

**Synopsis of the Draft Plan for Innovation**

Foreword - *Mayor / LEP Board Chair [to follow]*

# **Introduction**

## **Why innovation?**

Innovation is about the creation and use of new ideas – tackling global challenges and improving people’s lives. It is the process which drives human progress and turns ideas into value, prosperity and well-being, delivering real change across all aspects of our society, from transport and housing to art and nature. Crucially, innovation plays a vital role in addressing the world’s biggest challenges – from tackling pandemics to reaching net zero.

Innovation is vital to our region’s productivity and growth. Through innovation, organisations develop new products, processes and services for people and improve efficiency and resilience. Innovative organisations grow twice as fast as those that fail to innovate,[[1]](#endnote-2) creating high quality jobs and opportunities for our residents. Slowdown in UK labour productivity growth can largely be attributed to a slowdown in innovation.[[2]](#endnote-3) In the last two decades, the share in the UK economy of high-productivity sectors such as manufacturing and mining has reduced; this resulted in a loss of productivity growth of over 0.5% on average each year for the last two decades.[[3]](#endnote-4) This Plan identifies the region’s key innovation sectors and technologies that will help the UK counteract the downward trend, and put the region at the core of growth to benefit its residents and natural environment as well as the nation as a whole.

## **Why now?**

The clock is ticking, and we know we need to take urgent action to meet our global commitments and remain competitive internationally. By acting now, we can seize the opportunities to create a better future for our residents.

*“We are living in a time of challenge; a time of constant change; but also, a time of very significant opportunity. There’s the opportunity to help and improve the present and the opportunity to create the future. A future of prosperity, good health, respect for our planet and environment – and a future of fairness, diversity and equality”.* Indro Mukerjee, Chief Executive Officer, Innovate UK

We are ready to accelerate our innovation activity right now and are looking to increase investment and collaborations from and with Government, industry and other investors. We have the people and organisations with the expertise, dynamism and drive to maximise the impact of our innovation assets for our residents, for our nation and as well as globally.

## **Why here?**

The West of England is a science super-power with an innovation record spanning from Brunel to vertical flight. The region already benefits from a strong platform of talented people, innovative businesses and world leading research assets. Our unique mix of culture, people, businesses and organisations means that we are a place where ideas flourish. As a result:

* We are the most productive city region outside London
* 47% of our businesses are innovation active, the 5th highest of all LEPs
* Our businesses have been awarded the highest level of innovation funding outside of London
* We hosted the world’s first 5G smart tourism trial
* We are home to 585 scale-ups who employ 114,376 people and turnover £13bn; this is more scale-ups than the national average
* We have the most skilled workforce of any English core city region and 80 people per week re-locate here from London
* We have more people employed in science, technology and engineering roles than the national average
* In 2019, our carbon emissions per person were 17% lower than the UK

### **Our Place-based Advantages**

We are a global centre of innovation excellence with these significant place-based advantages underpinning our innovation leadership:

* ***Our outstanding digital and technology prowess***helping us deliver our innovation priorities. Key West of England Technologies are:
* Advanced Materials & Manufacturing
* Robotics & Smart Machines
* AI, Digital & Computing
* Energy and Environment Technologies
* ***Our key innovation strengths*** providing a focal point around which our innovation communities come together to deliver transformational opportunities. Key Regional Innovation Strengths are:
* Advanced Engineering
* Clean Energy
* Health Equality
* Sustainable Fintech
* Immersive Creative
* ***Our* *collective approach*** *and* collaborative spirit unlocking a world of possibilities.
* ***Our world-leading scientists and researchers*** put us at the forefront of cutting edge research that will transform lives.
* ***Our Authority’s existing programme of enabling activities***supports our innovation system by improving our digital infrastructure and connectivity, empowering our residents through skills and training and encouraging our business to start and grow.

## **What does this Plan do?**

Our region has a unique opportunity to take a lead in tackling the great challenges of our day that matter to our residents and businesses. In so doing, we will sustainably stimulate productivity and economic growth, provide exciting opportunities for people across the region and support the recovery of our natural environment.

This Plan is not starting from scratch but builds on the commitments made in our Local Industrial Strategy and the   
COVID-19 Recovery Plan. The actions proposed in this Plan also complement and support priorities set out in our Climate and Ecological Emergency Action Plan as well as the Employment and Skills Plan.

This Plan puts us on a path to further accelerate innovation activity in the region in partnership with regional and national stakeholders. We are and will pioneer innovative solutions that not only benefit the West of England but benefit the world and make a huge contribution to the UK’s future resilience and growth.

However, we cannot achieve our regional ambitions by acting alone. Therefore, this plan highlights the commitments that we will make as an Authority as well as the wider commitments of both local and national partners. In addition, we identify the resources and support required from Government. Alongside this, Innovate UK committed to working with us to develop the principles and practical arrangements for closer long-term collaboration to increase innovation rates across the region.

Our role, as the Combined Authority, will be to:

* **Inspire**: Inspire our people and businesses to engage with the world of innovation and communicate our offer to the world
* **Engage and lead**: bring relevant organisations and people together to champion our shared ambitions
* **Enable:** convene the financial, technological and human resources necessary to deliver our ambitions

| * Make our transport services more **carbon efficient, reliable, affordable, enjoyable and safe** for our residents * Reduce traditional transport demand and encourage **modal shift** * Decrease transport **emissions and congestion** and improve **air quality** |
| --- |
| * Increase use of **zero carbon energy generation, storage and management technologies** (including hydrogen, tidal, floating offshore wind, batteries and nuclear fusion) * **Decarbonise** the region’s key industrial sectors across manufacturing and supply chains (including within health care, advanced engineering and aerospace/aviation) * Accelerate **climate emergency adaptation and mitigation** and **nature conservation and recovery** * Accelerate the development of **green finance solutions** to enable residents and businesses to finance environmental improvements * **Empower our communities** to tackle the climate and ecological emergency |
| * Create **accessible innovation jobs** for our residents * **Increase participation** in a wide range of innovative sectors * **Help businesses** to increase innovative products, services and processes being developed and adopted in our region * Increase the **diversity** of our innovation community |
| * Environmentally positive **new construction solutions** * Help residents and businesses adopt new to market energy saving solutions for **challenging and hard to treat properties** * Enable **vibrant and sustainable communities** through new approaches and solutions * Revitalise and build resilience in our **high streets and town centres** * Protect and help our **natural environment recover** |
| * Attract and leverage a **significant increase in private and public R&D expenditure** in the region * Consolidate **our region’s standing** as a global centre of innovation excellence * Help our businesses and organisations to **succeed on the international stage** |

# **PLAN ON A PAGE**

# Our Innovation Mission

‘To put the West of England on the map, tackle the climate and ecological emergency, and secure decent jobs and training and better quality of life for our residents, we will bring together the region’s innovators, scientists and creative thinkers around our Innovation Priorities.

Innovation is key to growth, productivity and prosperity in the   
region. It plays a key role in tackling challenges that matter most   
to our region, people, industry and environment, such as net zero.

We will target our innovation activities against five **Innovation Priorities,** to achieve real benefits for people across the region:

**Priority 1:** New and better ways of moving people and goods  
**Priority 2:** New and better products, processes & services for climate   
and nature  
**Priority 3:** Securing good jobs and training for innovation  
**Priority 4:** New ways of creating homes, places & vibrant communities  
**Priority 5:** Putting our world class innovation cluster on the map

The West of England is already a **global centre of innovation excellence.** We have a unique mix of advantages:

* Our outstanding digital and tech prowess
* Our key innovation strengths
* Our collective approach enabling us to collaborate widely
* Our world-leading scientists and researchers
* Our Authority’s existing programmes which enable innovation

# **Our Innovation Priorities in Detail**

| Innovation Priority 1: New and better ways of moving people and goods | |  |
| --- | --- | --- |
| Effective transport systems are vital to our society and to our region’s productivity, allowing us to access jobs, education, services and leisure as well as moving goods across the region. As the regional transport authority, our role is to make transport more reliable, affordable, enjoyable and safe.  Whilst the movement of people and goods is essential, it has significant impacts on the environment and people’s health. Transport emissions contribute approx. 44% of our emissions and have remained level over the past 15 years[[4]](#endnote-5). We need a significant modal shift from private cars to achieve our net zero targets and improve the air we breathe.  Within the West of England, we have nationally significant innovation assets and capabilities that are pioneering significant changes in the way we move people and goods. Technological and digital advances in the field are pioneering driverless cars, alternative fuel and propulsion systems, pay as you go services and smart travel initiatives to name but a few.  To address the above challenges, the Authority aims to be at the forefront of developing and applying innovative approaches and technologies to improve the way goods and people are moved, for example through our Future Transport Zone. However, we must do more and faster if we are to achieve our goals, and address problems at systems level. For instance, better use of real-time data could improve the delivery of our services, and new modes of transport can contribute. Innovation in the connectivity of our communities which enable people to access services locally, and social innovation techniques both have the potential to drive modal shift or reduce the need for transport altogether. | **CASE STUDY: FUTURE TRANSPORT ZONE** | **Relevant strengths and technologies:** |
| **Advanced Engineering** |
| Clean Energy |
| **WofE Technologies** |
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| What we want to achieve and how we will do it | | | |
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| What outcomes we want to achieve | **Our innovation focus – How innovation will support delivery of the outcome** | **Our actions – Practical steps we will take** | **Our ask of Government** |
| Make our transport services more carbon efficient, reliable, affordable, enjoyable and safe for our residents | By deploying digital and technological innovations in the delivery of transport services |  |  |
| Reduce traditional transport demand and encourage modal shift | By driving social innovation in our work with communities and partners |  |  |
| Decrease transport emissions and congestion and improve air quality | By supporting targeted research and innovation (including innovation propulsion and fuel systems, urban air mobility and autonomous vehicles and digital connectivity solutions) |  |  |

| Innovation Priority 2: New and better products, processes & services for climate & nature | | |
| --- | --- | --- |
| The [West of England Climate and Ecological Strategy and Action Plan](https://www.westofengland-ca.gov.uk/wp-content/uploads/2022/04/West-of-England-Climate-and-Ecological-Strategy-and-Action-Plan-2022.pdf) sets out the ambition that in 2030:   * The West of England is net zero carbon; and * Wildlife and the natural environment are in recovery, with their decline halted.   Whilst we have reduced total emissions since 2005, the evidence is clear - we are not on track to meet these objectives and we must go further and faster[[5]](#endnote-6).  Innovation will be a significant component in achieving these ambitious goals. Innovative regions have the potential to grasp huge economic opportunities: increase productivity, build a resilient economy and improve the quality of life for residents, both now and in the future.  We have the skills, capabilities and ambition in the region to be a major driver of the change required. Our scientists, creative thinkers and businesses are pioneering solutions to global challenges in their expert fields. With our strong capabilities in R&D across the aerospace, advanced engineering, digital, creative and tech sectors, coupled with our dynamic and collaborative way of working, our region is ready to lead the global transition to clean systems.  As well as supporting the development of new products and processes, we must bring to bear the full power of innovation to accelerate the adoption of existing knowledge and technologies which is lagging and holding back productivity. This could be through developing innovative delivery mechanisms or trialling new ways of working with our communities to help people make the changes needed in their day to day lives and work. | **CASE STUDY:** | **Relevant strengths and technologies:** |
| **Advanced Engineering** |
| **Clean Energy** |
| **Sustainable FinTech** |
| **WofE Technologies** |
|  |

| What we want to achieve and how we will do it | |  | | |
| --- | --- | --- | --- | --- |
| What outcomes we want to achieve | **Our innovation focus – How innovation will support delivery of the outcome** | | **Our actions – Practical steps we will take** | **Our ask of Government** |
| Increase use of zero carbon energy generation, storage and management technologies (including hydrogen, *tidal, floating offshore wind, batteries and nuclear fusion*) | By supporting the development of new technologies, systems and deployment approaches | |  |  |
| Decarbonise the region’s key industrial sectors across manufacturing and supply chains (including within health care, advanced engineering and aerospace/aviation) | By providing innovation leadership in sustainable materials, energy and environmental technology and alternative fuels | |  |  |
| Accelerate climate emergency adaptation and mitigation and nature conservation and recovery | By using innovative technology and digital data (including space technology) to develop new approaches | |  |  |
| Accelerate the development of green finance solutions to enable residents and businesses to finance environmental improvements | By encouraging the green finance sector to grow ambitiously in the region | |  |  |
| Empower our communities to tackle the climate and ecological emergency | By developing pioneering community-based initiatives | |  |  |

| Innovation Priority 3: Securing good jobs and training for innovation | |  |
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| We have more people employed in science, technology and engineering roles than the national average. The innovative businesses and industries in our region are highly productive and have high growth potential, creating more decent jobs and fulfilling careers for our residents. However, skills shortages (including green skills) prevent our expanding innovative businesses from growing further.  We must make sure everyone is able to access these decent job opportunities. People from disadvantaged backgrounds, older people, ethnic minorities, disabled people and women are less likely to access or progress into these jobs[[6]](#endnote-7). Not only does this drive inequalities, but businesses are not able to draw on the diverse talent they need to grow. Companies with executive teams in the top quartile for gender diversity are 25% more likely to outperform their competitors and this rises to 36% for ethnic diversity[[7]](#endnote-8). By ensuring all our residents have access to clear pathways and training into these job opportunities we can address inequalities, tackle skills shortages and improve productivity.  We must continue our very successful programmes which are creating the environment for businesses to innovate. Projects such as the Business Innovation Fund, DETI and Tech for Growth are helping businesses to develop new products and services by connecting with experts and making better use of digital technology and skills programmes. For example, Workforce for the Future and DSIP are helping businesses to attract and develop the skilled people they need to support innovation. Alongside this, we need to continue to collaborate in sector-based R&D initiatives and innovation opportunities which provide vital industry specific support. | CASE STUDY | **Training and Support for Residents:** |
| **WofE Technologies** |
| **Innovation Support for Businesses:** |
| **Advanced Engineering** |
| **Clean Energy** |
| **Health Equality** |
| **Sustainable Fintech** |
| **Immersive Creative** |

| What we want to achieve and how we will do it | | | |
| --- | --- | --- | --- |
| What outcomes we want to achieve | **Our innovation focus – How innovation will support delivery of the outcome** | **Our actions – Practical steps we will take** | **Our ask of Government** |
| Create accessible innovation jobs for our residents | By helping innovative businesses to grow, and to enhance the capability of their people |  |  |
| Increase participation in a wide range of innovative sectors | By inspiring and supporting residents to participate in a wide range of pathways into innovation sectors (including low carbon)  By influencing schools and education providers to deliver the curriculum relevant to our innovation sectors |  |  |
| Help businesses to increase innovative products, services and processes being developed and adopted in our region | By making it easier for our businesses to access research support and innovation facilities (including IP) |  |  |
| Increase the diversity of our innovation community | By embedding delivery of suitable skills and training activities as a condition of all innovation initiatives we support or deliver  By collaborating with organisations and communities focussed on diversifying innovation |  |  |

| Innovation Priority 4: New ways of creating homes, places and vibrant communities | | |
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| Availability and affordability of sustainable homes and premises is a significant issue for the region. If we are to reach net zero targets, we need to improve the energy performance of both new and existing buildings. Projects such as the Innovation Housing Retrofit scheme are already demonstrating new technologies to support our retrofit agenda.  Buildings and neighbourhoods need to incorporate innovative design and construction techniques to meet our future needs in terms of environment, well-being, equality and inclusivity. This applies both to individual homes and also at community level, to create places for our residents where people and nature can thrive. Assisted living solutions, digital infrastructure, sustainable materials, adaptability to the environmental emergency, nature recovery, regeneration of the high street and cultural connectivity are key to this.  Innovation in design, materials, financial/legal services and construction techniques have the potential to improve housing delivery and the performance of our homes and buildings by introducing:   * new technologies that offer better performance (e.g. sustainable advanced materials, clean energy; AI) * new construction techniques that allow buildings to be constructed more quickly or to a higher standard (e.g. additive engineering) * new methods of design (e.g. digital twinning) or concepts which improve the liveability and health of our homes and communities * new ways of enabling communities to access and make use of these innovation opportunities (e.g. ethical finance) | CASE STUDY | **Relevant strengths and technologies:** |
| **Advanced Engineering** |
| **Clean Energy** |
| **Sustainable Fintech** |
| **Health Equality** |
| **WoE Technologies** |

| What we want to achieve and how we will do it | | | |
| --- | --- | --- | --- |
| What outcomes we want to achieve | **Our innovation focus – How innovation will support delivery of the outcome** | **Our actions – Practical steps we will take** | **Our ask of Government** |
| Environmentally positive new construction solutions | By supporting innovative design and planning, advanced materials and digital connectivity technologies |  |  |
| Help residents and businesses adopt new to market energy saving solutions for challenging and hard to treat properties | By developing innovative barrier busting adoption processes for energy savings in buildings |  |  |
| Enable vibrant and sustainable communities through new approaches and solutions | By developing innovative place-making approaches for our rural and urban communities (*e.g. new forms of local food production, health and social care delivery, access to nature and transport*) |  |  |
| Revitalise and build resilience in our high streets and town centres | By innovating the way we design our built environment with a focus on central spaces |  |  |
| Protect and help our natural environment recover | By supporting our people and businesses in the adoption and development of new products and processes focussed on nature recovery and protection |  |  |

| Innovation Priority 5: Putting our world class innovation cluster on the map | |  |
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| The West of England is known for world leading, world changing innovation, with buoyant innovation clusters including the advanced engineering, creative & digital and professional services. Our scientists, researchers and businesses form part of an extensive global network of innovators, regularly working across borders to deliver solutions to global challenges that matter to our residents.  A vital ingredient of this heritage is our outward looking, internationally facing innovation culture. Our national and international connections and partnerships are essential to producing breakthroughs in our key challenge areas. These breakthroughs consolidate our region’s position as a global centre of innovation excellence, stimulating regional productivity and economic growth for the benefit of our residents and businesses.  Similarly, it is essential to ensure that translational research opportunities are maximised to ensure ideas and discoveries from emerging research projects are translated into products and services that address our regional Innovation Priorities. Businesses that participate in global innovation projects are more likely to grow and create decent jobs for our residents.  This will put our businesses in an ideal position to:   * Compete in international markets and export innovative goods and services * Be part of international supply chains * Attract inward investment in research, development and innovation | CASE STUDY | **Relevant strengths and technologies:** |
| **Advanced Engineering** |
| **Clean Energy** |
| **Sustainable Fintech** |
| **Immersive Creative** |
| **WofE Technologies** |

| What we want to achieve and how we will do it | | | |
| --- | --- | --- | --- |
| What outcomes we want to achieve | **Our innovation focus – How innovation will support delivery of the outcome** | **Our actions – Practical steps we will take** | **Our ask of Government** |
| Attract and leverage a significant increase in private and public R&D expenditure in the region | By shaping, supporting and leading collaborative innovation partnerships and consortia aligned to our Innovation Priorities and key innovation strengths and technologies  By identifying opportunities through horizon scanning and sharing intelligence with our wider innovation community |  |  |
| Consolidate our region’s standing as a global centre of innovation excellence | By presenting a compelling and co-ordinated offer to the world, showcasing the opportunities for national and global partners to innovate, invest and partner with us |  |  |
| Help our businesses and organisations succeed on the international stage | By making connections across and through our ecosystem, and  championing West of England innovations to be valued beyond our boundaries |  |  |

# **Our Place-Based Advantages**

The West of England has long been at the cutting edge of technology and innovation: Brunel, Concorde, computing, advanced materials, haptics, vertical flight, immersive tech, 5G – the rollcall of innovation achievements goes on. At our fingertips, an impressive range of advantages, in combination unique. Our **place-based advantages** will propel the delivery of our innovation priorities.

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| | Place-based Advantage: Our Collective Approach | | --- | | The West of England is the perfect place for collaboration. With a strong sense of community, edgy culture and diverse and talented population, our people’s collaborative spirit unlocks a world of possibilities. | | * Our world leading talent pool - Our opportunities, culture and quality of life mean that the West of England is one of the most desirable places to live in the UK. Our four universities produce 10,000 graduates a year – many of whom stay in the area after graduating. As a result, we have more people with a degree education and more people employed in science, technology and engineering roles than the national average. * Our ways of working - We are known for our collaborative way of working. Our strong networks, sense of community, open attitudes and ‘edgy’ culture create the perfect environment for idea generation and development. * Our Diverse People and Culture - With 91 languages spoken and 45 different religions, the West of England is a hub of diverse and international activity. This cultural diversity drives new ideas and initiatives. * Our ambition - To unlock even more possibilities for new ideas to take off through achieving greater equality and inclusion in innovation. * Our Place - Not too big, not too small enables meaningful connections to be made, ideas to be shared and innovative products to be developed. | |

| Place-based Advantage: Our world leading Science and Research Capabilities |
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| The West of England’s outstanding science and research capabilities, innovation institutions and collaborative R&D leadership put us at the forefront of cutting edge research that will transform lives |
| * Our track record of world leading R&D and innovation - Our globally connected universities, research organisations and businesses are delivering pioneering solutions to global challenges as well as providing education and training opportunities for our people * Our distinctive research strengths - Our research strengths in areas such as life and health sciences, net zero, energy, advanced engineering and computing, put us at the forefront of cutting edge research that will lead to new products and services * Our Collaborative R&D successes - Collaborative projects such as DETI, IAAPS and MyWorld, provide the foundations for future innovative partnerships * Our Real Life application of Innovation - Through a series of testbeds and trials we test new technologies in real life settings involving our residents and businesses, providing invaluable feedback to researchers to allow them to improve their products. |

| Place-based Advantage: Our Authority’s Programme of Enabling Activities |
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| The Combined Authority provides a huge, targeted range of programmes to support residents to train and find employment, to improve digital infrastructure and connectivity, and to support businesses to start and grow. These activities are of huge benefit to our innovation ecosystem. |
| Employment and Training - We bring together local employers, skills providers and other stakeholders to help residents to develop the skills they need to achieve their potential. We provide one to one career coaching and access to a range of training and skills support for individuals as well as supporting businesses to access a range of services to help them develop their employee skills. Our [Skills Portal](https://www.westofengland-ca.gov.uk/what-we-do/employment-skills/skills-portal/) provides access to all these initiatives.  Business Support - The [West of England Growth Hub](https://r1.dotdigital-pages.com/p/4PDY-ABE/www.westofengland-ca.gov.uk/growth-hub/) provides tailored support, expert guidance and access to finance and support programmes to small and medium-sized businesses. We bring together local and national business support in one place, making it easy for you to find what you need. We will connect you to the best public and private sector partners and suppliers to help your business develop and grow. We provide small and medium-sized businesses with the expert help and guidance they need to safeguard their Intellectual Property.  Inward investment Service – [words to follow – IBB] Digital Infrastructure and Connectivity – [words to follow – Digital team] |

| Place-based Advantage: Our Digital and Technological Prowess | |
| --- | --- |
| Our outstanding digital and technological capabilities will help us deliver our innovation priorities as well as build regional resilience through the competitive advantage they provide | |
| Major digital and technological revolutions, such as computing or composite materials, have transformed our world. Emerging technologies can make a fundamental difference to addressing global challenges and shaping lives of people and communities across the world, including in the West of England.  Partly due to its history and its key industry sectors, our region is a science and technology super-power. Our evidence base accumulated for and since the Local Industrial Strategy 2017 confirms that our innovation clusters provide the foundations for the region to lead in digital and technology driven creativity, manufacture and services. Our researchers and scientists have in the past and are now working at the cutting edge of technologies such as quantum, robotics, AI and cloud computing which have real-life applications.  With their pivotal impact also comes a set of challenges around their deployment, including accessibility and responsible use. Our region takes a lead here too, for example through university research activities such as the Institute of Coding and the UKRI Centre for Doctoral Training in Accountable, Responsible and Transparent AI both based at University of Bath, and the Authority’s own Plan for Digital.  There is an opportunity for the West of England through its outstanding digital and technology capability to maximise its competitive advantage on the national stage and to help the UK to secure and extend its global leadership in these areas. | Government in itsInnovation Strategy highlights seven ‘families’ of technologies which offer **global** strength and opportunity for the UK:   * Advanced Materials and Manufacturing * AI, Digital and Advanced Computing * Bioinformatics and Genomics * Engineering Biology * Electronics, Photonics and Quantum * Energy and Environment Technologies * Robotics and Smart Machines   To take forward our innovation priorities, this Plan for Innovation relies significantly on the evidence for the outstanding digital and technological strengths of our place, illustrated and highlighted throughout the Plan. They are:   |  |  |  |  | | --- | --- | --- | --- | | West of England Technologies | | | | |  | | | | | Robotics & Smart Machines | **AI, Digital & Computing** | **Energy and Environment Technologies** | **Advanced Materials & Manufacturing** | |  |  |  |  | |

| Place-based Advantage: Our Key Innovation Strengths | |
| --- | --- |
| These are the West of England strength areas where inventors, innovation communities, research organisations and regional ambition come together and where transformational research is most likely to produce game-changing real-life applications that stand up to deployment or commercialisation. | |
| Our region has a proud innovation record. Ground-breaking feats of the region include a great variety of advances for example Brunel, vertical flight, quantum computing, bionics, 5G testbeds and digital twinning.  The Digital Economy Council report 2021 states that the number of ‘unicorn’ companies worth over $1bn in the region’s burgeoning tech sector is predicted to double over the coming years[,](https://www.business-live.co.uk/technology/ultraleaps-touchless-technology-used-museums-18801374) following in the footsteps of companies such as Vertical Aerospace, Ovo Energy, Solarsense and Graphcore.  Our evidence base accumulated for and since the Local Industrial Strategy 2017 highlights the unique mix of strengths of our region particularly across engineering, energy, health, professional services and creative industries.  These industries have a long history, vibrant present and exciting future working together with innovation ecosystem to tackle challenges that matter to our residents and the planet. Our established track record of collaborative R&D across our key innovation strengths includes multi-partite programmes and partnerships focussing on air quality, tourism, net zero engineering, housing retrofit and community energy generation. Our ambition is to carry our experience and skills forward into areas as varied as for example hydrogen systems, modern construction, green finance and immersive reality emulation. | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Regional Key Innovation Strengths | | | | | | Advanced Engineering | **Clean Energy** | **Health Equality** | **Sustainable Fintech** | **Immersive Creative** | |  |  |  |  |  | | Clean Propulsion; Smart & Sustainable Aerospace;  Space for Climate, Defence & Security; Modern Construction;  5G | Hydrogen;  Floating Offshore Wind;  Hydro-electric;  Nuclear;  Battery Storage; Retrofit Innovation | Advanced Therapies;  Digital Health;  Assisted Living | Access to Finance;  Green Finance;  Ethical Finance;  Legal Tech | Extended & Mixed Reality;  Virtual Production;  Gaming |   **Our key innovation strengths are:** |

# **Our Innovation Region**

Let’s take a closer look at our region’s technologies and key innovation strengths. Our innovation landscape is rich in stories, case studies, successes and ambition.

[-> Regional s*howcase to be incorporated here - IBB, with case studies, illustrations etc based on*:]

| Regional Key Innovation Strengths | | | | |
| --- | --- | --- | --- | --- |
| Advanced Engineering | **Clean Energy** | **Health Equality** | **Sustainable Fintech** | **Immersive Creative** |
|  |  |  |  |  |
| Clean Propulsion; Smart & Sustainable Aerospace; Space Applications for Climate and Defence & Security; Modern Construction | Hydrogen; FLOW; Hydro-electric, Nuclear; Battery Storage | Advanced Therapies; Digital Health; Assisted Living | Access to Finance; Green Finance; Ethical Finance | Virtual & Augmented Reality; Media Production; Gaming |
| WofE Technologies | | | | |
| Robotics; AI, Digital and Computing; Clean Tech; Advance Materials and Manufacturing, Quantum | | | | |

# **Implementation**

## Implementation Plan

## Monitoring and Evaluation

1. NESTA (2009) ‘Business Growth and Innovation: The wider impact of rapidly growing firms in the UK city regions.

   Available from: https://media.nesta.org.uk/documents/business\_growth\_and\_innovation.pdf [↑](#endnote-ref-2)
2. P. Goodridge, J. Haskel (2022) Accounting for the slowdown in UK innovation and productivity Working Paper No. 022, The Productivity Institute. [↑](#endnote-ref-3)
3. The Adoption of Innovation, Stanford Social Innovation Review (2022) <https://ssir.org/articles/entry/the_adoption_of_innovati> [↑](#endnote-ref-4)
4. West of England Climate and Ecological Strategy and Action Plan [West of England Climate and Ecological Strategy and Action Plan 2022 (westofengland-ca.gov.uk)](https://www.westofengland-ca.gov.uk/wp-content/uploads/2022/04/West-of-England-Climate-and-Ecological-Strategy-and-Action-Plan-2022.pdf) [↑](#endnote-ref-5)
5. West of England Climate and Ecological Strategy and Action Plan 2022. [West of England Climate and Ecological Strategy and Action Plan 2022 (westofengland-ca.gov.uk)](https://www.westofengland-ca.gov.uk/wp-content/uploads/2022/04/West-of-England-Climate-and-Ecological-Strategy-and-Action-Plan-2022.pdf) [↑](#endnote-ref-6)
6. Women make up just 12% of Engineers and 26% of UK Science, Technology, Engineering and Mathematics (STEM) workforce, despite making up 51% of our population. Similarly people from Black, Asian and Minority Ethnic backgrounds make up 7% of engineers, despite being 13% of the population. Source: <https://www.nccuk.com/media/n3dfqr1r/deti-digitalnow-programme-issue-1-2021.pdf> [↑](#endnote-ref-7)
7. Building the Future Economy. Plan for action for UK business innovation. Innovate UK [↑](#endnote-ref-8)