Green Book Analysis

The Association of the British Pharmaceutical Industry (ABPI)

28 AUGUST 2025

Final Report

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EXECUTIVE SUMMARY

The Association of the British Pharmaceutical Industry (ABPI) commissioned Cambridge Economic Policy Associates (CEPA) to consider the application and design of the Green Book with respect to the Life Sciences Innovative Manufacturing Fund (LSIMF). The Medicines Manufacturing Industry Partnership (MMIP), which played a key role in supporting the creation of the LSIMF, provided extensive input into this project before and during its development.

The LSIMF is a UK capital grants initiative administered by the Office for Life Sciences (OLS), aimed at supporting growth in domestic manufacturing of human medicines, medical diagnostics, and medical devices. For globally mobile investment opportunities, the LSIMF improves the attractiveness of investment in the UK by reducing innovation risk and costs.

This project considered whether the use of the Green Book in appraising funding applications to the LSIMF – as well as the design of the Green Book itself – captures the full range and extent of economic and strategic benefits to the UK derived from investments in innovative life sciences manufacturing. This work utilises the latest available version of the Green Book, which was last updated substantively in 2022, and considers historic LSIMF applications. It draws on a detailed document review and consultations with stakeholders from industry and government, undertaken in May and June 2025.

Project appraisal is inherently challenging and features various trade-offs, such as the desire for a detailed assessment to ensure value for money, versus the administrative burden this may place on applicants. In this context, the government's commitment to continuous improvement in project appraisal – as evident in the HM Treasury's 2025 Green Book review – should be commended. Moreover, the LSIMF provides a practical example of positive action, with the OLS seeking to adapt the LSIMF appraisal process to address known challenges. In light of government ambitions for advanced manufacturing and life sciences, there is a unique opportunity for consideration of refinements to the LSIMF and the Green Book.

First, our analysis has identified that **major benefits of innovative manufacturing in life sciences are not being fully captured within the current LSIMF appraisal process.** Based on Green Book guidance, it is not straightforward to quantify, monetise or systematically assess several categories of benefits. This includes increased productivity, international competitiveness and export growth, agglomeration effects and spillovers, environmental sustainability, more evenly distributed growth across the UK, and – to an extent – national health resilience. LSIMF appraisals appear to place a disproportionate focus on benefits that can be readily monetised (primarily, short-term job creation) and reflected within relatively narrow benefit-cost ratios. Currently, the LSIMF application process does not have a clear methodological framework that could be used to systematically consider the full range of hard-to-monetise benefits.

Second, whilst stakeholders strongly welcome the LSIMF as an important lever to anchor high-value manufacturing in the UK, our analysis finds **a number of issues and potential areas for improvement to ensure the benefits from innovative manufacturing are fully captured**.

The full set of issues identified in our analysis is presented in the table below. Our findings align closely with the 2025 Green Book Review, which calls for clearer appraisal of transformational change, place-based benefits and non-monetisable impacts.

	Issues
1	Key economic and strategic benefits, such as productivity, competitiveness, exports, and agglomeration effects, are not systematically assessed
2	Over-reliance on the benefit-cost ratio (BCR) to assess and size capital grants
3	Challenge and lack of guidance around monetising key economic and strategic benefits
4	Lack of predictability and transparency
5	Complexity of process and need for proportionality
6	Capital grants are only one component in companies' decision-making and need to be placed in the context of market conditions and the wider policy landscape
7	There may be trade-offs between scheme value for money and the government's longer-term strategic objectives

Finally, taking into account the findings above and building on the government's recent Green Book review, we provide three main recommendations for HM Treasury and the OLS.

	Recommendations for the LSIMF
1	Introduce a more comprehensive appraisal framework to reduce reliance on the BCR and to strengthen non-monetisable benefits within decision-making
2	Increase the predictability and transparency of the LSIMF process
3	Ensure proportionality and timeliness of the LSIMF process

These recommendations complement each other to improve the LSIMF's effectiveness as a stimulus for UK competitiveness. For example, implementing recommendation 1 (to introduce a broader, more holistic appraisal framework) would support the delivery of recommendation 2 (to strengthen transparency and predictability for applicants). A more holistic framework would also help to widen the range of benefits considered by appraisers without necessarily increasing the administrative burden on them or applicants, thereby progressing recommendation 3 (to increase proportionality).

1. INTRODUCTION

The Association of the British Pharmaceutical Industry (ABPI) commissioned Cambridge Economic Policy Associates (CEPA) to consider the application and design of the Green Book with respect to the Life Sciences Innovative Manufacturing Fund (LSIMF).

Specifically, this project considered whether the use of the Green Book in appraising funding applications to the LSIMF – as well as the design of the Green Book itself – captures the full range and extent of economic and strategic benefits to the UK derived from investments in innovative life sciences manufacturing. This project utilises the latest version of the Green Book, which was last updated substantively in 2022.

The work provides a snapshot of the LSIMF's current appraisal framework, drawing on an extensive review of documentation and targeted consultations with stakeholders across the private and public sectors. This includes discussions with pharmaceutical manufacturers and individuals involved in the appraisal and oversight of public investment processes. Stakeholder perspectives covered insights across the full LSIMF application and award cycle, largely focused on LSIMF applications since 2022, including submissions before and after the 2024 scheme iterations. Some stakeholder perspectives were also shaped by experiences with the predecessor fund (the Medicines and Diagnostics Manufacturing Transformation Fund, MDMTF). Consultations were conducted throughout May and June 2025.

This report comes at a timely moment. In June 2025, HM Treasury published a review of the Green Book.[1] The review highlighted several areas for improvement in the appraisal process, including an over-reliance on benefit-cost ratios (BCRs) relative to strategic dimensions of value, and the need for stronger consideration of 'place-based' (localised) objectives. Also in June 2025, the government released its Modern Industrial Strategy and the Life Sciences Sector Plan, reaffirming life sciences and advanced manufacturing as national priorities and highlighting the LSIMF as a key vehicle, with up to £520 million earmarked to attract globally mobile manufacturing investments and strengthen domestic supply chain resilience.[2, 3] Together, these developments present a 'window of opportunity' to ensure that the appraisal framework for allocating public funding reflects the full value of innovative life sciences manufacturing.

Within this context, this report considers whether there are specific opportunities to better reflect the full value of innovative life sciences manufacturing within the Green Book's application to the LSIMF and in its design more broadly.

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[1] HM Treasury. 2025. Green Book Review 2025: Findings and actions. https://www.gov.uk/government/publications/green-book-review-2025-findings-and-actions/green-book-review-2025-findings-and-actions.
[2] UK Government. 2025. The UK's Modern Industrial Strategy. https://assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf
[3] UK Government. 2025. Life Sciences Sector Plan. https://assets.publishing.service.gov.uk/media/687653fb55c4bd0544dcaeb1/Life_Sciences_Sector_Plan.pdf

2. CONTEXT OF THE GREEN BOOK AND THE LIFE SCIENCES INNOVATIVE MANUFACTURING FUND

2.1. Green Book

The Green Book is the HM Treasury's official guidance on how government and public bodies should appraise policies, programmes, and investment proposals.[4] It provides a standardised framework for evaluating costs, benefits, risks, and value-for-money to support evidence-based advice to UK ministers.[5] While the Green Book does not set government policy objectives, it underpins business cases across departments and agencies within government.

The Green Book uses a five-case model to evaluate proposals, which is a structured framework for developing business cases for public spending decisions. This model requires funding applicants to develop proposals which set out: (i) the strategic case, (ii) economic case, (iii) commercial case, (iv) financial case, and (v) management case.[6] Each of these cases serves a specific purpose in ensuring proposals are affordable, achievable, and provide value for money for taxpayers. This report focuses on the strategic and economic cases, which are most relevant to how value is assessed within LSIMF applications.

The strategic case presents the rationale for intervention and demonstrates alignment with wider public policy objectives. It sets out the current 'Business as Usual' (BAU) scenario (which forms the counterfactual for appraisal), identifies a small number of 'SMART' (specific, measurable, achievable, relevant, and time-bound) objectives to define the desired outcomes, and articulates the changes required to move from BAU to those outcomes. It also accounts for external constraints and dependencies (e.g., alignment with wider government policies and/or specific government timeframes) and should be grounded in evidence, consultation, and a clear chain of cause and effect between intervention and impact.

The economic case evaluates the net societal value of the proposal by comparing costs and benefits across a range of options, relative to the counterfactual. It forms the analytical heart of the business case, building on the SMART objectives from the strategic case to assess the social value of credible alternatives. This includes appraising longlisted and shortlisted options, considering potential unintended consequences, and assessing both monetisable and non-monetisable benefits. Key elements include whole-life costs, risk, distributional impacts, and the potential to deliver unquantifiable policy goals. Stakeholder input and integration with the other cases are also essential. Appraisal within the economic case typically uses social cost-benefit

[4] HM Treasury. 2020. The Green Book and accompanying guidance. https://www.gov.uk/government/collections/the-green-book-and-accompanying-guidance-and-documents.
[5] HM Treasury. 2025. Green Book Review 2025: Findings and actions. https://www.gov.uk/government/publications/green-book-review-2025-findings-and-actions/green-book-review-2025-findings-and-actions.
[6] HM Treasury. 2024. The Green Book. https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020.

analysis (CBA), with results summarised using a benefit-cost ratio (BCR) and other supporting metrics such as net present social value (NPSV).[7]

While the Green Book provides central guidance, responsibility for applying it rests with departments and arms-length public bodies, who often have developed their own supplementary guidance for specific contexts, provided it remains consistent with the Green Book framework.

2025 Green Book Review

The Green Book review was announced by the Chancellor in January 2025 and published in June 2025.[8] It provided a forward-looking assessment of how the Green Book's appraisal framework could better support strategic public investment. Table 2.1, below, presents the six key issues identified and the corresponding actions proposed by the government to address them.

Table 2.1: 2025 Green Book Review key findings and proposed actions[9]

Key finding	Proposed government action
1. Insufficient emphasis on place-based objectives	Introduce place-based business cases in collaboration with relevant departments and local/regional government to capture the combined value of multiple interventions.
2. Ineffectiveness at assessing transformational change	Improve guidance on transformational change and commission a review of the discount rate to ensure long-term benefits are fairly assessed.
3. Continued over-emphasis on BCRs in decision making	Update the Green Book to clarify the role of the BCR in appraisal and reaffirm that value for money includes non-monetisable economic benefits.
4. Overly long and complicated guidance	Simplify and shorten the Green Book and business case guides; clarify proportionate requirements and provide examples.
5. Inadequate capacity and capability across the public sector	Reform training programmes and expand early-stage support through the National Wealth Fund (NWF) and promote secondments between central and regional government.
6. Poor transparency of government business cases	Require publication of major business cases to improve transparency and support learning across public bodies.

[7] The value of all benefits, less all costs, in each year when discounted can be added together because they are in present value (discounted) terms and then represent net cost benefit (benefits minus costs). This sum is the NPSV.
[8] HM Treasury. 2025. Green Book Review 2025: Findings and actions. https://www.gov.uk/government/publications/green-book-review-2025-findings-and-actions.
[9] HM Treasury. 2025. Green Book Review 2025: Findings and actions. https://www.gov.uk/government/publications/green-book-review-2025-findings-and-actions/green-book-review-2025-findings-and-actions.

Use of the Green Book in assessing grant funding applications

While the Green Book provides an overarching set of principles for appraising proposed public spending decisions, individual government departments are responsible for deciding how those principles are applied to specific spending decisions. In the context of capital grant schemes, such as the LSIMF, the Green Book principles serve two purposes:

- **At the scheme level:** To ensure that the LSIMF overall delivers value for money. The government (and specifically HM Treasury) requires assurance that the LSIMF will efficiently support the government's objectives, which subsequently helps the government to calibrate the size of the total LSIMF funding pot.
- **At the individual application level:** To ensure that the applications receiving capital grant funding are those that deliver the highest social and economic benefit and, by extension, value for money. To ensure optimal allocation of public funding, government departments or public bodies administering such grant schemes are required to develop fair and objective approaches to assessing grant funding applications.

Whether assessing a capital grant scheme or an individual grant funding application, the Green Book places importance on the principle of additionality. This principle is important to ensure that public spending generates additional social and economic benefits compared to what may have happened in the absence of that spending (i.e. the counterfactual). As a result, the amount of additionality a capital grant scheme or individual application can demonstrate has a significant influence on its appraisal.

Known appraisal issues and challenges

Regarding the impact of funding relative to the counterfactual, the principle of 'additionality' may be relatively straightforward conceptually, but producing robust, quantitative estimates of the *additional* benefits of the funding can be challenging in practice. Regarding CBAs, it may not be possible to estimate all potential benefits in monetary terms, and this can create a natural bias in favour of the impacts that can be monetised.

A related challenge for the authorities administering funding schemes is managing the trade-off between developing a standardised process that ensures all projects are assessed consistently and developing a more flexible process that allows individual applications to demonstrate what unique benefits their proposed investment delivers. The former approach has the advantage of allowing for a more streamlined application process with fewer evidence requirements, as the authority can request the same information from all applicants and undertake the CBA internally. However, this comes at the expense of the assessment not necessarily fully reflecting the benefits of a proposed investment where grant funding is being sought.

Given these complexities and trade-offs within project appraisal, it is natural for guidance to be revised and refined over time, as per the 2025 Green Book Review. For example, the BCR metric is helpful in providing a figure (monetisable costs versus benefits) which is both easy to interpret and which can support objective comparison between options. However, as a result, funding appraisals may tend towards placing a disproportionate focus on monetisable benefits and the BCR, at the expense of wider relevant considerations such as alignment to governmental strategic objectives.[10] This is discussed in further detail in Section 4 of this report.

2.2. Life Sciences Innovative Manufacturing Fund and its predecessor schemes

The LSIMF is a flagship UK capital grants initiative administered by the Office for Life Sciences (OLS). The LSIMF in its current form was introduced in October 2024 and aims to boost domestic manufacturing of human medicines, medical diagnostics, and medical devices by providing up to £520 million in matched capital grants through to 2030.[11, 12] The scheme aims to attract globally mobile investment projects to the UK. The LSIMF supports projects with a minimum total cost threshold of £8 million, covering between approximately 10%-20% of eligible project costs. Applicants are required to demonstrate that grants are essential for project delivery.[13] Eligible costs are primarily capital-based, including spend on land, buildings, machinery, and equipment. In some cases, expenditure related to process development or automation may also be eligible if it can be demonstrated to have a clear link to manufacturing.[14]

The current LSIMF scheme running from 2025-30 is the successor to previous, smaller funding schemes: The Medicines and Diagnostics Manufacturing Transformation Fund (MDMTF, £20 million, 2021), the previous LSIMF scheme (£68 million, 2022-24) and the Biomanufacturing Fund (£38 million, 2023).[15] The first LSIMF scheme (2022-24) awarded a total of £64.2 million in grants and leveraged £856 million in private investment.[16] See Box 2.1 for further details.

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[10] HM Treasury. 2025. Green Book Review 2025: Findings and actions. https://www.gov.uk/government/publications/green-book-review-2025-findings-and-actions/green-book-review-2025-findings-and-actions.
[11] UK Government. 2022. Life Sciences Innovative Manufacturing Fund (LSIMF): Expression of Interest. https://www.gov.uk/government/publications/life-sciences-innovative-manufacturing-fund-lsimf.
[12] The UK's Modern Industrial Strategy. 2025. assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf
[13] UK Government. 2024. The Life Sciences Innovative Manufacturing Fund (LSIMF). https://www.find-government-grants.service.gov.uk/grants/life-sciences-innovative-manufacturing-fund-lsimf-1.
[14] Office for Life Sciences. 2024. Life Sciences Innovative Manufacturing Fund (LSIMF), Applicant Guidance. https://www.ukspa.org.uk/wp-content/uploads/2024/11/LSIMF-520m-Company-Guidance-Slides-Short.pdf
[15] Competition and Markets Authority. 2024. Subsidy Advice Unit Report on the proposed Life Sciences Innovative Manufacturing Fund. https://assets.publishing.service.gov.uk/media/667e71ee7d26b2be17a4b44f/Report_on_the_proposed_Life_Sciences_Innovative_Manufacturing_Fund_Scheme_by_Office_for_Life_Sciences.pdf.
[16] Office for Life Sciences. 2024. Life Sciences Innovative Manufacturing Fund (LSIMF), Applicant Guidance. https://www.ukspa.org.uk/wp-content/uploads/2024/11/LSIMF-520m-Company-Guidance-Slides-Short.pdf.

Box 2.1: LSIMF grants – Unlocking investment in the UK[17, 18, 19, 20, 21, 22]

The LSIMF has already delivered tangible results for the UK life sciences sector. As of 2024, the scheme had awarded £64.2 million in government grants, leveraging over £850 million in private investment. This early pipeline demonstrates the fund's potential to attract globally mobile capital, support the development of strategic manufacturing infrastructure, and generate wider economic benefits for the UK.

One example is from Almac, which received LSIMF support to expand its small molecule active pharmaceutical ingredient (API) manufacturing facility in Craigavon, Northern Ireland. The new 30,000 square foot site, due for completion in 2025, will strengthen the UK's domestic API manufacturing base and enhance long-term resilience by reducing reliance on international supply chains for critical pharmaceutical ingredients.

This catalytic effect is further illustrated by four other LSIMF-backed projects supported through an initial tranche of £17 million in government funding, which unlocked a total of £277 million in combined public and private investment. In Liverpool, Pharmaron committed £151 million to expand facilities and increase production capacity for gene therapy and vaccine components. In London, Touchlight invested £14 million to establish commercial-scale manufacturing of enzymatic DNA. Another company headquartered in the UK announced a £75 million expansion to expand its capacity to manufacture neurological medicines in Wrexham, North Wales. In Crumlin, Northern Ireland, Randox planned a £36 million project to modernise its antibody manufacturing used in diagnostic tests.

Collectively, these LSIMF grant-supported projects will create and safeguard approximately 500 jobs, while advancing strategic goals in health resilience, innovation, and economic growth through investment across the UK.

[17] Office for Life Sciences. 2024. Life Sciences Innovative Manufacturing Fund (LSIMF), Applicant Guidance. https://www.ukspa.org.uk/wp-content/uploads/2024/11/LSIMF-520m-Company-Guidance-Slides-Short.pdf
[18] Almac. 2024. Almac Sciences awarded Life Sciences Innovative Manufacturing Fund Grant. https://www.almacgroup.com/news/almac-sciences-awarded-life-sciences-innovative-manufacturing-fund-grant/.
[19] UK Government. 2023. Life sciences companies supercharged with £277 million in government and private investment. https://www.gov.uk/government/news/life-sciences-companies-supercharged-with-277-million-in-government-and-private-investment.
[20] Touchlight. 2023. Touchlight secures government grant to support its £14m investment in scale-up DNA manufacturing. https://www.touchlight.com/news/touchlight-secures-government-grant/.
[21] Pharmaron. 2023. Pharmaron invests £151M into UK Gene Therapy CDMO with support from UK Government Grant. https://www.pharmaron.com/about-us/latest-news/pharmaron-invests-151m-into-uk-gene-therapy-cdmo-with-support-from-uk-government-grant/.
[22] Pharmaceutical Technology. 2023. UK boosts life science innovation with £277 million funding. https://www.pharmaceutical-technology.com/news/uk-boosts-life-science-innovation-with-277-million-funding/.

The current LSIMF application process is based on three steps (see Box 2.2) and follows the current guidance from the Green Book. Specifically, applicants complete dedicated forms on strategic priorities such as health resilience and broader economic contributions (e.g., gross value added (GVA) economic output, jobs, supply chain impacts) before providing detailed financial and risk evidence.[23]

A key methodological requirement, drawn directly from the Green Book and shared by most, if not all, other public subsidies for industry, is the test for 'additionality' versus the counterfactual. Funding awards are contingent on clear demonstration of additional benefits (in size, timing, or location) versus a counterfactual scenario in the absence of public funding.[24] As an example of the counterfactual without LSIMF funding, a company might have chosen to invest in new and/or expanded manufacturing capacity abroad, rather than to invest in the UK. Awardees must demonstrate that LSIMF-funded capital projects deliver genuinely incremental and/or step-change benefits. Applications must be able to clearly articulate why funding is necessary for the investment to go ahead, and what would happen in its absence.

Box 2.2: LSIMF application process[25,26]

The LSIMF currently follows a structured, three-stage application process aligned with Green Book guidance, designed to test strategic fit, health resilience impact, and value for money.

1. **Expression of Interest (EOI):** Applicants submit a brief summary of their proposed investment, including counterfactual scenarios and alignment with LSIMF objectives. Projects deemed eligible are invited to proceed to Stage 2 and provide a full application.
2. **Health Resilience Assessment:** Applicants complete a form setting out how their project contributes to UK health resilience. The OLS defines health resilience as "the UK's ability to withstand and recover from health emergencies such as pandemics, long-term healthcare challenges, and system shocks such as supply chain disruption".[27] This is followed by an expert panel interview, where applicants present the case for resilience impact. Applications are scored on a scale of 1-10, and only those applications demonstrating strategic alignment with the health resilience objective proceed to the next stage of the appraisal process.

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[23] UK Government. 2024. Life Sciences Innovative Manufacturing Fund (LSIMF), Application guide. https://www.gov.uk/government/publications/life-sciences-innovative-manufacturing-fund-lsimf/life-sciences-innovative-manufacturing-fund-lsimf-application-guide.
[24] Competition and Markets Authority. 2024. Subsidy Advice Unit Report on the proposed Life Sciences Innovative Manufacturing Fund. https://assets.publishing.service.gov.uk/media/667e71ee7d26b2be17a4b44f/Report_on_the_proposed_Life_Sciences_Innovative_Manufacturing_Fund_Scheme_by_Office_for_Life_Sciences.pdf.
[25] Office for Life Sciences. 2024. Life Sciences Innovative Manufacturing Fund (LSIMF), Applicant Guidance. https://www.ukspa.org.uk/wp-content/uploads/2024/11/LSIMF-520m-Company-Guidance-Slides-Short.pdf.
[26] UK government. 2024. The Life Sciences Innovative Manufacturing Fund (LSIMF). https://www.find-government-grants.service.gov.uk/grants/life-sciences-innovative-manufacturing-fund-lsimf-1#apply.
[27] UK Government. 2024. Life Sciences Innovative Manufacturing Fund (LSIMF): application guide. https://www.gov.uk/government/publications/life-sciences-innovative-manufacturing-fund-lsimf/life-sciences-innovative-manufacturing-fund-lsimf-application-guide.

3. Financial and Economic Assessment: Successful applicants submit a second form, covering project scope, capital costs, financial forecasts, and economic impact. Applicants also complete a structured Excel template covering GVA, job creation and export potential.

   Projects are then subject to due diligence regarding: (i) value for money and additionality, (ii) compliance with subsidy control, and (iii) deliverability, risk, and financial viability.

   Based on the financial and economic assessment, as well as some consideration given to the health resilience score, a recommendation for awarding a capital grant and its size will be made.

   Applications may then be reviewed by the Industrial Development Advisory Board (IDAB), depending on project size, and final approvals are determined by the Department for Science, Innovation and Technology (DSIT) Secretary of State and the Chief Secretary to the Treasury.

3. BENEFITS OF INNOVATIVE LIFE SCIENCES MANUFACTURING

Innovative manufacturing in the life sciences sector delivers a wide range of benefits that are crucial to delivering the government's mission-based agenda. These benefits include the economic impact of medicines manufacturing, which generated £16.4 billion of Gross Value Added (GVA) economic output in 2019[28] and enabled £26.1 billion of exports in 2023.[29] Beyond these headline economic statistics, there are significant wider benefits, aligned to the government's strategic objectives, including **health resilience,** delivering **economic growth across the UK** (including through place-based investment), and supporting the push towards **Net Zero**.

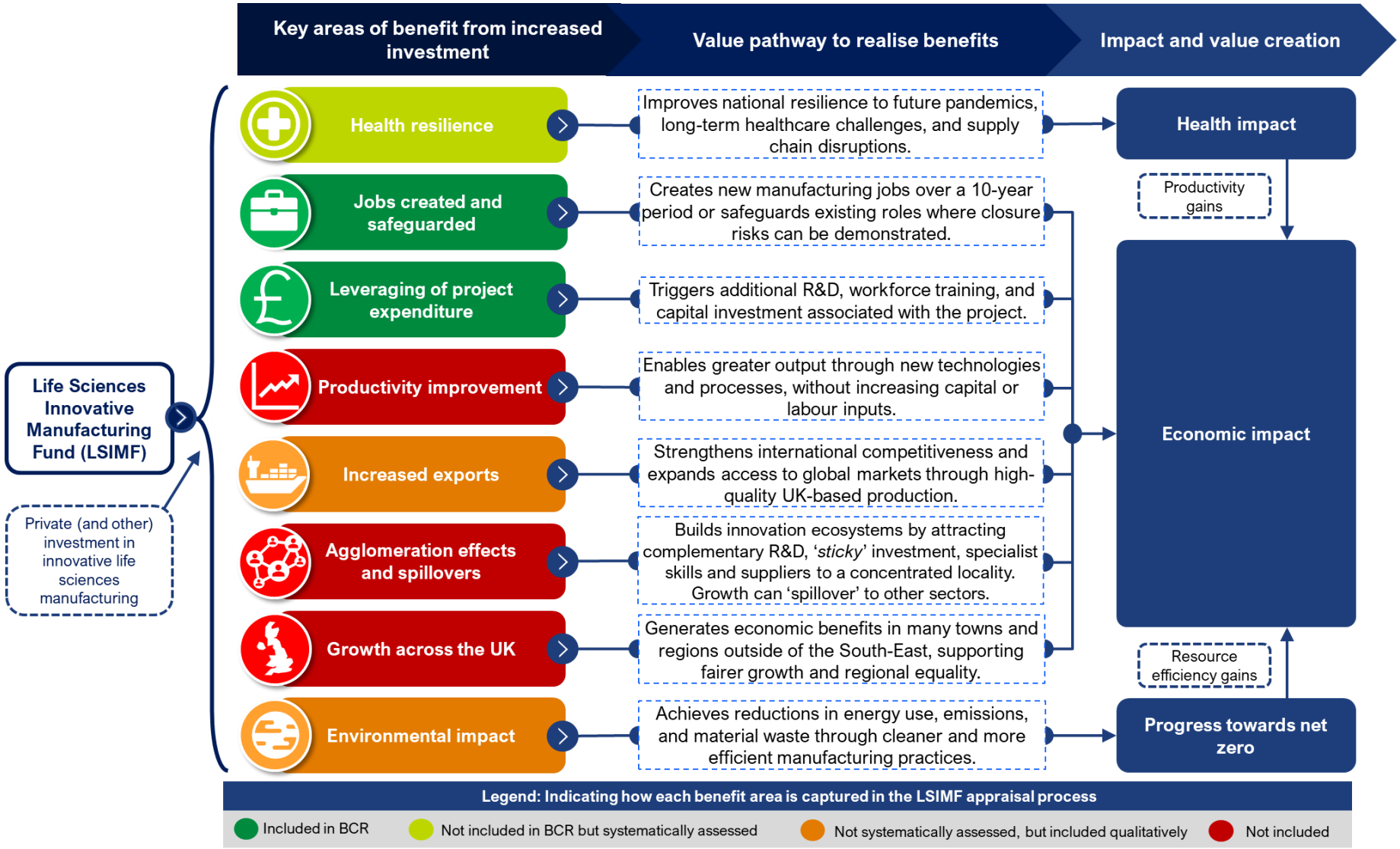
In this report, we have identified eight key economic benefits of innovative manufacturing in the life sciences sector. Figure 3.1 provides a high-level logic model that sets out these benefits, the value pathway through which they are realised, and their resulting outcomes.

Figure 3.1 also assigns a colour-based categorisation for each benefit based on the extent to which the Green Book captures the benefit in the LSIMF appraisal process. Many of these benefits are not systematically assessed (orange) or are excluded entirely from the LSIMF benefits framework (red). Only a minority of the benefits – job creation and leveraging of project expenditure – are systematically recognised within the BCR (dark green) or – as done for health resilience – systemically assessed as part of the appraisal process (light green)

We understand that the OLS is planning some further changes to the appraisal methodology, so Figure 3.1 represents the current state of the LSIMF application process, as of June 2025.

[28] Medicines Manufacturing Industry Partnership. 2023. Follow the green, high-tech road. https://www.abpi.org.uk/publications/follow-the-green-high-tech-road/
[29] Office for National Statistics 2024. Trade in goods: country-by-commodity exports. https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/datasets/uktradecountrybycommodityexports

Figure 3.1: Logic model linking LSIMF investment benefits to value creation and impact



Below, each of the eight key benefit areas associated with innovative life sciences manufacturing is discussed in more detail, including the extent to which each benefit is currently captured in the LSIMF appraisal process.

1. **Health resilience**: Strengthens the UK's ability to withstand pandemics, long-term health challenges, and supply chain shocks.

Contribution of innovative manufacturing to health resilience:

Improving health resilience is a key goal of the LSIMF. This goal was highlighted during the COVID-19 pandemic, with the 2024 Subsidy Advice Unit (SUA) report on the LSIMF warning that the UK population remains vulnerable to shortages of vital medicines or medical technologies.[30] Attracting investment in innovative manufacturing can, therefore, address this vulnerability by expanding the UK's manufacturing capacity to meet demand. Investment in manufacturing capabilities that can be flexibly adjusted to meet sudden changes in demand can be especially impactful (e.g., facilities that could be used for vaccine production).

Current appraisal treatment:

Included in the strategic case and assessed in LSIMF Stage 2 through an expert panel on a scale from 1-10. Broader economic benefits, such as avoided productivity loss or costlier policy interventions (e.g. lockdowns), are not monetised. Historically, we understand that the health resilience score has been factored into decision-making, although applicants were not clear whether it had played a significant role, particularly in award sizing. However, under the current LSIMF scheme, the OLS is planning to more substantively consider the health resilience score for award selection and sizing.

The Green Book itself does not provide any direct guidance on monetising health resilience.

2. **Jobs created and safeguarded:** Creates new jobs and/or preserves existing employment at risk due to potential site closures.

Contribution of innovative manufacturing to job creation:

Innovative life sciences manufacturing creates and sustains highly-skilled, highly productive, and well-paid jobs across all parts of the UK. Life sciences manufacturing employs over 115,000 people, with the average role contributing £128,000 to the wider UK economy.[31] More broadly, pharmaceutical manufacturing in the UK is estimated to support an additional 267,000 jobs when factoring in employment created through indirect and induced effects.[32]

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[30] Subsidy Advice Unit. 2024. Subsidy Advice Unit report on the proposed Life Sciences Innovative Manufacturing Fund. https://assets.publishing.service.gov.uk/media/667e71ee7d26b2be17a4b44f/Report_on_the_proposed_Life_Sciences_Innovative_Manufacturing_Fund_Scheme_by_Office_for_Life_Sciences.pdf

[31] Medicines Manufacturing Industry Partnership. 2023. Follow the green, high-tech road. https://www.abpi.org.uk/publications/follow-the-green-high-tech-road/

[32] PwC. 2022. Life Sciences Superpower, Growing the leading global hub in the UK. https://www.abpi.org.uk/publications/abpi-life-sciences-superpower-report/.

Current appraisal treatment:

Job creation is the central driver of BCR calculations. Although some provision is made for specifying qualification levels of new and retained staff, gross value added (GVA) is primarily derived from total headcount and wage inputs. Therefore, within the appraisal BCR calculations, projects with large operational workforces are judged to generate high economic benefits, even though capital-intensive and technologically advanced projects may generate higher levels of productivity in practice.

This is in line with the Green Book and supporting guidance on estimating the economic benefits generated through created and safeguarded jobs.

3. **Leveraging of project expenditure**: Unlocks additional R&D, capital and workforce investment catalysed by the initial manufacturing project

Contribution of innovative manufacturing to leveraging additional expenditure:

Manufacturing investments act as anchors for broader value creation, triggering additional capital spending, research activity, and workforce development. This leverage effect magnifies the public value of funding support. For example, in 2023, £17 million in LSIMF funding across four projects supported an additional £260 million raised in private investment, including the expansion of Pharmaron's biologics production facility in Liverpool.[33]

Current appraisal treatment:

Applicants report this wider expenditure through a standardised spreadsheet template**,** and this information is incorporated into the value-for-money assessment and BCR.

4. **Productivity improvements**: Implementing new technology to increase output efficiency

Contribution of innovative manufacturing to productivity improvements:

Innovative manufacturing in the life sciences sector is highly productive, with the average GVA per worker far above the UK average. This high level of output per worker is the result of investments in factors that raise productivity, such as the adoption of new technologies and investments that deliver process innovation. Attracting more innovative manufacturing investments is therefore an effective way of raising the growth rate of productivity in the UK economy, which has been lagging over the past 15 years.

For example, technologies such as real-time release (RTR) allow manufacturers to continuously monitor critical process parameters and verify product quality during production, eliminating the need for lengthy post-production testing and significantly shortening cycle times. This approach

[33] UK Government. 2023. Life sciences companies supercharged with £277 million in government and private investment. https://www.gov.uk/government/news/life-sciences-companies-supercharged-with-277-million-in-government-and-private-investment.

has been shown to reduce manufacturing cycle times by over 30% while improving resource utilisation and accelerating time to market.[34] These innovations shift the productivity frontier by embedding intelligence directly into manufacturing, enabling firms to produce more with the same resources.

Current appraisal treatment:

Within the LSIMF, there is no systematic way to capture these additional productivity gains (beyond what is captured within the job creation calculations).

The Green Book does not provide a readily applicable approach to estimating overall productivity gains (beyond a shift to higher-paying jobs) arising from manufacturing-related investments.

5. **Increased exports**: Supports entry to – and expansion in – international markets, by improving UK-based manufacturing competitiveness.

Contribution of innovative manufacturing to increased exports:

Innovative pharmaceutical manufacturing increases the UK's global export capacity by enabling domestic production of advanced, high-value medical products. Advanced therapies manufactured in the UK are exported across Europe, North America and internationally. For example, the global supply chain firm Cryoport Systems opened a global hub in Stevenage in 2024 to support cell and gene therapy exports to Europe.[35, 36]

Strengthening domestic pharmaceutical manufacturing through targeted investment and appraisal reform could help to boost high-value exports and enable the UK to better commercialise life science innovations. For example, an increase in the UK share of global pharmaceutical exports by 4 percentage points would generate an estimated £16.3 billion in additional GDP and 85,000 new jobs.[37]

Current appraisal treatment:

Export potential may be discussed and/or quantified by applicants in a non-standardised manner in narrative sections of LSIMF applications, but this is not done in a systematic manner, creating uncertainty about how this information is used in the assessment.

The Green Book provides no systematic framework or guidance to support the quantification of these benefits or to support comparison between different applications.

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[34] EY. 2025. How real-time release (RTR) can transform pharmaceutical manufacturing. https://www.ey.com/en_us/insights/life-sciences/unlocking-efficiency-in-pharma-with-rtr-technology.
[35] Catapult. 2024. Cell and Gene Therapy GMP Manufacturing in the UK. https://cgt.ams3.cdn.digitaloceanspaces.com/GMP-Manufacturing-Report-2024.pdf
[36] Cryoport Systems. 2024. News release. https://www.cryoport.com/cryoport-systems-launches-supply-chain-hub-stevenage-uk/
[37] ABPI. 2025. Growing Britain's life sciences sector through international and trade policy. https://www.abpi.org.uk/publications/growing-britain-s-life-sciences-sector-through-international-and-trade-policy/

6. **Agglomeration effects and spillovers**: Investment generates clustering benefits by attracting R&D, supply chain firms, and skilled labour to a location, plus wider spillovers.

Contribution of innovative manufacturing to agglomeration effects and spillovers:

Investments in new or expanded innovative manufacturing capacity are fixed and highly immobile. The 'stickiness' of these investments, therefore, helps to anchor business activities in the UK, attracting even more investment in the long run.

The longevity of the innovative manufacturing sites enables them to anchor vibrant life sciences clusters, drawing in specialist suppliers, contract manufacturers, academic institutions, and skilled talent, all contributing to dense innovation ecosystems. A prime example is the Babraham Research Campus near Cambridge, where co-location of biotech firms, world-leading academic research, and manufacturing-related activities generated £538 million in GVA in 2022/23 alone and supported approximately 9,400 jobs across the UK.[38]

Finally, innovative manufacturing capacity can be repurposed if intended product lines are discontinued (for example, because the product failed in late-stage clinical trials), sold to other life sciences companies, or even repurposed for other types of advanced manufacturing. As a result, attracting these investments can add economic resilience to the local ecosystem.

Current appraisal treatment:

Agglomeration effects and spillovers are not monetised or captured qualitatively under the current LSIMF appraisal processes. Industry stakeholders reported a lack of consistent guidance to include such indirect or ecosystem-level benefits.

The Green Book supports the inclusion of agglomeration-related productivity improvements within scheme appraisal, but it does not provide an approach on how to measure these for manufacturing investments, nor provide a usable indication of the size of such benefits.

Regarding spillovers, the Green Book provides quantitative estimates for place-based employment multipliers (which are additional, indirect employment effects arising from an initial, direct employment growth), but these apply to specific localities and are not recommended for use within UK-wide appraisals. Similarly, the Green Book advises against the use of Keynesian multipliers (which estimate the subsequent, additional gain in GDP arising from an initial increase), noting that it is "not generally possible to estimate objectively based, credible and statistically significant differences in macroeconomic variables arising from alternative options within a business case".[39]

[38] Cambridge Economic Associates. 2024. Economic Impact of the Babraham Research Campus. https://www.ukri.org/wp-content/uploads/2024/12/BBSRC-061224-EconomicImpactBabrahamResearchCampus-FullReport.pdf.
[39] HMT Treasury. 2024. The Green Book. https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government/the-green-book-2020#fn:16

7. **Growth across the UK**: Delivers benefits to regions outside of the South-East, generating 'fairer growth' through job creation, supply chain activation, and local spending effects.

Contribution of innovative manufacturing to growth across the UK:

Life sciences manufacturing supports regional growth by creating high-skilled jobs and strengthening local supply chains that, in turn, invigorate growth in the local area. Investments tend to be dispersed across the UK more evenly compared to some other sectors, which supports the government's ambition for 'fairer growth' (e.g., only 25% of all manufacturing sites are located in London or the South East).[40]

Recent LSIMF-backed projects illustrate this potential, with major investments by Almac Sciences in Craigavon, Randox in Crumlin, and another company headquartered in the UK in Wrexham, demonstrating the fund's role in supporting high-value manufacturing across different parts of the UK, well beyond London and the Southeast.

Current appraisal treatment:

To date, distributional impacts and regional equality goals are not directly factored into the LSIMF (e.g., there are no specific questions on this topic in the LSIMF application form).

The Green Book does include scope for 'weighting' costs and benefits according to their distribution across society (e.g., valuing benefits higher in disadvantaged segments of the population). However, an evaluation of 'unweighted' assessments is typically used in practice.

8. **Environmental impact**: Innovative, environmentally-friendly production techniques can reduce energy use, carbon emissions, and material waste.

Contribution of innovative manufacturing to Net Zero:

Innovative pharmaceutical manufacturing is increasingly supporting sustainability goals through cleaner processes and lower emissions. For example, AstraZeneca is further reducing its carbon footprint by operating a biomethane plant in Lincolnshire that provides 100 GWh of renewable energy annually, enough to power 20% of its UK R&D and manufacturing activities.[41]

Current appraisal treatment:

Environmental impact may be discussed and/or quantified by applicants in a non-standardised manner in narrative sections of LSIMF applications, but this is not done systematically, which creates uncertainty about how this information is used in the assessment.

The Green Book provides guidance on assessing and monetising the benefits of a reduction in greenhouse gas emissions.

[40] ABPI. 2025. Manufacturing sites distribution. https://sector-insights-map.abpi.org.uk/
[41] AstraZeneca. 2025. Renewable energy. https://www.astrazeneca.com/sustainability/climate-change/renewable-energy.html.

4. FINDINGS

From our stakeholder discussions, the LSIMF is widely welcomed by industry stakeholders as a valuable mechanism to support investment in advanced manufacturing within the UK's life sciences sector. For globally mobile investment opportunities, the LSIMF is considered to improve the attractiveness of investment in the UK by reducing innovation risk and costs. The fund is seen to reflect the government's commitment to supporting the life sciences sector and its companies to overcome barriers to investment and expansion (see Box 2.1 for some of the LSIMF's key achievements to date). Moreover, as discussed further below, we understand that the OLS is set to update the LSIMF's appraisal methodology in order to better align with the government's key findings from the recent Green Book review.

Alongside these strengths, our analysis finds that the way in which the LSIMF process has been conducted – with respect to the application and design of the Green Book – has undervalued the benefits in attracting investment in innovative manufacturing. As a result, this limits the full potential of the LSIMF to provide the best social and economic benefits to the UK and its taxpayers. From our assessment, we have identified seven issues:

Issue 1: Key economic and strategic benefits, such as productivity, competitiveness, exports, and agglomeration effects, are not systematically assessed

The LSIMF currently lacks a systematic approach to assess key economic and strategic benefits of grant applications, including improvements to productivity, export capacity, agglomeration and spillover effects, and regionally dispersed economic growth. While the LSIMF addresses some of these benefits through open-ended questions, industry stakeholders emphasised that these critical benefits of prospective investments are not sufficiently considered in decision-making, which risks undervaluing the true benefits of attracting additional investment in innovative life sciences manufacturing.

While not all of these benefits can be systematically monetised across applications (or, at least, not without significant administrative burden and cost for applicants and appraisers), a more proportionate approach would be to capture these aspects through a systematic assessment framework based on qualitative and, where available, quantitative information.

The approach by the OLS to assess the health resilience against a score from 1-10 and, reportedly, its plan to use this score more heavily in the final assessment, is a good starting point in this regard. However, it would be important to provide a transparent and structured appraisal methodology for the assessment of these wider benefits, as done by other capital grant schemes.

For example, Australia's Modern Manufacturing Initiative uses a transparent, points-based appraisal methodology that places a significant weighting on 'strategic alignment', encompassing global supply chain integration, domestic production capacity, and high-value job creation (see Box 4.1).

Box 4.1: Australia: Structured appraisal framework[42, 43, 44, 45, 46]

Australia's Modern Manufacturing Initiative (MMI) was launched in 2020 with AUD $1.3 billion in funding to provide grants as part of a wider AUD $1.5 billion Modern Manufacturing Strategy to boost advanced manufacturing in six priority sectors, including medical products. The MMI offers matched funding of up to 50% of eligible costs, with grants ranging from AUD $1 million to AUD $20 million, to support the scale-up of domestic production.

Applications are competitively assessed on a 100-point scale along three criteria:

1	**Strategic alignment** considers factors such as job creation, integration into global supply chains, use of advanced technologies, and production of high-value medicines.	**50 points**
2	**Delivery capacity** covers the applicant's track record, project plan, and financing.	**30 points**
3	**Impact of grant funding** assesses how the funding would affect the project's scale, speed, or viability.	**20 points**

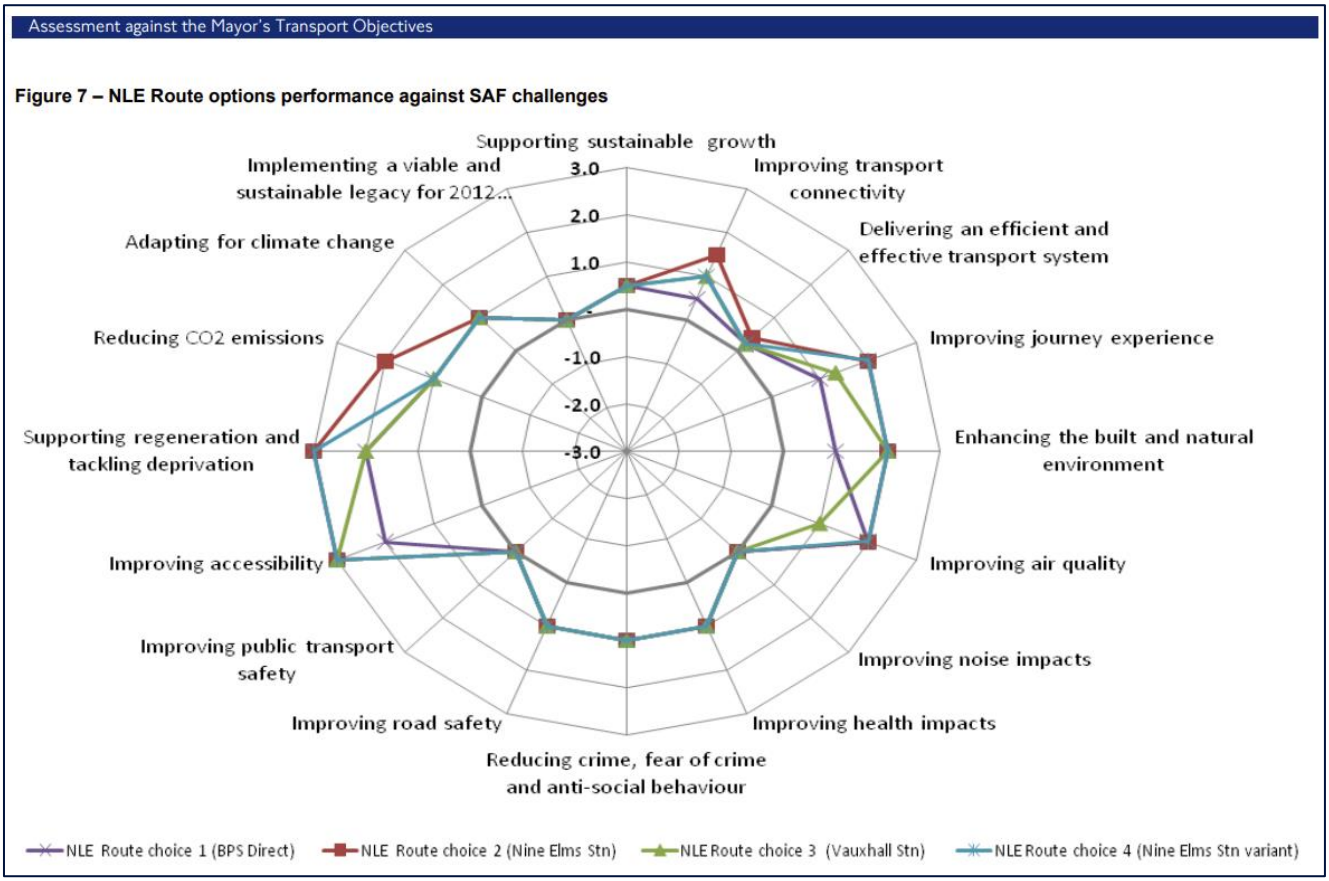
Box 4.2 provides a further example of the incorporation of strategic objectives into a scheme appraisal framework and methodology.

[42] Australian Government, Department of Industry, Sciences and Resources. 2021. Medical products manufacturing funding now available under the Modern Manufacturing Initiative. https://www.industry.gov.au/news/medical-products-manufacturing-funding-now-available-under-modern-manufacturing-initiative
[43] Australian Government. 2025. Funding for business to translate research and ideas into commercial outcomes. https://business.gov.au/grants-and-programs/modern-manufacturing-initiative-manufacturing-translation
[44] Australian Government. 2025. Sample Application form. https://business.gov.au/-/media/grants-and-programs/mmi-translation/mmi-manufacturing-translation-stream-sample-grant-agreement-pdf.pdf?sc_lang=en&hash=21DA6FAC4AD8C2601F1D1D580329618E.
[45] Australian Government. 2025. Modern Manufacturing Initiative – Manufacturing Integration Stream grant recipients. https://business.gov.au/grants-and-programs/modern-manufacturing-initiative-manufacturing-integration/grant-recipients.
[46] Fierce Pharma. 2024. Australia's Noumed Pharma breaks ground on $65m manufacturing plant. https://www.fiercepharma.com/manufacturing/australias-noumed-pharma-breaks-ground-100m-manufacturing-plant.

Box 4.2: Appraisal Innovations Driving Strategic and Resilience-Focused Investments[47, 48, 49, 50 51]

Since 2010, Transport for London (TfL) used a Strategic Assessment Framework (SAF) alongside traditional cost-benefit analysis to score projects against the Mayor's Transport Strategy goals (e.g. regeneration, equity, carbon reduction). This allows strategic objectives to be incorporated within the appraisal methodology.

For example, the SAF supported the decision to proceed with the Northern Line Extension (NLE). The diagram below sets out TfL's published SAF results as part of its Options Assessment. The coloured lines show how different investment options are judged to deliver TfL's objectives. For NLE, utilisation of the SAF influenced project design by prompting early inclusion of features like accessibility and environmental improvements, and in the decision to include a station at Nine Elms (near Vauxhall).



Source: Mayor of London & Transport for London. Northern Line extension to Battersea, updated route option assessment. ***https://content.tfl.gov.uk/northern-line-route-option-assessment.pdf***

Box 4.3 provides an example of how another funding scheme has included health resilience within its appraisal criteria.

Box 4.3: UK Biomedical Catalyst Systematic Assessment of Health Resilience and Health Impacts [52]

Biomedical Catalyst (BMC) is an industry-led R&D grant run by Innovate UK and the Medical Research Council. It dedicates 10% of the funding proposal template to the 'Need or challenge' addressed by the proposed project, with particular interest in the UK health system and the NHS. Applicants are required to '*explain the health, or healthcare, challenge this project addresses and the impacts your solution will have*'. In addition, it specifically asks for a) evidence that the health, or healthcare, challenge is real, and b) any input received from healthcare professionals, patients, potential partners or representatives of the onward supply chain.

Issue 2: Over-reliance on the BCR to assess and size capital grants

Related to Issue 1, industry stakeholders raised concerns that LSIMF decision-making, including award sizing, is predominantly driven by the BCR calculation. Specifically, they considered the economic assessment through the BCR to be narrowly defined, with an over-emphasis on job creation and related economic outputs, and an under-representation of wider economic benefits that cannot be easily monetised or quantified. For instance, the weight given to job creation when calculating the BCR risks under-recognising the benefits of innovative projects that increase productivity through automation – in effect, penalising or discouraging advanced, capital-intensive technologies. A range of examples were provided of projects that may have a lower job count but would support a wider set of strategic benefits, such as:

- Projects that invest in highly automated but modular manufacturing capabilities, the utilisation of which can flexibly and rapidly respond to new demands for medical products, such as during a pandemic.
- Projects offering innovative new manufacturing techniques which increase outputs at reduced costs, improving competitiveness and boosting the UK's long-run export share.
- Projects that invest in new technologies, which generate positive spillover effects for the wider ecosystem, through the role of associated sectors in manufacturing, installation, and system maintenance over years or even decades.

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[47] Transport for London. 2010. Environment, corporate, and planning panel, strategic assessment framework. https://content.tfl.gov.uk/item06-ecpp-oct-10-saf.pdf.
[48] Mayor of London & Transport for London. 2011. Northern Line extension to Battersea, updated route option assessment. https://content.tfl.gov.uk/northern-line-route-option-assessment.pdf.
[49] APM. 2020. APM's portfolio management specific interest group. https://www.apm.org.uk/media/0u5oi51s/apm-portfolio-management-sig-the-first-10-years.pdf.
[50] Department for Transport. 2014. Transport Resilience Review. https://assets.publishing.service.gov.uk/media/5a7e42f840f0b62305b81d99/transport-resilience-review-web.pdf.
[51] Transport for London. 2012. Northern line route option assessment. https://content.tfl.gov.uk/northern-line-route-option-assessment.pdf
[52] UK government. 2015. Biomedical Catalyst 2024 Round 1: Industry-led R&D. https://apply-for-innovation-funding.service.gov.uk/competition/2015/overview/c68e00d5-ba8a-4c91-a615-ef3e780ffda7

The 2025 review of the Green Book (as well as the 2020 review[53]) also identified over-reliance on the BCR in government decision-making as an issue. While the Green Book itself already highlights the need to take account of strategic and non-monetisable economic and social benefits, it does not provide a framework or practical guidance to government departments for how this could be implemented. As such, many departments, including the OLS in the case of the LSIMF, ultimately rely heavily on the BCR calculations for final decision-making, with non-monetisable benefits acknowledged but not evaluated systematically. It is welcome that the OLS has recognised this point and is planning to increase the significance of other aspects, including health resilience, in the current LSIMF round.

Besides the over-reliance on the BCR in decision-making, stakeholders also voiced concern that the appraisal period was restricted to a 10-year horizon. This was considered to undervalue the full, long-term benefits of manufacturing facilities. For instance, manufacturing sites typically remain utilised even when a company decides to discontinue a product, as the facilities can be sold or repurposed. As such, a longer time horizon for new or large-scale expansion, such as 25-30 years, was seen as more appropriate.

Lastly, the BCR score appears to be used not only to determine whether a project merits support but also to adjust the award size itself. Given the relatively narrow scope of the BCR, this practice received some criticism for reducing the size of funding awards relative to what was anticipated (and/or requested within the application), and for significantly increasing the level of uncertainty for applicants.

Issue 3: Challenge and lack of guidance on monetising key economic and strategic benefits

The Green Book and its supplementary guidance documents provide a range of detailed instructions on how to assess and monetise economic benefits that do not have a market value, such as reductions in greenhouse gases or improvements in water quality. However, as summarised in Figure 3.1, various economic benefits relevant to innovative manufacturing in life sciences are currently not addressed by the Green Book or its supplementary guidance. This includes productivity improvements (beyond job-based analyses), health resilience, exports, international competitiveness, agglomeration effects and improvements in the national distribution of economic growth. As discussed in Section 2.1, the challenge of quantifying and/or monetising some of these benefits is already well-known and understood.

The absence of guidance on these areas creates a challenge for departments to quantitatively appraise these aspects in a standardised manner. In turn, this creates a tendency to fall back upon more 'tried-and-tested' economic appraisal measures, such as job creation (see above), especially in the absence of an appraisal framework for systematically assessing these aspects

[53] HM Treasury. 2020. Green Book Review 2020: Findings and response. https://assets.publishing.service.gov.uk/media/5fbce9cce90e077ee32ea0c3/Green_Book_Review_final_report_241120v2.pdf

qualitatively (see issue 1). As such, estimates of the economic benefits from innovative manufacturing are likely to be underrepresented within the LSIMF appraisal process.

As a qualification, appraisal methodologies have trade-offs, and it is important to acknowledge the need for simplicity within the appraisal process, particularly given the lack of clear consensus on how or whether some of these wider benefits can be monetised. Nonetheless, there are examples of work by government departments to estimate these wider benefits at an aggregate level. Box 4.4 below provides an example of previous work by the Department for Transport to estimate the economic impacts of resilience.

Box 4.4: Estimating the benefits resilience [54, 55, 56, 57, 58]

The Department for Transport (DfT)'s 2010 analysis of severe winter weather disruption estimated daily economic losses of £280 million, combining lost output and wider welfare costs. The evidence from this analysis informed a national response: the creation of a strategic salt reserve, mandated local authority stock monitoring, and capital investment in rail de-icing and third-rail heating infrastructure. These measures were part of a wider shift to embed resilience in national transport policy, with "resilient network" planning and prioritised winter corridors formalised in DfT guidance for local authorities.

A more recent example is the National Audit Office (NAO)'s 2023 report on the risks from extreme weather. The NAO estimated that the economic cost of several (but not all) climate risks would exceed £1 billion per annum by 2050, including risks to businesses from flooding and risks to health and wellbeing from high temperatures.

Issue 4: Lack of predictability and transparency

Applicants and potential applicants to LSIMF have reported uncertainty around how the LSIMF makes decisions and sizes grants, in large part due to the way in which the BCR calculations are used in award sizing (see above). Instances where awarded capital grants were just a fraction of the anticipated support illustrate that the appraisal process (including the specific weightings and decisions on grant sizing) remained a non-transparent 'black box', which increased uncertainty for prospective applicants. This also includes the current LSIMF, in which the OLS is planning to also consider other factors more strongly, as the degree and weighting for other factors, such as health resilience, remains unclear under current guidance.

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[54] Transport for London. 2010. Environment, corporate, and planning panel, strategic assessment framework. https://content.tfl.gov.uk/item06-ecpp-oct-10-saf.pdf.
[55] Mayor of London & Transport for London. 2011. Northern Line extension to Battersea, updated route option assessment. https://content.tfl.gov.uk/northern-line-route-option-assessment.pdf.
[56] APM. 2020. APM's portfolio management specific interest group. https://www.apm.org.uk/media/0u5oi51s/apm-portfolio-management-sig-the-first-10-years.pdf.
[57] Department for Transport. 2014. Transport Resilience Review. https://assets.publishing.service.gov.uk/media/5a7e42f840f0b62305b81d99/transport-resilience-review-web.pdf.
[58] National Audit Office. 2023. Government resilience: extreme weather. https://www.nao.org.uk/wp-content/uploads/2023/12/government-resilience-extreme-weather.pdf

This uncertainty risks discouraging investors from applying, because they underestimate their chances of success, or it can lead to a 'long road to no' for those that apply and get too little support to make the investment viable. Both outcomes limit the value leveraged by the LSIMF and the UK's global competitiveness.

We understand the OLS is developing further guidance to clarify how the LSIMF process works, which is welcomed by industry. Information on the available LSIMF budget (for each round), the number of applicants, the success rate, and the breakdown of public and private funding for each awarded project (not just on aggregate) would give prospective applicants greater clarity on how decisions are made and what levels of support are realistic. Other capital grant initiatives often provide more transparent data on the application process, applicants and outcomes (see Box 4.5). By adopting similar transparency practices, the LSIMF could significantly strengthen its role as a predictable and strategic funding mechanism.

Box 4.5: Transparency in EU Health Funding[59, 60, 61, 62]

The EU4Health programme, through funding calls managed by Health Emergency Preparedness and Response Authority (HERA) and the European Health and Digital Executive Agency **(**HaDEA), demonstrates a high standard of transparency in its grant-making. For example, in 2024, the EU published full evaluation outcomes for a call focused on improving pharmaceutical manufacturing technologies, including APIs, excipients, and finished medicines. The call received eight proposals, of which five met the threshold and four were awarded grants. For each funded project, the EU disclosed the project title, total budget, and EU contribution, such as PharmSD 3.0, which received €5.7 million toward a total project cost of €7.1 million.

In the same year, the EU launched a separate call to establish a European Hub for vaccine development, combining R&D excellence with scalable manufacturing capacity. The single winning consortium was awarded over €100 million from the EU, with the total project budget at €170 million. Across both calls, the EU provided a public record of how many organisations applied, how many were successful, and how much funding they received, both from the EU and from other sources.

[59] European Commission. 2024. Call for proposals to support innovative manufacturing technologies and processes in the Union for medicines production (HERA) - CP-g-24-12. https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/EU4H-2024-PJ-01-3

[60] European Commission. 2024. Call for proposals on the European Hub for vaccine development (HERA) - CP-g-24-10. https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/EU4H-2024-PJ-01-1?order=DESC&pageNumber=1&pageSize=50&sortBy=startDate&isExactMatch=true&status=31094501,31094502&frameworkProgramme=43332642.

[61] European Commission. 2025. European Vaccines Hub for Pandemic Readiness. https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43332642/101202831.

[62] European Commission. 2025. Continuous Spray Drying for Enhanced Isolation of Enabling Pharmaceutical Products. https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43332642/101202523.

Issue 5: Complexity of process and lack of proportionality

Through the Green Book, government departments are tasked with ensuring value for money within public funding schemes, and this inevitably requires the collection of detailed information to facilitate robust appraisal. This practice is applied to the LSIMF, which collects a considerable amount of material, across multiple stages, about the prospective investment seeking a capital grant and the counterfactual of what would happen if that grant were not awarded. This process can be administratively burdensome for applicants, especially for smaller businesses with less experience navigating capital grant schemes. This issue does not strictly relate to the direct application of the Green Book, but it does relate to the broader appraisal and review process that has been built on top of the Green Book and its guidance.

Crucially, the volume and level of detail that LSIMF applicants are required to provide is largely the same regardless of the prospective investment's size or the value of the capital grant being requested. For example, the requirement for review by the Industrial Advisory Board towards the end of the LSIMF process applies even to relatively small-value projects, which adds reporting burden and uncertainty. Other capital grants have addressed these issues through greater differentiation in the application process and review based on the size of funding requested. [63]

A further consideration is proportionality in both appraisal requirements and the level of financial support offered. Compared to other grant capital initiatives internationally, the LSIMF's typical intervention rate of 10-20% is relatively modest. For example, Australia's Modern Manufacturing Initiative has offered co-financing rates of up to 50% (see Box 4.2 above), while the EU4Health programme typically funds up to 60% of eligible project costs, rising to 80% for initiatives of exceptional utility.[64, 65] There are also certain conditions attached to grant awards which are more commonly used in loan agreements, such as a high degree of due diligence on business plans and reporting, and a parent company or bank guarantee. This creates additional challenges for 'high risk, high reward' applications, relative to other international capital grant schemes. When combined with the extensive application effort and uncertainty over the grant's size, this can discourage firms, particularly smaller manufacturers, from pursuing an investment in the UK that would deliver wider strategic and economic benefits.

Issue 6: Capital grants are only one component in companies' decision-making and need to be placed in the context of market conditions and the wider policy landscape

Given the cost and longevity of investing in new and/or expanded innovative manufacturing facilities, companies assess the full range of their costs and revenues in considering where, when and whether to make an investment. Relevant considerations for companies include

[63] UK government. 2025. Farming Futures R&D Fund: low emissions farming. https://apply-for-innovation-funding.service.gov.uk/competition/2169/overview/64b0d550-3f46-4ab4-a0cd-5fa7ac488cb6
[64] Australian Government. 2025. Funding for businesses to translate research and ideas into commercial outcomes. https://business.gov.au/grants-and-programs/modern-manufacturing-initiative-manufacturing-translation.
[65] European Health and Digital Executive Agency. 2025. How to apply. https://hadea.ec.europa.eu/programmes/eu4health/how-apply_en.

energy costs, local construction and labour costs, and the broader economic operating environment, such as taxes and/or clawback payments, supply readiness, and the viability of launching products in a market. Not only are these wider costs and revenues highly material, but they are also subject to change from year to year (e.g., due to changes in government policy or wider macroeconomic conditions that differ across countries).

Therefore, whilst the LSIMF has demonstrated success to date (see Box 2.1) and capital grants schemes are an important factor in companies' decision-making process, this process is also influenced by the wider operating environment.

As such, it is challenging to precisely calculate the level of LSIMF funding required to tip a company's decision in favour of investing within the UK. There is a risk that pursuing value for money leads to over-engineering of the calculations within scheme funding appraisals. This adds complexity, uncertainty and increases the lengthiness of the application process, which risks weakening the LSIMF as a tool for stimulating UK investment and competitiveness. With many other countries offering generous support to attract investment, there is merit in ensuring that the LSIMF scheme is proportionate in its focus and level of detail, whilst also ensuring that the wider policy landscape supports the LSIMF in attracting investment.

Issue 7: There may be trade-offs between scheme value for money and the government's longer-term strategic objectives

From a taxpayer value-for-money perspective, it is entirely appropriate that the Green Book focuses on scheme additionality. This is also a requirement of the wider UK subsidy control regime[66], codified in the Subsidy Control Act 2022, which requires subsidies to bring change that would not have occurred without the subsidy and precludes the government from supporting the simple relocation of activities. Without assurance on the benefits arising from LSIMF funding, there is a risk that public funding crowds out private investment. This risk is pronounced given the tight fiscal circumstances outlined at the 2025 Spending Review.

However, there is a balance to be struck between rigorous application of scheme-specific value for money considerations and the government's 'big picture' strategic objectives. For the LSIMF, tough scrutiny for applications will likely increase the assurance around additionality but could risk stifling sector growth over the longer term, along with productivity and economic growth. As an illustrative example, investment tax credits provide a counterpoint in having much lower conditionality – and the precise level of 'additionality' may vary from project to project – but they generate substantial aggregate benefits overall[67].

In part, this issue arises for the LSIMF because long-term growth is uncertain. It is challenging for companies to accurately forecast the full range of longer-term economic benefits (such as agglomeration and global market share), and for scheme-specific appraisers to accurately

[66] UK Government. 2024. UK subsidy control regimen. https://www.gov.uk/government/collections/subsidy-control-regime
[67] HM Revenue & Customs. 2020. Working paper: Evaluation of the Research and Development Expenditure Credit (RDEC). https://assets.publishing.service.gov.uk/media/5faad42ed3bf7f767a564f65/Evaluation_report_-_R_D_RDEC.pdf

assess the holistic long-term benefits that might arise from (and be attributable to) a single project. A further uncertainty arises because the international landscape for globally mobile capital is competitive; the UK's success in growing life sciences and advanced manufacturing depends on the strategies and policies undertaken by other countries.

As such, the government has a role in communicating the optimal appraisal approach. It requires clarity on the balance between the delivery of strategic objectives and the level of detailed assurance required for funding support. For example, the government may wish to consider the extent to which it is seeking a highly detailed, investigatory process versus a more pragmatic approach that focuses on growing sectors that are identified as strategic priorities.

For the LSIMF, recent government policy may warrant a review of this balance. For example, the government has reaffirmed that its priority 'mission' is economic growth, the 2025 Spending Review committed to delivering investment "more quickly", and the Advanced Manufacturing Sector Plan states that the UK's ambition is be "recognised as the best place in the world to start, grow, and invest in advanced manufacturing" by 2035.[68] [69] Box 4.6 contains examples of differing international approaches to achieving such growth.

[68] HM Treasury. 2025. Spending Review 2025. https://www.gov.uk/government/publications/spending-review-2025-document/spending-review-2025-html
[69] UK Government. 2025. Advanced Manufacturing Sector Plan. https://www.gov.uk/government/publications/advanced-manufacturing-sector-plan

Box 4.6: Life Sciences Policy Models: Long-Term Strategies and Capital Support Schemes[70, 71, 72, 73, 74, 75, 76, 77]

There are many examples of countries with project-specific capital support schemes, similar to the LSIMF, and some of these countries offer to cover a higher percentage of the capital costs. Australia's Modern Manufacturing Initiative (MMI) offers grants up to AUD $20 million, covering 50% of project costs. The EU, through HERA and HaDEA, has launched a series of open calls offering project-based funding to strengthen biomanufacturing and pharmaceutical supply resilience, which offer contribution rates typically of 60-80%. Belgium is more similar to the UK in providing a combination of 20% capital support, low-interest regional loans and innovation tax incentives.

Some countries are regularly cited (including by companies considering investment in the UK) as examples of having implemented successful, long-term strategies to achieve sector growth and attract wider investment. Many of these countries utilise tax adjustments as a funding lever – a less targeted support mechanism compared to the LSIMF. Singapore has invested SGD $14 billion in biomedical R&D between 2000 and 2018, and it offers up to 250% R&D tax deductions. China supports biomanufacturing through its Five-Year Plans, with >10% annual R&D growth targets, super deductions, and regional tax breaks. Ireland combines 12.5% corporate tax, a 30% R&D credit, and pro-investment regulation, attracting over €12 billion in life sciences FDI since 2010. Overall, these countries have implemented major, state-led, long-term investment and growth strategies in pursuit of becoming global leaders in life science and advanced manufacturing.

[70] Republique Francaise. 2023. Meeting with the healthcare industries. https://en.media.businessfrance.fr/news/meeting-with-the-healthcare-industries-c10b7-aba4d.htm.
[71] University of Cambridge. 2021. Singapore's biomedical cluster, lessons from two decades of innovation and manufacturing policy. https://www.ciip.group.cam.ac.uk/reports-and-articles/singapores-biomedical-cluster-lessons-from-two-decades-of-innovation-and-manufacturing-policy/
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[75] Invest in Wallonia. 2024. Strengths of the life sciences ecosystem in Belgium-Wallonia. https://www.investinwallonia.be/files/library/Publications-AWEX/Life-Sciences-brochure_2.7-BD-01.pdf
[76] European Commission. 2023. Commission Implementing Decision on the financing of the Programme for the Union's action in the field of health ('EU4Health Programme') and the adoption of the work programme for 2024. https://www.euro-access.eu/_media/file/666_EU4Health_2024_work_programme.pdf.
[77] European Health and Digital Executive Agency. 2025. How to apply. https://hadea.ec.europa.eu/programmes/eu4health/how-apply_en.

5. RECOMMENDATIONS

In light of the seven issues above, we have formed three core recommendations for the application and design of the Green Book with respect to the LSIMF. Our proposals are intended to align with the findings of the 2025 Green Book review and support their operationalisation, including to inform development of the streamlined Green Book expected in early 2026.

It is important to acknowledge and commend the government's current stance in relation to the appraisal methodology. HMT's 2025 Green Book review signals the government's willingness to continuously improve its appraisal and decision-making processes. In addition, the OLS has already started to adapt the appraisal process for the LSIMF to address some known challenges (e.g., over-reliance on the BCR). The present moment, therefore, provides a unique opportunity for consideration of a wider range of potential refinements to the LSIMF and Green Book.

These three recommendations seek to realise this opportunity by making improvements that ensure the full economic and strategic benefits arising from the LSIMF and investments in innovative life sciences manufacturing are accounted for. In turn, this should help to maximise value for money by more accurately estimating the return on awarded capital grants.

Recommendation 1: Introduce a more comprehensive appraisal framework to reduce reliance on the BCR and to strengthen non-monetisable benefits within decision-making

The current LSIMF process lacks a structured and transparent method for balancing the BCR and non-monetizable economic and strategic benefits, which in the past has led to an overemphasis on the BCR in decision-making. A **reformed appraisal framework** should provide a framework to demonstrate the full range of benefits, communicate the relative importance (e.g., the assigned weighting) of different benefits within the appraisal methodology, and share this information with applicants in advance for understanding, transparency and fairness. The OLS's plan to more strongly consider an application's contributions to UK health resilience is a critical and welcome step to address this gap, but it should be more transparently communicated to industry. This would serve as a strong starting point on the path to creating a more holistic and systematic appraisal framework.

This recommendation directly responds to 'Finding 3' of the government's Green Book review, which also identified the issue of over-reliance of the BCR. While the onus lies on adjustments to the LSIMF process and the application of the Green Book, this step would be further aided by the government updating the Green Book to include guidance on how centralised public departments can systematically combine the BCR with other non-monetisable economic and strategic benefits. This could also refer to examples of real-world, systematic appraisal frameworks that are already utilised in practice, such as those highlighted in this report.

Keeping in mind the need for simplicity and proportionality, **non-monetisable strategic and economic benefits should be captured through a systematic scoring approach** that can either be applied individually or across: (i) exports and wider competitiveness, (ii) productivity

improvements; (iii) agglomeration and spillover effects and (iv) environmental impacts and (v) growth across the UK. This approach is consistent with the Green Book Review's emphasis on the need for improved methods to assess transformational change and broader societal benefits. It also reflects the Review's call for clearer frameworks for place-based and long-term interventions.

Recommendation 2: Increase the predictability and transparency of the LSIMF process

Manufacturers in the life sciences sector currently face considerable uncertainty as to how LSIMF applications are assessed, how award decisions are reached, and the level of funding provided. For example, at the time of application, companies do not know how much funding they will receive if successful. Given this, companies cannot assess upfront whether the administrative costs of the application process will be worthwhile, and this uncertainty can disincentivise companies from applying to the process.

- **Improving predictability** may have a cost to government departments, as it reduces flexibility around decision-making, but would have benefits through providing companies with greater visibility around planning, which supports investment overall.
- **Improving transparency** would reduce instances of companies undertaking substantial administrative efforts and delaying investment decision-making, only to subsequently receive financial support which is much lower than expected (or, in some cases, zero).

This recommendation echoes the Green Book Review's 'Finding 6' on transparency and its commitment to publish business cases and improve decision-making visibility. The LSIMF has already made some progress in this regard. For example, the OLS provides guidance documents to potential applicants. However, there are several aspects that could further improve predictability and transparency:

- Publishing a clear breakdown of appraisal components and their relative weightings, including how strategic and economic factors are scored (see Recommendation 1).
- Providing an overview of remaining funding and anonymised data on the distribution and size of previous awards, to help applicants benchmark their expectations.
- Improving predictability of awarded funding by (i) not relying on project BCRs to determine award sizes and (ii) guaranteeing minimum thresholds of support for approved projects to provide applicants with planning security.

Recommendation 3: Ensure proportionality and timeliness of the LSIMF process

Applicants consider the LSIMF appraisal process to be disproportionately complex compared with the unpredictable and potentially low level of support available, comprising multiple review stages and substantial information requirements. This complexity adds an administrative burden to companies (especially smaller firms) and appraisers, which risks delays to investment and constrains UK growth and productivity. This recommendation for proportionality mirrors the

Green Book review's recommendation ('Finding 4') to simplify the appraisal process and ensure proportionality to overall project size and support.

In the case of LSIMF, there are several options **to achieve greater proportionality,** especially for applications from smaller firms, including the following:

- Introduce a simplified application route for projects below a defined financial threshold (cost of project), with reduced documentation and streamlined review.
- Offer alternative routes to demonstrating additionality for SMEs, such as simplified counterfactual scenarios or qualitative narratives.
- Raise the materiality threshold for projects requiring additional cross-departmental review or external board engagement (e.g., in the Industrial Development Advisory Board).
- Devote appraisal resources in proportion to the potential benefits, which might involve prioritised attention towards the largest projects, particularly as they are more globally mobile and may have an outsized positive impact on anchoring local life science ecosystems.

In terms of the roles and responsibilities of different parties, it is unlikely to be proportionate for each individual grant application to attempt to monetise (or even systematically quantify) every possible type of benefit. Rather, to simplify the process for applicants, the HM Treasury and OLS could take a larger role in considering the likely 'order of magnitude' of hard-to-measure benefits (e.g. exports, competitiveness, productivity) arising from LSIMF-related projects. **This could involve a top-down, portfolio analysis of the LSIMF scheme.** Through its own analysis of these wider benefits, and from reviewing the full range of applications, the government may be best placed to take a view on the likely magnitude of social and economic benefits in categories which are the most challenging for individual companies to estimate. In this case, applicants would still need to provide an explanation of the benefits, as per the appraisal framework (see Recommendation 1). However, scheme appraisers could potentially offer some flexibility around hard-to-quantify economic benefits, specifically where the government – via its own independent analysis – has confidence around the benefits generated by certain types of schemes.

Finally, to improve proportionality whilst also increasing the impact of the LSIMF, the government could also **review the intervention rate,** noting that capital grants schemes in some other countries and industries offer higher rates. Adjusting the rate would involve trade-offs; the UK government is experiencing a challenging fiscal climate, but it would further support the UK government's ambition to be "recognised as the best place in the world to start, grow, and invest in advanced manufacturing" by 2035.[78]

[78] UK Government. 2025. Advanced Manufacturing Sector Plan. https://www.gov.uk/government/publications/advanced-manufacturing-sector-plan

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