



**COUNCIL FOR  
SCIENCE AND  
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Prime Minister  
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*Sent by email only*

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*Dear Prime Minister*

## **LEVELLING UP: PROMOTING LOCAL IMPACT FROM INVESTMENT IN RESEARCH AND INNOVATION**

Innovation, as the process of taking ideas from inception to impact, has an important influence on productivity and long-term economic growth. Innovation policy can play a key role in driving local economic growth and is an important part of the approach to levelling up across the UK.

We are writing to add to our advice on the Innovation Strategy. This letter considers when and how research and innovation policies might be given a 'place dimension' to support more equitable, sustainable, and inclusive development across the UK. We hope this will inform thinking on how to enable thriving research and innovation activity in public, private, and voluntary sectors across the nation and how to build on local potential so that all regions and nations of the UK benefit from an R&D intensive economy.

A consideration of place as part of research and innovation policies could also address other national targets. Achieving our goal of becoming a science superpower means a significant increase in research and innovation intensity, which will require the development across the UK of greater capacity and capability to perform excellent research, development, and innovation activity.<sup>1</sup> Achieving the Government's goal of increasing productivity and prosperity will require economic growth across the UK,<sup>2</sup> and a major uplift in underperforming regions.<sup>3</sup>

It is important, though, that actions taken to level up low research and innovation intensity regions should not diminish the success of the UK's existing outstanding research institutions and knowledge-based economies.

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<sup>1</sup> Taylor, Abigail, et. al., "[What does it take to "level up" places?](#)" *Report for the Industrial Strategy Council*, (2021).

<sup>2</sup> The UK has one of the largest regional productivity disparities in the world: Zymek, Robert, and Ben Jones. "[UK regional productivity differences: An evidence review.](#)" *Report for the Industrial Strategy Council*, (2020).

<sup>3</sup> Budden, Phil, and Fiona Murrey. "[An MIT Approach to Innovation: eco/systems, capacities & stakeholders.](#)" *MIT Working Paper*, (2019).

## When to consider place? Different interventions for different activities

The pipeline from discovery to impact is long, often nonlinear, occurs across many places or countries, and encompasses a wide range of activities that require different skillsets. Policies to support research and innovation should distinguish between research for discovery and generation of initial ideas, which is a UK strength, and the process of developing, growing, and scaling up solutions into impact.

Given limited funding, any investment in research cannot and should not be spread evenly across the country. This would be expensive and unsuccessful. Geographic concentration of research – agglomeration - is probably necessary and is a characteristic of research globally.<sup>4</sup>

However, the ideas generated in research clusters can be developed, scaled up, and manufactured in supply chains anywhere there is the capacity to understand their value and the access to skills, facilities, and finance.

There are more opportunities for levelling up through policies to support innovation activity than through discovery research. Innovation support that is intended for levelling up will need to be aligned to where there is local capacity to translate invention into commercial activity and local jobs.

Therefore, to *extend* the impact of existing research clusters, Government should develop interventions which:

- Focus on where there is an existing industry base which, with support, may be able to adapt to take advantage of new technological opportunities.<sup>5</sup> Engaging business and private investment, including foreign direct investment, will be critical.
- Build national and regional connections that allow ideas generated in research clusters to be shared, developed, scaled up, and manufactured in national supply chains. This will require an active mapping of innovation supply chains.
- Build partnerships that bring together and shape national capability by linking places with concentrated areas of strength (such as large research-intensive universities) with smaller, specialist institutions or more vocationally funded universities with particular research specialisms.

## Factors for building successful innovation clusters

Development and scale up of innovation will be led by business. We have identified the following ‘success factors’ which enable the strengthening of local innovation ecosystems:<sup>6,7</sup>

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<sup>4</sup> Chaytor, Sarah, Gottlieb, Grace., and Graeme Reid. “[Regional policy and R&D: evidence, experiments and expectations.](#)” *Higher Education Institute Policy, Report 137*, (2021)

<sup>5</sup> Jones, Richard (2020), [Can research clusters help level up the country?](#)

<sup>6</sup> The Royal Society (2020), [Research and innovation clusters: Policy briefing](#)

<sup>7</sup> Swinney, Paul et al. (2020), [Identifying potential growth centres across Great Britain](#)

### i. Strong local leadership

Levelling up requires significant investment in capacity and capability in local government<sup>8</sup> so that they can facilitate regional innovation by having responsibility for designing, delivering, and funding local economic initiatives.<sup>9</sup> The aim should be to strengthen capacity to:

- a. identify and respond to different local capabilities and;
- b. empower participation, engagement, and cooperation across a wide range of actors (community, business, academia, education and financial). This may require reconsideration of governance structures so that local leaders have sufficient flexibility over how they use innovation funding alongside other support as part of their strategy for development.

### ii. Skilled workforce (for core competency and general business practice) and ability to attract and retain those skills

Policy should focus on supply and demand, particularly when addressing the growing skills mismatch.<sup>10</sup> We believe tax credits could be extended to incentivise businesses to develop technical and professional skills for innovation. Evidence highlights the net positive impact of research and development tax credits on UK and international investment; a diverse range of countries have identified their positive impact on corporate research and development investment.<sup>11</sup>

### iii. Strengthening innovation infrastructure provision

Evidence from worldwide comparators suggests that universities,<sup>12</sup> Catapults, public sector research establishments (PSREs), and other major national facilities are important to their local area's innovation system. Universities provide skills and attract knowledge-intensive industries that promote agglomeration and specialism in their cities and nearby regions. Major national research infrastructure provides national benefits and can be the focal point for local innovation clusters. Mechanisms to support this include expanding enterprise zones and VAT exemptions on industry-used research facilities. The policy of enterprise zones has positively affected the labour market, especially for employment with low-wage workers.<sup>13</sup> Access to infrastructure and equipment (through the Catapult network and opening university facilities more widely to private organisations) would also be highly effective.

### iv. Access to finance

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<sup>8</sup> The Industrial Strategy Council (2020), [Understanding the policy-making processes behind local growth strategies in England](#)

<sup>9</sup> Wagner, Julie, et al. "[Advancing a new wave of urban competitiveness: role of mayors in the rise of innovation districts.](#)" (2017).

<sup>10</sup> Government Office for Science. "[Future of skills and lifelong learning.](#)" (2017).

<sup>11</sup> Castellacci, Fulvio, and Christine Mee Lie. "[Do the effects of R&D tax credits vary across industries? A meta-regression analysis.](#)" *Research Policy* 44.4 (2015): 819-832.

<sup>12</sup> Taylor, Abigail, et. al., "[What does it take to "level up" places?](#)" *Report for the Industrial Strategy Council*, (2021).

<sup>13</sup> Mayer, Thierry, Florian Mayneris, and Loriane Py. "[The impact of Urban Enterprise Zones on establishment location decisions and labor market outcomes: evidence from France.](#)" *Journal of Economic Geography* 17.4 (2017): 709-752.

Long-term investment is required to enhance existing clusters.<sup>14</sup> The European Regional Development Fund and the Local Growth Fund have been important sources of funding to promote innovation activity and partnerships among local businesses.<sup>15</sup> Government should establish a Local Innovation Fund focused specifically on building local innovation capacity and networks. This will need to be aligned to both other support for levelling up (such as the new UK Shared Prosperity Fund) and other research and innovation support through UKRI. The approach should give significant autonomy to local leaders and should prioritise what will have the biggest impact on innovation capacity rather than rewarding existing excellence.

#### v. Collaborative culture across business, government, and research institutions

The UK's research base is world-class, but the structural disconnect in its national organisation of skills, research, and innovation ecosystems prevents the progress of far-reaching innovation. This inhibits national economic growth and prevents the benefits of UK research activity reaching our communities. Public sector funding schemes can shape the culture for collaboration. The Strength in Places Fund is a model to build on which helps areas of the UK to build on existing strengths in research and innovation to deliver benefits for their local economy. All projects are collaborative and are led by consortiums that include both research organisations and businesses. A coherent approach at a local level needs to be supported by a national strategy which identifies goals for levelling up and creates a menu of public sector support measures accessible to local leaders.

#### vi. Build on an area's core competencies or emerging strengths. This may be local resources linked to a place, local public skills, or centred on local business or educational institutions

Building local innovation capabilities involves choices on where to focus. A partnership strategy building on the dynamics of agglomeration and comparative advantage should be informed by an evidenced-based approach using the BEIS/Nesta Spatial Innovation data tool,<sup>16</sup> Science and Innovation Audits,<sup>17</sup> the Research Excellence Framework, and the first iteration of the Knowledge Exchange Framework.<sup>18</sup> These data allows regions to assess assets, identify strengths, build on best practice, and create new relationships which maximise these opportunities.

#### vii. Positive local impacts are reliant on local level demand and absorptive capacity

A local area can capture the maximum benefits (jobs and growth) to the local economy from R&D activity where there is capacity to pull through ideas and invention into the market. The Sheffield advanced manufacturing and engineering cluster illustrates the power of development of innovation infrastructure (facilities and skills) with a strong focus on local as well as national business need.

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<sup>14</sup> Campaign for Science and Engineering (2020), [The Power of Place](#)

<sup>15</sup> The British Academy (2020), [The European Structural and Investment Funds –Contribution to UK research and innovation](#)

<sup>16</sup> Department for Business, Energy & Industrial Strategy (2021), [BEIS Indicators](#) - late-stage prototype.

<sup>17</sup> Department for Business, Energy & Industrial Strategy (2019), [Science and Innovation Audits](#)

<sup>18</sup> UK Research and Innovation (2021), [Knowledge Exchange Framework \(KEF\)](#)

Enhancing research and innovation activity builds economic resilience but can only be fully achieved with public engagement. MHCLG, BEIS, and other Government Departments should work with UKRI to develop initiatives for community engagement to incentivise innovation. Initiatives can include regional Hackathons to help communities solve local challenges and inform local policy making,<sup>19</sup> which has resulted in significant growth in international digital health communities.<sup>20</sup>

Together, these factors form a combination of support which enables business-led innovation and growth. We recommend Government strengthens support in these areas by exploring:

- a. As part of boosting public sector support for applied R&D and innovation, Innovation funders should include mechanisms to build local innovation capacity and networks, building on what has been learnt from previous programmes.
- b. Support for local economic development should allow for funding infrastructure and capability to pull through innovation into the local market and help attract and retain businesses to an area. This could include development of specialist skills in the local workforce or provide specific infrastructure or physical spaces relevant to local business needs.
- c. Strengthen support for publicly funded institutes to open up their infrastructure, facilities and expertise to support local business collaboration and innovation.
- d. Support initiatives for good local governance and decision-making, including building capacity for local community engagement on innovation.
- e. Develop a national strategy aligning action on research, innovation, and skills to create an ecosystem of public sector support measures that enable local leaders to generate and diffuse new ideas across the economy and to maximise their benefits.

Given innovation's economic and societal benefits, Government should bear some of the risk of development to drive private investment. The Government has a duty to support innovation because of its unique position to support large scale projects over long-term horizons, which private funds do not typically support. While robust evidence of impact at a local level may be hard to identify, Government investment in large scale infrastructure and human capital development can significantly attract and support business innovation that contributes to local growth.

We would be delighted to discuss in more detail with you, or your Ministerial colleagues, how the principles and success factors outlined in this letter can help the Government amplify the contribution of research and innovation in its levelling up policies. We are grateful to Council members for developing this advice, in particular, Professor Dame Nancy Rothwell (President and Vice-Chancellor, University of Manchester) for leading this advice, with support from Dervilla Mitchell (Director, Arup), Professor Fiona Murray (Associate Dean for Innovation and Professor,

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<sup>19</sup> European Commission (2021), [Description of the planned negotiated procedure for a middle value contract for testing an innovative approach to citizens' engagement for knowledge valorisation through a Hackathon](#)

<sup>20</sup> Temiz, Serdar. "Open Innovation via Crowdsourcing: A Digital Only Hackathon Case Study from Sweden." *Journal of Open Innovation: Technology, Market, and Complexity* 7.1 (2021): 39.

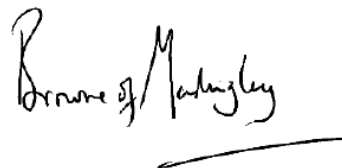
Massachusetts Institute of Technology, School of Management), and Professor Julia Black (Strategic Director of Innovation and Professor of Law, London School of Economics and Political Science). We are also grateful to Andy Haldane, Rotha Johnston, and Juergen Maier of the Industrial Strategy Council for giving their time and expertise.

This letter is copied to the Chancellor of the Exchequer; the Secretary of State for Business, Energy and Industrial Strategy; the Secretary of State for Education; the Secretary of State for Housing, Communities and Local Government; the Chief Secretary to the Treasury; the Minister of State for Universities; the Parliamentary Under Secretary for Science, Research and Innovation; the Minister for Regional Growth and Local Government; the Cabinet Secretary and the Permanent Secretaries of HM Treasury, the Department for Business, Energy and Industrial Strategy, the Department for Education, and the Ministry of Housing, Communities and Local Government.

Yours sincerely,



**Sir Patrick Vallance**  
Co-Chair



**Lord Browne of Madingley**  
Co-Chair