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# OXFORDSHIRE LOW CARBON ECONOMY REPORT

Could the low-carbon transition deliver growth for Oxfordshire?

## Cameron Hepburn

Professor of Environmental Economics  
INET & Smith School, University of Oxford  
Senior Research Fellow, New College  
Grantham Research Institute, LSE

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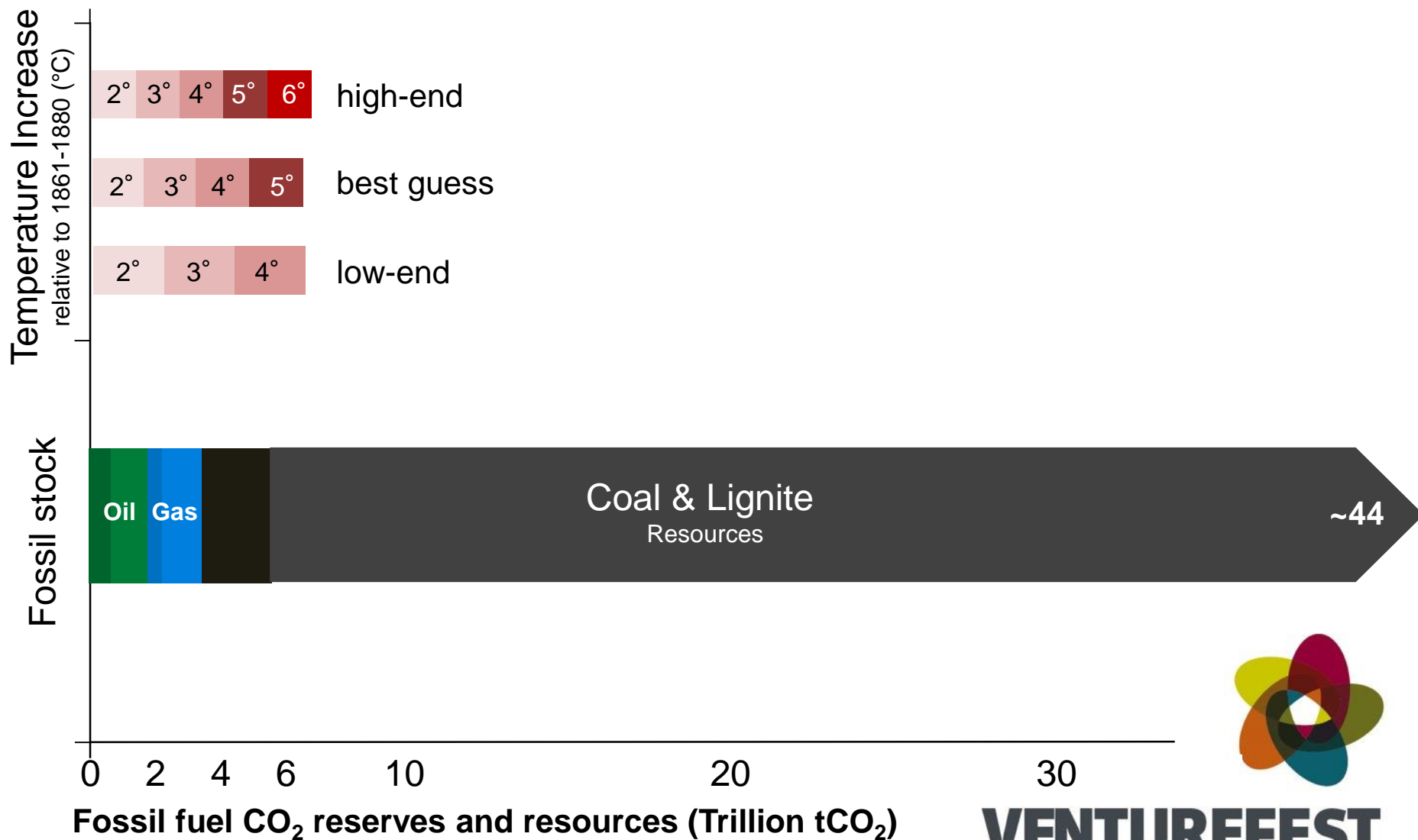
# Agenda

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1. Context – a new climate economy
2. Oxfordshire's assets
  - Do we have a global advantage in low-carbon?
  - Is low-carbon our comparative advantage?
3. Oxfordshire's future potential
4. Realising that potential
5. Conclusion



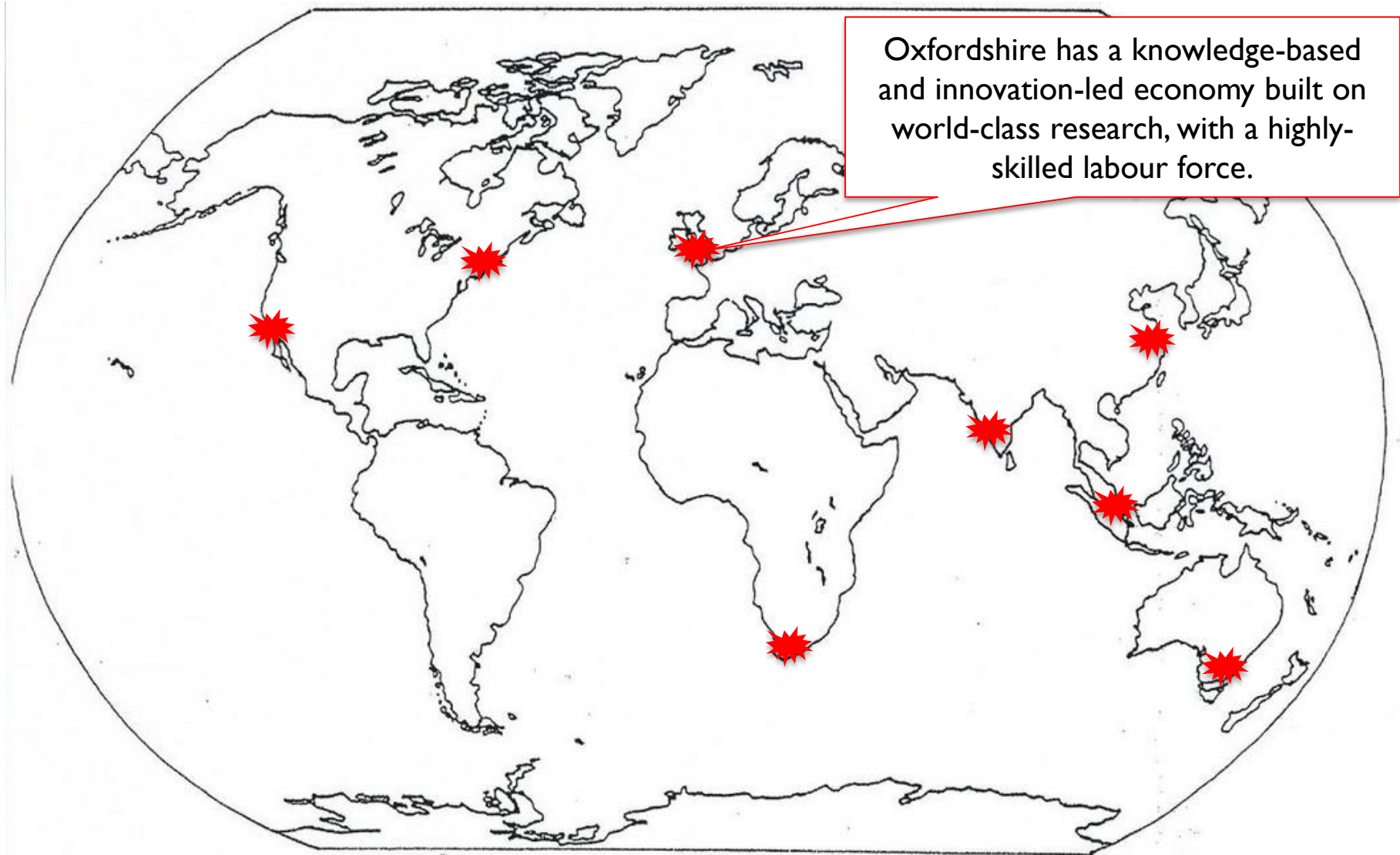
# The largest transformation since the industrial revolution is upon us – the energy system will have to shift sooner or later



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# Critical innovations will emerge from **concentrations of intelligence** – Oxfordshire is one with ‘planet-saving potential’

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# Does Oxfordshire have much of a low carbon economy?

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What do you think?

A

< 1% of GVA

< £150 million

B

< 5% of GVA

< £750 million

C

more?

even more?

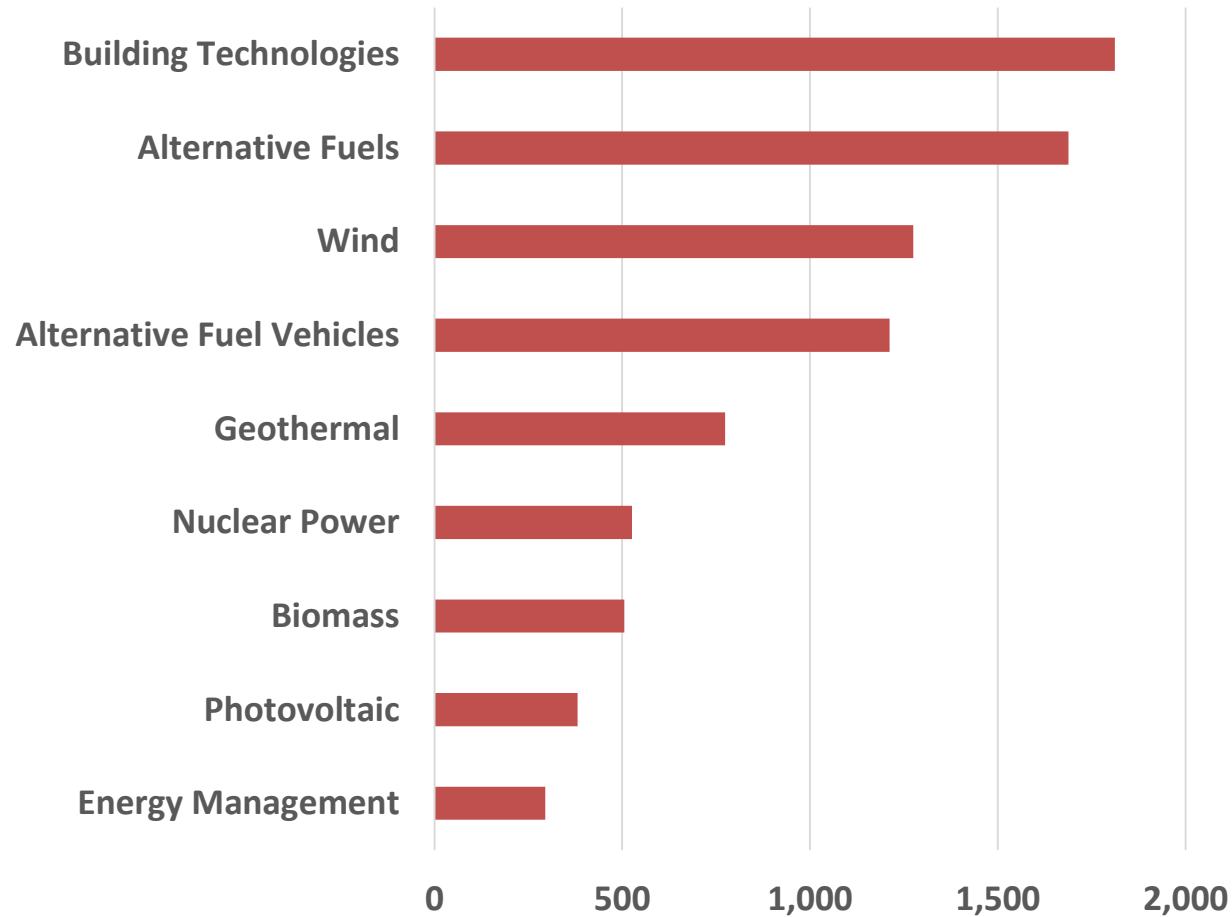
≈ £1150 million



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# There are already **8,900** people employed in low-carbon sectors in Oxford...

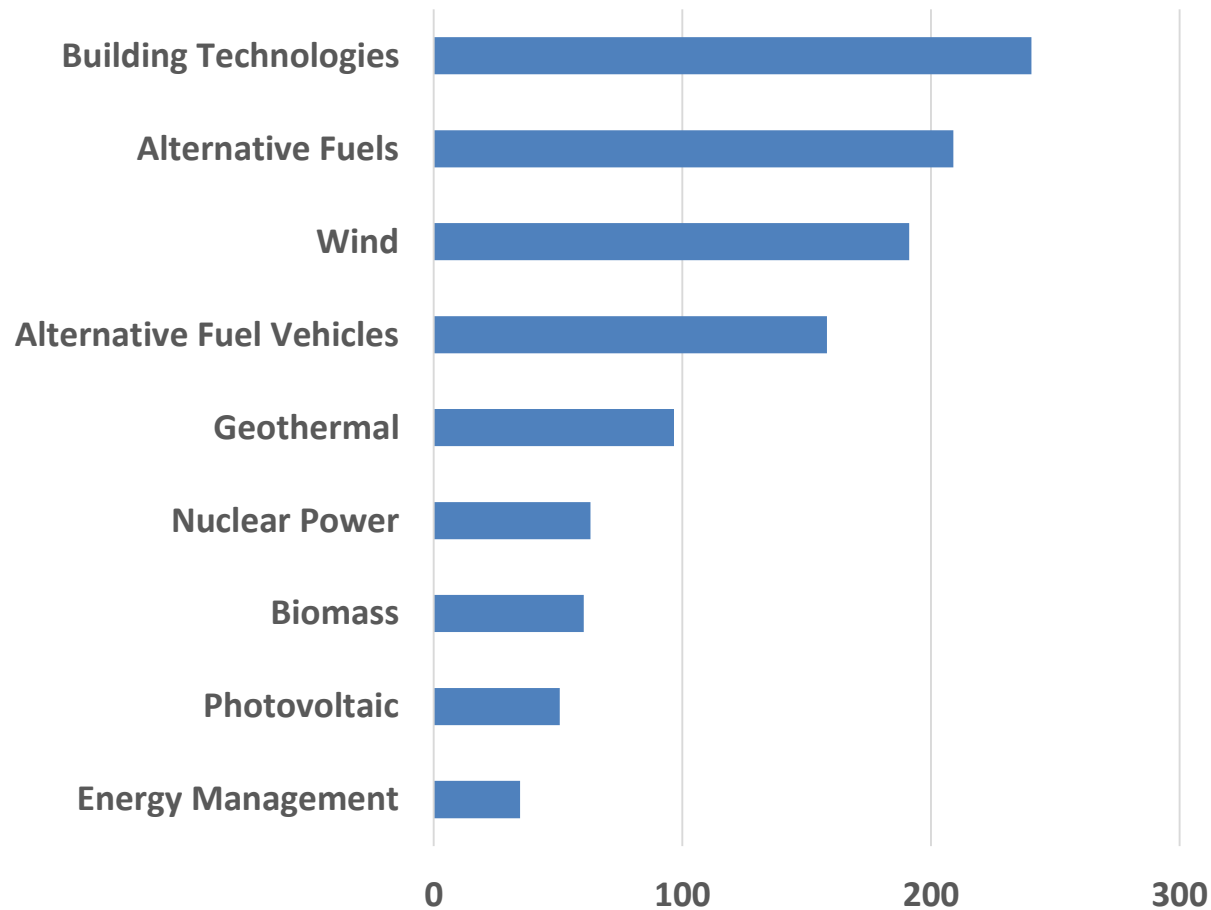
■ Employment (people)



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## ...delivering that £1.15b (7%) of gross value added in the county

■ Sales (£m)



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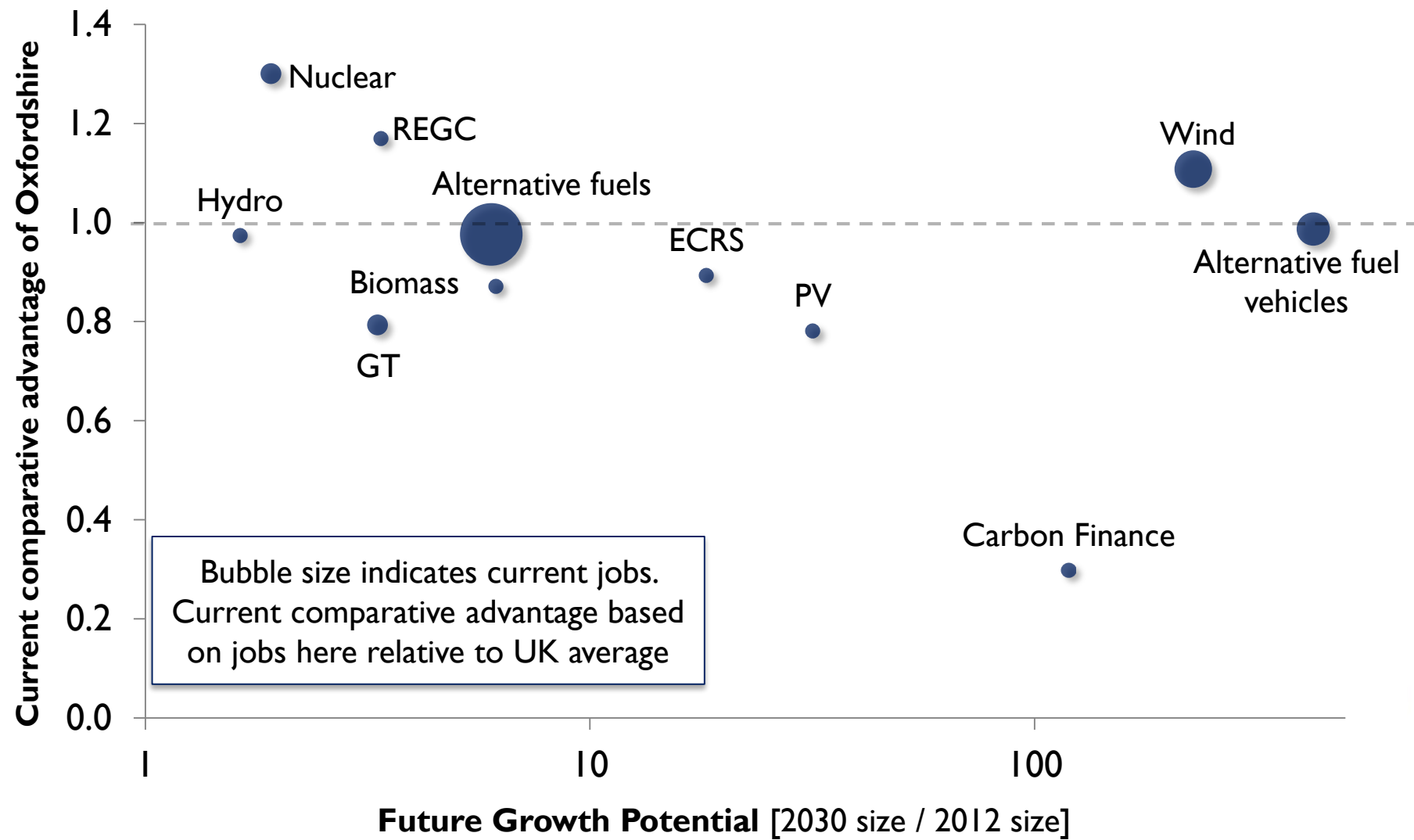
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# Historical data suggest that we have advantage in some near-commercial low-carbon technologies; possibly in high potential areas



Source: IEA ETP (2012) kMatrix (2013), [Vivid Economics](#) (2014)

In addition, there are anecdotal reasons to think that we have a low-carbon RD&D opportunity in the future – this is not in the data

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# Are we world-beating? Innovative locations, such as Silicon Valley, are going hard at the opportunity – Google is a large clean tech outfit

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**Bought Nest for \$3 billion**



**Serious energy efficiency in data centres and operations**



**Invested > \$1 billion in renewable energy projects**



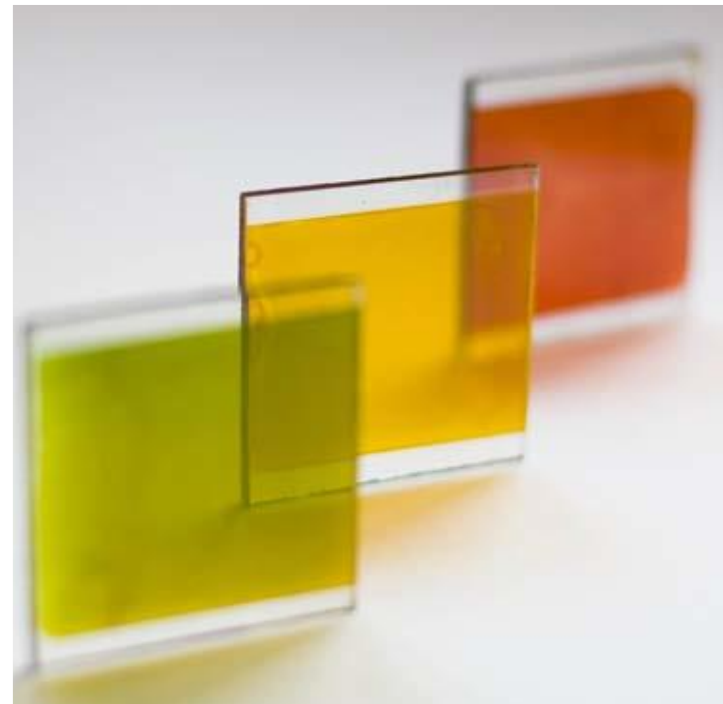
**Developing autonomous vehicles**



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But Oxford also has world-class research strength, particularly in vehicle technology and solar PV, among others

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# How does low-carbon compare to alternative potential growth opportunities for the county?

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Bioscience, medical  
technology and  
pharmaceuticals

Physics, cryogenics,  
instruments,  
magnets

Engineering and  
electronics,  
including  
motorsport

Telecoms, computer  
hardware and  
software



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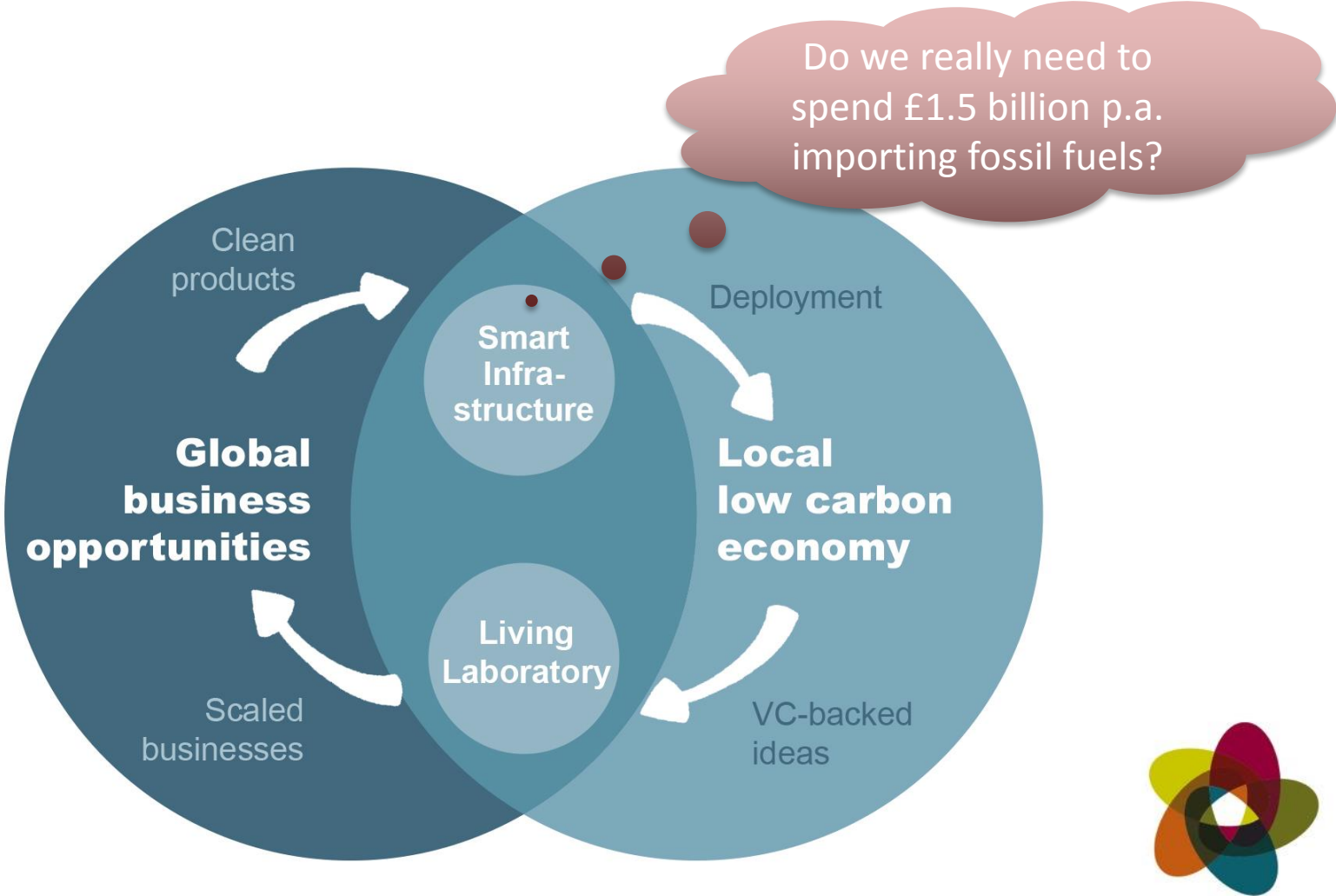
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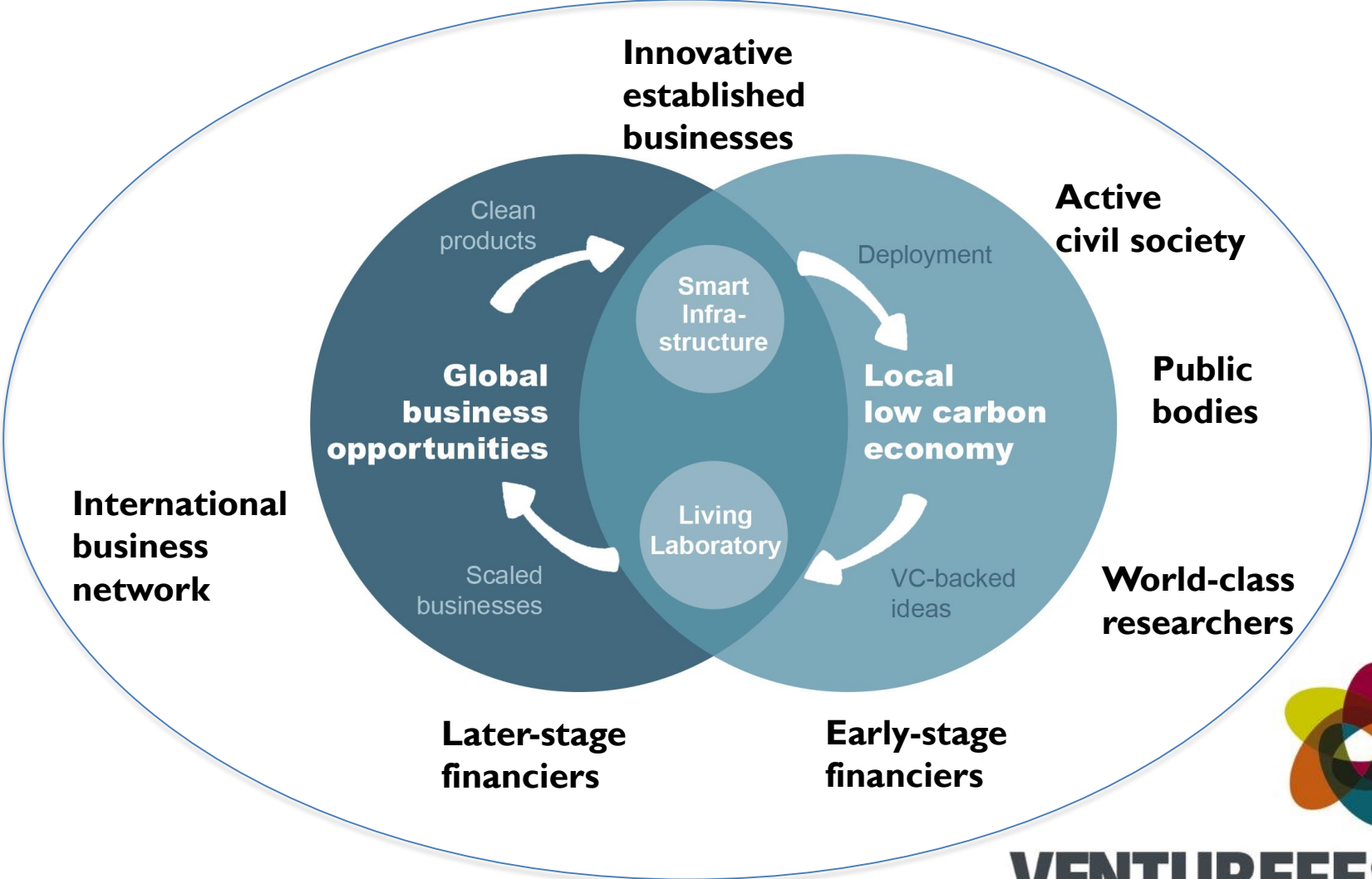


# Is there an opportunities to help address the global challenge and deliver growth locally to Oxfordshire?



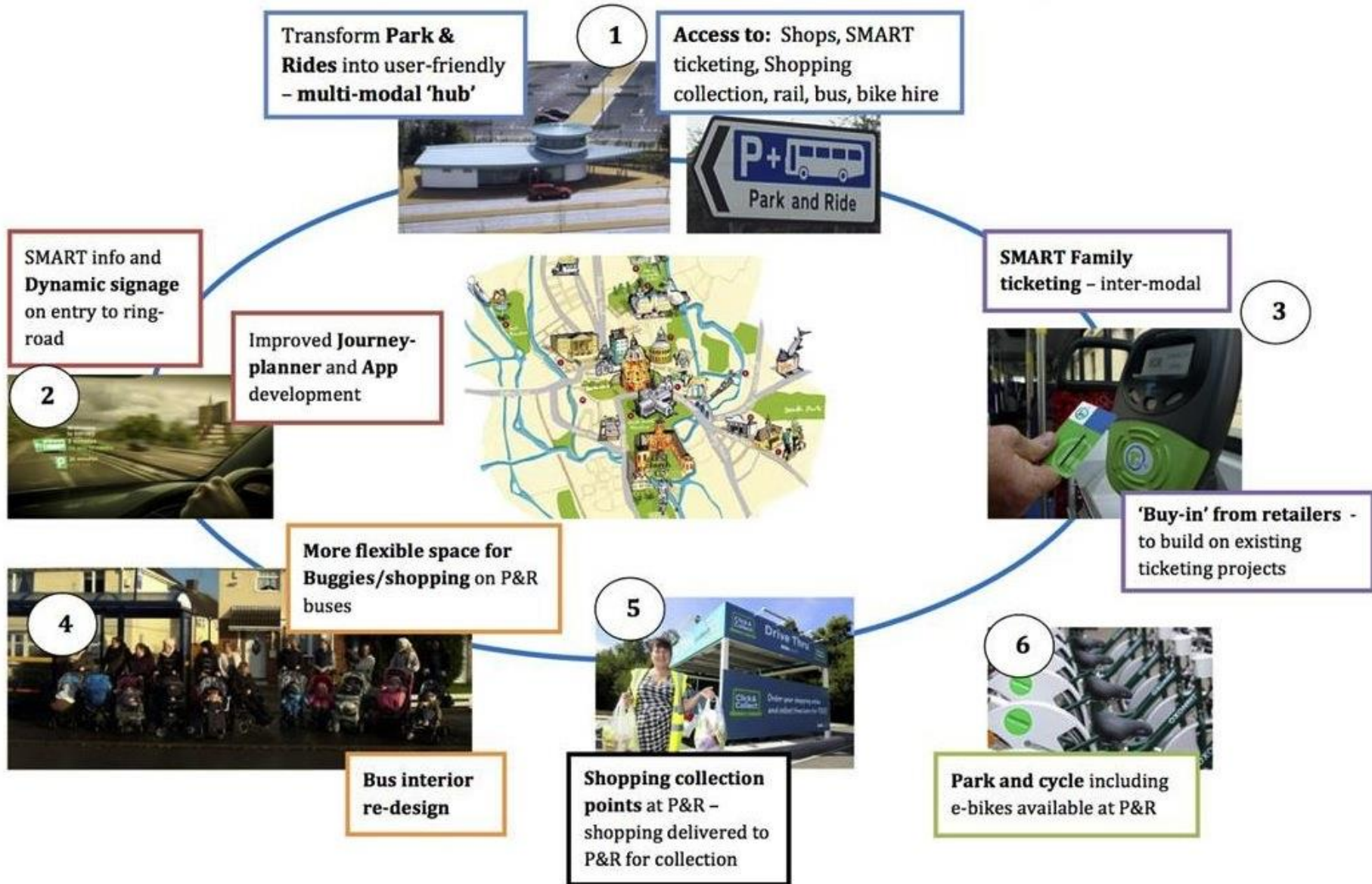
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This will be most successful if different elements of the Oxford community can come together



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# The MobOx integrated transport 'living lab' brings together RD&D, with a view to exporting the model to other medium-sized cities ...





# Eco Bicester Living Lab

- **Bicester is one of four Eco Towns**
- **Plans for 6,000 zero carbon new homes**
- **Many smaller scale projects already complete**
- **Monitoring real-life building performance**
- **Applying lessons learned to the next phase**



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With plausible assumptions and good winds, low-carbon sectors could create another **10,000 jobs** and **£750 million** of value added

|                            | Business sectors |           |        | Oxfordshire Infrastructure |           |        | Total   |
|----------------------------|------------------|-----------|--------|----------------------------|-----------|--------|---------|
|                            | Transport        | Buildings | Energy | Transport                  | Buildings | Energy |         |
| <b>2030 changes</b>        |                  |           |        |                            |           |        |         |
| Additional Jobs, Number    | 4,200            | 2,300     | 1,100  | 400                        | 1,800     | 40     | ~10,000 |
| Additional Value Added, £M | 360              | 110       | 220    | 20                         | 90        | 2      | ~750    |



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# There are several general challenges for future growth in Oxfordshire that affect low-carbon growth

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- the growth in our **knowledge-intensive economy** is slower than its competitors
- **poor infrastructure** such as congestion on the roads, slow broadband and poor mobile phone access adds costs for businesses seeking to work efficiently
- Oxfordshire is **not attractive to inward investment**; only 3 per cent of South East jobs from Foreign Direct Investment were located in the county between 1999 and 2010 as compared to 16 per cent in Surrey and 15 per cent in Buckinghamshire
- **high house prices** and **limited housing supply** may be the cause of the fact that Oxfordshire's workforce is ageing more quickly than the national average
- despite the county's success in producing high tech start-ups, Oxfordshire has produced far **fewer businesses that have scaled up** to become 'large' businesses. This is important as growth in GVA is associated with businesses scaling up from medium to large size



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# There are four key elements to delivering a low-carbon economic cluster in Oxford

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## 1. Research and knowledge-intensive activity

- Support low-carbon researchers in winning grants from EU and UK research councils

## 2. Test beds for deployment and implementation

- Use the 'living lab' to deploy existing and developing technologies

## 3. Scale manufacturing

- export orientated
- high tech, where a high-cost labour economy has a competitive advantage

## 4. Supporting services for low-carbon activity in Oxford and elsewhere:

- business
- financial
- policy
- professional
- technical

**Increase communication and collaboration in the cluster to make the most of synergies and attract inward investment and human capital**



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**‘Cluster effects’ have been important for growth elsewhere...**



...possibly also for low-carbon Oxfordshire

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# The low-carbon transition provides an opportunity to significantly boost Oxfordshire's economic growth

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## Rationales:

1. Low-carbon is already a more significant economic contributor than thought, with 7% of value-added in the shire
2. The low-carbon sector will sooner or later explode globally
3. We will need local infrastructure investment to support economic growth. Making this low carbon to create additional value and jobs, support the living laboratory and avoid the risk of high-carbon lock-in
4. We are not well-positioned for some of the growth (and never will be), but have the critical raw ingredients in some areas (e.g. world-class research in vehicles, PV, nuclear)
5. We have a strong social venture activity, and willingness to serve as a 'living laboratory' for low-carbon transformation



## Four next steps on the path to Oxfordshire's low-carbon growth:

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1. Focused support for growth sectors and clusters, such as:
  - alternative fuel vehicles
  - renewable and smart electricity innovations
2. Investment in enabling infrastructure, coordination, networks, public strategies & funding (and land use planning) to support innovation and growth
3. Specific business cases for public and private sector investment in the context of existing strategies and investment plans (e.g. City Deal, Strategic EconcPlan)
4. Increased incentives for universities, smart cluster branding, a county **cluster champion** – making it easier to attract & retain skills and access enabling infrastructure and investment



Thanks to the project team and steering committee

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Environmental *Change* Institute



**OXFORDSHIRE  
COUNTY COUNCIL**



**Oxfordshire Local  
Enterprise Partnership**

[www.oxford.gov.uk](http://www.oxford.gov.uk)



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# Thank you

- Website: <http://www.energy.ox.ac.uk/olce>
- Twitter: @oxoncleantech
- Email: lowcarbonoxford@gmail.com



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