actually innovate. Concern was expressed by a respondent who questioned the political implications of the proposed strategy; more specifically how elected and unelected representatives would be able to support long-term innovation in the face of short-term political terms.

4.28 Conversely, one respondent claimed that "the market will develop solutions if the right foundations are provided by the Government." Respondents noted that leadership from bodies like Natural Resources Wales will be fundamental to delivering change. Similarly, the 'Forest of Wales' initiative was highlighted as being relevant and potentially supportive of the Innovation Strategy.

Private Sector

4.29 Private sector respondents reiterated that the objectives were too high level. A private sector respondent was unsure how the strategy will increase capacity to adapt to change, and it requested clarification on

the specific desired outcomes concerning the circular economy. It was also said that the objectives fail to link the system as a whole, with an example being that the circular economy should be mapped across health and social care, manufacturing, environment, and agriculture.

Public Sector

4.30 Some highly positive responses were provided by the public sector on whether the strategy can deliver on a more resilient Wales. It was felt that the objectives set out to improve and maintain a healthy natural environment, driving innovation to protect it. However, one respondent noted there was nothing about ecological restoration despite "the UK being one of the most depleted countries in Europe". It was also recommended that there needs to be more on incentivization for businesses to move away from business as usual to more environmentally friendly practices.

4.31 There were also hopes shared that it could deliver improved healthcare value by developing, sharing, procuring, and adopting innovative practice and technology. Conversely, the Microbiology Society argued that more is required in this part of the strategy on viral and immunological research, especially in the context of emerging from the coronavirus pandemic. There were also concerns about how the strategy approaches social care and health care services, as their structures are different, and so a "one-size fits all" approach is inappropriate.

Research Organisations

4.32 Research organizations noted that the aspirations are clear and welcomed, and are in line with a whole system approach, but innovation alone cannot deliver the desired impacts. Respondents urged the strategy to deliver on these objectives through grass roots development but with a consistent message across all sectors from

schools, government, and industry, with delivery aligned and embedded across the policy spectrum.

4.33   Cardiff University responded that it is unclear what the specific desired outcomes are concerning the circular economy. They felt that the objectives require significant further definition and prioritisation so that desired outcomes are clear, and this was corroborated by other respondents.

Third Sector

4.34   The Royal Society of Chemistry implored the strategy to ensure that young people have the skills and careers information needed to progress into green jobs, including in the chemical sciences, to contribute to the future green economy

4.35   Another third sector respondent commented that it is vital that research and engagement is undertaken with citizens and grassroots organisations, so that they are enabled to meaningfully participate in these activities and existing inequalities are not inadvertently increased.

Citizens

Citizens that responded made the following requests:

- More on the culture of reuse such as with school uniforms.
- More focus on other area such as extractive and manufacturing industry power, and transport to ensure employment and settled culture.

Question 13

An equal Wales is an objective of the Innovation Strategy. This proposes a transparent innovation ecosystem that ensures inclusivity in all research, development and innovation activity and a fairer distribution of investment where all regions in Wales feel the benefit from increased innovation activities.

Do you believe the proposed Innovation Strategy has set out clear objectives to achieve these outcomes? If not, what is missing?

4.36   Regarding whether the proposed Innovation Strategy has set out clear objectives to achieve inclusivity in RD&I equally across all regions of Wales, there were mixed responses across sectors.

4.37   For example, it was noted by some respondents that due to the nature of innovation, research, and development, investment was unlikely to be "fair across regions." This is because they felt that investment should be granted on merit, however if that investment were to be selective of the best projects for short term gains, it would not necessarily be distributed fairly or equally. However, others believed that RD&I must be distributed fairly so that citizens across Wales can feel the benefits and promote collaboration.

Private Sector

4.38   One private sector respondent suggested that the strategy should acknowledge that there will be areas of Wales that will excel in some fields and not, so capacity and support should be built to fund those activities, then support all areas in Wales in adoption and spread such that everyone in Wales benefits.

4.39   Another respondent recommended that the strategy implement developed metrics for equality and social mobility, and to improve barriers to engagement with complex regional structures such as Corporate Joint Committees (CJCs).

Public Sector

4.40   Respondents from the public sector called for a fair distribution of funds across Wales to encourage businesses and academic institutions to collaborate nationwide and support levelling up. Specifically, the public sector called for more support from Welsh

Government in promoting Swansea and the West, and emphasised that not all areas are "coming from the same starting point."

4.41   In addition to the strategy proposing to provide access to faster broadband and digitising services, it was suggested that it should support businesses that create resources that have a positive impact on rural or digitally excluded communities. This will allow all citizens to participate in innovation

4.42   More generally the public sector called for a focus on both digital and geographical exclusions facing people in rural areas, particularly young people, tackling health inequalities across Wales, and promoting and building on the Anti-racist Wales Action Plan.

Research Organisations

4.43   Research organisations recognized that social capital and relationships are important to promote more effective exchange of ideas and resources. Greater representation is seen as a first step, but it was noted that work is needed towards partners feeling of equal status in collaborative work. For some, it was not clear how the strategy will measure equity, and the objectives do not stand out clearly.

4.44   Respondents felt that there was a lack of detail on budgeting and distribution of resources across Wales, meaning that they could not appropriately give an informed opinion on whether the funding will be fairly spent. One respondent suggested the concept of a centrally managed fund with allocation to local authorities, with a specific budget for developing pan-Wales and International specialist networks. This was backed by calls for a place-based approach.

4.45   For the strategy to further contribute to an equal Wales, one research organisation respondent suggested a reduction in bureaucracy when applying for innovation funding, and not applying the same yardstick to potential industry collaborations in north Wales as to those in

south-east Wales which can disadvantage applications and drive inequalities.

Third Sector

4.46   For one third sector respondent, the strategy needs broad and thorough measurement of equality, diversity, and inclusion (EDI) metrics. There was a wish for transparent intersectional data to understand the challenges faced by those belonging to multiple underrepresented groups to improve the diversity of the STEM workforce and remove existing barriers.

4.47   The response from the WCVA felt positively that Innovation Strategy recognises the need to engage and support people from all demographics by creating a transparent innovation ecosystem, but warned of the danger that "innovation privileges those who are already privileged" not being addressed. They argued this could be tackled in part by championing the voluntary sector in the strategy.

Question 18

The Innovation Strategy aims to promote a globally responsible Wales through decision making processes that take account of the impact of our innovation activities on global wellbeing, as well as a collaborative approach to working in partnerships internationally to share knowledge, skills and undertake projects with a social purpose.

Do you believe the proposed Innovation Strategy has set out clear objectives to achieve these outcomes? If not, what is missing?

Private Sector

4.48   Building global thinking into the innovation process ensures the results are both internationally focused and Welsh-centric, attracting diverse employees, global organisations, and global funding to Wales.

This needs to be cultural, connecting people and funding collaborative efforts to foster such relationships. This was supported by the recommendation to coordinate with the UK Government to create a new international collaboration strategy to replace Horizon Europe.

4.49   It was also noted by a respondent that in the post-Brexit era, the focus should be on sourcing alternative partnerships and opportunities, rather than seeking replacement to EU funding.

Public Sector

4.50   Public sector respondents also recognized the importance of multilateral programmes, such as Horizon, to address global challenges. It was recommended that the strategy promote continued funding of international programmes to encourage further innovation (e.g., the Celtic Routes project).

4.51   The inclusion of circular and foundational economies and place-based solutions was appreciated by a public sector respondent; however, they would like to have seen it permeate through the strategy. Another respondent felt that the section should be extended to include *ethical* supply chains, with a need for cooperation between the Welsh Government and partners to achieve the systemic change required.

Research Organisations

4.52   Cardiff University responded saying that defining priorities for innovation and addressing short-, medium- and long-term development of the strategy would be a highly effective way to develop a globally responsible Wales, since responsible innovation can be embedded throughout.

4.53   Swansea University described the need for the strategy to incorporate the TAITH project and further initiatives that align Wales with international strategy, particularly areas where the greatest challenges, opportunities, and potential for delivering impact exist.

They also felt that maintaining links with the European research community is important for innovation.

4.54 Other research bodies suggested that there is a need for the strategy to champion more research and innovation led partnerships into lifecycle analysis, circular economy, and sustainable packaging in product development. It was noted by one respondent that in low carbon materials and green construction projects there is a real shortage of expertise in Wales and an opportunity for green jobs. The BioComposites Centre at Bangor University, and its relationship with WRAP Cymru, was an example provided of an innovation led partnership targeting a globally responsible agenda.

Third Sector

Respondents from the third sector were supportive of this section and its "intentions." One body responded with "Wales can be a leader and testbed for globally important innovative solutions," and it was recognised that the draft Innovation Strategy has chosen important areas to direct efforts, including net zero, resilience, and health and wellbeing. Another responded notes that the strategy stresses the importance of cross-border partnerships and should support advancing these efforts.

Question 19

The proposed strategy aims to create cohesive communities which will see greater cross sector collaboration, greater community connectivity and adoption of digital technologies, and the aligning of activities towards delivering for our communities in Wales.

Do you believe the Strategy will support this ambition? If not, how can we achieve this?

4.55 Respondents stressed the need to include detailed plans for implementation. Respondents also expressed concern over the

systematic belief that digital technologies are always superior, as they can often be excluding.

Private Sector

4.56   WWIC responded saying that data collaboration is an area in which more could be achieved with the appropriate infrastructure. They also suggested procurement is an area where there is much potential to promote innovation, particularly in healthcare.

4.57   To create the cohesive communities, it was noted that the Welsh population will need to be able to access ongoing opportunities to develop their skills.

4.58   Jisc believes the strategy should harness the potential and beneficial innovation between the healthcare, multi-academia, and technology areas, as they are intrinsically linked with much of the current innovations as joint ventures. They suggest a digital infrastructure and identity management practices that allow for cross sector collaboration would provide greater convenience of learning and security and increase efficiency.

Public Sector

4.59   The public sector respondents were positive about this area of the strategy, especially as it particularly recognizes the importance of collaboration. However, respondents wanted the strategy to commit to ensuring that connectivity is equally distributed, ensuring rural communities have access to suitable digital infrastructure and that collaboration across all regions is fostered equally.

4.60   Conversely, one respondent implored for more on green spaces as places for socializing and promoting wellbeing and social cohesion, as to only focus on digital connectedness potentially ignores the nature and climate emergencies, factors which can drive inequality.

4.61   To further increase connectivity and cohesion, respondents urged for the strategy to build on place based, 'local' approaches, such as ones that grew from the pandemic as well as other regional RDI assets. In particular, Social Care Wales encouraged the strategy to support "place-based community resourcefulness," whereas others referred to the foundational economy.

Research Organisations and Academic Institutions

4.62   Research organisations also encourage the strategy to look more broadly beyond adoption of digital technologies in relation to creating cohesive communities. For example, looking at the role of shared spaces in supporting cohesive communities for innovation. It was highlighted by Y Lab the importance of social infrastructure.

4.63   However other respondents argued that if Wales wants a world class innovation ecosystem it needs the digital infrastructure to deliver this, with a reference the DSP Centre at Bangor University as best practice in connecting communities including hard to reach ones.

4.64   WGU encourages the replication of SBRI concepts within the care agenda as has been successfully integrated in health, and emphasise the importance of social and behavioural science along with user-centred design within this agenda.

Third Sector

4.65   In terms of digital connectedness, a third sector respondent suggested that not only should the strategy 'deliver and modernise services so that they are designed around user needs and are simple, secure and convenient,' but it should also ensure that they are affordable, especially during the cost-of-living crisis. They argue that "data poverty" is acknowledged but that there is no mention of actions being taken to address it.

4.66   Another respondent felt that the strategy does not clearly articulate any other communities other than research, medical and technology oriented sectors, and that it needs to include a social dynamic, and social factors which will impact on the adoption of technologies.

4.67   In order for policy objectives to be as successful as possible, it was argued that they must utilise and build on existing networks that are already embedded in communities, and use their expertise and experience in identifying and solving social problems. An example given was how social enterprise can play a particular key role in creating cohesive communities because of their distribution across the country.

Question 20

The new Innovation Strategy wants to achieve a healthier Wales through a more coherent and aligned innovation ecosystem that targets new and different ways of working, supports recovery strategies from the pandemic and enables greater adoption of innovation.

This will be underpinned by a health and social care system that collaborates across industry, academia and the third sector to deliver improved healthcare value by developing, sharing, procuring, and adopting innovative practice and technology.

Do you believe the strategy will support this ambition? If not, what additional activities need to be included?

4.68   Although there were positive comments, there was also significant feedback on ways that the strategy could further this ambition. Respondents also emphasised the importance of ambitions to be rooted in local communities and to have a greater focus on social prescribing and self-help.

4.69   Furthermore, several respondents considered the importance of utilising the NHS databases to better establish the efficacy and clinical utility of NHS services. This could then act as a support base for addressing areas in need of innovation.

4.70   Respondents welcomed the implementation of innovative practice and technology in health and social services, however one noted that limited implementation of past innovation pilot projects in the NHS took place due to time constraints. A comment was also made on ensuring that the development of digital capabilities in social care is prioritised to the same extent as in health services.

Private Sector

4.71   Those that responded negatively to this question felt that shifts are needed in the sector with areas such as circular economy, but that the gap between what is needed and what is being talked about in the strategy feels too big. It was noted the need to define processes for implementations and specific goals.

4.72   Private sector respondent, Jisc, believes the strategy should encourage open research and open access to publications to help foster greater knowledge transfer and collaboration as well as policy compliance and cost management. Another respondent furthered this concept, suggesting that the strategy should aim to enable access to globally competitive health data that supports RD&I.

4.73   Other suggestions by third sector respondents were that equal weight must be given to innovations can be brought to the health and social sector from outside the organisations as those that can be developed from within. For example, ensuring that nursing, midwifery, and allied health profession research is part of an innovation ecosystem can improve healthcare services and address the healthcare inequalities facing Wales.

4.74   A barrier to achieving this ambition noted by respondents was culture and leadership, with responses noting that what needs to be seen from the strategy is an explicit action plan that will help overcome the barriers to innovation, as happened during the pandemic. There is an opportunity through the strategy for innovation knowledge brokerage, benefitting from ambassadorial representation through commercial, academic, and public sectors and partnerships ranging across health services, social care, education, and people who access care and support.

4.75   One respondent noted that each health board in Wales has different strengths, however it is not necessarily the case that neighbouring health boards have complementary strengths. Strategy should thus emphasise the value of collaborations between institutions outside of the traditional regions. Another recommendation made for the strategy is a focus on training and education to help combat staff shortages and ensure a fit-for-purpose-social care system. Social care was felt by another to be overshadowed by health care in the strategy for example with the common use of the term "patient."

Research Organisations

4.76   Research organisations made several suggestions for the strategy in achieving a healthier Wales. For example, a respondent suggested that the Innovation Strategy should support the local sourcing of food and drink into schools and hospital procurement; ensuring these settings provide quality nutrition that also supports regional/national businesses.

4.77   Others thought the strategy needed an integrated, coordinated, and collaborative approach, as well as routes to levering additional funding to better support the adoption of innovation at scale in the sector.

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4.78   Echoing sentiments made by the private sector, respondents encouraged supporting social care to unlock its own innovations in context, as they will recognise the relevant nuances. Research organisations believe the strategy needs a targeted approach with relevant partners, supported by relevant policy to support transformation in health and social care according to need.

Third Sector

4.79   Further stress on coproduction in this part of the strategy was encouraged by the third sector, noting also the importance that service-providers engage with diverse communities. It was observed that health and social care professionals need space and capacity away from their current work pressures to contemplate innovation and what it means within their sector. This could also include promoting involvement from the voluntary sector.

4.80   To further improve this area of the strategy, one respondent mentioned that they welcome technological innovation in this sector, and that developing digital capabilities is crucial to this.

4.81   Another respondent implored for a focus on research which explores how disabled people can live happier and more fulfilled lives, particularly following the social model of disability.

Question 21

As part of Welsh Government commitment to a vibrant culture and thriving Welsh language, the proposed Innovation Strategy looks to ensure multi-lingual development as standard.

Do you agree that the strategy outlines the ways in which it hopes to successfully create the right conditions to increase the use of the Welsh language across all proposed innovation activities? If not, what additional activities should be undertaken?

4.82   The strategy has the potential to have a positive impact on promoting Welsh language, numerous suggestions for how this could be done further were provided by respondents.

Private Sector

4.83   Some private sector respondents felt the strategy fails to specifically outline how the Welsh language could be used across all proposed innovation activities, when it is crucial to ensure that it has equal footing in all aspects of life in Wales. It was also suggested that a more progressive approach could be taken, in the area of public procurement for example, with the strategy in a position to strengthen the use of Welsh in imaginative ways to transition to an environment where creativity can genuinely add to the development of an innovative culture.

4.84   A private sector respondent also felt that consideration needs to be given to the impact for SMEs as translation costs can be significant and prohibitive.

Public Sector

4.85   The public sector respondents suggested that more specific objectives are needed in this area, with variations in whether the strategy should underpin Welsh language as a cross-cutting theme or be delivered in isolation as a unique innovation asset in its own right. Respondents did want to see the strategy support wider Welsh Government initiative to collectively promote the Welsh language, but have a more strategic future direction with cultural aspirations.

Research Organisations

4.86   Cardiff University support Welsh language and culture being embedded throughout innovation activity as an integral part that they would propose framing accordingly. Respondents agreed that much more could be articulated in this space, and one respondent

suggested outlining the role of the Coleg Cymraeg Cenedlaethol in supporting the strategy.

4.87   Another respondent stated that more students need to learn the language, especially those in university, to increase confidence in using the language.

4.88   Additionally, a respondent noted the need for the development of digital technologies to support language communities in ways that safeguard language use. Another recommendation was support and guidance in translation for SMEs, as mentioned by the private sector.

4.89   A research organisation observed that the strategy had no reference to the value of supporting Welsh language and culture in relation to health and wellbeing, communities, and governance.

5. Section 4 – Equality and Levelling up

> **Key findings:**
> - Concerns about the strategy being urban and South Wales focused
> - Respondents want to see the inclusion of more underrepresented groups including (but not limited to) LGBTQ+ people, Black, Asian, and Minority Ethnic communities, older people, and disabled people
> - There needs to be equal access for everyone to participate and benefit from innovation opportunities
> - Consider Welsh regional diversity within the development of the strategy
> - Ensure consistent and regular communication with UK government and other UK bodies.

Question 14

Do you believe the strategy has the potential to positively impact every region in Wales? If not, what actions are needed?

5.1 Although some believed that the strategy has the potential to positively impact every region in Wales, other respondents were less positive. Some respondents noted that they felt the strategy had a Cardiff-centric southern focus, and that there should be more focus on north Wales. There was also concern about how the strategy will positively impact rural economies. One respondent expressed weariness and noted that positive impacts from the strategy across the regions would be difficult to measure.

Private Sector Respondents

5.2 Private sector respondents felt that Wales must lay a globally competitive foundation for investment. The strategy must therefore ensure that Wales offers an environment that can attract and retain global talent, particularly in disciplines and skills needed for the future. For this, there were suggestions that Innovation hubs (such as those

in Cardiff, Swansea, and Bangor) should be supported, and further investment allocated to set up hubs in other areas. Such innovation centres need to be easily accessible across all regions.

5.3   West Wales Regional Innovation Coordination Hub noted the need for a structured approach to innovation, which should include unblocking bureaucracy (e.g., procurement rules) to enable the public sector to innovate more with SMEs and support the growth of local economies.

5.4   The Strategy should prioritise the need to build back the resilience of ecosystem services that play a crucial role in the future of rural Wales.

Public Sector Respondents

5.5   One public sector respondent stated that there needs to be transparency over any "funding formulae" that are produced, and that these should be accessible and available to the public.

5.6   It was noted that the four regional framework 'pen portraits' provides a strong foundation. However, further detail is required to gather propositions for innovation investment in these locations. Such an exercise should draw on public, private and education sectors to provide detail on the relative innovation strengths, any outstanding sectoral prowess, world-leading academia/private research and existing programmes of enabling activities in the regions.

5.7   One respondent noted that the Strategy should align with the Growth Deal principles and vision for north Wales by focusing clustering around 'magnet assets' and priority sectors for each region. The strategy should also ensure that there is flexibility for regions to build on their strengths and attract investment.

5.8   For the heath sector there is a feeling that the Strategy could unlock opportunities to embrace innovation within all health and care settings and transform health service delivery. It was recommended that funds are allocated to ensure that care is provided closer to homes and that backlogs in diagnostics and surgeries are reduced.

Research Organisations and Academic Institutions

5.9   Research organisations and academic institutions highlighted the need for investment in Wales' transport and digital infrastructure so that all communities can participate in innovation, be they rural or urban.

5.10   A place-based approach to innovation is needed to ensure that innovation is anchored on the specifics of each region. For example, regional funds such as the Strength in Places Fund (SIPF) could be used to focus on the specific competitive strengths of different regions.

Third Sector Respondents

5.11   The Welsh Government, through the work of HCRW (Health and Care Research Wales) and NHS Wales, should seek to ensure that patients across Wales have improved and equitable access to research and clinical trials.

5.12   The Innovation Strategy should include commitments to strengthen core capabilities around innovation across sectors, including place-based approaches and investment in pan-Wales transport.

Question 15

Are there any existing inequalities within the research, development and innovation sector that have not been highlighted in the draft strategy? How could the strategy address these inequalities?

5.13   Respondents noted various inequalities within the RD&I sector, and provided examples on how to address inequalities in the sector, these included: emphasising the importance of the foundational economy, recognising the value of volunteer opportunities, and strengthening relationships with universities (particularly in mid-Wales). A

respondent also wished for the strategy to promote the fact that anyone can innovate, and that R&D is not just for scientists.

Private Sector Respondents

5.14   Respondents highlighted the need to support micro businesses as they constitute some of the most innovative companies in the innovation ecosystem with the greatest potential for growth.

5.15   The strategy must take into account the north/south divide within Wales in order to target funding and allocate education resources. A private sector respondent noted that they believed that in the strategy there was no mention of mid-Wales, and it seemed to be "forgotten." The respondent suggested that the strategy could benefit from more detail in this area.

5.16   Steps need to be taken to develop university courses that support students and help develop skilled graduates.

Public Sector Respondents

5.17   One respondent suggested that as long as the suggested seven goals of the Wellbeing of Future Generations Act are realised in the overarching narrative then the draft strategy will be fit for purpose.

5.18   Another public sector respondent noted that within the sector, there is too much of a focus on medicine and medical science. They suggested that more attention should be given to addressing health and social care related inequalities by adopting a greater focus towards enabling research in areas like social care, housing and third sector.

5.19   The strategy should acknowledge the disparities between Welsh regions in terms of accessing R&D funding. The respondent goes on to recommend that an action plan for funding should be published along with detailed pathways for implementation.

5.20   Again, in terms of disparities the Strategy should identify the significant gender inequalities in sectors such as cyber, FinTech, and AI, which are currently not addressed to the same extent as STEM. With regards to supporting female-owned tech businesses more needs to be done to help those currently underrepresented to realise their ideas and commercialise R&D.

Research Organisations and Academic Institutions

5.21   One respondent recommends that placing more of an emphasis on language technologies and creative sectors rather than manufacturing would address research inequalities.

5.22   Highlight the highly successful ERDF funded project across the West Wales and Valley's region as an example of the innovation sector within Wales. This fast, reactive, and high impact model could be adapted across Wales.

5.23   Respondents from this sector recommended drawing effective links between the outcomes of applied research, vocational education and training curricula, and the needs of business and industry.

5.24   It was suggested that the strategy should explore the capacity for the Further Education sector to contribute, collaborate and in some cases lead innovation projects, whilst also extending innovation and engagement funding to the Further Education sector.

Third sector

5.25   One respondent from the third sector commented that the strategy fails to give cognisance to the inequalities affecting older adults, in terms of their capability and choice to live in their own homes with adequate social care, irrespective of medical conditions or socio-economic status.

5.26   Another respondent felt that this section of the Strategy neglects the fact that employment is not always a viable route out of poverty or

'levelling up' for disabled people, people facing additional barriers to employment, or older people. They suggest the strategy reconsider what constitutes 'productivity', and how such activities might be better supported and compensated.

Question 16

Are there any under-represented groups that have not been identified as priority groups within the strategy?

5.27   Regarding whether there were under-represented groups that have not been identified as priority groups within the strategy, the respondents identified the following groups:

- Volunteers and carers
- Factory and retail workers
- People from lower income households with limited access to transport links within their local communities
- Refugees
- Older people
- 18–35-year-olds
- Graduates from Welsh universities
- Women in STEM
- Black, Asian, and Minority Ethnic communities
- LGBTQ+ community
- Disabled people
- People living with chronic illness
- Homeless people
- People with no recourse to public funds
- People who are not in paid employment
- Those experiencing food poverty
- Young people in rural communities
- SMEs/MSMEs

- Traveler communities

- Minority language communities

- Neurodiverse people

- People from deprived communities

Question 17

In the context of the UK levelling up agenda, how can we further consider Welsh regional diversity within the development of this strategy?

5.28   There were a range of responses describing how the Welsh Government can further consider Welsh regional diversity within the development of the Innovation Strategy. Public sector respondents noted that the UK Government must recognise and value regional diversity and ensure opportunities are provided to all. Although it is mentioned, one respondent felt the strategy could be highlighting more strongly how Wales can benefit from being part of the wider UK landscape, as they believe "we can be more ambitious together."

5.29   Respondents reiterated the need for the strategy to commit to growth and investment strategies across the region and within all local communities. Respondents noted that this included revitalising the motorways in Wales, increasing public transport in rural areas, and providing efficient and effective healthcare that is sustainable.

5.30   One respondent suggested that the strategy needs to increase paid opportunities in innovation. This would provide more equal opportunities for people to participate in innovation.

Private Sector

5.31   One private sector respondent urged the strategy to promote regular discussion with UK government to procure a fair share of levelling up agenda opportunities, with engagement from all representatives of the innovation ecosystem.

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5.32   Another respondent suggested that the Welsh Government / the strategy should consider equal funding distributions rather than competitive bids to allow universities in rural areas to effectively attain funding. They also added that in education it is important the strategy continue blended learning courses to allow those in rural communities to access healthcare education and join workforce needed in their community.

Public Sector

5.33   Respondents from the public sector believe there is a need to better inform what is already being developed in terms of innovation in Wales. For example, a respondent suggested it could be useful to help consider how the strategy can promote local and regional innovation by linking to structures such as Public Service Boards, Regional Partnership Boards and the Research, Innovation, and Improvement Co-ordination Hubs. Working closely with a network of organisations and partners such as Diverse Cymru, Colegau Cymru, BSI was also recommended. One respondent urged the strategy to identify local strengths across Wales, not only regional or national ones, and provide opportunities for these to flourish.

5.34   There was also a call for the strategy to engage more broadly with the regional context – CCR, Ambition North Wales, and Swansea Bay City Deal. Respondents recommended a place-based approach ensuring data from area statements and wellbeing plans are used to drive innovation in areas most needed, whilst identifying the key strengths and aspirations for innovation. For example, one respondent recommends the strategy recognises the role of the Regional Partnership Boards that are driving health and social care integration in Wales.

5.35   In agreement with the private sector, one respondent recommended the strategy push for engaging regularly with UK decision makers at all levels for the benefit of Wales.

Research Organisations and Academic Institutions

5.36　A respondent from this sector commented that care needs to be taken to make sure that 'regional diversity' is not used as an excuse to hold back development or typify some regions.

5.37　Colegau Cymru suggests engagement with local authorities, including the regional channels established, to ensure that innovation is part of any future bids or discussions around Shared Prosperity. Another respondent complemented this with the suggestion of collaborative approaches in terms of Shared Prosperity Funding and revenue support. On the contrary, another respondent recommended delivering communication platforms to include groups from all regions to review the Strategy but *not* from a local authority perspective.

Third Sector

5.38　There was one response from the third sector regarding the levelling up agenda and regional diversity. They encouraged the strategy to promote and create a cooperative atmosphere across Wales, using technology to connect people

6. Section 5 – Views on Innovation

> **Key findings:**
> - A culture of innovation is one where ideas can flourish, be tested, and be improved
> - To develop innovation culture there is a need for supportive leadership
> - Barriers to innovation in Wales include demographic factors, costs, and skills
> - Most respondents do not feel supported in participating in innovation due to limited opportunities
> - Greater collaboration is needed between the 'triple-helix'
> - Establish and promote accessible innovation hubs at the community-level and encourage novel approaches.

Question 22

The strategy aims to create a culture of innovation in Wales, one which collaborates, shares risk, encourages participation and supports the ecosystem to innovate.

What does an innovation culture mean to you? What is needed to develop an innovation culture in Wales?

What does innovation culture mean?

6.1 One public sector respondent defined innovation culture as the work environment that leaders cultivate to nurture unorthodox thinking and its application. It was also described as being a culture where anyone is able to express their individuality and ideas to improve their situation, processes, and outcomes.

6.2 Another public sector response described innovation as a learning culture that thrives on "failing fast and moving on." This was supported by an additional respondent who felt that it was a culture of greater risk taking, patience, persistence, and performance.

6.3 A number of respondents within the public and private sectors emphasised greater 'risk taking' as a defining feature of innovation

culture. One private sector respondent noted that "not taking any risks is a risk in itself, because competitors will get ahead." The same respondent described innovation culture as a workplace in which employees feel included as part of the same team as their employers, where they are trusted to take risks and sometimes fail, because failure is an opportunity for learning.

6.4   Some key themes that emerged from public and private sector responses as they sought to define 'innovation culture' include equity in the workplace, trust, freedom, risk taking and competition, as well as creativity and unorthodox thinking.

6.5   Respondents from research and academic institutions defined their own roles as exemplifying 'innovation culture' in action. One research institution noted that "innovation culture is embedded in what we do.... a good innovation culture is empowering, encouraging all to consider how their work can be of benefit."

What is needed?

6.6   To develop an innovation culture in Wales respondents suggested the need to foster more ambition in society by promoting, rewarding, and celebrating positive cases of successful innovators to inspire others. One respondent felt that to achieve this culture, the Welsh Government first has to adequately define 'innovation' and back the strategy with financial support.

6.7   It was noted by the Association of the British Pharmaceutical Industry that there is a greater need for cross-sector collaboration; particularly between the 'triple-helix' of academia, SMEs, industry, and government. In order to achieve this, a platform of education and clear communication between stakeholders is necessary. In this respect, one public sector respondent noted the lack of effective connectivity and relatively weak networks between the various actors and groups within the innovation ecosystem in Wales, which acts as a barrier to innovation.

6.8 In terms of improving connectivity, a public sector respondent commented that innovation hubs are critical to creating a culture of innovation as they offer a space to determine goals, encourage 'out of the box' thinking, conduct innovation workshops, create idea challenges, and grow entrepreneurship. Similarly, another respondent noted that 'innovation commons' could be a useful means of connecting interfaces, acting as a 'missing link' between innovation actors and institutions in Wales.

6.9 Several responses highlighted the need to challenge excessive bureaucracy such that organisations in both the public and private sectors have greater freedom to adopt innovative approaches that are disruptive and potentially paradigm changing.

6.10 Building on the idea of pervasive influence and change, one respondent from the private sector suggested that the Innovation Strategy needs to consider the sociological impact of Welsh employment history i.e., the stories that get passed down the generations, and how these stories affect the perceptions of young people today.

Private Sector Respondents

6.11 It was suggested that in order to develop an effective innovation ecosystem we need:

- An alignment of public and private sector innovation goals.
- A shared vision of success (ideally using the Future Generations Act as a framework)
- A collaborative system that allows for the timely and effective adoption of new ideas
- A communal mindset to acceptance, development and adoption of new ideas and ways of doing things
- The acceptance across community of some levels of risk when testing and developing new ideas
- A population who are skilled and able to generate ideas, create new concept and progress them through to reality.

- An innovation community, open to all, who are both global and local in outlook.

6.12 Work with Welsh Suppliers to create viable small businesses that have realistic delivery plans to grow slowly and organically.

Public Sector Respondents

6.13 People need to be given adequate time, space, and resources to consider the key challenges facing their organisation as well as a receptive and supportive environment in which to do so.

6.14 It is also important that people feel empowered to explore new ideas, and so innovation should be embedded in all educational offerings. Leaders should acknowledge the importance of innovation through encouraging and reward it within their organisations. A culture and supporting framework of proportionate risk management could be developed to avoid stifling innovation, particularly within the public sector. Public sector and particularly NHS staff should feel empowered to innovate within their roles.

6.15 Carmarthenshire County Council noted the existence of a culture of "fearing to fail." They suggest that sometimes taking a risk and encountering setbacks can lead to greater successes. This generates a culture of innovation.

6.16 It was suggested that in order to succeed we must invest in leadership, and build leadership capabilities that embrace change and welcome the adoption of innovation. To achieve a culture of innovation in healthcare we need to:

- Support leadership training for innovation
- Continually monitor the health and life sciences business market, and horizon scan technology developments globally
- Talk about technology – share challenges and listen to new ideas
- Establish a permissive innovation adoption culture supported by procurement processes

- Celebrate innovation – locally and nationally

- Create a strong industry-led ecosystem

- Build on European funded programmes such as 'Accelerate' which works with industry to support the development of health technology innovation

- Support evidence based health innovation

- Create an environment for spread and scale of innovation.

6.17 A response from Natural Resources Wales (NRW) noted that they want to see the strategy foster a culture of innovation that champions the creative power of citizens and organisations in Wales to meet the challenges posed by the Nature and Climate emergencies. They feel that innovation is adaptive and iterative, and so it will not always work the first time. What is needed is to capture this learning, disseminate it and let it shape how we solve problems in the future. NRW suggested that this process of failing fast and well is central to innovation.

Research Organisations and Academic Institutions

6.18 Research organisations generally agreed that developing an innovation culture requires the prioritisation of research and researchers in order to drive new scientific discoveries, which will ultimately deliver benefits to society. In order to achieve major benefit, respondents reiterated that there needs to be investment to build critical mass in major research areas, which in turn will lead to greater grant capture, scientific output, and the training of a high-tech workforce.

6.19 One respondent noted that the Innovation Strategy places emphasis on translating research discoveries through business and industry. They felt that the biggest challenge seems to come from a lack of investment in discovery science at one end of the scale and a lack of relevant industries at the other.

6.20 Cardiff University noted that they have used their RWIF funding to develop an 'Innovation for All' approach where staff and students are supported with development opportunities through training and

leading/participating in funded projects to gain the skills and knowledge to undertake impactful innovation, which has relevance in Wales and further afield. This, they say, underlines the necessity of having stable and meaningful levels of innovation funding provided at a university level to establish support structures to develop skills, expertise and confidence in staff and students to undertake innovation.

6.21   There is a need to build on what is already working including the collaborative activity taking place locally, nationally, and internationally. Both the Wales Innovation Network and Global Wales have already delivered benefits in the formation of innovation partnerships both within Wales and with international partners. Removing the barriers to collaboration should be a key approach for the strategy.

Other Respondents

6.22   Smaller businesses need to be more involved in the shaping the strategy as they are currently an under-represented group. A respondent noted the need to understand the barriers that small/micro business and entrepreneurs face (time and money). It is important to encourage them to make small changes and mitigate risk by engaging with others such as universities. This is key to ensuring that small businesses are aware that the strategy is relevant to them.

Question 9

What are the main challenges and barriers to innovation in Wales? What needs to be done to overcome these barriers?

6.23   Respondents highlighted a number of challenges and barriers to innovation in Wales including the following:

- Cost and accessibility of funding for micro/small businesses
- Political culture with "entrenched attitudes" by senior leaders
- Lack of government/policy support

- Bureaucratic barriers
- Organisations are constrained by resource issues, procurement rules, and political cycles
- An ageing population
- The remoteness of many areas in Wales
- Poor infrastructure and the limitation of road, rail, and bus networks
- The diversity of business sectors
- Low population density in some areas
- Lack of time and skills
- Lack of digital skills in particular
- Stretched public services
- Cost of living crisis
- Lack of measures/accountability
- Risk aversion
- Lack of funding
- Loss of EU funding since Brexit
- Investment in University research is significantly weaker in Wales when compared to Scotland and England.

6.24   Some respondents suggested what needs to be done in order to overcome these barriers. One suggested that regional hubs can prevent duplication by linking together people doing similar work and can encourage innovation by facilitating the sharing of ideas.

6.25   Another respondent noted the need to align innovation with mitigating the effects of the cost-of-living crisis. In this sense the strategy should be sensitive to the reality of this crisis.

6.26   A citizen's response suggested the need to highlight positive role models in society, particularly people who have overcome challenging circumstances.

6.27   A key theme that emerged from private sector responses was the need for cross-sector collaboration between academia, industry, and government.

Question 23

Do you feel that you have the opportunity to participate in innovation? Please explain why you feel that you are able / unable to participate in innovation?

6.28   One public sector respondent noted that throughout their own career they had sought to build links between people across different organizations, which has allowed for the sharing of ideas and interests, which in turn has led to innovation and change.

6.29   One private sector respondent highlighted that they were able to participate in innovation due to their own personal drive and opportunities that they had created. Another respondent stated that although they have had opportunities to participate in innovation, these opportunities are becoming harder to find due to a decrease in staff involved in innovative measures within the local authority and social care sector.

6.30   However, other participants felt that unemployment, lack of awareness of opportunities, and limited ability to access funds were barriers to participating in innovation. One respondent described how, as an 'employee' innovation is framed within the requirements of the role, but as a 'citizen' there are no opportunities to innovate.

Private Sector Respondents

6.31   One response from a business delivering innovation focused support to SMEs in Wales noted that they are in a unique position to represent the voice of the knowledge-based businesses across the whole of Wales, and yet find themselves in somewhat of a vacuum as there is no tangible outlet or mechanism to present their observations.

6.32 Another response posed the questions: "How do we link to Government organisations/inventors/private companies with ideas who have the funding to progress but have no idea of the process they need to follow? How can we gain funding to develop our own ideas?"

6.33 One business noted that they find it hard to participate in innovation due to difficulties surrounding engagement with public sector. Understanding public sector needs would help companies to invest appropriately and develop services/products that are currently missing.

6.34 Greater access to Government funding and support was flagged as a key priority.

Public Sector Respondents

6.35 All respondents within the public sector stated that they are actively involved in innovation. Many of them cited their involvement in specific projects and how these relate to the wider innovation ecosystem.

6.36 For example, Carmarthenshire County Council feels that is has an opportunity to participate in innovation via its Innovation Strategy produced by Cardiff University's Centre for Innovation Policy Research, in which four Innovation Opportunities are identified:

- Enhancing digital connectivity and exploiting opportunities across Carmarthenshire
- Health - development of a dispersed living laboratory
- Foundational Economy - sustainable food procurement
- Circular Economy (CE) - Leveraging a CE approach for the net zero agenda

Research Organisations and Academic Institutions

6.37 In general, research organisations highlighted the fact that their work is inherently innovative.

6.38   One respondent expressed his inability to innovate in Wales – he had to resort to a company in England to license his Intellectual Property as there was no suitable equivalent available in Wales. The same respondent noted that the main barriers in the NHS tend to be bureaucratic.

6.39   Similarly, other respondents suggested the need to cut bureaucracy, improve the agility and flexibility of funding and support and generate a risk balance that encourages innovation.

7.   Section 6 - Welsh Language

> **Key findings:**
> - Promote the Welsh language through technological and software development
> - Invest in indigenous Welsh companies to develop language software
> - Welsh needs to be more embedded across the strategy
> - The place of Welsh in the Innovation Strategy very much intersects with the need to develop accessible, affordable language software, and address digital exclusion.

Question 35

We would like to know your views on the effects that the Innovation Strategy for Wales would have on the Welsh language, specifically on opportunities for people to use Welsh and on treating the Welsh language no less favourably than English.

What effects do you think there would be? How could positive effects be increased, or negative effects be mitigated?

7.1   One respondent from the private sector noted that Wales is well placed to become an exporter of multilingual software products. They further suggested that the strategy could potentially act to increase awareness, interest and learning of the Welsh language outside of Wales. They recommended:

- Accessible digital services in the language of choice

- Immersive bilingual digital resources that bridge the gap between English-speaking parents and children educated at Welsh-Medium schools

- Promote the adoption of existing technologies such as Duolingo

7.2   Again, from the private sector, it was observed that a bilingual Wales provides a USP that should be leveraged constructively and creatively

to gain the maximum impact, both social and economic terms. The FAW (Football Association of Wales) was cited a prime example of how to use the language respectfully and consistently to reinforce a message. Positive effects could be increased by:

- Using public procurement more progressively and insist on bilingual delivery of services where public money is used
- Capitalising on the trends and facilitate a more supportive environment for learners to gain confidence quicker
- Celebrate the positive effects of mainstreaming the language within the Welsh innovation ecosystem
- Support businesses to develop a sustainable Welsh language capability.

Negative effects could be mitigated by:

- Sharing different perspectives
- Being factual
- Developing a narrative that highlights the business advantages of using Welsh to create, promote and deliver unique products and services.

7.3 A response submitted by a research organisation noted that while the emphasis on the Welsh language and technology is useful, the Welsh language should be integrated more throughout the strategy. Integrating Welsh more throughout the Strategy, rather than as a stand-alone mission, would help emphasise the potential for innovation culture to be conducted through the medium of Welsh.

7.4 Cardiff Metropolitan University noted that while technology has a huge potential relating to the Welsh language, the University has experienced issues relating to digital exclusion in Wales and the barriers that technology can create, where bilingual services are not available.

7.5 According to another research organisation, the strategy could have a huge potential positive impact on the Welsh language. However, it needs to be made clearer that this is not just a case of providing

bilingual software but rather of true bilingual and multilingual innovation, resulting in expanded markets. In this case, research and investment in Language Technology sectors is crucial to develop the core technologies – speech, machine translation, AI etc. which should be embedded in health and social care.

7.6 Bilingualism provides opportunities to improve well-being at home and contributes to Wales' economic prospects internationally.

Question 36

Please also explain how you believe the proposed strategy could be formulated or changed so as to have positive effects or increased positive effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language, and no adverse effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language.

7.7 The majority of respondents expressed that Welsh should have equal footing to English across all aspects of life in Wales.

7.8 One unspecified respondent suggested the need for stronger alignment with the Curriculum for Wales and the actions proposed by the Welsh Government in its 10-year plan for the Welsh-medium education workforce.

7.9 From the private sector came the recommendation that the "West of Wales (south/mid and north)" should be central to the Government's plans rather than being accommodated once that the metropolitan region has been dealt with.

7.10 Toolkits and services already created provide a positive step forward but need to be better promoted. It was suggested that the Wales Collaborative Procurement Hub could be used to procure bilingual

software/services that could work across many sectors in Wales and through this ensure value for money.

7.11   The benefits of improved bilingual services and access need to be emphasised when working towards the aim of making Welsh "easy."

7.12   A very comprehensive response to the question came from the research sector and noted that there are currently several unrealised opportunities that would have a positive effect on developing expertise and skills where investment could make Wales a global player in innovative multilingual digital technologies. These include:

- Automating electronic communications

- Automatic translation

- Choice of bilingual service when dealing with public and private services

- Chatbots

- Assistive technologies in Welsh for disabled people, older people etc.

- Text to speech for people with sight impairments

- Speech recognition for people with hearing impairments

- Communication aids for neurodiverse people and people with dementia

- Bilingualism for the creative and entertainment industries

- Automatic subtitling

- Machine translation

- Creative use of synthetic voices etc.

7.13   Several respondents within the public and research sectors noted the crucial role that technology plays in expanding the use of the Welsh language. On this theme:

- Tech companies develop their software to work with multiple languages – providers in the UK should be encouraged to do the same

- Invest in indigenous Welsh companies to develop language software. Utilise smart technology to assist in areas such as dementia support.

- The bilingual toolkits and services already created (e.g., Cysill and Cysgair) provide a positive step forward but need to be better promoted and developed.

8. Section 7 - Final Comments

> **Key findings:**
> - Financial support for disabled people
> - More support needed for job seekers
> - Increased accessibility of the survey for those with learning difficulties.
> - A summary of glossary of terms
> - The inclusion of social care perspectives

Question 37

We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them:

8.1 Much of the feedback provided in the 'Final Comments' section reiterated points made in response to previous questions. Included here is a summary of some of the more substantive responses.

8.2 There were calls for further financial support for disabled people and job seekers in Wales.

8.3 It was noted that the survey was not accessible for those with learning difficulties due to the lengthy questions and high reading level.

8.4 One respondent recommended a much shorter and more focused second draft with an accompanying appendix of existing activity and success.

8.5 A few respondents called for an executive summary and glossary of terms.

8.6 Another respondent suggested that the resources, funding as well as wider incentives and levers are clearly identified as part of the strategy.

8.7 Social Care Wales expressed the need for a stronger voice for social care reflected in the strategy, and in innovation policy more widely.

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9. Section 8 – Next Steps

9.1 Thank you to everyone that took part in the consultation. Based on this analysis we will be redeveloping and refining the strategy further, ready for publication early in 2023

# Annex A: demographic insights from responses to the consultation

9.2   Demographic information below also includes data from the equal opportunities monitoring from innovation strategy events and engagement.
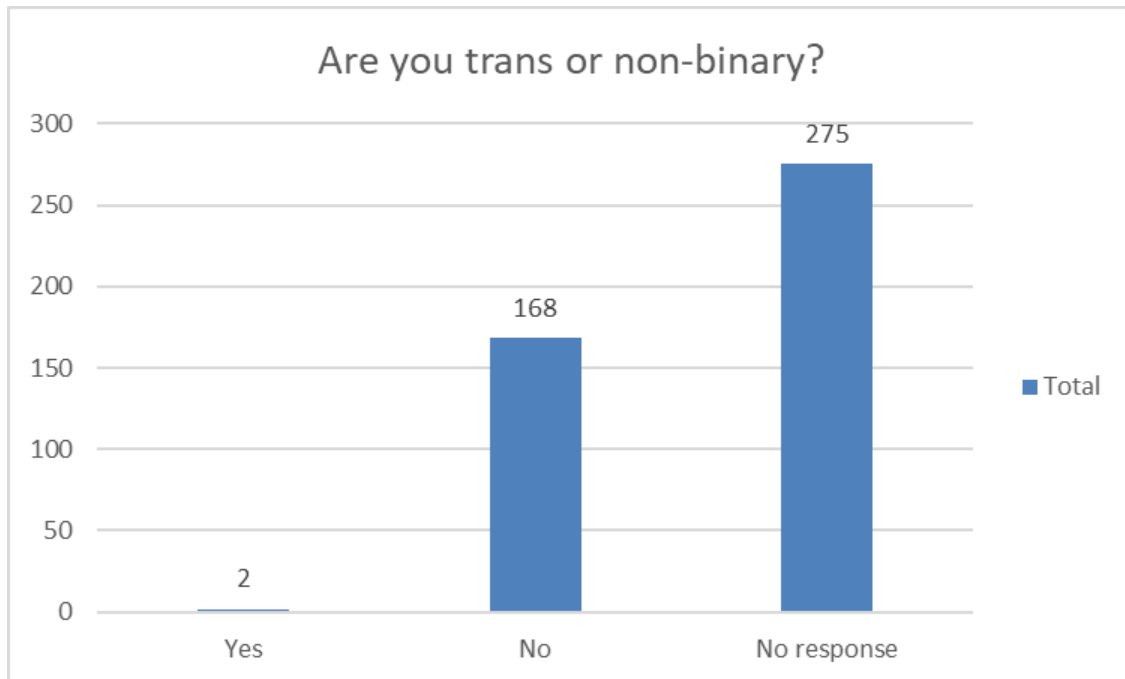
Question 25: "Which stakeholder group would you consider yourself to represent"
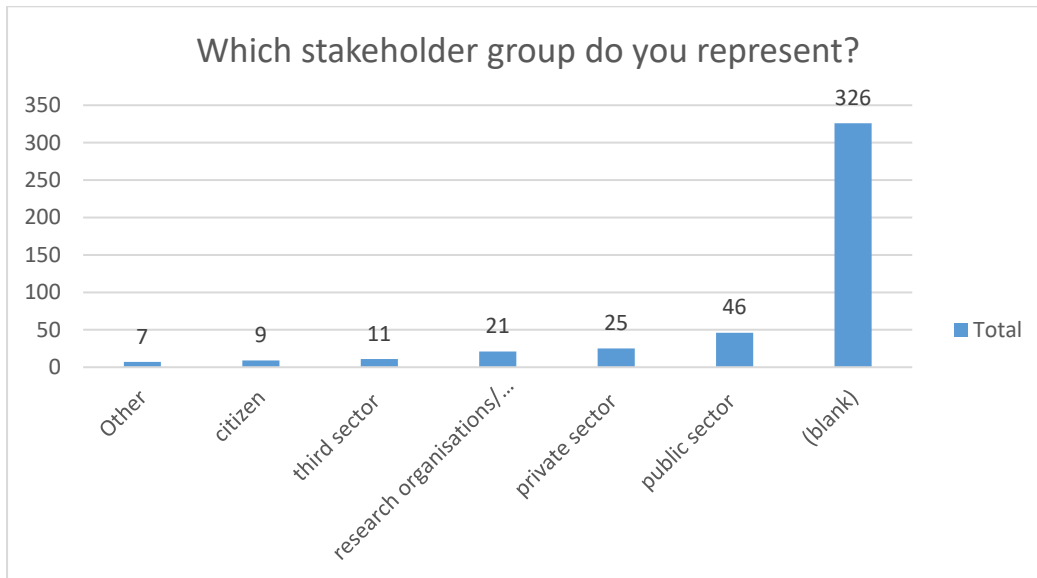
Source: Innovation Strategy Consultation Initial Diagnostic n=445

Question 26: "What gender do you identify as?"
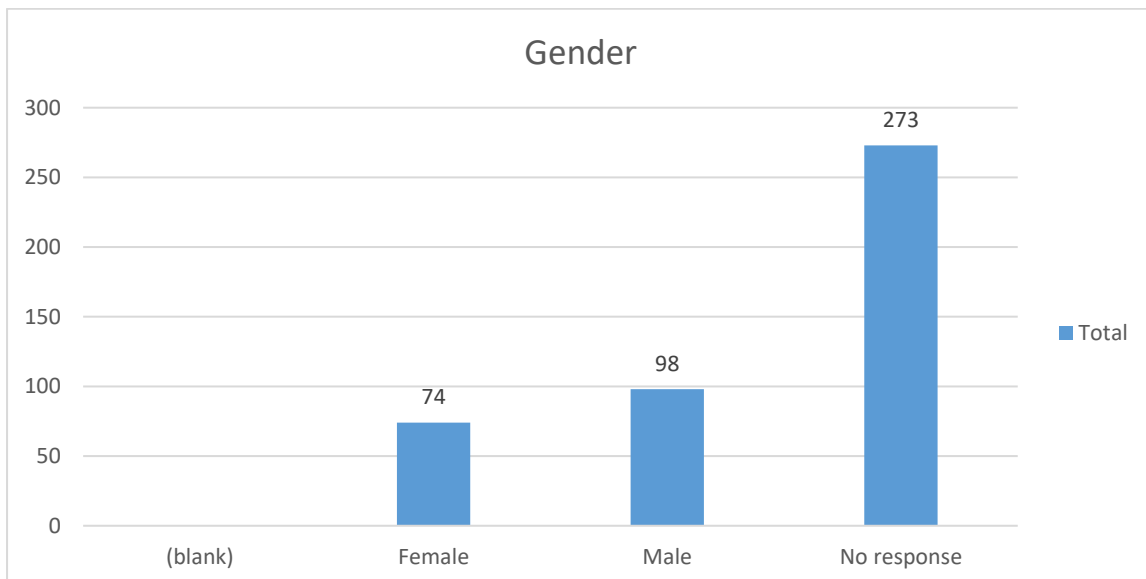
Source: Innovation Strategy Consultation Initial Diagnostic n=445

Question 27: "Are you trans or non-binary?"

Are you trans or non-binary?

Yes	No	No response
2	168	275

■ Total

Source: Innovation Strategy Consultation Initial Diagnostic n=445

Question 28: "Are you currently pregnant or have been pregnant/ taken maternity leave in the past year?"
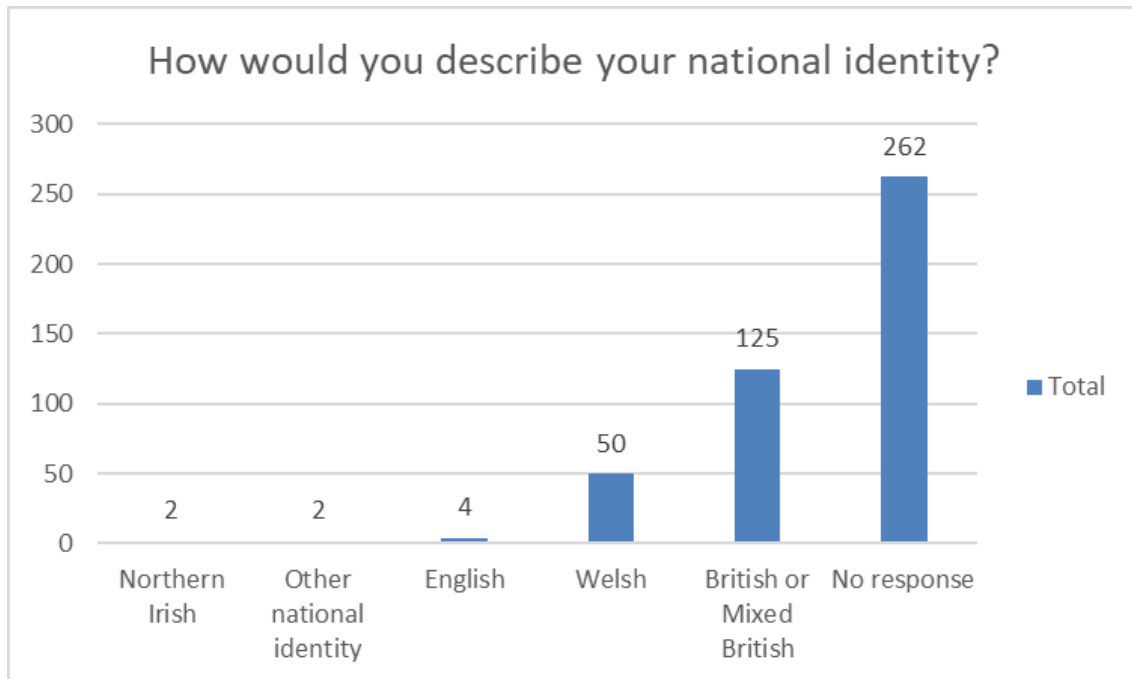

Pregnancy status

-	Yes	Prefer not to say	(blank)	No response	No
1	4	14	123	135	168

■ Total
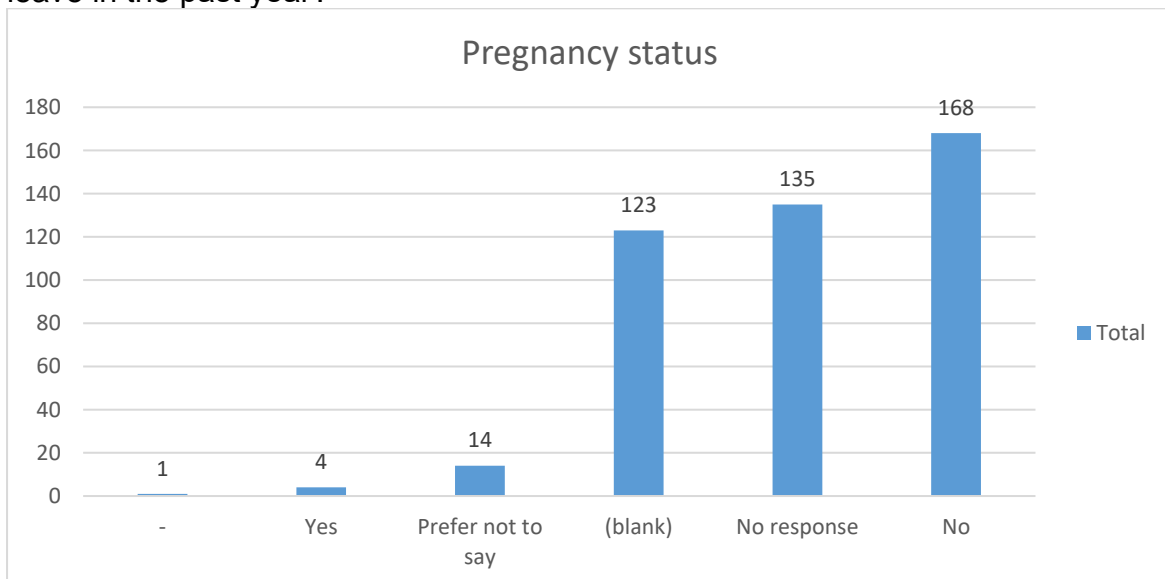
Source: Innovation Strategy Consultation Initial Diagnostic n=445

Question 29: "What is your age?"
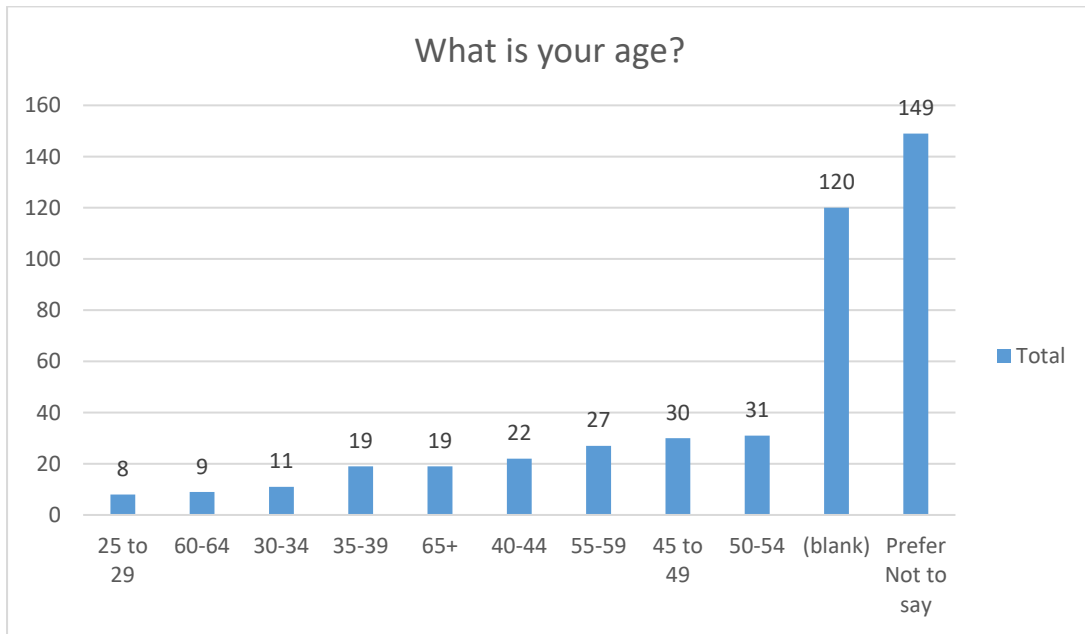
Source: Innovation Strategy Consultation Initial Diagnostic n=445

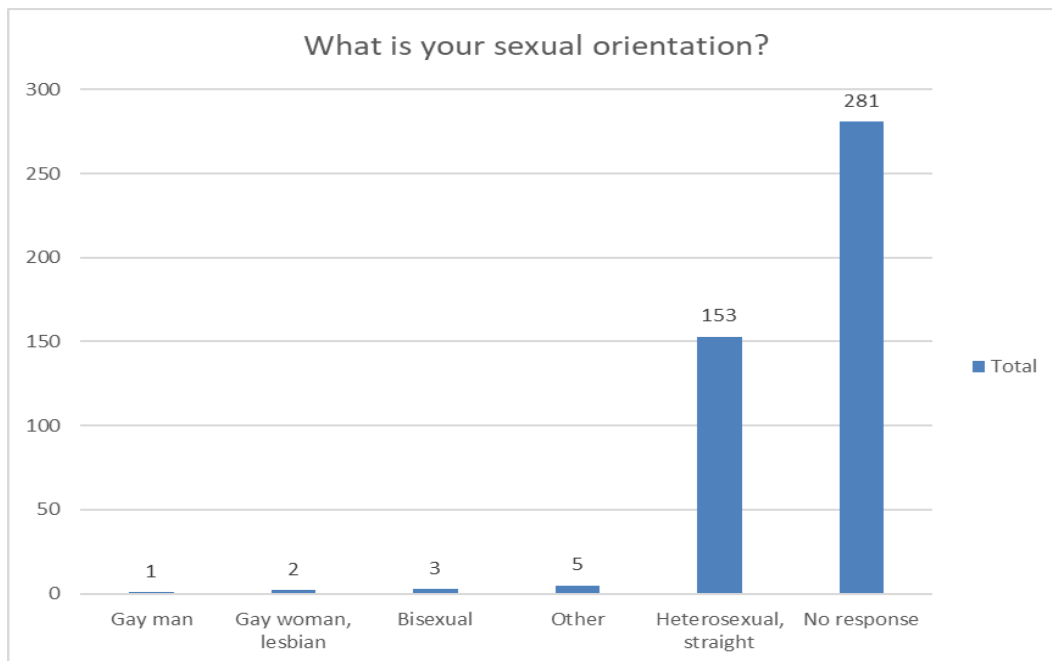Question 30: "How would you describe your national identity?"

Source: Innovation Strategy Consultation Initial Diagnostic n=445
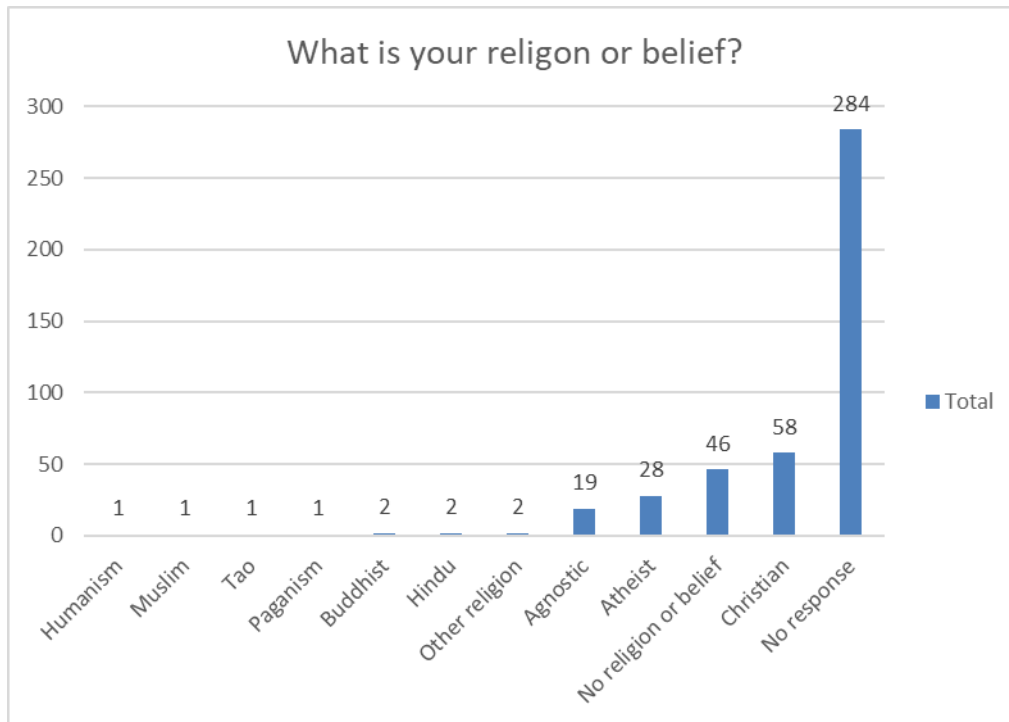
Question 31: "What is your ethnicity?"
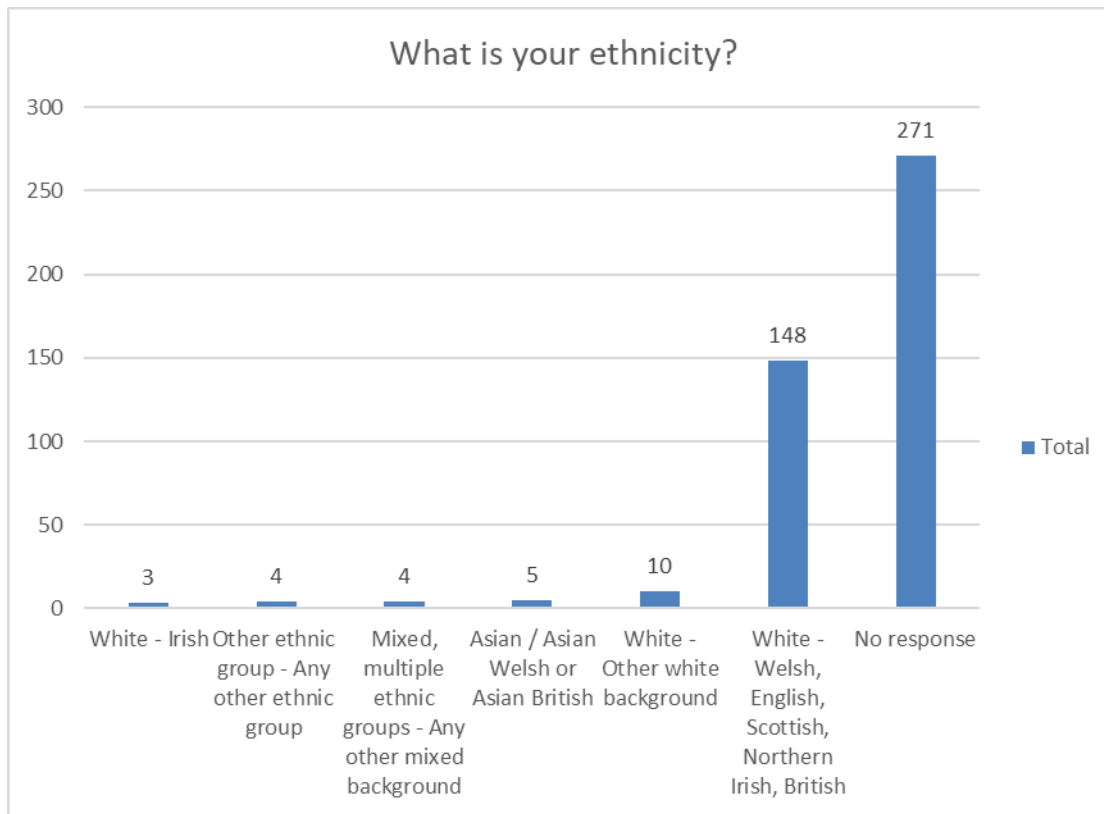
Source: Innovation Strategy Consultation Initial Diagnostic n=445

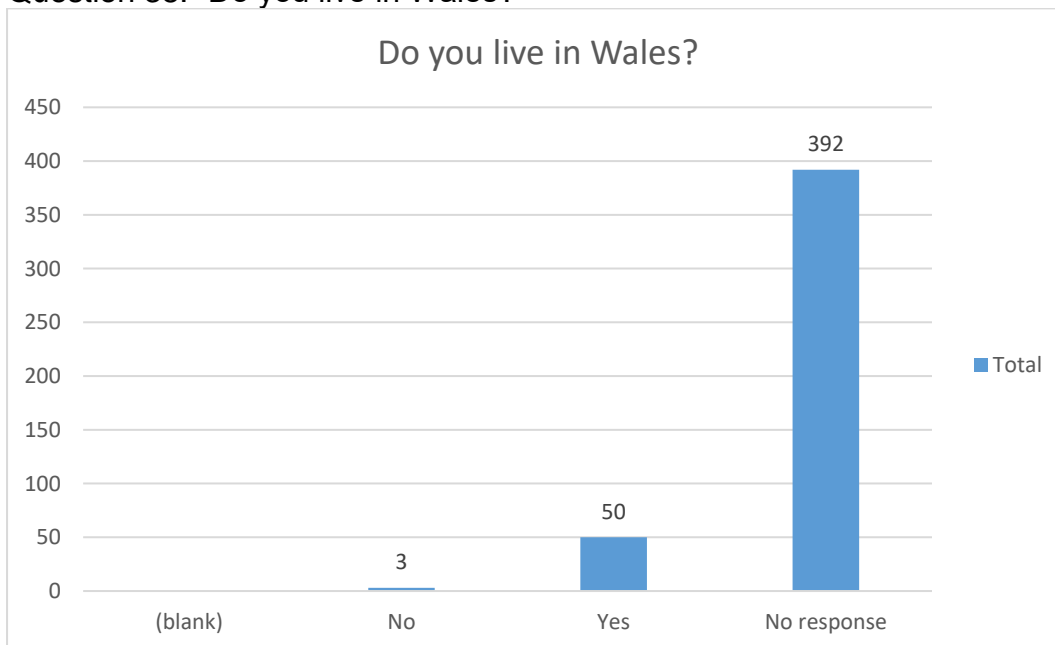Question 32: "What is your sexual orientation?"

Source: Innovation Strategy Consultation Initial Diagnostic n=445

Question 33: "What is your religion or belief?"

What is your religon or belief?

Source: Innovation Strategy Consultation Initial Diagnostic n=445

Question 38: "Do you live in Wales?"

Do you live in Wales?

Source: Innovation Strategy Consultation Initial Diagnostic n=445

Question 39: "Do you have a business interest in Wales?"

Do you have a business interest in Wales?

	Total
No	14
Yes	28
No response	403
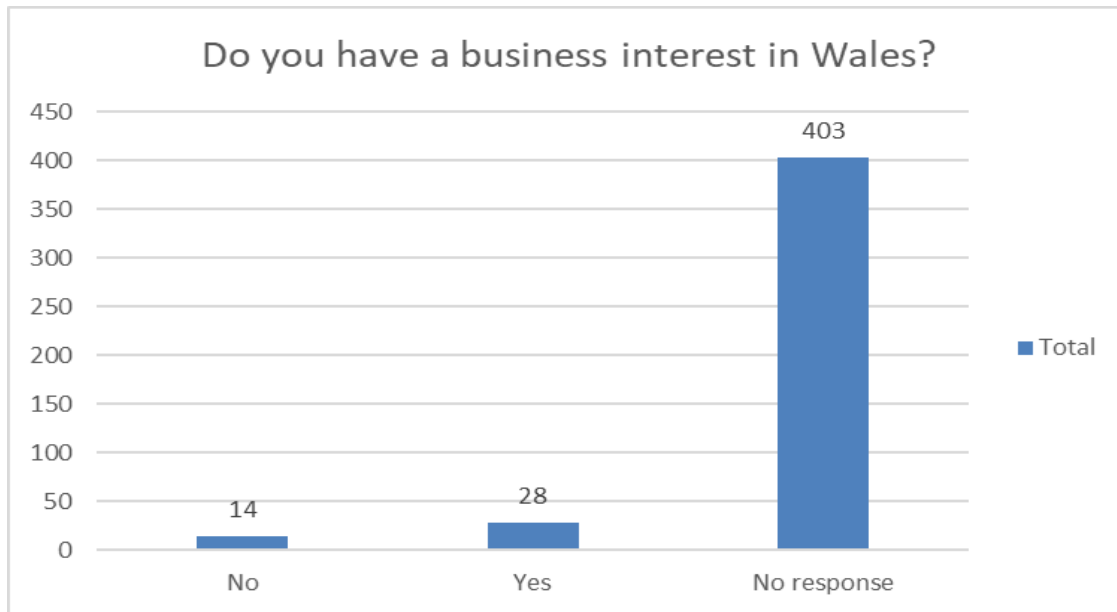
Source: Innovation Strategy Consultation Initial Diagnostic n=445

Q34: "Do you consider yourself to meet the social definition of disability which the Welsh Government uses?"

Do you consider yourself to meet the social definition of disability which the Welsh Government uses?

	Total
(blank)	
Yes	2
No	164
No response	279

Source: Innovation Strategy Consultation Initial Diagnostic n=445

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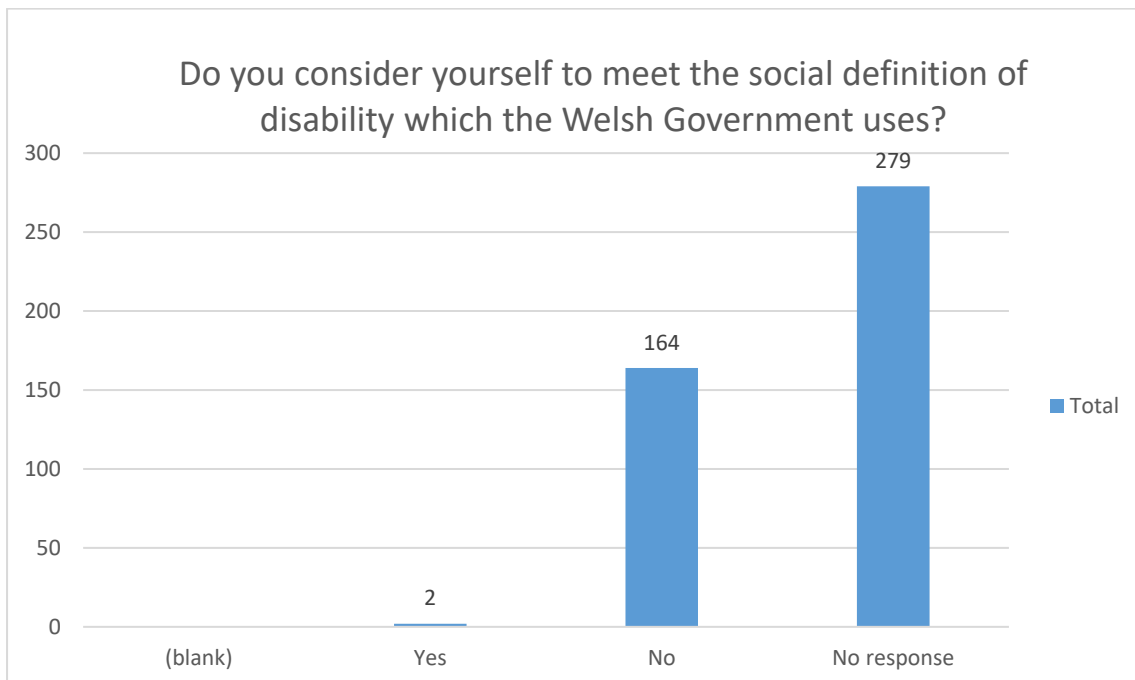
Annex B: Consultation Questions: Innovation strategy for Wales

Q1. Which stakeholder group would you consider yourself to represent:

Q2. What would you like the Innovation Strategy to achieve in the short (1 year) term in relation to: economic growth skills development social equity climate and environment other

Q3. What would you like the Innovation Strategy to achieve in the medium (2 to 5 years) term in relation to: economic growth skills development social equity climate and environment other

Q4. What would you like the Innovation Strategy to achieve in the long (5+ years) term in relation to: economic growth skills development social equity climate and environment other

Q5. We set out some high-level objectives that underpin our vision in the draft strategy. We recognise that Wales cannot be a global leader of innovation in all areas. Is there a specific mission or missions, linked to economic sectors or areas of social outcome where you think activity and resources should be concentrated?

Q6. What impact, positive or negative, do you think the innovation strategy will have on Wales?

Q7. What new actions are needed from the Innovation Strategy?

Q8. Which aspects of the innovation strategy should remain the same?

Q9. What are the main challenges and barriers to innovation in Wales? What needs to be done to overcome these barriers?

Q10. The Innovation Strategy aims to achieve a more prosperous Wales through introducing new products and services, job creation, spend in the Welsh economy and productivity. An ecosystem where innovation becomes everyone's responsibility.

a. Do you believe the proposed Innovation Strategy has set out clear objectives to achieve this outcome? If not, what is missing?

Q11. b. What impact, positive or negative, do you think innovation can have on helping improve the economic prospects and well-being of the people of Wales?

Q12. The Strategy aims to grow a more Resilient Wales which aims to improve a healthy natural environment, adopt circular economy principles and increase our capacity and capability in adapting to change.

Do you believe the proposed Innovation Strategy has set out clear objectives to achieve these outcomes? If not, what is missing?

Q13. An equal Wales is an objective of the Innovation Strategy. This proposes a transparent innovation ecosystem that ensures inclusivity in all research, development and innovation activity and a fairer distribution of investment where all regions in Wales feel the benefit from increased innovation activities.

a. Do you believe the proposed Innovation Strategy has set out clear objectives to achieve these outcomes? If not, what is missing?

Q14. b. Do you believe the strategy has the potential to positively impact every region in Wales? If not, what actions are needed?

Q15. c. Are there any existing inequalities within the research, development and innovation sector that have not been highlighted in the draft strategy? How could the strategy address these inequalities?

Q16. d. Are there any under-represented groups that have not been identified as priority groups within the strategy?

Q17. e. In the context of the UK levelling up agenda, how can we further consider Welsh regional diversity within the development of this strategy?

Q18. The Innovation Strategy aims to promote a globally responsible Wales through decision making processes that take account of the impact of our innovation activities on global wellbeing, as well as a collaborative approach to working in partnerships internationally to share knowledge, skills and undertake projects with a social purpose.

Do you believe the proposed Innovation Strategy has set out clear objectives to achieve these outcomes? If not, what is missing?

Q19. The proposed strategy aims to create cohesive communities which will see greater cross sector collaboration, greater community connectivity and adoption of digital technologies, and the aligning of activities towards delivering for our communities in Wales.

Do you believe the Strategy will support this ambition? If not, how can we achieve this?

Q20. The new Innovation Strategy wants to achieve a healthier Wales through a more coherent and aligned innovation ecosystem that targets new and different ways of working, supports recovery strategies from the pandemic and enables greater adoption of innovation.

This will be underpinned by a health and social care system that collaborates across industry, academia and the third sector to deliver improved healthcare value by developing, sharing, procuring and adopting innovative practice and technology.

Do you believe the strategy will support this ambition? If not, what additional activities need to be included?

Q21. As part of Welsh Government commitment to a vibrant culture and thriving Welsh language, the proposed Innovation Strategy looks to ensure multi-lingual development as standard.

Do you agree that the strategy outlines the ways in which it hopes to successfully create the right conditions to increase the use of the Welsh language across all proposed innovation activities? If not, what additional activities should be undertaken?

Q22. The strategy aims to create a culture of innovation in Wales, one which collaborates, shares risk, encourages participation and supports the ecosystem to innovate.

a. What does an innovation culture mean to you? What is needed to develop an innovation culture in Wales?

Q23. b. Do you feel that you have the opportunity to participate in innovation? Please explain why you feel that you are able / unable to participate in innovation?

Q24. Do you think this Innovation Strategy would positively impact you? If not, how could this be changed?

Q25. Alongside the final strategy we plan to publish an action plan which will address resourcing and implementation of the strategy. The Commission for Tertiary Education and Research will have a leading role to play in the implementation of the strategy, as will the Welsh Government and other bodies and partners. Wales currently does not have one lead body responsible for the coordination and delivery of our innovation system. Turning to implementation, how would you like to see this strategy implemented?

About you

Q26. Gender

Q27. Are you trans or non-binary?

Q28. Are you currently pregnant or have been pregnant/ taken maternity leave in the past year?

Q29. Age

Q30. How would you describe your national identity?

Q31. What is your ethnicity?

Q32. What is your sexual orientation?

Q33. What is your religion or belief?

Q34. The Welsh Government recognises that disabled people are not disabled by their impairment or health condition or by using British Sign Language but by policies, processes and environments which may not be accessible to them. We are committed to taking action to remove those barriers.

The Equality Act 2010 defines disability as:

'A physical or mental impairment which has a substantial and long term adverse effect on a person's ability to carry out normal day-to-day activities.'

For diversity monitoring purposes, do you consider yourself to meet either the social definition of disability which the Welsh Government uses and/or the definition in the Equality Act 2010?

Q35. We would like to know your views on the effects that the Innovation Strategy for Wales would have on the Welsh language, specifically on opportunities for people to use Welsh and on treating the Welsh language no less favourably than English.

What effects do you think there would be? How could positive effects be increased, or negative effects be mitigated?

Q36. Please also explain how you believe the proposed strategy could be formulated or changed so as to have positive effects or increased positive effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language, and no adverse effects on opportunities for people to use the Welsh language and on treating the Welsh language no less favourably than the English language.

Q37. We have asked a number of specific questions. If you have any related issues which we have not specifically addressed, please use this space to report them:

Submit your response

Q38. Do you live in Wales?

Q39. Do you have a business interest in Wales?

Q40. Please provide the first part of your home postcode e.g., CF10

Q41. You are about to submit your response. Please ensure you are satisfied with the answers you have provided before sending.

Name -

Organisation (if applicable)

Q42. If you want to receive a receipt of your response, please provide an email address.

Email address

Q43. Responses to consultations may be made public. To keep your response anonymous (including email addresses) tick the box.