Commons Treasury Select Committee National Wealth Fund – Call for evidence

About the BIA

The BioIndustry Association (BIA) is the voice of the innovative life sciences and biotech industry, enabling and connecting the UK ecosystem so that businesses can start, grow and deliver world changing innovation. Our 600+ members include start-ups, biotechnology and innovative life science companies, large pharmaceutical companies, universities, research centres, tech transfer offices, incubators and accelerators, and a wide range of life science service providers: investors, lawyers, IP consultants, and IR agencies. We promote an ecosystem that enables innovative life science companies to start and grow successfully and sustainably.

Summary

The launch of the National Wealth Fund (NWF) is very welcome. If effectively targeted and aligned with the priority sectors and pro-innovation approach of the Government's wider Industrial Strategy, the NWF can succeed in its objective of meeting the 'triple bottom line': supporting government's growth and clean energy missions, generating returns for the taxpayer, and crowding in capital.

To fully unlock the Fund's potential, priority sectors must include high-growth, innovation-driven industries such as engineering biology and the life sciences – both of which are already recognised by Government as critical to UK growth, and uniquely positioned to meet the NWF's triple bottom line objectives. Engineering biology is considered by government as part of the "digital and technologies" sector of the industrial strategy, so should already be a focus for the NWF, but life sciences has not been notified as one, for unclear reasons. Both have considerable sector-specific infrastructure gaps that need to be addressed, and are critically dependent on more traditional infrastructure projects such as building and transport. Therefore, the Fund should consider benefits and impacts on all priority sectors when making general infrastructure investment decisions. This will require it to build sector specific teams and work with others in government.

Success will be dependent on the NWF complementing existing institutions, drawing on established expertise across government, including the British Business Bank and Innovate UK, and acting in concert with the private sector—de-risking investments and addressing critical market failures. Government must be prepared to take calculated risks and invest in innovation even where there is no guarantee of success, as this is crucial to securing the long-term benefits of innovation for the UK economy.

Responses to questions

- **How successful is the National Wealth Fund likely to be in (1) mobilising private investment and (2) stimulating economic growth?**
- **The Chancellor's strategic direction sets clean energy, advanced manufacturing, digital technologies, and transport as priority sectors for the National Wealth Fund. Are these the right priority sectors? Should others have been included?**
- **The Chancellor has given the National Wealth Fund two strategic objectives: (i) supporting regional and local economic growth and (ii) tackling climate change. How will these two objectives work together?**

The launch of the National Wealth Fund (NWF) is very welcome. If delivered efficiently, and if appropriately targeted at sectors and technologies aligned with the Industrial Strategy that reinforce the 'triple bottom line' for investment – helping deliver the Government's growth and clean energy missions, generating a return for the taxpayer, and crowding in private capital – the fund should succeed in its goals of mobilising private investment, and stimulating economic growth.

The NWF's focus is on investment in late-stage development, construction, and commercialisation. We envisage it will deliver its objective through investing in infrastructure that has cross-sector applications, such as transport and energy supply, and more specialist infrastructure, which may only be used by one sector or type of business. Both of these activities would be beneficial for the companies we represent. Tackling infrastructure gaps, using the NWF

as a lever, will help root British firms in the soil in the UK, even as they expand into global markets, which will stimulate economic growth and mobilise private investment.

Infrastructure that will enable the UK to expand its high-value manufacturing basein particular, represents an excellent opportunity to both mobilise investment and stimulate growth, especially in innovative sectors where the UK can capitalise on its world-leading science base, such as life sciences and others underpinned by emerging technologies like engineering biology. With the NWF's focus on investment in late-stage development, construction, and commercialisation, this is an opportunity the NWF is well equipped to seize.

Designing and delivering the NWF in a way that is complementary to existing bodies, and avoids undermining or duplicating efforts, is of vital importance to the fund's success, and the success of the broader Industrial Strategy. The implementation of this fund, therefore, needs to be symbiotic with the current ecosystem. To succeed in this regard, it will be imperative to retain a future-looking perspective and to take account of not only existing schemes but also the future plans from relevant departments, including the Life Sciences Sector Plan and Industrial Strategy.

Making use of established expertise, particularly with regard to high-growth, innovative sectors, will also be key to the success of the fund. The British Business Bank, British Patient Capital and Innovate UK have built a considerable level of expertise in just such sectors. Leveraging this expertise and ensuring it isn't lost will be essential. In the context of the recently announced review of arm's length bodies[1], any consolidation or thin spreading of resources and talent could have unintended consequences for the Government's ability to deliver support for complex and innovative sectors.

Beyond ensuring the scheme's symbiosis with existing Government programmes, and seizing the opportunities and infrastructure gaps that the fund is best equipped to tackle, success will largely be dependent on selecting the right priority sectors for investment.

[1] Cabinet Office: Hundreds of quangos to be examined for potential closure as Government takes back control. (2025)

Engineering biology

Engineering biology (EB) should be specifically prioritised by the NWF, as EB is a uniquely placed technology that can create economic growth, well-paid jobs, and crowd in private capital, whilst making our society more environmentally sustainable. EB is the design, scaling and commercialisation of biology-derived products and services. It draws on the tools of synthetic biology, and has the potential to both transform sectors and produce existing products more sustainably, creating the next wave of innovation in the bioeconomy.

However, as a relatively new technology with broad industrial application, its development, commercialization and adoption faces significant market failures that necessitate Government intervention.

Using the NWF as a lever to invest in EB is consistent with existing Government policy. EB has been identified as a critical technology with strategic importance and high-growth potential in successive Government strategies including the Science and Technology Framework[2] and the forthcoming Industrial Strategy,[3] which captures EB within the 'digital and technologies' sector. The National Vision for Engineering Biology,[4] identified gaps in infrastructure as a key challenge for EB companies. It sets out the goal of reducing the costs of both the early stages of EB innovation, and its scale-up by providing UK infrastructure. The House of Lords Science and Technology Committee's report: 'Don't fail to scale: Seizing the opportunity of engineering biology', urged the Government to urgently expand the scope and scale of its National Wealth Fund to ensure it can include investments in technologies such as EB that support the aims of its industrial strategy.[5] In its response, Government said that DSIT are engaging with HMT and the NWF to identify where opportunities to support EB are a part of this mandate.[6]

Clearly, there is already recognition from Government that EB requires the support of the NWF. The EB ecosystem needs public investment to deliver the pilot-scale and scale-up infrastructure it needs. Specifically, the EB ecosystem needs more capacity below the biopharmaceutical grade

[2] DSIT: UK Science and Technology Framework. (2024)
[3] DBT: Invest 2035: the UK's modern industrial strategy. (2024)
[4] DSIT: National vision for engineering biology. (2023)
[5] HOL Science and Technology Committee: Don't fail to scale: seizing the opportunity of engineering biology. (2025)
[6] HMG: Government Response to House of Lords enquiry on Engineering Biology. (2025)

e.g. large-scale food-grade fermentation facilities for cultivated novel foods[7]. This infrastructure is expensive and the market demand has a degree of uncertainty and risk that mean the private sector has not stepped in to meet the young but growing industry's needs.
Investing in infrastructure to support the commercialisation of EB will support the NWF fund in achieving its objective of meeting the 'triple bottom line': helping deliver the Government's growth and clean energy missions, generating a return for the taxpayer, and crowding in private capital, as set out below.

1. Helping deliver the government's missions

Growth

Regional growth

EB can play a central role in driving both regional economic growth and decarbonisation. EB facilities require highly skilled operators, creating high-value jobs, operations, and infrastructure management. When located strategically, taking into account local strengths, these facilities can contribute to addressing regional inequality. The wider UK industrial biotechnology sector has already outpaced national employment growth averages, increasing by more than 10% per year, with median earnings around £20,000 above the national average[8].

Strength in engineering biology exists across the UK, with significant clusters in Scotland, Teesside, the North West, and the South East. Bristol offers a clear example of how public investment in EB can catalyse regional growth. Initial UKRI funding into the BrisSynBio Synthetic Biology Research Centre and the Oxford-Warwick-Bristol Synthetic Biology Centre for Doctoral Training was followed by further inward investment from the University of Bristol. This helped establish the Bristol BioDesign Institute and the Max Planck-Bristol Centre for Minimal Biology, which together supported 50 academics and 60 post-doctoral researchers and led to over 400 academic publications. This public investment laid the foundations for a thriving entrepreneurial ecosystem, now home to Science Creates,[9] which channels venture capital investment into innovative start-ups. In

[7] BIA: A call to action: Driving deep biotech through policy. (2025)
[8] Industrial Biotechnology Leadership Forum: Growing the UK Industrial Biotechnology Base. (2018)
[9] https://sciencecreates.co.uk/

2023, the Science Creates ecosystem surpassed a Gross Value Added (GVA) of £125 million per year and employed 370 people across the UK[10].

Grangemouth, an oil refinery which is due to cease operations in 2025, also has potential to become a high-value centre for engineering biology. Grangemouth's future as a sustainable manufacturing site is being explored by a joint initiative, called Project Willow, led by Petroineos (the current operator) in collaboration with the UK and Scottish governments.

Several of the proposed projects under Project Willow, including those involving biorefining, bioethanol, and anaerobic digestion, could contribute to the creation of up to 800 new jobs at the site by 2040[11]. The NWF has already committed £200 million to support Grangemouth's transition to green industry[12], and this example illustrates the wider potential for EB to deliver economic growth and high-quality jobs across the UK.

National growth

EB is a high-growth platform technology. In 2014, the UK bioeconomy was estimated to contribute £220 billion in GVA and support over five million jobs[13]. A 2023 PwC report commissioned by GO-Science estimated that engineering biology alone could contribute 1.55% of real GDP growth by 2035[14]. The UK is a global leader in this field: it ranks fifth in the world for engineering biology research publications and fourth for their impact. It has a growing SME base, with around 1,162 companies active in engineering biology. Between 2017 and 2023, UK companies raised over £5.2 billion in private investment, ranking the UK third globally in engineering biology investment, behind only the US and China.[15]

More than half of the economic impact of biotechnology is expected to lie outside healthcare, particularly in agriculture, aquaculture and food ($0.8–1.2 trillion globally by 2030–40), followed by consumer products and services ($0.2–0.7 trillion) and materials

[10] DSIT: National vision for engineering biology. (2023)
[11] Scottish Development International: Project Willow. (2025)
[12] Scotland Office: Prime Minister announcement on Grangemouth. (2025)
[13] Capital Economics, TBR, E4tech: Evidencing the bioeconomy. (2016)
[14] GOS, DSIT: The wider economic impacts of emerging technologies in the UK. (2025)
[15] DSIT: National vision for engineering biology. (2023)

and energy production ($0.2–0.3 trillion)[16]. Many of these non-health applications also have indirect public health benefits, for example by reducing healthcare costs through improvements to air quality.

Tackling climate change

EB also has the potential to contribute significantly to the Government's clean energy mission. It is a cross-cutting platform that offers solutions to 10 of the 17 Sustainable Development Goals (SDGs) and can be applied across a wide range of sectors.

Agriculture and food

EB enables more sustainable food systems by reducing reliance on livestock (responsible for 14.5% of global greenhouse gas emissions), freeing up agricultural land, and producing climate-resilient crops through techniques such as cellular agriculture, precision fermentation and gene editing.

Materials and chemicals

Bio-based polymers offer sustainable alternatives to petrochemical-based plastics in textiles, packaging and household goods, with benefits for both climate and microplastic reduction.

Biofuels and CO_2 capture

Algae and bacteria-based systems can be used to capture industrial carbon emissions and transform them into valuable compounds, including insulin. EB can also be used to produce biofuels from industrial waste, such as whisky residues, contributing to circular economy models.

Manufacturing

EB enables cleaner, lower-temperature and lower-energy manufacturing processes without the use of harsh chemicals. The Boston Consulting Group has projected that by the end of the decade, engineering biology could be used extensively in industries accounting for more than one-third of global output—nearly $30 trillion in value.

[16] University of Cambridge, CIIP: Life sciences beyond human health: modern industrial biotechnology in the UK. (2023

2. Generating return for the taxpayer

Public investment in engineering biology has been shown to deliver strong returns for the taxpayer. For example, the BBSRC's Synthetic Biology for Growth (SBfG) programme delivered an ROI of 8.7 times the initial investment (according to the top-down model), with a total net additional GVA of up to £1,065 million. The SBfG programme funding has directly supported 47 early-stage companies through providing access to facilities and expertise at the SBRCs. This in turn has leveraged £79 million in investment for these companies and allowed them to grow to around 250 staff[17].

Likewise, UKRI's initial investment of £10 million in SynbiCITE lead to 27 companies achieve a combined market capitalisation of £790 million in 2022. This initial public investment has been followed on by private investments from SynBioVen[18].

3. Crowding in private capital

There is currently a clear market failure in engineering biology infrastructure investment, especially non-health applications. Public investment would not displace private capital, but rather help to de-risk and catalyse it. Private investors view EB investments as inherently risky and capital-intensive, and they are often deterred from investing in projects that require high upfront capital investment and long development times[19].

In his testimony at the House of Lords Science and Technology Committee inquiry into EB, Professor Paul Freemont said it is unlikely that venture capitalists will fund large capital expenditure investments in the pilot-scale infrastructure that the EB ecosystem needs[20]. More public funding is needed to stimulate flow of investments into start-ups and SMEs, and nurture them for longer, to help companies demonstrate de-risked propositions and thereby attract private funding[21].

[17] UKRI: Synthetic biology for growth programme economic impact evaluation. (2024)
[18] Imperial: National hub to support synthetic biology extended with £5.5m funding commitment. (2022)
[19] European Investment Bank: Financing the Deep Tech Revolution: How investors assess risks in Key Enabling Technologies (2018)
[20] HOL Science and Technology Committee: Don't fail to scale: seizing the opportunity of engineering biology. (2025)
[21] Engineering Biology Leadership Council: Building back better with Engineering Biology (2021)

These findings were echoed by private investors who informed BIA's policy development on EB[22]. They explicitly called for public investment to derisk their investments, demonstrating a clear appetite for co-investment and 'crowding in' of private capital.[23]

Life sciences

In addition to engineering biology, the medical life sciences is a sector that should be considered as a focus for the NWF. It has been identified by the Industrial Strategy as a priority sector,[24] one that offers the highest growth opportunities for business and the economy, and will thus play a pivotal role in the delivery of the Government's growth mission. It is clear then that – as with engineering biology – the life sciences can help the NWF reach its objective of meeting the triple bottom line. It is therefore highly regrettable that it is not currently included in the NWF's sectors of focus. We are not aware of the Government's reasoning for this omission.

1. Helping deliver the government's growth mission

The UK life sciences industry employs over 300,000 people. There are 6,850 life sciences businesses, 75% of which are SMEs, and combined they generate a turnover of £108.1bn.[25] The average GVA per employee is over twice the UK average at £104,000 and the sector consistently invests more in R&D than any other (£9 billion in 2022).[26]

This strength is spread across the UK. The South East is widely regarded as Europe's Silicon Valley, with thousands of fast-growing agile life science start-ups and scaling companies, many linked to the world-leading universities of London, Cambridge and Oxford, operating at the cutting edge of science to build industries of the future. The North West is the third most concentrated area for life sciences jobs. Pioneering efforts by Eli Lilly in the early 1980s resulted in large scale production of recombinant insulin and human growth hormone there, and the past decade has witnessed significant investments, including Pharmaron's Biologics Centre in Liverpool. These companies not

[22] BIA: A call to action: Driving deep biotech through policy. (2025)
[23] BIA would be happy to share further details from these workshops.
[24] DBT: Invest 2035: the UK's modern industrial strategy. (2024)
[25] DSIT, DHSC, OLS: Bioscience and health technology sector statistics 2021 to 2022. (2023)
[26] ONS: Business enterprise research and development, UK: 2022. (2024)

only bring in millions of pounds of foreign private capital into the UK, but also create a demand for services and manufacturing that spreads prosperity across the country.

2. Generating a return for the tax payer

With over 6,850 businesses, generating £108.1bn in turnover,[27] 300,000 jobs – around two-thirds of which are outside London and the South East – and approximately 5% jobs growth per year, UK life science consistently delivers for the UK tax payer. In 2024, pharmaceuticals were the third largest sector for exported goods at over £24 billion.[28]

Beyond a purely economic lens, UK life science delivers returns for the tax payer in a myriad of ways, from keeping people healthy for work and improving patients' lives through new treatments and digital healthcare, to the development of environmentally sustainable technologies, including fossil fuel substitutes, biodegradable bioplastics and the cleaning of polluted waters.

3. Crowding in private capital

The UK biotech sector is exceptionally capable at crowing in capital. In 2024 the sector attracted significant investment, raising £3.7 billion – a 106% increase compared to the previous year.[29] This represents the highest annual figure since the £4.5 billion raised in 2021 and is a testament to the sector's resilience, innovation, and global appeal, even in the face of challenging economic conditions. The sector is particularly attractive to the US, with 33% of seed deals are led by US investors, and 47% of Series A deals.[30]

In addition, UK life sciences continually draws high levels of foreign direct investment (FDI); it continually places within the top ten countries worldwide for life sciences FDI. [31] In 2023, an estimated £800 million of inward FDI was attracted by UK life sciences. However, the levels of FDI have decreased since the pandemic, showing there is potential to improve our position with the right infrastructure investments to boost competitiveness..

[27] DSIT, DHSC, OLS: Bioscience and health technology sector statistics 2021 to 2022. (2023)
[28] ONS: Trade in goods: country-by-commodity exports (2025).
[29] BIA: UK biotech financing 2024. (2025)
[30] BIA: UK biotech financing 2024. (2025)
[31] DSIT, DHSC: Life sciences competitiveness indicators 2024: summary. (2024)

Buildings, transport and other traditional infrastructure are critical for life science and biotech companies, and insufficiencies will hold back the sector. The Oxford-Cambridge Arc for example is a project that will substantially benefit the life sciences, and as a priority sector for growth within the Industrial Strategy, the impact of infrastructure projects on the life sciences should be considered within the decision making process for strategic investment in the NWF.

Specialist infrastructure within the life sciences sector is also essential and NWF can play a role in ensuring its availability, especially as we adopt more advanced techniques for medicine manufacturing. As manufacturing processes evolve to meet Net Zero goals, facility design and requirements are also changing. Currently, the UK lacks a sufficient number of specialized facilities to meet the demands for a healthy, resilient workforce.

A major issue within medicine manufacturing is the lack of infrastructure readily available. Whilst the UK has a flourishing contract development and manufacturing organisations (CDMO) community, this is not enough to support the upcoming demand of innovative therapies; for example, currently around 11,000 cell therapy doses are produced annually, and it is expected that 160,000 doses will be required annually to ensure eligible patients are treated. The next few years in advanced therapies are critical, and manufacturing space is one of the main bottlenecks. If the NWF were to channel investment into life science manufacturing and other specialised infrastructure, it would have hugely positive impact.

- **How attractive is the National Wealth Fund likely to be as a partner for the private sector? Is the private sector sufficiently aware of the opportunities available within the National Wealth Fund?**
- **How can the National Wealth Fund ensure that it is crowding in rather than crowding out private sector investment?**

The NWF has the potential to be a highly attractive partner for engineering biology investment, particularly in addressing capital investment gaps that are currently unmet by the private sector.

However, as it has only recently been announced and is still under development, awareness and understanding of the NWF is low in engineering biology and life sciences communities.

EB SMEs routinely struggle to attract investment for physical infrastructure, including pilot plants, fermentation facilities, downstream processing capabilities, and other specialist equipment. This infrastructure is critical at both the R&D and commercial stages of a company's development. For highly innovative companies costs are compounded by the fact their process might be unique, requiring them to build a 'first-of-a-kind' assets that carry higher technical and financial risk, limiting the willingness of private investors to engage. Currently there is clear and growing demand for large-scale, food-grade fermentation facilities for novel foods and for Good Manufacturing Practice (GMP) facilities for therapeutics based on engineered microorganisms. These facilities are essential for UK companies to scale and commercialise effectively.

Private investors are generally reluctant to fund such infrastructure due to a combination of uncertain market conditions and regulatory frameworks, long return-on-investment timelines, high upfront capital requirements, and the absence of short-term revenue. This has created a clear market failure in EB infrastructure investment, particularly in high-potential subsectors such as food and materials. As such, there is no significant risk of crowding out existing investment. Rather, there is strong evidence of investor appetite for public-private partnerships that de-risk investment and provide long-term support[32].

Non-health EB investors have called for public investment to act as a catalyst, demonstrating support for crowding in rather than crowding out. Schemes such as the Investor Partnerships[33] from Innovate UK have been welcomed by both investors and innovators, offering mutual benefit to the taxpayer and the private sector alike[34]. A public capital partner like the NWF, with a strategic remit and appropriate risk appetite, is therefore highly attractive to the sector. It is well placed to support first-of-a-kind facilities and enable the UK to anchor the economic and industrial benefits of EB.

To ensure the private sector is sufficiently aware of the opportunities available through the NWF, and to maximise its impact in the field of EB, the Fund should establish a dedicated investment team focused on this area. This recommendation, made by the House of Lords Science and

[32] BIA workshops on deep biotech finance and infrastructure (unpublished)
[33] IUK: Investor partnerships future economy
[34] BIA workshops on deep biotech finance and infrastructure (unpublished)

Technology Committee[35], would help to identify high-potential investment opportunities and provide a clear point of engagement for the sector.

To ensure it crowds in private sector investment, the NWF must address the disincentives currently facing capital-intensive, innovation-driven industries. As an example, there is currently very little incentive within the Government's fiscal policy for companies to make manufacturing investments. Capital allowances are generous, but are only incentives for profit-making companies, not scaling, R&D intensive businesses that are the driving force of economic growth and creators of future industries. R&D tax reliefs do not include capital expenditure, and very few capital grants or other incentives are available for companies to invest in their facilities. Moreover, Green Book rules prevent their effective deployment. As such, increased public and private investment is required to secure internationally-mobile investments and prevent promising UK companies from moving or expanding overseas, rather than in the UK.

- **Do we need to accept that some of the projects funded by the National Wealth Fund will fail or be poor value for money? What kinds of failure does the Government need to tolerate in projects funded through the National Wealth Fund?**

To realise the full growth potential of engineering biology, government must be prepared to take calculated risks and invest in innovation, even where there is no guarantee of success. Emerging technologies such as engineering biology hold significant promise for long-term economic transformation. However, by their nature, these opportunities come with uncertainty. The Government must accept that not all investments will deliver the expected returns, and that some projects may fail or prove to be poor value for money. This is not a flaw in the system, but a necessary aspect of fostering innovation.

[35] HOL Science and Technology Committee: Don't fail to scale: seizing the opportunity of engineering biology. (2025)

As highlighted in the House of Lords report, Lord Willetts noted that risk tolerance is essential: "If it ends up that companies cannot then deliver some of the contracts, that is not a political scandal; it is the risk you need to bear if you fund innovation."
Lord Vallance similarly cited the Vaccine Taskforce as a model—an initiative that accepted risk in the pursuit of high-stakes innovation, and ultimately played a key role in the UK's pandemic response[36].

For the NWF to be effective, it must adopt a similar approach. A willingness to back emerging technologies, while accepting that not every investment will succeed, is crucial to securing the long-term benefits of innovation for the UK economy.

[36] HOL Science and Technology Committee: Don't fail to scale: seizing the opportunity of engineering biology. (2025)