



Department for
Science, Innovation
& Technology

2023 Update to the ‘Catapult Network Review’

An update on developments since the
Catapult Network Review April 2021



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Foreword

Science and innovation are central to tackling the largest challenges we face as the UK and as a planet. From climate change to global health emergencies like the Coronavirus pandemic, we cannot respond without world class innovation. That is why the defining ambition of our new Department for Science, Innovation and Technology (DSIT) is to place innovation at the centre of everything the nation does, to enhance productivity across the economy, and in turn bring jobs, growth, and prosperity, through our regional R&D clusters to all parts of the UK.

As unique national assets, Catapults have a key role to play, bringing together public and private sector research in deep long-term collaborations distributed across the UK catapult network which is key to regional economic growth by supporting world-class clusters of R&D excellence. By fostering partnerships between businesses and universities they bridge the gap between industry and academia and attract industrial R&D, turning the best of UK science into solutions that drive economic growth.

Since their inception in 2011, they have leveraged millions of pounds in private sector investment into UK R&D, across critical technologies and sectors. This is why, in partnership with Innovate UK, we're putting more resources than ever into our Catapults; I am proud that the £1.6bn we are providing over the next 5 years is a 35% increase compared to the previous 5 years and will generate a step change in leveraging even more businesses investment in cutting-edge R&D.

But we cannot rest on our laurels. The pace of change in science, research and innovation is accelerating, so we are always looking to maximise impact and build on our successes. That is why we published the Catapult Network Review in April 2021 which highlighted the positive impact made by Catapults and made recommendations for strengthening their role in driving UK innovation and supporting sectors and industries. This update sets out the progress we have made against these commitments.

As the frontline of the UK R&D innovation ecosystem, the Catapults must continually evolve to remain at the cutting edge. That is why our update draws attention to the new bespoke and ambitious key performance indicators for each Catapult, which are being embedded in the Catapult grant funding agreements (GFA), ensuring our funding is delivering the best value for money and driving the outcomes that matter most for the UK.

We must also ensure we are making the best use of these national assets across the public and private sector, so the benefits they offer can be felt as widely as possible. That is why I am pleased to also announce the publication of guidance for public sector bodies on working with Catapults. This will foster more effective engagement between Catapults and Government departments and agencies, so promote better alignment of public and private innovation priorities.

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By sharing best practice, assessing impact, and continually looking to improve, the impact of the Catapults can continue to expand and evolve, and the exceptional value they add to the UK's R&D ecosystem and economy increases.

The Catapult network is a dynamic ecosystem that needs to evolve at the pace of the global race for Science & Technology investment.

This report is an important contribution to that process, to ensure the Catapults deliver value for the UK over the next decade and beyond.

George Freeman.

Introduction

The July 2021 UK Innovation Strategy, published following the Catapult Network Review in April 2021, sets out the government's vision to make the UK a global hub for innovation by 2035, with the objective to become a global science superpower, turning world leading science and ideas into solutions for the public good. Catapults play a key part in the UK innovation system to help deliver this, by bridging the gap between research and industry through their knowledge, infrastructure, and collaborations.

As we look to the future, R&D will be critical to economic recovery. Catapults are important parts of the UK's innovation ecosystem as it builds back better, helping to contribute to key government R&D objectives.

Catapults are private not-for-profit Research and Technology Organisations (RTOs) working with innovators, government, and industry. In 2011 government provided funding to Innovate UK (part of UK Research and Innovation) to establish Catapults to support innovation and de-risk the transition from research to commercial delivery through the provision of R&D infrastructure, specialist knowledge and expertise, partnership and collaboration building capabilities and business support. There are nine Catapults across the UK in over 50 locations, ensuring the benefits of their work are felt nationwide. An overview of each Catapult can be found in Annex 2.

In April 2021, the then Department for Business, Energy and Industrial Strategy (BEIS) published the ['BEIS Catapult Network Review: how the UK's Catapults can strengthen research and development capacity'](#). The document was written in response to Prime Minister Boris Johnson's announcement in January 2020 that the Government would examine how Catapults can enhance research and development capacity and improve productivity across the UK.

13 recommendations were made as part of the review to ensure Catapults continue to support UK innovation, sectors, and industries. Considering the positive impact Catapults have had to date, the recommendations focused on expanding their impact, operational effectiveness, and further strengthening their collaboration.

Since publication of the review, £1.6bn Catapult core funding has been agreed for the next five years (April 2023 – March 2028). This will enable Catapults to continue to support innovation and commercialisation by providing access to world-leading facilities, skills, and equipment across the UK. The renewal of funding reflects the continuing importance of Catapults' role, as key contributors to UK R&D within their sectors, and the associated governance through Innovate UK will ensure that the Catapults drive even greater impact in the next funding period.

This report produced by government and Innovate UK, working with Catapults, provides an update of the progress on each of the recommendations from the 2021 review. The full list of recommendations can be found in Annex 1.

Recommendation Updates

A critical part of the UK's innovation ecosystem

As unique institutions in the UK's R&D system, Catapults help bridge the gap between research and industry. All Catapults play a critical role in the wider innovation system, with their impact varying depending on a number of factors including when they were established. Recommendations 1-2 focused on this, addressing how Catapults can enrich the UK's innovation landscape.

Recommendation 1: Catapults fill a gap in the UK innovation ecosystem and should focus on the core objectives established in 2010. Our focus now, drawing on the findings of the 2014, 2017 and this review, will be on moving away from extensive reviews and instead on supporting them to be more effective institutions.

Since the publication of the review, a dedicated team within DSIT has been established to lead on the overall government innovation policy, government ambitions and priorities relevant to Catapults. In addition, they help promote and improve understanding of Catapults value across government, and facilitate relevant policy join up.

In the Autumn Statement 2022, government confirmed funding of £1.6bn for the Catapults for the next five years (April 2023 – March 2028) which will enable Catapults to continue to support innovation and commercialisation by providing access to world-leading facilities, skills, and equipment across the UK. This is a 35% increase from the previous five years of funding of £1.2bn. The renewal of funding reflects the Catapults' role as key contributors to UK R&D and the valuable role they play within their sectors.

The business case for this next five years' funding sets out the governance that Innovate UK has agreed with the Catapults, and a clear approach to incentivisation of Catapult impact and performance. The aim is that this provides clear evidence and assurance of the performance and strategic impact of Catapults, avoiding the need for extensive reviews in the future.

As part of this process, Innovate UK, working closely with each Catapult, and experts across DSIT, government, and academia, have put in place detailed Monitoring & Evaluation (M&E) frameworks for each Catapult for the next five years. These frameworks and the associated data systems will provide robust evidence of value for money for the public funding provided, with regular data analysis and reporting.

Recommendation 2: As part of the [then] forthcoming Innovation Strategy, BEIS should work with UKRI and partners across government, business and academia to consider the strengths and weaknesses of the UK's innovation ecosystem as a whole, and how we make the most of Catapults as a critical part of that, ahead of funding decisions at the 2021 Spending Review.

The Innovation Strategy, published three months after the Catapult Review, set out commitments to make the UK a global hub for innovation by the year 2035. The government is clear that Catapults play an important role in delivering this ambition. As unique institutions in the UK R&D ecosystem they are a critical part of a wider innovation system. The Innovation Strategy also spoke to the importance of levelling up and ensuring innovation is embedded across the country. Catapults have a strong presence across the UK, and a track record of accelerating growth of clusters of innovative businesses, connecting those businesses to the local research base, and driving skills development for their local economies. This generates jobs and attracts businesses, innovators, foreign investment, and global expertise while contributing greatly to local clusters of innovation activity. Some examples of Catapults' contributions to levelling up can be seen [here](#).

In the 2021 Spending Review (SR) settlement, the government provided a clear foundation for increasing public R&D spending to £22 billion by 2026-2027. The Catapult budget was increased in what was then BEIS allocations to £870m over the 2021 SR period as part of an overall increase in the Innovate UK core budget. As per our response to recommendation 1, government has confirmed funding of £1.6bn for the Catapults for the next five years (April 2023 – March 2028). This represents a 35% gross total increase compared to the £1.2bn funding provided for the current five-year funding period (April 2018 – March 2023).

Innovate UK will continue to work with the Catapults to identify and proactively facilitate opportunities for greater cross-Catapult and cross-ecosystem collaboration, for example through the cross-Catapult work on hydrogen. UKRI has also removed eligibility constraints so that Catapults can apply to be eligible for all UKRI grants, in a similar way to the arrangement for Public Sector Research Establishments that was announced in the 2021 Spending Review. Where they are successful, Catapults will be able to participate in collaborative programmes throughout the spectrum of research and innovation.

Catapults have had deep and wide-ranging impacts on the sectors that they are associated with, and into the wider economy. As part of the business case for the next five years, Innovate UK has set out 6 clear objectives for the Catapult portfolio, aligned with strategic themes in the Innovate UK Plan for Action, which focuses on supporting business innovation in the UK. These objectives for Catapults are:

- **Future Economy:** Catapults will deliver transformative change in sectors, and UK competitiveness. This will include stimulating additional private sector funding into R&D.
- **Growth at Scale:** Catapults will enable UK businesses to access expertise, skills, facilities, and equipment needed for them to grow and scale in the UK and internationally through innovation.

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- **Global opportunities:** Catapults will provide opportunities for innovative UK businesses to collaborate, contribute to addressing global challenges and attract inward investment.
- **Innovation Ecosystem:** Catapults will stimulate and facilitate innovation collaboration and partnerships across the UK ecosystem, including between the research base and businesses.
- **Commercialisation:** Catapults will work with industry to commercialise and diffuse innovation in a way that drives long-term sustainable benefit to the UK economy.
- **Talent & Skills:** Catapults will drive skills foresighting and development to enable inclusive innovation and promote diversity in the businesses they support.

In March 2023, the [Landscape Review](#) was published, which explored the features and characteristics of the research, development, and innovation landscape as a whole. This identified what is working well and what could be improved. It was not a review of Catapults but considered them in the context of the wider UK research, development and innovation (RDI) landscape, alongside other research-performing organisations. Some things highlighted were the value added by Translational Research Organisations (TROs) such as Catapults in responding to industry needs, as they can test pre-commercial ideas and address emerging challenges without the need to always make a profit. It acknowledges that although multiple types of organisational models are needed to meet the wide variety of roles for TROs in the UK RDI landscape, the establishment of Catapults has broadened the range of TROs in the UK.

The review advised government to optimise TROs by increasing their number, widening access, and promoting the benefits of research capability, including regionally. In the Secretary of State's letter to Sir Paul Nurse, she outlined that a full government response to the Landscape Review will follow, setting out how government will take forward the recommendations.

Governance and Evaluation

The Catapults need sustainable governance and consistent review processes that are not revisited during every funding cycle. The review recommended that Innovate UK agreed with what was then BEIS a clear, consistent and sustained 5-year review cycle which builds in expert review panels.

Recommendation 3: Innovate UK/UKRI should incorporate independent review panels into the funding renewal process for 2023, which will begin during 2021. Subsequently, this process should be refined and built into a consistent 5-year review cycle run by UKRI / Innovate UK to provide evidence for long-term funding decisions.

Since the review, Innovate UK has carried out a detailed Future Economy Review (FER) and has published its Strategic Delivery Plan that sets out priorities for investing in innovation, taking long-term opportunities into account. This review determined the overall strategy in each of Innovate UK's three domains (Net Zero, Healthy Living and Agriculture, and Digital and Technologies), to which Catapults' capability and priorities will contribute to the overall goals and opportunities.

Each Catapult has then developed a five-year 'Outputs and Outcomes' (O&O) proposal. These 'O&Os' are reviewed by Innovate UK domain leads, in consultation with relevant DSIT policy and sector teams alongside other government departments and the wider stakeholder community. This has ensured strong coherence between the individual O&Os and Innovate UK and UK government strategic goals.

In addition, the business case process for the next five years (April 2023 – March 2028) has provided detailed programme level scrutiny, including strong evidence of impact and robust evaluation methodologies for each Catapult.

Innovate UK and what was then BEIS explored the use of independent panels as part of the 2023 funding renewal and concluded that this would not add significant value, given the O&O and business case processes set out above. Instead, Innovate UK and what was then BEIS concluded that an independent panel would add greater value reviewing strategic objectives and portfolio balance of Catapults at key points during the five-year grant funding cycle.

This additional layer of assurance will ensure that the strategic objectives of the programme are being met and strategic coherence is maintained.

Recommendation 4: BEIS, Innovate UK and the Catapults will work together to ensure that appropriate data is being collected to provide robust evidence of impact. As part of the 5-year review cycle, BEIS and Innovate UK will work towards agreeing bespoke KPIs with the Catapults that reflect the individual nature of each Catapult, alongside a core set of common KPIs.

As described above, Innovate UK has worked closely with each Catapult to develop a comprehensive M&E framework to provide evidence of impact, as part of the process for agreeing the next five years of funding. This includes a set of objectives to meet the roles and

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responsibilities that are specific to their associated sector and technology domains. The activities, outputs, and outcomes involved in meeting these objectives are set in agreement with Innovate UK and measured through associated metrics and captured by each Catapult. The frameworks also include development of robust data systems in each Catapult to enable them to capture and report their relevant metrics and Key Performance Indicators (KPIs). For example, this could be a Catapult developing new technologies and information tools to progress their industry expertise and deliver R&D programmes with greater impact with the businesses they support. All Catapults have also put in place appropriate resources to carry out their M&E activities.

Whilst it is important to emphasise the diverse nature of the Catapult portfolio and their roles in the sectors with which they are associated, a subset of metrics have been developed as common across the whole portfolio:

- Total private sector funding secured by UK Small and medium-sized enterprises (SMEs)
- Total public sector funding secured by UK SMEs
- Total headcount growth of UK SMEs
- Total turnover growth of UK SMEs
- CR&D Industry match funding
- Discrete partners (collaboration)

Catapults and Innovate UK will use the data collected to understand and demonstrate progress towards meeting ministerial priorities such as levelling up and R&D private sector leverage.

Innovate UK share monitoring data with DSIT on a quarterly basis. To ensure that DSIT is understanding progress in M&E as well as progress towards meeting the Catapults' objectives, Catapults will produce evidence of impact annually and evaluation reports at frequencies set out in their M&E framework.

Catapult Collaboration and Competition

To achieve their objectives, it is vital that Catapults collaborate effectively with universities, other RTOs, businesses, and each other. Noting that each Catapult is unique, and that the same model will not necessarily work for all Catapults, the review recommended that the Catapults should each review their engagement with universities and their support for helping businesses to access finance. The review also noted that the Catapults should introduce a code of practice to disincentivise competition with the market in their own sectors or technology domains and have a transparent and robust process for handling complaints.

Recommendation 5: The Catapults should each review whether their engagement with universities is benefitting their sector or technology and meeting their original purpose to bridge the gap between research and industry, and whether such engagement could usefully be expanded to a wider range of universities.

Through joint projects and programmes, Catapults and universities can achieve faster translation of science into commercial opportunities, to develop, innovate, and address key technological challenges in sectors of mutual interest. By working closely with universities, Catapults are helping the UK's research and innovation sectors to thrive, delivering science and technology through testing, adopting, and scaling cutting-edge research in real-life Catapult environments.

Catapults are using their own networks and academic advisory groups to inform development of individual plans around engagement with universities. They continue to engage with Innovate UK to enhance their strategic alignment with research commercialisation opportunities and identify opportunities to disseminate their existing capabilities. Over 1,400 new collaborations between Catapults and research institutions took place in 2021/22 and case studies on their academic engagement have been collated on the [here](#).

Catapults demonstrate their continued engagement with universities via:

- **Joint programmes and projects** including commercialisation activities, technology and capability road-mapping, large-scale sector-focused programme activities and network building.
- **Secondments into Catapults** such as through the Engineering and Physical Sciences Research Council (EPSRC) funded Innovation Launchpad Network+ which supports the 'researchers in residence' programme. This brings together leading universities, the Catapults and regional innovation ecosystems to enrich the exchange of ideas and knowledge across these organisations.
- **Talent and Skills development.** Catapults already play a strong role in shaping future workforce development through their training centres in key sectors, as well as working with universities to address skills gaps and advance future skills needs. Addressing national skills shortages, Catapults and universities are collaborating to develop technical skills and to embed the latest knowledge into professional qualifications.

- **Building Strategic relationships** to stimulate market-led research and bring industry knowledge closer to the research base, in order to address technological challenges and accelerate the translation of knowledge, for example the recent agreement between Cardiff University and the Compound Semiconductor Applications Catapult.

Recommendation 6: Catapults should share best practice across the network supported by UKRI / Innovate UK, including on supporting companies to access finance. All Catapults should seek to proactively broker introductions with investors.

Catapults play an important role in supporting business on the investment journey and introducing them to suitable investors to secure private funding. The key strength of the Catapult approach is the “sector specific” support which is not usually covered by commercial accelerators. The work Catapults do to leverage private investment contributes directly to the Government's ambitions in this area.

Since the review, a working group consisting of Catapults and Innovate UK has been established to share best practise on how Catapults can support companies in accessing finance.

Catapults continue to explore a range of activities to provide routes to investors, depending on the needs of their sectors, such as investor intelligence, running accelerators and investor engagement events, undertaking investor mapping, pre-screening, corporate matching, venture building, investor readiness, equity and many other activities that stimulate this important connection.

Stimulating and leveraging private sector investment is a key target for Catapults during their next 5-year funding period. Innovate UK is working with Catapults to explore opportunities for alternative investment models for Catapult supported businesses.

Catapults also support the engagement of early-stage UK businesses with corporate investment which can lead to new joint services or ventures. All Catapults are continuing to work with Innovate UK to further evolve their business models in this area.

Recommendation 7: UKRI / Innovate UK should review their funding rules to ensure they allow Catapults to collaborate on projects of mutual interest to the network and evaluate how effectively Catapults are collaborating as part of monitoring and evaluation.

In 2022, UKRI reviewed their policy on Catapults' access to Research Council funding to assess if more flexibility could be provided in accessing UKRI-funded projects. As a result, from 1 June 2022, each Catapult is now able to apply for eligibility for Research Council funding opportunities on the same basis as Independent Research Organisations and Public Sector Research Establishments. If they are able to meet the eligibility criteria, and are then successful in competing for collaborative funding, this will enable Catapults and universities to collaborate more effectively, as well as better supporting the commercialisation journey from idea through to successful business offering. The list of currently eligible organisations can be found [here](#).

Currently, Innovate UK collaborative R&D funding to RTOs (including Catapults) is capped at 30% of the total eligible project costs. Innovate UK have investigated whether this cap should be raised to allow RTOs access to further collaborative R&D funding. There has always been scope for individual competitions to make a case for up to 50% where there is evidence that more significant research organisation participation is necessary to deliver the best outcomes with the funding.

Beyond that, there is no scope to lift the cap, because it is important that any funding allocation to RTOs does not crowd out other types of projects and reduce the overall investment in business innovation. To mitigate this and enable multi-Catapult, challenge led work, Innovate UK has made dedicated cross-Catapult funding available in several strategic priority areas including Net Zero and Hydrogen energy. Innovate UK are continuing this work with plans to extend this 'additional capability funding' over the next 5-year GFA period.

There are also a series of cross-Catapult working groups, on strategic topics such as skills and access to finance, which work closely with Innovate UK to discuss best practise, common goals and collaborative opportunities. The Catapults' M&E frameworks capture where they are collaborating with each other, for example on a Net Zero programme, businesses, academia, and government as well as skills development and place-based initiatives.

Recommendation 8: The Catapult network should develop a code of practice that provides greater transparency over how they make decisions on competing for commercial work and collaborative R&D (CR&D). Catapults should have a transparent and robust framework in place to address concerns raised by external stakeholders.

Catapults are developing a common code of practice for their commercial activities which sets out how they work in a complementary way with organisations across their sectors and a consistent set of principles to continue to do so. This reflects their RTO status alongside their role of supporting UK economic growth through innovation in areas of market failure and where there is significant UK opportunity. The code sets out that:

- Catapults can compete for work when they are able to bring distinctive capabilities to bear and can show that they deliver additionality.
- Catapults cannot use grant funding to subsidise their commercial position. They charge commercial rates for their assets and services.
- Although not for profit, Catapults have to demonstrate the same financial prudence and good governance as any well-managed commercial enterprise.
- Catapults procure goods and services using fair and transparent processes.
- Catapults should not normally directly award grants themselves but sometimes administer grants on behalf of other organisations.
- Each Catapult has a set of criteria to inform their choices on which opportunities to pursue and where to act commercially, or to compete for a grant.
- Each Catapult has robust and transparent procedures to address any concerns that may be raised by external stakeholders about the delivery of the model.

What next?

The review considered whether the Catapults should be expanding their remit or core objectives in line with Government priorities on levelling up, talent, and culture. The last set of recommendations focused on how Catapults can support the delivery of long-term benefit to the UK economy and increase economic growth in their sectors or technology domains. The review recognised the need for Catapults to identify and address skills gaps as well as publicise their commitment to diversity and inclusion across their institutions. Looking ahead, it was recommended that Innovate UK use existing criteria to assess whether new Catapults should be established if a strategic opportunity is identified, and appropriate funding becomes available.

Recommendation 9: Catapults should look for opportunities to support local economies, work with local partners and build innovation clusters as part of their overall strategy to support their sector or technology, and report on progress as part of their 5-yearly reviews. The Innovation Strategy and R&D Places Strategy should consider how to make the most of Catapults' local impact.

Catapults deliver impact across the UK with over 50 sites and a presence in each of the UK's devolved administrations. Catapult centres have a track record of accelerating growth of clusters of innovative businesses, connecting those businesses to the local research base, and driving skills development for their local economies. In so doing, they are both building national capability and driving local impact.

Around 74%¹ of Innovate UK's core grant funding to Catapults is deployed outside of London and the UK's Greater Southeast. For example, 'Digital Catapult Southwest', a partnership between the Digital Catapult and the University of Bristol has been formed, providing a boost to national capability, and strengthening innovation in Bristol and the wider region. The partnership will build on multiple ongoing projects between the two organisations.

There are a number of instances of local authorities and devolved administration Governments investing in Catapult facilities to enable greater local capability and impact. This includes investment from the Northern Ireland's Department of the Economy into Digital Catapult facilities in Belfast, the Welsh Government support for the Compound Semiconductor Applications Catapult in Newport, and the Scottish Government support for the National Manufacturing Institute for Scotland (part of the High Value Manufacturing (HVM) Catapult).

Increasing innovation across the UK was a key objective of the Innovation Strategy published in August 2021 as well as a principal objective of Innovate UK, and Catapults are a key part of this. The planned R&D Places Strategy was replaced by the R&D Chapter of the February 2022 Levelling Up White Paper (LUWP). This outlined how the UK Government will work to increase research and innovation capacity nationwide and for the UK to be a science superpower and a global hub of innovation by 2035. Examples of Catapult contributions to levelling up can be found [here](#).

¹ Based on Catapult HQ postcodes.

As part of the LUWP, a pilot program called 'Innovation Accelerators' was launched to support Glasgow, Greater Manchester, and the West Midlands to become global research and innovation centres. To grow local innovation networks, the Innovation Accelerators are locally led partnerships involving leaders from local government, business, and R&D institutions with opportunities for Catapults to be involved. For example, Connected Places Catapult has succeeded in winning [several programmes](#) as part of the first round of West Midlands Innovation Accelerator funding. Innovate UK has also made provision for additional Catapult funding to enable and incentivise further activity to support local impact.

Recommendation 10: Catapults should identify whether they can introduce skills development into the next 5-year review cycle in a way that works for their sector, considers Catapult maturity, and does not compromise core objectives.

Catapults are well placed to identify future skills needs and gaps in their sectors and technology domains due to their deep understanding and shaping of future opportunities, and to support businesses to develop a workforce with the skills to take those opportunities and be globally competitive. A key objective set out by Innovate UK for Catapults over the next 5-years is to drive skills foresighting and development to enable inclusive innovation and promote diversity in the businesses they support. As a result, the majority of the Catapults have included skills development activities as part of their O&Os proposals for the next 5-year grant funding period.

Previous examples of successful Catapult skills development initiatives include the Cell and Gene Therapy Catapult working with Advanced Therapy Apprenticeship Community to develop skills training from apprenticeships through to doctorates, and the Advanced Manufacturing Research Centre (part of the HVM Catapult) Training Centre providing apprenticeships and continuing professional development courses. Innovate UK has made provision for funding to enable and incentivise further Catapult activities on skills fore sighting and development, allowing Catapults to pilot new skills-based approaches.

Recommendation 11: The Catapult network should reconfirm its commitment to embedding EDI at all levels and in all the Catapults do, including monitoring diversity and publicising their work on EDI.

Catapults have demonstrated their commitment to embedding equality, diversity and inclusion (EDI) at all levels through their [EDI Charter](#), which was published in February 2022. The Catapults built on this by hosting a successful EDI Charter event in July 2022 in Glasgow, celebrating their commitments and successes to date and highlighting the critical role EDI has in delivering innovation and driving growth across their industries. Catapult case studies on EDI can be found on their [website](#).

A series of actions are listed in the charter which address historical barriers to opportunities including Class, Nationality, Dialect, Education and other forms of socio-economic exclusion and ensures all public sector equality duties (PSED) are upheld under the Equality Act 2010. This includes collecting and reporting baseline data on Diversity and Inclusion, creating local EDI champions in each Catapult and ensuring EDI strategy, policy and roadmap documents

are in place and operating. With Catapults Boards and Innovate UK, work is ongoing to ensure Catapults are collecting appropriate, robust data to track their adherence to PSED, taking opportunities (e.g. when making senior appointments) and tracking their own progress in EDI.

Innovate UK has made provision for additional core funding for Catapults to develop EDI initiatives to complement and participate in Innovate UK's own EDI programmes. Innovate UK will continue to work with DSIT and Catapults to collect appropriate PSED data related to organisations the Catapults work with. This will enable better understanding of the positive impact Catapults have on the innovation ecosystem.

Recommendation 12: Innovate UK will use existing criteria, updated to reflect the recommendations in this review, to assess whether new Catapults should be opened if appropriate funding is available.

In the event a new Catapult was being considered, Innovate UK has a robust process for determining whether it would be appropriate.

The criteria include:

- The global market opportunity is large, or the market is fast-growing and sustainable.
- The UK has capabilities to meet market needs in terms of research strength and business capacity.
- The time is right to invest given the opportunities presented.
- There is evidence that Government support will make a difference.
- There is a critical role for co-located expertise or equipment to provide what companies cannot get access to elsewhere or is required to attract investment.

The evidence used in the assessment process is drawn from diverse sources of data and information such as:

- Well established data sources e.g. bibliometrics for research outputs data, employment data and investment data.
- New data sources: customised analysis from IPO patent data, customised analysis from Gateway to Research Dataset and Pitchbook Investment Platform data analysis.

If there is clear and robust evidence for a new Catapult to be established, Innovate UK will assess the options for supporting such investment and develop the appropriate business case. This would involve working closely with DSIT officials and Ministers.

Recommendation 13: BEIS will work with Cabinet Office to provide best practice guidance for Government Departments on contracting and engaging with Catapults.

In September 2023, DSIT [published guidance](#) on how government departments can best work with Catapults to benefit from their sector expertise and knowledge. It aims to assist government departments in better understanding the purpose of Catapults and the benefits of working with them to deliver against government priorities. It also provides some detail on

potential routes for teams who are considering working with Catapults. Several case studies are included which showcase how government departments have successfully worked with Catapults.

Next steps for Catapults

This document highlights the excellent progress that has been made on all recommendations by DSIT (formerly BEIS), Innovate UK and Catapults. Innovate UK has ensured that strategic coherence will be maintained through the next five-years of funding, along with strong governance and impact delivery. Business-led innovation in the UK will benefit from Catapults' role as a key vehicle in the innovation ecosystem to drive the UK's ambition to be an Innovation Nation by:

- creating more value for the UK economy and stimulating private sector investment
- developing capability and capacity to support DSIT and wider UK Government priorities including skills, EDI and levelling-up and;
- ensuring value for money and appropriate use of public investment

Further information on Catapults can be found [here](#).

Annex 1 – List of 2021 Catapult Review Recommendations

Recommendation 1: Catapults fill a gap in the UK innovation ecosystem and should focus on the core objectives established in 2010. Our focus now, drawing on the findings of the 2014, 2017 and this review, will be on moving away from extensive reviews and instead on supporting them to be more effective institutions.

Recommendation 2: As part of the forthcoming Innovation Strategy, BEIS should work with UKRI and partners across government, business and academia to consider the strengths and weaknesses of the UK's innovation ecosystem as a whole, and how we make the most of Catapults as a critical part of that, ahead of funding decisions at the 2021 Spending Review.

Recommendation 3: Innovate UK/UKRI should incorporate independent review panels into the funding renewal process for 2023, which will begin during 2021. Subsequently, this process should be refined and built into a consistent 5-year review cycle run by UKRI / Innovate UK to provide evidence for long-term funding decisions.

Recommendation 4: BEIS, Innovate UK and the Catapults will work together to ensure that appropriate data is being collected to provide robust evidence of impact. As part of the 5-year review cycle, BEIS and Innovate UK will work towards agreeing bespoke KPIs with the Catapults that reflect the individual nature of each Catapult, alongside a core set of common KPIs.

Recommendation 5: The Catapults should each review whether their engagement with universities is benefitting their sector or technology and meeting their original purpose to bridge the gap between research and industry, and whether such engagement could usefully be expanded to a wider range of universities.

Recommendation 6: Catapults should share best practice across the network supported by UKRI / Innovate UK, including on supporting companies to access finance. All Catapults should seek to proactively broker introductions with investors.

Recommendation 7: UKRI/Innovate UK should review their funding rules to ensure they allow Catapults to collaborate on projects of mutual interest to the network and evaluate how effectively Catapults are collaborating as part of monitoring and evaluation.

Recommendation 8: The Catapult network should develop a code of practice that provides greater transparency over how they make decisions on competing for commercial work and collaborative R&D (CR&D). Catapults should have a transparent and robust framework in place to address concerns raised by external stakeholders.

Recommendation 9: Catapults should look for opportunities to support local economies, work with local partners and build innovation clusters as part of their overall strategy to support their sector or technology, and report on progress as part of their 5 yearly reviews. The Innovation Strategy and R&D Places Strategy should consider how to make the most of Catapults' local impact.

Recommendation 10: Catapults should identify whether they can introduce skills development into the next 5-year review cycle in a way that works for their sector, considers Catapult maturity, and does not compromise core objectives.

Recommendation 11: The Catapult network should reconfirm its commitment to embedding EDI at all levels and in all the Catapults do, including monitoring diversity and publicising their work on EDI.

Recommendation 12: Innovate UK will use existing criteria, updated to reflect the recommendations in this review, to assess whether new Catapults should be opened if appropriate funding is available.

Recommendation 13: BEIS will work with Cabinet Office to provide best practice guidance for Government Departments on contracting and engaging with Catapults.

Annex 2 – Catapult Activity

This table details the 9 Catapults and the types of activities they undertake:

Catapult	Date Created	What it does and how it does it
High Value Manufacturing (a network of another seven centres)	October 2011	Embraces all forms of manufacture using metals and composites, in addition to process manufacturing technologies and bioprocessing (A process which uses a living source to create a product). They provide open access to innovation capability and technical expertise to companies, enabling them to adopt new technologies and improve their performance and delivery. Head office outside of Birmingham with 7 centres throughout the UK.
Cell and Gene Therapy	October 2012	Develops the Cell and Gene Therapy Industry in the UK, working together with academia and industry ensuring these life-changing therapies can be used in health services throughout the world. Through its sites in London, Stevenage and Braintree, it offers leading-edge capability, technology and innovation to enable companies to take products into clinical trials and provide clinical, process development, manufacturing, regulatory, health economics and market access expertise.
Satellite Applications	December 2012	Helps businesses to realise their potential from space infrastructure and applications towards worldwide connectivity and geospatial intelligence. It is based at the science innovation and business campus at Harwell in South Oxfordshire and supported by five Regional Centres of Excellence (East Midlands, Northeast, Southwest, South Coast and Central Scotland).
Offshore Renewable Energy	March 2013	Drives the development of commercially viable technologies applicable to offshore wind, wave and tidal power. Headquartered in Glasgow with the National Renewable Energy Centre in Blyth, Northumberland as the main operational facility, and further facilities in Fife, East Anglia, West Cornwall, Pembrokeshire, Aberdeen and Shandong Province, China.

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Digital	June 2013	Drives early adoption of advanced digital technologies with a focus on the creative and manufacturing sectors. It identifies, builds, and operates physical and digital facilities not currently available elsewhere (e.g., its work for DCMS on 5G test beds). Headquartered in London with local centres in Sunderland and Belfast.
Energy Systems	April 2015	Supports companies and Government to develop products and services to address the new commercial opportunities created by the transformation of UK and global energy systems (covering electricity, heat, and combustible gases). Based in Birmingham and Derby.
Medicines Discovery	April 2015	Advances the development of new discovery techniques and technologies through a partnership model focused on SMEs and including service providers, medical charities, national research bodies, academia, clinicians and regulators. Office and laboratories in Alderley Park in Cheshire.
Compound Semiconductor Applications	January 2018	Supports the development of compound semi-conductors and their applications through work to accelerate the use of compound semi-conductor devices within five key areas of application: healthcare; digital economy; energy; transport; and defence and security. Based in South Wales.
Connected Places created by merger of Future cities and Transport Systems	April 2019	Focuses on growing businesses with innovations in mobility services, the built environment and placemaking that drive the Net Zero transition and boost local prosperity through improved physical, digital and social connectedness. Their main offices are in London and Milton Keynes (with additional locations in Leeds and Glasgow).

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