



Western Gateway

Independent Economic Review II

Western Gateway Partnership
Roadmap

Final Report

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Foreword

Sitting across either side of the Severn Estuary, connecting South Wales and the West of England, the Western Gateway offers a unique proposition which combines strategic location, an innovative economy, and significant natural and economic assets. Home to market leading multinationals, creative enterprises, and academic expertise, the region is an innovation powerhouse and can play a crucial part in engineering and designing the industry and economy of tomorrow.

Despite these strengths, the Gateway does not yet realise its full economic potential, lagging behind the UK average for productivity, housing pockets of significant deprivation, and does not fully commercialise and capitalise on its research and innovation capabilities. Over the course of this report, the Independent Economic Review 2, Deloitte highlight the competitive strengths and outline the key bottlenecks holding back the Western Gateway's economy. Through engagements with Partners and stakeholders, this report outlines a roadmap of initiatives that aim to overcome these hurdles and unlock the Western Gateway's economic potential.

By playing to the region's key sectors and areas of strength, supporting innovative and scalable businesses, providing regional leadership for the challenge of Net Zero, providing Partners and businesses with evidence and helping to close the skills gap and connect left behind regions, the WGP can amplify the region's economic assets and help support inclusive and sustainable growth across the Gateway. Working with initiatives and support already in place and leveraging the WGP's regional overview and size, the initiatives were designed to provide additionality so its Partners can amplify the region's economic assets and help support inclusive and sustainable growth across the Gateway.

Ultimately, the region and the UK economy sit at a cross-roads: recovering from the effects of the Covid-19 pandemic, achieving the transformational shift to Net Zero, Connecting the Union and Levelling Up are key challenges to meet in order to support economic growth across the entire country. These are challenges and opportunities alike to the Gateway. By moving to support delivery and the initiatives outlined in this report, the WGP can help boost productivity across the entire region to help close the productivity gap with the rest of the UK, supporting the next generation of innovative businesses and sectors, propelling a greener, fairer, and stronger Britain.

Sir Howard Bernstein

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and Deloitte Strategic Advisor for Local
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Executive Summary

This report has carried out a review of strengths and opportunities of the Western Gateway

This report covers the Western Gateway's (WG) economic strengths and opportunities (the Independent Economic Review 2 – IER2) and considers initiatives to be led and coordinated by WGP to drive WG's economic development (the Roadmap). These initiatives have been agreed by WGP leaders with Deloitte support through a strategy formulation and delivery plan.

The WG generates **£110bn¹** of Gross Value Added (GVA) per year, contributing 6% of UK output. It is a national innovation powerhouse, has an educated workforce, and hosts significant natural and economic assets.² Despite these advantages, the WG lags behind the UK average in terms of productivity. As a pan-regional partnership, the WGP is well-placed to champion economic growth for the area. Indicative analysis suggests that improving the region's productivity performance could **add £34bn³ to the UK economy by 2030**, if half the current productivity gap to the UK average is bridged.

This report considers the region's strengths and assesses opportunities for improving economic growth. It also sets out a roadmap for how the WGP as an organisation could play a role in furthering inclusive and sustainable growth for the area. The report concludes that as part of accomplishing its vision, the WGP could work with its members to help deliver an **Innovation Deal**, a **Net Zero working group** and an integrated **Digital Connectivity strategy**. This could help boost economic growth and contribute to unlocking a substantial productivity divide.

By leveraging its natural and economic endowments, the WG can have an important role in designing the economy of the future

Sitting across either side of the Severn Estuary, connecting South Wales and the West of England, the Western Gateway offers a unique proposition which combines a strategic location, an innovative economy, and significant natural and economic assets. An attractive place to live, the Gateway is home to market leading multinationals, creative enterprises, skilled labour, and academic expertise.

The WG is a powerhouse for innovation: its innovation scores are higher than the UK average and far exceeding European peers. The region has **more PhDs than the Ox-Cam Arc** and hosts high-quality universities, such as the **research intensive GW4**.⁴ Fuelled by its research and innovation capabilities, the Western Gateway's leading sectors are advanced manufacturing & Engineering (A&ME), cyber, green energy, fintech and creative & digital media.⁵ Based on an extensive evidence-review and interviews with sector experts, this review summarises the region's strengths and assets across each sector:



Advanced Manufacturing & Engineering (AM&E): The Western Gateway has become a leader in design and engineering. It has attracted **14 of 15 largest aerospace companies** and **IQE has a 55% global market share in compound semiconductor technology, manufactured at its bases in Cardiff and Newport**.⁶ The region has leading research facilities, and houses Europe's largest 5G and 6G research groups.



Cyber: The region's cyber clusters are the **largest and most developed in Europe**, supported by a strong research base that has formed in the Western Gateway, with 2 centres of academic excellence in Bristol and Cardiff. It is a highly productive cyber sector, **outperforming the UK average by 25%**. **1/3 of all UK cyber patents** are registered in the WG.⁷

¹ Source: Deloitte Analysis of Oxford Economics data. Figure is cumulative.

² As further detailed in this Executive Summary and report, the WG has leading innovation scores, high educational attainment, and has built sectors of strength on some key economic and natural assets (see Section 2).

³ Source: Deloitte Analysis of Oxford Economics data. Figure is cumulative.

⁴ GW4 is a consortium of four research intensive universities in South West England and Wales. It was formed in January 2013 by the universities of Bath, Bristol, Cardiff and Exeter to enhance research collaboration. It was launched at the House of Commons in October 2014.

⁵ Oxford Economics, 2021. Western Gateway Economic Position Statement

⁶ Compound semiconductors are integral to the development of smartphones, Wi-Fi, satellite communication systems, robotics and efficient LEDs to name but a few. From its headquarters in Cardiff, IQE has a 55% global market share in compound semiconductor technology. IQE is leading the way in developing the global market and spearheading the development in Wales. Tech, Trade, and Invest Wales, 2021

⁷ Western Gateway, January 2021. Western Gateway Cyber and Digital2 Opportunities



Green energy: The Western Gateway has a strong position to lead the economic geography towards the energy transition. It is **unique in providing access to tidal and marine energy assets via ports and infrastructure** and has emerging assets in hydrogen. As such it combines assets in renewable energies with research strength at its universities, in particular Bristol and Swansea, and an ability to leverage the region's AM&E capabilities for systems design for innovation in this sector.



Fintech: Home to **two of only ten clusters in the UK**, the WG has a strength in Fintech. This is supported by its established base of financial and professional services firms, and skilled workforce with high levels of qualification attainment. The WG is also **one of only few** areas in the UK to **house a Fintech accelerator programme**.



Creative & digital media: The WG has strengths in high-end production and digital media due to nationally and internationally significant production assets and cutting-edge workspaces. **2 out of 9** national creative research councils are located in the area in Bristol and Cardiff, and the WG is the **only area outside London** that boasts Top 10 clusters for both creative and high technology sectors – offering unique synergies in the UK.

These strengths are further manifested in the synergies that can be reaped across the sectors of strength: across all sectors the WG occupies segments relying on research and innovation. The strengths in AM&E can complement developments in green energy, and cyber can add a unique selling point to AM&E. Similarly, creative & digital media as well as cyber and fintech require educated labour and digital skills.

If it successfully leverages these synergies, the region can play a crucial part in engineering and designing the industry and economy of tomorrow. Particularly pertinent is the potential for the WG to leverage its research and innovation strengths across the advanced manufacturing and engineering, cyber, and green energy sectors, underpinned by the WG's capabilities in digital and computer component manufacturing, the engineering of SMART industrial systems, strengths in green energy and cyber capabilities. Collaborating across these capabilities pitches the WG at the forefront of two transformative processes:

- **Development of Industry 4.0 processes:** Utilising the area's significant strengths in the design and engineering of advanced industrial systems, AI, and advanced robotics, the WG can develop the next generation of automated industrial processes. Strengths in the production of advanced compound semiconductor components and telecommunications capabilities support the control and refinement of these systems whilst data and cyber capabilities secure the integrity and monitor the performance of the industrial systems.
- **Design and integration of the next generation of green power systems:** Boasting nuclear research and generation capabilities with the potential for large scale marine, tidal and hydrogen energy generation, the WG can play an important role in the production of consistent and clean energy generation. Coupled with capabilities in the designing of SMART integrated industrial and energy systems the WG can leverage its abilities to design and power the next generation of integrated energy systems required to support the transition to Net Zero.

To realise this potential, the WG needs to focus on key opportunities for growth

While the region has significant strengths, it lags the UK average for productivity overall. The average GVA per employee in the WG is 9% lower than the UK average.⁸ To identify what drives this productivity gap, and what could be done to address it, this review assessed the barriers and opportunities for the wider WG economy, and specifically the 5 sectors of strength. Relying on desk research of sector reports, WG partner documentation, wider literature, and 19 interviews with sector experts, the review identified common challenges to growth in the WG's sectors of strength, as well as potential contributors to the productivity puzzle. These were then tested and refined with WG stakeholders.

Drawing on the evidence review, for the WG to realise its full potential, further investment and coordination is required on the following themes: **innovation & business growth**, digital and transport **connectivity**, **skills** formation, and **brand & place**. In addition, WG partners suggested two further themes that could support the WG for future growth: **Net Zero** transition and **data & monitoring**.

Addressing these themes, summarised in Figure 1, could help the WG to build on its strengths to create interconnected clusters in high-technology sectors. Capitalising on these opportunities will not only boost economic growth in the targeted sectors and their supply chains but will support economic growth in the foundational economy.

⁸ Oxford Economics, 2021. Western Gateway Economic Position Statement

Figure 1 Growth opportunity themes



To maximise impact, initiatives should focus on innovation, Net Zero and connectivity, in line with Welsh and UK Governments priorities

The WGP has a role to play to leverage these opportunities and foster inclusive and sustainable growth for its economic geography. It should convene its partners and amplify their already well-established capabilities by bringing to bear its scale. To identify where the WGP should focus, Deloitte facilitated two workshops with WG Partners to verify, refine, and prioritise the identified themes and generate a list of actionable initiatives for each.

Figure 2: Selection of priority themes

Two additional criteria were added to the selection of relevant themes and initiatives, the WGP role and alignment with the Welsh and UK Government priorities (Figure 2). Based on the themes identified by the evidence review, Partners agreed the focus should be on those themes that would maximise the potential to leverage the Partnership and its role for impact and presented the closest alignment to wider UK and Welsh government objectives.

Three themes stood out as priorities for immediate action: **innovation and business growth**, **Net Zero**, and **connectivity**, in particular digital.

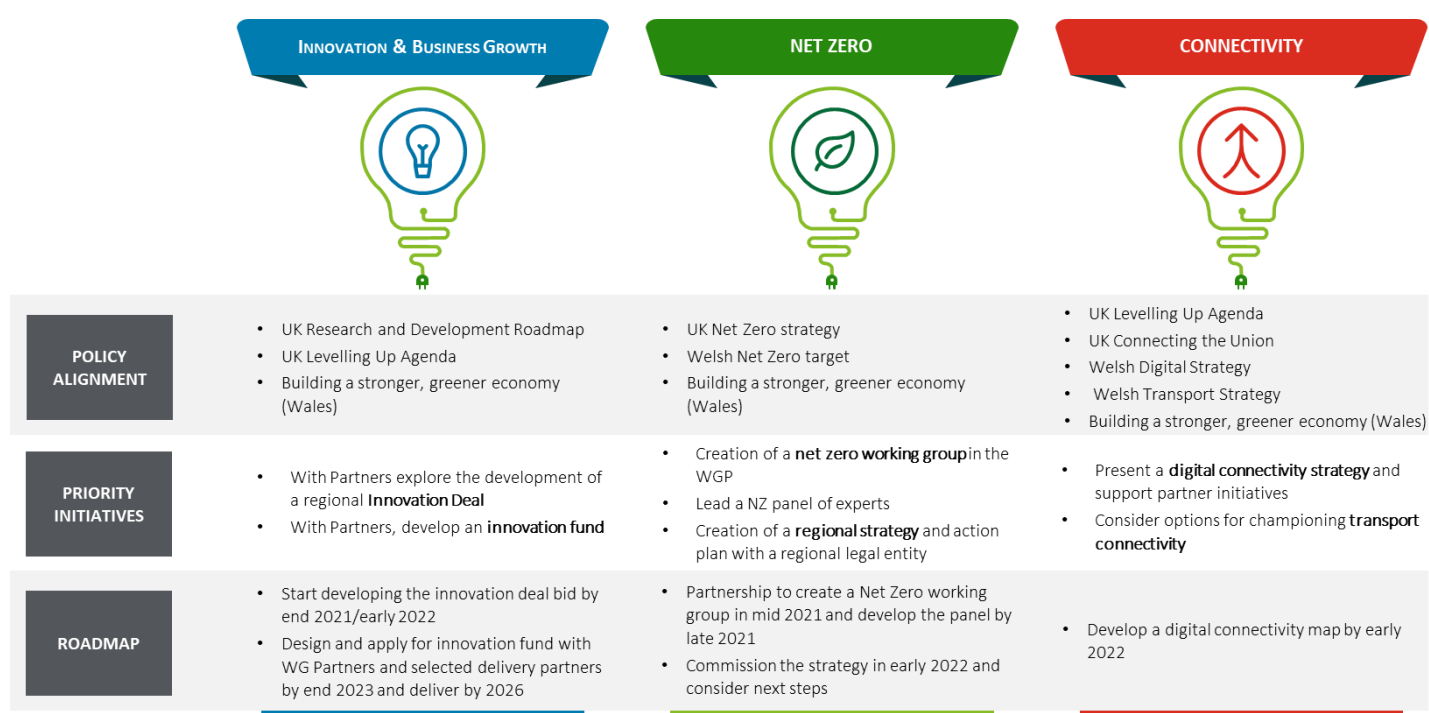
Regarding **innovation**, the UK Government has an ambitious target to increase public R&D spend by an additional £9bn per year by 2024/25. This offers an opportunity the region could seize.

Similarly, transition to cutting emissions by 80% to 2050 is a core policy of Welsh Government,⁹ whilst the UK Government has legally committed to reducing emissions to **Net Zero** by 2050, with a £12bn support already ringfenced.

Connectivity is not only a WG priority, but a Welsh and UK Government priority. This alignment offers the opportunity for the region to maximise benefits for the WG. Both Governments have the ambition to improve digital and physical connectivity and support the integration and use of public transport in support of objectives such as Levelling Up, and Net Zero.¹⁰ Funding such as the newly announced £4.2bn City Region Sustainable Transport Fund and the £5bn to support its Gigabit broadband rollout, with £1.2bn already being committed to 2025, could be capitalised by the WGP.¹¹ In addition, the WG is uniquely positioned to support UK Government in its ambition to Connect the Union.

Within these themes, the WGP has concluded that focus should be given to the implementation of the following initiatives over the course of the next 5 years:

Figure 2: Priority themes and initiatives



Upon WGP Board approval, the immediate next steps for the WGP revolve around convening and engaging Partners across the outlined themes. Creating a working group and a panel of experts on Net Zero and commissioning a digital connectivity map could provide the

⁹ Welsh Government, 2019. A Low Carbon Wales

¹⁰ HM Treasury, 2021. Levelling Up Fund: Prospectus. Welsh Government, 2021. Programme for Government.

¹¹ DCMS, 2020. Planning for Gigabit Delivery in 2021

initial frameworks for the Western Gateway to build upon. During 2022, the WGP could utilise the Net Zero working group and panels of experts created in 2021 to commission and deliver the Net Zero strategy.

Eighteen months into the timeline, the Partnership should reflect and re-examine progress and update initiatives at the start of the year. Following this, WGP could implement an initiative from its priority themes: the creation of a regional innovation fund in a convening role.

For the final two years of the roadmap, the Partnership should focus on delivering its larger initiatives. The delivery of the regional innovation fund captures the desire for actionable delivery outlined in the stakeholder engagements and enables the WGP to utilise its regional position and provide additionality.

To succeed in this endeavour, the WGP is recommended to concentrate its efforts in delivering the Roadmap under the principles of **collaboration and co-production, accountability, leadership, and external focus**. Playing its role as a convening body, focused on amplifying its partners programmes and initiatives, and providing additionality where the sum is greater than the individual parts, the WGP could enable the area to reach its economic potential, and provide support that could also benefit the foundational economy.

1. Introduction

The Western Gateway's economy has considerable assets but underperforms on its potential. Across the area's £110 billion economy, there are considerable strengths, and the presence of multinational firms, high-growth businesses, and world-class research institutions. However, the area lags behind UK average productivity, and suffers from pockets of significant deprivation and regional inequality.

This situation sits within a complex context. The economy is still experiencing the effects of the Covid-19 pandemic, with jobs still being lost during 2021, particularly across foundational sectors of the economy.¹² Also, there is an ever more urgent need to address the global climate challenges and transition to a greener and more sustainable economy.

Together, the state of the Western Gateway's economy and a context of global challenges create an imperative to leverage resources and capabilities across the area's Partners for maximum impact to generate inclusive and sustainable growth for all.

The Western Gateway Partnership aims to build on the area's economic assets, realising its economy's potential and delivering inclusive and sustainable growth. The cross-border Partnership will leverage its scale and collaborate with Partners to provide additionality and amplify existing initiatives, strategies, and assets across the region, thereby propelling a greener, fairer, and stronger Britain.

The Partnership has commissioned two Independent Reviews to explore how to achieve its ambition. The first Independent Review (IR1) provided an overview of capabilities, key sectors of strength,¹³ and areas for the Partnership to focus on to support its ambitions. Deloitte was commissioned to complete an Independent Review (IER2) and a Roadmap for the WGP with a two-fold purpose:

- **to deepen the evidence base** and build on conclusions drawn from the previous research; and
- **to identify actionable opportunities**, and generate a roadmap for delivery, building on the collated evidence.

Scope

The scope of IER2 and the Roadmap is to build upon the IER1 to provide the WGP with:

- (a) a **review of the leading five sectors** (advanced manufacturing and engineering, cyber, green energy, fintech and creative industry) selected jointly with the WGP steering group, establishing the strengths, opportunities, and barriers of growth within each.
- (b) an **analysis of the key drivers of the regional productivity gap**, as well as estimates of the potential size of the prize should the WG economic geography increase productivity towards national levels.
- (c) an **iterative strategy and roadmap**, defining the aims and objectives of the Partnership, which themes and sectors to play, as well as what initiatives to pursue next, in order to advance delivery of those strategic aims and objectives over the next 100 days, 1 and 5 years.

The purpose of the IER2 was not to test and re-examine the analysis and evidence already collated by the Western Gateway and its Partners,¹⁴ but rather to provide a more detailed and consolidated view on the leading sectors and their strengths. These sectors were identified as areas where the WG has largest potential competitive and area for growth. It is noted that outside of these sectors there are other sectors of strength or size that could be of importance to the WG and its Partners. These sectors are outside the scope of this report.

To determine a roadmap, Deloitte were tasked to identify actionable opportunities for initiatives the WGP could pursue to achieve its mission of fostering inclusive and sustainable growth. An element of this objective is supporting the foundational economy, especially after the effects of the Covid-19 pandemic. Partners identified throughout this work that within its remit, the WGP's role should focus on transformational initiatives, whereas the WGP's role regarding the foundational economy is more limited. As such, this report does

¹² The foundational economy consists of the basic products and services that are relied upon for everyday goods and services. [Welsh Government, 2021.](#)

¹³ These are advanced manufacturing & engineering, creative industries, cyber, fintech, and green energy

¹⁴ Western Gateway Partners refers to the local authorities, combined authorities and LEPs that make up the Western Gateway Partnership

not specifically identify interventions for the foundational economy, but it relates the impact of proposed initiatives to the foundational economy where relevant.

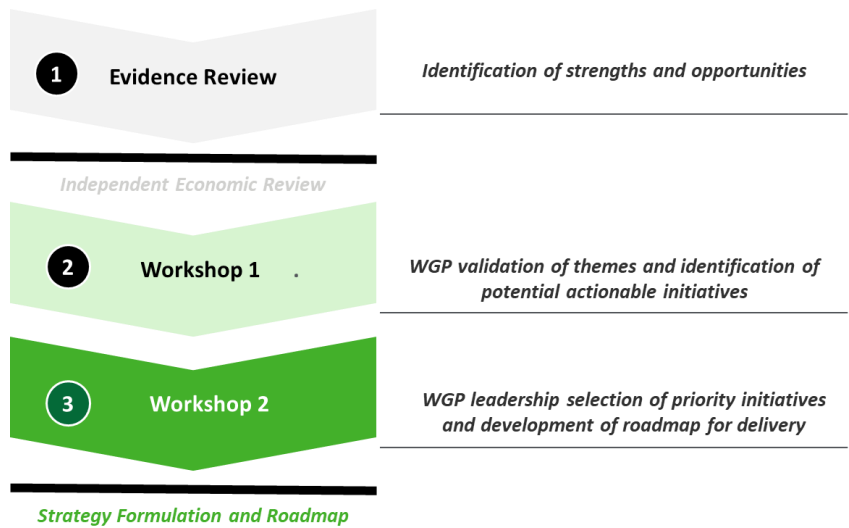
Approach

This report addresses the purpose and scope through three main sections: an evidence review of sector strengths and a review of the opportunities for growth, together forming the **Independent Economic Review**, and a **Roadmap** of how the WGP as an organisation can contribute to the further development of the WG economy.

The approach to these components is summarised in Figure 3. The Independent Economic Review reviewed and expanded the existing evidence base to identify the key sector strengths of the WG economic geography and identify opportunities for growth. This included interviews with regional and sector leaders. The Strategy Formulation relied on two workshops with the WGP to generate an actionable roadmap and proposals for interventions. Further detail on the approach can be found in Appendix 1 and Appendix 6.

Note that given the new establishment of the Partnership and the fact that it spans across multiple regional and national boundaries, there is currently a lack of regionally aggregated evidence for the sectors. Best attempts to mitigate this were made, e.g. through interviews with sector experts, but this lack of a full evidence base is a key limitation of the research and the rationale for the data and monitoring initiative discussed in this report.

Figure 3: Overview of the approach



Structure

The main body of this report presents the suggested initiatives and summary of the evidence concluded in IER2 with a full repository of the collated evidence provided in related appendices.

Section 2: summarises the Western Gateway’s core sectoral strengths and capabilities.

Section 3: presents the key opportunities and themes for growth, building on an analysis of sector growth opportunities and a review of the productivity gap.

Section 4: sets out the roadmap for delivery, including prioritised themes and initiatives, to move the Western Gateway’s economy forward.

Appendices: set out the detailed evidence collected on the leading sectors, the productivity gap, as well as the materials and conclusions from the workshops.

2. The Western Gateway's Strengths

This section summarises the Western Gateway's competitive strengths across the key sectors previously identified by the Metrodynamics a Powerhouse for the West report and the IER1, using Porter's framework of cluster formation as a basis.¹⁵ The analysis relied on an extensive evidence review and interviews with sector experts and highlights that:

- **The WG has significant sector strengths in innovative sectors that may be key to the future economy.** Across the identified sectors of advanced manufacturing and engineering (AM&E), cyber, green energy, fintech, and the creative industries there is a consistent trend of the WG housing significant academic and research capabilities to support innovation across the sectors, enabling the WG to become the 'Ideas Factory' of the UK.
- **Sector strengths could be amplified through potential synergies in innovation and academic expertise across the sectors.** Pertinent is the potential for the WG to leverage its research and innovation strengths across the AM&E, cyber, and green energy sectors, underpinned by the WG's significant capabilities in digital and computer manufacturing, the engineering of SMART industrial systems, strengths in green energy and cyber capabilities.
- Collaborating across these capabilities pitches the WG at the forefront of two transformative processes: **development of Industry 4.0 processes**, and **design and integration of the next generation of green power systems**.

The remainder of this section summarises the sector strengths and capabilities in turn, with more detail contained in Appendix 2.

Advanced Manufacturing & Engineering



having attracted innovative firms in the sector, and boasting cutting-edge research capability



Research leaders located in the WG*



Market leaders located in the WG*

14 of 15 largest aerospace manufacturers based in WG

55% of the world's mobile phone semiconductors manufactured by IQE in Cardiff and Newport, alongside developing compound semiconductor cluster in South Wales

Europe's largest 5G and 6G research groups

- National composites centre
- Bristol Robotics Laboratory
- Insitutes of Technology

- Airbus
- BAE Systems
- Dyson
- IQE
- Rolls Royce
- Thales

** Examples only, list non-exhaustive*

Advanced manufacturing¹⁶ represents one of the WG's strongest strengths, powered by the presence of research heavy firms and considerable academic and research capabilities along the M4 corridor from Swindon to Cardiff and along the Severn estuary from Bristol to Swansea.

Advanced Manufacturing & Engineering Strengths

The Western Gateway has clear strengths in the AM&E, and broader manufacturing sector (the WG's largest sector by GVA), as already highlighted by IER1, with particular strengths in the manufacture of computer equipment, other transport equipment (aerospace) and motor vehicles. Sector experts highlighted the area's advanced manufacturing strengths are underpinned by the engineering, integration, and building of advanced industrial systems.¹⁷ The area leads the UK in the design applications in the introduction of existing products and services¹⁸ and interviews with sector experts highlighted the Western Gateway as the 'Ideas Factory' of the UK. Further evidenced by the presence of 14 of the 15 world's largest aerospace design and manufacturing firms in the region,¹⁹ as well as a number of other design leaders such as Dyson, the design and engineering aspect of the WG is a key competitive advantage.

¹⁵ State Competitiveness: Creating Economic Strategy in a Time of Austerity, Professor Michael Porter 26th February 2011

¹⁶ Defined by the ONS as manufacturing that is 'intensive in its use of capital and knowledge and requires a high level of technology utilisation and Research and Development'

¹⁷ Interviews with sector experts

¹⁸ Deloitte, [Regional Innovation Scoreboard 2019 \(interactivetool.eu\)](https://www.interactivetool.eu)




¹⁹ Metrodynamics, 2019. A Powerhouse for the West

This advantage in advanced design and engineering allows the area to play to its research strengths, leveraging the significant research capabilities available in the Western Gateway and building on its facilities, such as the Institutes of Technology, the National Composite Centre, and the Bristol Robotics Laboratory.²⁰ Alongside the presence of large, research heavy industry leaders, such as Airbus, Thales, and Rolls Royce, the Western Gateway provides the initial prerequisites for the development of AM&E sectors; the presence of a centre of academic excellence and/or an industry leader in R&D.²¹

The ability to successfully collaborate across academia, industry, and government is epitomised by the developing compound semiconductor cluster in South Wales. For almost 30 years, the area has been building the world's first advanced compound semiconductor cluster, working to develop and build new and innovative semiconductors suitable for the next generation of technology, culminating in the region holding a 55% market share in compound semiconductor technology from IQE's bases in Cardiff and Newport.²² Furthermore, the BEIS innovation survey highlighted the wider South West of England and Wales as a leader in the research and innovation in AI and data systems.²³

Housing the largest 5G and 6G research groups in Europe and projects such as the 5G ENCODE project at the NCC in Bristol,^{24,25} the Western Gateway is rapidly emerging as a national and international leader in the R&D of the next generation of telecommunications networks. This is further supported by the WG's bid for the Digital Accelerator programme. By collaborating across firms and areas of expertise and utilising its strengths in advanced communication networks, development of advanced computer components and the design of complex and smart integrated systems, the WG has an opportunity to place itself as a leading player in the design and development of the next generation of advanced manufacturing systems. This push to develop and build the next generation of industrial revolutions, or industry 4.0, opens to WG a unique opportunity to build a larger, more productive, and integrated AM&E cluster, supporting the development of more jobs and a greater amount of economic output than is already produced by this sector across the region.

Cyber

	The region's cyber clusters are the largest and most developed in Europe, supported by a strong research base that has formed in the Western Gateway		Research leaders located in the WG		Market leaders located in the WG
1/3	of all UK cyber patents are filed in the Western Gateway		<ul style="list-style-type: none"> University of Bristol Cardiff University 		<ul style="list-style-type: none"> GCHQ National Cyber Security Centre Thales
25%	higher productivity per worker in the cyber sector in Gloucestershire compared to the UK average				
>6x	higher density of Cyber firms compared to the rest of the UK, as the UK's most specialised cyber economy				
2	centres of academic excellence in Bristol and Cardiff, home to 1 of only 3 NCSC doctoral training centres				

** Examples only, list non-exhaustive*

As the economy and our lives become ever more digital, cyber is a crucial horizontal sector underpinning the UK's future security and prosperity.²⁶ The UK cyber sector, already one of the most developed cyber economies in the world, is growing at pace. Nearly 1/3 of all UK cyber patents are filed in the Western Gateway, positioning it at the heart of the cyber sector.²⁷ In the WG the sector has developed clusters in Cheltenham, Cardiff, Bristol, and the wider South Wales. With an average GVA of £61,900 in the UK and £77,800 in Gloucestershire,²⁸ this is a highly productive, and growing sector.²⁹

²⁰ See annex for full list of research capabilities

²¹ Advanced Manufacturing Cluster: Background Material, Toronto Board of Trend & KPMG, 2012

²² Tech, Trade and Invest Wales, 2021

²³ BEIS, 2019. [UK Innovation Survey 2019](#)

²⁴ Interviews with sector experts

²⁵ DCMS, 2020. [New £65million package for 5G trials](#)

²⁶ The activities of the cyber sector are defined by DCMS as: "The protection of internet connected systems (to include hardware, software and associated infrastructure), the data on them, and the services they provide, from unauthorised access, harm or misuse. This includes harm caused intentionally by the operator of the system, or accidentally, as a result of failing to follow security procedures or being manipulated into doing so.", National Cyber Security Strategy, DCMS 2015

²⁷ Western Gateway, January 2021. Western Gateway Cyber and Digital Opportunities

²⁸ Hatch Regeneris, 2020. Gloucestershire Cyber and Digital Sector Impact Study

²⁹ Western Gateway, January 2021. Western Gateway Cyber and Digital Opportunities

Cyber Strengths

The WG's strengths in cyber are centred around its two primary clusters of cyber activity. The first, the Cheltenham cluster, is one of the largest and most developed clusters in Europe. One of its key assets is the presence of GCHQ in Cheltenham and the subsequently developed critical mass of assets and clusters surrounding it. GCHQ, alongside the NCSC Cyber Accelerator, act as significant magnets for both talent and firms to locate in the Cheltenham and wider Gloucestershire area. The resulting density of cyber firms in Cheltenham and wider Gloucestershire is eleven and six times greater than that of the rest of the UK respectively, making the area the most specialised cyber economy in the country. It is set to become an even larger cluster with the proposed Cyber Central and Golden Valley developments.³⁰ The second core cluster, located in South Wales, is founded upon the academic research strengths of its universities and has seen considerable investment from established industry firms, such as Thales and Airbus.³¹ Furthermore, the WG houses the MOD's cyber security headquarter, alongside a growing cluster to support it, in Corsham and a developing cyber cluster in Swindon.³²

Several universities and colleges located in the area have developed specialisms and expertise in the cyber sector. Two of these universities, Cardiff and Bristol, are part of the nineteen universities nationally designated as academic centres of excellence in cyber security by the NCSC. Bristol and Bath Universities house one of only three NCSC centres for doctoral training in cyber security.³³ The academic expertise is supported by considerable R&D spend and commercialisation of innovation in the cyber sector within the area and is driven by a number of nationally important public-private innovation hubs, with R&D spend in the sector growing twice as fast as the national rate.^{34,35}

Green Energy



The Western Gateway has a strong position to lead the economic geography towards the energy transition, as it combines natural assets with research strength

Unique

position as the only UK area to access to tidal and marine energy assets via ports and infrastructure

Synergy

with the area's strengths in advanced engineering and systems designs

1

Bristol's position in the Smart City Index



Research leaders located in the WG

- University of Bristol
- Swansea University
- Centre for Sustainable Chemical Technologies



Market leaders located in the WG

- EDF
- Ecotricity
- HydrogenHub

** Examples only, list non-exhaustive*

As the first major economy to pass a Net Zero emissions law, green energy and the transition to Net Zero have become a transformational priority for the UK economy. Ensuring that the area capitalises on its natural green energy potential and considerable research endowment gives the WG a significant opportunity to support this transition locally, domestically, and internationally.

Green Energy Strengths

Across the WG exhibits key pockets of strength in the research and development of green energy. Along the M4 corridor, from the hub in Swindon to Cardiff, and including the South Wales Hydrogen Industrial Cluster, there is an established host of expertise in the development of hydrogen as an alternative energy source.³⁶ Academic research centres at Baglan and the UK Energy Research Centre in Bath as well as investments by industry leading firms in the use of hydrogen as an alternative fuel source, such as Airbus, present opportunities for the Western Gateway to become a market leader in developing and supplying this alternative to hydrocarbon-based fuel sources as outlined in the Government's Hydrogen Strategy.³⁷

Through the presence of the Bristol-Oxford Nuclear Research Centre, the South West nuclear hub, nuclear research at Bristol and Cardiff Universities and the presence of EDF's nuclear development centre in the WG, the area boasts significant academic credentials in the research of new nuclear capabilities. Coupled with the development of Hinkley Point C in neighbouring Somerset (the UK's only currently under construction nuclear site), and the potential development of Hinkley B and Oldbury sites, the WG is strategically placed

³⁰ Hatch Regeneris, 2020. Gloucestershire Cyber and Digital Sector Impact Study

³¹ Cardiff Capital Region, 2021. Investment Prospectus

³² SWLEP, 2020. Swindon and Wiltshire Local Industrial Strategy 2020-2036

³³ National Cyber Security Centre, July 2020. Developing Our Capability in Cyber Security

³⁴ Western Gateway, January 2021. Western Gateway Cyber and Digital Opportunities

³⁵ RSM, 2018. Cyber Resilience Alliance

³⁶ BEIS 2019. South West England and South East Wales Science and Innovation Audit – Annex H: New Energy Systems Theme Report

³⁷ HMG, 2021. UK Hydrogen Strategy

to be at the centre of the development of the next generation of nuclear energy research and generation in the UK. A vital component for the drive to clean energy,³⁸ developing cheaper and safer nuclear power enables the WG to remain at the forefront of an integral part of the UK's transformation to Net Zero.

The WG's final identified strength in green energy generation lies in the natural asset resulting around the Severn Estuary and marine renewables. Whilst the technology is not yet commercially competitive, the potential to harness the energy resulting from the second largest tidal range in the world presents a unique opportunity to the WG with estimated power generation from identified projects capable of providing 7% of the UK's energy needs.³⁹ Furthermore, there are research strengths across both sides of the estuary for both the development of tidal and wider marine energy generation stretching from Swansea and Cardiff along the Estuary to Bristol. With the wider South West of England being identified as the only region in the UK with all marine renewable resources accessible from ports and infrastructure,⁴⁰ the WG can leverage its research and natural assets to develop the commercialisation of this new and potentially abundant renewable resource.

The Western Gateway has further advantages in the design and development of smart systems, which are vital in the design of new renewables-based energy systems.⁴¹ This is exemplified by Bristol's status as the UK's leader in the Smart City Index and further strengthened by its smart city strategy,⁴² as well as the research capabilities provided by the regions' universities.

Fintech

With sector revenues of £11 billion and commanding nearly 10% of the global market share,⁴³ and with the sector still developing and maturing, the UK is a global leader in the rapidly growing fintech sector. In Bristol and Cardiff, the Western Gateway houses two of the ten identified high-growth fintech clusters across the UK.⁴⁴



Home to two of only ten clusters in the UK, the WG has a strength in Fintech, supported by its established base of financial and professional services

2 of 10

Identified fintech clusters in the UK located in the WG in Bristol and South Wales

10%

share of the global fintech market held by the UK

1

of only few areas in the UK to have a dedicated fintech accelerator programme in Bristol and Wales

Qualified

Higher levels of qualification attainment than both the NPH and the ME



Research leaders located in the WG

- University of Bristol
- Cardiff University



Market leaders located in the WG

- Admiral
- Hargreaves Lansdown

** Examples only, list non-exhaustive*

Fintech Strengths

Building upon the already established financial and professional services strengths within the region, the two clusters have developed due to their proximity to established financial services firms with each cluster specialises in different subsectors. The reflect the subsectors of the financial sector firms already present in the regions. The South Wales cluster specialises in banking, lending, and payments, while Bristol focuses on business banking and InsureTech. Equally, each cluster builds on the available talent located in their sub-area resulting from the already established financial and professional services and tech/data clusters. The strengths of the WG's supporting industries to fintech are exemplified by wider Wales' position as the UK's fastest growing digital economy outside of London⁴⁵ and Bristol and Bath housing the largest digital cluster outside of London.⁴⁶

There are a number of successful investment and catapult and accelerators supporting the clusters. In South Wales, the Foundry is a specialised fintech accelerator programme, whilst Bristol is one of the UK's only cities to have a dedicated fintech accelerator programme, helping to support the highest density of fintech start-ups outside of London.⁴⁷ Furthermore, there is a growing strength

³⁸ HMG, 2017. The Clean Growth Strategy

³⁹ Institution of Civil Engineers, 2015. Tidal energy from the Severn estuary, UK

⁴⁰ BEIS 2019. South West England and South East Wales Science and Innovation Audit – Annex H: New Energy Systems Theme Report

⁴¹ Interviews with sector experts

⁴² Bristol City Council August 2019. Connecting Bristol

⁴³ City of London & Innovate Finance 2021. Kalifa Review of UK Fintech

⁴⁴ High-growth as indicated by c10% of firms in the cluster achieving high-growth status giving these clusters the most potential to grow and develop further. City of London & Innovate Finance 2021. Kalifa Review of UK Fintech

⁴⁵ [Business Wales, Fintech](#)

⁴⁶ Whitecap Consulting, February 2020. Bristol & Bath Fintech Ecosystem Report 2019-2020

⁴⁷ Whitecap Consulting, February 2020. Bristol & Bath Fintech Ecosystem Report 2019-2020

of academic expertise with Cardiff University housing the Cardiff Fintech Research Group, aiming to improve academic and industry links and provide academic expertise to Fintech across Cardiff and wider Wales,⁴⁸ and alongside Bristol, also running one of the UK's first dedicated fintech Masters programmes.

Creative Industries



The WG has strengths in high-end production and digital media due to nationally and internationally significant production assets and cutting-edge workspaces

2 of 9

national creative research councils are located in the area in Bristol and Cardiff

4 of 47

creative clusters in the UK, housed in Bath, Bristol, Cardiff and Cheltenham

16

microclusters across the Western Gateway

Top 10

clusters for both Creative and high technology, Bristol is one of only 2 major cities outside London to provide such strong sector synergies



Research leaders located in the WG

- Bristol & Bath Creative R&D
- Cardiff University
- Clwstwr



Market leaders located in the WG

- Bad Wolf
- BBC cymru wales
- BBC Natural History
- Channel 4

** Examples only, list non-exhaustive*

Home to a strong creative industries sector, the Western Gateway houses 4 out of the UK's 47 identified creative clusters in Bath, Bristol, Cardiff, and Cheltenham.⁴⁹ The sector is defined as "industries which have their origin in individual creativity, skill and talent which have a potential for wealth and job creation through the generation and exploitation of intellectual property".⁵⁰ Covering a broad range of groupings,⁵¹ location quotient analysis indicates that there are particular strengths in publishing, media (television, film and music), and advertising and marketing across Bath, Bristol, Cardiff, Cheltenham, and Stroud.

Creative Industries Strengths

Core to the area's strength in the creative industries sector is the activity anchored around Bristol, which is a globally significant creative cluster, and Cardiff, which is rapidly developing a nationally important film and TV production location. Their strengths are built around nationally and internationally significant production assets and workspaces which grant access to cutting edge facilities. Each specialises in different, but complimentary parts of the supply chain: Cardiff in high-end production and Bristol in digital media.⁵² The two cities are home to increasing R&D expertise, with two of the UK Research and Innovation's nine creative research councils funding innovative projects in the area.⁵³

The success of the Bristol (and Bath) cluster is partly driven by the number of creative hubs in the area, such as the Bristol temple Quarter Economic Zone and the Harbourside Mile, supporting strong links between creative firms. With Bristol being only one of two outside London to feature as a top 10 cluster for both the creative industries and high-tech sectors, Bristol's creative firms can facilitate cross-sector collaboration with its strong tech sector.⁵⁴ Furthermore Bristol is able to combine significant crossovers between creativity and technology, as well as potential access to financial business partners in its established fintech sector.⁵⁵

Cardiff, as one of the largest media centres outside of London,⁵⁶ has benefitted from successful support by the Cardiff Capital Region Deal completed in 2016 to support the city's creative industries sector which now generates an estimated £1.2bn in revenues. The combination of major broadcasters (BBC Wales, ITV and S4C), development of major studio spaces (Bad Wolf studios), and the development of significant coworking spaces all develop a strong asset base to support the cluster developing into an important national creative node. Furthermore, an estimated 15% of all enterprises in Cardiff are involved in the creative industries sector.⁵⁷

⁴⁸ Cardiff University. [Cardiff Fintech Research Group](#)

⁴⁹ Nesta 2016. The Geography of Creativity in the UK

⁵⁰ HMG 2001. Creative Industries Mapping Document

⁵¹ including advertising and marketing, architecture, crafts, design, film, tv, video, radio and photography, IT, software and computer services, publishing, museums, galleries and libraries, and music, performing and visual arts - Creative Industries Economic Estimates, DCMS January 2016

⁵² Interviews with sector experts

⁵³ UKRI, [Creative industries clusters](#)

⁵⁴ Sir Peter Bazlgette, 2017. Independent Review of the Creative Industries

⁵⁵ West of England LEP, 2018. West of England Industrial Strategy

⁵⁶ Sir Peter Bazlgette, 2017. Independent Review of the Creative Industries

⁵⁷ Clwstwr, 2020. The size and composition of creative industries in Wales

The Ideas Factory of the UK

The review of sector strengths across AM&E, cyber, green energy, fintech, and creative highlights the following cross-cutting findings:

The WG has significant sector strengths in innovative sectors that may be key to the future economy. The WG houses significant academic and research capabilities to support innovation across its core sectors of strength. Its sectors of strength also are highly relevant to future economic developments, including industry 4.0, the green revolution, and cyber security. This could enable the WG to become the 'Ideas Factory' of the UK.

Sector strengths could be amplified through potential synergies in innovation and academic expertise across the sectors. Pertinent is the potential for the WG to leverage its research and innovation strengths across the AM&E, cyber, and green energy sectors, underpinned by the WG's significant capabilities in digital and computer manufacturing, the engineering of SMART industrial systems, strengths in green energy and cyber capabilities. Collaborating across these capabilities could pitch the WG at the forefront of two transformative processes:

1. **Development of Industry 4.0 processes:** Utilising the area's significant strengths in the design and engineering of advanced industrial systems, AI, and advanced robotics, the WG could develop the next generation of automated industrial processes. Strengths in the production of advanced compound semiconductors and telecommunications capabilities support the control and refinement of these systems whilst data and cyber capabilities secure the integrity and monitor the performance of the industrial systems.
2. **Design and integration of the next generation of green power systems:** Boasting strong nuclear research and generation capabilities with the potential for large scale marine, tidal and hydrogen energy generation, the WG can play a leading role in the UK in the production of consistent and clean energy generation. Coupled with capabilities in the designing of SMART integrated industrial and energy systems, the WG can leverage its abilities to design and power the next generation of integrated energy systems required to support the transition to Net Zero.

Focusing on these two topics would allow the WG to play across its range of core strengths, engaging some of the most innovative businesses and academic strengths from Swindon up to Cheltenham and Bristol across to Swansea. Supporting the commercialisation and design of the next generation technologies and processes and encouraging the growth of productive jobs and businesses.

3. Western Gateway's Opportunities

Despite the presence of five strong sectors and significant assets described in the previous section (i.e. Advanced Manufacturing & Engineering, Cyber, Green Energy, Fintech, and Creative Industries), on average the WG lags behind the UK in terms of productivity (average GVA per employee in the WG is 9% lower than the UK average).⁵⁸ The prize for closing this productivity gap is sizeable. As an indication, we estimate that **the WG's GDP could increase by 3% by 2031** if the gap with the UK average productivity (including London) was halved compared to a baseline scenario in which WG productivity growth remains at current levels (this is an increase of **£34bn** over the next ten years).

This section investigates how the WG could build on its strengths and address the productivity puzzle by (i) identifying factors that contribute to the prevailing productivity gap, and (ii) identifying opportunities to grow its sectors. The opportunities demonstrate there are common themes across sectors and the productivity puzzle, namely: innovation & business growth (inc. access to finance), brand & place, connectivity, and skills.

This indicates that the Western Gateway has the opportunity to further its sectors of strength, address its productivity puzzle, and thus contribute to supporting the area's recovery from the pandemic, by targeting interventions in four key themes:

- **Innovation & Business growth** – addressing the innovation and enterprise gap;
- **Brand & Place** – promoting a joint identity and generating a brand for the WG;
- **Connectivity** – supporting digital connectivity, transport connectivity and networks; and
- **Skills** – addressing the skills gap particularly regarding digital and leadership skills.

Size of the Prize

We have conducted indicative quantitative analysis to estimate the potential benefit to the Western Gateway's economy if it could achieve significant improvement of productivity in the region. We detail the approach for this analysis in Appendix 3.

This analysis suggests that halving the gap between the Western Gateway's average productivity and UK average productivity (including London) by 2031 could increase the **WG's GDP by 3% by 2031**, compared to a baseline scenario in which WG productivity remains at current levels. This represents a cumulative increase in GVA of **£34bn** over the next ten years.⁵⁹ As such, the prize for improving WG's productivity in this context could be substantial.

The remainder of this section summarises our findings regarding the opportunities for improving growth across the WG. We begin by analysing the productivity puzzle and then consider in turn each of the five sectors of strength to identify opportunities for growth.

Productivity Opportunities

To further investigate the productivity puzzle posed by IER1, we assessed the evidence for several indicators for productivity performance, drawing on desk research and interviews with stakeholders across the WG.

There is evidence for the following factors contributing to lagging productivity across the Gateway:

- **Innovation and R&D gap:** the area has several strong assets relating to innovation and R&D. However, there appears to be a lack of SME innovation and weak performance of University Spinouts, which means that the area has a low commercialisation rate of R&D. This may also be due to a lack of available finance.
- **Business linkages gap:** despite exhibiting clusters across the sectors of strength, the area suffers from weak supply-chain and business linkages. Addressing these linkages would increase the positive spillovers associated with the area's research and innovation strengths.
- **Connectivity gap:** while the area has good transport linkages, a rural-urban divide exists, with a number of deprived locations being 'left behind' in transport connectedness. The area also faces lower than average digital connectivity. Transport and digital connectivity are key requirements to enable citizens and businesses to engage in productive economic activity in the modern economy.

⁵⁸ Oxford Economics, 2021. Western Gateway Economic Position Statement

⁵⁹ Note: the analysis is based on high-level what-if scenarios, modelling an average increase in the Western Gateway region's productivity to close half the productivity gap that currently exists compared to the UK average including London.

- **Scale ups and enterprise gap:** The Western Gateway has lower than average business start-up and high-growth business rates, reducing the ability for new and innovative businesses to design, implement, and scale new productive processes.
- **Exports and investment gap:** despite the presence of large multinationals, the Western Gateway has fewer international exporters than the UK average; the Western Gateway area has £15,600 exports per job, compared to the UK average of £16,500.⁶⁰ As the process of exporting raises a firm's productivity,⁶¹ fewer exporting firms implies a productivity lag *versus* the rest of the UK. Despite the availability of regional support for investment, there is a sense amongst sector experts that SMEs in the area are not able to access and utilise required scale-up investment and support.

Addressing these through targeted interventions could generate economic growth across the area. We now consider each of these productivity gaps in turn.

Innovation & R&D gap

The area has a number of strong assets relating to innovation and R&D – it boasts two Russell Group Universities, a wider base of other strong, research driven universities, and is home to prestigious research centres and catapults across several industries.

Interviews with experts have identified other world-leading areas of R&D in the region, such as semiconductors and telecommunication systems infrastructure for 5G and 6G. While the area boasts strong performance in output metrics, such as design applications, the area lags behind the UK average in terms of successful commercialisation of this strength. This is illustrated by a lack of SME innovation compared to the rest of the UK, as well as a lack of successful university spinouts.^{62, 63} While the South West **was the UK area with the most innovative businesses (53%) in 2017, it has fallen behind with only 40% in 2019.**⁶⁴ A potential barrier to successful commercialisation may be poor availability of finance; both the South West and Wales lag behind other UK regions in availability of public and private finance.⁶⁵ As further identified in the sector deep dives in Appendix 2, this may hamper the area's ability to harness innovation to foster productivity.

Business linkages gap

Despite housing numerous clusters across different sectors, IER1 highlights the weak business linkages across the Western Gateway and a need for further integration and strengthening of business links across the region.⁶⁶ Large supply-chain leakages in the Western Gateway's industries, particularly in the AM&E sector,⁶⁷ reduce the positive spillovers potentially garnered from their innovation and R&D activities, reducing the potential for further innovation by other firms.

For the Western Gateway to capitalise on its R&D capabilities and sectors of strength, particularly as it moves to support its strengths in digital technologies, there is a need for the Western Gateway to create better business linkages across the region. To do so, it needs to support the development of tighter clusters, which foster collaboration between firms, sharing facilities, and building supply chains (particularly filling in the missing 'middle' of mid-sized companies in the supply chains).^{68,69}

Connectivity gap

Transport connectivity is a core enabler for productivity, allowing individuals and businesses to access productive jobs and talent, thereby increasing specialisation and productivity.⁷⁰ Overall, the Western Gateway has relatively strong transport links, both across the area and in its connections to other regions when compared to UK averages.⁷¹ However, Deloitte analysis of transport connectivity presents a clear urban-rural divide in transport links, with the Western Gateway's rural regions lagging significantly behind in their connectedness versus their urban counterparts (Appendix 4.3). Improving transport connectivity, particularly to regions that have been left behind, is a key principle in supporting inclusive growth for the Western Gateway, its Partners, and its regional and national transport authorities.⁷²

Another enabler for productive economic activity is digital connectivity, especially as jobs and activities become increasingly digital. The Western Gateway lags regarding digital connectivity, in particular it **lags behind the UK average of 36.4% in 32 out of 46 constituencies**

⁶⁰ Oxford Economics, 2021. Western Gateway Economic Position Statement

⁶¹ UK Board of Trade, 2021. Global Britain, Local Jobs

⁶² Coates Ullrichsen, 2019. Developing university spinouts in the UK

⁶³ Ranking at NUTS1 level out of 12 UK regions.

⁶⁴ BEIS, 2019. [UK Innovation Survey 2019](#)

⁶⁵ Ranking at NUTS1 level out of 12 UK regions.

⁶⁶ Oxford Economics, 2021, Western Gateway Economic Position Statement

⁶⁷ And from the leading sector investigations, potentially also the creative industries

⁶⁸ Interviews with sector experts

⁶⁹ Oxford Economics, 2021, Western Gateway Economic Position Statement

⁷⁰ Lloyds Banking Group Centre for Business Prosperity, 2018. Infrastructure and Productivity: A Review

⁷¹ Oxford Economics, 2021, Western Gateway Economic Position Statement

⁷² This includes both UK and Welsh Government strategic transport objectives

in terms of access to ultrafast broadband connections.⁷³ Again, there is an observable rural-urban divide, with many rural places, particularly in the Welsh valleys, lagging significantly behind regional and national averages. To support the Western Gateway's objective of becoming the most 'digitally connected region' in the UK, and to enable all residents and businesses to take part in the increasingly digital economy, the Western Gateway needs significant investment into its high-speed broadband rollout.

Scale ups and enterprise gap

Despite the recognition for the need for a welcoming business enterprise environment in the development plans of a number of Partners, the Western Gateway performs slightly lower than average in terms of business starter rates, with the Welsh side of the Western Gateway performing somewhat worse.⁷⁴ Lower rates of business start-ups represent a barrier to fostering a local start-up scene and suggest a less-welcoming environment for entrepreneurship.

Furthermore, **by hosting 52.5% of high growth businesses**⁷⁵ of the South West and Wales regions, the Western Gateway has, to a certain extent, a thriving business environment. Nevertheless, the overall business picture does not suggest the Western Gateway is outperforming other UK regions on average, requiring a stronger focus on the commercialisation and use of innovative and more productive approaches in the region.

The difficulty of SMEs in accessing support was also confirmed throughout the interviews with sector experts who cited a confusing and fragmented regional landscape of business support. Supporting the start-up and scale-up environment of the area encourages innovative new firms to locate and grow in the area by enabling them to adopt and introduce better and more productive processes.

Exports gap

With **exports per job of £15,600**, the Western Gateway lags behind the UK average of £16,500.⁷⁶ As outlined by the Department for International Trade, exporting businesses are on average 21% more productive and pay median wages 7% higher than non-exporting businesses.⁷⁷ Therefore, increasing the number and value of exporters could help to increase productivity in the Western Gateway.

Investment gap

Ensuring adequate and sufficient investment into business is a key requirement to enable these businesses to introduce new processes, develop new products and, ultimately, become more productive and grow. The key to helping start-ups and other businesses to scale up and enter the global market is to provide them with access to capital so as to avoid them being sold out to established and often foreign companies.⁷⁸ In order to close the finance gap, the government can "catalyse" this process by being an early investor in innovative businesses in the UK, which will then allow these businesses to attract further private funding.⁷⁹

Interviews with sector specialists from the Western Gateway area identified an imbalance between larger firms, which are able to export and compete in global markets, and smaller businesses that find the expansion more challenging. One underlying hurdle for SMEs is the lack of resources and experience in applying for government funding and raising investment, compared to larger firms, who have the capacity and experience to navigate through the application processes.

Sector Growth Opportunities

In addition to the economy-wide considerations of the productivity gap, we also consider opportunities for enhancing growth in the WG's sectors of strength. The sector growth opportunities have been identified through our evidence review, including sector interviews. For more detail please refer to the Sector Deep Dives in Appendix 2.

Section 4 outlines the actionable interventions and initiatives the Western Gateway could drive forwards in order to deliver on these growth priorities, and priorities identified across other sectors and the wider productivity analysis for the Western Gateway.

Advanced Manufacturing & Engineering

The Western Gateway should continue to play to its world-leading strengths in the advanced engineering and integration of advanced systems and its developing clusters in compound semiconductors. By leveraging its competitiveness in advanced engineering, systems

⁷³ Oxford Economics, 2021, Western Gateway Economic Position Statement

⁷⁴ ONS, 2019. Business demography UK

⁷⁵ ONS definition: "High growth measures businesses, who had at least 10 employees in 2016, that had an average growth in employment of greater than 20% per year between 2016 to 2019", 2019, Business demography UK

⁷⁶ Oxford Economics, 2021. Western Gateway Economic Position Statement

⁷⁷ UK Board of Trade, 2021. Global Britain, Local Jobs

⁷⁸ Interviews with sector experts

⁷⁹ Scaleup Institute, 2020. The Future of Growth Capital

building, and digital and telecommunication capabilities there is an opportunity to lead on the design of the next generation of industrial processes. Creating the digitally connected 'Industry 4.0' links to other Western Gateway strengths: cyber, given the requirement to secure digitally enabled processes, and green energy, when designing the next generation of integrated energy systems. However, evidence from IER1, supported by stakeholder interviews, highlights a lack of mid-sized companies in the A&ME sector across the Western Gateway. This results in significant supply-chain leakages and a lack of high-growth businesses to continue to drive growth and innovation in the sector.

The evidence from across the sector, which is further outlined in Appendix 2, indicates that the continued development of the sector requires the Western Gateway to:



Continue to foster innovation: As outlined in the previous section, the WG's R&D and innovation capabilities are its key pillars of strength. To remain competitive in the evolving landscape of AM&E, sector experts highlighted the need to ensure continued support and coordination between the area's significant R&D base across different localities and specialisms. By developing strong links between the advanced engineering companies, academic institutions, and developers in the tech and telecoms industries, the area's firms and institutions could be empowered to continue to innovate and develop the next generation of manufacturing and interconnected systems.



Address the skills gap: Discussions with sector experts highlighted the skills gap in the sector, particularly in leadership and digital skills. While there are initiatives aiming to address this gap, particularly in STEM subjects, more support is needed to develop the required strategy and innovation skills across the sector. The barrier is particularly acute for the area's SME firms, who struggle to attract the required leadership skills to develop and capitalise on innovative new products or methods.



Improve linkages and brand: Across the region, there are various locations of significant strengths, each with potential complementarities, such as the design and utilisation of next generation telecoms into new industrial processes. However, in the WG the sector is characterised by weak supply-chain linkages between firms and a small number of successful mid-sized firms, as outlined by the IER1.⁸⁰ To allow the Western Gateway to capitalise on its multiple verticals of strength and help develop its SME base into the next generation of mid-sized firms, sector experts highlighted a potential for the WG to improve linkage and collaboration between firms across the area. Developing links between the larger and more established firms, and smaller, innovative SMEs would foster greater collaboration, increasing spillovers from research by larger firms and help to reduce some of the significant supply-chain leakages observed in the sector.⁸¹ In addition, improved awareness of the WG's strength could increase demand for its products and increase exports.



Increase the availability of scale-up finance: Capitalising on the world leading research assets requires a strong entrepreneurial environment with investors willing, and able, to take the necessary risks to commercialise ideas and innovations. While there is financial support available, sector experts highlighted a need for greater and more targeted provision of public finance to crowd-in private investors and support entrepreneurship. A successful example of support in the WG is the Cardiff Capital Region's (CCR) support for the development of the IQE Foundry in Newport. The initial investment by the CCR in conjunction with the CSCatapult, is expected to leverage an additional £375million of private investment, safeguard 545 and support an additional 2,000 jobs, and further develop South Wales as a leader in the design and production of advanced compound semiconductors to power the next generation of computers and smart devices.⁸² The success of the CCR investment in crowding in considerable private sector investment to help build an advanced clusters provides a template for how the WG could help support the development of further AM&E clusters.

Cyber

Complementing the Western Gateway's strength in digital technology,⁸³ the presence of a thriving cyber security sector supports both the fintech sector and the increasing digitisation of systems in the advanced manufacturing sector. To continue to capitalise on its cyber capabilities and R&D strengths the Western Gateway should:

⁸⁰ Oxford Economics, 2021. Western Gateway Economic Position Statement

⁸¹ Oxford Economics, 2021. Western Gateway Economic Position Statement

⁸² Cardiff Capital Region, [The Foundry](#)

⁸³ Outlined in IER1 and repeatedly by sector experts



Improve access to skills: With three out of every five cyber businesses nationally reporting a lack of suitable candidates with the required cyber security skills, access to talent is the most significant barrier to growth for the sector.⁸⁴ The issue is more pronounced in the Western Gateway, with firms reporting difficulties competing with London and the South East in attracting and retaining adequate talent. With demand for talent outstripping supply, labour costs are high and act as a barrier to entry for start-ups or for firms looking to expand across the WG.⁸⁵ With the skills gap being a significant barrier to growth for the sector, improving the availability of necessary training and education is critical. With several initiatives already in place, such as the development of cyber specialist courses at Gloucestershire college, coordination is needed to ensure gaps are correctly filled and the required talent pipeline is developed to support the sector's continued growth.



Support key placemaking initiatives: Due to the highly mobile nature and competitive demand for talent and investment, continuing to improve the attractiveness of the core clusters to both talent and firms is a requirement for the sector to maintain its growth and potential. Innovative and transformative designs for commercial areas, leisure, and housing aimed at improving the liveability, attractiveness, and competitiveness of the clusters could contribute to the positioning of the region. Various proposed initiatives, such as Cyber Central in Cheltenham and the Business Cyber Centre in Swindon, present opportunities for core placemaking to be at the heart of developing the sector.



Improving human networks: To support the Western Gateway's cyber businesses to develop the next generation of cyber security products, sector experts suggested that cyber firms must be plugged into the developing needs and activities of consumer firms. Creating a clear sense of direction for the region and strong human networks between firms, academic institutions, and customers supports the Western Gateway's cyber businesses in continuing to design and safeguard the networks and digital assets of the Western Gateway and beyond.



Increasing digital and transport connectivity: Supporting the development of the core clusters is imperative to the continued growth in the sector, given the industry's need to accumulate economic mass across clusters to drive competitiveness. Sector experts highlighted the need to ensure strong digital and transport links between clusters across the WG to continue to support the development and integration of the pockets of strength. In particular ensuring good transport links between clusters enables greater collaboration and improvements in economic agglomeration whilst improving digital connectivity supports the sector's need to access high-speed and intensive data connectivity whilst also providing access to digital opportunities for citizens across the WG.⁸⁶

Green Energy

Supporting the area's green energy transition requires both investment in the development of green energy production and changes to the existing energy infrastructure. While a full list of requirements for the energy transition is beyond the scope of this report, there are several potential priority interventions to support this transition and position the Western Gateway as a market leader.



Continue to support and foster innovation: The green energy strengths of the Western Gateway, tidal and hydrogen, are still developing technologies, and are not yet viable at commercial scale. The development and the viability of these technologies requires continued research and investment. The Western Gateway and its Partners should continue to support and encourage this investment and work with academia and industry to help develop these technologies to commercial viability.



Support upskilling and retraining: The transformation to green energy requires significant retrofitting and repurposing of assets and infrastructure. The scale of the retrofitting and speed needed to meet Net Zero targets require not only large-scale infrastructure projects but also investment in the necessary skills to implement the retrofitting projects. An example is the installation skills needed to retrofit nearly all of the UK's 29 million homes with energy efficient and clean heat measures, as is required to meet the UK's legally binding target of Net Zero by 2050 and is a key recommendation by the Committee on Climate Change.⁸⁷

⁸⁴ Ipsos Mori & Perspective Economics, 2020. UK Cyber Security Sectoral Analysis

⁸⁵ Ipsos Mori & Perspective Economics, 2020. UK Cyber Security Sectoral Analysis

⁸⁶ Interviews with sector experts

⁸⁷ Committee on Climate Change February 2019. UK Housing: Fit for the Future?



Create human linkages: Enabling the transition to Net Zero requires the utilisation of a range of new, low-carbon energy sources and the integration of these sources into smarter local energy systems.⁸⁸ Building strong human networks and a clear direction between academic institutions, energy providers, and systems engineers supports the development and integration of these developing energy systems.

Fintech

Across the UK and internationally, the fintech sector is becoming increasingly competitive and a target priority for an increasing number of national and regional governments. Ensuring competitiveness for the two clusters located in the region –Bristol and Cardiff– requires playing across their individual strengths and supporting complementarities. Whilst different approaches and interventions will be required for each of the clusters, there are a number of emerging priorities to improve the general competitiveness of the sector.



Increase availability of scale-up finance: Access to scale-up finance and investors is a critical requirement to support the growth of fintech firms; only 6% of a sample of UK fintechs taken by KPMG were profitable.⁸⁹ In the UK, investment in the sector is dominated by London, with 90% of all venture capital in the UK flowing via the city. To enable developing fintechs in the region to access required finance and financial expertise, there need to be clear networks linking fintech businesses to investors, leaders, and established financial firms across the UK.⁹⁰

. Greater provision of regional scale-up finance, or support in tapping investment elsewhere, could help Gateway fintechs develop and support the clusters' ability to develop the next, and current, generation of fintech firms.



Expand the provision of skills: The sector faces a skills shortage, particularly in digital and leadership talent.⁹¹ Sector experts highlighted a need to improving the development of digital skills and attracting the necessary leadership talent requires greater engagement between industry, further education providers, and links between firms.



Regional leadership: Across the English regions, and the Western Gateway, there are a number of competing bodies aiming to represent and drive forward fintech in their localities. Competition between bodies creates a confusing and fragmented landscape, making it difficult for small fintech firms to understand where to seek support or finance, how to develop vital networks or for investors to understand the regional offering.⁹² Provision of a clear regional identity and signposting of regional leaders would reduce the difficulty in navigating the investment and support landscape.^{93, 94}

Creative Industries

Creative industries are a nationally expanding sector with a strong and increasing demand, both in the UK and internationally. Anchored by core final consumers in national broadcasters and publishing houses and supported by strong investment initiatives such the Bristol Temple development and Cardiff Creative Industries Sector Panel and expanding creative technologies innovation. The Western Gateway should look to exemplify the strengths of the Bristol and Cardiff clusters and support further developing clusters such as Bath and Swindon. In particular, the ability for the sector to develop microclusters⁹⁵ outside of larger cities presents an opportunity for inclusive growth outside of the larger cities.

To ensure the area's clusters remain competitive and raise ambitions for the industry the Western Gateway should prioritise:



Increasing digital and transport connectivity: There is a strong incentive, and value, for creative firms to form clusters and increase economic agglomeration, allowing them to share access to talent, innovation, and assets. With this tendency and value to form clusters,⁹⁶ supporting the development of the core clusters is imperative to the continued growth in the sector, given the sector's need to accumulate economic mass

⁸⁸ HM Government. 2018, The Clean Growth Strategy

⁸⁹ KPMG 2020, Fintech Focus

⁹⁰ Interviews with sector experts

⁹¹ Interviews with sector experts

⁹² Interviews with sector experts

⁹³ Ensuring cooperation with the established Fintech Wales presence

⁹⁴ This follows the recommendation for the creation of the Centre for Finance, Innovation and Technology (CFIT) outlined in the Khalifa review of UK fintech

⁹⁵ A cluster with 50 or more firms in an area

⁹⁶ Creative Industries Policy and Evidence Centre, 2020. Creative Radar

across clusters to drive competitiveness. Improving transport connectivity, both between and to clusters, supports this development of economic agglomeration and improved competitiveness. Furthermore, expanding digital connectivity allows more creative firms and individuals to engage outside of the core clusters in the sector and support the development of more competitive microclusters.⁹⁷ This presents an opportunity to support economic growth across a wider range of localities and potentially supporting the foundational economy and areas of lagging growth.⁹⁸



Increase the provision of skills: Nationally, the sector faces a skills shortage, with a particular shortage in specific software skills⁹⁹ and skills shortages were ranked as the 3rd largest barrier to expansion across the creative industries.¹⁰⁰ Discussions with sector experts confirmed difficulties in finding appropriate skills and training across the WG. With only 2% of surveyed firms reporting knowledge of available traineeship programmes,¹⁰¹ improving the provision, accessibility, and coordination between skills demand, businesses and further education providers would alleviate this barrier to growth.



Availability of scale-up financing: With over 95% of creative firms being classed as micro-businesses,¹⁰² the sector is largely characterised by micro and small firms. By helping creative firms to scale, these will become more productive, as firms that grow above nine employees see their median GVA per worker increase by 26%.¹⁰³ However, with the lack of access to finance being one of the largest barriers to expansion,¹⁰⁴ there are concerns that smaller businesses in the sector are unable to access the support and finance suitable for their needs.¹⁰⁵ Sector experts confirmed that there was a lack of clear signposting and provision of financing for creative business in the WG. Sector experts further highlighted that improving the provision and support for creative firms to access scale-up financing would help to develop and grow productive firms across the WG.



Improving branding of capabilities: Discussions with sector experts suggested that a lack of awareness regarding the area's capabilities often means that firms understate and overlook these. In turn, this leads to leakages in the creative supply chain. Furthermore, sector experts recognised that the area's high standard of living and natural beauty are considerable assets for attracting talent and investment into the region. By developing an understanding of these capabilities and embedding those in the branding and communication campaign, the area would be able to increase the demand and desirability of creative firms to engage, work, and locate in the Western Gateway.

Themes emerging from the opportunities

Assessing the areas identified across the productivity and sector opportunities, key themes emerge that help explain the wider productivity puzzle, but that also present barriers to growth in the WG's sectors of strength. Addressing these themes, summarised in Figure 4, could help the WG to build on its strengths, and encourage economic growth across the economy. These themes should therefore be the starting point for considering the interventions and initiatives the WGP will look to support. The development of a roadmap to address the opportunities through the WGP is discussed in Section 4.

⁹⁷ Creative Industries Policy and Evidence Centre, 2020. Creative Radar

⁹⁸ Interviews with sector experts

⁹⁹ Digital and Creative Industries Deep Dive, Greater Manchester Combined Authority 2016

¹⁰⁰ DCMS, 2020. R&D in Creative Industries Survey

¹⁰¹ Nesta, 2020. Creative Skills Monitor

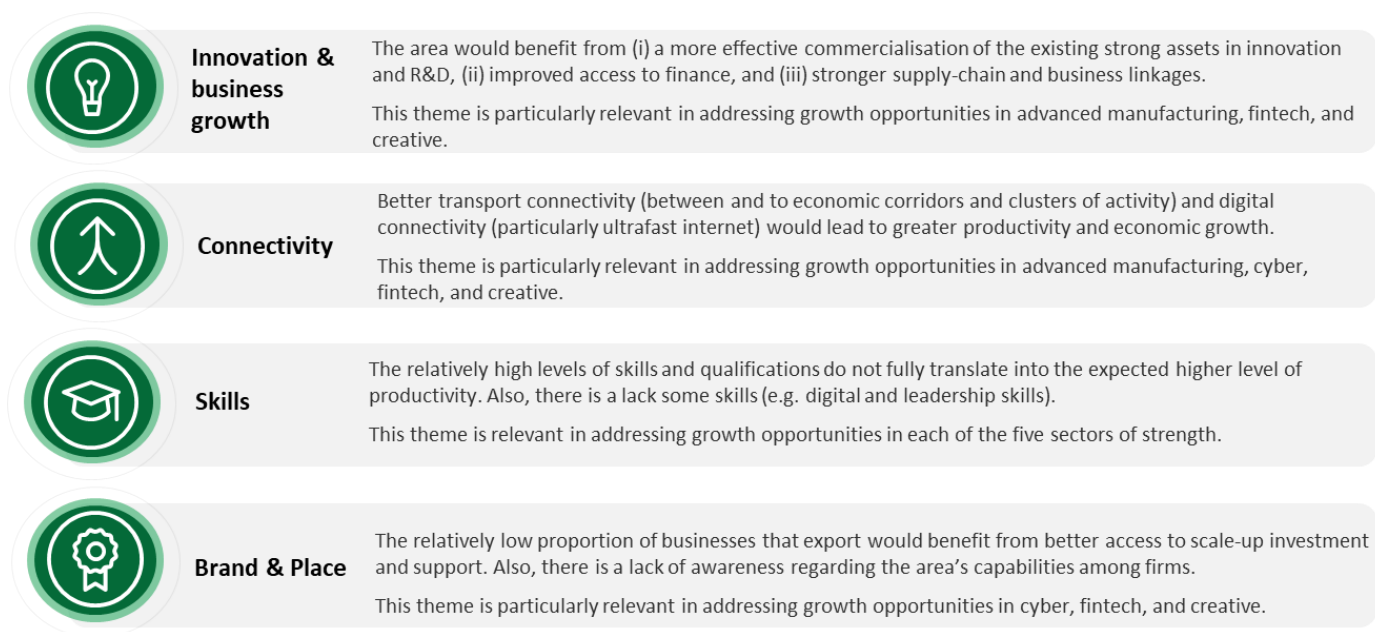
¹⁰² Nesta, 2018. Creative Nation – How the creative industries are powering the UK's nations and regions

¹⁰³ Nesta, 2018. Creative Nation – How the creative industries are powering the UK's nations and regions

¹⁰⁴ DCMS, 2020. R&D in Creative Industries Survey

¹⁰⁵ Interviews with sector experts

Figure 4: Themes from sector and productivity opportunities



4. A Roadmap for WGP

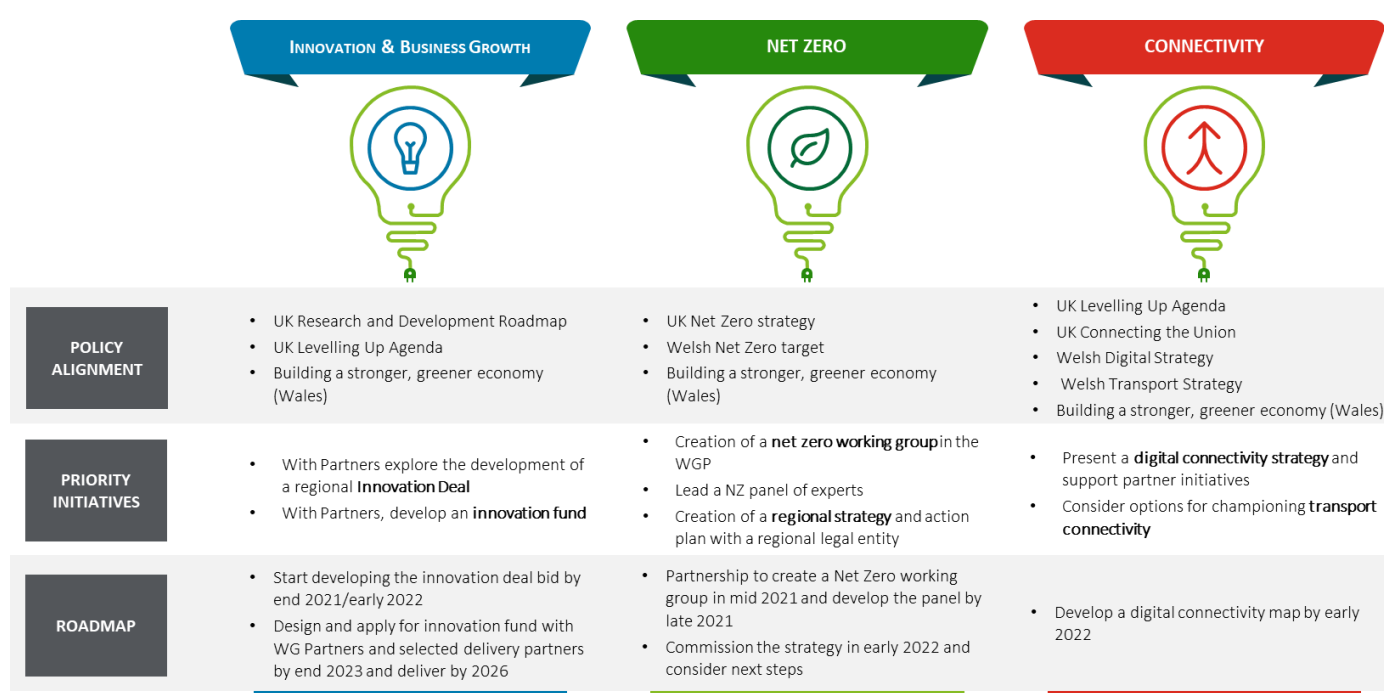
The WG as a Partnership was formed with the ambition to promote inclusive and sustainable growth across its economic geography. Building on the strengths, opportunities and themes identified in the preceding evidence review, the Western Gateway Partnership has the opportunity to deliver on this ambition through convening and amplifying initiatives across partners. To enable it to deliver successfully, the Partnership, supported by Deloitte, has identified strategic considerations and actionable proposals to take forward.

This section of the report sets out WGP's strategy formulation to develop areas of focus for the Partnership, as well as a roadmap to delivery, and the organisational needs of the WGP to succeed. This strategy was formulated by Partners in workshops facilitated by Deloitte, through use of a Strategic Choice Framework.

The priority themes, summarised in Figure 5 are the areas for interventions where Partners identified the greatest need for action, as well as the clearest role and contribution of the Partnership within its remit. They also align closest to areas of UK and Welsh Government priority and availability of public funds towards delivering and achieving these outcomes.

Going forward, the potential initiatives need to be prioritised and executed in accordance with the Partnership's preferences and constraints.¹⁰⁶ An indicative roadmap for delivery over the next 5 years has been included.

Figure 5: Priority themes



This section sets out a long list of proposed strategic themes and their rationale, the priority themes, and a roadmap for delivery, and defines how the WGP as an organisation intends to contribute to this ambition. The strategy formulation in form of the Strategic Choice Cascade is summarised in Appendix 6.

Process for developing the Roadmap for the WGP

Deloitte has supported the WGP to develop a roadmap to acting on the opportunities identified through the Evidence Review, to assist WGP in formulating the strategy to achieve its objectives and promote inclusive and sustainable growth.

¹⁰⁶ This exercise did not account for organisational and budgetary constraints. Following steer from the WGP Secretariat, constraints will be applied in a subsequent stage, through deliberations of the Partnership Board, as well as in iteration with the relevant Government Departments.

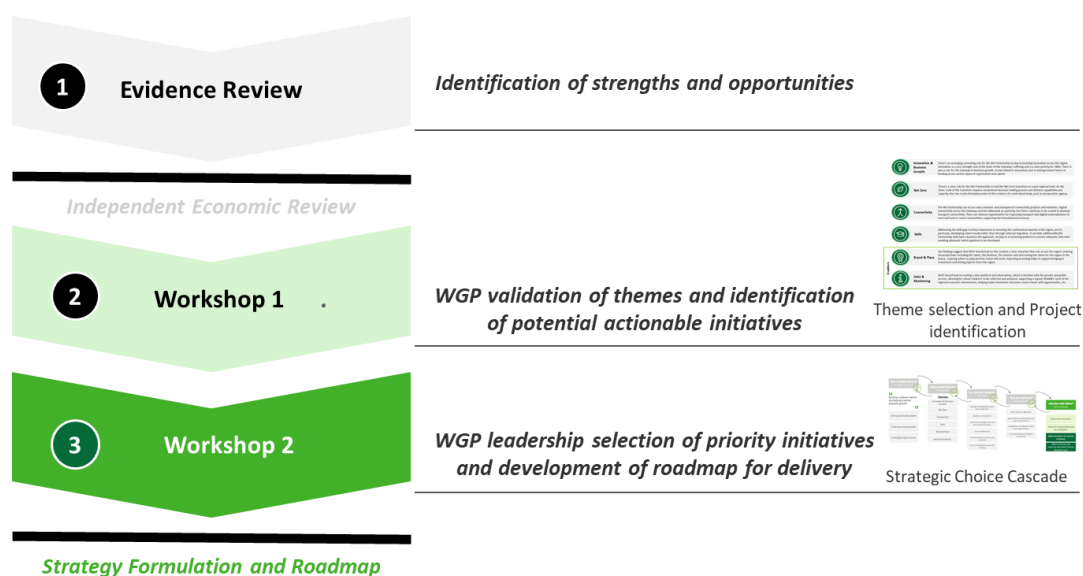
To formulate a strategy and develop an actionable roadmap, Deloitte facilitated two workshops for the WGP:

- **Workshop 1 – validation and identification:** An initial workshop focused on validating the results of the evidence review – validating and refining themes, as well as identifying potential initiatives for intervention. Attendees to this workshop included partners’ project officers and the WG Secretariat.
- **Workshop 2 – prioritisation and delivery:** A second workshop conducted with the Partnership Board and WGP leaders focused on selecting priority themes from the long list identified and proposing how these would be delivered. This included selection of priority initiatives for the WGP to pursue going forward.

The workshops built on the evidence review as a basis for discussion, but conclusions reached in the workshops reflect WG Partners’ inputs, with Deloitte acting as facilitator. The approach followed for the workshops and strategy formulation, using Deloitte’s Strategic Choice Cascade, are further detailed in Appendix 6. Results of this work are summarised in this section, specifically:

- Priority themes and initiatives
- Indicative roadmap for delivery
- How the WGP can deliver

Figure 6: Approach to formulating the strategy



Role and objectives of the WG

The overarching ambition of the WG is to foster sustainable and inclusive growth by leveraging across regional strengths and assets. Its objective is to build a coherent identity and help to deliver economic growth. Furthermore, Partners stressed the importance of the WGP in ensuring support for the foundational economy in response to the effects of the Covid-19 pandemic.

As a Partnership, the WGP is not a statutory or delivery body, but instead acts as a convener, amplifier, and catalyst across its partners. The prioritised themes and initiatives proposed below as a result of the workshop are based on this ambition, role, and remit.

Potential Priority themes and initiatives

The ambition, role and remit agreed upon by the WG leadership formed the basis for discussing needs and objectives, potential interventions, and the WGP's ambition for delivery timelines as part of the Choice Cascade. The 'menu' of intervention options, or 'work packages' discussed can be found in Appendix 7. Those discussions resulted in a long list of six intervention themes outlined in Section 3. In addition to the themes identified in Section 30, Partners suggested Net Zero (as an overarching rather than sectoral theme) and Data & Monitoring as further themes for consideration.

Of these, Partner leaders prioritised three intervention themes as focus areas for WGP intervention going forward. These are innovation and business growth, Net Zero, and connectivity. Stakeholders agreed that these themes represent where there is the greatest need for action, as well as areas where the Partnership has a clear role within its remit. They also align closest to areas of UK and Welsh Government priority and availability of public funds towards delivering and achieving these outcomes:

- **Innovation & Business Growth**
- **Net Zero**
- **Digital Connectivity**

However, a full long list of the six themes are presented in the rest of this section for completeness and further reference. It is the responsibility of the Partnership Board to make the final decision on which initiatives to enact and prioritise. The rationale for interventions across the themes, the evidence underpinning them, and the manner in which the WGP could provide additionality and amplification to the support already in place is presented below and detailed further in Appendix 6.

Note that the list of themes and interventions below does not holistically approach all opportunities identified in Section 4 where the Partnership identified that the themes or opportunities could not be addressed through the WGP's remit – for example, Place-making was considered a theme predominantly within the remit of individual partners, rather than the WGP.

Figure 7: Selection of priority themes

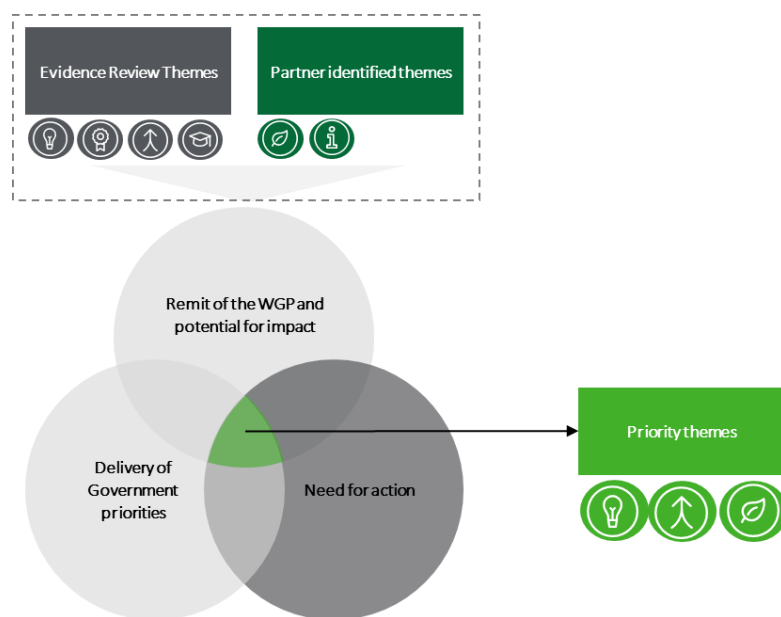


Figure 8: How could WGP deliver its objectives?

	WHY	WHAT
 INNOVATION & BUSINESS GROWTH	<p>Build on the region's R&D strengths to improve commercialisation and scale-up businesses in order to increase productivity</p> <p>Prioritise to reflect key innovation strengths of the region, while recognising the potential to improve commercialisation and access to finance.</p>	<ol style="list-style-type: none"> 1. With Partners explore the development of a regional Innovation Deal 2. With Partners, develop an innovation/patient capital fund
 NET ZERO	<p>Provide regional leadership to support and deliver Partners' and the Gateway's Net Zero priorities, advancing the productivity of the region, whilst supporting businesses and households exposed to adverse effects</p> <p>Prioritise due to the wider national drive to Net Zero, and in order to capitalize on the regions emerging strengths and assets in clean energy.</p>	<ol style="list-style-type: none"> 1. Creation of a net zero working group in the WGP 2. Lead a NZ panel of experts 3. Creation of a regional strategy and action plan with a regional legal entity
 CONNECTIVITY	<p>Increase digital and transport connectivity between clusters and to remote places to increase economic agglomeration and levelling up access to opportunities</p> <p>Prioritise as a key enabler across sectors of strengths, and to enable addressing gaps in terms of digital connectivity and access to opportunity</p>	<ol style="list-style-type: none"> 1. Champion partner travel projects and create an integrated travel zone 2. Present a digital connectivity strategy and support partner initiatives
 SKILLS	<p>Address the skills gaps to ensure adequate talent pipelines, access to opportunities, increase productivity, and support opportunities for all in the Gateway</p>	<ol style="list-style-type: none"> 1. A regional skills audit 2. Bid for digital Institute of Technology 3. Piloting of a business-led skills and/or apprenticeship program
 BRAND & PLACE	<p>Raise the profile and definition of strengths of the region to increase trade and investment and highlight the regions high quality of living</p>	<ol style="list-style-type: none"> 1. Refresh the Western Gateway branding 2. Creation of an updated prospectus 3. Campaign to support re-brand and prospectus
 DATA & MONITORING	<p>Develop a robust evidence base to underpin bids, support future interventions, and assist SMEs, improving effectiveness of interventions</p>	<ol style="list-style-type: none"> 1. Engage with local research bodies, such as the ONS, and convene a Data Observatory 2. Develop and commission a research agenda 3. Horizon scan for new trends that impact WG businesses and Partners

Innovation and Business Growth

Building on the evidence outlined in the previous sections of this report and through engagement with Partners, the WGP could have a key role in intervening to help drive forward innovation and business growth across the WG:

- **A pillar of strength and the 'Ideas Factory' of the UK:** Identified as a strong innovator and housing some of the UK's most innovative areas¹⁰⁷ and across the sectors of strength, research and innovation were consistently outlined through both evidential reviews and engagements with sector experts as one of the WG's key competitive advantages.
- **A lagging opportunity:** Despite this strength the area performs poorly against the UK in the commercialisation of innovation and public R&D spend, with public R&D low by the UK's already low international standards. Research by Nesta highlights that the wider South West and Wales are missing £580m and £480m of annual public R&D spend compared to the UK average, respectively.¹⁰⁸ Raising public R&D spend to the UK average and supporting increases in the commercialisation of research presents an opportunity to raise productivity growth across the WG (Appendix 4.1).
- **Large public funds:** Government has set the target of increasing annual public R&D spend by an additional £9bn per year by 2024/25, part of its objective of making the UK the world's most innovative economy by 2030.
- **The WGP has a unique position:** Partners recognised the unique opportunity of the WGP to leverage its convening power and scale across the WG to engage with local and external partners to support the bidding and delivery of innovation and business growth initiatives.

Across the workshops, Partners identified the WGP's role in driving forward innovation and business growth as one of the core initiatives where the WGP can provide additionality and drive value for the area. The initiatives discussed during the workshops are outlined below.

¹⁰⁷ European Commission, 2019. Regional Innovation Scoreboard

¹⁰⁸ Nesta, 2020. The Missing £4billion

Delivering an Innovation Deal

Discussions with regional development experts, corroborated during the leaders' workshop, highlighted the potential for the WGP to leverage its pan-regional size to connect across sectors and academic strengths to present the Western Gateway as a research and innovation 'super-cluster' to explore a potential bid for innovation funding under an 'Innovation Deal'.¹⁰⁹

Convening with Partners, local and national agencies, and research institutions, the WGP could provide a blueprint innovation model for how to attract and prioritise investment in research and innovation capabilities across the WG. Supporting co-design with its Partners, the WGP acts as a conduit between Government and private investors, enabling the communication of strengths, as further highlighted in the brand and place theme, and driving momentum to unlock a significant transformational R&D and innovation spending package, similar to those being proposed in other regions.¹¹⁰ The fund could leverage other investment partnerships in the area to identify and provide support to businesses, such as the programme run by the SETsquared partnership of universities.¹¹¹

The Innovation Deal presents the WGP with an opportunity to access a substantial pipeline of funds. These funds could support the development of the WG as an innovation 'supercluster' by expanding on the WG's R&D assets and drive forward the WG's ambitions to raise productivity and support sustainable and inclusive growth. As an indication of the potential benefits, it is worth referring to the experience of Greater Manchester. Funded by a £250m per year Greater Manchester Innovation Transformation Fund (GMITF), the Greater Manchester Innovation Deal estimates it could deliver over 100,000 jobs and an increase in GVA of £7bn across Greater Manchester's towns and cities. The WG could develop similar outcomes across the whole of the WG by leveraging its strengths and its diverse range of Partners. This would support the region in levelling up and connecting across both the Welsh and English parts of the union.

Development of a WG Innovation Fund

Secondly, Partners highlighted the potential for the WGP to help develop a WG Innovation Fund (WGIF). Developed in conjunction with internal Partners and external expertise such as Innovate UK and the British Business Bank, the WGIF would provide scale-up and growth financing to innovative and scalable business across the WG. By improving access to seed and risk capital to WG business, the fund could raise the low levels of research commercialisation in the WG and develop the next generation of high-growth business.

The fund could be similar to the £500m Northern Powerhouse Investment Fund (NPIF) and the £250m Midlands Engine Investment Fund (MEIF) which are delivered by the British Business Bank in conjunction with their LEP and Local Partners. Through a range of business loans, debt and equity finance, and early stage proof of concept finance, the fund would support the WG's SMEs in building scale or the rollout of new products and processes.

Across the area, Partners highlighted that only the WGP has the necessary scale and reach to convene enough partners to develop this opportunity and funding. The WGP would work to convene an oversight board with representatives from Partners to ensure appropriate representation, following a similar structure to the MEIF and NPIF.¹¹² Utilising the experience and criteria of the delivery partners, the oversight board would develop a set of funding products and criteria appropriate for the WG, with delivery of the fund left to the Partner's networks already in place locally to leverage their local expertise and capabilities.

A further potential option outlined during the Partnership Board would be for the WGP to work with Partners and convene private investors to develop a patient capital fund that aims to underpin private investment into high-risk high-reward innovative and growing business in the region. Ultimately, the fund could help develop the next generation of high-growth and productive businesses in the Western Gateway.

Net Zero

Highlighted by Partners as a key challenge and responsibility for the WG, helping the area drive to Net Zero is identified as a core intervention for the WGP to help deliver on. The potential for the WGP's interventions in Net Zero are:

¹⁰⁹ In the 2020 spending review, the Government promised £15bn of R&D spending over the next year. Source: <https://www.openaccessgovernment.org/what-should-the-governments-new-innovation-strategy-look-like/111273/>

¹¹⁰ Both Belfast and Greater Manchester have put forward bids for various innovation deals. Greater Manchester's Innovation Deal, Innovation Greater Manchester, proposes the creation of a £250m a year fund that is directed under a single umbrella organisation that provides coordination and leadership across all innovation stakeholders and to increase R&D in the region to 2.4% of GDP by 2027. The deal has expectations of creating 100,000 jobs and boosting the economy by £7bn. *GMCA, 2021. Innovation Greater Manchester provides blueprint for boosting R&D investment and levelling up North*

¹¹¹ SETsquared is a business incubator run as a collaboration between Bath, Bristol, Exeter, Southampton and Surrey universities

¹¹² Midlands Engine Investment Fund. [About MEIF](#)

- **A transformation across the whole economy:** the transition to Net Zero will require transformation across the entirety of the economy and up to £1tn in investment nationally by 2050¹¹³ and up to £2bn per year in Wales to 2050.¹¹⁴
- **Core green energy strengths in the WG:** this transition plays into the WG's strengths and potential in decarbonised energy generation and the development of integrated and SMART energy systems (Section 2).
- **Government support across both sides of the border:** the transition to cutting emissions by 80% to 2050 is a core policy of Welsh Government¹¹⁵ while the UK Government has legally committed to reducing emissions to Net Zero by 2050 and committed to £12bn in investment to accelerate this transition.¹¹⁶
- **Leveraging across all its Partners and levers:** highlighted by the Committee on Climate Change, local government will play a pivotal role in realising the Net Zero ambition,¹¹⁷ but highlighted by Partners, individual authorities lack the scale, reach or financing to deliver Net Zero on their own.

In the workshops, and through the reviews into the green energy sector strengths, the WGP's scale and ability to convene and engage Partners was highlighted as integral to ensuring the collaboration and innovation necessary to support the transition to Net Zero occurs. The initiatives that the WGP could do to enact this are outlined below:

Providing evidence and a regional direction

Project officers in workshop 1 highlighted that it is not possible for individual Partners to provide the leadership and cross-cutting approach to foster the investments and actions required to achieve Net Zero. There is, therefore, a role for the WGP to provide regional leadership on the steps and milestones required for the Western Gateway and to exercise its convening power to foster collaboration between Partners, industry, and academia, which will be necessary to enable the transition. An example highlighted by the Partners of the scale required to enact the Net Zero transition is the need to train an additional 350,000 construction workers nationally by 2028 to carry out the necessary retrofitting of UK homes.¹¹⁸

However, stakeholders acknowledged that more information and evidence is required to start developing initiatives to support the WG Net Zero agenda. Therefore, Partners agreed that in order to initiate the theme and provide action immediately, the WGP should create a Net Zero working group that regularly convenes Partners and starts to foster collaboration on Net Zero initiatives. This is a low-cost initiative which enables Partners to share and distribute learnings, find commonalities, and identify emerging difficulties or opportunities, amplifying the impacts of Partner's individual initiatives. In addition to this, the group can develop and appoint the creation of a Net Zero panel of experts, composed of academic and business leaders from across the region, to provide advice and support directly to the Partnership leadership board on the necessary actions and emerging trends for the green transition.

By working collaboratively, the working group and panel of experts could identify the full carbon characteristics of the WG economy and required decarbonisation strategy to enable the WG to achieve Net Zero. This would help to identify and build evidence on (i) the methods that the WG can apply to play to its strengths in the green economy to support the energy transition, and (ii) how to best decarbonise the rest of the WG's economy. The evidence and expertise could also support WG Partners in their bids for significant decarbonised funds such as the £240m Net Zero Hydrogen and the £385m Advanced Nuclear Fund.^{119,120}

The culmination of this Net Zero workstream would be commissioning a specific Net Zero strategy similar to the Midlands Engine's Ten Point Plan for Green Growth.¹²¹ Engagements with sector experts suggested that the purpose of the strategy should be to drive defined leadership and outcomes. Alongside a review of the decarbonisation needs and opportunities, the objectives could thus be threefold:

- Delivery of a fully integrated decarbonised industrial cluster playing to the WG's strengths in the green economy and advanced manufacturing to drive a sustainable and inclusive de-carbonised economy;
- Securing clean energy as a platform for decarbonisation across the WG; and
- Providing direction on creating the eco-system and market for low carbon electricity and green hydrogen supply from renewable sources to drive economic change and community well-being.

¹¹³ BEIS, 2019. Meeting climate change requirements from 1 January 2021

¹¹⁴ Climate Change Committee, 2020. The path to a Net Zero Wales

¹¹⁵ Welsh Government, 2019. A Low Carbon Wales

¹¹⁶ Hm Government, 2020. The Ten Point Plan for a Green Industrial Revolution

¹¹⁷ Committee on Climate Change, 2019. Net Zero – The UK's contribution to stopping global warming

¹¹⁸ The Construction Industry Training Board, 2021. Industry Insights and Analysis

¹¹⁹ HM Government, 2020. Powering our Net Zero Future.

¹²⁰ HM Government, 2020. Powering our Net Zero Future.

¹²¹ Midlands Engine, 2021. The Ten Point Plan for Green Growth in the Midlands Engine

Delivery of a WG Net Zero Entity

To support the initiatives required to enact the strategy, the WG Partners' leaders suggested exploring options for how Partners could practically convene to deliver Net Zero for the Gateway: to build upon the strategy, streamline the decision-making process, provide delivery capabilities, and foster investment. The potential for the WG to create a Net Zero entity, that would help to represent the NZ ambition across the area and in engaging with external partners, was discussed with Partners. The role of the entity could be to facilitate the large-scale and transformational decisions required to enable the WG to get to NZ at the necessary speed to meet this challenge and opportunity. However, it is recognised that the structure, role, and definition of the entity would have to be deliberated and decided upon by the WGP.

Connectivity

Building on the evidence outlined in the previous sections of this report and through engagement with Partners, the WGP could support growth in its key sectors and across the economy by championing connectivity initiatives:

- **The WG's connectivity performance is mixed:** While the area performs well on overall transport connectivity, areas of the WG are in need of improvement. In digital connectivity, the WG lags behind the UK average. Successful clusters are often based around strong connectivity links, and connectivity, whether digital or transport, enables people to access opportunities.
- **Connectivity is core to some high-profile government agendas:** Connectivity mirrors UK and Welsh governments' objectives to improve digital and physical connectivity and support the integration and use of public transport in support of objectives such as Levelling Up, and Net Zero, which rely to a large extent on connectivity investments and supporting decarbonised and public transport.¹²² In addition, the WGP is uniquely placed to support the government to Connect the Union. Funding such as the newly announced £4.2bn City Region Sustainable Transport Fund to increase integration across different modes of public and active travel¹²³ could be leveraged across partners to create more integrated public travel corridors across the WG. With the ambition of becoming a world class leader in digital connectivity, the Government is providing £5bn to industry to support its Gigabit broadband rollout, with £1.2bn already being committed to 2025.¹²⁴
- **The WG could take a convening and championing role in driving connectivity:** Partners see a clear role for the WG in supporting connectivity through convening and championing across Partners to build a joined-up approach to connectivity needs. There is a role for the WGP to champion not only connectivity within the WG, but also to strengthen links to outside its own geography. However, while there is clear support for convening for digital connectivity, further clarity on specific transport interventions that could be supported across partners will be required to progress with transport initiatives.

Support for transport and digital connectivity across the WG Partners is high and seen as a key priority in supporting the integration of the area as an economic entity and enabling the levelling up of areas by accessing economic opportunities. Partners also put focus on this theme due to its potential to benefit the foundational economy. However, while there was consensus around the priority initiatives for digital connectivity, Partners did not prioritise transport initiatives at this point. The following initiatives were proposed:

Commission a Digital Connectivity Map and Outline and support digital connectivity priorities

There is a clear need for significant investment into digital connectivity infrastructure, despite the initiatives already in place. Consultations also highlighted the need for a centralised understanding of the connectivity requirements of the WG and for identifying the places with the greatest need so that the WGP could best target its support. By mapping out the digital connectivity requirements, the Western Gateway could present a clear approach to raising its lagging levels of access and create alignment between central and local Government priorities across the area and focusing support. The WGP could convene partners to commission a Digital Connectivity Map.

Developing a clear understanding of where digital connectivity investments are needed and where they should be prioritised through the Map, the WGP could be better able to champion Partner initiatives. Through outlining and championing the recommendations from the Map, it could support the WGP's objective of being the UK's most digitally connected region.¹²⁵

Champion 2-3 transport bids

Currently, commuting data in the Western Gateway indicates high levels of economic self-containment within areas of the Gateway. Improving connectivity between economic centres and wider reaches of the Gateway could help to develop greater economic integration across the area and support giving access to opportunities for residents across the WG.¹²⁶ With this joint objective, the WGP

¹²² HM Treasury, 2021. Levelling Up Fund: Prospectus. Welsh Government, 2021. Programme for Government.

¹²³ Prime Minister's Speech, 15 July 2021. The Prime Minister's Levelling Up Speech

¹²⁴ DCMS, 2020. Planning for Gigabit Delivery in 2021

¹²⁵ Western Gateway, 2020. Propelling a greener, fairer, stronger Britain

¹²⁶ Metrodynamcis, 2019. A Powerhouse for the West

could create a joint plan for the WG and champion partner bids into funds such as the City Region Sustainable Transport Fund. Convening partners and leveraging the scale of the WGP could strengthen the case of individual bids.

Develop WG integrated travel zone

The development of the Western Gateway Strategic Transport Board in 2020 provides a strong conduit for improving transport connectivity across the region. However, the body does not encompass the whole region, crucially not covering the Welsh half of the geography, which is managed under the Welsh devolved administration. To support greater integration and linkages across both sides of the Western Gateway in the short-term, the Partnership and the STB, alongside Welsh authorities, could prioritise building an integrated travel zone, supporting and expanding the currently proposed West of England integrated travel zone. The precise role the WG could play in supporting this initiative was not fully clarified across Partners, and as such the intervention was not prioritised at this stage.

Skills

Building on the evidence outlined in the previous sections of this report and through engagement with Partners, the WGP could have a key role in intervening to help drive forward innovation and business growth across the WG as:

- **Skills are holding back sector growth:** Despite the area's relatively high levels of skills and qualifications across each of the five sectors of strength, a lack of skills was consistently stated as a barrier to growth, particularly lacking digital and leadership skills. Addressing these skills could thus unlock growth across several sectors.
- **Skills are an important part of the Welsh and UK governments' agendas:** There is an opportunity for the WGP to align with the reforms to skills training outlined in the Government's Skills for Jobs White Paper, in particular supporting Partners in developing Local Skills Improvement Plans to shape technical, including digital, skills required for Partners' local economies.
- **The WG's role should focus on additionality:** Partners clearly outlined the complex and varied landscape of skills support across the area with skills training devolved across Combined and Unitary Authorities. Partners stressed that if the WGP is to intervene in supporting skills provision, it must ensure that it is truly additional to the support already offered, is business-led, and builds upon the WGP's position as a convener and utilising its pan-regional view to provide additionality to the support already offered.

Across the workshops, Partners agreed there was a consensus on the need for improvement in digital and leadership skills provision across the Western Gateway and particularly in smaller and less developed areas. However, given the complex landscape of convening partners to provide additionality, this theme was not prioritised at this time. The following interventions were supported by partners as potential future considerations:

Convene a skills group and commission a skills audit

Partners suggested the first initiative could be to convene a skills working group and commission a regional skills audit. By commissioning the audit, the WGP could provide the required evidence base of the skill requirements, provision of support, and the identified gaps. Mapping the current gaps would support the Partners and further education providers in tailoring their own initiatives, reducing duplication of support and encouraging collaboration. By highlighting areas where skills provision could be increased to support inclusive growth and the foundational economy, particularly in more deprived areas, the audit could help Partners to develop and deliver their own Local Skills Improvement Plans and also access some of the £2.5bn National Skills Fund to provide free level 3 qualifications to all adults.¹²⁷

Develop a skills training pilot

Building on the outcomes of the audit, Partner leaders in workshop 2 highlighted the potential for the Western Gateway to convene with Partners to support the development of a pilot addressing one of the critical skills gaps afflicting the region. Working with a Partner to deliver the programme, the WGP would convene industry leaders to provide a business-led and novel approach to providing skills training, ensuring additionality and removing duplication. Through the development and implementation of the pilot, and sharing the lessons learnt and successes with Partners, the WGP could support the development and tailoring of Partners' own future initiatives.

Bid for and deliver an Institute of Technology

Finally, the support of a partner bid for a regional Digital Institute of Technology (IoT) would provide a centre of excellence in the design, implementation, and provision of digital skills. Developing a specialised IoT aligns with the Western Gateway's need for digital skills and the Government's objective of expanding IoTs to every part of the country to increase higher STEM, including digital, skills.¹²⁸ By

¹²⁷ DfE, 2021. Skills for Jobs White Paper

¹²⁸ DfE, 2021. Skills for Jobs White Paper

facilitating collaboration between higher further education providers, universities, and leading employers, the WG digital IoT would deliver higher-level technical education with a clear route to high-skilled employment in digital areas across the sectors of strength.

Brand & Place

A key recommendation of the OCO Western Gateway International Market Prioritisation report, reflected on by sector experts and outlined by Partners, promoting the unique skills and capability of the WG could better support businesses to export and attract investment. There is potential for the WGP to intervene as:

- **The WG lags behind the rest of the UK in exports:** A relatively low proportion of businesses export, and the value of exports per employee is 5% lower than the UK average.¹²⁹
- **Limited clarity of the area's marketable strengths and 'unique value proposition':** Partners, stakeholders, and sector experts (particularly in the cyber, creative and fintech sectors) echoed this view. This could be undermining exporting businesses, investment-led growth, and bids for Government funding under the WG brand.
- **The WG could focus on a branding and building the profile of the area to external and overseas partners:** Developing a consistent message of the WG's strengths and its key opportunities could bring about clarity of the area's strengths and support exporting businesses.

Raising the value and number of exporting businesses and attracting investment is a key requirement and target of the Western Gateway. Across engagements Partners identified the potential for the WGP to:

Refresh and market an updated WG prospectus and branding

Project Officers highlighted that by rebranding and refreshing the Western Gateway's proposition and prospectus, the WGP could build on the additional evidence outlined in IER1 and IER2 and present a clearer, more focused advertisement for the region. By promoting the updated products, and providing tailored products for different scenarios, the Partnership could help to communicate a consistent message of the Western Gateway. Thereby, supporting its priority to increase export and investment-led growth and its underpinning bids for Government funding under the Western Gateway brand.

Building on the evidence base covered and expanded on in this report, the WGP could work with an advertising agency to commission an updated prospectus. The updated prospectus should clearly outline the area's strengths, including the WG's high standard of living, and its ambition and needs. As well as helping to deliver a clear message of the WG, the updated prospectus provides a framework for developing subsequent template investment brochures. The brochures will allow for customisation to support various proposals or overseas engagements, highlighting particular individual strengths as required.

Finally, the WGP should run a targeted campaign to raise awareness of the WG, utilising the updated branding products. By targeting priority tradeshow, such as those highlighted in both DIT and OCO market prioritisation reports, and Government and other regional partners, the WGP could help to drive home a clear and powerful message of the Western Gateway, its capabilities, and its businesses.

Data & Monitoring

Over the course of the IER2, it became apparent that there are evidence gaps on some of the area's specific strengths and requirements. Given the Western Gateway's new status, and its geography spanning multiple regional and national boundaries, Project Officers outlined the need for the WGP to support in the provision of evidence and business intelligence across the WG as:

- **Evidence gaps hinder the policy decisions of the WG and its Partners:** Project officers outlined how these evidence gaps will hinder the ability to make informed decisions and support bids to central Government as the Western Gateway progresses along the roadmap and seeks to enact initiatives.
- **Improving data and business intelligence improves the cohesiveness and messaging of the WG:** Clear evidence and business intelligence allows the WGP and its Partners to tell a clearer and more defined picture of the WG, its core strengths and upcoming opportunities.
- **The WGP can convene the assets already in the region:** The WGP can leverage the considerable research assets in the area such as the ONS, Connected Places Catapult, research councils, and academic institutions to support the delivery of a robust evidence base.

¹²⁹ Oxford Economics, 2021. Western Gateway Economic Position Statement

Convening a Data Observatory

Partner leaders suggested that the WGP could convene a “smart” database project or observatory in conjunction with research organisations from across the WG. The observatory would collate a panel of experts from across the WG to develop and implement a research agenda aimed at addressing the core data gaps for the Western Gateway and build a robust evidence base for the WG.

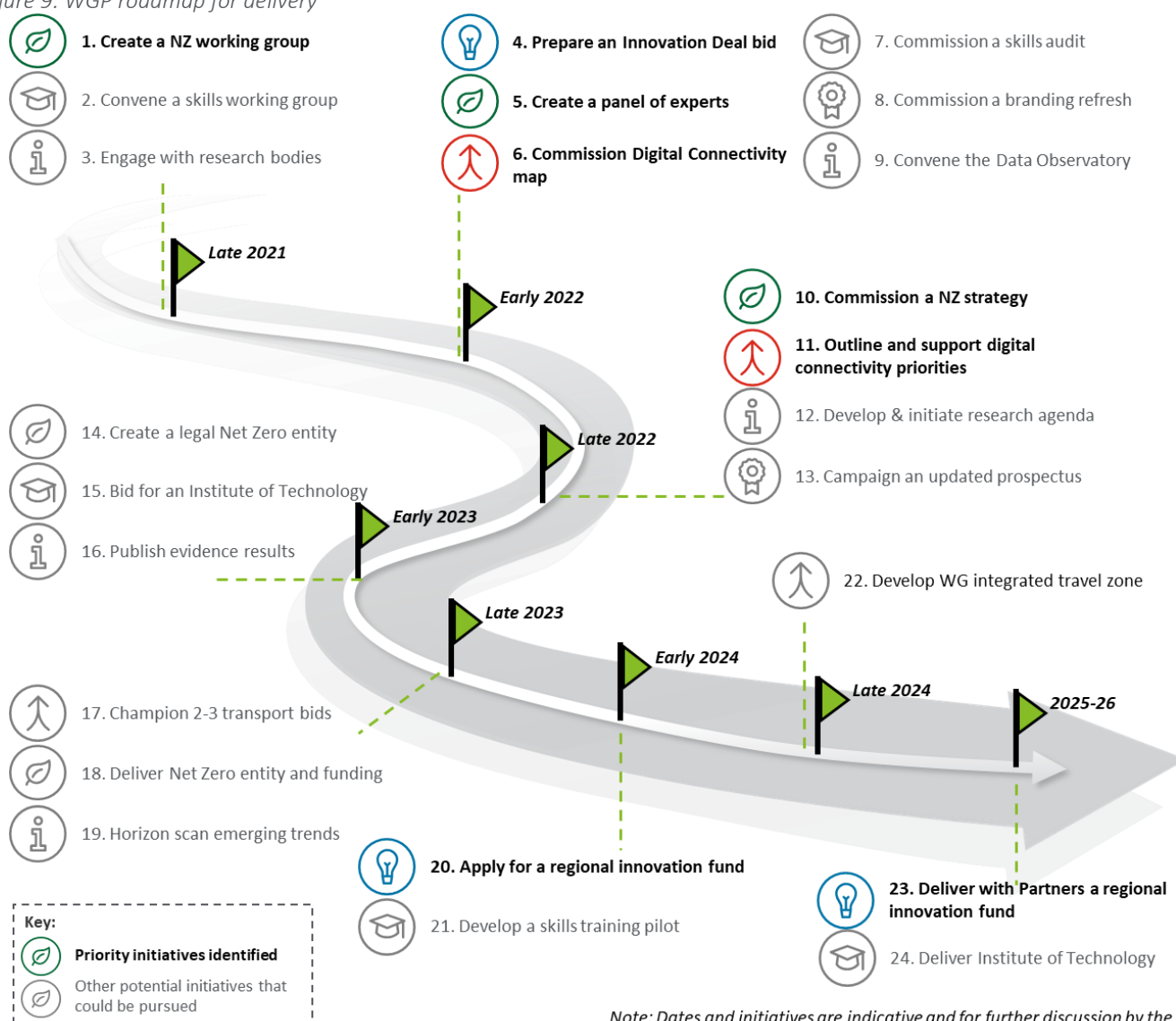
By convening a Data Observatory (similar to that initiated by the Midlands Engine), and the publication of a research agenda, the WG Partnership could start addressing the most prominent data gaps across the region. With the panel engaging directly with the leadership board, it could support the decision-making process and capabilities of the Board, improving outcomes and the authority of the Western Gateway.

Finally, the Observatory should scan the horizon for emerging trends and iterate the research agenda, enabling the Data Observatory to support the Western Gateway and its member firms in assessing and responding to important emerging trends for the region. Ultimately, this will improve decision-making and adaptability of the Partnership and provide a valuable resource of intelligence for firms across the Western Gateway.

Indicative Roadmap for Delivery

To finalise the strategy formation, Deloitte worked with the WG Partners’ leadership to set prospective timelines for implementing and delivering on the initiatives outlined above. The roadmap in Figure 9 summarises the themes and potential interventions as a timeline, providing a list of suggestions and actions for the Partnership to deliberate upon. Initiatives relating to the three priority themes are highlighted.

Figure 9: WGP roadmap for delivery



Note: Dates and initiatives are indicative and for further discussion by the WGP

Priority initiatives

Late 2021 and 2022

The immediate next steps for the Western Gateway revolve around convening and engaging Partners across the outlined themes. Creating a working group and a panel of experts on Net Zero and commissioning a digital connectivity map could provide the initial frameworks for the Western Gateway to build upon.

During 2022, the Western Gateway could utilise the Net Zero working group and panels of experts created in 2021 to commission and deliver the Net Zero strategy.

2023 and 2024

Eighteen months into the timeline, the Partnership should reflect and re-examine progress and update initiatives at the start of the year. Following this, the Western Gateway Partnership is suggested to implement an initiative from its priority themes: the creation of a regional innovation fund in a convening role.

2025-2026 and Beyond

For the final two years of the roadmap, the Partnership should focus on delivering its larger initiatives. The delivery of the regional innovation fund captures the desire for actionable delivery outlined in the stakeholder engagements and enables the Western Gateway to utilise its regional position and provide additionality.

Following the completion of the innovation, net zero, and digital connectivity interventions, the WGP should have clear delivered outputs, and a basis for completing its future vision and strategy.

Potential Other initiatives

The Partners discussed further potential initiatives the WGP could consider pursuing. Compared to the priority initiatives, these themes may revolve around areas of less prioritised need or may require evolution or consideration of the remit of the WGP in supporting the initiatives.

Late 2021 and 2022

The Western Gateway could set up further working groups and panels, specifically on skills and data, to create a basis for these themes. Further, the WGP could work with, and support, Partners in the development of regionally significant transport and Institute of Technology bids. By utilising the updated evidence base and aligning with its clarified priorities and its regional focus, the Western Gateway will provide significant additionality to these bids.

The suggestion for commissioning a rebrand of the Western Gateway and preparation for an innovation deal bid reflect the engagements and suggestions received from the workshop engagements with Partners (Appendix 6). They reflect the desire for immediate action from the Partnership and a clear alignment between Gateway needs, opportunities, and actions discussed in the previous section.

Furthermore, the WGP could use a Data Observatory to commission strategies and research agendas to provide the evidence for future actions. Expanding on the rebranding work and publishing and campaigning an updated prospectus would allow the Western Gateway to actively support its global gateway ambition and provide a firmer platform when developing or supporting future initiatives, thereby narrowing the focus provided by itself and its Partners.

2023 and 2024

Depending on the maturation of the Partnership's capabilities and previous experience and learnings, the WGP may also consider establishing a Net Zero delivery body, and the design and implementation of a skills pilot with a Partner. These initiatives would require careful evaluation of the WGP's role and remit.

As well as supporting and working on the delivery of the initiatives outlined in 2023, the Western Gateway should seek to engage with Partners across both sides of the border to develop and plan the integrated transport zone. The Western Gateway has a clearly defined role in this key regional flagship initiative by providing leadership to develop and kickstart this initiative.

2025-2026 and Beyond

The WG could culminate its initial roadmap relating to innovation by completing the Institute of Technology.

Next Steps

Based on discussions with the IER2 steering group, the roadmap will be agreed upon by the Partnership, on the basis of initiatives that are suitable for the organisational and budgetary constraints, maximise productivity gains and socio-economic benefits. Furthermore, the WGP and its Partners must ensure they have the capabilities to deliver. These requirements are discussed in the next section.

How the WGP can deliver

Through discussions with Partners and local development experts, four main actors are required for the WGP to deliver its ambitions. The first is providing strong leadership on a clear set of priorities for the WGP. Secondly, the WGP must ensure it maintains an external focus, engaging with investors and central Government and align WGP priorities with external partners and investors. The third requirement is to maintain the Partnership's focus on collaboration and co-production, thereby facilitating the pooling of resources and sharing of individual Partner knowledge and expertise. The fourth requirement is clear accountability and responsibility of the Partnership, and of all Partners across agreed interventions. These requirements are discussed in greater detail below.

Figure 10: How the WGP can deliver



Leadership

Discussions with stakeholders highlighted that by focussing on clear priorities, the WGP has the potential to provide significant benefit to the wider area and add value to the existing leadership of the WG economic geographies. Clear leadership and clarity of purpose facilitates gathering momentum and enables change to be delivered. Driving success for the region requires a clear definition of the WGP's purpose, how it will lead, what it and its Partners roles are and coordinated engagement with business leadership and Government. The WGP organisational structure is being prepared and shall be adapted to reflect the requirements of the initiatives agreed upon by the Partnership Board.¹³⁰

By building a strong brand for the WG and engaging with the keystone institutions, such as the area's business leaders and universities, to back its direction and strategy, the WGP could establish itself as a competent and credible national and local partner.

External Focus

Given its regional focus and size, the WGP should ensure that it maintains an external focus for the Western Gateway. Engaging with central Government, overseas investors and customers, and other regional partners would enable the WGP to align its strengths and priorities with Government and investors and support the WG playing to its research and development strengths.¹³¹ This could be essential in both attracting investments and amplifying the impact of the proposed initiatives across the area. In particular, through discussions with Partners and the sectoral analysis covered in Section 2, there are a number of central Government priorities with which the WGP could align. As discussed in previous sections of the report, consultations confirmed these initiatives are Build Back Better, Levelling Up, connecting the union, and driving innovation.

Through aligning WGP priorities with central Government objectives and communicating how it could help deliver against these priorities, the WG could manifest its place within national strategic policy priority. Strengthening the strategic significance of the WG, this could support bids and encourage transformative investments into the area benefiting all parts of the Western Gateway. By supporting improved outcomes and linking to opportunities, the WG aligns with the Levelling Up initiative and as the WG recovers from the pandemic, it could align with the Build Back Better plan. Leveraging its cross-border status, there is clear alignment with the 'connecting the union' national priority and, by looking to improve skills and training provision, there is alignment with the Government's Skills for Jobs initiative. Moreover, as the WG looks to decarbonise, it needs to ensure that it is engaging with the national Government's Net Zero priority and is accessing key funds available to support this transition, while identifying the role it could play in the national effort through its own strengths. Finally, there is significant investment earmarked for digital and transport connectivity as part of the Government's national infrastructure strategy, aligning with WG initiatives to improve digital and transport connectivity across the area.

¹³⁰ Confirmed with WGP IER2 steering group.

¹³¹ This includes leveraging the current capabilities and external networks of its research institutions.

Collaboration and co-production

By emphasising co-design and partnership at its core, the WGP could convene its Partners and pool resources ensuring maximum impact and providing amplification and additionality to the existing support. By leveraging the local expertise and capabilities of individual Partners and providing scale across the whole WG, the WGP is able to increase the impact and value of individual initiatives and ensure that the outcome is greater than the sum of the parts. Supporting the development of spatial frameworks and local investment models and implementing quick wins all builds the capabilities of the WGP and confidence in its delivery potential, encouraging future investments and delivery of initiatives.

Accountability

As a Partnership, the WGP is only able to deliver, and provide amplification and additionality, through the contributions and initiatives enacted by its Partners. Therefore, a key requirement of the Partnership's success is to determine adequate accountability and responsibilities, both for itself and the Partners, when delivering individual initiatives. Apportioning accountability includes ensuring that Partner's local investment models are linked to WG area wide ambitions and fostering alignment between local, regional, and national investment priorities.

Further deliberation by the WGP is required to define the adequate management structures, the responsibility and accountability of Partners and other organisations involved, and to define the adequate resources. Before delivering interventions, the WGP and Partners may require business cases and/or further due diligence depending on funding sources/requirements and any relevant WGP and Partner protocols.

5. Conclusion

There is an opportunity for the WG to leverage its assets and build a widely recognised national and international reputation for its expertise in the development of **industry 4.0 processes**, as well as the **design and integration of the next generation green power systems**, becoming the “ideas factory” of the UK. This is an opportunity for the region and the UK to increase its economic and reputational footprint, whilst addressing some of the most pressing challenges of the current economic structures.

The WGP is positioning itself as a regional and national leader, a key player in the delivery of initiatives that will help the WG capitalise on its assets. To do that, the WGP will focus on convening and amplifying successful policies across its partners, as well as lead on novel initiatives, which require pan-regional leadership. The WGP will also focus on principles of **collaboration and co-production, accountability, leadership, and external focus**, to deliver the priority initiatives identified by the Roadmap and beyond.

Playing its role as a convening body, focused on amplifying its partners programmes and initiatives, and providing additionality where the sum is greater than the individual parts, the WGP could enable the area to reach its economic potential, and provide support that could also benefit the foundational economy.

In the next 5 years, as part of accomplishing this vision, the WGP should work with its members to help deliver an **Innovation Deal**, a **Net Zero Working Group**, and an integrated **Digital Connectivity strategy**. Potential gains are significant. According to indicative analysis, improvements in productivity could lead to an **additional £34bn**¹³² contribution to the UK economy, in the event the productivity gap to the UK average is bridged by 50%, by 2030.

Additional to the three main priority initiatives above, the WGP could consider exploring the following initiatives:

- **Championing skills:** Convening to address the core skills gaps afflicting the sectors of strength and supporting the development of adequate talent pipelines to provide opportunities across the Western Gateway.
- **Establishing a brand and identity:** Working with partners to raise the profile of the area and presenting the unique strengths, both domestically and internationally.
- **Convening a Data Observatory:** Developing a robust evidence base to underpin interventions and provide support to businesses and Partners.

There is no time like now to begin acting on the WGP’s mission, at a time when macroeconomic, social, and environmental challenges pervade. As the WG economy recovers from the effects of the Covid-19 pandemic, there is an opportunity to reflect and assess the direction of the economy and influence the shape of the recovery. By playing to its strengths and collaborating with Partners, the WGP could help foster inclusive and sustainable growth and enable the area to reach its economic potential and close the productivity gap with the rest of the UK.

Central and Welsh Government response programmes (Net Zero, Build Back Better, Levelling Up, connecting the union, and increasing innovation)¹³³ aim to address the problems at hand, but also the underlying structural issues the UK has been facing for decades, such as low levels of productivity and rising inequality. The WGP can play a key role in supporting its partners in linking into these programmes, and helping governments deliver on their priorities.

The uniqueness of the Western Gateway geography, cutting across national governments and devolved powers, provides an opportunity to show strong and purposeful leadership for a common social and economic purpose. This IER2 provides an important step towards helping the WG further understand its economic footprint and define the WGP’s role and focus. Effective implementation should now be the priority.

¹³² Deloitte indicative analysis of Oxford Economics GVA data, 2019.

¹³³ £15bn ringfenced for R&D spend the next year.

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Appendix 1 Detailed Approach

This section summarises the detailed approach underpinning this report.

Figure 11 summarises the approach taken for the main two components at a high level:

- **The Independent Economic Review** reviewed and expanded the existing evidence base to identify the key sector strengths of the WG economic geography and identify opportunities for growth. This included interviews with 19 regional and sector leaders.
- **The Roadmap Formulation** relied on two workshops with the WGP to build on the WGP strategy, generate an actionable roadmap and proposals for interventions.

Figure 11: Detailed overview of the approach

	Component	Approach	Output	Outcome
Independent Economic Review				
1	Review of prior evidence base	Desk review of previous work commissioned by the Western Gateway, including: <ul style="list-style-type: none"> - A Powerhouse for the West report (2019) - Western Gateway Economic Position Statement (2021) 		
2	Expansion of evidence base	Desk research of additional sources including: <ul style="list-style-type: none"> - Western Gateway Partner documentation (e.g. local strategies) - Western Gateway Partner initiatives (reports and live projects by local authorities and Partners) - Public reports and data sources Interviews with 19 experts including: <ul style="list-style-type: none"> - Sector leaders in the Western Gateway - Sector leaders at Deloitte - Local and regional development leads Deloitte used Porter's Framework of Cluster Formation to assess Sector Strengths. ¹³⁴	Sector strengths (Section 2) Sector and productivity opportunities (Section 3) Sector deep dives (Appendix 2) Size of the Prize analysis (Appendix 3) Productivity deep dives (Appendix 3) Location Quotient analysis (Appendix 5)	Identified strengths, needs and opportunities, consolidated into themes
Strategy and roadmap formulation				
3	Assessment and refinement of findings and development of potential interventions as 'work packages'	Workshop with WG Partners' Project Officers	Potential Priority themes and initiatives (Section 4) Example work packages (Appendix 7)	Validated key themes and proposed potential work packages for interventions
4	Prioritisation, roadmap and needs for delivery	Workshop with WGP Partner leaders using the Strategic Choice Cascade as a basis for discussion	Potential Priority themes and initiatives (Section 4) Indicative roadmap for delivery (Section 4) How the WGP can deliver (Section 4) Strategy and Roadmap formulation (Appendix 6)	Prioritisation of themes and determination of roadmap

¹³⁴ State Competitiveness: Creating Economic Strategy in a Time of Austerity, Professor Michael Porter 26th February 2011

Existing evidence review

The first step was a review of work previously carried out on behalf of the WGP. The leading sectors review and the opportunity identification was built upon the evidence outlined in the IER1 and the 'A Powerhouse for the West' reports as well as the evidence collated and presented by the Partners from across the Western Gateway.

Evidence collection and analysis

The second step involved sectoral analysis of the five selected sectors, through literature review, secondary data analysis, and interviews with sector and local development experts, as well as an exploration of the Western Gateway's core strengths and bottlenecks to development. This phase further assessed the WGP Partner's priority projects against regional themes and strengths and examined the size of the prize available to the area in productivity terms. The result of this phase was a set of themes based on WG strengths and opportunities.

Deloitte reviewed the Western Gateway's leading five sectors to determine the identifiable competitive advantages of each and the localities in which they are concentrated. Deloitte completed an evidence gathering and literature review process, reviewing the previous research provided by the WGP as well as the relevant Partner development prospectuses, research, and investment proposals. Regional evidence was supported by sector specific research, such as the Government industry sector deals and national reports to provide context around the area's strengths and the wider UK and international context.

To support the sectoral review, Deloitte conducted independent analysis on the location quotient (LQ) levels for the local authorities across the Western Gateway. Utilising ONS labour force data by SIC code, the relative specialisms and sectoral strengths for each Partner body were analysed. While presenting an indicative picture of the subsector strengths, given the specialist nature of the identified sectors of strength, and the lack of direct mapping to SIC sectors, the analysis, summarised in Appendix 5, is only indicative and not exhaustive. Further independent analysis was conducted to identify the 'size of the prize' of improving productivity in the Western Gateway in line with the wider UK to frame the vision for interventions (Appendix 3).

Deloitte also completed a series of interviews with regional development and sector experts which provided greater context and additional evidence to complement the literature review. By taking a range of views from across the area and the leading sectors of interest, Deloitte explored the key barriers and opportunities present in the sectors, providing greater substance and an on the ground perspective to the developing findings. Finally, these emerging findings were tested and developed iteratively through two workshop engagements with Partners. Additionally, by analysing the projects already in place, the findings were refined and honed, identifying where the Partnership could add value and amplify initiatives already in place, thereby maximising impact for the region.

The purpose of the IER2 was not to test and re-examine the analysis and evidence already collated by the Western Gateway and its Partners,¹³⁵ but rather to provide a more detailed and consolidated view on the leading sectors as a basis for the development, in conjunction with the Partnership, of WGP strategy, enabling decision-making on clear steps towards the Partnership mission. Furthermore, given the new establishment of the Partnership and the fact that it spans across multiple regional and national boundaries, there is currently a lack of regionally aggregated evidence for the sectors. Best attempts to mitigate this were made, but this lack of a full evidence base is a key limitation of the research and the rationale for the data and monitoring initiative discussed in Section 4.

Testing and validating

Thirdly, we validated the emerging findings and themes through a workshop with WGP Partners' project officers. The emerging findings and themes were discussed and refined, with the addition of Net Zero as a stand-alone theme, and branding/external focus to help attract investment and potential customers to the region. Attendees further discussed potential intervention options to develop example 'workpackages'. Results of this are summarised in Appendix 6 and Appendix 7.

Prioritisation and Roadmap formulation

The final phase involved the articulation of the strategy and discussion of delivery priorities through a workshop with WGP Partner leaders, culminating in a delivery roadmap. This is described in the strategy section of this report in more detail (see Appendix 6).

¹³⁵ Western Gateway Partners refers to the local authorities, combined authorities and LEPs that make up the Western Gateway Partnership

Appendix 2 Sector Deep Dives

Appendix 2.1 Advanced Manufacturing & Engineering

Sector Baseline and Footprint

Manufacturing is the largest sector in the Western Gateway and employs a greater percentage of the population than anywhere else in the country. The area has a competitive advantage in advanced and high-technology manufacturing¹³⁶, defined as manufacturing that is 'intensive in its use of capital and knowledge and requires a high level of technology utilisation and Research and Development'.¹³⁷ Deloitte's location quotient analysis (Appendix 5) indicates that the area has particular specialisms in:

- Aerospace
- Automobiles
- Computer products
- Electrical equipment (incl. telecoms)
- Weapons and ammunition
- Pharmaceuticals

Strength identification

Given the broad definition of advanced manufacturing and the significant differentials between various sub-sectors, the requirements for each sub-sector will differ. However, there are a number of broad requirements for advanced manufacturing firms to develop and grow.

Clusters in advanced manufacturing are often built around a centre of academic excellence and/or an industry leader in R&D.¹³⁸ These institutions are able to provide the required leadership and investment into R&D to attract investment, skilled labour, and further specialist companies and create the required environment to start building a successful ecosystem.

Factor Conditions

Outside of its relatively highly skilled and educated workforce, the Western Gateway has a number of clear factor condition advantages across a number of advanced manufacturing sub-sectors and localities. Of particular note, the area has positioned itself as a specialist in the design and implementation of complex engineering systems by the presence of large players and strong research institutions. The ability to create and implement these systems is integral to preparing economies for a host of future scenarios, from driving industry 4.0 to addressing the requirements for the Net Zero transition. Leveraging the area's expertise in complex systems, data, digital tech, and communications (such as 5G) will allow it to remain globally competitive as the ideas workshop for the next generation of industry.¹³⁹

The area is home to a large number of successful, globally competitive, and R&D driven core businesses and employers. These include Airbus, Thales, and Rolls Royce, to name a few. Furthermore, it is home to a number of nationally leading research centres and technology institutes. These include the Institutes of Technology in Swindon, West of England Institute Technology, the Centre for Advanced Simulation and Modelling, Digital and Engineering Technology and Innovation centre, Global Technology and Aerospace centre, the Centre for Advanced Manufacturing in Cardiff and the National Composite Centre. All these facilities provide links between key R&D players and core businesses, as well as providing required infrastructure for R&D development and commercialisation. The evidence points to clear regional strengths in the aerospace, computers, and systems design manufacturing and engineering.

¹³⁶ Oxford Economics, 2021. Western Gateway Economic Position Statement

¹³⁷ ONS definition: manufacture of chemicals and chemical products; manufacture of basic pharmaceutical products and pharmaceutical preparations; manufacture of weapons and ammunition; manufacture of computer, electronic and optical products; manufacture of electrical equipment; manufacture of machinery and equipment not elsewhere classified (N.E.C.); manufacture of motor vehicles, trailers and semi-trailers; manufacture of railway locomotives and rolling stock; manufacture of air and spacecraft and related machinery; manufacture of military fighting vehicles; manufacture of transport equipment n.e.c; manufacture of medical and dental instruments and supplies; research and experimental development on natural sciences and engineering.

¹³⁸ Toronto Board of trend & KPMG, 2012. Advanced Manufacturing Cluster: Background Material

¹³⁹ Interviews with sector experts

Driving the area's strengths in computers and electronics manufacturing and engineering is its internationally leading research and development of compound semiconductors. Anchored by the new IQE foundry in Newport, and supported by the Compound Semiconductors Applications Catapult, this sector is developing and producing the next generation of crucial digital components.

The area is also the UK's hub of aerospace manufacturing, with 14 of the world's 15 major aerospace giants based in the South West of England. This represents a significant and globally competitive presence of skills, expertise, and infrastructure to deliver in this high-growth and high-value sector. However, the sector has been hit considerably hard by the coronavirus pandemic and it remains to be seen how well it will recover.

The area is home to several well-regarded and leading research-driven universities that have a wide array of specialisms in the advanced manufacturing sector. However, nationally, there is a skills shortage in the advanced manufacturing sector, with an acute shortage of available and applicable digital skills.¹⁴⁰

Supporting Industries

One of the difficulties that the sector faces is the lack of developed regional supply chains associated with the advanced manufacturing sector, increasing supply-chain leakages and reducing the positive spillovers resulting from the key assets and businesses in the region.¹⁴¹ Given the IP and high security surrounding a number of the sub-sectors and the international nature of their supply chains, the area has focused on the assembly and systems engineering of the value-chain, rather than the manufacturing of the components.¹⁴² As a result, there are weak upstream linkages from some of the large and specialised firms located in the WG and therefore a lack of supporting SMEs in the region. Improving the availability and suitability of suppliers in the area would share the benefits of this high-growth, high-productivity sector, improving productivity through increased business linkages. This could involve engaging with large manufacturers to identify areas where supply chains could be developed locally or re-shored and how to retool and retrain local businesses and workforces.

With the upwards trend of digitisation and certification of advanced manufacturing products offered by advanced manufacturing firms, there is a growing need to support digital and tech industries.¹⁴³ In order to continue developing this sector across the Western Gateway, there needs to be a strong digital, tech, and cyber presence in the area to support and develop this digitisation. Fortunately, this plays into some of the Western Gateway's other strengths in tech, cyber, and digital industries. Ensuring that there is successful engagements and links between these sectors is integral in supporting and promoting the development of these sectors.

Strategy, Rivalry, and Collaboration

The high-density of large and world-leading research intensive players has enabled the area to become a specialist in the design and engineering aspect of the sector, with the area widely considered to be the 'ideas factory' of the UK.¹⁴⁴ Fostering a strong sense of research collaboration, an impressive systems thinking, provides a major source of strength for the region. However, as previously mentioned, the lack of mid-sized firms presents a major challenge for smaller innovative firms looking to scale-up, leading to major leakages in the area's supply chains.

While there are significant collaboration links between larger firms and the area's research base, the area would benefit from expanding these links to include smaller firms. This includes ensuring access to the area's world-leading, but often expensive, research facilities.¹⁴⁵

Appendix 2.2 Cyber

Sector Baseline and Footprint

The UK has one of the most developed cyber sectors in the world.¹⁴⁶ With the number of employees and GVA of the sector having increased by 9% to 46,683 and 6% to £4bn respectively in the last year, the sector is experiencing rapid growth despite the Covid pandemic.¹⁴⁷ In the Western Gateway, the sector's main locations are centred in Cheltenham, which is the largest cyber sector cluster

¹⁴⁰ Interviews with sector experts

¹⁴¹ Oxford Economics, 2021. Western Gateway Economic Position Statement

¹⁴² Interviews

¹⁴³ Oxford Economics, 2021. Western Gateway Economic Position Statement

¹⁴⁴ Interviews

¹⁴⁵ Interviews

¹⁴⁶ The activities of the cyber sector are defined by DCMS as: *"The protection of internet connected systems (to include hardware, software and associated infrastructure), the data on them, and the services they provide, from unauthorised access, harm or misuse. This includes harm caused intentionally by the operator of the system, or accidentally, as a result of failing to follow security procedures or being manipulated into doing so."*, National Cyber Security Strategy, DCMS 2015

¹⁴⁷ Ipsos Mori, CSIT & Perspective Economics, 2021. UK Cyber Security Sectoral Analysis 2021

outside of London, and South Wales. There are further clusters located in Tewksbury and the wider Gloucester area, as well as a significant cluster in Bristol.

As the economy becomes ever more digitally interconnected, the needs and demand for the cyber security sector is set to grow. The UK is positioned as one of the international sector leaders in this transformative and highly productive sector. Utilising its core national assets, entrepreneurial base, and high R&D profile, the Western Gateway could build on its status as a research and commercial base in cyber.

Cyber is vital in underpinning the success and security of emerging digital, tech, and advanced sectors. It is a highly productive sector, with average GVA per employee of £77,800 in Gloucestershire.¹⁴⁸ With significant spillovers, the sector could provide valuable productivity and skills boost to other interconnected sectors. The sector has also remained largely unscathed by the pandemic, offering continued opportunity for growth and economic recovery after the Covid-19 pandemic.

Strength identification

The location and development of cyber firms and cyber clusters can be driven by a number of factors:¹⁴⁹

- Proximity to specialist universities, large companies, and funding and research organisations
- The availability and quality of cyber security talent
- Locations of key customer industries
- Development and proximity to new, cyber-reliant, industries and technologies

Clusters also require good digital connectivity and strong cultural or well-being factors to entice and retain mobile and highly in-demand cyber talent.

Factor Conditions

The primary drivers of the Western Gateway's strength in the cyber sector relies on the area's core national assets, strong academic performance, commercialisation, and the location of market leaders in cyber security R&D.

The biggest of these drivers is the presence of GCHQ in Cheltenham and the subsequently developed critical mass of assets and clusters surrounding it. GCHQ, alongside the NCSC Cyber Accelerator, act as significant magnet for both talent and firms to locate in the Cheltenham and wider Gloucestershire area. The resulting density of cyber firms in Cheltenham and wider Gloucestershire is 11 and 6 times greater than that of the rest of the UK respectively, making the area the most specialised cyber economy in the country.¹⁵⁰

A number of universities and colleges located in the area have developed specialisms and expertise in the cyber sector. Two of these universities, Cardiff and Bristol, are amongst the nineteen universities nationally designated as academic centres of excellence in cyber security by the NCSC. Furthermore, Bristol and Bath Universities house one of only three NCSC centres for doctoral training in cyber security.¹⁵¹

Academic expertise is supported by considerable R&D spend and commercialisation of innovation within the area and is driven by a number of nationally important public-private innovation hubs. In South Wales, Thales and Airbus have specialist cyber innovation labs in Partnership with the Welsh Government and Cardiff University. 1/3 of all the UK's recent cyber patents are filed in the Western Gateway and R&D spend in the area is growing twice the national rate.^{152,153}

However, with three out of every five cyber businesses nationally reporting a lack of suitable candidates with the required cyber security skills, access to talent is the most significant barrier to growth for the sector.¹⁵⁴ The issue is particularly pronounced in the Western Gateway, with firms reporting difficulties in combatting the attractiveness of London and the South East in attracting talent, limiting the potential for recruitment and the talent pool. With demand for talent outstripping supply, labour costs are high and could act as a barrier to entry for start-ups or expansion across the Western Gateway.¹⁵⁵

¹⁴⁸ Hatch Regeneris, 2020. Gloucestershire Cyber and Digital Sector Impact Study

¹⁴⁹ DCMS & RSM, 2018. UK Cyber Security Sectoral Analysis and Deep-Dive Review

¹⁵⁰ Hatch Regeneris, 2020. Gloucestershire Cyber and Digital Sector Impact Study

¹⁵¹ National Cyber Security Centre, 2020. Developing Our Capability in Cyber Security

¹⁵² Western Gateway, 2021. Western Gateway Cyber and Digital Opportunities

¹⁵³ RSM, 2018. Cyber Resilience Alliance

¹⁵⁴ Ipsos Mori & Perspective Economics, 2020. UK Cyber Security Sectoral Analysis 2020

¹⁵⁵ Ipsos Mori & Perspective Economics, 2020. UK Cyber Security Sectoral Analysis 2020

Continuing to improve the attractiveness of the core clusters to both talent and firms is necessary for the sector to maintain its growth potential in the Western Gateway. Due to the highly mobile nature of talent and firms, this requires improvements to the liveability, attractiveness, and competitiveness of its clusters and the area as a whole.

Supporting Industries

Cyber is an emerging sector with close links and crossovers between the digital and technology sectors. As an increasingly important foundation for the advancing digital economy, cyber firms and clusters often develop around consumer industries, such as financial services, defence providers, and digital services. Proximity to these industries enables collaboration when developing or delivering a product.¹⁵⁶ With a large defence and advanced manufacturing presence and developing creative, tech, and fintech clusters, there are ample consumer industries to grow the Western Gateway's cyber sector.

More crucially, there is a need for support and links with prominent research institutions, with all the UK's identified cyber clusters located within close proximity to an Academic Centre of Excellence in Cyber Security Research (ACE-CSRs). As previously discussed, with access to two ACE-CSRs and further research institutions from the NCSC and GCHQ, the area is well placed to continue to benefit from its research capabilities.

Demand Conditions

Recent years have seen an increase in the demand for the amount and quality of cyber security products. Driven by increased awareness of the risks of cyber security and regulatory requirements for increased protections, such as under the GDPR regulations, demand for cyber security products is expected to increase rapidly both domestically and internationally.

Demand for cyber security in the area is driven by the presence and investment of large public sector institutions and established private sector players. On the public sector side, the location of GCHQ is the primary driver, while there are established presences by Thales, Airbus, Raytheon, and others, which all provide a significant demand ecosystem around which to build the sector's presence.

With UK cyber exports increasing by 90% from 2018 to nearly £4 billion internationally, the demand for cyber products are growing and is expected to continue growing at pace. Increasingly, exports and the investment of (largely American) foreign cyber companies have driven the large-scale increases in revenue and growth in the cyber sector. If the Western Gateway and wider UK continue to present itself as a global leader, particularly in the development of new technologies, then this presents itself as a significant opportunity to drive export revenues and attract FDI.¹⁵⁷

To continue to capitalise on this rapidly expanding market, the Western Gateway must maintain strong access to R&D and continue to push itself as a technological leader in the sector. This involves maintaining and improving its innovation links and attractiveness to top talent.

Strategy, Rivalry, and Collaboration

While the majority of employees and value in the sector is dominated by large firms, the number of cyber firms nationally has increased rapidly in recent years. However, with recent increases in investments and acquisitions, there is an opportunity for the market to consolidate.¹⁵⁸

Nationally, the cyber sector has been identified as a key sector for Government support, with the Government committing to two centres of excellence and a cyber security export strategy.¹⁵⁹ Regionally, cyber is a priority sector for three of the Western Gateway's Partners (GFirst LEP, Swindon & Wiltshire LEP, and Cardiff Capital Region) and the WG houses two pan regional projects, Cyber Resilience Alliance and Cyber Wales. Across the region, there are three developments for cyber centres of excellence: Cyber Central in Cheltenham, a business-led cyber centre in Swindon and Wiltshire, and the development of an R&D-focused Cyber Innovation Hub in Cardiff. These programmes present significant opportunities for the sector to develop scale in the region, but duplication or dilution of the Western Gateway's offering needs to be avoided.

Growth Priorities

To ensure the sector continues to remain competitive and holds its advantageous position in the sector, the WG must be able to continue to convince both talent and companies that the area is the right location in which to flourish. To do this, the WG needs to continue capitalising on its research and commercialisation strengths by promoting the presence of its internationally competitive

¹⁵⁶ DCMS & RSM, 2018. UK Cyber Security Sectoral Analysis and Deep-Dive Review

¹⁵⁷ Department for International Trade, 2020. UK Defence and Security Exports Statistics for 2019

¹⁵⁸ Ipsos Mori & Perspective Economics, 2020. UK Cyber Security Sectoral Analysis 2020

¹⁵⁹ Department for International Trade, 2018. Cyber Security Export Strategy

institutions. It must ensure that the biggest constraint facing expanding companies, the lack of skills, is addressed as comprehensively as possible. Due to the highly competitive market for talent, the core clusters in the area must ensure that they are attractive and vibrant places to live, offering a full ecosystem in which to live, work, and collaborate. Finally, the WG needs to ensure that there are strong human networks between firms, academic institutions, and consumers of cyber to ensure that businesses in the area could continue to design and build the next generation of cyber security products underpinning the next generation of digital and industrial applications.

Appendix 2.3 Green Energy

Sector Baseline and Footprint

As the first major economy to pass a Net Zero emissions law and a target to get greenhouse gas emissions to Net Zero by 2050, green energy and the shift to Net Zero has become a transformational priority for the UK. Ensuring that the area capitalises on its natural green energy potential and significant research endowment will enable the WG to support this transition both locally, domestically, and internationally.

Strength identification

Factor Conditions

The Western Gateway has significant natural assets in solar, tidal, marine, and wind for green energy development. Its tidal assets, in particular, are world class, with the Bristol channel having the second highest tidal range in the world. Bristol has become a research hub for tidal technology development, while Swansea Bay has been identified as the best potential location for a tidal lagoon pilot (pathfinder) project.^{160,161} However, while there are advantages in tidal energy, the industry is still nascent, and the feasibility and commercialisation of large-scale tidal projects has yet to be proven.

The area has a further speciality and advantage in nuclear power generation, with Hinkley Point C just over the border in Somerset the largest of the UK's next proposed generation of power plants and the only one under construction. The Western Gateway also has a further potential nuclear power plant site near Oldbury.¹⁶² Furthermore, there are sites of nuclear research capability in the area with a strong mix of supply-chain companies and required expertise.¹⁶³ There is also a growing strength in the research and development of hydrogen fuel, with the area boasting a significant corridor of expertise and specialism along the M4 corridor from Cardiff to the developing hydrogen hub in Swindon.¹⁶⁴

The Western Gateway has further advantages in the design and development of smart systems, which are vital in the design of new renewables-based energy systems.¹⁶⁵ This is exemplified by Bristol's status as the UK's leader in the Smart City Index and further strengthened by its smart city strategy,¹⁶⁶ as well as the research capabilities provided by the regions' universities.

Supporting Industries

There are strong linkages and support from the area's strengths in advance manufacturing and engineering, in particular with the strong presence of a large number of high precision manufacturing companies and the strength in systems building and design.¹⁶⁷ In particular, the ability to design and implement large scale energy and distribution networks is seen as a key strength and requirement in supporting the region, wider UK, and international customers to develop robust energy networks in the move towards Net Zero.¹⁶⁸

Demand Conditions

Given the UK's and area's commitment to Net Zero by 2050, renewable energy demand is expected to double by 2035 (from 2018 levels)¹⁶⁹ and the supply of green energy solutions is set to rise significantly in the next few years.

The Western Gateway is advantageously located near the core demand centre of SE England and is much closer than the other major sources of renewable energy, primarily located in the North of England. However, there is currently not the required infrastructure to

¹⁶⁰ BEIS, 2019. South West England and South East Wales Science and Innovation Audit – Annex H: New Energy Systems Theme Report

¹⁶¹ Charles Hendry, 2016. The Role of Tidal Lagoons

¹⁶² World Nuclear, 2021. Nuclear Power in the United Kingdom

¹⁶³ BEIS, 2019. South West England and South East Wales Science and Innovation Audit – Annex H: New Energy Systems Theme Report

¹⁶⁴ South West England and South East Wales Science and Innovation Audit – Annex H: New Energy Systems Theme Report, BEIS 2019

¹⁶⁵ Interviews with sector experts

¹⁶⁶ Connecting Bristol, Bristol City Council August 2019

¹⁶⁷ BEIS, 2019. South West England and South East Wales Science and Innovation Audit – Annex H: New Energy Systems Theme Report

¹⁶⁸ Interviews with sector experts

¹⁶⁹ BEIS, 2019. Updated energy and Emissions Project sections 2018

transport large scale energy from the Western Gateway to the South East and significant improvements to electricity transmission capabilities would be required to tap into this demand.

Strategy, Rivalry, and Collaboration

There are defined strategies for the development of green energy as part of local and national strategies, such as HMG's 'The Clean Growth Strategy'. However, developing the area's nascent green energy technologies into viable power alternatives, and integrating them into the energy system, will require significant collaboration between research institutions, industry leaders, and systems developers. The South West England and South East Science and Innovation Audit, as well as discussions with sector experts, highlighted a current lack of leadership or collaboration, which is required at the regional level to support the Western Gateway's green energy ambitions.

Growth Priorities

Supporting the area's green energy transition requires both investment in the development of green energy production and the changes to the existing energy infrastructure. Whilst a full list of requirements for the energy transition is beyond the scope of this report, there are several potential priority interventions to support this transition and position the Western Gateway as a market leader. The area must continue to support and foster innovation in its green energy strengths in tidal and hydrogen to enable their development to a viable commercial scale.

To enable the area to capitalise on its natural and research endowments, there is a need for a clear regional strategy to support the development of green energy and a greater collaboration between research clusters. The Western Gateway should leverage its strengths in the design of advanced systems, outlined in the AM&E section, to ensure green energy systems could be integrated into the next generation of smart power systems.

Appendix 2.4 Fintech

Sector Baseline and Footprint

With sector revenues of £11 billion, comprising 10% of the total global market share, the UK is a world leader in fintech. The sector employs 76,500 people nationally and this number expected to increase to 105,500 by 2030 becoming a cornerstone of the modern financial sector.¹⁷⁰ In the Western Gateway, the sector is built around the area's strong financial, professional services, and tech presence with nationally emerging clusters in Bristol and Cardiff.¹⁷¹

Strength Identification

To flourish, the fintech sector requires access to an ecosystem of talent, investment capital, supportive policy, and demand for fintech services.¹⁷² At a local level, the development of successful fintech clusters would support the growth of the sector by enabling participants to grow faster, innovate quicker, employ more workers, and pay higher salaries. The core requirements for high fintech clusters are:¹⁷³

- Proximity to financial services and technology expertise
- Proximity to academia
- Proximity to accelerators and investment

Recent analysis suggests that, in order for a high-growth cluster to form, an area must be based around three strong universities producing highly skilled STEM graduates, offer a large supply of financial services and technology professionals, and have a presence of at least 3 fintech accelerators. Together, these conditions provide the necessary expertise, skills, and investment opportunities for a thriving fintech cluster to develop.

Factor Conditions

The Western Gateway is home to two of the ten identified developed and emerging fintech clusters in the UK, in Bristol and South Wales. Each cluster specialises in different subsectors, with the South Wales cluster specialising in banking, lending, and payments

¹⁷⁰ Department for International Trade, HM Treasury, and Innovate Finance, 2019. UK FinTech State of the Nation,

¹⁷¹ City of London & Innovate Finance, 2021. Kalifa Review of UK Fintech

¹⁷² EY, 2015. UK Fintech On the Cutting Edge

¹⁷³ City of London & Innovate Finance, 2021. Kalifa Review of UK Fintech

fintech, while Bristol focuses on business banking and InsureTech. Both clusters contain the necessary requirements to develop into thriving fintech clusters.¹⁷⁴

Both clusters build on the available talent located in their sub-region, provided by the established financial and professional services and tech clusters. There are a number of successful investment and catapult schemes supporting the developing fintech clusters, with Bristol being one of the only cities in the UK to have a dedicated fintech accelerator programme.¹⁷⁵

Lack of skills, both technical and softer skills/leadership, is a major barrier to the growth of the sector nationally and within the Western Gateway.¹⁷⁶ There needs to be an improvement in the ability of the area's clusters to attract senior management and talent in the designated sub-sectors and match them with the required STEM and tech capabilities to support fintech. There is a requirement for the education and training being offered by higher education institutions to be linked to skills requirements in industry. An example of this is the specialist fintech MSc run by the University of West England, which was developed in consultation with the local fintech community and provides practical education tailored to the sector.¹⁷⁷

With over 90% of fintech investment in the UK flowing via London,¹⁷⁸ discussions with sector experts highlighted concerns that, despite the strong professional and financial services and digital and technology presences across the Western Gateway, the area is not able to attract the required financial and expertise investments into the fintech sector. Sector experts suggested there is a lack of awareness of the sector and a lack of clear regional networks and leadership to attract and engage investment and leadership talent into the clusters.

Supporting Industries

Fintech is heavily linked to the digital and creative, technology, cyber, and wider financial services sectors. The Western Gateway performs well in these industries and the two emerging clusters are located where there is already a significant and developing presence in these supporting sectors. Furthermore, Bristol is only one of two UK cities outside of London to feature in the top-10 clusters for both financial services and high-tech.

Strategy, Rivalry, and Collaboration

Given the enormous potential and disruptive nature of fintech, the sector is becoming increasingly competitive globally as other countries and regions support and further their own offering, threatening the UK's position as a dominant force.¹⁷⁹ At a national level, there are a large number of competing pan-regional and national bodies aiming to attract talent, invest and champion localities. Given the dynamism and high mobility of the sector, previous strengths do not guarantee future success and the Western Gateway must continue to play to its emerging strengths to remain competitive.

From discussions with sector experts, one weakness of the sector, but potential strength for the Western Gateway, is in regional leadership. Across England, including the Western Gateway, there are a large number of competing bodies claiming to represent the interests of the fintech sector. However, there are concerns around the structure of these bodies, and therefore their ability to deliver. The development of a clear leadership body representing the fintech sector at a pan Western Gateway level could help develop and navigate the various government and regulatory bodies to further the sector in the region. Examples of successful initiatives are the Fintech Scotland and Fintech Wales supporting bodies.

Demand Conditions

With comparatively high SME and consumer adoption and strong support from financial institutions, demand for fintech in the UK is high by international standards. The UK has a strong and competitive fintech demand environment and represents over 10% of the global fintech market.¹⁸⁰ However, the gravitational focus for the demand is located in London, which is a national and international demand hub, and consumer demand in UK regions outside London is significantly lower. A combination of smaller consumer and institutional presence and lower consumer take-up outside of London reduces the local demand benefits for fintech in the Western Gateway. Therefore, increased connectivity between the developing clusters and the supercluster in London are vital to improving the demand conditions for fintech in the Western Gateway.

¹⁷⁴ City of London & Innovate Finance, 2021. Kalifa Review of UK Fintech,

¹⁷⁵ Whitecap Consulting, 2020. Bristol & Bath Fintech Ecosystem Report 2019-2020

¹⁷⁶ Interviews with sector experts

¹⁷⁷ Whitecap Consulting, 2020. Bristol & Bath Fintech Ecosystem Report 2019-2020

¹⁷⁸ Innovate Finance UK

¹⁷⁹ EY, 2020. UK FinTech: Moving mountains and moving mainstream

¹⁸⁰ City of London & Innovate Finance, 2021. Kalifa Review of UK Fintech

The UK Government has made fintech a national and strategic priority. High levels of accessibility and support from the Financial Conduct Authority (FCA), effective tax incentives, and numerous government programmes designed to promote competition and innovation, which indirectly support fintech firms (e.g. Open API and Mandatory Referrals), create an internationally competitive regulatory policy. This is further supported by the country's reputation and access to markets in financial services.¹⁸¹

Growth Priorities

Despite a strong asset base and significant potential, there is an apparent lack of clear local leadership and direction for the Western Gateway's fintech sector. The body could provide signposting and simplification of the various local support initiatives available. Furthermore, it could engage with supporting industries and provide a figurehead for attracting investment to the region.

The sector faces a shortage of digital and leadership skills.¹⁸² Ensuring adequate links between further education providers and developing networks to support leadership talent pipelines would support the continued growth of the sector in the region.

Access to investment is another key barrier to growth, with only 6% of fintech firms surveyed by KPMG reporting a profit in 2020, meaning access to finance for the development of fintechs is a priority.¹⁸³ Increasing the availability and awareness of both publicly available funds and supporting private-led developments will help support the growth of the sector, especially as it recovers from the Covid pandemic.¹⁸⁴ At a national level, there are a large number of competing pan-regional and national bodies aiming to attract talent and investment, as well as champion localities. Given the dynamism and high mobility of the sector, previous strengths do not guarantee future success and the Western Gateway must continue to play on its emerging strengths to remain competitive.

Appendix 2.5 Creative Industries

Sector Baseline and Footprint

The WG is home to a strong creative industries sector, housing 4 out of the UK's 47 identified creative clusters in Bath, Bristol, Cardiff, and Cheltenham.¹⁸⁵ The sector is defined as "industries which have their origin in individual creativity, skill and talent which have a potential for wealth and job creation through the generation and exploitation of intellectual property".¹⁸⁶ It covers a broad range of groupings, including advertising and marketing, architecture, crafts, design, film, tv, video, radio and photography, IT, software and computer services, publishing, museums, galleries and libraries, and music, performing and visual arts.¹⁸⁷

With annual growth, pre-Covid, of over 7% per annum, five times that of the wider economy, it is one of the fastest growing sectors in the UK economy.¹⁸⁸ Outside of the developed clusters, further analysis identified 16 micro-clusters (i.e. clusters occurring in small aggregations, such as streets or neighbourhoods) across the WG.¹⁸⁹

Location quotient analysis of ONS employment data indicates that there are competitive advantages in the following creative and digital media sub-sectors in the following local authorities:

- Publishing: Stroud, Cheltenham, Bristol, Bath
- Television, film, and music publishing: Cardiff, Bristol
- Advertising and marketing: Cheltenham, Cotswold, Bristol

Strength Identification

As creative industries are characterised by large numbers of micro and SME businesses and a high number of self-employed workers, there is a large incentive for these to locate where job prospects are high – i.e. in dense clusters in densely populated areas,¹⁹⁰ a trend which is only set to increase.¹⁹¹ The clusters require a number of key infrastructure requirements to drive success. These are:

- Access to mixed creative spaces and centres to bring creative firms together
- Access to shared R&D, talent pools, and infrastructure

¹⁸¹ EY, 2015. UK Fintech On the Cutting Edge

¹⁸² Sector interviews

¹⁸³ PWC 2020, Fintech Focus

¹⁸⁴ PWC 2020, Fintech Focus

¹⁸⁵ Nesta, 2016. The Geography of Creativity in the UK

¹⁸⁶ HMG 2001. Creative Industries Mapping Document

¹⁸⁷ DCMS, 2016. Creative Industries Economic Estimates

¹⁸⁸ UK's Creative Industries contributes almost £13 million to the UK economy every hour, DCMS 6th February 2020

¹⁸⁹ A microcluster is defined as a cluster with at least 50 creative industry firms

¹⁹⁰ Guidant Group, 2017. The UK Digital and Creative Sector Talent Insight Report

¹⁹¹ Nesta, 2018. Creative Nation – How the creative industries are powering the UK's nations and regions

- Digital and physical connectivity to other clusters, enabling sectors to accumulate economic mass.

Furthermore, creative industry companies often co-locate in clusters in proximity to other enabling sectors, particularly high-tech and business services, and require connectivity to integral firms, business partners, and finance.

Within the Western Gateway, sources of particular strength are the presence of suitable factor conditions, in particular existing specialist capital stock, access to natural beauty and strong R&D, as well as existing clusters which provide suitable workspaces and the ability to pool resources.

Factor Conditions

The sector has two clear strengths anchored around Bristol as a globally significant creative cluster and Cardiff as a rapidly developing and nationally important film and TV production location. Their strengths are built around nationally and internationally important production assets and workspaces, granting access to cutting edge facilities and workspaces. There are further identified and developing clusters in Swindon and Wiltshire through the development of new film studios to support the growth of the sector there.¹⁹²

Bristol's success is based on key institutions such as BBC Natural History, Channel 4 creative centre, as well as access to co-working spaces and shared creative hubs and cultural organisations. As the home of BBC Wales, Cardiff has a history as a nationally important film and TV production cluster and recent access to developed and specialised television and film production studios. The presence of nationally important media houses and publishers acts as an anchor for attracting talent, investment, and supply chains.

Furthermore, the Western Gateway boasts strong, and improving, R&D links for the sector. Home to two of the UK's nine Creative Industries Research Clusters in Cardiff and Bristol, the area could facilitate greater collaboration and innovation between academia and enterprises in the sector. By fostering greater innovation and collaboration, the two largest clusters could increase their competitive advantage and improve productivity for firms in the area, helping to achieve innovation ambition across the Western Gateway.

Nationally, the sector faces a skills shortage. This is driven by lack of proficiency in individual software or applications rather than specific qualifications.¹⁹³ While there is no clear consensus on the skills gap, or size of the gap, of the creative industries in the Western Gateway, it is assumed to be significant given the difficulty in attracting talent away from London and the South East.¹⁹⁴ Understanding the size of the skills gap regionally would be the first logical step in reducing the skills shortage in creative industries in the Western Gateway and could potentially build on the work done by WECA and Skills West in this task. Expanding on this, there could be greater coordination between job providers, industry bodies, and skills providers (again, building on the work designed and implemented by Skills West) to ensure that training programmes help solve the skills shortage. Pooling resources and coordinating across wider jobs and talent catchment areas could increase both the provision, success, and outcomes of employer led training services. Furthermore, with one of the key challenges in the sector being attracting and retaining senior talent,¹⁹⁵ a clearer focus on how to attract, retain, and develop the next level of senior leaders is vital for the Western Gateway.

Supporting Industries

Proximity to supporting sectors has enabled the development of the established clusters in Cardiff and Bristol. The Cheltenham cluster has developed around the significant cyber and tech sectors, whilst the Bath cluster is supported by its close proximity and connectivity to Bristol.

Furthermore, as one of only two cities outside London to feature as a top 10 cluster for both the creative industries and high-tech sectors, Bristol is able to combine significant crossovers between creativity and technology, as well as potential access to financial business partners in its established fintech sector.¹⁹⁶

Demand Conditions

With the sector growing at five times the rate of the wider UK economy, and exports increasing by over 44% between 2010 and 2016,¹⁹⁷ the sector is benefiting from an increasing demand, both nationally and internationally.

¹⁹² Swindon and Wiltshire Local Enterprise Partnership, 2020. Swindon and Wiltshire Local Industrial Strategy 2020-2036.

¹⁹³ Digital and Creative Industries Deep Dive, Greater Manchester Combined Authority 2016

¹⁹⁴ Guidant Group, 2017. The UK Digital and Creative Sector Talent Insight Report

¹⁹⁵ Creative Industries PEC, 2020. Workplace Perspective: skill needs, mismatches and development in the Creative Industries

¹⁹⁶ West of England LEP, 2018. West of England Industrial Strategy

¹⁹⁷ DCMS, 2017. Creative Industries Sector Deal

The establishment of large media consumers, in the form of national networks and consumer organisations, in both Bristol and Cardiff provide significant agglomerated demand. By anchoring consistent and high-quality demand, they facilitate the development of creative ecosystems. However, the industry is dominated by London and the South East, which together account for 69% of GVA in the sector.¹⁹⁸ Improving connectivity and cooperation between established clusters would help the area to compete against London and the South East and other clusters across the UK for talent, investment, and demand.

The sector is a major source of growth for UK exports, with exports valued at £46bn in 2017 and experiencing significant year-on-year growth.¹⁹⁹ Creative industry businesses inside the Western Gateway could capitalise on this export boom as demand for UK PLC creative products increases around the world.

Strategy, Rivalry, and Collaboration

Creative clusters are characterised by large numbers of micro and SME businesses with a high number of self-employed workers. These firms compete and collaborate with each other for opportunities to supply to larger, established firms. While this creates a highly competitive industry, these small and micro firms struggle to access the funds necessary to invest in infrastructure or skills training necessary for advancements in the sector. There is, therefore, a requirement for government or coordinating bodies to help coordinate and support seed and scale up investment in the sector, as will be discussed later in this appendix.²⁰⁰

While creative industry firms are more productive than comparable businesses in regional economies, there is a major barrier to further growth. 95% of creative industry firms are microbusinesses. Research by Nesta highlights that once a creative firm has reached a scale of more than 10 employees, the firm is able to increase productivity; when controlling for size, creative firms with more than 10 employees have a median GVA of £58,000 vs £46,000 for firms with fewer than 10 employees. This effect is compounded when the firms are located in regional clusters or hubs.²⁰¹ Therefore, support should focus on increasing the ability for micro firms to reach scale.

Due to their small size, there is a large incentive for these small and micro firms to be located where job prospects are high, namely in dense clusters around large customers.²⁰² Therefore, while Bristol and Cardiff present large and relatively agglomerated clusters, they are dwarfed in comparison to London and the South East. This lack of size relative to London and the South East limits the ability to attract talent, further compounding the skills shortage discussed previously, as the area struggles to compete to attract a largely young and mobile workforce. Greater connectivity and collaboration between the four clusters in the Western Gateway would help to pool firms and demand together, improving the attractiveness of the clusters and the area as a whole.

Furthermore, due to the prevalence of microclusters formation outside of larger cities,²⁰³ support for microclusters development presents a unique opportunity as a driver of growth outside of the WG's core city regions. Already, there are 16 identified microclusters outside of the five established clusters. Building on these could enable growth and access to jobs in less developed and more deprived areas, supporting inclusive growth across the Western Gateway.

Government support has been strong for the sector, both in the area and nationally. In Cardiff, since the inception of the Creative Industries Sector Panel in 2010, the city's media sector has positioned itself as an internationally attractive hub, attracting significant investment in prime infrastructure projects, such as the Pinewood and Wolf Studios Wales and over £100 million in FDI into the region. This has led to strong growth in the sector, with 34% of all media job growth in the UK occurring in the Cardiff Capital Area between 2016 to 2020.²⁰⁴ Nationally, the UK Government has placed the creative industries as a national priority for attracting both inward investment and driving exports through its Creative Sectors Deal. The Creative Industries Trade and Investment Board has been set-up with the ambition of growing exports in the sector by 50% from 2018-2023.²⁰⁵

Growth Priorities

The propensity for creative industries to form clusters, and the productivity and agglomeration benefits these realise, suggests that the focus of the Western Gateway should be on prioritising growth in the established clusters across the region. In particular, the Western Gateway should leverage the sector strength and strong demand conditions found in Cardiff and Bristol. Furthermore, by improving connectivity between, firstly, these two clusters, and secondly, the clusters in Cheltenham and Bath, the area could connect the clusters and increase agglomeration.

¹⁹⁸ DCMS, 2021. DCMS Subsectors Economic Estimates – Regional Gross Value Added (GVA)

¹⁹⁹ Creative Industries Federation, 2018. The True Value of Creative Industries Digital Exports

²⁰⁰ OMB Research & DCMS, 2020. R&D in the Creative Industries Survey

²⁰¹ Nesta, 2018. Creative Nation – How the creative industries are powering the UK's nations and regions

²⁰² Guidant Group, 2017. The UK Digital and Creative Sector Talent Insight Report

²⁰³ Creative Industries Policy and Evidence Centre 2020. Creative Radar

²⁰⁴ Cardiff Capital Region, 2021. Cardiff Capital Region Investment Prospectus

²⁰⁵ Creative Industries Trade, and Investment Board, 2019. International Strategy for the UK Creative Industries

The sector faces a skills shortage, particularly in practical and specific skills in software or experience rather than higher education, meaning there is a need to rethink training and education for the sector. Whilst it has not been possible to quantify the skills shortage in the Western Gateway, supporting evidence and interviews suggest that the skills gap is more pronounced in the area versus London and the South East.

To reap the benefits associated with the creative industries sector and to raise productivity standards, there is a need to scale-up creative industry businesses and improve entrepreneurship. With access to finance being a considerable constraint on the expansion of creative firms,²⁰⁶ there is a concern among sector experts that smaller businesses in the sector are unable to access the support and finance suitable for their sector.²⁰⁷ Improving access to tailored finance and support across the developed clusters could unlock opportunities and skills to drive growth in output and productivity for individual businesses and the sector as a whole.

Increasing awareness around the full range and capabilities available in the Western Gateway could increase the demand and appetite for creative industries providers in the region. Sector experts described that the lack of awareness of the area's capabilities often leads to international firms overlooking local businesses as potential suppliers for relevant goods or services, despite having already located some of their activities in the region. By developing an understanding and mapping of these capabilities, and then communicating these together with 'Brand WG', the area would be able to increase the demand and desirability of firms to engage, work, and locate in the Western Gateway.

²⁰⁶ DCMS, 2020. R&D in Creative Industries Survey

²⁰⁷ Interview with sector expert

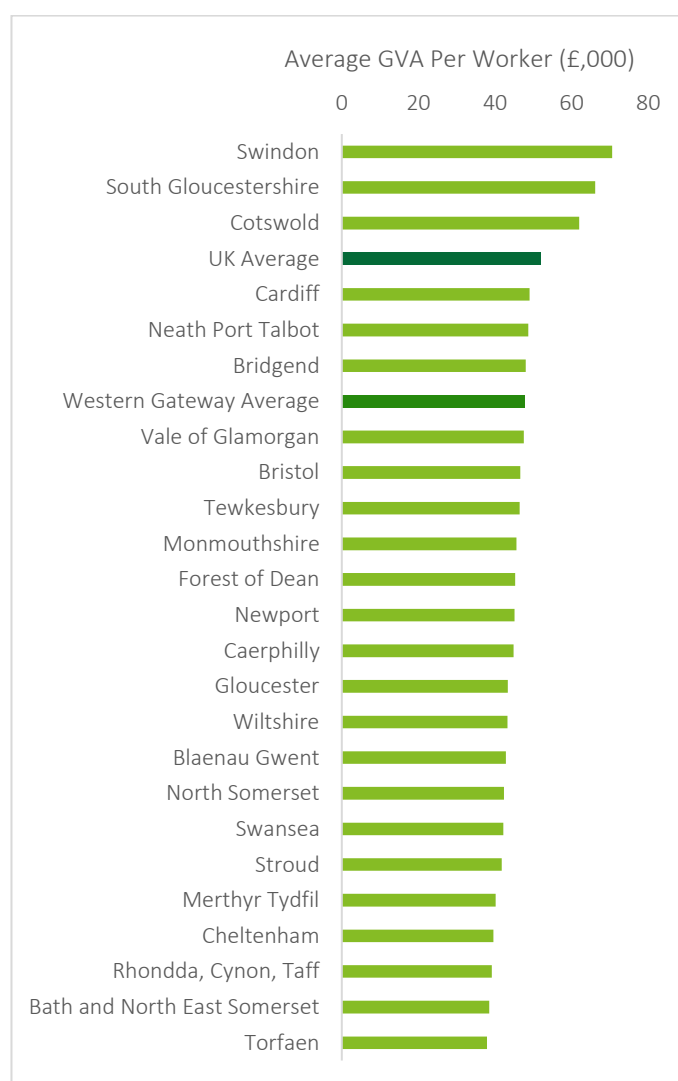
Appendix 3 Size of the Prize Analysis

Deloitte conducted analysis on the average GVA per worker for the Western Gateway regions and compared this against the UK, including London. Using Regional GVA data from Oxford Economics, Deloitte carried out an indicative ‘what if’ analysis to assess the economic impact of raising productivity in the Western Gateway to a level equivalent with closing half the gap to the UK average. This improved productivity performance was then contrasted with a baseline in which productivity remained constant.

Results indicate that halving the gap between the Western Gateway’s productivity performance and the UK average (including London) by 2031 could increase the **WG’s GDP by 3% by 2031 (above baseline)**, an increase of **£34bn** over the next ten years, compared to a baseline scenario, in which productivity remains at current levels.

While writing the report, the ONS has revised historical productivity estimates for the UK upwards.²⁰⁸ Whilst this has the effect of making national productivity performance higher from 2008, this is not thought to affect the outlined regional imbalances in productivity that need to be tackled by the Western Gateway to close the productivity gap.

Figure 12: Average GVA Per Worker (£,000)



Source: Deloitte analysis of Oxford Economics Regional GVA data, 2019

²⁰⁸ ONS, 2021. Labour productivity: revision triangles

Appendix 4 Productivity Deep Dive

This Appendix summarises the evidence review carried out into analysing the Western Gateway's productivity puzzle, i.e. the area's productivity 'gaps' in comparison to the rest of the UK. The review was guided by economic theory and carried out through desk research and supported by stakeholder interviews.

The economic literature suggests that numerous factors drive economic productivity: innovation and R&D, business linkages, connectivity and agglomeration, scale-ups, export intensity and investment, skills, and the sector mix. A number of these factors are considered to potentially be contributing to the productivity puzzle in the Western Gateway. However, the evidence does not indicate that skills or the sector mix can explain the gap: the Western Gateway's labour force is highly skilled and educated compared to the UK average, and the Western Gateway economy does not appear to be focused disproportionately in low productivity sectors compared to the remainder of the UK. For brevity, the subsequent sections summarise only the factors that evidence indicates may contribute to the productivity puzzle.

Appendix 4.1 Innovation and R&D gap

The area has several strong assets relating to innovation and R&D – it hosts two Russell Group Universities, a wide base of recognised research driven universities, and is home to prestigious research centres and catapults across several industries. Interviews with experts have identified other strong areas of R&D in the region, such for semiconductors and telecommunication systems infrastructure 5G and 6G. While the area boasts strong performance in output metrics such as design applications, it lags behind in terms of successful commercialisation of this strength, demonstrated by a lack of SME innovation compared to the rest of the UK, and a lack of successful University Spin Outs. A potential barrier to successful commercialisation may be poor availability of finance, with both the South West and Wales lagging behind stronger regions in availability of public and private finance. This hampers the area's ability to harness innovation strength and foster productivity. The remainder of this appendix will explore these dynamics in more depth.

Innovation performance

The Western Gateway area performs well in international rankings of R&D and innovation; the Regional Innovation Scoreboard classifies both the South West and Wales as 'strong' innovators. The South West is just above the UK average (1.4% above) and ranks 4th in the UK for innovation, behind London, the South East, and East. Wales meanwhile is slightly below average, ranking at 9th in the UK.²⁰⁹ The Western Gateway's main innovative research areas are AI, Data, Clean growth, advanced manufacturing and ageing society sectors that are concentrated in the Western Gateway region. The highest R&D spending goes into the aerospace industry.²¹⁰

The South West performs particularly well in terms of research outputs, leading the UK in design applications and scoring strongly for patent applications. However, this is mainly in the introduction of existing products and services, rather than novel products and processes.²¹¹ Both the South West and Wales score well in 'sales of new to market/new to firm innovations', but lag behind for SME innovation, and product and process innovation. These indicators point to a strong research capability, however, there appears to be a lack of transfer of these assets to firm level innovation. This is also corroborated by data from the UK Innovation Survey, which indicates a declining trend: while the South West was the UK area with the most innovative businesses (53%) in 2017, it has fallen behind with only 40% in 2019.²¹²

Commercialisation of research

Strong R&D and innovation capability is an asset; however, it is not sufficient to stimulate economic productivity, which requires this innovation to be transferred to industry and commercialised. While business performance indicators, such as the innovation index (see Table 1), show the Western Gateway regions to be a thriving area for enterprises to flourish, both the South West and Wales have untapped potential in terms of commercialising this innovation.

Internationally, the UK ranks 5th in strength of university-industry collaboration, indicating a relatively high level of knowledge transfer. The United States are leading the field with a score of 5.9 (1 indicates no collaboration and 7 a wide-ranging Partnership) compared to the UK score of 5.4. The 5-year survival rates of university spin outs, another measure of commercialisation of research, lies at 76% compared to 43% of normal businesses for the UK as a whole, but there is substantial variation between regions. With a survival rate

²⁰⁹ European Commission, n.d.. [Regional Innovation monitor](#). Note that performance is classified ranging from Modest, Moderate, and Strong to Leader.

²¹⁰ European Commission, n.d.. [Regional Innovation monitor](#)

²¹¹ European Commission, n.d.. [Regional Innovation monitor](#)

²¹² BEIS, 2019. [UK Innovation Survey 2019](#)

of only 60% for USOs, the South West has the highest failure rate in the UK. Yet when looking at enterprises in general, 46% still exist after five years, slightly higher than the UK average. A similar picture exists for Wales in terms of businesses in general, but the USOs survival rate is close to the national average at 73%.²¹³ All this suggests that there is room for improvement in terms of the transfer of knowledge between research and industry and the commercialisation of innovation.

A key factor in explaining regional variation performance of USOs might lie in the ability and availability to raise investment to commercialise the research. While the investments raised by USOs over the time period of 2011-2017 shows South East England and London leading with estimations ranging from £1.3bn to £2.25bn, the South West and Wales remain below the £500m mark. However, over the period 2011-2018, 150 USOs were formed in both the South West and Wales, which is similar to the South East (175), but behind London (310)²¹⁴. Further to this, the South West and Wales both rank below average for public investment into R&D (8% and 12% below UK average respectively) and private investment into R&D (17% lower in Wales than average UK), potentially indicating that a lack of access to funding hampers commercialisation of research and innovation.²¹⁵ ²¹⁶An underlying factor in capitalising on the innovation potential thus lies in addressing the funding gap for both public and private R&D expenditure.

²¹³ Coates Ullrichsen, 2019. [Developing university spinouts in the UK](#)

²¹⁴ Coates Ullrichsen, 2019. [Developing university spinouts in the UK](#)

²¹⁵ European Commission, 2019. Regional Innovation Scoreboard 2019.

²¹⁶ European Commission, n.d.. [Regional Innovation monitor](#)

Table 1: Regional Innovation Scoreboard, UK 2019- selected indicators

Region	Scientific co-publications	Most-cited publications	R&D expenditure public sector	R&D expenditure business sector	Non-R&D innovation expéditeurs	Product or process innovators	SMEs innovating in-house	Innovative SMEs collaborating with others	Public-private co-publications	PCT patent applications	Trademark applications	Design applications	Employment MHT manufacturing & knowledge-intensive services	Sales of new-to-market and new-to-firm innovations	Innovation Index
EU28	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North East	113.0	125.9	83.1	60.2	122.3	97.8	102.2	234.7	68.7	109.3	25.6	48.5	91.8	166.0	103.6
North West	87.1	125.3	77.1	96.7	118.7	97.4	101.5	233.3	115.2	82.3	46.1	38.5	90.2	155.0	105.8
Yorkshire and The Humber	106.7	122.4	84.1	64.6	122.4	107.7	112.5	248.5	105.6	84.2	63.7	93.7	73.9	129.9	107.5
East Midlands	96.1	114.6	70.7	105.5	112.9	120.1	125.4	243.6	115.2	83.6	57.3	66.3	95.9	166.0	112.2
West Midlands	93.5	135.1	66.1	111.2	120.5	126.3	130.3	248.5	77.0	104.1	68.7	110.4	96.7	166.0	115.6
East of England	130.0	163.0	106.4	144.4	49.7	128.0	132.3	248.5	212.5	142.9	80.6	80.1	107.3	63.1	123.2
London	159.2	150.8	85.0	58.3	78.2	91.4	94.0	221.4	136.8	63.2	141.1	89.6	156.3	119.9	121.6
South East	135.3	140.3	96.7	110.8	101.1	130.4	136.0	248.5	156.2	110.8	85.4	90.7	127.7	166.0	129.9
South West	104.1	136.6	78.1	88.0	117.7	110.0	112.8	248.5	94.1	113.4	66.7	125.8	97.6	166.0	119.1
Wales	100.5	114.8	75.0	67.5	202.1	103.8	108.4	240.5	76.6	73.2	35.7	42.8	67.4	166.0	106.3
Scotland	137.5	130.4	109.5	71.0	112.9	102.7	107.3	248.5	86.8	93.3	46.9	38.2	75.5	160.3	113.0
Northern Ireland	95.4	110.1	72.9	92.4	114.9	98.9	103.3	203.7	67.7	54.4	43.0	42.3	80.4	107.0	92.3

Source: Deloitte, [Regional Innovation Scoreboard 2019 \(interactivetool.eu\)](https://www.interactivetool.eu)

Appendix 4.2 Business Linkages gap

Despite housing numerous clusters across different sectors, IER1 highlights the weak business linkages across the Western Gateway and a need for further integration and the strengthening of business links across the region.²¹⁷ Large leakages from the supply chains of the Western Gateway's industries, particularly in the AM&E sector, reduces the positive spillovers potentially garnered from their innovation and R&D activities, reducing the potential for further innovation by other firms.

For the Western Gateway to capitalise on its R&D capabilities and sectors of strength, particularly as it moves to support its strengths in digital technologies, there is a need for the Western Gateway to create better business linkages across the region. It needs to support the development of tighter clusters, collaboration between firms, and sharing facilities, and building supply chains (particularly filling in the missing 'middle' of mid-sized companies in the supply chains²¹⁸).²¹⁹

Clusters and business linkages

The Western Gateway is home to several sectoral clusters such as in advanced engineering, aerospace in defence, high tech (Semi-conductors), creative and digital media, as well as financial services²²⁰. Financial services are a regional cluster that performs above the UK average, but competes with several other hubs around the country. Counting 315 financial services companies in Bristol and Cardiff, the area has a higher density than Glasgow and Edinburgh (224), but lower than in the Midlands cluster (Birmingham, Nottingham and Leicester) with 561, the Liverpool and Manchester area (643), and London (2800)²²¹.

Yet this sectoral expertise is not sufficient to drive local growth if not combined with investment and cooperation on R&D between companies. In order to gain a competitive advantage in targeted industries and develop specialised products and services, the deepening of business links is vital. However, Oxford Economics pointed out the ability for the Western Gateway to do so may be limited by the inability to share IP and national security relevant information and technology in sectors such as defence and aerospace.²²²

Another key driver to strengthen Western Gateway clusters lies in localising the supply chains of major businesses in the region. Established companies in the aerospace sector have global supply chains, but do not currently use local suppliers or contribute in the formation of new SMEs in the region.²²³ The Western Gateway has various large businesses that specialise in advanced manufacturing as well as small enterprises but there is a missing middle in terms of mid-sized companies that could establish local supply chains. This implies there is untapped potential for local innovators to supply to the global leaders, thereby raising local productivity levels and growth.

Appendix 4.3 Connectivity gap

Transport connectivity is core enabler in allowing individuals and businesses to access productive jobs and talent. The Western Gateway has relatively strong transport links compared to UK averages, both across the area and to other regions.²²⁴ Deloitte analysis, presented in chart 3, presents a clear urban-rural divide in transport links, with the Western Gateway's rural regions lagging significantly behind in their connectedness versus their urban counterparts. Improving transport connectivity, particularly to regions that have been left behind, is a key component for the Western Gateway and its Partners in supporting inclusive growth.

Another enabler for productive economic activity is digital connectivity, especially as jobs and activities become increasingly digital. The Western Gateway lags the UK average, particularly for access to ultrafast broadband

²¹⁷ Oxford Economics, 2021, Western Gateway Economic Position Statement

²¹⁸ Interviews with sector experts

²¹⁹ Oxford Economics, 2021, Western Gateway Economic Position Statement

²²⁰ West of England. N.d.. [West of England Strategic Economic Plan 2015-2030](#)

²²¹ BEIS. 2017. [Industrial Clusters in England](#)

²²² Oxford Economics, 2021, Western Gateway Economic Position Statement

²²³ Oxford Economics, 2021, Western Gateway Economic Position Statement

²²⁴ Oxford Economics, 2021, Western Gateway Economic Position Statement

connections.²²⁵ Again, there is an observable rural-urban divide, with many rural places, particularly in the Welsh valleys, lagging significantly behind regional and national averages. To support the Western Gateway's objective of becoming the most 'digitally connected region' in the UK and enable all residents and businesses to take part in the increasingly digital economy, the Western Gateway needs significant investment into its broadband rollout.

The following sections provide more detail on the regional transport and digital connectivity in the Western Gateway region.

Transport connectivity

Oxford Economics has highlighted in their report that the transport connections in the Western Gateway are in good shape, both within the area and towards other parts of the UK. There are, however, certain possible improvements for local public transport and links with the Oxford Cambridge Arc, as well as Heathrow.²²⁶

Based on the levelling up fund prioritisation note, a Deloitte model has been set up to rank the boroughs based on their need for improvement of regional transport connectivity (indicator 2). Boroughs across England (as there is no data for Wales or Scotland) are used to determine the classification, dividing them in three broad categories: bottom, middle and top third. Out of the 12 English boroughs that form part of the Western Gateway, Forest of Dean, Cotswold, Wiltshire, and North Somerset are in the bottom 33%. The middle 33% are formed by Stroud, Tewkesbury, South Gloucestershire and Bath and North East Somerset, whereas the top category features Gloucester, Cheltenham, Swindon, and the City of Bristol.

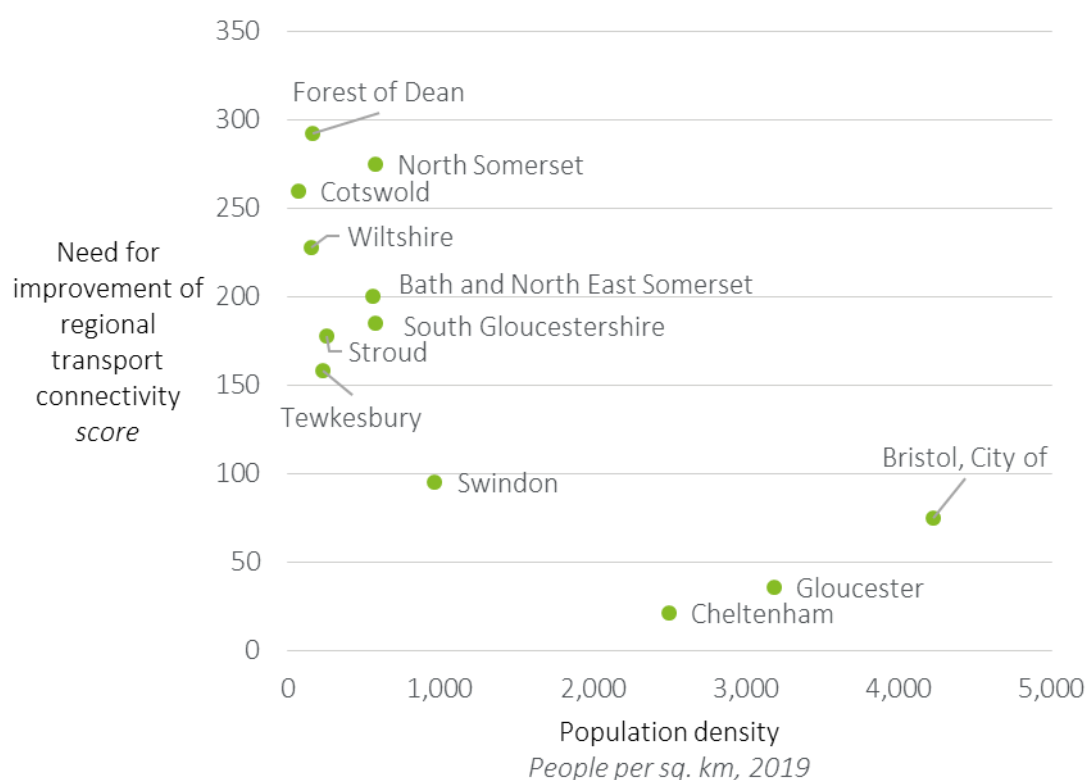
The scatter plot displayed in Chart 3 plots the population density against the transport connectivity need score for boroughs in South West England, where 339 is the highest possible need and 1 represents the best positioned borough.²²⁷ The chart shows that the areas with low population density have the highest need for connectivity improvement. This clearly highlights the connectivity divide between the leading urban areas, compared to the rural parts of the Western Gateway.

²²⁵ Oxford Economics, 2021, Western Gateway Economic Position Statement

²²⁶ Oxford Economics, 2021. Western Gateway Economic Position Statement

²²⁷ Wales is not included as there is no publicly available data on journey times in Wales, as is highlighted in the 'Levelling Up Fund: Prioritisation of places methodology note' published on 11 June 2021. The Wales Transport Strategy 2021 indicates a commitment to gathering more specific data on transport connectivity going forward. The report outlines a South East Metro programme to improve public transport in South East Wales and reducing traffic congestion on the M4.

Chart 1: Scatter plot on population density vs need for regional transport connectivity improvement (South West England boroughs of the WG)



Source: Deloitte; ONS, 2020, [Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland](#)

Digital connectivity

According to the findings in the Independent Economic Review 1, the internet connectivity in the Western Gateway area is underdeveloped, which could hamper economic growth going forward.²²⁸ In terms of premises that have a broadband internet connection that could receive speeds over 1 gigabit per second in January 2021, the Western Gateway performs below the UK average of 36.4% in 33 out of 47 constituencies, as displayed in the table below. The highest gigabit connectivity level of roughly 80% can be found in the Cardiff area, whilst the Bristol area has a connectivity level above 50%²²⁹. In contrast, the constituencies of Cynon Valley, Neath, Blaenau Gwent, and Rhondda form the lower tail, with less than 5% of households having gigabit connectivity. However, the area scores well when looking at premises, with fibre connection of 18% (Oxford-Cambridge Arc 17%), compared to 14% UK average.²³⁰ In order to achieve Western Gateway goal of becoming “the UK’s most digitally connected region”, more investment into the broadband rollout is necessary²³¹.

²²⁸ Oxford Economics, 2021. Western Gateway Economic Position Statement

²²⁹ UK Parliament, 2021. [Constituency data: broadband coverage and speeds](#)

²³⁰ Oxford Economics, 2021. Western Gateway Economic Position Statement

²³¹ Western Gateway, 2020. [Western Gateway Prospectus](#)

Table 2: % of premises capable of receiving 1 Gigabit per second by WG constituencies, May 2021

Constituency	Gigabit availability
Cardiff West	82.60%
Cardiff North	81.50%
Cardiff South and Peart	79.50%
Bristol South	79.30%
Cardiff Central	78.10%
Salisbury	59.50%
Aberavon	57.20%
Vale of Glamorgan	57.10%
Bridgend	51.60%
Bristol West	51.10%
Bristol East	43.20%
Pontypridd	41.60%
The Cotswold's	39.00%
Weston super Mare	37.60%
North East Somerset	36.20%
Swansea West	35.20%
Caerphilly	30.40%
Swansea East	29.00%
North Swindon	28.10%
Gower	27.50%
Forest of Dean	27.10%
North Wiltshire	25.80%
Bath	25.10%
Islwyn	24.80%
Tewkesbury	21.30%
Bristol North West	19.80%
Monmouth	18.20%
Merthyr Tydfil and Rhymney	18.00%
North Somerset	18.00%
Thornbury and Yate	16.90%
Chippenham	16.20%
Filton and Bradley Stoke	15.20%
Stroud	14.10%
Ogmore	12.40%
South Swindon	11.90%
South West Wiltshire	10.60%
Newport West	9.70%
Devizes	9.50%
Gloucester	8.90%
Cynon Valley	8.10%
Kingswood	7.80%
Newport East	7.70%
Torfaen	6.60%
Neath	4.50%
Blaenau Gwent	2.70%
Cheltenham	2.30%
Rhondda	1.50%
Cardiff West	82.60%
Cardiff North	81.50%
Cardiff South and Peart	79.50%

Source: UK Parliament, 2021. [Constituency data: broadband coverage and speeds](#)

Appendix 4.4 Scale ups and enterprise gap

Hosting 52.5% of high growth businesses²³² of the South West and Wales regions, the Western Gateway has, to a certain extent, a thriving business environment. Nevertheless, the overall business picture does not suggest that the Western Gateway is outperforming other UK regions on average and indicates that the area requires a stronger focus on the commercial application of innovation.

Despite the need for a welcoming business enterprise environment being recognised in the development plans of a number of Partners, the Western Gateway as a whole performs slightly lower than average in terms of business starter rates, with the Welsh side of the Western Gateway performing somewhat worse.²³³ This suggests a less-welcoming environment for entrepreneurship, whilst the lower rates of business start-ups indicate the existence of barriers to fostering a local start-up scene. In interviews, one of the barriers identified is the difficulty of SMEs to access support, with sector experts citing a confusing and fragmented regional landscape of business support. This implies that the area should foster a more supportive start-up and scaling-up environment to attract new firms to the region, which will introduce better and more productive processes.

The rest of this section provides more detail on the business start-up rate, trade, and investment in the Western Gateway region.

Business start-ups per capita

The importance of enabling business start-ups to thrive is highlighted in various LEPs strategy plans to strengthen the local economy. Newport, for instance, recognised the need for an adequate incubation space for its start-up community in order to address the shortage in office supply, which was leading SMEs to relocate out of the region.²³⁴ Swindon and Wiltshire also host a large start-up scene, however their local industrial strategy plan recognised that more emphasis should be placed on assisting local businesses to scale up.²³⁵

In 2019, the business birth rate in the South West former amounted to 11.1% (12,500) and for Wales to 13.1% (7,800), compared to the UK average of 13.0%.²³⁶ Regarding the Business death rate, the South West (10.1%; 11,400) is performing better than the average of 11.2% across the country, but Wales (11.7%; 7,000) slightly worse. The Western Gateway area falls short of the UK average birth rate (11.8%) by 1.2% but has slightly lower death rates of 10.7%. More specifically, 52.5% (785) of all high growth businesses from the South West and Wales are located in the Western Gateway²³⁷. In contrast, Cambridgeshire and Oxfordshire together host 360 high growth businesses and the UK 12,600 in 2019.

The numbers suggest that the Western Gateway has a thriving business environment with a substantial amount of high growth businesses. However, based on the table below, it can be seen that business birth/death rates are substantially higher in the South Western part than the Welsh part, except for Swansea and Cardiff. Even though the Western Gateway encompasses a substantial amount of well performing enterprises, the general business landscape of the Western Gateway does not outperform the rest of the UK. To foster local inclusive growth, strengthening the start-up and entrepreneurship potential in the area should be considered.

²³² ONS definition: "High growth () measures businesses, who had at least 10 employees in 2016, that had an average growth in employment of greater than 20% per year between 2016 to 2019", 2019, [Business demography UK](#)

²³³ ONS, 2019. [Business demography UK](#)

²³⁴ City of Newport, 2020. [Economic Growth Strategy Update](#)

²³⁵ Swindon and Wiltshire local enterprise Partnership, 2020. [Swindon and Wiltshire local industrial strategy](#)

²³⁶ ONS, 2019, [Business demography UK](#)

²³⁷ ONS, 2019. [Business demography UK](#)

Table 3: Western Gateway business demography, 2019²³⁸

	Birth rate	% birth rate	Death rate	% death rate
Total Western Gateway	20,335	11.8%	18,375	10.7%
South Western LAs	12,490	11.1%	11,385	10.1%
Bath and North East Somerset	930		820	
Bristol City of	2,895		2,370	
North Somerset	1,000		925	
South Gloucestershire	1,290		1,110	
Swindon	1,110		925	
Wiltshire	2,220		2,390	
Gloucestershire	3,045		2,845	
Wales LAs	7,845	13.1%	6,990	11.7%
Swansea	1,290		845	
Neath Port Talbot	375		355	
Bridgend	540		475	
Vale of Glamorgan	510		490	
Cardiff	1,735		1,455	
Rhondda Cynon Taf	905		780	
Merthyr Tydfil	190		165	
Caerphilly	655		440	
Blaenau Gwent	190		155	
Torfaen	265		270	
Monmouthshire	415		395	
Newport	775		1,165	

Appendix 4.5 Exports and Investment Gap

As identified in IER1, the Western Gateway has fewer international exporters than the UK average; the Western Gateway area has £15,600 exports per job, compared to the UK average of £16,500.²³⁹ In 2019, the Western Gateway exported £22.6bn in goods, which represents 6.5% of total UK exports. As can be seen in Table 4 Gloucestershire had the highest amount of exports (£6.3bn), whereas Swansea the lowest (£0.6bn).

When looking at the total value of trade in services by NUTS3 area exported, City of Bristol (£2.1bn) is the only part of the Western Gateway above the UK regional average of £1.8bn.²⁴⁰ It should be noted that for the other regions, there is a rural-urban divide, with Bristol (£2.1bn), Gloucestershire (£1.7bn), Central Valleys (£1.7bn), Bath and North East Somerset, North Somerset and South Gloucestershire (£1.6bn), Swindon (£1.6bn), Cardiff and Vale of Glamorgan (£1.5bn) being mostly urban areas close to the average. In comparison, Monmouthshire and Newport as well as Swansea and Wiltshire export services to a total value of £0.6bn each and Bridgend and Neath Port Talbot (£0.5bn) and Gwent Valleys (£0.3bn) are lagging behind. Compared to the UK overall, only Bristol makes it into the top 30 regions, whereas Cambridgeshire (£4.5bn) and Oxfordshire (£3bn) rank 12th and 22nd respectively, although both are, in terms of volume, far behind the leading Camden and City of London with £39.3bn exported services in 2018. Thus, while the more urban areas of the Western Gateway are in the UK midfield in the total volume of services exported, the considerable gap lies with the more rural areas.

As outlined by the Department for International Trade, exporting businesses are on average 21% more productive, pay median wages 7% higher than non-exporting businesses, and invest 3-15% more in research in order to sell a competitive product on the global market.²⁴¹ The regional economy could therefore benefit from a more export-oriented enterprises, as competing against global competition incentivises companies to innovate products and processes and hence increase productivity.²⁴² This underscores the importance of assisting companies to access global markets. This need for support has been reinforced by the restriction of access to the European Single Market, which is especially important for the well-established aerospace and automotive sector that has cross-border supply chains with the EU.

²³⁸ ONS, 2019. [Business demography UK](#)

²³⁹ Oxford Economics, 2021. Western Gateway Economic Position Statement

²⁴⁰ ONS, 2018. [International trade in services by subnational areas of the UK](#)

²⁴¹ UK Board of Trade, 2021, [Global Britain, Local Jobs](#)

²⁴² Oxford Economics, 2021. Western Gateway Economic Position Statement

Table 4: Western Gateway goods exports in 2019 by NUTS3 region²⁴³

NUTS 3 Region	Goods Exports (£ million)
Gloucestershire	6,365
Bath and North East Somerset, North Somerset and South Gloucestershire	4,803
Central Valleys	2,480
Bridgend and Neath Port Talbot	1,683
Gwent Valleys	1,425
Wiltshire	1,411
Monmouthshire and Newport	1,112
Cardiff and Vale of Glamorgan	1,107
Swindon	874
Bristol, City of	730
Swansea	578
Total Western Gateway	22,568
Total UK	347,831

Table 5: Western Gateway service exports in 2018 by NUTS3 region²⁴⁴

NUTS3 Region	Service Exports (£million)
Bristol, City of	2,084
Gloucestershire	1,788
Central Valleys	1,777
Bath and North East Somerset, North Somerset and South Gloucestershire	1,621
Swindon	1,555
Cardiff and Vale of Glamorgan	1,479
Monmouthshire and Newport	645
Swansea	630
Wiltshire	611
Bridgend and Neath Port Talbot	493
Gwent Valleys	338
Total Western Gateway	13,021

²⁴³ HM Revenue & Customs, 2020. [Regional trade in goods statistics disaggregated by smaller geographical areas: 2019](#)

²⁴⁴ ONS, 2018. [International trade in services by subnational areas of the UK](#)

Investment

Overall, the Western Gateway has individual high-performing global export-oriented companies, but on the whole, businesses in the area are in the UK midfield. However, while the WG compares well against the Northern Powerhouse and the Midlands Engine in attracting FDI projects, per capita,²⁴⁵ the WG should continue encouraging and supporting companies to develop their product so it could compete on the global market should be a policy priority to close the productivity gap. Interviews with sector specialists of the Western Gateway area have identified an imbalance between larger firms, which are able to export and compete on global markets, and smaller businesses that find the expansion more challenging. One underlying hurdle for SMEs is the lack of resources and experience in applying for government funding and raising investment, compared to larger firms, who have the capacity and experience to navigate through the application processes.

Securing investment from the public and private sector is key for new business ventures to succeed and drive growth in the Western Gateway. The report by Oxford Economics has identified the Western Gateway Partnership as a pan regional actor that could use its powerhouse status to lobby central government and highlight the investment shortages from the past. By bringing together businesses from the South West and the Welsh side of the Seven Estuary, it might however also run the risk of competing with “Brand Wales” and individual cities for funding opportunities.²⁴⁶ On the flipside, if the cooperation is well executed, there are significant gains in terms in local growth that could be achieved by pooling, training, and attracting a highly skilled workforce, building clusters, and providing adequate access to funding.²⁴⁷ The key to helping start-ups and other businesses to scale up and enter the global market is to provide them with access to capital to avoid them being sold out to established and often foreign companies.²⁴⁸ In order to close the finance gap, the government can “catalyse” this process by being an early investor in innovative businesses in the UK, which will then attract further private funding.²⁴⁹

²⁴⁵ OCO, 2021. Western Gateway International Market Prioritisation

²⁴⁶ Oxford Economics, 2021. Western Gateway Economic Position Statement

²⁴⁷ Scaleup Institute, 2020. [The Future of Growth Capital](#)

²⁴⁸ Interview with sector experts

²⁴⁹ Scaleup Institute, 2020. [The Future of Growth Capital](#)

Appendix 5 Location Quotient Analysis

The below table summarises the results of Deloitte's location quotient (LQ) analysis used to identify potential sector strengths across the Western Gateway. The table only contains sectors where there was a positive location quotient, a sign of comparative specialism, when comparing employment levels across the sectors vs in the rest of the UK. A higher type 1 multiplier indicates a more regional supply chain associated with that sector, which is desirable for regional economic development interventions. Sectors with a LQ lower than 1 have been excluded from the table for visual purposes. To note, the table covers analysis for the whole Gateway area and does not necessarily map the identified clusters and various sub-sectors of strength discussion in the sectoral analysis.

Table 6 Summary of location quotient analysis

SIC Code	Description		Location Quotient		Employment		Type 1 Sector Multiplier
5	Coal and lignite	●	8.58	●	800	●	1.05
11	Dairy products	●	1.90	●	2,985	●	1.22
11	Grain mill products, starches and starch products	●	1.18	●	810	●	1.29
17	Paper and paper products	●	1.49	●	5,255	●	1.13
18	Printing and recording services	●	1.31	●	8,075	●	1.21
20B	Petrochemicals - 20.14/16/17/60	●	1.34	●	1,590	●	1.17
20	Soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	●	1.53	●	2,710	●	1.18
21	Basic pharmaceutical products and pharmaceutical preparations	●	1.79	●	4,670	●	1.07
22	Rubber and plastic products	●	1.23	●	12,870	●	1.14
24.1-3	Basic iron and steel	●	3.39	●	7,425	●	1.10
25OTHE	Fabricated metal products, excl. machinery and equipment and weapons & ammunition - 25	●	1.13	●	20,355	●	1.16
25	Weapons and ammunition	●	1.47	●	1,310	●	1.14
26	Computer, electronic and optical products	●	1.64	●	12,455	●	1.12
27	Electrical equipment	●	1.55	●	7,330	●	1.14
28	Machinery and equipment n.e.c.	●	1.06	●	12,465	●	1.21
30	Ships and boats	●	1.27	●	6,955	●	1.25
30	Air and spacecraft and related machinery	●	1.29	●	550	●	1.16
30OTHE	Other transport equipment - 30.2/4/9	●	2.40	●	16,835	●	1.12
32	Other manufactured goods	●	2.04	●	7,500	●	1.10
33OTHE	Rest of repair; Installation - 33.11-14/17/19/20	●	1.23	●	8,975	●	1.18
35.2-3	Gas; distribution of gaseous fuels through mains; steam and air conditioning supply	●	1.48	●	4,755	●	1.20
36	Natural water; water treatment and supply services	●	1.87	●	5,370	●	1.10
37	Sewerage services; sewage sludge	●	1.20	●	1,650	●	1.18
38	Waste collection, treatment and disposal services; materials recovery services	●	1.37	●	12,055	●	1.20
39	Remediation services and other waste management services	●	1.49	●	730	●	1.14
41-43	Construction	●	1.07	●	96,985	●	1.28
45	Wholesale and retail trade and repair services of motor vehicles and motorcycles	●	1.12	●	42,755	●	1.17
56	Food and beverage serving services	●	1.04	●	125,940	●	1.15
65	Insurance, reinsurance and pension funding services, except compulsory social security	●	2.26	●	16,935	●	1.16
69	Accounting, bookkeeping and auditing services; tax consulting services	●	1.33	●	26,850	●	1.07
75	Veterinary services	●	1.06	●	5,885	●	1.09
77	Rental and leasing services	●	1.05	●	11,560	●	1.17
84	Public administration and defence services; compulsory social security services	●	1.40	●	124,585	●	1.20
86	Human health services	●	1.07	●	133,495	●	1.05
87-88	Residential Care & Social Work Activities	●	1.04	●	115,645	●	1.12

Appendix 6 Strategy and Roadmap Formulation

Appendix 6.1 Approach to Strategy Formulation

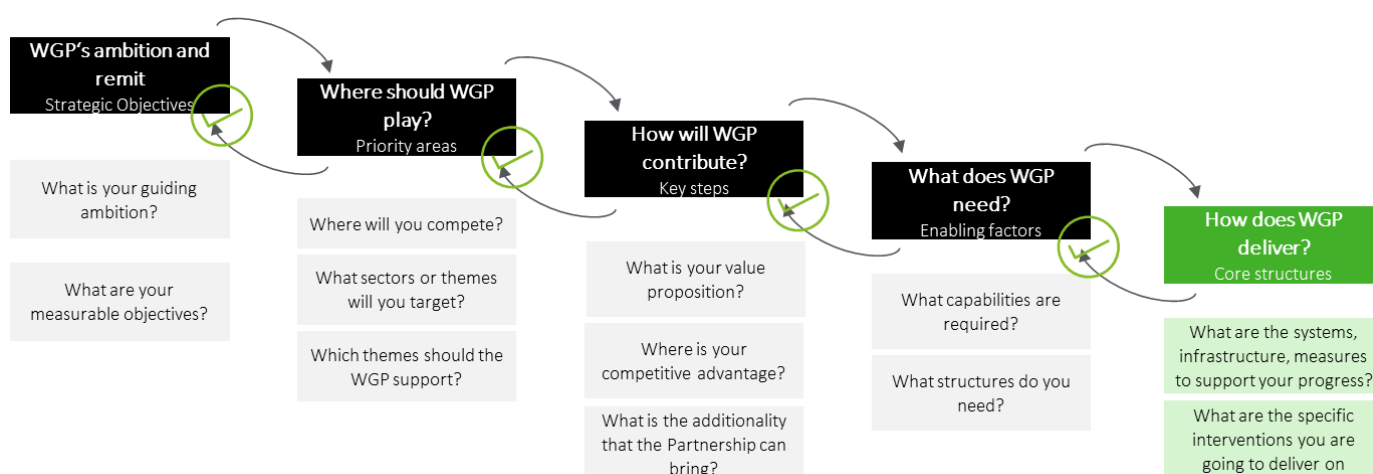
The evidence review outlined in Sections 2 and 3 of this report identified the strengths and opportunities for the Western Gateway as an economic geography. To move from opportunities to actionable intervention areas for the WGP, Deloitte worked with the Partners to formulate a strategy and roadmap for how to capitalise on opportunities to deliver the Partnership's vision. The vision for the WGP is best summarised as supporting sustainable and inclusive economic growth and consolidating the reputation of the area as a great place to work and live.

This Appendix describes in more detail the process used by Deloitte to examine the opportunities and constraints to inclusive and sustainable growth, and to develop these into a comprehensive roadmap of potential initiatives.

Strategic Alignment (The Choice Cascade)

Deloitte used a modified strategic choice cascade framework to engage with the Western Gateway Partnership leaders and project officers.²⁵⁰ The cascade can be used in the public or private sector for organisational or project specific strategy formulation. The process moves from left to right and at the end of each of the five steps, it returns to the start, making sure decisions are being made consistently.

Figure 13: WGP template choice cascade



Source: Deloitte Analysis

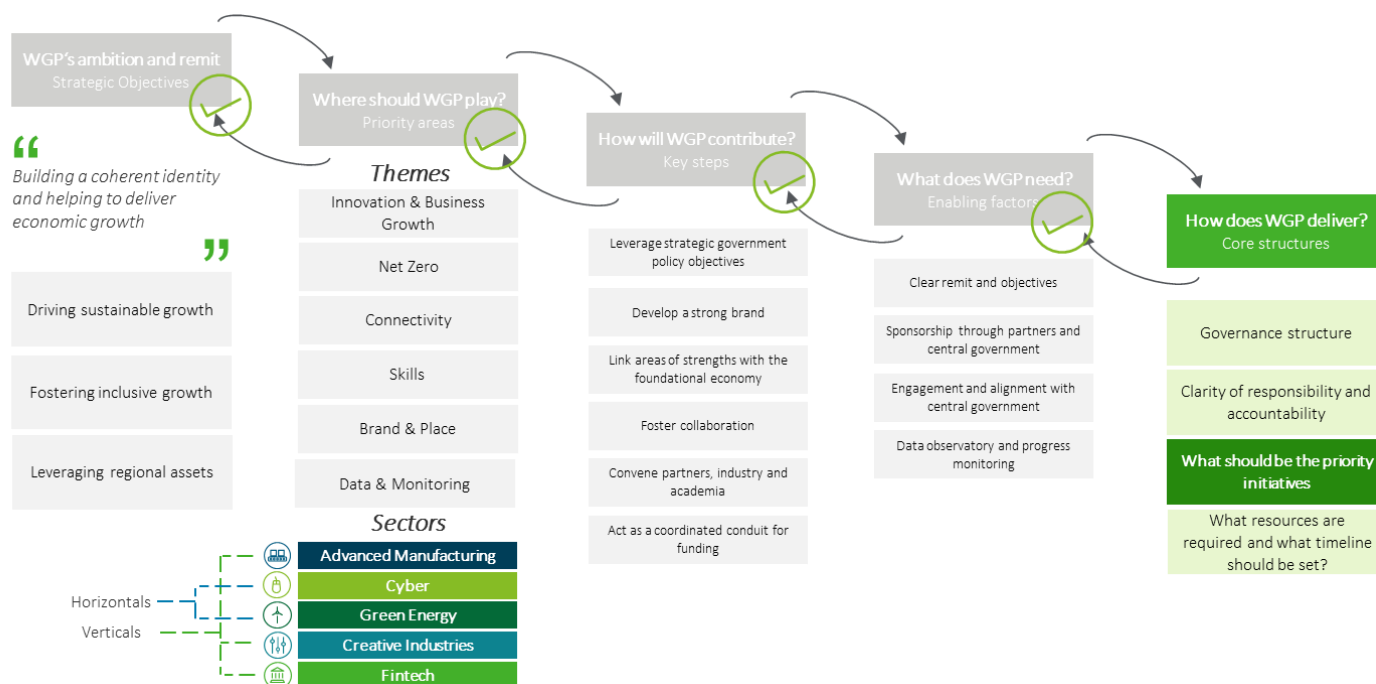
The starting point of this exercise is to discuss the driving ambition of the WGP *vis a vis* the needs of the WG geography, then identify themes that should be targeted in order to deliver to those ambitions and how to deliver these ambitions in practice. The first four columns of the strategic choice cascade have been tested and confirmed qualitatively and quantitatively by this IER2, as well as by previous studies, such as IER1 and the 'A Powerhouse for the West'.²⁵¹ With particular focus on the final column, the cascade was discussed and refined with the WG Partners in two workshops: the first workshop was carried out with Project Officers of WG Partners, and the second workshop included WGP leaders.

²⁵⁰ This process helps leaders think through their strategic choices in an iterative fashion, making decisions about multiple criteria simultaneously. Successful organisational strategies are formulated in an iterative fashion. For example, key strategic decisions involve making choices about "where to play" and "how to win," but no "how to win" choice can be made outside of the particular context of a given "where to play" choice. Each decision has to link together and reinforce each other. Thus, the most productive way to generate possibilities for strategy choice is to consider *matched sets* of choices.

²⁵¹ Confirmation provided by the Secretariat in pre-workshop meeting.

On that basis, the below choice cascade was presented to, and validated by, the WG Partners' leaders in workshop 2. In summary, the **WGP's ambition and remit** is to drive sustainable inclusive growth by leveraging regional assets.

Figure 14: WGP choice cascade



Source: Deloitte Analysis

Given the enabling factors required for the five leading sectors of the area to thrive and the drivers of the productivity gap identified in the evidence review, potential areas where the **WGP should play** was taken to the Partners' project officers for discussion. Outputs from this workshop highlighted where the WGP could provide value across the four key areas identified in Section 2 and emphasised a potential role for Net Zero and Data & Monitoring. The Partners suggested the **WGP should play** across on the following themes:



Innovation and Business Growth: The area has strong assets relating to innovation and R&D with stakeholders consistently highlighting the research strengths in advanced manufacturing, cyber, and green energy outlined in Section 2. However, from the evidence outlined in Section 3, there is a lack of SME innovation, weak performance of university spinouts, and below average spending on R&D, all of which are key factors deterring the area from increasing the commercialisation of ideas and capitalising on its research strengths. Furthermore, discussions with sector experts highlighted the difficulty for SMEs in the area in accessing scale-up funding to support expansion and commercialise innovation, as well as a need to improve linkages between research institutions and businesses.

Discussions with project officers highlighted the potential for the WGP to leverage its pan-regional size to convene Partners to bid for a regional investment fund. Similar to those developed by the Midlands Engine and the Northern Powerhouse, the fund could raise access to business and innovation finance and support the commercialisation of research and scale-ups of businesses in the Western Gateway. Given the alignment to Government priorities, there is also an opportunity to explore on the national policy agenda.



Connectivity: This theme cuts across digital and transport, both of which are major priorities for both HMG, via its Levelling Up and connect the union agendas, and the Welsh Governments' economic action plan. However, the digital connectivity of the WG geography is underdeveloped. The ratio of premises with speeds over 1 gigabyte per second is below UK average, hampering the area's develop digital strengths. As outlined by IER1, transport connectivity in the Western Gateway is good, however, a few strategic investments are required to increase business linkages and agglomeration, as well as to address the transport connectivity divide between less populous areas and cities (annex A1.4).

Engagements from workshop 1 outlined the potential scale of the opportunity for the WGP to support in accessing funds for transformative transport investments given Governmental priorities for Connecting the Union, Levelling Up and build Back Better. Project officers stated that the WGP should leverage its position

to support and champion large-scale transport projects to improve transport across the area and to other regions outside of the WG. Furthermore, there is a role for the Partnership to convene across the Partners to increase linkages on sustainable and public transport plans with a view to creating an integrated transport system across the Western Gateway. Furthermore, attendees agreed that there was a role for the WGP in providing direction and supporting Partner projects in improving digital access and connectivity across the WG.



Skills: Whilst the area scores above the UK average for skills,²⁵² the sector deep dives concluded that a lack of skills is a significant constraint to growth, acting as a major barrier to growth across all of the five sectors investigated. As discussed in Section 2, there are particular shortages in digital and leadership skills.

Project officers stated that, while there is a role for the WGP in setting direction or a regional skills strategy for addressing these skills gaps, it must ensure that any engagement is additional to the support already in place by the Partners. Rather than direct intervention, project officers suggested the WGP should focus on utilising its pan-area position to link skills gaps to opportunities, engage more directly with employers across the area's strengths and support Partners by sharing learnings across the WG and lobbying for skills training funding. By supporting Partners in increasing access to skills, and particularly digital skills, project officers felt that the WGP could play a role in supporting inclusive growth and the foundational economy.



Brand and Place: For the creative industries, cyber, and fintech sectors, there is high demand to attract mobile talent and investment into the region, as well as to communicate the full range of sector capabilities to investors and overseas customers. Through interviews and the project officers' workshop, it became apparent that an improvement in the ability to communicate the area's strengths and attractive living environment would help attract talent, investment, and exports from the region. It is evident that the WG offers good places to live and visit, with decent housing affordability and high quality of living. Therefore, project officers agreed that there is a need to improve the 'brand' of the Western Gateway and continue to strengthen its placemaking attractiveness.

Further to the four themes discussed above, the WGP highlighted the following enablers as areas on which they should focus:



Net Zero: This is one of the most transformational opportunities for the UK over the coming decades and requires an estimated £70bn of investment per year nationally to be realised.²⁵³ The scale of investment, technological advancement, and business transformation needed to deliver the agenda require short-term investments in building retrofit,²⁵⁴ green infrastructure, renewables²⁵⁵, hydrogen tech, and de-carbonised energy generation. In the longer term, industry transformation and behavioural change are also required.²⁵⁶ Stakeholders highlighted the need for clear regional direction and leadership to facilitate this transformative change.



Data & Monitoring: The identification of data gaps and the desire of both project officers and leaders for more evidence has highlighted the need to improve the provision and availability of pan-regional evidence and data for the Western Gateway. Partners agreed that the WGP could support by increasing the availability and communication of cross-WG evidence to underpin interventions and support business decision-making.

Taking forward these 6 themes, partners also discussed which themes to prioritise at this point in time, based on:

- **The remit of the partnership:** Given its current role and remit, the WGP will deliver by convening and amplifying across its partners. As such, it currently does not envisage taking the role of a delivery body. Partners thus considered which themes had the greatest potential for impact for the WGP in its role and remit.
- **The need for action:** In addition, Partners deliberated which themes had the greatest need for action now. This included consideration of the alignment of themes with partners' priorities (see figure below) as well as partners' own assessments of emerging priorities. Thought was also given to political will for the WGP to take initiative, including delivering against UK and Welsh Government objectives.

²⁵² Oxford Economics, 2021. Western Gateway Economic Position Statement

²⁵³ CCC, 2019. Net Zero – The UK's contribution to stopping global warming

²⁵⁴ 29 million homes require retrofitting to meet the UK's legally binding target of Net Zero by 2050.

²⁵⁵ Severn Estuary, which has the second largest tidal range in the world.

²⁵⁶ BEIS, 2020. Powering our Net Zero Future

Partners concluded that current priority areas are **innovation & business growth, connectivity (particularly digital)** and **Net Zero**.

Figure 15 Summary of WGP Partners Priority Projects

Partner priority projects by theme (long list)

Projects per category:	No.	%
Transport	17	23%
Innovation	13	17%
Digital/Internet Infrastructure	12	16%
Skills	9	12%
Clean Energy/Resource Efficiency	5	7%
Regeneration	5	7%
Enterprise	4	5%
Cross-cutting	3	4%
Housing	2	3%
Employment	2	3%
Total	75	100%

The **WGP contribution** to these themes is driven by the vision of Partners, according to which WGP shall focus on creating additionality to the Partners initiatives and remit, as well as serve as a platform to amplify successful initiatives elsewhere in the region.

Therefore, the WGP should contribute by leveraging strategic government objectives, developing a strong pan-regional brand, linking areas of strength with the foundational economy, fostering collaboration, convening Partners, industry, and academia, bridging across common needs, and acting as a coordinator and conduit of funding. To effectively contribute to the WG economic geography, the **WGP needs** a clear remit of objectives (which have been further defined by the roadmap – please see section below), sponsorship from Partners and central government, and effective instruments to help further shape interventions, such as a data observatory.

Finally, there is the question on which the leadership workshop was focused: **how does WGP deliver**. A suitable management structure and clarity of responsibility and accountability of the Partnership, Partners, and other institutions and organisations is required to allow the WGP to deliver its ambition²⁵⁷ and deliver the roadmap. Preferably, responsibilities and accountabilities shall be designed at the initiative level.

The outcomes from the workshop, summarised in Appendix 6.1, confirmed the appetite for the Partnership to provide support across the themes and for clear, actionable, and defined workpackages. Attendees stressed the importance for the WGP to provide regional leadership to drive the Net Zero transition and define the Western Gateway's brand, unique selling points, and competitive advantages to Government, as well as overseas customers and investors.

Validating how the WGP should contribute: the value proposition

Based on the project officers' workshop and WGP feedback, Deloitte prepared a series of example workpackages, outlined in Appendix 7, to steer discussion amongst the WG Partners' leaders on WGP objectives for each of those themes; WGP's role in delivering those objectives; desired outcomes; and the actual initiatives to deliver.

The workpackages covered the six themes, reflecting the outputs of workshop 1, the findings from the leading sectors and steer from WGP, including the dimension of 'place' to the brand theme given that the advocacy and branding of the area's liveability was perceived as a key role of the WGP. Furthermore, the need to increase the provision of evidence and data to support Partners and initiatives was outlined. In summary, the WG Partners' leadership group concluded the WGP should play the following roles in each of the themes discussed:²⁵⁸

²⁵⁷ WGP's governance structure is being prepared and will be further adapted to account for the results of the IER2.

²⁵⁸ ROAMEF cycle: rationale, objectives appraisal, monitoring, evaluating, feedback. This cycle is used to improve interventions iteratively, as they move along their implementation timeline. The smart data platform/observatory shall be designed to aid the WGP, its Partners and the firms located in the region to adapt their investment models according to opportunities, needs and requirements shown by the improved evidence base.

Figure 16: WGP value proposition



Feedback from the WGP's leaders during workshop 2, whilst again highlighting the need for clear branding and a focus on delivery, gave steers on the initiatives the Partnership should enact across each of the example workpackages. The workpackages are summarised in Appendix 7.

Appendix 6.2 Western Gateway IER2 Workshop 1 Summary Notes – 09/06/2021

Summary

- There was general agreement amongst the attendees on the ideas presented and the suggested approach going forward.
- Attendees were engaged and eager to share developing projects and priorities and to start exploring synergies and overlaps between projects, whilst being clear that no duplication should take place.
- There was agreement that there is an emerging role for the Western Gateway, especially in supporting and attracting inward investment, both from overseas and central government.
- Inputs suggested that there needed to be a strong focus on the transformative role of Net Zero for the area (as something to 'hang' the Western Gateway offer on) and the importance of emphasising trade and investment in the Western Gateway narrative.
- Many noted that the foundational economy was not covered extensively in the presentation and needs to be embedded in the strategy.
- In order to drive value, the WGP and its Partners need to be clear on its priorities with a clearly defined strategy that focuses on delivery and culminates in clearly defined work-packages.
- There is a responsibility to ensure buy-in from Partners and to develop an understanding of how the benefits and needs for each Partner are linked and supported by one another and in applying for large investment bids.

- Ultimately, the role of the WG is to present a unique regional offering, with a unique brand and identity to showcase nationally and internationally by utilising its connections and platform to leverage its strong institutions and create connections that advocate and advance the WG.

Implications

Utilising the feedback and inputs from the session helped to refine and improve Deloitte's thinking and subsequently the second workshop and report. In particular, the five main takeaways are:

- Providing clarity on Gateway purpose, role, strategy, and delivery priorities
- Clarifying the need for a clear brand identity and delivering a prospectus for the Western Gateway Partnership
- Using Net Zero as a clear driver for growth, as well as giving trade and investment much more prominence
- Clarity on the importance of inclusive growth/foundational economy and the role of WG versus other stakeholders in developing this
- Encouraging collaboration with the creation of a platform to discuss priorities, benefits, and needs of Partners in relation to the priority areas of focus and initiatives of the WGP




Appendix 6.3 Western Gateway IER2 Workshop 2 Summary Notes – 23/06/2021

Core themes from the workshop




- HMG Connecting the Union is a key opportunity for the Western Gateway, given its position across national boundaries. There is an opportunity to shape a number of initiatives in this frame.
- The development of a core brand and USP is a must and will help shape where to focus and play.
- While there is a need to specify and narrow the support that WGP provides to the key areas of competitive advantage, it needs to ensure that there are links to the foundational economy via connectivity, skills and innovation.
- A focus on delivery is vital. Actioning a roadmap and delivery of a few core products to show the strength and value of the WGP will help expand its current support base.
- The Partnership should ensure that it is driving ambition and an external focus for the Partners and the wider WG.
- The WGP must utilise its ability to convene and provide mass to support large scale transformational bids for the area (Cyber Central, STEP Fusion, and Digital Accelerator are given examples).

Appendix 7 Example workpackages




Appendix 7.1 Innovation and Business Growth

	 Innovation and R&D	 Business Growth Support	 Targeted Investment
Objective	Ensure that businesses across the region, and particularly SMEs are able to build on the region's outstanding R&D strengths to improve productivity and commercialisation of innovation across the sectors of strength	To improve the access and availability of business scale-up support to increase the number and success of high-growth businesses across the sectors of strength in the region	Provide targeted support on the WG's key areas of comparative sector strength in key areas: compound semiconductors, development of advanced engineering systems, design of advanced telecom systems, and cyber R&D
WGP Role	<ol style="list-style-type: none"> 1. Champion: Provide a one-stop-shop for signposting access to the range of finance and support available to businesses 2. Convene: Increase links between SMEs, academic institutions and leading businesses 3. Lead: Development of local investment models to support truly innovative and scalable businesses 	<ol style="list-style-type: none"> 1. Convene: Work with partners to collaborate on regional investment priorities using already existing funds and infrastructure and aligning priorities 2. Lead: Creation of a regional investment fund 	<ol style="list-style-type: none"> 1. Champion: Support transformational partner led initiatives that align with the WGP's regional priorities 2. Lead: WGP to conceive and plan the development of transformational projects
Example Outputs	An audit of required funding and support shortfalls across the sectors of strength and a strategy to address these to increase the commercialisation of research in the region	Creation of an integrated pan-regional scale-up programme that aligns local with regional growth priorities and a facility to share best practice and collaborate across local boundaries	Leveraging of a clear regional proposition across the core sectors to identify, communicate and facilitate targeting and support of large-scale investment bids
Link to Examples	<ul style="list-style-type: none"> • WECA universal business support and Cardiff business finance • Midlands Engine and Northern Powerhouse investment funds 	<ul style="list-style-type: none"> • Partner scale-up programmes and funds • Northern Powerhouse House and Midlands Engine regional investment funds in partnership with the British Business Bank 	<ul style="list-style-type: none"> • Cyber Central development in Cheltenham • The Foundry plant in Newport

Appendix 7.2 Example workpackage: Net Zero

	 Strategy	 Collaboration	 Support
Objective	Map out regional plan for achieving Net Zero by 2050, or even 2030, to foster direction, leadership and requirements from the Partnership and constituent Partners	Work with partners to ensure the required connections and investments are made to decarbonise the economy and ensure benefits from identified synergies	Ensure businesses know where and how to access the range of support available to help them adapt and respond to the challenge of Net Zero
WGP Role	<ol style="list-style-type: none"> 1. Convening: Present an overview of the region's main challenges and assets in decarbonising its economy, based on existing commitments 2. Lead: Identify the areas where the pan-regional approach could add value to the local strategies 3. Lead: Provide a roadmap and core milestones in achieving net zero 	<ol style="list-style-type: none"> 1. Convene: Provide a platform to ensure a joined up approach to net zero 2. Convene and Champion: Provide a platform for researchers and industry to collaborate on NZ R&D 3. Champion: Ensure clear synergies are observed and active role in sharing best practice 4. Lead: Creation of a body capable of applying for and funding key initiatives 	<ol style="list-style-type: none"> 1. Champion: Provide a one-stop-shop for signposting access to the range of finance and support available to businesses 2. Convene: Engage with leaders and partners to identify and address gaps in support 3. Lead: Development of a WG Net Zero business support fund
Example Outputs	Completion and agreement of a report and major milestones required for the WG and its partners to achieve net zero	A regional convening body and secretariat that is able to apply and conduit funding bids and applications	An audit of required funding and support shortfalls and development of an investment model to address these
Link to Examples	<ul style="list-style-type: none"> • Partner net zero by 2030 • Midlands Engine Energy Conversation programme 	<ul style="list-style-type: none"> • Green infrastructure transformation projects • Green skills projects • Small scale home retrofitting at scale 	<ul style="list-style-type: none"> • Midlands Engine and Northern Powerhouse investment funds/models

Appendix 7.3 Example workpackage: Connectivity

	 Digital	 Transport	 Networks
Objective	Have a map of the digital connectivity gaps and requirements across the WG geography and determine the required funding to ensure that the WG becomes the 'most digitally connected region' in the UK	Have an integrated map with the transport requirements at the pan-regional level, including inter and intra-regional clusters to improve economic agglomeration and access to opportunities	Create strong business and human networks around the core themes and sectors across the region to reduce leakages in supply-chains seen in some of the region's sectors of strength
WGP Role	<ol style="list-style-type: none"> 1. Convene: Join-up and map partners needs 2. Champion: Research, present and champion findings to central Government 3. Lead: WG programme for digital access 	<ol style="list-style-type: none"> 1. Lead: Carry-out pan-regional transport review 2. Convene and champion: Connect with partners (inside and outside the region) to apply for joint funding 3. Convene: Link to central Gov priorities such as linking the nation 	<ol style="list-style-type: none"> 1. Convene: Utilise WGP regional 'convening power' 2. Convene: Create forums across the key themes of interest 3. Champion: Support established networks and links with other regions
Example Outputs	WG-wide digital connectivity programme with clear priorities to maximise aggregate economic output simultaneous to creating opportunities for the lagging behind regions, increasing the average digital connectivity and universalisation metrics	Pan-regional transport programme to be delivered by either the WGP or a relevant partner and support to deliver regional recommendations such as the Burns report	Build on the informal networks already in place, developing thematic business boards that provide steer, guidance, and support in achieving the WGP's objectives
Link to Examples	<ul style="list-style-type: none"> • Programmes to increase superfast broadband access to remote locations • Initiatives to increase business access to full/dark fibre connections 	<ul style="list-style-type: none"> • Bids/proposals for improved road access and improved transport corridors • Pan-regional transport plan targeted on the whole WG (linking with local plans) 	<ul style="list-style-type: none"> • Digital Accelerator programme/bid (this is a multidisciplinary example) • Cyber resilience alliance • GW4 universities research coalition


Appendix 7.4 Example workpackage: Skills

Skills	
Objective	Have a pan-regional map of skills shortages and requirements, particularly in digital and leadership skills, in close alignment with the private sector, and linked to the relevant educational institution at all educational and administrative levels to improve relevance and utility of training programmes
WGP Role	<ol style="list-style-type: none"> 1. Convene: Create a forum across partners to share knowledge and link initiatives 2. Lead: Coordinate and deliver a package of skills to support the foundational economy 3. Champion: With the support of partners prepare a pan-regional funding application for a pan-regional skills programme
Example Outputs	Regular knowledge sharing across partners and collaboration across programmes of synergies, led by partners and identify opportunities for pan-Gateway skills provision
Link to Examples	<ul style="list-style-type: none"> • WG digital skills council • LEP employment and skills plan – e.g. adult education package • Midlands Engine skills networks and direct skills programmes

Appendix 7.5 Example workpackage: Brand and place

	 Brand	 Place/Attractiveness
Objective	Define and get partnership buy-in on a clear and coherent picture of the region's identity, as well as living and communicating that story to the region, the UK and the world to increase awareness abroad and raise foreign investment and exports	Build on the region's natural assets and abundant opportunities to make it the most attractive place to live and one of the most attractive places to visit in the UK, increasing the ability to attract top talent and investment
WGP Role	<ol style="list-style-type: none"> 1. Leading: Develop a coherent story that represents the region as a whole with a marketing agency 2. Champion: Assembling investment brochure for the region, capturing all main sectors and geographies 	<ol style="list-style-type: none"> 1. Lead: Comprehensive regional places plan and WG to lead on core regional placemaking programmes 2. Champion: Define core placemaking requirements and support partner led bids that have alignment with regional priorities
Example Outputs	Develop a clear and iterative international investment proposition and increase the regional, national and international awareness and presence	Creation and communication of a clear placemaking strategy and targeted support/funding initiatives to make the WG the most attractive place in the UK to live
Link to Examples	<ul style="list-style-type: none"> • DIT development of an investment prospectus 	<ul style="list-style-type: none"> • Numerous placemaking initiatives run by different partners such as the garden town projects

Appendix 7.6 Example workpackage: Data and monitoring

 Data observatory	
Objective	Development of a robust evidence base and provide timely, accessible and impactful data for partners, business and Government to support the WG and improve decision-making and clarify areas for intervention
WGP Role	<ol style="list-style-type: none"> 1. Lead: Creation of a robust and proportional regional data observatory 2. Convene: Convening of a research and advisory board to help interpret findings and direct research objectives for the WGP
Example Outputs	A clear, accessible and timely provision of data and intelligence presented to an expert panel to suggest actions and inform decisions
Link to Examples	<ul style="list-style-type: none"> • Data observatory panel run by Midlands Engine



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