



OXFORD -  
CAMBRIDGE  
ARC

# The Oxford-Cambridge **Arc** Economic Prospectus

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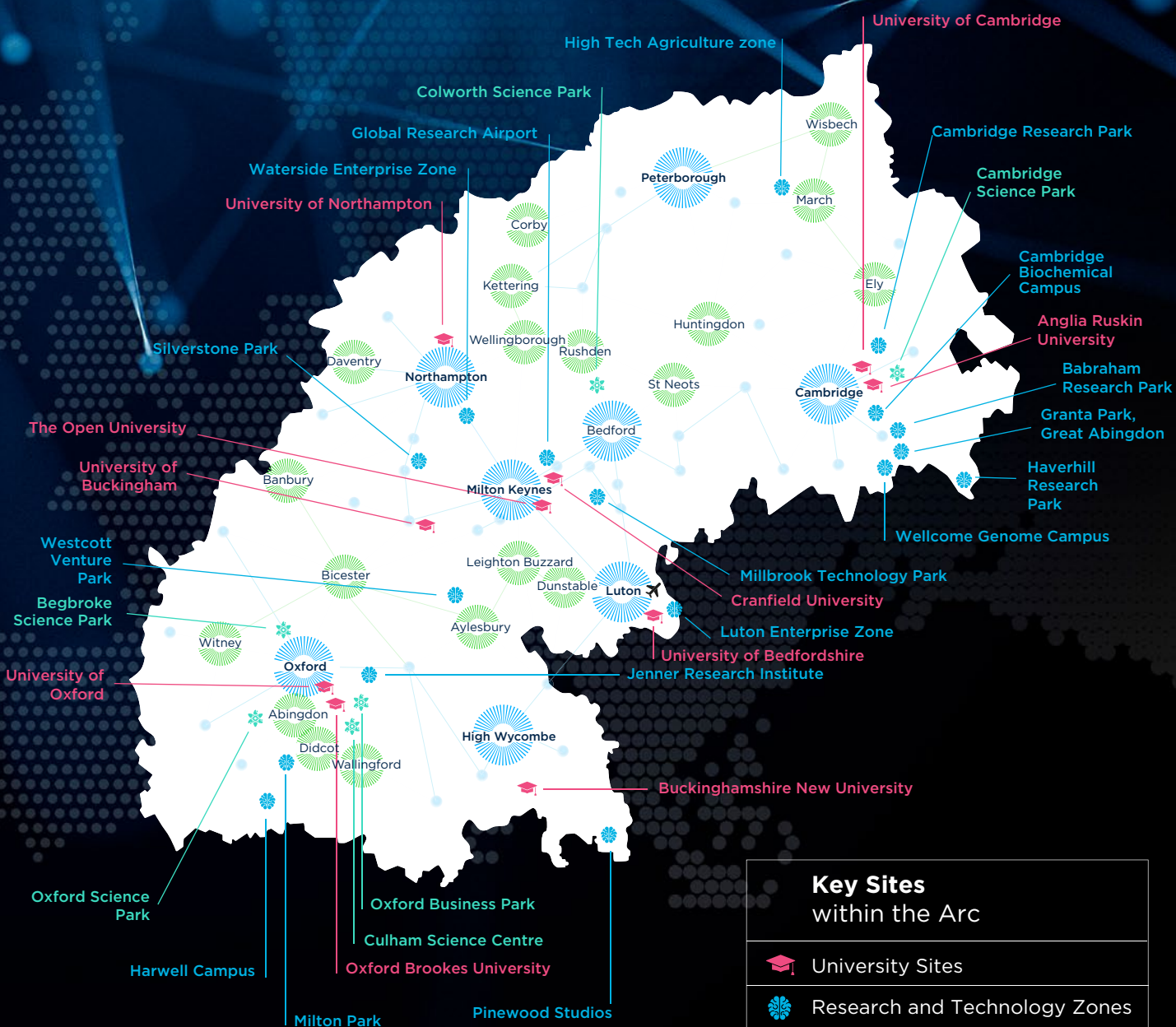
## Executive summary

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The **Oxford-Cambridge Arc** has unrivalled assets of international standing and significance. With the commitment of Government to long term investment in the area, the Arc will fulfil its true potential to deliver transformational economic growth that will benefit the whole of the UK. Investment is critical to tackle connectivity and congestion constraints and to provide the skills that industry requires to enable the Arc to pursue its role as a leading global innovation region.



#### Key Sites within the Arc

|           |                               |
|-----------|-------------------------------|
|           | University Sites              |
|           | Research and Technology Zones |
|           | Science Parks                 |
| <b>19</b> | FE College Groups             |



The Arc has an incredible tradition of bringing the best minds together to create solutions to the most complex challenges. It is home to some of the world's greatest innovators who transform lives with their ideas, entrepreneurs who have created world leading products and services and researchers and academics who are at the frontier of human discovery.

With investment, this area will enhance its world-leading science, technologies and industries which can drive competitive growth, deliver sustainable outcomes and secure inclusive job creation for the UK economy over the coming decades.

The Arc's growth will be innovation-led and aimed at helping to solve the major economic, environmental, health and social challenges facing the world. This will drive UK green growth and create better-quality opportunities for our residents and businesses, now and in the future.

Above. AstraZeneca, Cambridge Biomedical Campus.

#### The Arc comprises

3.8 Million Residents

High-tech clusters and science parks and a current GVA p.a. of £111bn

2 Million Jobs

10 universities, contributing £13bn p.a. GVA<sub>2</sub>

1 International Airport

7000+ English Heritage recognised sites

26 local authorities, covering 5 historic county areas

3 local enterprise partnerships<sup>1</sup>

1 Combined Authority Business Board

1 emerging sub-national transport body

one shared ambition



**Our vision:** By 2050, the Arc will be the world leading place for high-value growth, innovation and productivity. A global hub where ideas and companies are generated and thrive, home to exemplary models of 21st century development, with a high-quality environment and outstanding quality of life, and with a strong economic focus that drives inclusive clean growth.

## Ambition

Our ambition is to create a world-leading innovation region that will deliver the Arc's transformational economic potential and double the area's GVA p.a. to over £200bn.

## A call for action

The Arc Leadership will pursue innovation-led growth to help solve major, urgent environmental, health and social challenges and at the same time, drive UK competitiveness and local prosperity.

With investment, we can better connect and release the potential of the critical mass of research, assets and expertise of the Arc's people, businesses and institutions. We will be home to exemplary models of green development, by being a global testbed of new ways of living and working. We can achieve our aim of becoming a Green Arc, which demonstrates that net-zero carbon and environmental net gain are both achievable and economically beneficial.

This region can deliver at a scale able to propel the Arc and the UK into a new era of global growth at the vanguard of innovation.

The Arc's economic potential is of global significance but we are very early in the life cycle of regional maturity. We now need government backing and joined-up investment from across Whitehall.

This will help us to clearly establish our nationally significant status and to develop robust and committed investment channels so that we may upgrade critical parts of our infrastructure and secure the future competitive edge of our knowledge assets.

## The Arc at work

The Arc partnership will work at pace to achieve our vision. We will work collaboratively with local, national and international stakeholders eager to explore new models of delivering the economic outcomes we want to see. Our focus will be on:

**Initiatives which have impact across local borders:** Initiatives that maximise the collective strengths of the region.

**Nationally significant initiatives:** Programmes which will reinforce positive perceptions of the UK and have a global impact.

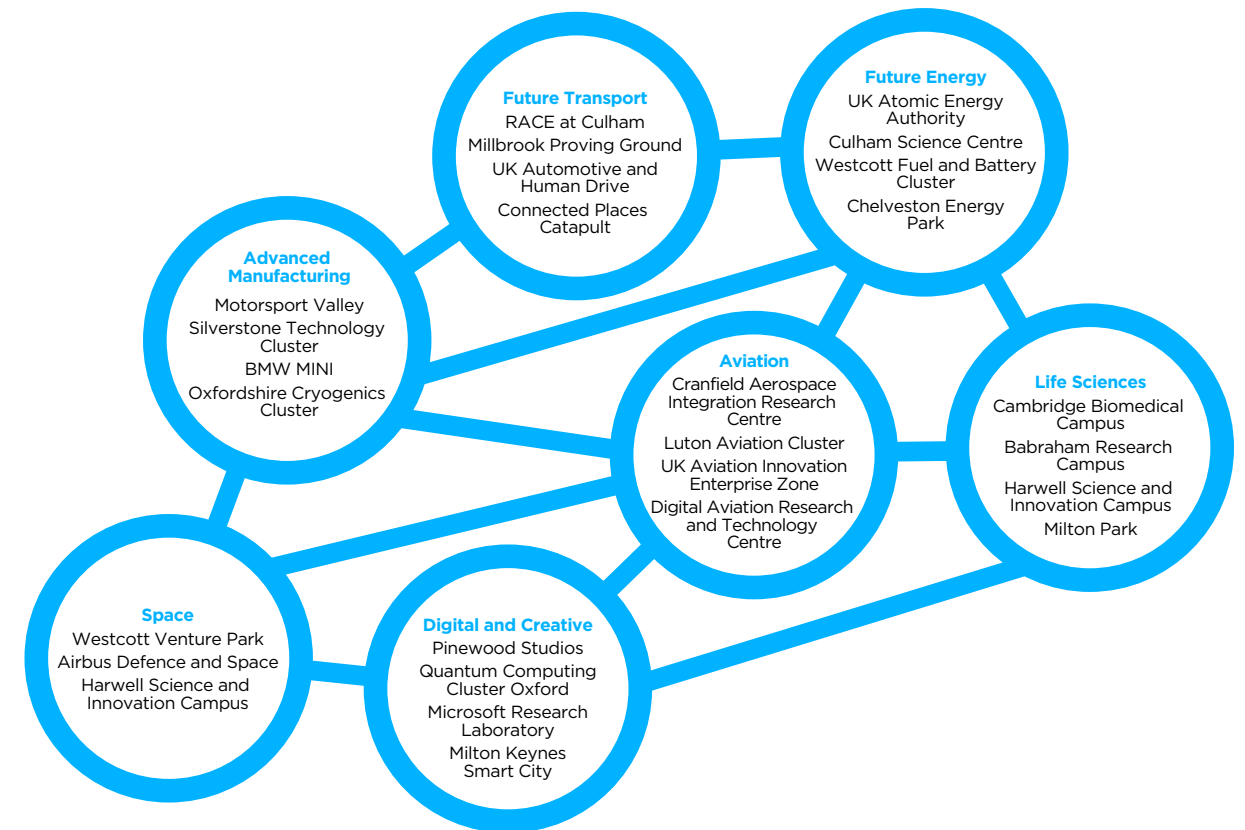
**Innovation and thought leadership in key economic policy areas:** Where the Arc can set and shape the agenda to help achieve UK national priorities.



Above. Apprentices at Metalcraft.

Below. Academic Centre, Milton Keynes University Hospital Foundation Trust.

Bottom. Students walking around university campus.



## Building the new economy

The area's research, technology and testing capabilities, alongside the record in commercialising ideas, attracts new business, talent and investment. This is already creating significant economic value to the UK.

The Arc's clusters provide the UK with strong foundations to be a world leader in a wide array of industries with global reach and strong growth potential. They are innovating in high profile areas on global platforms, such as vaccine development, space applications, robotics and artificial intelligence through to electric and hydrogen powered transport.

We can show that connecting businesses, academia and clusters across industries stimulates new ideas, collaboration and technologies that have a dynamic effect on growth and productivity.

The Arc partners will further deepen the connections between the area's priority sectors and innovation assets to deliver networked excellence.

We have the environment to develop, apply and test new solutions across other sector challenges and create efficiencies for businesses. Bringing this together, the Arc has the ability to lead the UK as it drives further waves of Green growth: securing low carbon solutions that minimise depletion of precious resources.

Below. Person using virtual reality headset at the UK Atomic Energy Authority.





Our ask of central government

To achieve our vision, Arc partners have immediate asks of central government:

- Increased focus on the Arc’s strategic innovation infrastructure
- Continued support for planned Arc based projects
- Establishment of an Arc-governed investment channel

The Arc needs to have a clear shared identity: one which collectively promotes the connected assets and opportunities across the Arc and is empowered to deliver.

Investment proposition

The dynamic nature of innovation and world-leading research and development in the Arc provides the basis for an investment return to government in the order of £4 for every £1 of public expenditure. This will further catalyse increased value across the UK economy through new inter-regional collaborations, increased expenditure in research and development and creation of new supply chain opportunities across the country.



Strategic innovation infrastructure

Innovation is the key strength of the Arc. Major areas where Arc investment proposals are at the forefront of R&D expertise are:

**Life Science innovation network:** To build on the world-leading capability of the clusters around Oxford and Cambridge. The network will facilitate increased opportunities for greater collaboration, accelerate innovation and commercialisation and power the scaling up of high growth spinout companies to create high tech, high-value jobs across the Arc.

**Sustainable aviation:** To forge a pathway towards zero-carbon aviation, delivering a leadership position for the UK in the evolving global market of ‘green’ aviation.

**UK Space Gateway:** To maximise the world-leading space capabilities of the Arc’s universities, the global potential of the Harwell Space Cluster and rocket and propulsion and testing capabilities at Westcott Venture Park, to position the UK as a market leader in space technologies and applications to meet the national ambition for 10% share of the global space market.

**Future mobility:** To strengthen the Arc as the UK’s hub for the development, testing and rollout of Connected and Autonomous Vehicles (CAV) and underpinning technologies.

**Zero-carbon energy:** To accelerate solutions to tackle climate change and enable us to advance towards a zero carbon Arc we aim to build on leading collaborations between industry and academia through national energy systems demonstrator pilots in Oxfordshire, hydrogen research at Cranfield, the trialling and testing of hydrogen fuel in HGVs at Chelveston and world leading research in fusion technology at Culham Science Centre, home of the UK Atomic Energy Authority.



Top. Connected and autonomous vehicle testing systems, provided by Cranfield University.

Middle. Oxford University COVID vaccine development.

Above. StreetDrone autonomous vehicle.

Enabling infrastructure

To provide the environment for these initiatives to succeed, we need to invest in the Arc’s enabling infrastructure.

**Business growth and commercialisation investment:** to support a business scale up programme, the creation of an Arc investment fund to provide investment mechanisms to accelerate growth in innovative businesses, as well as an internationalisation programme to promote the Arc’s investor potential in key global markets.

**Connectivity infrastructure:** Digital connectivity is poor in many areas, yet exceptional digital infrastructure is required to better connect our places, and stimulate digital innovation to facilitate new learning solutions and working patterns. Transport infrastructure investment is needed to pursue electrified east-west rail and enhance road connections designed to meet the needs of all users, reduces congestion, improves safety and air quality, as well as greater funding certainty to support local sustainable forms of transport and enable active travel initiatives fundamental to connecting the places we live and work with places we seek nature and wellbeing.

**Skills investment:** to support a dynamic and responsive skills system, including the redeployment of unused Apprenticeship Levy and expanding the joint LEP-Careers and Enterprise Company Skills Hub model. A skills capital and revenue co-investment fund will accelerate the development of world-class vocational and further education facilities. Investment in new STEM focused institutions such as Peterborough University and MK:U, a university being jointly developed with industry, focusing on opportunities to excel in digital and engineering skills.

**Place and environment investment** to establish testbed locations to trial new sustainable and affordable solutions for living and working. Places will be assessed against the aim of delivering net environmental gain, net biodiversity and net zero carbon. Secured investment will contribute to achieving our **green arc** ambitions to double the amount of land actively managed for nature by 2050 and to enhance our environment assets. Further investment will create living labs that integrate pioneering technology and innovation into improved mobility, healthcare, energy and sustainable design; as well as a connected University-led data lab that will support decision making decarbonising transport, strategic planning and investment, environmental protection and infrastructure planning.

Below. Drone flight.





The Arc has a key role in responding to the immediate issues facing the country, and can demonstrate its contribution in helping to address:

**COVID-19 recovery.** From the search for new vaccines to mass-production of ventilators and PPE, our businesses can export innovations in the fight against this virus.

**EU-Exit.** The Arc's science and technology strengths and skilled workforce will be central in strengthening the UK's competitive advantage as we forge new trading deals.

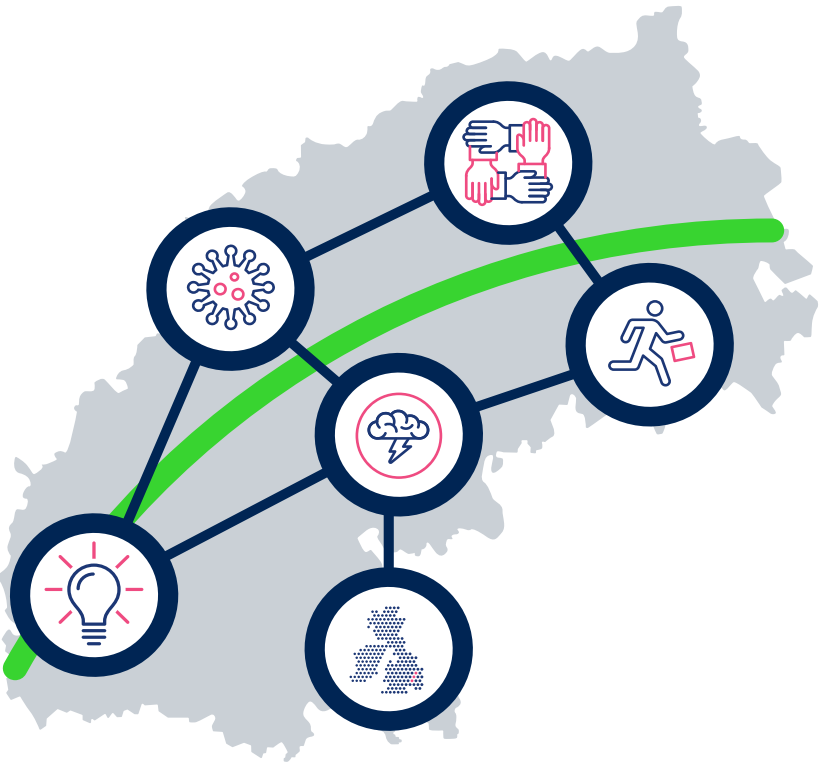
**National rebalancing.** The Arc will play a leading role in driving change in the UK growth dynamic. The region can connect the growth trajectory of London and the South East to the rest of the country.

**Climate change and other sustainability challenges:** The Arc's sector strengths show that this region contributes significantly towards the global response to climate change.

**Inclusive growth.** We will reduce health and social inequality by creating opportunities, raising productivity through skills, infrastructure and place-shaping investments.



Above. UTC Oxfordshire.



Imagining our future

The Arc's vision is one of transformative change. This will enable the UK to strengthen its global competitive standing and position the economy for a long-term transition ensuring our businesses, institutions, communities and residents are able to capitalise on the emerging opportunities for growth, innovation and prosperity and respond to the global and local challenges we face.

With collaboration and long-term investment, together, we can create a future for people living and working here that is characterised in three ways:

A zero carbon and net environmental and biodiversity gain corridor

We will become at least carbon neutral and will have doubled the land for nature by 2050.



Top. Aerial view of Milton Keynes.



Above. RAL Space, Harwell.

In practice, we will:

- Pioneer new solutions in energy management, battery technology, renewables and clean forms of energy which will revolutionise how the UK generates power for residential, industrial and commercial use. This will catalyse new technology sectors which will be exportable and internationally market leading.
- Attract and concentrate R&D investment on the global effort to tackle climate change, natural resource depletion, the protection and enhancement of the natural environment and quality of life.
- Revolutionise our use of renewable energy to power our growth, whilst embedding this into upgrades to our infrastructure, housing and commercial premises to maximise resource efficiency.
- Protect, nurture and enhance our wildlife, natural capital assets and green spaces to provide vital green infrastructure for the Arc.
- Increase resilience of our places by investing in infrastructure to manage the risks of, and embed our proactive response to, flooding, water resources and quality, sustainable energy, soil degradation and air quality.

A pioneer in digitally connected and open networks

We will make our places, people and institutions more resilient, better informed and more widely connected to opportunities in the Arc and around the world. In practice we will:

- Test and develop new ideas, products and solutions to drive prosperity and sustainability in the Arc, grow UK supply chains and export our know-how to the rest of the world.
- Sustain a culture of openness, collaboration and transparency in our institutions and amongst our businesses to use the broadest range of expert insights and continually improve the quality of what we do.
- Create flexible, accessible and resilient infrastructure to allow more people and businesses to share ideas, trade globally and facilitate stronger collaboration between institutions and businesses.

- Deploy leading edge digital technology to increase the range and accessibility of learning and work opportunities for people and places across the Arc.
- Develop our communities to allow people to continue living and working in harmony with our zero carbon and net environment and net biodiversity gain ambitions.

The destination of choice for talent & skills

We will ensure the Arc remains and grows as a source of world-class skills, a top destination for the most able people who can drive forward our commitment to solve global challenges and a place where everyone can access the learning they need to realise their full potential. In practice, we will:

- Champion broad-minded businesses that invest in our local talent and suppliers to ensure solid foundations of our economic growth.
- Attract upcoming talents from around the world to work in Arc institutions and help support our innovation-led growth plans.
- Drive ambitious, excellence-based growth in applied research and learning in all our universities.
- Instigate a revolution in innovative, flexible and accessible learning that capitalises on digital channels to ensure people have the skills they need to fulfil their potential and employees have access to globally best in class lifelong learning.

The Oxford to Cambridge Arc is a genuine global asset and a national investment priority. With determined leadership and financial backing, the Arc can leverage its innovation capability to drive regional growth, national prosperity and global inward investment to the UK.



Top. University of Northampton, Waterside Campus.

Middle. Students in a laboratory.

Above. UAV Flying Lab.



