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**Summative Assessment of the Sustainable
Materials Innovation (SMI) Hub prepared for
The University of Manchester**

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1 Project overview and assessment scope

Introduction

1.1 This report sets out the findings of the Summative Assessment of the Sustainable Materials Innovation (SMI) Hub project delivered by the University of Manchester (UoM). With a revised total budget of £7.4m, including £3.7m of ERDF funding, the project focuses on innovation in sustainable plastics and included both capital investment in laboratory space and equipment to fit out and establish the SMI Hub at the Henry Royce Institute, and revenue investment in a business support project to engage and support small and medium sizes enterprises (SMEs) and start-ups. The report covers the project's lifetime and has been completed in March 2023, ahead of the project's completion in July 2023.

1.2 The assessment has been completed in line with Summative Assessment guidelines with this report prepared to ensure compliance with the report structure provided in the guidance appendices. This approach ensures that all requirements are satisfied and that intelligence is captured that is both of local interest and that provides the evidence needed to feed into the national programme evaluation.

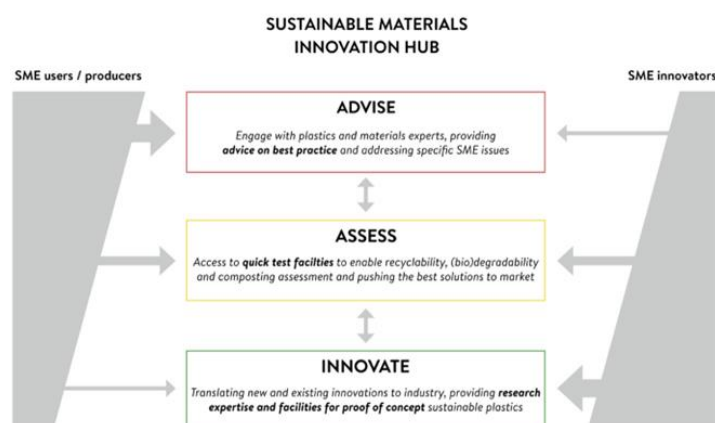
Project activities

1.3 Plastic waste and pollution has become one of the most pressing environmental issues in recent years. Organisations often want to be sustainable in their use of plastics, but lack the knowledge, expertise and insights that unlock opportunities for transformative change. This is especially challenging for small, resource-scarce businesses. The SMI Hub's laboratory, workspace and support package was developed as a direct response, engaging Greater Manchester's (GM) start-ups and SMEs in the sustainable plastics agenda and providing an opportunity for initial engagement with the University – through facilities and expertise – to potentially lead to longer term collaborative working and innovation.

1.4 The SMI Hub combines access to three interconnected laboratories, work and meeting space, specialist equipment, impartial research and technical expertise to connect businesses to the knowledge base and deliver a comprehensive support package capable of helping beneficiaries to make sustainable decisions and efficiencies, realise opportunities through innovation, and avoid unintended consequences at all stages of the product life cycle (from manufacture, to use, to disposal).

1.5 As set out in figure 1.1, the revenue funded support package comprises three strands – Advice, Assess and Innovate – which offer support of varying intensity to enable businesses to identify opportunities to adopt existing zero waste solutions, consider and adopt sustainable plastic technologies, and design new sustainable advanced material systems/processes/products for regional and international markets.

Figure 1.1: SME Workflow



1.6 The SMI Hub delivery model is designed to 'funnel' businesses through the support strands following their initial engagement with the project, enabling a sub-set of businesses to engage in and collaborate on the more intensive assess and innovate strands following initial support through the advice strand, where it is appropriate to do so. However, the delivery team also work flexibly with beneficiaries to best meet their needs which can result in SMEs going straight to the assess or innovate strand. In terms of the support provided:

- Under the '**Advice**' strand, the SMI Hub consults with businesses via workshops and targeted interventions on material choices from sourcing and manufacturing to specific applications that would allow lower environmental footprints.
- Under the '**Assess**' strand, the SMI Hub works with companies in more depth to carry out materials assessments on products and components from cradle to grave to provide a robust evaluation of opportunities.
- Under the '**Innovate**' strand, the SMI Hub collaborates with companies in developing and de-risking new sustainable polymers for market, improved recycling and validating material performance. Through these more in-depth projects the SMI Hub supports the initial scientific foundations to enable new technologies to reach Higher Technology Readiness Levels.

1.7 Further details on the project's capital and revenue activities and their effectiveness are set out in Section 4.

Project objectives

1.8 The SMI Hub has five objectives which were included in the project's original ERDF application with the wording refined at the project's inception to clearly set out the SMI Hub's focus on plastics (which was clearly intended within the application). Specifically, the objectives of the SMI Hub are to:

- Deliver a purposefully designed innovation hub to support practical advances in the sustainable design and use of plastics.
- Build on the critical mass of expertise already evident within the UoM to allow GM to maintain its competitive advantage in the sustainable materials agenda.
- Engage SMEs in sustainable plastics innovation through business engagement activities, workshop sessions and through tailored programmes of support (advice, assessment and innovation).
- Drive advances in the sustainable polymers sector, supporting the progression of new innovations along the Technology Readiness Levels and ultimately result in improved sustainable materials use within the economy.
- Help organisations understand the economic opportunities of improving environmental sustainability.

1.9 The objectives have remained consistent throughout the delivery period. Further details of the rationale for intervention are provided in Section 2, while the achievement of the objectives is considered as part of the report conclusions.

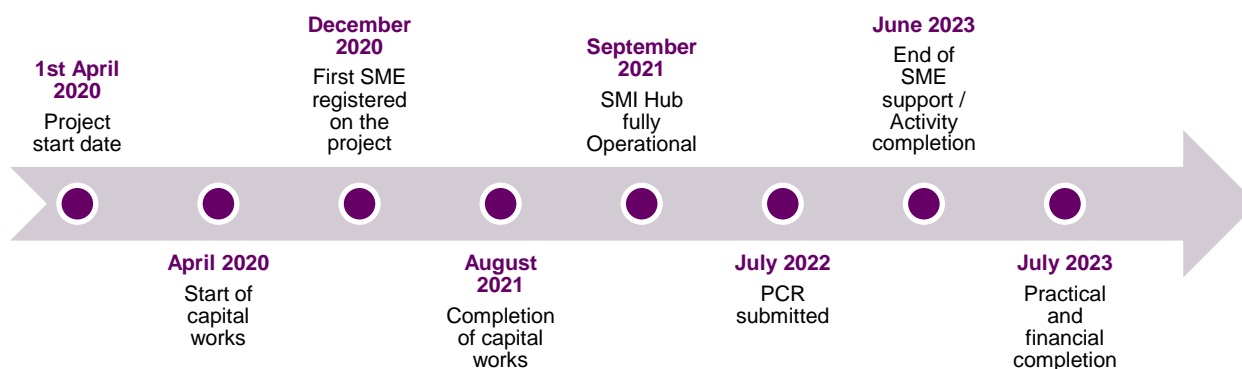
Project timescales

1.10 The project's original Grant Funding Agreement was signed in April 2020 providing support for just over three years to June 2023.

1.11 The capital works on the laboratory and office workspace commenced in April 2020 and were complete by August 2021 (just six weeks behind the original schedule), with the official opening in

September 2021. As set out in Section 4, the delivery team worked to minimise delays to the project, and this included commencing delivery of the business support activity (albeit a more limited offer) ahead of the SMI Hub laboratories becoming operational. By September 2021, the SMI Hub was fully open and home to the team of researchers and the SME support project.

1.12 In June 2022, a Project Change Request (PCR) was submitted to extend the practical and financial completion of the project by one month to the end of July 2023, to enable activity to continue right up to the end of June 2023, and outputs to be claimed during July 2023. This was due to revenue project delivery levels being slightly lower than anticipated following delays to the capital build and staff recruitment at the project's outset, which coincided with the start of the Covid-19 Pandemic and the subsequent national lockdowns.



Assessment approach

1.13 The Summative Assessment and this resulting report have drawn on both qualitative and quantitative evidence gathered through:

- A detailed review of project documents and management records including the ERDF full application, project claims and project management reports, including a PCR.
- A review of the changing policy context at the time of the project's inception and during the delivery period. The impact of external circumstances (such as Covid-19, Brexit, high inflation) and how these have changed the delivery context and impacted upon project delivery has also been considered.
- Consulting key project team members to understand how the project has been delivered in practice, including exploring key success factors and issues encountered and how they have been overcome. Consulting 16 project beneficiaries through a beneficiary survey and interviews (approximately 25% of the C1 business assists claimed to the end of December 2022) to understand their engagement with the project; views on the support received; and its associated impacts – both to date and anticipated in future.
- Consulting strategic stakeholders to understand the project's fit within the Henry Royce Institute, the wider University and its alignment with sub-regional priorities and any benefits being experienced.
- Assessing project impacts, including both economic and wider benefits reported by beneficiaries.
- Considering what would have happened in the absence of intervention to determine the additionality of activities and impacts.
- Identifying lessons from the project that can be applied on future innovation projects, and highlighting lessons and impacts that could help to make the case for future projects and likely funding opportunities.

2 Project context

A changing delivery context

2.1 The SMI Hub project was designed to capitalise on local strengths in sustainability and advanced materials, respond to local and national policy priorities, and to address challenges faced by the business base.

2.2 Due to the timing of the project, the SMI Hub has been delivered in a significantly different context to that in which the project concept was conceived and developed. As detailed in Section 1, the ERDF application was prepared in 2019, and led to the project successfully being awarded funding in 2020, with a start date of April 2020, which coincided with declaration of the Covid-19 Pandemic (with initial restrictions introduced in March 2020).

2.3 While many of the strategic priorities and drivers aligned with the SMI Hub have remained relevant throughout the project's delivery, the overall economic climate has been unstable as a result of multiple factors including Covid-19, Brexit and high inflation. This has at times shifted the focus of economic and business priorities, creating unexpected challenges for the project delivery team to navigate (as detailed further in Section 4).

2.4 This section considers:

- **The strategic alignment** of the project with local and national priorities during its development drawing on the key policies identified in the application relating to innovation, economic growth and clean growth. It also considers how the project has continued to respond to emerging policy priorities (including Covid-19 economic recovery plans) throughout the delivery period.
- **The need to intervene and the overall project rationale** outlining the factors driving the project including environmental issues and legislation, the opportunity to capitalise and expand upon local specialisms and innovation infrastructure, and market failures.

Strategic Alignment

Strategic alignment during the project's development (2019-2020)

2.5 As the project was developed, the SMI Hub was designed to build on competitive advantages and support past investments by Greater Manchester Combined Authority (GMCA) and the UoM in the commercialisation of innovation and the development of advanced materials infrastructure - including the Henry Royce Institute which was a recognised asset in the **Greater Manchester and Cheshire East SIA**¹. The SMI Hub was aligned with the rationale and objectives of the Henry Royce Institute, which had identified sustainability as a central theme for its vision and mission as it transitioned from building capability to operations. It was also designed to address local priorities by:

- Supporting the **Greater Manchester Local Industrial Strategy**² which built upon the '**five foundations**' of the National Industrial Strategy and set out a regional ambition to "*deliver an economy fit for the future*". In particular, the SMI Hub's focus on innovation in sustainable plastics was in line with the need to focus on the strength of advanced materials by "*positioning GM as a world leading region for innovative firms to experiment with, develop and adopt advanced materials in manufacturing*". It also supported the strategy's positioning of Manchester as a world-leading city-region for innovative firms to experiment with, develop and adopt advanced materials in support of the Clean Growth Grand Challenge.

¹ [Layout 1 \(greatermanchester-ca.gov.uk\)](https://www.greatermanchester-ca.gov.uk)

² <https://www.greatermanchester-ca.gov.uk/media/2132/gm-local-industrial-strategy-web.pdf>

- Supporting Manchester's ambition to be a carbon neutral city by 2038, and responding to Mayor Andy Burnham's **Greater Manchester Green Summit** and the 5-year **GMCA Environment Plan's**³ recognition that sustainability is both an urgent environmental crisis and an economic opportunity. The state of the art facilities and support at the SMI Hub were underpinned by this principle, providing opportunities for innovation to deal with the environmental crisis, whilst also providing SMEs with the opportunity to develop and grow.

2.6 The SMI Hub was also designed to support the achievement of the UK's strategic goals by:

- Supporting national **smart specialisation policy**, which focuses on the comparative advantages of assets in particular places, and delivering activities such as innovation which are fully integrated with business needs to build connections and promote the use of enabling technologies between related sectors. The SMI Hub was designed to position the UoM as the leading research and support organisation in the country for plastics innovation, strengthening and broadening the region's global specialisation in advanced materials, with a major focus on smart and timely technologies to deliver innovative solutions across a range of sectors.
- Helping businesses to grow through investment in the industries and infrastructure of the future, in line with the **National Industrial Strategy**. The SMI Hub was established to help businesses to be more innovative in their use of plastics and to provide opportunities for business growth. The innovate strand of the SMI Hub's support offer in particular was designed to help develop local solutions, which can be rolled out nationally and exported internationally.
- Supporting the **Grand Challenge of Clean Growth** (outlined in the National Industrial Strategy), providing the infrastructure and support needed to ensure that GM SMEs and start ups can make sustainable choices in relation to their use of plastics when developing, distributing and disposing of products. The establishment of the SMI Hub as a physical hub in the Henry Royce Institute also ensures that Manchester has the capability to leverage this support from local to national levels in the future.
- Aligning with the **national science, innovation and research strategies** which all recognise the importance of driving collaboration between universities and the local business base as a way to accelerate innovation and the commercialisation of research. The SMI Hub is based upon proactively linking innovators to adopters, facilitated by access to the world class knowledge base available at the UoM, enhancing the transfer of knowledge and accelerating the commercialisation of new products and services.
- Responding to the potential of sustainable packaging innovation, identified as a "high potential opportunity" for inward investment in Manchester by the **Department for International Trade**.

Strategic alignment during the Project Delivery Period (2020 – 2023)

2.7 The project has continued to align with strategic priorities and policies that were published during the project delivery period. This included the **University of Manchester's Vision and Strategic Plan**⁴ which was launched in January 2020 (just ahead of the project's start date). The Plan set out the University's priorities for the next five years built around three themes (innovation, civic engagement, global influence). The SMI Hub aligns strongly to the innovation theme, which prioritises the development of sustainable materials infrastructure, and the further commercialisation of related innovation to continue to build on competitive advantages. The SMI Hub also contributes to the civic engagement theme by helping to increase the University's contribution to the sub-regional economy through advanced materials commercialisation. Other key additions to local and national policy (see table 2.1) included a common focus on innovation, advanced materials, collaboration/knowledge exchange, sustainability and clean growth.

³ [5-year-plan-branded_3.pdf \(greatermanchester-ca.gov.uk\)](#)

⁴ <http://documents.manchester.ac.uk/display.aspx?DocID=46723>

Table 2.1: Strategic Alignment of the SMI Hub during the Delivery Period

Policy	SMI Hub Alignment / Contribution
Emerging Local Policies	
Greater Manchester Independent Prosperity Review⁵ – sets out actions required to improve productivity and drive prosperity. The review recognises GM's world-class strengths in advanced materials and recommends capitalising on this by investing in facilities and developing new partnerships between universities and the private sector.	<ul style="list-style-type: none"> Developing a new research and innovation facility focused on sustainable plastics. Encouraging relationships and collaborative projects between the UoM and local private sector.
Greater Manchester Strategy 2021–2031⁶ – outlines plans for recovery and renewal following the pandemic, outlining a desire to become greener, fairer, more prosperous and opportunity driven. It identified advanced materials and clean growth as two of GM's greatest strengths, with an opportunity to focus upon these and supporting related businesses to grow and promote innovation as a way to address wider challenges including carbon neutrality.	<ul style="list-style-type: none"> Building upon GM's advanced materials specialism and helping businesses to adopt and innovate sustainable plastics. Supporting both business growth and clean growth.
Manchester City Council Climate Change Action Plan 2020-25⁷ - sets out commitments to tackle climate change. It aims to ensure that Manchester establishes an ' <i>inclusive, zero carbon and climate resilient economy where everyone can benefit from playing an active role in decarbonising and adapting the city to the changing climate</i> '.	<ul style="list-style-type: none"> Engaging SMEs/start-ups in sustainable plastics agenda and innovation. Supporting the adoption of sustainable materials and processes, and progression of sustainable products to market. Reducing waste across the business base.
Emerging National Policies	
UK Research and Development Roadmap (2020)⁸ – sets out a strategy to nurture and grow the UK's innovation system including the need to strengthen the interactions between discovery research, applied research, innovation, commercialisation and deployment, as well as the need to support entrepreneurs and start-ups.	<ul style="list-style-type: none"> Supporting SMEs and start-ups to engage and invest in R&D and innovation. Supporting the progression of sustainable products and processes to market through the innovative use of advanced materials.
Building the future economy: Plan for action for UK business innovation 2021-2025⁹ – outlines Innovate UK's ambitions to help businesses grow through the development and commercialisation of new products, processes, and services, supported by an outstanding innovation ecosystem that is agile, inclusive and easy to navigate.	<ul style="list-style-type: none"> Bringing together world class facilities, expertise and a targeted SME support offer at a single location, to create a valuable business facing innovation asset. Cultivating innovation within SMEs, leading to the development of new products.
Build Back Better: our plan for growth (2021)¹⁰ – outlining the need to respond to the impacts of the Covid-19 Pandemic to deliver growth. Innovation is one of the core pillars, highlighting the necessity to support creative ideas and technologies that will shape the UK's future economy. The plan also outlines the need to support SMEs to grow to boost productivity and transform the ways in which they do business.	<ul style="list-style-type: none"> Supporting SMEs to develop sustainable products and processes that can benefit a wide range of markets. Encouraging businesses to adopt sustainable approaches to the use of plastics to support business resilience and growth over the longer term.
UK Innovation Strategy – BEIS - (2021)¹¹ – sets out long-term plans for delivering innovation led growth, with the primary objective of boosting private sector investment across the UK, creating the right conditions for businesses to innovate with confidence. It outlines areas of strength and opportunity, including advanced materials.	<ul style="list-style-type: none"> Facilitating innovation within SMEs and start-ups in GM by increasing knowledge and confidence. Building upon GM's strengths in advanced materials, with a focus on sustainable plastics.

⁵ https://issuu.com/greatermcr/docs/gmipr_reviewersreport_web_20190208?e=35861904/67626379

⁶ <https://aboutgreatermanchester.com/media/ilslobys/greater-manchester-strategy-our-plan.pdf>

⁷ [MCC Climate Change Action Plan 2020-25 | Manchester City Council](#)

⁸ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/896799/UK_Research_and_Development_Roadmap.pdf

⁹ https://www.ukri.org/wp-content/uploads/2021/11/IUK-18112021-Plan-For-Action-for-UK-Business-Innovation_FULL_WEB-FINAL-26.10.21-1.pdf

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/968403/PfG_Final_Web_Accessible_Version.pdf

¹¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009577/uk-innovation-strategy.pdf

2.8 Overall, the SMI Hub has remained relevant to a wide range of local and national policy priorities throughout its design and delivery.

The need to intervene and overall project rationale

Responding to Market Forces

2.9 Plastic waste and pollution has become one of the most pressing environmental issues in recent years. With forecasts that plastic waste could reach 40 billion tons per annum (p.a.) in the Earth's system by 2050, urgent and widespread action has been called for across all sectors of the economy to find sustainable solutions and alternative materials for plastics use. Increasing awareness of environmental impacts, changing consumer behaviour, and evolving regulatory and legislative frameworks are driving a rapid shift towards reduction, replacement, reuse and recycling. Key market forces include:

- **Public pressures and changing consumer intention:** Public awareness of the environmental impacts of plastic waste has grown rapidly in recent years, fuelled by popular media and news coverage, and this is changing buying habits. Businesses are looking for new alternative solutions to single-use plastics and packaging to enable them to market their products to early adopters within new, fast-growing markets. This is impacting on businesses within supply chains, which are adjusting component products to account for downstream innovation, as well as those companies bringing products directly to consumer markets.
- **Government and legislation:** The Greater Manchester Combined Authority (GMCA) is a national leader in addressing the need for sustainable plastics through its '*Plastic Free GM*' campaign which commits to '*stamp out avoidable single use plastics and increase sustainable, reusable, compostable and recyclable choices*'. There is local pressure for SMEs to be part of this change and pledge action.
- This has been reinforced by government plans, including a new plastic packaging tax, which came into effect from April 2022, that charges a flat-rate per tonne on any new packaging that contains less than 30% recycled content. Further proposals, such as a deposit return scheme for single use drink containers set to be introduced in England in 2025, emphasise the principle of extended producer responsibility and compel brands and retailers to make a change. Businesses that do not plan for this changing landscape of legislation will be hit by both future increased costs and a loss of competitiveness in their market(s).

2.10 Whilst these challenges are widely recognised by businesses, they are not often fully understood and there are several barriers and market failures (as detailed later in this section) which prevent businesses, particularly SMEs and new starts, from being able to respond and unlock opportunities for transformative change. With its core focus on engaging SMEs in the plastics innovation agenda, the SMI Hub was designed to directly respond to these market forces and the opportunity to accelerate the implementation of sustainable materials innovation to promote recycled, reused and repurposed solutions that respond to consumer preferences and fit within the regional and national waste and legislative frameworks of today and tomorrow.

Enhancing Research and Innovation Infrastructure and Specialisms

2.11 The SMI Hub was designed to enhance the science base by expanding the world leading advanced materials support at the Henry Royce Institute to include sustainability and plastics. This also complemented wider investment in advanced materials infrastructure across the University and the City.

2.12 Whilst significant investment had been committed to the Henry Royce Institute, the funding towards the construction of the facility did not allow all the building's floors to progress to a completed state, including the sixth floor which is now home to the SMI Hub. The ERDF funding provided an opportunity to use the empty shell space at the Institute to develop a specialist facility and support offer that proactively targets SMEs focused on innovation in sustainable plastics. This was seen as unique

with no other local or national facility enabling specialised lab-based development and capability supporting routes to commercialisation in this arena.

Supporting an innovation culture

2.13 Increasing innovation by firms and across the public sector is recognised as being crucial to meet the Industrial Strategy target of 2.4 per cent of GDP being invested in R&D by 2027, and 3 per cent in the longer term. In 2019, the Enterprise Research Centre released LEP Innovation Benchmarks¹² ranking each of the 39 LEPs in England across a series of innovation indicators. Based on these figures, GM ranks fairly poorly, with an average rank of 24th across all indicators. Specifically, GM ranks poorly against the following indicators:

- Research and development – 22% of firms, ranked 19th of 39;
- New to the market product and service innovation – 8% of firms, ranked 24th of 39;
- Product/service innovation – 24% of firms, ranked 26th of 39;
- Design investment for innovation – 11% of firms, ranked 29th of 39; and
- Collaboration – 27% of firms, ranked 32nd of 39.

2.14 Each of these indicators has been supported – to an extent – by the activities of the SMI Hub project. The innovation support provided by the project has directly supported more SMEs to develop and commercialise new or improved products or services through collaborative working with the UoM and the SMI Hub, as well as helping to support an innovation culture more widely within the SME business base.

Overcoming market failures

2.15 As set out above, there is unprecedented demand to transform the role and value of plastics in our society. Businesses need to be able to understand and adopt alternative solutions and innovate new products within a rapidly changing market and a complex, diverse and fluctuating regional and national waste management infrastructure.

2.16 However, SMEs often have limited capability to respond to these dynamic driving forces and tend to be faced with a plethora of information and jargon on sustainability, which can be inconsistent and/or conflicting. Specifically, there are two market failures that the SMI Hub project sought to address:

1. **Information asymmetries:** Many SMEs lack all of the information they need to inform investment and action, and fail to: (i) understand how sustainable advanced materials could be applied in their business; and (ii) appreciate the benefits they could gain from moving to sustainable solutions. These barriers are compounded by limited understanding of the scope for and benefits of innovation more widely and a lack of access to investment capital as investors lack detailed information about innovation characteristics and success probabilities due to the inherent uncertainty involved in innovation activity.
2. **Failure of coordination:** to address the information asymmetries outlined above, a coordinated response is required to bring together access to impartial, expert advice on alternative sustainable products and directions for innovation in advanced materials, as well as access to support and facilities which facilitate adoption. However, this is challenging to secure in the absence of public investment. There is a lack of independent expertise and capability available to businesses to help them understand and assess options, with many organisations invested in promoting a particular solution with no holistic view of the end-to-end waste management system, either locally, or more widely across the UK. In addition, the capital investment and

¹² <https://www.enterpriseresearch.ac.uk/wp-content/uploads/2019/06/ERC-ResReport-Benchmarking-local-innovation.pdf>

technical knowledge required to test both new innovations and the suitability of existing solutions means this infrastructure is not widely available.

“There is a thirst for sustainable solutions amongst businesses, but they often lack access to lab space and knowledge to make choices.” – Team Member

2.17 The market failures are observable relating to each of the three support strands offered by the SMI Hub, with local examples included in the project application which demonstrate failure to: *adopt* existing zero waste solutions; *evaluate* sustainable plastics technologies; and, *innovate* new sustainable advanced material systems/processes.

2.18 This has led to under investment in plastics innovation outside of a small number of UK-based multinational companies. As a result, they face a high risk of adopting inadequate and poorly conceived strategies for plastics use, product innovation, and waste management. The consequences of this can be significant: loss of market share and sales revenue; loss of domestic and international competitiveness; failure to exploit new markets; reputational risk; waste of resource and capital investment; and increased costs from new taxation and compliance regimes.

2.19 The SMI Hub project has addressed market failures by combining capital facilities with a holistic support offer, and undertaking business engagement activities designed to expose SMEs to the potential of sustainable advanced materials and their applications, and to increase their knowledge, awareness and experience of undertaking innovation.

2.20 Overall, the market failures combined with local need and opportunity have provided a strong multifaceted need and rationale for public sector investment in the SMI Hub.

3 Progress against targets

Overall progress

3.1 Following delays in both the capital and revenue elements at the start of the project, caused in part by Covid-19 and post-Brexit issues, the project has made good progress against targets. Table 3.1 (overleaf) highlights the project's expenditure and output targets, reported progress against them (based on the latest claim for the period to the end of December 2022) and the anticipated position at project close, when the team remain confident that targets will be satisfied.

3.2 While the output targets have remained consistent throughout the delivery period, there has been a significant change to the capital expenditure target following a PCR, submitted in June 2022. This requested a reduction in the capital budget by £2.5m following the completion of the capital works for a significantly lower cost than expected. This was a result of a number of factors:

- There were variances associated between the fully scoped costing for the fit out of the space and the estimates included within the original ERDF application which were based on a high-level Feasibility Estimate, underpinned by applying benchmarks (£/m²) for works completed elsewhere within the Henry Royce Institute Hub Building.
- The specification and requirements for the sixth floor were less high specification than anticipated, reducing the construction costs.
- Some elements of capital works included in the original funding application have been delivered within the funding for the Henry Royce Institute budget as part of a wider bundle of building wide fit-out works.
- Covid-19 impacted upon contractors' workload and increased competitive pricing, resulting in a competitive tender process.
- Some office furniture was not able to be allocated to the grant because the framework / procurement process utilised by the University was not ERDF compliant.
- Procurement and appointment of MEP Contractor in lieu of Main Contractor which reduced management, preliminaries and OH&P costs.
- Efficiencies in preliminaries for the Contractor, due to concurrent working on wider Henry Royce Institute fit out works including management and accommodation.

3.3 The PCR also included a request to reprofile the revenue expenditure (following recruitment delays and staff turnover which impacted upon project activity) and to change the financial and practical completion dates from 30th June 2023 to 31st July 2023. This was proposed to allow the project staff to continue working to achieve outputs right up to the end of the project activity end date of June 2023 recognising the time required to gather evidence to allow outputs to be captured until end July 2023 in the final claim.

3.4 The requests were accepted and as a result the capital expenditure target was revised downwards, the revenue expenditure was reprofiled to increase targets in the later months of the project, and the practical and financial completion date was extended. The amendment to the capital expenditure target represented a 33% decrease in the ERDF capital project budget, and an 26% decrease in the overall ERDF project budget.

Table 3.1: Spend and output performance – current project scope

Indicator	Targets		Performance at time of evaluation (end of December 2022 claim)		Projected performance at project closure (end of July 2023)		Overall assessment
	Original	Adjusted	Number	% of target	Number	% of target	
Total revenue expenditure	£2,258,532	N/A	£1,536,601	68%	£2,230,939	99%	Expected to meet target
ERDF revenue expenditure	£1,493,813	£1,493,793	£1,016,308	68%	£1,475,563	99%	Expected to meet target
Total Capital Expenditure	£7,675,094	£5,129,792	£5,128,619	99.98%	£5,129,792	100%	Expected to meet target
Total ERDF Capital Expenditure	£3,467,638	£2,196,577	£2,196,075	100%	£2,196,577	100%	Expected to meet target
C1 – Number of enterprises receiving support	80	N/A	63	79%	80	100%	Expected to meet target
C5- Number of new enterprises supported	3	N/A	7	233%	7	233%	Expected to exceed target
C8 – Employment increase in supported enterprises	5 FTEs	N/A	1	20%	5	100%	Expected to meet target
C26 – Number of enterprises cooperating with research institutions	40	N/A	34	85%	40	100%	Expected to meet target
C28 – Number of enterprises supported to introduce new to the market products	3	N/A	2	67%	3	100%	Expected to meet target
C29 – Number of enterprises supported to introduce new to the firm products	9	N/A	5	56%	9	100%	Expected to meet target
P2 – Public or commercial building built or renovated	1570m ²	N/A	0	-	1570m ²	100%	To be claimed at end of project - Expected to meet target
C25 – Number of researchers working in improved research facilities	22	N/A	0	-	43	159%	To be claimed at end of project - Expected to exceed target

Source: Project management records

	Less than 85%	Between 85% and 95%	Greater than 95%
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Progress against expenditure targets

3.5 Progress against both the capital and revenue expenditure targets over the project delivery period has been delayed as a result of the impact of Covid-19 and/or post-Brexit challenges.

Capital expenditure

3.6 There were initial delays with capital expenditure due to:

- The working restrictions imposed during the Covid-19 Pandemic which initially included lockdowns and requirements to work from home (restricting initial project tasks and procurement activities), followed by later measures which meant that strict distancing measures were required on site during the delivery of building works (although this was well managed by the contractor).
- Items of equipment that were purchased from within the EU being delayed following Post-Brexit trading arrangements. For example, one piece of equipment (the composter) was kept at customs for almost six months.

3.7 However, the project has now spent and claimed almost all (99.98%) of its revised capital budget. The project is forecast to claim its full capital allocation by the end of June 2023.

Revenue expenditure

3.8 The revenue expenditure is largely focused upon staff costs, and has been affected by recruitment delays, staff turnover and initial difficulties engaging beneficiaries:

- **Staff Recruitment:** Initially, there was a significant revenue underspend as a result of severe delays in recruiting staff largely caused by Covid-19 which resulted in UoM implementing a blanket pause on recruitment during most of 2020 and putting additional policies in place. This had a knock-on effect on the project's ability to start delivering project activities and outputs (as considered in the following section).
- **Staff Turnover:** The salary costs of the initial team recruited were lower than forecast which enabled the project to employ more staff than anticipated within the original budget. In November 2021, the project requested authorisation to employ four additional members of staff to recover the engagement capabilities lost earlier and provide the capacity for more in-depth interventions. However, the continuation of staff turnover has impacted upon the project's ability to catch up with the expenditure target.
- **Beneficiary Engagement:** as covered in more detail in Section 4, the recruitment delays above included the recruitment of the business engagement team (the Industrial Liaison Officers were not in post until Q4 2020). The Pandemic also impacted upon SME appetite and ability to engage due to closure of non-essential businesses, the inability to hold in-person meetings, as well as the focus for many businesses being on survival, dealing with the repercussions of the Pandemic and widespread economic downturn. Therefore, sustainability and innovation has not necessarily been a priority for some. These factors slowed project delivery and revenue expenditure in the first 18 months of the project.

3.9 As of December 2022, the project had spent 68% of its revenue budget based on the original profile, or 92% of the anticipated spend to date following the reprofiling of spend through the PCR.

3.10 A significant level of revenue spend is forecast within the last seven months of the project compared to revenue spend to date, with the forecast spend equivalent to 45% of revenue spend to date. Over half (55%) covers staff costs and overheads (continuing recent spend levels), while the remaining 45% includes marketing, office costs, travel, catering, the summative assessment and lab

consumables. The team confirmed the reason for a relatively high level of non-staff related spend remaining is a result of catching up on lab and office consumables and travel spending which were impacted in the first year of the project due to initial delays to delivery. The forecast non-staff spend also includes some spend from 2022 that hasn't been invoiced yet. At the time of writing, the project is expected to be around £28,000 below its revenue spend target (99% of target) by the end of June 2023. The team confirmed that the level of underspend will be in part determined by the types of projects the team delivers and the associated lab and office consumable costs.

Progress against indicator targets

3.11 Overall, the project has performed well against its output targets, recovering from the challenges experienced early on in the project relating to the delivery of the capital works, securing equipment, recruiting staff and engaging beneficiaries, as set out in the previous section.

Outputs related to capital expenditure

3.12 The P2 target to deliver 1,570m² of floorspace has remained unchanged throughout the project, despite the significant reduction in the capital expenditure against the initial project budget, reflecting final build costs and efficiency savings. While the P2 output had not been claimed as of the December 2022 claim, the facilities have been delivered in full, with the fit out of Floor 6 of the Henry Royce Institute complete. This output is expected to be claimed in Q1 2023.

3.13 By project closure, it is expected that the C25 target will be exceeded with 43 FTE researchers working in improved research facilities against a target of 22 FTEs (195%). The 43 FTEs to be claimed, is made up of 62 individual researchers working on the floor.

3.14 Although the outputs related to the capital expenditure have been met, it is important to note that the delays in them being delivered impacted upon the project's ability to deliver the revenue funded business support from the new facility at the outset. Similarly, while there are no specific outputs relating to the equipment that was purchased as part of the project, delays in delivery of specific items of equipment did delay their installation and researcher/SME access to its capabilities. These operational points are considered in further detail in Section 4.

Outputs related to revenue expenditure

3.15 As of December 2022, with six months remaining in the delivery period, the project is expected to meet (in the case of C1, C8, C26, C28 and C29) or exceed (for C5) all revenue activity targets by June 2023 (the project activity end date).

3.16 In line with expenditure, the timing of outputs has required amendment since the original funding application was made reflecting delays in the construction, procurement and recruitment and a limited programme of business engagement activity during 2020 as a result of the Pandemic.

3.17 In terms of business assists, there were initial concerns about hitting the C1 target – given its scale and the initial project delays. However, this has been overcome – largely through the development of the cohort approach - and the project has been able to engage a significant number of SMEs (as set out in Section 4). As of December 2022, the project has claimed 63 C1s, 79% of the target. By project closure the project is expected to have met this target in full, with 80 C1 assists.

3.18 The team have already exceeded the number of new enterprises supported (C5), supporting 7 against a target of 3. There have been 34 longer term C26 assists (which typically relates to the innovate strand of support) against a target of 40. The project has sufficient assists underway or in the pipeline to meet the final C26 target by project closure. This suggests by project closure there will a 50% conversion rate from the advice and assess strands (C1) to innovate (C26), in line with the target set at the project's outset.

3.19 The team have been concerned about the achievement of C8 (employment increase in supported enterprises). To date the project has claimed 1 FTE, against a target of 5. While this target is modest, reasons for this cited by the project team include the wider economic downturn following Covid-19 with businesses in survival mode and the project focus on supporting businesses to make better use of materials which to date has delivered other benefits as opposed to business growth. There is also the recognised lag between innovation support being provided and the true benefits of intervention being realised. However, the team now expect to meet this target in full by project closure, which will be an achievement given the challenging economic conditions in which the project is being delivered.

3.20 The project also expects to meet the targets with regards to new to the market (C28) and new to firm products (C29).

3.21 The quarterly profile of achievements is illustrated in the chart below. While it was December 2020 when the first SME was registered onto the project, it was not until Q2 2021 when the first project outputs were claimed. The timing of outputs highlights the time it took for the project to build momentum. The physical SMI Hub was fully operational by September 2021, this appears to align with when the activity picked up with a high number of C1 and C26 outputs claimed in the subsequent quarters, Q4 of 2021 (with 10 C1s and 12 C26s) and Q1 of 2022 (13 C1s and 15 C26s). From Q4 of 2021 onwards a relatively consistent number of C1 assists have been claimed each quarter (between 10 and 13).

Figure 3.1: Output performance to date



Source: Project Management Records

3.22 The project keeps records of all the businesses it has engaged with for at least one hour. While not all have met the criteria to be captured as an ERDF output, as of December 2022, the project has engaged with 292 businesses in total for at least an hour. This highlights the scale of the project's engagement to date and determination to meet output targets, despite the challenging delivery context.

3.23 It should be noted the output claims are likely to underestimate the overall impact of the project which will continue to occur within the GM SME base beyond the project's monitoring period. As set out in Section 5, there are also a wider range of impacts and benefits generated by the project which are not captured by the output indicators.

Contribution to ERDF horizontal principles

3.24 The ERDF horizontal principles that all projects must align to are sustainable development; equal opportunities and non-discrimination; and equality between men and women.

Sustainable development

3.25 The project has a strong alignment with the Sustainable Development ERDF horizontal principle, given sustainable development principles and promoting environmental sustainability is at the heart of the project focus and objectives, business support offer and innovation projects supported by the SMI Hub.

3.26 The project's sustainability credentials have been recognised. In June 2022, the SMI Hub team received an award for its 'outstanding contribution to social innovation and environmental impact through enterprise' at the UoM's 2022 Faculty of Science and Engineering Better World Awards.

3.27 Within the SMI Hub laboratories, which have been delivered by the project, a sustainability team meet monthly to assess and address areas of improvement and make plans to change behaviours relating to waste, reuse, recycling and energy consumption. In November 2021, the team gained the Bronze LEAF (Laboratory Efficiency Assessment Framework) level award, which is a sector-wide framework containing a set of criteria aimed at improving the sustainability and efficiency of research and teaching laboratory spaces. Changes such as recycling materials from lab spaces and reducing energy use through switching off equipment when not in use have been implemented plus a tracking system for common consumables for the SMI Hub laboratories has been designed so that these items can be bulk ordered when required which in turn reduces delivery emissions.

3.28 Through further changes made throughout 2022, the team has subsequently achieved Gold LEAF level, announced in January 2023. The Project Director advised that the SMI Hub labs are the first in the University to achieve this level, and the project team has been sharing best practice in regard to environmental sustainability in labs to assist in achieving a LEAF accreditation within the Henry Royce Institute and the rest of the University as well as start-ups and spinouts.

Equal opportunities, non-discrimination and equality between men and women

3.29 In regard to SME engagement, the SMI Hub monitors and records equality and diversity to try to ensure support provided reflects the diversity of applicants. The Business Engagement team has also worked with the Communications Manager to develop a strategy to promote awareness of engagement opportunities amongst underrepresented groups via specialist networks such as 'Women Leading in Business' and 'Skills for Growth'.

3.30 In terms of the project staffing, all SMI Hub staff are required to complete compulsory UoM Equality, Diversity & Inclusion (EDI) training. Any SMI Hub staff involved in recruitment and selection has completed additional 'Diversity in The Workplace' and 'Unconscious Bias' training, in line with UoM EDI policies. The SMI Hub's interview questions about equality and diversity for recruitment have been adopted across the Faculty of Science and Engineering.

3.31 As of February 2023, two-thirds of the SMI Hub staff are female, compared to 51% across the UoM staff as a whole¹³ and 43% of full-time researchers in the SMI Hub laboratories are female consistent with the gender balance of academic staff within the University (43.5%).

¹³ [Equality, diversity and inclusion | The University of Manchester](#)

4 The effectiveness of project delivery and management

Project delivery

The project delivery team

4.1 The project delivery team currently comprises 18 staff members. This includes 11 staff members who work on the project full time, and 7 staff members who work part time on the project. The equivalent of 14.5 full time equivalent (FTE) posts are funded by the project.

4.2 The team is currently larger than that set out in the original Grant Funding Agreement, which suggested a team of 15 (10 FTEs). This is partly a result of the initial significant delays to recruitment, caused by Covid-19, which resulted in an underspend in staffing. In addition, salary costs were lower than forecast. Together this has enabled additional staff to be recruited to deliver the project at the same scale (from a revenue activity perspective) but within a compressed timescale.

4.3 The composition of the team has also changed, with staff turnover and promotions. The team has grown during the project delivery period in line with recruitment activities and in response to business needs and support requirements.

Table 4.1: Final SMI Hub project team

Role	Number of posts
Project Director	1
Project Manager	1
Business Development Manager	1
Industrial Liaison Officer	2
Business Engagement Coordinator	1
Senior Experimental Officer	1
Experimental Officer	1
Technician	1
Research Fellow	2
Research Associate	1
Project Administrator	1
Communications Officer	1
Management Accountant	1
Finance Assistant	1
Research and Facilities Manager	1
Technical Services Manager	1
Total posts	18

Collaborative and integrated team working

4.4 While team members have distinct job titles, consultations across the delivery team and stakeholders revealed a collaborative and integrated approach to working had been adopted across the team, with flexibility in terms of responsibilities which is responsive to the needs of the beneficiaries and team.

4.5 The Project Director has sought to “*flatten the structure*” and encourage the team to “*be inquisitive*” about the different project functions and work together closely. An integrated relationship has been established between the non-technical and technical staff who are working closely together on the business engagement and technical advice. It was noted that this differs from the usual approach taken to working with businesses within the University.

“There isn’t any support offer like ours – we blur lines between different functions” – Project Team Member

“We are more fluid in roles and do not have set responsibilities” – Project Team Member

4.6 The team were positive about this way of working and suggested it has supported staff across the project to gain an appreciation of the business engagement function and technical knowledge/capabilities around plastics, advanced materials and sustainability. This has helped members of the team to speak confidently about the support offer and articulate the technical details.

4.7 It was noted that this has also created an environment where the team feel valued and have “greater ownership” over the project.

“each team member feels valued which is very important” – Project Team Member

4.8 The business engagement team, who are typically the first point of contact to the project for beneficiaries, remain involved throughout the beneficiary journey, working together with the technical/research team on project scoping and advice, as well as ensuring the support progresses “in line with priorities and based on needs of business”. As noted by the team, the business engagement team has provided a “translator role to help communicate between academics and businesses and make sure the language is right in the outputs we provide”. This is strength of the project, as noted by beneficiaries:

“.. the way they translate the academic knowledge into something useful for the real world is not something everywhere is good at. They give you incredibly deep knowledge on materials in a way that isn’t chemistry jargon, instead having it in a way that we can incorporate.... Something, which from my experience, is very specific to the SMI Hub” – Beneficiary

“[the greatest strength of the project is]...very talented scientists who are able to take a broad question from a business who are not themselves academic, and say ‘this is the number of ways we can approach the problem’. Delivering a well evidenced, tested response which is relevant from the business and not stuck in lab talk.” – Beneficiary

“The network and bridge it [SMI Hub] provides between deep knowledge and expertise and bringing that into the real world and connecting it to businesses.” – Beneficiary

4.9 The research team has been involved on the business engagement side by providing input on which sectors or types of businesses to target.

4.10 Overall, this approach appears to have been successful and it is evident that the team has worked well together, a particular strength of the project. The Project Director suggested that this way of working has since been adopted by others within the University.

“This way of working has meant that the early conversations the businesses have with the Business Engagement team become much more powerful which allows businesses to accelerate through support and allows projects to move fluidly” – Project Team Member

A committed and purpose driven team

4.11 Discussions across the team and stakeholders highlight how the project staff are committed and “purpose driven” with a shared ethos and agreed set of principles around meeting the needs of businesses and driving sustainability. This has supported consistent messaging with beneficiaries and effective team working.

“The team is purpose driven...we all feel strongly about what we are doing and why and working towards similar goal in a really collaborative way” – Project Team Member

“The team has worked well together” – Project Team Member

“Can’t undersell how well the team has worked together” – Project Team Member

“sustainability is our key focus and the core of our ethos and decision making” – Project Team Member

4.12 The commitment and knowledge of the team was also noted by beneficiaries, who recognised the value in the knowledge, expertise and support offered by the researchers.

“access to specialists has been invaluable and also their desire to make things better and listen to businesses has been very much appreciated.” – Beneficiary

“...the quality of input and researchers, the quality and depth of their output, in particular the sessions and workshops was excellent and above what I have seen elsewhere, turning the abstract into concrete... the energy for engagement, we were able to form quite a strong connection.” – Beneficiary

“... he found the right people for the project. It was really powerful that he could find the right expertise for the particular project, we would have struggled otherwise.” – Beneficiary

“... they are clearly not just trying to work with anyone. They are keen to develop things for the long term despite the fact the ERDF is running out. They genuinely seem to think there is potential and want to work together.” – Beneficiary

“[The most valuable feature of the support was the] access to incredibly specialised expertise and knowledge and the networks it has, they have been incredibly helpful.” – Beneficiary

Project management and governance

Regular meeting cycles

4.13 ‘Project Strategy’ Team meetings involving every project team member have been held fortnightly throughout the duration of the project. This has provided the opportunity for updates on project progress around: expenditure and outputs, recruitment, finance, team resource and the business engagement strategy. Progress with individual projects with beneficiaries is also discussed. This forum has also allowed project risks to be raised and suitable actions to be discussed. The Project Manager commented on how proactive the team have been in identifying risks and solutions.

“the team are really proactive in knowing where challenges are and managing risks and developing strategies to address these”

4.14 For the first 18 months of the project, fortnightly ‘Operations’ meetings also took place involving the Project Manager, Business Development Manager, Research and Facilities Manager, Technical Services Manager and the Management Accountant to discuss progress, raise any issues or project risks, and ensure processes were being embedded within team. Once the labs were complete and financial processes were in place, the frequency of these meetings reduced to as and when they were needed.

Maintaining project records

4.15 An asset register has been developed and maintained listing all equipment purchased throughout the project to support the audit trail for the capital expenditure.

4.16 On the revenue side, a project Customer Relationship Management (CRM) system has been set up by customising the existing Royce CRM system to fit the project’s needs. The system has allowed the team to track business engagements including business details, time spent working with the

beneficiary and outputs, both those realised to date and potential outputs. While the CRM system was available from the start of the business engagement activities commencing, it took around a year for the team to modify the CRM system to best fit the needs of the project. By the summer of 2021 the system was fully functional and user friendly. The team suggest the system is fit for purpose: *“it has been effective and does what it needs to do”*.

4.17 Quarterly ERDF project progress reports to support claims are submitted by the Project Manager.

Project governance

4.18 A nine-person Project Board has been established. The Board is comprised of the SMI Hub Director and Project Manager, five senior staff within Henry Royce Institute – including the CEO who chairs the Board – and two external members, one from the Universities Economic Development Unit Ltd and the other from Innovate UK KTN.

4.19 The SMI Hub Board meet every six weeks to discuss the project’s progress, this includes consideration of how the project is performing against contracted outputs and finances, managing and mitigating risks, and ensuring the project is compliant with ERDF rules. The meeting includes a review of the project’s audit trail and advice around marketing to support business engagement. At each meeting, minutes are kept and a set of actions are identified. This has helped to ensure that there is oversight of the activities being delivered.

4.20 The Chair of the Board commented that *“our role was relatively light touch – the project has gone very well”*.

Financial management

4.21 Thorough and transparent financial structures and processes have been put in place to effectively monitor and evidence transactions. This has ensured appropriate audit trails are established in line with ERDF rules.

4.22 Oracle Finances system has been used, with dedicated project drive set up to save all documentation (with backup files). Checklists have been created to ensure the required evidence is collected and documentation is saved on file, in order to comply with banking and procurement rules.

4.23 Securing the necessary information in a format which is compliant and auditable has required considerable liaison with various internal departments within the University, including the Treasury, Accounts Payable and Payroll teams. The Management Accountant for the project noted that although this was initially a challenge given the large number of requests, it was overcome through establishing effective lines of communication with the departments.

4.24 Effective governance structures are in place to support the compliant financial management of the project. Financial reports are prepared for each Board meeting, which highlight project budget to date and forecast, any areas of overspend or underspend and any challenges or risks. The Board reviews and provides feedback and advice, which is then implemented by the finance team.

“we get appropriate feedback from board and we implement what they advise us to do...this has been effective...we have a high level of transparency” – Project Finance Assistant

4.25 The Chair of the Board commented on the financial management of the project: *“I am particularly pleased with financial governance on the project, it has been quite complex but it has all been kept in line”*

A well-managed project

4.26 Throughout the consultations, the management and governance of the project has been highly commended. The structures that have been put in place are seen as being effective, and the valuable impact and management skills of those who have been employed by the project are also recognised. Those consulted consistently commented upon being aware of the project's activities and progress and working collectively to identify risks early and to overcome any challenges as they have arisen.

“The systems we have in place allow us to deliver projects at speed – if we didn’t have processes in place it would be harder to allocate resource effectively and target right businesses and delivery best support.” – Project Team Member

“the team have been very professional. Everything is documented rigorously and they have questioned things appropriately. The papers are always on time and comprehensive. The governance of the project is very good.” – Project Board Member

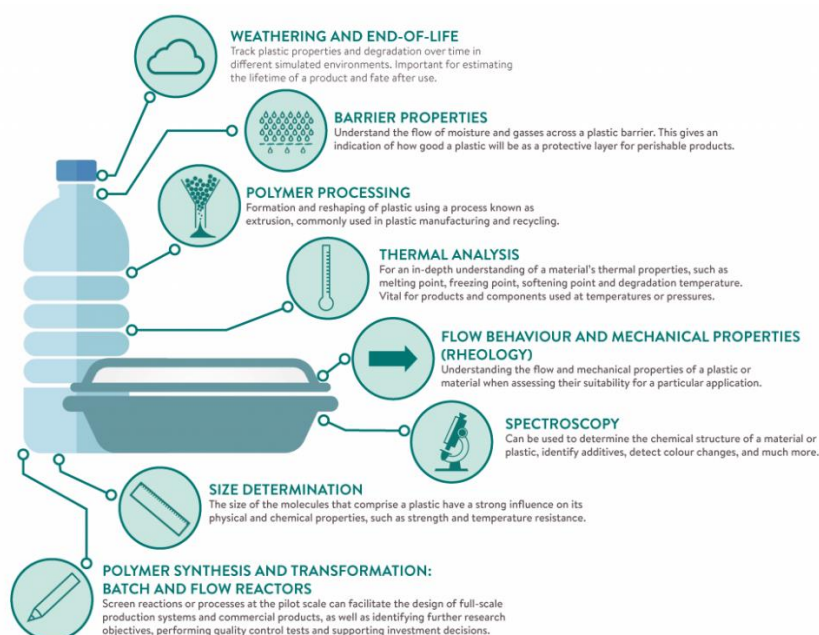
The capital investment

4.27 The capital elements of the project comprise investment in the creation of new laboratory and office space on the sixth floor of the Henry Royce Institute (which was an empty shell), alongside investment in specialist equipment. The space was designed to house the individuals employed through the revenue funded SMI Hub support project and provide supported SMEs with access to specialist facilities, as well as hosting four (soon to be five¹⁴) research groups from the UoM who are involved in delivering the support provided to SMEs.

4.28 The space includes three linking laboratories that “*speak to each other*” providing an analytical lab, a synthesis lab and an end of life lab, covering all stages of the product life cycle, to drive innovation and test and validate existing and new materials, products and processes. SMEs and researchers can work in an individual laboratory space or progress through the three spaces depending on the requirements of the project. The 15 pieces of equipment purchased through the project, as of the end of December 2022, enable a wide range of capabilities and tests within the laboratories to support the characterisation of materials as outlined in figure 4.1.

Figure 4.1: SMI Hub Equipment Capabilities

¹⁴ An additional research group is due to join the SMI Hub at Easter 2023.



4.29 The connectivity and flow of the facility has been a key consideration in the overall design of the SMI Hub. This included adopting a different orientation to the other floors in the Henry Royce Institute and erecting viewing panels between the office, meeting and laboratory spaces, as well as between the three laboratories, to showcase the wide range of facilities available and activities taking place, enhance collaboration and maximise safety. The overall layout of the space was also carefully considered during the design phase, ensuring that: there was sufficient flexibility in the office space; equipment was well placed to support servicing, ventilation, cooling and ongoing maintenance; and the space could be adapted in the future, if required.

Managing external challenges during delivery

4.30 As set out in Sections 1 and 3, the project start date meant that the procurement and delivery of the capital works coincided with the Covid-19 Pandemic and the strict restrictions that were placed on travel and working conditions. This delayed the completion and opening of the SMI Hub facility by approximately six weeks, although this delay is quite minimal and considered an achievement given the level of disruption and the experiences of projects delivered elsewhere. The tenacity of the project team in this regard was noted by one of the Board Members who commented *“the team just got on it with it, they were very dynamic and versatile and dealt with any challenges well.”*

4.31 In addition, the project also experienced significant delays in receiving pieces of equipment due to the disruptions to imports caused by changes in trading conditions and legislation following Brexit. This meant that two pieces of equipment, including the composter, were held in customs for extended periods of time and there were delays to their installation and access by researchers and SMEs.

4.32 Each of these challenges was well managed by the project team who worked hard to minimise delays and any disruptions caused to the delivery of the support offer. This included thorough planning and effective execution of the fit out and subsequent team relocation to the facility and the SME support project initially being delivered from other premises. While the latter severely restricted the offer to SMEs initially, it did provide time for the business engagement team to build momentum contacting businesses and for some of the earlier advice outputs to progress.

A uniquely equipped and fit for purpose facility

4.33 Both the delivery team and stakeholders are very proud and satisfied with the capital fit out and the resulting facility which is seen as being fit for purpose and, through the delivery of the revenue

support project, is proving to meet business needs. The co-location of the equipment purchased through the project, alongside the laboratory and office space provide a uniquely equipped space that is “a *highly serviced, highly specialised space*” for the SMI Hub to deliver innovation across the Advice, Assess and Innovate strands. The only gap that has been identified in the capabilities available at the SMI Hub is mechanical testing, which was not included in the original project scope and will be filled by the additional research team to soon be based at the SMI Hub.

4.34 The use of the space and equipment is determined by business need, with most equipment operating at capacity. Given the nature of the R&D being undertaken at the SMI Hub, some of the equipment is dedicated to certain tasks for months (for example, to weather materials). While this does have implications for when activities with SMEs can be scheduled and undertaken, the delivery team have been transparent about timings with beneficiaries and have been able to work flexibly to combine activities where possible (for example, adding components to weathering activities). To date, this has not caused any issues for the delivery of support.

4.35 While it is recognised that there are elements of the support service (especially those relating to the advice strand) that could be delivered in another space and do not necessarily require a dedicated facility, the equipment and space is crucial to the assess and innovate strands, and enables a holistic offer to be presented to SMEs. The co-location of equipment also ensures that SMEs have access to an efficient and professional innovation service, rather than having to visit disparate locations across the University to access different equipment – which was the case when the revenue support project initially launched prior to the capital elements of the SMI Hub opening. During this period, the range of equipment and capabilities was also more limited and required additional administration to book times for use.

4.36 The feedback from beneficiaries with regards to the facility, equipment and capabilities is also positive, evidencing the role these aspects of the SMI Hub play in meeting business needs.

“There are commercial labs that do testing, but they are narrower in focus and equipment. We were able to do more extensive answers... We would have been able to do testing, but it would have been harder to get a result.” – Beneficiary

*“They had the exact skills that were required and the exact equipment, GPC and NMR”. – Beneficiary
(See Case Study 2)*

“very well equipped lab”. – Beneficiary

“They gave me the best available technology”. – Beneficiary

“[we needed] their expertise and a couple bits of their equipment”. – Beneficiary

A business facing facility

4.37 The role that the SMI Hub plays in “opening the door of the University and the Henry Royce Institute to businesses” has been highlighted as a major strength of the SMI Hub through the consultations. The SMI Hub operates as a “one stop shop for polymers” which is directly targeted at SMEs and this has enabled a proactive approach to business engagement in the plastics innovation agenda – an underlying principle for the project. This is recognised to differ from the approach used elsewhere at some of the University’s existing assets which have typically worked with SMEs in a largely reactive capacity with limited direct focus on a major theme.

4.38 In addition to raising awareness, adoption and innovation in sustainable plastics across the GM business base, the project is also influencing the research being undertaken by the University and supporting wider ambitions to drive collaborations and knowledge exchange between academics and local industry.

Protecting the facility for the future

4.39 The capital facilities at the SMI Hub form an important part of the Henry Royce Institute's assets. The workspace, laboratories and equipment is all regularly serviced and maintained by the Capital Estates Team, to ensure that their lifetime can be maximised. A strong working relationship between the Capital Estates Team and project management staff from the outset of the development of the SMI Hub has meant that maintenance has been a key and routine consideration and is scheduled well in advance to minimise any disruption and down time at the facility. The University is committed to maintaining this arrangement beyond the ERDF project's lifetime.

The support offer

The delivery model

4.40 The revenue funded support provided at the SMI Hub is based upon the SME Workflow set out in the project application (see figure 1.1. in Section 1). This is based around the three strands: advice, assess and innovate, which are designed to 'funnel' businesses through the support strands following their initial engagement with the project, enabling a sub-set of businesses to engage in and collaborate on the more intensive assess and innovate strands following initial support through the advice strand.

4.41 There is no set format or output for the support delivered through each strand, instead this is determined by the beneficiary's needs and requirements. Typically:

- The '**Advice**' strand involves consulting with businesses for up to 12 hours via workshops or targeted one to one interventions.
- The '**Assess**' strand involves working with companies for up to three months to carry out materials assessments. This usually involves desk based research and/or laboratory based testing.
- The '**Innovate**' strand focuses on longer term collaboration with companies –usually for between four and six months, although projects can be longer. This work is largely based in the laboratories and supports the initial scientific foundations to enable new technologies to reach higher Technology Readiness Levels.

4.42 The offer through each of the strands, covers all stages of the product life cycle (from manufacture to use and disposal of plastics). The focus is determined by business need and is typically concentrated on one aspect of the lifecycle.

4.43 The delivery model and approaches have remained largely unchanged throughout the delivery period. The two exceptions are:

- **Point of Entry:** The delivery team are able to take businesses straight to the assess and innovate strands if appropriate. This tends to be the exception but it is possible to bypass the advice strand if this is not required.
- **Adopting a cohort approach:** (predominately for the advice strand) with support delivered on a one to many basis through workshops, alongside the provision of the intended one to one support.

4.44 These changes are in the main reflective of need and demand and provide evidence of the team working flexibly and efficiently to best deliver the support required by SMEs. The development of the cohort approach has also helped the team to overcome anticipated challenges with regards to the achievement of output targets (and in particular the number of business assists delivered) linked to delays at the outset of the project and initial difficulties in engaging SMEs (as detailed in the section below).

4.45 While this does mean that the ERDF targets have been a driver of activity at times, it highlights the foresight and agility of the project delivery team which has been commended by senior stakeholders. The workshop approach has also proved to be beneficial beyond supporting the delivery of the assist outputs, by:

- **Enabling the project to support a broader range of sectors:** this includes businesses operating in the retail and hospitality sector, which could not be supported on a one to one basis due to ERDF eligibility restrictions.
- **Efficiently delivering advice that can benefit multiple businesses:** by delivering the advice once through a workshop rather than on multiple occasions through a series of one to one assists. This includes the delivery of a workshop – *It's Not Easy Being Green* - which included a section dedicated to policy covering EPR and Plastic Packaging Tax and their implications for SMEs.
- **Providing opportunities to identify businesses for longer term assists:** the team have been able to identify businesses that they can follow up to engage in one to one support through the assess and innovate strands.
- **Disseminate the intelligence and resources generated through the SMI Hub:** most recently, the team have developed an all round sustainability workshop that is targeted at businesses across the economy, which brings together key points of learning and advice relating to the plastics innovation agenda that can benefit others. This “fast-tracking” of information from the University to the SME base is helping to maximise the knowledge transfer activities of the SMI Hub.

4.46 Overall, the support offer and delivery model has been well received by stakeholders and beneficiaries (see beneficiary perspectives below) and is viewed as being effective in supporting the delivery of the project objectives.

Support duration and intensity

4.47 As set out above, the support duration and intensity varies by strand of support ranging from 12 hours through the advice strand to up to (or occasionally beyond) six months through the innovate strand. The offer of the three project strands and the varying intensities contribute towards the SMI Hub being able to offer support across a wide range of sustainable plastic issues and cover the full spectrum of activities from the adoption of existing zero waste solutions to the design of new sustainable advanced material systems/processes for regional and international markets. This is another factor, which combines with the capital facilities and expertise available at the SMI Hub to create a “one stop shop”.

4.48 As is often the case with ERDF support projects, there are times when the team have worked with businesses for more than 12 hours on a C1 assist. This additional support has been targeted at those businesses who show potential to progress to the assess and innovate strands, and helps to ensure that sufficient groundwork has been undertaken to underpin the more intensive phases of activities.

4.49 The delivery team quickly became aware of the need to distinguish between those businesses whose needs could be met through a C1 assist and those who had the potential to engage in longer term collaborations to ensure that their time was efficiently invested and appropriately targeted. This led to the creation of internal C1- and C1+ business assist outputs being created, with the latter capturing those beneficiaries that were likely to progress to assess, and potentially innovate. This has proved to be an effective approach to identifying opportunities for C26, C28 and C29 assists.

Providing honest and evidence-based advice and support

4.50 The project has offered honest advice and support, providing beneficiaries with the evidence to make informed choices which avoid unintended consequences. The team is committed to help prevent 'greenwashing' by businesses following support.

"Transparency and authenticity are essential" – Project Team Member

"We work with organisations to understand unintended consequences of innovation – to support businesses to launch new things with confidence with right words behind to evidence what they are trying to say" - Project Team Member

4.51 There have been a limited number of instances, as noted by the team, where the team have not supported beneficiaries with their ask. This has been in cases where the project team disagree that the product/process the beneficiary wishes to test and/or implement will be sustainable. In these instances, the project team has provided advice and evidence to explain their reasoning.

"There was an expectation from some [beneficiaries] that we would just say something was sustainable even if it wasn't true. If we did we would destroy our reputation... it does not fit with our ethos" – Project Team Member

"Some people come to us and want big package of innovation work which is bad for planet – instead we will do a smaller piece of work which explains why we think it is bad for planet – this reduces risks to the business of being accused of greenwashing and regulatory risks" – Project Team Member

4.52 This is recognised as a strength of the project, with evidence to suggest the honesty and rigour is also appreciated by beneficiaries.

"[The most valuable feature was] The challenge and academic rigor that they bring to it. The first brief was vague and specific, they were quite keen to explain that they don't start with such a fixed viewpoint for what a project is about. As a result of that, I went away from that and have since radically rethought the project for the better". – Beneficiary

Project profile

Beneficiary engagement

4.53 The beneficiary engagement approach has evolved throughout the duration of the project. Given that sustainable plastics is a widespread issue that cuts across multiple sectors, the project has sought to engage a diverse range of businesses, including many businesses who do not have prior experience of engaging with universities on innovation. There were also initial difficulties in engaging SMEs, caused in part by Covid-19 restrictions which limited in-person events taking place for much of 2020 and 2021. This has resulted in the team trying various routes to engage beneficiaries, including:

- Undertaking a **mapping exercise** to identify potential beneficiaries, target businesses and networks.
- **Direct approaches** to organisations (via email, phone, LinkedIn)
- Tapping into **existing networks** both across GM and further afield (e.g. Business Growth Hub, GM Chamber of Commerce)
- **Attending and speaking at a wide range of events.** This has included both local authority and GM events (for example *Greater Manchester Green Summit, Climate Action Business Forum in Stockport, Manchester Polymer Group, Salford Innovation Forum, Wythenshawe Business Gateway, Green Breakfast Networking in Rochdale, Growing opportunities for Green Enterprise*

in Bolton) in addition to national or international events (which has included *Global Research & Innovation in Plastics Sustainability*, *UK Plastics Pact Annual Summit*, *UK Advanced Materials Workshop*, *BPF Sustainability Conference*, *World Plastics Summit*).

- **Hosting sustainability events and workshops**
- **Paid advertisement** on social media (LinkedIn, Twitter, Instagram and Facebook) and a local newspaper (M.E.N)
- Employing an **external telemarketing agency** who directly contacted around 100 SMEs
- Internal UoM **referrals** (including from the Graphene Engineering Innovation Centre (GEIC))

4.54 The business engagement team have also taken a proactive approach to target certain sectors, working closely with the research team to identify challenges facing certain sectors/groups of businesses. This has led to targeted one to many interventions, including for example, breweries, printers and cafés. This approach has been successful, given the offer seeks to directly respond to challenges which are unique to the sector/ types of business. As one stakeholder noted, it can be challenging engaging businesses with a general offer of support, and *“there needs to be those hooks to show how we can help them [the businesses] specifically – this is where the targeting of groups has worked well”*.

4.55 The business engagement team suggested the most effective routes have been targeted direct engagement and paid LinkedIn posts. As well as reaching the required scale of businesses, approaches are seen to be effective in reaching the right beneficiaries with the delivery team commenting that they rarely turn businesses away following the initial point of contact/needs assessment. There are instances when they may signpost businesses to other services if the request is out of scope due to the nature of support needs and/or eligibility criteria. This includes referring SMEs to other parts of the Henry Royce Institute if their needs are more aligned with work undertaken elsewhere.

4.56 Once beneficiaries are engaged, the team highlighted challenges with the level of paperwork to sign up to the project, as per ERDF requirements, being burdensome and complicated for SMEs and acting as a barrier to securing SME involvement. The ERDF paperwork requirements can also result in issues further down the line in the support journey when trying to evidence state aid and secure sign off at the end of support from beneficiaries.

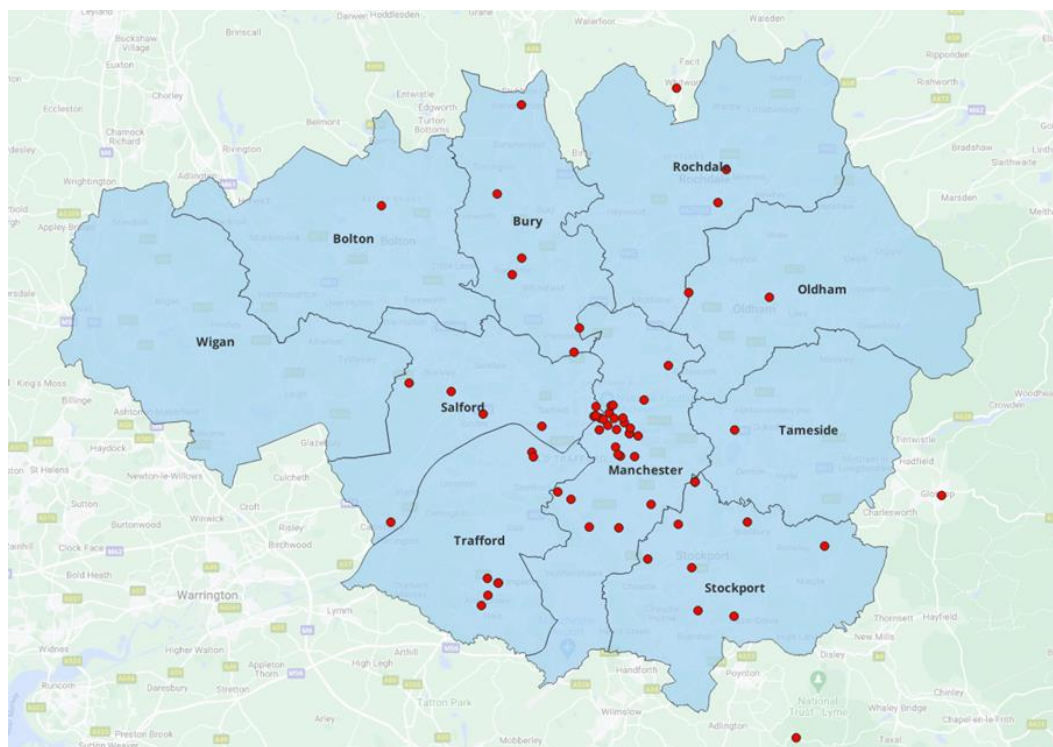
Beneficiary profile

4.57 At the time of reporting, the SMI Hub had claimed 63 C1 assists with SMEs, with project records (including assists yet to be claimed) showing 68 SMEs have completed assists. A range of SMEs have been supported with analysis of the latest beneficiary business base showing:

- Just under a fifth (15%) are start-up businesses or established since the support started in December 2020 and 34% have been operating for at least the past 10 years.
- The majority (59%) are micro businesses with less than 10 employees, 32% are small businesses and 9% are medium-sized enterprises.
- Three-fifths (60%) of beneficiaries operate in the Other Service sector (which includes retail and hospitality), with a further 32% operating in the Manufacturing sector. The remaining beneficiaries operate in Construction (3%), Financial & Insurance (1%), Professional, Scientific and Technical (1%), and Arts, Entertainment & Recreation (1%).
- Just under two-fifths of the assisted businesses are based in Manchester (37%), with a further (51%) spread across all other local authorities in GM, aside from Wigan. Three beneficiaries (4%) whose head offices are located just outside the GM region (in Cheshire East, High Peak

and Rossendale) have been supported. There was also involvement with a limited number of businesses whose head offices are based further afield, in both the South East (6%) and Yorkshire (1%), suggesting that the project has secured a broad reach.

Figure 4.2: Location of SMI Hub beneficiaries



4.58 The focus of the project on targeting businesses within GM has largely been determined by the ERDF eligibility criteria, with views across the project team and stakeholders that this is one of the biggest constraints on project delivery, given that the offer would be suitable to business across the country. However, as one stakeholder commented, the geographical focus has also meant that the project has really had to focus in on understanding and navigating challenges for the local area, which may help to maximise its impact within GM.

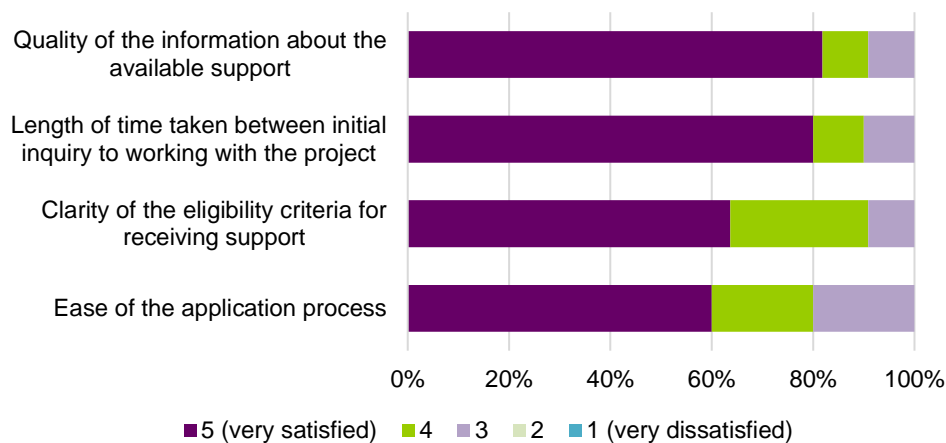
Beneficiary perspectives

Reasons for engagement

4.59 Almost all (ten of the eleven) beneficiaries in the sample engaged with the project to find out more about sustainable solutions for plastics use and end of life and how they can help their business. Around half of beneficiaries surveyed were also interested in the development, testing and evaluation of an idea, as well as progressing new products, processes and services to the market. These services are not typically easily accessible to SMEs, as one beneficiary reported: *“the fact we were able to access something like this, as a small business at no cost to us was excellent”*.

Experiences of engaging with the project

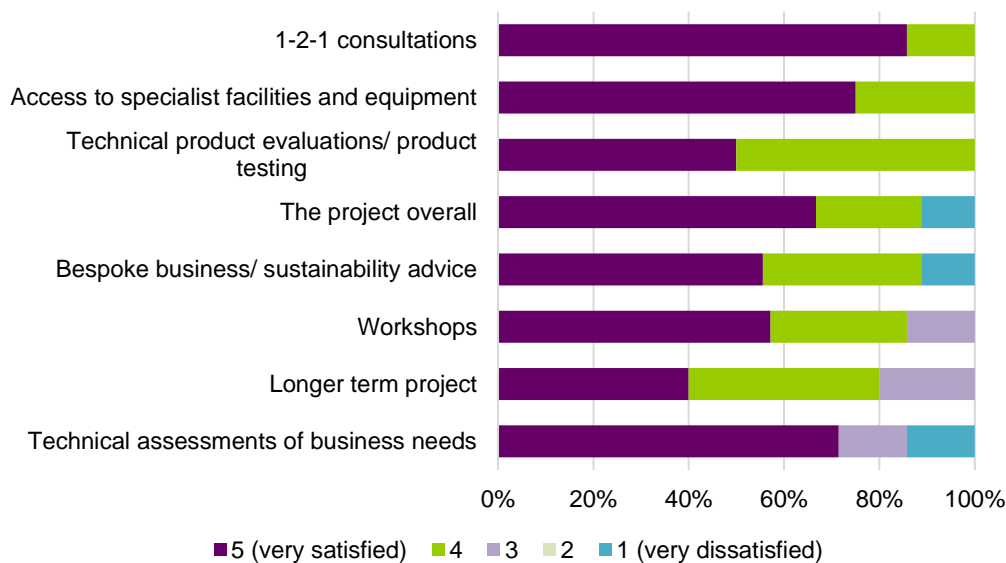
4.60 Overall, the majority of the beneficiaries rated their experience of engaging with the project positively, and none of them rated their experience negatively. Ten out of eleven beneficiaries reported being satisfied or very satisfied with the quality of the information provided about the support, the length of time between the initial inquiry to working with the project and the clarity of the eligibility criteria for receiving support.

Chart 4.1: Beneficiary experiences engaging with the project

Source: ekosgen survey of beneficiaries, 2023, n=11

Experience of support

4.61 Most of the beneficiaries who rated the overall support they received through SMI Hub, were either satisfied or very satisfied. In particular, 1-2-1 consultations, accessing specialist facilities and equipment, and technical product evaluations and testing were positive experiences for all the beneficiaries.

Chart 4.2: Beneficiary experiences of support

Source: ekosgen survey of beneficiaries, 2023, n=11

4.62 Of the beneficiaries surveyed and consulted, the majority spoke positively of their experience with the SMI Hub. Business expectations were overreached through the provision of a clearly defined support offer and a thoughtful team.

"The whole experience has been pretty great". – Beneficiary

"Very satisfied on a few different levels". – Beneficiary

"It was absolutely brilliant, couldn't praise them enough" – Beneficiary

"[It was] Good, certainly they provided me with the info to make decisions on availability of new products that are being developed, another reason why the SMI Hub was important". – Beneficiary

"[The most valuable feature was] The challenge and academic rigor that they bring to it. The first brief was vague and specific, they were quite keen to explain that they don't start with such a fixed viewpoint for what a project is about. As a result of that, I went away from that and have since radically rethought the project for the better". – Beneficiary

"They knew how to drive it, was all good. The dual thing of expertise and equipment" – Beneficiary

"Sometimes you worry that things can be slow and bureaucratic, they were keen to push ahead and get results" – Beneficiary

4.63 In particular, the beneficiaries surveyed and consulted were very positive about the SMI Hub team.

"The team we worked with were great to work with, understood our potential needs and what we wanted to achieve. They were very professional and thorough with their work and the feedback we got at the end was very valuable information that we were able to use to form the outcome of how we move forward with any potential choices for our business" – Beneficiary

"[The greatest strength of the project is the] People who are engaged with the project and delivering the content. University and SME's working together to make change happen in our City and on a global scale" – Beneficiary

"SMI Hub were always there for us, during the project and the communication post-project is prompt and friendly" – Beneficiary

"Access to specialists has been invaluable and also their desire to make things better and listen to businesses has been very much appreciated." – Beneficiary

4.64 The beneficiaries generally had little, if any, feedback on how the SMI Hub could be improved. One beneficiary noted that it would be helpful to receive advice on how they could access further support through the project, and whether there would be any funding to support this or if they could cover the costs. This suggests an appetite for continued innovation.

Overarching reflections

The added value of support

4.65 The combination of capital and revenue investment in the SMI Hub, has led to the creation of a state of the art, flagship facility and holistic support offer dedicated to engaging start-ups and SMEs in GM in the sustainable plastics agenda – an offer that is not available elsewhere within GM or in other regions across England. This enhances Manchester's advanced materials offer and complements and adds to the wider offer at the Henry Royce Institute, with effort made to ensure that services complement each other and do not duplicate activities. At the same time, the SMI Hub is also making an important contribution to key policy areas including sustainability and zero waste.

4.66 The capital and revenue elements of the project are dependent on each other, with the facility and equipment required to deliver the assess and innovate strands of the business support project in particular, while the free advice and technical expertise available through the business support project has been required to attract and engage beneficiaries in the SMI Hub, deliver advice and help conduct assessment and innovation activities. It would not have been possible to establish this facility and support offer without ERDF funding.

4.67 Other key aspects of the project's added value, and indeed the public investment made, include:

- **Bringing together specialist and technical expertise:** the recruitment of staff through the revenue support project, and the co-location of research teams at the capital facility, has led to the establishment of a strong delivery team with a broad range of knowledge and capabilities relating to sustainable materials, plastics and innovation. As a stakeholder commented *“the [SMI Hub] team are one of the most valuable resources that has been established through the project – this resource and expertise have been well deployed. What happens next for the team [beyond ERDF] is key to the project’s legacy”*.
- **Developing a successful delivery model:** that is capable of supporting a wide range of businesses (recognising how widespread issues around sustainable materials and plastics are) and that could also be rolled out to businesses beyond the GM geography in the future – either through the SMI Hub, or in other projects through the replication of facilities and/or the delivery model. As one stakeholder commented *“the model and the monitoring processes of the SMI Hub are really good ...they could be used by other projects and organisations”*.
- **Adopting a proactive approach to business engagement:** The SMI Hub was designed to be outward facing, with SME engagement at its heart. This has helped to demonstrate the benefits that proactive business engagement can generate in terms of knowledge exchange and the commercialisation of research, with techniques that can be adopted by more traditionally reactive departments across the University to help deliver the institute’s vision and strategic plan.
- **Providing SME accessible facilities and support services:** For many SMEs, accessing the expertise and equipment available within universities is unobtainable due to a lack of information and challenges to engaging in innovation – as highlighted by the market failures and rationale to intervene highlighted in the project’s application. The project has effectively overcome these barriers and demonstrated to a number of SMEs that there is scope to work in partnership and potentially continue relationships beyond the ERDF project.
- **Becoming an exemplar of sustainability:** the way in which the laboratory space at the SMI Hub is operated has led to the delivery team being the first in the Faculty of Science & Engineering at the University to secure a Gold LEAF award – a sector-wide assessment that assesses the sustainability and efficiency of research and teaching laboratory spaces (as set out in further detail in section 3). This demonstrates the team’s broader commitment to sustainability, an important shared value that helps drives the quality of the support delivered by the team, and which is now providing an opportunity to transfer knowledge and best practice in regard to environmental sustainability within the Henry Royce Institute and the rest of the University, as well as to start-ups and spinouts.

The need for continued support

4.68 The SMI Hub has become well established within a relatively short operational period. The University remain committed to operating the SMI Hub as a business facing facility with a continued focus on sustainable innovation in plastics. There is widespread agreement that there is a continued need and demand for a dedicated business support service, which would require additional public funding. Evidence of the demand includes known beneficiaries that the project could engage and collaborate with if the revenue funded project were to continue beyond the period of ERDF funding. For example, there are recent instances when the team have not been able to pursue beneficiary approaches as there is insufficient time and funding remaining under the existing contract to deliver the support needed to meet business needs.

4.69 The issue of sustainability, which is a key driver for the SMI Hub, also continues to increase in importance, and will be an important priority for the foreseeable future. Similarly, the need to increase businesses innovation remains at the core of local and national policy.

4.70 Other factors which contribute to the case for further investment in the support offer include:

- The momentum that has been built during a reasonably short operational period. This is underpinned by the establishment of a highly specialist facility, a highly skilled and capable team and an effective delivery model. This resource, which is relatively new to the sub-region, should now be harnessed to maximise the impact and legacy of the ERDF funding and new capital asset, and to continue to deliver the University's strategic objectives.
- The project has a distinct role within the marketplace that could not be delivered by others, due to the need to provide access to specialist equipment and expertise that are not available elsewhere in the sub-region.
- The continuation of market failures, and the current economic downturn and crisis, which make it unlikely that start-ups and SMEs would be in a position to pay for the support.
- Evidence of the impact that the support is starting to have within the local business base, including the development of new products and processes. Continuation of the SMI Hub's support offer would provide an opportunity for longer term and boarder monitoring to capture the full benefits of support. See section 5 for further details.
- The potential to extend the support offer to businesses in other geographies, and further establish the UoM and Manchester's leadership in advanced materials and sustainability.

5 Project impacts and outcomes

5.1 There is evidence from the project monitoring information and through the beneficiary feedback gathered for the summative assessment that the SMI Hub is generating a range of impacts and outcomes for the start-ups and SMEs it has supported, including economic and environmental benefits. There are also a range of wider benefits which are generated for the University and the GM economy which were identified through the consultations. Each of the benefits and outcomes are set out thematically below.

Economic impact

5.2 While the number of new jobs created is typically a key measure of the impact generated by business support and innovation projects and is included in the project's outputs, it is worth noting that it is not the primary purpose of the project. The impact of the SMI Hub with regards to new employment and the associated output (GVA) is therefore limited.

5.3 By the end of December 2022, the SMI Hub had supported the creation of 1.0 full-time equivalent (FTE) job in assisted SMEs. By the time of project closure the team expect to have met the target of supporting the creation of 5.0 FTEs in assisted SMEs. Based on the average GVA per FTE in GM, converted to current prices, it is estimated that the 1.0 FTE achieved to date generates £0.07m GVA per annum. An anticipated 5.0 FTEs by project closure suggests that £0.37m of GVA will be generated annually. This represents the gross economic impact, Section 6 below considers additionality and presents the net economic impacts achieved to date and expected in the future.

Table 5.1: Gross Economic Impacts

Economic impact	Achieved to date at time of evaluation (end of Dec 2022 claim)	Expected at project closure (end of July 2023)
Employment increase in supported enterprises	1.0	5.0
Annual GVA	£73,000	£367,000

Source: Project management records and ekosgen calculations drawing on ONS BRES and Regional Accounts

5.4 While this impact is limited, it does not capture the wider range of economic benefits which are experienced by the beneficiaries with outputs focused on quantifying the scale of activity (e.g. number of businesses developing new products) rather than the associated impacts (e.g. increased turnover, profit, output). It also does not take account of the recognised lag between innovation support being delivered and the true impacts being evident, as well as the impacts of Covid-19 on project delivery and business ability to grow.

5.5 Looking at impacts both achieved to date and anticipated in the future, the majority of survey respondents (nine out of eleven) have or expect to **develop and improve new or existing products, processes or services**. All the beneficiaries who responded to the survey reported that their product/process/service idea is now closer to launch or implementation following project support. This suggests the SMI Hub will deliver on its key objective.

5.6 Just over half of survey respondents (six out of eleven) have or expect to save costs and support new start-ups, while just under half (five out of eleven) have or expect to increase or sustain employment levels, introduce new-to-firm products, processes or services, increase sales, turnover and profit and support a new spin-out suggesting further economic impacts will be achieved in the future.

Table 5.2: Economic impacts achieved to date or expected in the future

	Achieved to date	Expected in the future	Total
Improved existing business products/processes/services	18%	64%	82%
Developed new products/services/processes	18%	64%	82%
Generated cost savings	0%	55%	55%
Supported a new business start-up	9%	45%	55%
Introduced new-to-firm products products/processes/services	9%	36%	45%
Increased employment levels	9%	36%	45%
Sustained employment levels	9%	36%	45%
Increased sales/turnover	0%	45%	45%
Increased profit	0%	45%	45%
Supported a new spin out	0%	45%	45%

Source: ekosgen survey of beneficiaries, 2023, n=11

5.7 Most businesses surveyed stated that without the support from the SMI Hub they anticipate they would have achieved the expected impacts but on a smaller scale or at a later date. This aligns with stakeholder views that the SMI Hub is helping to accelerate innovation, and in particular the development of new products and services, by bringing together businesses with higher Technology Readiness Levels and academic expertise and providing funding that enables regular and concentrated interactions to take place.

“[It] Would have been a struggle to find something like that, commercial labs don’t provide that. The SMI Hub allowed smaller, focused bite-sized chunks – my understanding is that there aren’t (m)any similar routes for this. We would have been able to do testing, but it would have been harder to get a result.” – Beneficiary

“[Without the SMI Hub] We were at a loss. We were looking at consultants which would have cost us a fortune. Given the results, we wouldn’t have got as far as we did in such a short period of time... with such an honest appraisal”. – Beneficiary

“[Without them we] would have had to do the work in a less academic way... they gave me the best available technology”. – Beneficiary

Wider impacts and outcomes

Environmental impacts

5.8 The project seeks to support SMEs to adopt more sustainable practices and products, develop new sustainable products, and reduce the chances of inadvertent increases in their environmental footprint. The team has engaged a large number of businesses (as of December 2022 292 businesses had been engaged for at least one hour), providing advice around a wide range of sustainable plastic issues to a broad range of SMEs, including how to avoid unintended consequences at all stages of the product life cycle.

5.9 As the Project Director noted *“There have been a few organisations which have really economically benefited from our help – and many more that now have clear steer on how sustainability fits with their work”*.

5.10 Looking at impacts both achieved to date and anticipated in the future, the majority (nine out of eleven) have or expect to have increased their understanding of sustainable choices in the use of plastics and addressed particular sustainability challenges. A large share (eight out of eleven) have or expect to reduce their carbon footprint and develop products/processes/services that have an

environmental impact. This suggests the project will meet its key objective of supporting beneficiaries to achieve environmental impacts.

Table 5.3: Environmental impacts achieved to date or expected in the future

	Achieved to date	Expected in the future	Total
Increased understanding of sustainable choices in use of plastics and how they can help our business	73%	9%	82%
Addressed particular sustainability challenges	55%	27%	82%
Reduced carbon footprint	27%	45%	73%
Developed products/processes/services that have an environmental impact	18%	55%	73%

Source: ekosgen survey of beneficiaries, 2023, n=11

5.11 Consultations suggest the project is supporting businesses to develop new products, make more sustainable and better materials choices, encourage circular pathways and reduce the use of environmentally damaging products.

“[the biggest impact for our business was] challenging my own beliefs, misconceptions even, about plastics and their role in the future of society” – Beneficiary

“The study we undertook was all related to sustainable packaging for our products. The results were interesting in that whilst there are products available, they may not be the best solution for us which has then allowed us to focus on other methods to change our methods/processes and products and help reduce our carbon footprint.” – Beneficiary

[When asked about effect on innovation prior and after involvement with the SMI Hub], *“Big time, we have changed the way the industry makes claims on certain kinds of products. A paper based pouch, often claimed as plastic free, we showed they weren't plastic free entirely. We were able to bring an innovative product to market and have confidence in our claims, with ripple effects in the industry too”* – Beneficiary [See Case Study 1]

[When asked to explain how the project has supported environmental impacts] *“Innovation process adopted and team engagement in how to lower environmental impact”* - Beneficiary

“we have given people the tools to make better decisions” – Project Team Member

“A lot of what we do is preventative – making sure people don't go down wrong route and make the right choices” – Project Team Member

“[the project] cuts through the myths and provide objective advice on how to avoid unintended consequences” – Stakeholder

5.12 The SMI Hub team received an award for its ‘outstanding contribution to social innovation and environmental impact through enterprise’ at the UoM 2022 Faculty of Science and Engineering Better World Awards, as referenced in Section 3.

5.13 While the survey and consultations suggest the project is having a positive impact in reducing SMEs’ environmental impacts, which is at the core of the project rationale and support offer, the impacts are not easily measurable or attributable. The project team noted that the support is influencing scope 3 emissions, referring to the indirect emissions involved within company’s supply chains, which are difficult to measure and could not be quantified as part of the summative assessment.

5.14 As referenced earlier in the report, the team has also worked to achieve environmental sustainability in the laboratory space at the SMI Hub. This is evidenced by the achievement of a Gold

LEAF award – a sector-wide assessment that assesses the sustainability and efficiency of research and teaching laboratory spaces.

Wider benefits for beneficiaries

5.15 The survey with a sample of beneficiaries indicates that the project has helped to **increase their propensity to innovate**, for instance:

- Beneficiaries indicated that their innovation level has increased since receiving support from the project, although it was already at an intermediate level and therefore the increase was modest.
- Just over half (six out of eleven) of beneficiaries reported that the project has been helpful in overcoming any previous barriers to innovation.
- Just under half of beneficiaries (five out of eleven) surveyed suggested that they have or expect to increase investment in R&D activities.
- The majority (eight out of 10 responses to this question) are either very likely or likely to continue to engage in innovation activity.

5.16 In addition, through interviews and surveys with a sample of beneficiaries, the following wider benefits of SMI Hub support have been identified:

- **Increased likelihood to work with the University of Manchester in the future:** the majority of the sample of beneficiaries surveyed (eight out of eleven) stated that they are likely or very likely to continue to engage with the University.
- **Enhanced market awareness and raising the business profile:** reported by seven out of the eleven surveyed.
- **An increase in the confidence to grow their businesses:** reported by six out of eleven beneficiaries.
- **Making the businesses stronger and more resilient:** reported by six out of eleven beneficiaries.
- **Opportunity to network with like-minded businesses:** highlighted during interviews.

5.17 Some of these benefits are illustrated through the following quotes:

“[the project has given us] a greater understanding of the products available to us and also the real affect it has on our business from both a financial and sustainable aspect.” – Beneficiary

“[the project] increased our understanding of sustainability for our business and our industry ... [it has given us] confidence to articulate to stakeholders our current and future position” – Beneficiary

“[The project helped] Build brand awareness... the pouches are getting lots of interest from big high street brands and small brands too. [We are] Expecting that to be a direct revenue stream which was supported by collaboration with the SMI Hub”. – Beneficiary (See Case Study 1)

“[the project is] Really, really good, I’ve actually contacted them to work together again” – Beneficiary

“...met some interesting people, absolutely, big advocate of talking to people about goals and direction. It was a positive networking impact”. – Beneficiary

“Connecting and networking with other organisations that I might not otherwise have access to is good for exposure and profile raising” – Beneficiary

Benefits for the University of Manchester

5.18 The project has delivered a unique state of the art, flagship facility at the University which is unrivalled in its capabilities nationally. This has significantly enhanced the University's capabilities and specialism in the advanced materials and sustainability fields.

"It will be a real legacy for the University" – Project Director

"the university now has a unique lab that can do everything in one place... synthesis through to testing and manufacture" – Stakeholder

"there is nothing that specifically fills role of the SMI Hub" – Stakeholder

5.19 Wide engagement with GM SMEs is helping to raise the University's profile with the local business base, including supporting many SMEs which have not engaged with the University before, as noted by the team. The pro-active business engagement approach has supported the University with its wider ambition to become more business facing. As referenced above, the majority of the sample of beneficiaries surveyed stated that they are likely or very likely to continue to engage with the University.

"it is an amazing way of attracting more industry to the university" – Stakeholder

5.20 The project has evidently helped to raise the profile of the UoM and its reputation in the sustainable plastics and advanced materials arena. The team have attended, been invited to speak at, and hosted a significant number of events, both locally in GM as well as at high profile national and international events. This has helped to raise the profile of the SMI Hub, The Henry Royce Institute and expertise held at the University.

"We have gone from a university with no reputation in this space to an internationally leading representative" – Project Director

"It has been a real success in raising the profile regionally and nationally around plastics sustainability and what university can offer" – Stakeholder

5.21 The Project Director noted that the project has helped to attract further expertise and research funding to the university.

"it has attracted other academics to move here, brought in wealth of research funding and set to bring in more" – Project Director

Benefits for the Greater Manchester economy

5.22 Beyond the benefits identified for individual project beneficiaries, wider benefits for the sub-regional economy have been identified to include:

Ensuring that GM's business base benefits from the academic expertise held within the University to promote material innovation and adoption that is both environmentally and economically sustainable, helping to contribute towards GM's sustainability and economic growth targets.

Contributing to the sub-region's low carbon agenda as more sustainable products and processes are adopted and developed, and the use of harmful products and processes is reduced.

Helping to showcase and develop GM's role in environmental leadership, sustainability and clean growth. The Greater Manchester Mayor has visited the SMI Hub and engaged with the team to contribute to GM's sustainability agenda.

Developing an innovation culture where businesses are more confident to continue to innovate and generate wealth and new opportunities for the local economy.

“To Greater Manchester it [the project] has been incredibly valuable. It is an accelerator providing advice to SMEs on plastics and packaging in GM that wouldn’t have had access to without it” – Stakeholder

“it [the project] is supporting Greater Manchester to move in right direction with how an urban ecosystem needs to operate to deal with resources such as plastics that should be sustainable” – Stakeholder

Increasing the profile of the sustainable plastics agenda

5.23 As noted above, the SMI Hub project team have attended a number of events helping to raise the profile of the sustainable plastics agenda.

5.24 The Project Director has also been an invited speaker at a number of high profile events which influence sustainability policy. The Project Director has inputted to The Environment, Food and Rural Affairs Committee (EFRA) committee around plastics waste and alternative plastics, which has produced reports submitted to Government.^{15,16} The project team also attended the Greater Manchester Green Summit, where the Project Director had a figurehead speaking role¹⁷.

¹⁵ [The price of plastic \(shorthandstories.com\)](https://shorthandstories.com/the-price-of-plastic/)

¹⁶ [MPs ask how ‘alternative plastics’ might reduce waste - Committees - UK Parliament](#)

¹⁷ The Project Director was a part of the ‘Sustainable Consumption Plan’ session which attracted an audience of approximately 1,000

6 Value for money

6.1 It is important to note that the ERDF indicators and quantifiable benefits which can be used to assess the project's value for money are not well aligned to the SMI Hub project's objectives. A full value for money assessment should also consider wider indicators which capture environmental impact which have not required monitoring as a condition of funding. An assessment at this stage in the project is also likely to underestimate the overall impact of the project which is expected to continue to build beyond the project's monitoring period.

Quantified impacts to date

6.2 Table 6.1 presents the current employment and GVA benefits to be generated by the project. In the absence of project specific intelligence, the HCA benchmarks¹⁸ for sub-regional business support deadweight, displacement and leakage have been applied to the forecast gross benefits to provide an indication of the anticipated net employment and GVA impact to be generated for the GM economy. To date, as of December 2022, the project has reported 1 FTE job created in assisted SMEs. It is estimated that this job will generate a gross impact of £0.07m of GVA per annum.

Table 6.1: Current gross and net additional impact of SMI Hub

		Impact Area: Greater Manchester	
		Measure	Adjustment
Impact Indicator: Employment Unit = Full time equivalent posts	Gross impact	1	n/a – number of additional FTEs created within supported SMEs.
	Deadweight/reference case	0.5	47.2% - some jobs may have been realised in the absence of SMI Hub with innovations taken forward through other routes.
	Displacement/substitution	0.4	19.5% - an element of the SMI Hub funding may have been committed to other support.
	Leakage	0.4	16.3% - some new positions may be taken up by people resident outside the GM area.
	Net additional	0.4	
Impact Indicator: GVA Unit = £m	Gross impact	0.07	n/a – per annum contribution, applying the GVA per FTE for the whole economy £73,000 in GM
	Deadweight/reference case	0.04	See above
	Displacement/substitution	0.03	See above
	Leakage	0.03	See above
	Net additional	0.03	

Source: ekosgen analysis based on project management records

6.3 Based on their knowledge of the SMEs supported and their plans arising from project support, the SMI Hub project team anticipate the project will meet its target in relation to new jobs, with forecasts suggesting 5 FTE jobs will be created by the end of July 2023.

6.4 The forecast employment and GVA benefits to be generated by the end of the project's reporting period are presented in the table below.

¹⁸ HCA Additionality Guide, Fourth Edition (2014)

Table 6.2: Forecast gross and net additional impact of SMI Hub

		Impact Area: Greater Manchester	
		Measure	Adjustment
Impact Indicator: Employment Unit = Full time equivalent posts	Gross impact	5.0	n/a – number of additional FTEs created within supported SMEs.
	Deadweight/reference case	2.6	47.2% - some jobs may have been realised in the absence of SMI Hub with innovations taken forward through other routes.
	Displacement/substitution	2.1	19.5% - an element of the SMI Hub funding may have been committed to other support.
	Leakage	1.8	16.3% - some new positions may be taken up by people resident outside the GM area.
	Net additional	1.8	
Impact Indicator: GVA Unit = £m	Gross impact	0.37	n/a – per annum contribution, applying the GVA per FTE for the whole economy £73,000 in GM
	Deadweight/reference case	0.19	See above
	Displacement/substitution	0.16	See above
	Leakage	0.13	See above
	Net additional	0.13	

Source: ekosgen analysis based on project management records

6.5 As stated in Section 5, supporting employment growth is not the core purpose of the project. Beneficiaries are also reporting a wider range of impacts, such as increasing their understanding of sustainable choices, addressing sustainable challenges and innovation barriers, developing products, processes and services with an environmental impact (see Section 5), although the impacts of these benefits have not been quantified.

6.6 The majority of beneficiaries surveyed also suggested that in the future they expect a reduction in carbon emissions. As suggested by the project team, there are challenges in monitoring carbon savings given the project is likely to lead to a reduction in indirect emissions in supply chains (see Section 5).

Costs per output

6.7 By project closure in July 2023, the project's total revenue (ERDF and match funding) unit cost per assist is expected to be £27,887 per enterprise receiving support. This is broadly in line with the cost per assist benchmarks ekosgen has identified through recent summative assessments of other ERDF Priority 1 funded innovation support schemes elsewhere in the North West of England. It is also in line with the value for money anticipated at the time of the project's approval with the C1 business assist target to be achieved for a slightly lower than anticipated level of revenue expenditure.

7 Conclusions and lessons learnt

Conclusions

Establishing innovation in sustainable plastics as a local specialism

7.1 The SMI Hub project has established a state of the art facility at the Henry Royce Institute and enabled delivery of a holistic SME and start-up support offer focused on innovation in sustainable plastics – an offer that is not available elsewhere within GM or in other regions across England. This builds upon and enhances Manchester's and the wider region's specialism in advanced materials and further cements the city's role as a leader in sustainability and clean growth.

7.2 The sustainable plastics agenda underpins the project and this resonates in all aspects of its delivery – the interests, specialisms and shared values of the team; the laboratory capabilities; and the broad targeting of the support (recognising that plastics use affects all types of businesses). It is also reflected in the way the SMI Hub is ran, as evidenced through its award of a University Gold Leaf Award for sustainable operations.

7.3 At the same time, the SMI Hub has responded to a wider range of national drivers and priorities including supporting businesses to navigate changing consumer patterns and legislation relating to sustainability, whilst also delivering on wider clean growth, economic growth and innovation priorities.

A well-rounded investment package

7.4 The project has included both capital and revenue investment, enabling delivery of a comprehensive support package that provides access to the expertise, equipment and facilities required to engage SMEs and start-ups in sustainable plastics innovation. Both elements of the investment are dependent upon each other and are required to overcome market failures that prevent businesses from engaging in innovation. It would not have been possible to establish this facility and support offer without ERDF funding.

7.5 In particular, the ERDF capital investment has been used to address a funding gap at the Henry Royce Institute, fitting out the sixth floor to deliver a highly specialist facility, while the revenue funding has been used to cover the costs of proactively connecting the local business base to the new facilities and providing the expertise required to overcome challenges and realise opportunities relating to sustainable plastics. Both the facilities and the support offer are highly regarded by stakeholders and beneficiaries and are successfully meeting business needs.

Pro-active engagement of SMEs and start-ups

7.6 Proactively engaging SMEs and start-ups in the sustainable plastics agenda has been at the core of the project and was one of the main reasons for developing the SMI Hub and support offer. This approach is helping to support the University with its wider ambition to become more business facing, with the SMI Hub providing businesses with a direct access point and route into the University to facilitate knowledge exchange and research and development.

7.7 The role of the business engagement team has been crucial to these pursuits. While there were initially challenges with engaging businesses in the project, the team worked hard and adopted a range of methods to directly target potential beneficiaries. Using a flexible and mixed approach has worked well, with its success reflected in the project being on track to meet targets with regards to the number of business assists and the proportion of these which translate into longer term team assists and collaborations with the University. This is an impressive position given the project's slow start.

7.8 A wide range of businesses have been engaged in the project as a result, including a high proportion of businesses who have not engaged with the University and/or other support activities

previously. This is recognised as a key feature of the project's beneficiaries and is also reflective of the intentional focus of the SMI Hub on engaging businesses from all sectors of the economy given how widespread the issues relating to sustainable plastics use are across the business base.

A committed and agile delivery team

7.9 In addition to the facilities, the delivery team are one of the most valuable resources that has been established through the project. The commitment, determination, agility and expertise of the team, including their project management capabilities, have been repeatedly highlighted and evidenced throughout the evaluation and have led to the successful delivery of both the capital and revenue elements of the project.

7.10 The delivery team have been responsive to delivery challenges, including delays to the capital fit out and opening of the facility, recruitment delays, and engaging businesses who were focusing on survival rather than sustainability or innovation. The majority of these challenges have been unexpected and beyond the project's control, driven by external factors such as the Covid-19 Pandemic, post-Brexit trade implications, high inflation and wider economic uncertainty. However, the delivery team have provided the driving force required to overcome and minimise issues and to enable the project to progress and recover time within relatively compressed delivery timescales. The success of the project in this regard is reflected by there being no extension to the activity end date, with just the practical and financial completion dates only being extended by one month (from June 2023 to July 2023), despite much more substantial delays at the outset. Delays to the capital works programme were also minimal, given the extensive restrictions evident at the time works were being delivered.

A comprehensive support offer and delivery model

7.11 The breadth of the support offer and the structure of the delivery model, based upon the three advice, assess and innovate strands is comprehensive and enables businesses to access support of varying intensities to meet their needs. The ability of the project to simply deliver advice which a business can take forward independently, whilst also supporting other businesses to de-risk innovation and develop new technical solutions and products supports the project's efficiency and allows the time and expertise of the delivery team to be appropriately targeted.

7.12 There have been minimal changes to the delivery model throughout the project, with the main change being the introduction of a cohort approach which has enabled the delivery team to provide advice to businesses in a workshop format, as well as through 1-2-1 sessions. While the need to engage large numbers of beneficiaries in order to reach output targets was a key driver for this change, it has also proved to be beneficial beyond this. Specifically, it has enabled the project to: support a broader range of sectors (including retail and hospitality); efficiently deliver advice that can benefit multiple businesses (e.g. relating to the plastic tax); provide opportunities to identify businesses for longer term assists; and supported the dissemination of intelligence and resources generated through the SMI Hub (through the introduction of an overarching sustainability workshop).

7.13 The model and support offer is now well established and provides an example of best practice that could be adopted in other projects.

Meeting project targets

7.14 The project is on track to meet or exceed all the contracted expenditure and output targets by project closure. This has been supported by a wide range of factors highlighted throughout this report, including the holistic project offer, an effective delivery model and project management, a dedicated team and a proactive approach to business engagement.

7.15 The achievement of output targets relating to enterprises cooperating with research institutions, enterprises supported to introduce new to firm/new to market products and employment created also highlights the project's success in identifying and engaging businesses to work with on a longer term collaborative basis through the assess and innovate strands, and the ability for this work to translate

into positive outcomes for the businesses including growth through new products and jobs. It should be noted, however, that the targets and outputs are not expected to capture the full extent of the project's benefits and impacts, which are much broader in nature (see below) and will occur over a longer timeframe as the advice, assessments and innovation delivered through the SMI Hub is progressed and embedded by beneficiaries. The latter is typical of business support, particularly, that focused on innovation where there is a time lag between the support being completed and the benefits and impacts occurring.

7.16 While most targets have remained consistent throughout the project's delivery the capital expenditure target and budget was significantly reduced (by £2.5m/33%) as a result of the activity costs for the equipment and fit out being lower than expected for a number of reasons (set out in detail in Section 3). However, this has not compromised the quality or nature of the facility that has been delivered, or the associated outputs in terms of floorspace and researchers accommodated. With output targets forecast to be achieved, the cost reduction has served to enhance the value for money offered by the project.

Generating a wide range of impacts

7.17 The project has supported a wide range of impacts cited by beneficiaries, including:

- Addressing particular sustainability challenges and improving understanding of sustainable choices in use of plastics
- Developing and improving new or existing products, processes or services with an environmental impact
- Reducing their carbon footprint
- Increasing their innovation activities/ propensity to innovate
- Increasing the likelihood to work with the UoM in the future
- Enhancing market awareness and raising the business profile
- Generating cost savings
- Increasing confidence to grow businesses and making the businesses stronger and more resilient

7.18 Given the relative infancy of the project, these are positive achievements with many of the impacts referenced by beneficiaries typically expected to occur at a later date. The majority of the impacts are harder to quantify and/or have not been quantified on a consistent basis (given that they sit outside ERDF monitoring requirements).

Delivery of project objectives

7.19 Overall, based on evidence gathered through the summative assessment, progress against the project's originally identified objectives is as follows:

Objective	Current status
Deliver a purposefully designed innovation hub to support practical advances in the sustainable design and use of plastics.	Achieved: The SMI Hub has been developed and established through the project, providing a new state of the art facility and a support offer that covers all aspects of the sustainable plastics agenda.
Build on the critical mass of expertise already evident within the UoM to allow GM to maintain its competitive advantage in the sustainable materials agenda.	Achieved: The SMI Hub has brought together and expanded the University's expertise and capabilities relating to sustainable plastics. The focus on sustainable plastics is supporting and enhancing the sub-region's competitive advantage in advanced and sustainable materials.

Objective	Current status
Engage SMEs in sustainable plastics innovation through business engagement activities, workshop sessions and through tailored programmes of support (advice, assessment and innovation).	Achieved: The SMI Hub has engaged 292 SMEs in the sustainable plastics agenda to date, including 63 SMEs who have received at least 12 hours of advice, with 26 of these SMEs progressing to work with the University on innovation projects.
Drive advances in the sustainable polymers sector, supporting the progression of new innovations along the Technology Readiness Levels and ultimately result in improved sustainable materials use within the economy.	Progressed: The SMI Hub has helped five businesses to develop new to firm products and services and two businesses to develop new to market products and services. As these products and services are progressed and embedded within the market they will result in improved sustainable materials use within the economy – an outcome that will be observed over the longer term.
Help organisations understand the economic opportunities of improving environmental sustainability.	Progressed: The SMI Hub has supported beneficiaries through the advice strand in particular to understand the opportunities of improving environmental sustainability. Given the breadth of businesses which this advice is applicable to and the scale of the business base, there is an opportunity for this activity to continue over the longer term, increasing the number of organisations supported.

7.20 These are important achievements secured throughout the project's lifetime that the continuation of activities at the SMI Hub could build on.

Lessons learnt

Lessons for the University of Manchester and others developing similar projects

Remaining flexible and agile to delivery conditions is key: The SMI Hub has been delivered in a significantly different context to that in which it was conceived, meaning that the project has not always progressed as expected (especially at the outset), through no fault of the project sponsor. There is a need to remain flexible and agile in all aspects of project delivery to allow issues to be overcome, and to minimise the impact on overall delivery of project activities, objectives and outputs.

Be flexible in your SME engagement and delivery approaches: Similar to the above, projects do not always operate as anticipated at their outset. There is a need to recognise when approaches are not effective and be willing to make changes to allow resources to be used as effectively as possible, ensure SME needs are addressed and retain a focus on the ultimate objectives of intervention.

Dedicated resource is needed to engage and support SMEs: The more traditionally reactive approaches to SME engagement used by some Departments across the University often fails to secure high levels of engagement and collaboration with the business base. Having a dedicated facility and business engagement team, with a proactive focus on connecting SMEs and starts up to the relevant expertise within the University broadens the reach and impact of knowledge exchange activities.

Effective team working and project management underpin successful delivery: The team responsible for delivering the project and their approaches to project management are one of the most valuable project resources, and their effectiveness has a direct impact upon the project's ability to successfully deliver its aims, objectives and targets. The importance of recruiting and retaining a team with the relevant skills, knowledge and expertise should not be underestimated.

A phased delivery approach works: A 'funnelled' delivery model and a conscious decision by the team to identify the intensity of support that businesses are likely to require and receive at the outset of engagement, has been effective in identifying those businesses that will progress to the assess and innovate strands and where additional time may need to be invested during the advice strand to ensure the foundations for more intensive support are in place. Being honest with businesses and identifying cases where it would not be appropriate to progress certain ideas can also be beneficial, allowing alternative ideas and opportunities to be considered.

Capturing impact requires ongoing monitoring and appropriate indicators: As is often the case on ERDF projects, the focus of the monitoring approaches are on output indicators delivered within the project lifetime to fulfil contractual obligations. However, to capture the full impact of the project's activities, monitoring over the longer term is required to track the progress and impacts of SMEs as they embed and progress new solutions and innovations, taking account of the time lag that occurs between project activity and impacts (especially in relation to innovation). Appropriate indicators which link back to the core project activities and objectives should also be included (for example, indicators related to sustainability and environmental benefits for the SMI Hub).

The project offer should be reviewed post ERDF funding: The unavoidable loss of ESIF funds for the project provides an opportunity for the University and the project team to reflect on the current project offer and to determine if this needs to be tweaked in any way to take account of the future market opportunities. For example, it has been suggested through consultations with the project team and stakeholders that:

- Target sectors could be identified for each strand of the support project, for example, to maintain the breadth of target for the assess strand and to focus the targeting of the assess and innovate strands on those businesses that are most likely to take forward innovation activity (based on experiences to date).
- Additional wrap around services (for example around business planning, growth finance and skills which are particularly important to help support the successful roll out of new ideas and businesses) could be incorporated.
- The geographical focus of the scheme could be extended beyond GM.

It should be noted that this lesson relates to longer term planning and development for the project and is not advising a significant departure from the current project, which remains very valid in the current context.

Lessons for policy makers

The main lessons arising from the summative assessment for policy makers are:

Capital facilities and revenue support are needed in tandem to drive innovation: The SMI Hub project (and other ERDF support project delivered by the University) has shown that, for a relatively small amount of money invested in a revenue support programme, the true value of capital facilities can begin to be realised. Continued, effective, dedicated SME engagement is needed if local businesses and the economies they are located within are to secure benefit from capital investments. This is especially true for the SMI Hub which is still at an early stage in its lifetime.

There is a need for continued support: Linked to the above, there is an ongoing need for a targeted business support service at the SMI Hub in GM, not only to maximise the benefits of the capital investment, but also to address persistent barriers to R&D and innovation in sustainable plastics amongst new starts and SMEs. The sustainable plastics agenda continues to rise in importance, while SME engagement and investment in innovation has continued to be an important theme in local and national policy. There have also been cases of unmet demand where the University has not been able to support businesses toward the end of the ERDF project's lifetime due to limited time and resource. The effort and funds that have been invested in developing and delivering the project successfully, has resulted in the SMI Hub providing a strong foundation for a future support offer.

A prompt plan for succession is required: The SMI Hub has become a well-established facility within a relatively short period of operation. Succession plans are required to support the long term future of new capital facilities (as recognised by the University with the submission of bids to secure funding to deliver further support to SMEs). Essentially, a three year maximum project duration (which was typical for ERDF projects) is insufficient to support combined capital and revenue schemes and ensure that the

full value is secured from completed facilities. Future funding streams should consider a minimum period of support to allow a return on investment to be secured.

A broader geographical focus may be appropriate: Future funding streams should consider the value of supporting projects to deliver beyond narrow geographies, where nationally significant assets and expertise are evident.

Paperwork requirements can act as barrier to SME engagement: Future funding streams should focus on core information requirements, making the paperwork as easy as possible for SMEs to complete and avoiding unnecessary or duplicate information requests to support engagement and evidence gathering, whilst still ensuring an appropriate audit trail is established.

Alternative funding pots are required: The summative assessment clearly highlights the benefits that can be delivered by innovation and business support focused projects. As ERDF funding comes to an end, alternative funding pots are required to support activities previously funded by the European monies, recognising continued market failures and challenging economic conditions.

Appendix A – Beneficiary case studies

Case Study 1: Sourceful

Sourceful, a global company with a base in Manchester, provides businesses with access to products that can be customised to their exact needs. Their all-in-one platform helps target all forms of waste in the supply chain: wasted time, energy, resources, from material selection, to the production processes, transport routing and end of life. Sourceful's approach involves showing their customers the carbon footprint of their product in real-time. To do this, they built a dynamic life cycle assessment (LCA) engine, the data is supplier, product and variant-specific, meaning they collect and quality assess primary data directly from manufacturers. The support package delivered with Sourceful has resulted in a C1 and C26 output claim.

Sourceful received support under the Advice, Assess and Innovate strands of support. They first accessed the SMI Hub in March 2022. The support was delivered in two stages, the first stage of the project involved two individual deep dives:

- The first was a literature review of the impact of different types of polymers and their physical and chemical risk to the environment.
- The second was a literature review based study on how degradable plastics are expected to behave in a home compost heap.

The second stage involved:

- The testing of three different pouch examples of a product Sourceful were launching to market, a polymer content pouch, looking at the content of the product's casing. The first pouch analysis has been completed, and the SMI Hub are currently testing two other pouches for Sourceful.

The beneficiary explained how it would have been difficult to access this support without collaborating with the SMI Hub:

"it would have been a struggle to find something like that, commercial labs don't provide that, you need researchers. The SMI Hub allowed smaller, focused, bite-sized chunks, my understanding is that there aren't (m)any similar routes for this. On physical testing, there are commercial labs that do testing, but they are narrower in focus and equipment. We were able to do more extensive answers... We would have been able to do testing, but it would have been harder to get a result".

The second project, which has begun recently, is similar to the third deep dive of the first project. It involves looking at two different products, analysing their composition and characterising their polymer content. This is because the producers of these coatings being analysed don't want to share their IP, but Sourceful need to understand the polymer content to develop a product with a lower environmental impact.

Sourceful have been "very satisfied [with the SMI Hub] on a few different levels":

"Flexibility in identifying a timeline... the scope of perspective, [they are] interested in exploring new projects and ways of doing things... their approach to get the relevant outcome to us... the quality of input and researchers, the quality and depth of their output, in particular the sessions and workshops was excellent and above what I have seen elsewhere, turning the abstract into concrete... the energy for engagement, we were able to form quite a strong connection".

Since receiving support, Sourceful's innovation level has increased "big time". They recently announced the launch of their new HydroTec Paper Pouch in January 2023. Made with FSC-certified paper, the HydroTec Paper Pouch reduces plastic use by 99% and carbon emissions by up to 40% compared to traditional pouches¹⁹. They have, "changed the way the industry makes claims on

certain kinds of products". It is difficult for Sourceful to judge any economic benefits following their involvement with the SMI Hub as the product has only been on the market for a couple of weeks. However, they are already experiencing some wider benefits:

"[on the pouches] there is lots of interest, from big high street brands and small brands too. We are expecting that to be a direct revenue stream which was supported by collaboration with the SMI".

The biggest impact for Sourceful has been:

"Bringing to market a product that we collaborated with the University on to understand its full depth, we wouldn't have been able to otherwise. It was more about finding a better way to characterise and talk about materials, and talk about claims associated with materials. Especially in a world where greenwashing is everywhere, we are able to talk about composition with confidence".

Sourceful would look forward to working with the SMI Hub in the future, after their second project is completed, but are aware that funding is running out. They remain *"keen to stay connected... because of the quality of work we have done and the flexibility and ease of working with them"*.

The greatest strength of the project, for Sourceful, was:

"[the] very well equipped lab, very talented scientists who are able to take a broad question from a business who are not themselves academic, and say 'this is the number of ways we can approach the problem'. Delivering a well evidenced, tested response which is relevant for the business and not stuck in lab talk. What is different at the SMI Hub is they focus on the outcome that matters, with well evidenced and researched content, you see the depth but it is applicable."

Sourceful didn't have an area that the SMI Hub could improve, but offered an idea of something that would be interesting and useful in the future:

"Something to consider if it is ever possible, how can they provide information on what else they are doing. So the better visibility I can have on all the things being worked on, taking the pulse on what is being developed".

¹⁹ <https://smihub.ac.uk/news/sourceful-launches-new-hydrotec-paper-pouch-that-reduces-plastic-by-99-and-carbon-emissions-by-up-to-40/>

Case Study 2: Recircle



Recircle is based in Stockport and is a recycling and industrial biotechnology start-up company. They apply expertise in biotechnology, engineering, polymer science and rubber technology to create a truly circular economy solution for the world's rubber waste. They help customers profit in cost effective recycling of rubber, reducing waste and emissions for the planet to achieve sustainability goals. They are able to standardise and upgrade waste rubber cost effectively for re-use in high performance rubber products, including tyres, profitably reducing the environmental impacts of the rubber industry. Recircle own a proven, patented and environmentally superior approach for removing sulphur from vulcanised rubber for highly effective reuse, and is building out commercial scale facilities. The support package delivered with Recircle is anticipated to result in a C1 and C26 output claim.

Recircle received support under the Advice, Assess and Innovate strands of support. Recircle's involvement with the SMI Hub began in April 2022 and finished in January 2023. Recircle needed *"their expertise, the big thing, and a couple bits of their equipment"*. It was *"effectively a chemistry project linked to biotechnology, we needed a test material to use in place of the material we want to use, to push through to an LC-MS [liquid chromatography-mass spectrometry] to use for testing purposes"*.

Recircle, although unsuccessful in getting the desired results of their project, were immensely satisfied with the SMI Hub:

"It was absolutely brilliant, couldn't praise them enough. Really, really good, I've actually contacted them to work together again".

The most valuable feature for Recircle was:

"twofold, the access to such clever people, they had had the exact skills that were required and the other thing is the exact equipment we required, GPC and NMR. They knew how to drive it, was all good. The dual thing of expertise and equipment".

As a start-up, Recircle are always looking to innovate, and have previously enjoyed working with universities. However, in the past have been underwhelmed with the speed at which they work. Working with the SMI Hub was good because *"they moved very rapidly"* and as such Recircle would *"love to work with them again, the key is access, people and the right time period"*.

This shows the effectiveness and attractiveness of working with the SMI Hub, despite Recircle having their proposed project disproved, the *"project gave us exactly what we needed"*.

If Recircle had not sought support from the SMI Hub, there were two options that they had been looking to pursue, neither of which were expected to have been as effective as engaging with the SMI Hub:

“Either go to consultants or hire a chemist and try do it internally, but they wouldn’t have had the kit. We were struggling, it came at a fortuitous time. The real advantage – when I first spoke to Adam, and he said there was funding available, he found the right people for the project. It was really powerful that he could find the right expertise for the particular project, we would have struggled otherwise”

“we were looking at consultants which would have cost us a fortune. Given the results we wouldn’t have got as far as we did in such a short period of time, with such an honest appraisal”.

Recircle will be looking to work with the SMI Hub and the University of Manchester again following the completion of their project.

A potential area of improvement for Recircle would be:

“It would be much easier if it was clearer how to access these skills. A clear and easy to use guide. This project appeared to have come from nowhere, it just happened through various contacts that we had, got rung up out of the blue. It felt fortuitous how we found it, still unsure of how to progress it further, we have the funding but not really clear how I would go about that. Only improvement, easier to get hold of this project again and working out whether there is funding available or if not how we can self-fund”.

Case Study 3: Fibrestar

Fibrestar is based in Stockport and is the largest supplier of fibre drums in the UK, delivering innovative, high-quality industrial packaging solutions across the globe. They can provide carbon emissions data for all their products, as well as showing how they compare with other types of packaging. The fibre drum is an environmentally friendly and efficient product.

Fibrestar worked with the SMI Hub on a project related to waterproofing and water retention of a new product around 18 months ago, over a period of around 3-4 months. Fibrestar received assistance under the Advice and Assess strands of support. The support package delivered with Fibrestar has resulted in a C1, C28 and C29 output claim.

The support from the SMI Hub was:

“Good, certainly they provided me with the info to make decisions on availability of new products that are being developed, another reason why the SMI was important. Not so much what is available, but if they tripped across new materials, I would take advantage of them. It’s a stick in the ground now but also what they can do in the future”.

Since working with the SMI Hub, further process development and optimisation of the product is required for market readiness, although “[the SMI Hub have] given me more information so I can make a better decision on what they provided”.

If Fibrestar had not sought support from the SMI Hub they:

“would have had to do the work in a less academic way, not come to any real conclusions as they did. They gave me the best available technology”.

The biggest impact for Fibrestar as a result of the project with the SMI Hub has been the:

“networking and communication about new business opportunities and development materials about reducing environmental impact. If I can continue this, so they know I am here, then hopefully we can gain from any materials that emerge from UoM and elsewhere. If we come across any applications that need technical support, I have a contact now. It is that networking, more than anything else, if I hadn’t had that opportunity, building that relationship and what they can do for us, it wouldn’t have happened”.

When asked about how likely they are to recommend the SMI Hub and the University of Manchester to other businesses they said:

“On a scale of 1-10, with 10 being no hesitation, 9”.

The biggest strength of the project for Fibrestar was:

“being aware of technical breakthroughs in material science to enable us to build a business that ideally can replace other materials using paper. What materials are available, what is being developed, can help us use the SMI and UoM to reduce our impacts through packaging”.

For Fibrestar, there was “not really” any area of improvement, “this project was specific and clear”.

Case Study 4: Mouthful Ltd

Mouthful Ltd, based in Manchester, is an independent strategy consultancy improving business performance through insight, collaboration and delivery. Although their work is focused on the Hospitality Sector, they work with a range of businesses to define strategic ambitions, position product and service offerings and respond to ever-evolving market dynamics.

Mouthful's support from the SMI Hub is still underway, beginning in 2022, with the project anticipated to last 6-12 months. They have been very satisfied with the support received from the SMI Hub, with the most satisfactory parts of the support involving the speed between initial inquiry to working on the project and the quality of the information about the available support. Mouthful Ltd received assistance under the Advice and Assess strands of support. The support package delivered with Mouthful Ltd is anticipated to result, although has not yet been claimed, in a C1 output claim.

The most valuable feature of the support for Mouthful to date has been:

"The challenge and academic rigor that they bring to it. The first brief was vague and specific, they were quite keen to explain that they don't start with such a fixed viewpoint for what a project is about. As a result of that, I went away from that and have since radically rethought the project for the better".

Since being involved in the project, innovation in the company has increased:

"the materials design would be the main one, but also it has helped me develop the business level of the overall business. To the extent that the relationship could keep going indefinitely, its an unrivalled resource that you cant get elsewhere. Whether that's my current project or in another form".

The support has also enabled Mouthful to overcome previous barriers to innovation:

"Trying to find one single product, we have since done that. That was the main barrier, did it quickly and effectively. Changed our philosophy on plastics, their importance and use. Prior to the conversation, I was set on them being the villain, and now I think, given what they have explained, its part of the solution and how you use and dispose".

As a result of their involvement with the SMI Hub, Mouthful's product is closer to market than it was prior to involvement, although there remains work to be done. The project has provided Mouthful with:

"Agility and flexibility to do things. Sometimes you worry that things can be slow and bureaucratic, they were keen to push ahead and get results. The benefit is to think of it as a genuine commercially viable partnership".

For Mouthful, the greatest strength of the SMI Hub project was:

"The proactiveness of it, a lot of the time when I have worked with universities, you explain what you want and you might get back 50-60%. With them they have given it all back, overdelivered even. It was a good experience all round, they are clearly not just trying to work with anyone. They are keen to develop things for the long term despite the fact the ERDF is running out. They genuinely seem to think there is potential and want to work together".

There was nothing about the nature of support that Mouthful would improve about the SMI Hub and their involvement with it. The only detail would be:

"...people in my situation, there are a lot of institutions and bodies that support start-ups and entrepreneurs, it can be a minefield. Sometimes the simplicity of the name of who you are dealing with can be quite helpful. The name is a bit of a mouthful, it doesn't trip off the tongue".

Case Study 5: Kickback Coffee

Kickback Coffee is a coffee company based in Cheshire, with a site in Altrincham. This year they embarked on a challenge to reduce their carbon footprint and impact on the planet. As a result, they are now members of 1% For The Planet, who award companies that spend 1% of revenue on non-profit organisations that focus on environmental causes. They have also teamed up with City of Trees to help plant trees around Greater Manchester.

Kickback Coffee received assistance under the Advice and Assess strands of support. Their involvement with the SMI Hub began mid-2022, and finished by the end of the year with the SMI Hub producing a report. The support package delivered with Kickback Coffee resulted in a C1 output claim.

The aim of the support was to *“assess our current packaging uses and the impact it has environmentally... Asking, ‘Can we do better?’, are our better choices quantifiable and genuinely making an impact”*. Kickback Coffee were very satisfied with the support received

“It wasn’t just a document which was emailed, the work of Hannah who led the project has been incredible, she sat on a panel at a coffee conference and discussed what we did. The outreach has been brilliant.”

The SMI Hub had a positive impact on Kickback Coffee, which has led to further contact following the end of their initial project, described as *“informal but formative”*. For Kickback Coffee, the support has been twofold in that,

“We had a question and got an answer. [There is] Added value of follow up support...the follow on support has been brilliant”.

Although not a direct impact of working with the SMI Hub,

“the impact it has had on me within the business has been huge. [We are] Going down a path that could potentially be world class innovation, [we] could be the first people to have an anaerobic digester on site involving reusing methane from local farms to roast our own coffee, creating a circular economy”.

Although no product has been brought to market directly following work with the SMI Hub, there may be further down the line. As explained,

“What the work with the SMI Hub helped, it gave us more information, with that information we will look to bring a new product to market, but this wasn’t the result of a sole report, this report is helping us make the decision”.

It has been an influential experience working with the SMI Hub, with changes quickly being made on the advice of the SMI Hub,

“It has made us realise the importance of reusable packaging, even the wording we use. One thing we try to encourage, is people bringing their bags back to our sites, this was an instant change. Our original labels said ‘reusable’, the SMI Hub said to change it to refillable”.

A wider benefit of the support for Kickback Coffee was the networking which came from the experience, *“...met some interesting people, absolutely, big advocate of talking to people about goals and direction. It was a positive networking impact”.*

While Kickback Coffee felt the project contributed to reducing their business’ carbon footprint, they do not yet have evidence of this: *“Absolutely, that is an answer I wish I had tangible results for but we are in the process of mapping them out. We intend to release the figures”.*

The biggest impact for Kickback Coffee has been *“the realisation that we can make a difference regardless of our size”*. They remain keen and committed to reducing their business’ carbon footprint. Going forward they are looking for different materials for packaging including a UK company who

produce plastic bioproducts from seaweed. The experience made them “*realise we need to invest more resources*” into research and development. When asked the likelihood of engaging with the University of Manchester and the SMI Hub again they responded,

“*On a scale of 1-5, 5. Their ability to get the answer that we needed with a skillset we don’t have, absolutely... I have recommended them multiple times, happily based on my experience*”. There was very little that could be improved about the experience for Kickback Coffee, the only suggestion they made was for, “*more access to likeminded businesses... if there was a way to link likeminded businesses through their platform, that would be added value*”.

Case Study 6: Dsposal



Dsposal offer producers and waste managers instant, real-time views of their compliance status, bringing transparency and clarity to the process. Their software delivers a complete waste management solution, built with the help of industry experts. The Plastic Packaging Portal (PPP) helps everyone involved in the packaging supply chain and at its end of life, allowing people to make the best decisions as often as possible along the waste hierarchy.

Dsposal received assistance under the Advice strand of support, and the support package delivered resulted in a C1 output claim. Dsposal have ongoing collaborative work with the SMI Hub, as well as a long-term project (PPP), which followed from their first project with the SMI Hub and sits outside the ERDF funded support. Of Dsposal's projects:

- The first, smaller, project began and was completed in the first half of 2021. It was a defined piece of work assessing different material types for actuators in inhalers, and whether they could be made reusable.
- Then second project, PPP, started in June 2021, with the first phase finishing in November 2022. Dsposal received direct funding for the second phase of the project, lasting 12 months from December 2022 to November 2023. This project forms part of the SMI Hub's wider research in collaboration with the One Bin and is not part of any ERDF funded support

With both projects, it would have been difficult for Dsposal to undertake them to the same standard without the support of the SMI Hub. In regards to the first project,

"[We] would have had to do a lot of our research. We aren't experts so it would have taken us a lot more time. I'm not sure how rigorous or good the outcome would have been, it [SMI Hub] really helped us".

With the second project,

"[It was important] being able to tap into Mike's material expertise. We designed it for plastic and now it covers all plastics, the expertise has been incredibly helpful in regards to structuring the standards. Without it, it would have been a huge amount more of effort and it wouldn't have been as good".

Overall Dsposal are very positive about the support received:

"It has been brilliant. Being completely frank, having had experience with academics and academia before, it hasn't always been an experience I would want to repeat. The Hub has been punctual,

they've gone above and beyond, they have made other connections. It's been fantastic and I've recommended it to other people".

The most valuable feature of the support for Dsposal has been the "access to incredibly specialised expertise and knowledge and the networks it has, they have been incredibly helpful".

When asked about whether the SMI Hub helped them overcome any barriers to innovation, Dsposal explained how it helped with,

"...access to some big organisations, and being involved in the One Bin project and the work with the Hub has opened a few doors. [This] would have been harder to achieve otherwise, when you have someone as respected as Mike and the Hub, it helps".

Neither of the projects have led to a product being delivered to the market. However, the PPP project has resulted in an open data standard being launched which would not have been possible "without the Hub's support".

The wider benefits of the work Dsposal has been doing with the SMI Hub are,

"...we are doing pretty transformative work for the sector and people are listening and paying attention. In the long run, the huge piece of work [PPP] will make a difference. Our team has grown a little bit to do with the PPP project too. [As well as this] Connecting and networking with other organisations that I might not otherwise have access to is good for exposure and profile raising".

If Dsposal had not sought support from the SMI Hub,

"[It would have been a] Less efficient schedule. There is a level of expertise there and coupled with the work they are doing with businesses, the way they translate the academic knowledge into something useful for the real world is not something everywhere is good at. They give you incredibly deep knowledge on materials in a way that isn't chemistry jargon, instead having it in a way that we can incorporate into the data standard [PPP] and our own understanding. Something, which from my experience, is very specific to the SMI Hub".

Going forward, Dsposal intends to continue its collaborative relationship with the SMI Hub, and continue its involvement with the One Bin and ReCon². The next stage of PPP will involve "continued support, advice and expertise and as this continues it will be interesting to see what other projects we can work on".

The biggest strength of the SMI Hub for Dsposal was,

"The network and bridge it provides between deep knowledge and expertise and bringing that into the real world and connecting it to businesses".

For Dsposal "nothing particularly springs to mind" that could be improved besides,

"maybe just... more of it. The experience has been incredibly positive, it would be great if they could work with more people and if it continues to exist, something around convening people who may want to work together on a particular challenge".