Full Impact and Economic Evaluation of NSIP Pilot and ETP

A report for UK SPACE AGENCY

Final

know.space

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to understand clearly and with certainty

About us

know.space[1] is a specialist space economics and strategy consultancy, with offices in London and Edinburgh. We are motivated by a single mission: to be the source of **authoritative economic knowledge for the space sector**.

www.know.space hello@know.space

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[1] **know.**consulting ltd. (CRN: 12152408; VAT: 333424820), trading as **know.**space

Key findings

The UK Space Agency funded 83 projects through the National Space Innovation Programme (NSIP) Pilot and Emerging Technologies Programme (ETP), as precursors to the ongoing NSIP. At the time of writing (March 2026), the **impact story is still evolving**. Not all project teams have continued to develop their technologies beyond the timelines of their funded projects, but those who have been able to have generated notable benefits. To date, **the programmes have performed well against their objectives**, though the achievement of some objectives must be judged in the long run. We find evidence of meaningful progress in advancing early-stage space technologies and building capability across the UK space ecosystem – with high concentrations of SMEs supported in the Pilot, and a high proportion of universities present in ETP project teams.

There is clear evidence of widespread de-risking of innovation, with both programmes exceeding the UK Space Agency objective of increasing Technology Readiness Levels (TRLs) by an average of two levels per project, for the data we have available. **Given the low starting TRLs of most projects, many remain some way from market, though there is increased stratification across both the Pilot and ETP.** Six Pilot teams and five ETP project teams have brought their technologies to market, generating initial attributable revenues of £2.6m. Outcomes across projects are uneven, reflecting the high-risk, high-reward nature of early R&D investment.

For some projects, de-risking through the NSIP Pilot has played a catalytic role in securing follow-on investment to scale-up and to commercialise. Six Pilot organisations generated external investment worth a combined £122m, after attribution-adjustment. £81m is private investment (contributing to the North Star Metric) and the remainder (£41m) is public. ETP projects reported £23m in attributable external investment, of which £16m is public, and £7.7m from private sources. This reflects low TRLs targeted by ETP and a relatively higher academic focus. At this stage, the private sector leverage ratio is 4.9 for the Pilot and 3.2 for ETP.

172 employment years have been directly supported by funding, alongside evidence of increased R&D capacity and organisational growth. ETP has created a total of 108 jobs, while NSIP Pilot has created 63. Our quasi-experimental analysis identifies a positive causal effect of Pilot funding on employment for smaller firms, though no significant effect is observed for ETP at this stage. This should not be interpreted as an absence of impact, given strong data limitations. Our Pilot results demonstrate an 'NSIP effect' of funding on (small organisation) firm-level employment.

Stakeholders across both programmes highlighted skills development within funded organisations. Project teams often featured a range of seniority levels, with a high prevalence of early-career workers and students involved. This offered opportunities for upskilling, both in terms of technical capability development, and project management skills and processes.

Collaboration has been central to both programmes, with strong academic-industry partnerships supporting knowledge exchange and enabling access to international missions, though both the Pilot International call, and ETP follow-on activity. UK capabilities have been demonstrated on the global stage, including participation in NASA, ESA and CSA missions. Reputational benefits through enhanced visibility and credibility have been significant.

Overall, we assess strong performance against most impact evaluation questions – with objectives largely met or exceeded across both the Pilot and ETP. In a Red-Amber-Green (RAG) assessment of performance, 6 (out of 7) are green, with the caveat that 'green' represents progress to date and with the (uncertain) longer-term potential still to be seen. We assess one question – the extent to which organisations have captured increased market share – as amber, reflecting the additional stages required to scale commercial activities and significantly disrupt industry status quo. **Whilst it is too soon to draw firm conclusions on value for money**, with the most significant benefits expected to accrue when technologies are commercialised at scale, we find evidence of substantial benefit. The real, discounted and attribution-adjusted UK benefit of the Pilot and ETP to date is at least £119m and £12.2m respectively. Non-monetisable benefits are expected to be substantial.

Executive Summary

Introduction

know.space have been commissioned to undertake a full Impact and Economic Evaluation of the UK Space Agency **National Space Innovation Programme (NSIP) Pilot and Emerging Technologies Programme (ETP)**. NSIP Pilot and ETP are precursors to the current flagship NSIP. The NSIP Pilot (2020-2025) included 42 projects funded under Pathfinder, International, and two down-selected Implementation calls, while ETP included 41 projects funded through four domain-specific calls between 2023 and 2025, targeting low TRL projects (TRL 1-4).

This evaluation outlines **what ETP and NSIP Pilot funding has achieved to date**, attribution to funding, and whether benefits represent **value for money** for the UK. We also assess the NSIP Pilot and ETP against UK Space Agency objectives, including North Star Metric and NSIP targets. We used a theory-based evaluation approach to assess the extent to which funding contributed to observed outcomes. This was supplemented by quasi-experimental (econometric) analysis.

Impact Evaluation

The **impact story is ongoing despite all projects having concluded**. Not all project teams have continued to develop their technologies beyond their funding timelines, but those who have been able to have generated notable benefits. As such, the magnitude of overall benefit is considerably larger than that reported in our Interim Evaluation. Whilst comparisons with other programmes are inherently challenging, the Pilot and ETP have generated substantial and wide-ranging benefits. To date, **the programmes have performed well against their objectives**, in some cases exceeding expectations, though progress against some objectives must be judged in the long run.

We view there is in **general high additionality of impacts** to Pilot and ETP funding. In the absence of funding, both the **scale and pace of innovation would likely have been significantly reduced**, limiting progress toward solving key technological challenges. Projects would have been less likely to sustain partnerships, with fewer opportunities to formalise collaborations, and a **reduced pipeline of technologies** advancing to stages capable of attracting private investment. As a result, commercialisation would have occurred more slowly and at a smaller scale, with some activity potentially shifting overseas, **weakening the UK's competitive position.**

Innovation

> *NSIP Pilot acted as a catalyst, enabling early technical validation, unlocking follow-on funding and leading to an operational service.*

- **NSIP Pilot and ETP have supported a range of organisation types** with NSIP Pilot projects funding a large proportion of SMEs, alongside large companies and research organisations. ETP has concentrated support for universities (and SMEs to a lesser extent).
- **Both pathways have supported projects with low initial technological maturity to reach mid-level TRLs, with some exceptions reaching later stages.** ETP projects have increased TRLs by 2.5 on average, exceeding original business case objectives. Across NSIP Pilot calls, we found a (caveated) average TRL increase of 2.8.
- **New Intellectual Property has been developed through Pilot and ETP programmes, though remains informal at present**, with limited patent activity.
- **76% (of 29 respondents) of ETP project teams agreed that funding had improved their productivity**, while Pilot funding was linked to at least 6 facility upgrades.
- **There has been significant private investment, driven by a subset of projects.** Six Pilot firms generated external investment worth £122m, after attribution-adjustment. £81m of

this is private investment, and the remainder (£41m) is public. ETP projects reported £23m attributable external investment, of which £16m is public, and £7.7m is private. ETP trends likely reflect low TRLs, high academic concentration, and an emerging story.

- For the question of **'to what extent have NSIP Pilot and ETP catalysed innovation and the development of disruptive technologies?'**, we view there has been strong performance across both Pilot and ETP, with widespread TRL raising and informal IP and digital asset creation.

Capturing market share

> *We are starting to commercialise, with multiple industrial partners and prospective customers currently engaged in integration and adoption activities.*

- **Reflecting early-stage starting technological maturity, Pilot and ETP projects show early but limited commercialisation.** 6 Pilot and 5 ETP projects have brought products or services to market, with most projects at an earlier stage, but with clear routes identified.
- **Projects have secured early interest from new clients and customers**. ETP projects have secured 17 new clients, while Pilot projects have gained 3 new customers.
- **Market access impacts remain modest but emerging.** 2 Pilot projects have accessed new sectors and 4 accessed new markets, while ETP supported entry into 4 new sectors and 6 new international markets. Future market entry may follow further commercialisation.
- **There are early signs of 'spillovers' though these will take longer to emerge.** Many project teams remain focused on advancing space-focussed technologies.
- **Projects are beginning to generate revenues, with more expected in future.** Pilot and ETP projects have secured initial revenues of £1.15m and £1.4m, respectively. Longer-term revenue projections are substantially higher.
- **NSIP Pilot generated 2 spin-out companies, with varying success, whilst no spinouts have been identified from ETP projects**, despite widespread long-term intention.
- For the question **'to what extent have NSIP Pilot / ETP funded organisations captured an increased market share in target (sub)sectors?'**, overall realised impact remains limited (as expected), though funding supported progress towards market-readiness.

Skills and Employment

> *Many of the project team have progressed internally, some who started at a junior level are now senior scientists.*

- **Project funding enabled teams across both programmes to dedicate significant resource to novel technology development**. NSIP Pilot funding supported approximately 157 FTE years of employment across streams, while ETP supported 76 FTE years.
- **ETP, and Pilot to a lesser extent, have led to significant job creation, with the potential for larger but less attributable job creation in the future.** Stakeholders reported that NSIP Pilot directly created 63 jobs, while ETP created 108.
- **Our quasi-experimental analysis demonstrates a causal job creation impact for smaller Pilot firms** of around 2 new jobs per firm (beyond contract-employment links). This signals an 'NSIP effect' of funding on job creation. No significant effect was found for ETP but given strong data limitations, this should not be interpreted as a lack of impact.
- **Project teams featured varied levels of seniority, offering potential for knowledge exchange and upskilling.** We identify 25 early-career workers and 8 students across NSIP pilot calls, and 35 early-career workers and 28 students working across ETP projects.
- **100% of respondents reported improved technical skills**. These skills are now being applied to enhance broader company efficiency.
- For the question of **'What impacts has NSIP had on skills, knowledge, and capabilities within the UK space sector?'**, progress is strong, with meaningful employment impacts, organisational growth, and upskilling linked to funding.

UK Competitiveness and Reputation

> *We had no footprint with ESA prior to ETP, now we have secured awards and are in the directory of developers.*

- **NSIP Pilot and ETP funding was crucial for strengthening relationships with partners**, with 38 Pilot and 30 ETP respondents agreeing with this sentiment.
- **Funding (especially the Pilot International call) catalysed international partnerships**. While some faced challenges, these have led to follow-on mission roles.
- **Stakeholders (almost) unanimously felt that funding had improved their reputation** (100% Pilot respondents, 95% of ETP respondents) with teams also receiving 6 awards.
- **4/5 of ETP respondents felt the programme had benefitted the reputation of the UK space sector**, especially through signalling early leadership in emerging subsectors.
- For the question of **'How has NSIP contributed to the development and international competitiveness of the UK space sector?'**, funding enhanced knowledge spillover through partnerships, as well as reputation/competitive offering and new market access.

Scientific and Societal

> *We try to lead by example in space sustainability […] so the whole community can operate more safely.*

- **NSIP addresses global challenges** by contributing to climate, space sustainability and defence objectives, with inherent dual-use applications identified.
- **NSIP funding has strengthened the UK's academic research base.** Growing publication outputs and confirmed roles on future ESA and NASA missions indicate that funded research is reinforcing the UK's standing as a space science partner of choice.
- **Pilot outcomes are concentrated in established regional hubs, while ETP has generated more geographically distributed economic impacts.** ETP's structure appears to have been effective at supporting developed beyond traditional space sector clusters
- For the question of **'To what extent has NSIP delivered UK scientific / societal benefits'**, funded projects target global challenges and support wider academic research.

Economic Evaluation

- **The impact story is still ongoing**, with substantial future benefits expected as more technologies are commercialised and commercial operations are scaled up. Therefore, it is too early to provide firm conclusions on the extent to which the Pilot or ETP have offered value for money or confidently answer the question, "was it worth it"?
- **We estimate that the real, discounted and attribution-adjusted UK benefit of the Pilot is at least £119m to date**. The nominal economic cost of the Pilot has been £41.2m.
- **For ETP, we estimate that the real discounted and additionality-adjusted benefit to date has been at least £12.2m**. The nominal economic cost of the ETP has been £10.4m.
- **Monetisable benefit estimates are driven by a few large external investment events and do not include the substantial non-monetisable benefits** outlined above.
- **A comparison with expectations at proposal stage for ETP demonstrates strong optimism bias** in estimated internal and external investment, revenues and job creation.
- **Costs are broadly in line with those expected at Business Case stage**, though the Pilot grew in scope with additional phases of funding added, whilst there is limited basis for comparison of anticipated benefits and value for money with realised outcomes.

Findings must be considered as part of a **longer-term narrative**. Technologies can take years to reach market or full operational capability, often (or typically) requiring follow-on funding to do so. This is an expected outcome of Pilot and ETP funding. Nevertheless, we see that funding has led to numerous and often very notable positive outcomes which we view exceed expectations at this stage. **Continuing to track future activity** will be key to strengthening the existing evidence base.

1 Introduction

1.1 Context

The **National Space Innovation Programme (NSIP)** is a flagship programme of the UK Space Agency, designed to support the research, development and commercialisation of innovative products, services and technologies across the space sector. The core aims of NSIP are to:

- **Catalyse Investment**: Supporting projects that multiply the value of non-government contracts and capital secured by the UK space sector by five to eight times the value of NSIP investment by 2030.
- **Drive innovation**: Accelerating the development of high-potential concepts and supporting measurable advances in Technology Readiness Level (TRL).
- **Capture market share**: Generating new products and services that are sold to the fastest growing and potential space markets by 2030.

NSIP supports delivery of National Space Strategy's[2] third pillar to 'grow the UK as a science and technology superpower', contributing to its objectives to grow and level up the UK space economy, lead pioneering scientific discovery, and use space to deliver for UK and global citizens.

know.space was commissioned by the UK Space Agency to undertake Monitoring and Evaluation (M&E) and benefits management activities for NSIP, in collaboration with our partners at RAND Europe (leading on the process evaluation), and our expert advisers.

As part of our wider M&E activities, this report focuses on two early NSIP funding programmes: the **NSIP Pilot** and the **Enabling Technologies Programme (ETP)**, which were precursors to later Kick Starter and Major Project activities (which will be the subject of separate M&E deliverables).

The NSIP Pilot (2020-2024) awarded grants of up to £1.4m through two routes. The National route invited proposals under two themes, Earth Observation to Tackle Climate Change, and Ubiquitous Communications for Enterprise, Consumers and Government, with projects receiving initial Discovery phase funding before the strongest performers were down-selected for follow-on Implementation phase grants. The largest Implementation grant was £5.9m. The International route meanwhile focused on bilateral collaboration to boost export potential and develop technologies with allied nations.

ETP (2023-2025) was established to fund early-stage enabling space technologies at low TRLs (typically 1-4), with grants of up to £250k across four calls targeting areas, including In-Orbit Servicing and Manufacturing, optics, space science technologies, sustainability in space, and a final open call with no thematic restriction. While some ETP projects experienced delays extending beyond the original programme window, all projects have now concluded.

Building on the *interim* impact and economic evaluation report from December 2024[3], this full report presents the **impact and economic (value for money) evaluation** of the NSIP Pilot and ETP. Process evaluation will separately be delivered by our partners at RAND Europe. The report

[2] HM Government, 2021. *National Space Strategy*. Available at: https://assets.publishing.service.gov.uk/media/6196205ce90e07043d677cca/national-space-strategy.pdf

[3] know.space, 2024. Available at: https://assets.publishing.service.gov.uk/media/68932c6c1217374e421d4e59/know.space-UKSA-Interim_Impact_and_Economic_Evaluation_of_Pilot_and_ETP__publishable_.pdf

aims to address the "so what" question of public investment in early-stage space innovation: **what ETP and NSIP Pilot funding has achieved to date**, **the extent to which observed impacts are attributable to this funding**, and **whether these benefits represent value for money for the UK**. In doing so, the report assesses the NSIP Pilot and ETP against key UK Space Agency success metrics, including the *North Star Metric* and original NSIP Pilot / ETP business case objectives.

Across the two programmes, the UK Space Agency funded **42 Pilot projects** and **41 ETP projects**, supporting organisations across industry and academia to progress high-risk, high-reward innovations towards commercial readiness and adoption.

1.2 Overview of approach

1.2.1 Data collection and monitoring

This evaluation uses a **mixed-methods** approach to assess the impact and value for money of the NSIP Pilot and ETP, triangulating evidence from primary and secondary sources. We also explicitly consider the counterfactual, i.e. what would have happened without UK Space Agency funding, including the additionality of funded activities.

Primary evidence was gathered across multiple rounds of engagement between autumn 2024 and spring 2026, through semi-structured stakeholder interviews with project teams as well as unsuccessful applicants, application reviewers, HMG actors, and other relevant stakeholders. Survey questionnaires were also distributed to project teams, designed to capture consistent and comparable quantitative data on project outcomes that, combined with qualitative evidence from interviews and secondary sources, enabled programme-level analysis and insight. This included:

- Interviews with funded NSIP Pilot project teams (13 in 2024, and 2 in 2026);
- Written feedback from Pilot teams (7 in responses total in 2026).
- Interviews with funded ETP project teams (37 in 2024, and 12 in 2026);
- Interviews with unsuccessful applicants (25) to inform understanding of the counterfactual;
- Interviews with reviewers (6) and relevant UK Space Agency / DSIT stakeholders (3);
- A survey of ETP project teams, (32 respondents in 2024, and 24 in 2026);

Secondary sources include programme and project documentation, such as applications (e.g. Finance annexes), monitoring evidence (e.g. North Star Metric reporting), milestone reports, delivery updates, and final reports. This was supplemented by wider online materials, and publications by the funded organisations to support our bibliometric analyses.

1.2.2 Theory-based impact evaluation

Overall, both primary and secondary evidence inform our **theory-based evaluation approach**, which uses contribution analysis to assess the extent to which Pilot and ETP funding contributed to observed outcomes. This draws on the NSIP theory of change and evaluation questions (see Annex) and a structured set of **impact themes** used to translate project-level outcomes into measurable programme-level impacts. These impact themes, shown below, provide the organising framework for the evaluation. For each theme, we use multiple **theme-specific indicators** to measure progress, and draw on key project-level examples (such as case studies) to demonstrate specific examples of impact.

Figure 1 *Impact themes*

1.2.3 Econometric methods (quasi-experimental methodologies)

We complement the theory-based approach with **quasi-experimental methodologies** applied to both the NSIP Pilot and ETP, allowing for more robust estimation of impacts. We use project-level reporting and external business data from the **Beauhurst**[4] platform to construct control groups of similar non-funded organisations. This allows us to estimate the **additional effect of receiving NSIP or ETP funding on employment growth**. Given sample sizes, programme heterogeneity, and the time required for R&D impacts to generate outcomes, econometric estimates should be interpreted as complementary evidence rather than definite "single number" impact measures. Full details of data structure, model design, robustness checks, limitations, and implications for future evaluations are provided in the Annex.

1.2.4 Economic evaluation (value for money)

We assess value for money by comparing the costs of delivering the Pilot and ETP (UK Space Agency grant funding and required matched contributions) against the economic benefits to date. Our economic evaluation follows HM Treasury Green Book principles and relevant DSIT evaluation guidance, adjusting for additionality. Recognising many benefits of early-stage innovation are non-monetisable (though important), or may materialise beyond the evaluation window, we present quantitative value for money (VfM) estimates alongside a qualitative assessment of wider benefits.

1.2.5 Caveats

As with many R&D programmes, and particularly those that - like the Pilot and ETP - deliberately target disruptive technologies at (often) low maturity levels, impacts often continue to develop well beyond the end of individual projects. Further technological advances are typically needed to bring funded innovations to the point of commercialisation, and this frequently requires additional funding or investment beyond the scope of the original grant. Benefits realised over the longer term are therefore often not solely attributable to UK Space Agency funding, though it can be at these later stages that some of the more sizeable revenue-generating benefits are unlocked.

The same applies to wider benefits to society, which in many cases depend on products and services reaching market or full operation over the longer term. This report therefore distinguishes between benefits realised within the evaluation period and those still expected to materialise in future, and considers the extent to which observed and anticipated outcomes are attributable to UK Space Agency funding. Inevitably, it also means that this 'full' evaluation is based on a partial impact picture, with many products and services (as expected) still in development.

As part of our M&E activities, we developed an evaluation framework and baseline for the broader NSIP programme in 2024. However, all Pilot and ETP projects started before our M&E roles were established[5], meaning that while standard project monitoring / reporting arrangements were in place, a comprehensive approach to evaluation baselining, data and regular evidence collection was not. Given changes in reporting requirements over time, including the introduction of North Star Metric reporting in 2022, data availability and granularity also vary across projects and calls. This means that – compared to future Kick Starter and Major Project focused evaluation deliverables – we faced some constraints regarding data/evidence quality and availability. Stakeholder engagement was also affected by organisational change and time elapsed: many Pilot projects for example were funded in 2020-21, meaning that retrospective evidence collection undertaken in 2024-26 faced some inevitable difficulties with recall and staff turnover. Some analysis is therefore based on relatively small sample sizes (which we flag where appropriate).

[4] A business intelligence platform that tracks company growth, investment, and firm-level financial and operational data.
[5] The last ETP project commenced in April 2024, and the framework and baseline report was finalised in May 2024.

2 Impact Evaluation

2.1 Counterfactual

In the absence of NSIP Pilot and ETP funding, our evaluation evidence suggests that **the scale and rate of innovation supported would have been significantly reduced**. The programmes were widely seen as filling a gap in the funding landscape, particularly for early-stage, high-risk R&D activities that are not easily supported through other routes or where these other routes (e.g. non-space-specific Innovate UK R&D calls) are often over-subscribed. Ultimately, the programmes represented a **supply-side increase in the availability of space sector innovation funding**.

Around a quarter of ETP projects and a third of Pilot projects definitively stated that their project would not have proceeded without funding, while others noted that proceeding was contingent on securing alternative sources of funding (with no guarantees of success and at a minimum leading to delays or reduced/changed scope of activities). Evidence from unsuccessful applicants reinforces this, with many projects either not having been pursued or experiencing delays. Without NSIP Pilot and ETP, we view that fewer technologies would have progressed through TRLs, and project developments would have been slower – or would simply not have been pursued.

> *We do not believe the project would have gone ahead without the Pilot funding.*

Even where alternative funding may have been secured, project teams noted that this would often have required changes in project focus or ambition. As a result, **innovative solutions to challenges NSIP-funded teams set out to face would have been substantially reduced**. This would be likely to have led to slower scientific progress and the ultimate development of fewer novel approaches to addressing global challenges, which were targeted by several projects.

Beyond funded technological developments, the Pilot and ETP supported collaborations, with many partnerships strengthened, and many established specifically for these projects. Without funding, **partnerships would likely have not progressed, or progressed at a slower pace or reduced scale**, with teams highlighting that they saw limited alternative opportunities to formalise collaborations around defined project ideas. In particular, the NSIP Pilot provided a valuable route for enabling international collaboration - with most projects predating the launch of the UK Space Agency's International Bilateral Fund, which awarded funding from late 2023. In the counterfactual scenario, therefore, we expect that less international collaboration would have occurred.

In the counterfactual, less early-stage funding would also have reduced the number of projects reaching a stage where they could attract private investment. **Fewer projects would have progressed toward commercialisation**, and/or commercialisation would have occurred over longer timescales. Investment-related outcomes would also likely have been lower. Delays and reductions in scope could have weakened the ability of project teams to establish or maintain competitive advantage. Unsuccessful applicants generally stated that (i) their project had not been progressed, or (ii) it has been taken forward, but overseas. This aligns with successful project teams noting that without funding, their advancements would have been delayed and would likely have **diminished the UK's competitive position in several emerging markets**.

While many individuals would have remained employed in the space sector, their **skills development may have followed different routes**. NSIP Pilot and ETP enabled the development

of space-relevant capabilities in niche sub-sectors and, in some cases, supported entry of talent and early career talent into these sub-sectors. Without this funding, the upskilling of project teams may not have occurred, and **some talent would likely have been lost to other sectors**.

Additionality

Many project teams would have likely pursued other productive research avenues in the absence of funding (as is the case for nearly any innovation-focused programme), so there are likely some **displacement effects**. The question of alternate uses of funding is beyond the scope of this evaluation. Again, however, as a supply-side increase in innovation funding, the net effect after displacement will be an increase in innovation activity. Reinforcing this, some unsuccessful applicants reported that their ideas were progressed overseas in the absence of funding, providing some evidence to suggest that the programmes catalysed new UK activity (and resultant UK socio-economic benefit) that otherwise would not have occurred.

Some projects were internationally-collaborative and as such, the ultimate benefits in many cases may accrue to both the UK and other countries. While this could be conceptualised as **leakage**, we note that the contributions from other countries mean that the UK can similarly benefit from their inputs, counterbalancing this effect. In some cases, an outcome of project funding has been organisational growth (revenue, employment) both in the UK and overseas. Within the economic evaluation, we focus on the UK impacts only, i.e. removing leakage effects. Similarly, the nature of innovation is that several **different streams of funding over different time periods can interplay to drive end results** (e.g. new product launch). We focus on the attribution to ETP/Pilot funding only, though longer term outcomes should be seen through this perspective.

Without Pilot and ETP funding, teams would have had to pursue other sources of funding, with no guarantees of success. Other relevant public innovation programmes are often highly over-subscribed, and projects were in general too early to seek private finance. Previous internal UK Space Agency M&E analysis of the Pilot (unpublished) reinforces the additionality of funding, with **16 of 17 implementation phase projects stating that funding enabled them to undertake innovation that would otherwise have been delayed or not taken place at all**. Without Pilot and ETP funding, therefore, we view there would have been substantial barriers to achieving the observed outcomes.

Impact Evaluation Question	RAG Rating	Performance
What has been the extent of each element of economic additionality to NSIP Pilot and ETP funding?		We view there is in general high additionality of impacts to Pilot and ETP funding, given that many projects would not have proceeded in the programmes' absence, or would at a minimum have faced delays or reduced scope. This, alongside limited alternative funding sources identified by project teams, indicates that observed outcomes are attributable to the programme's support. While some projects could have been taken forward in a different way or to longer timescales in the absence of funding (i.e. in economic terms, there is likely some deadweight), the programmes effectively represent a supply-side increase in space-related innovation funding, enabling the development of new products, services and mission ideas.

2.2 Innovation

Summary of key findings

- **NSIP Pilot and ETP have supported a range of organisation types,** with NSIP Pilot projects funding a large proportion of SMEs, alongside large companies and research organisations. ETP has relatively concentrated support for universities (and SMEs to a lesser extent).
- **Both pathways have supported projects with low initial technological maturity to reach mid-level TRLs, with some exceptions reaching later stages.** ETP projects have increased TRLs by 2.5 on average, exceeding UK Space Agency objectives. Across NSIP Pilot calls, we found a (caveated) average TRL increase of 2.8.
- **New Intellectual Property has been developed through Pilot and ETP programmes, though it remains informal at present**, with limited patent activity. There has been a total of 18 digital and software assets developed by project teams (15 ETP, 3 Pilot).
- **Stakeholders highlighted long-term productivity benefits associated with funding.** 76% (of 29 respondents) of ETP project teams agreed that funding had improved their productivity, while Pilot funding was linked to at least 6 facility upgrades which are expected to have long-term productivity benefits for funded organisations.
- **Driven by a subset of projects, there has been significant investment linked to NSIP Pilot funding, and ETP to a lesser extent.** Six Pilot organisations generated external investment worth £122m, after attribution-adjustment. £81m of this is private investment, and the remainder (£41m) is public. ETP projects reported £23m attributable external investment, of which £16m is public, and £7.7m is private. ETP trends likely reflect low TRLs, high academic concentration, and an emerging story.

Evaluation Question: *'To what extent have NSIP Pilot and ETP catalysed innovation and the development of disruptive technologies?'*

While new products and services will often take more time to reach market / full operation, there has been strong performance to date across Pilot and ETP, with widespread TRL raising, informal IP and digital asset development and creation.

2.2.1 NSIP Pilot projects

Distribution of NSIP Pilot funding by activity and organisation type

Of the **£28.1m total allocated** through all NSIP Pilot streams, £24.4m went to 'industrial research', as classified by the World Trade Organisation (WTO) subsidy control categories. The objectives of these projects were to develop new knowledge through applied research, supporting new product and service development with subsequent commercialisation activities.

The UK Space Agency allocated £2.6m to **experimental development** through the Pilot, aiming to bring market applications closer to market readiness, e.g. through prototype development and testing. The UK Space Agency also funded **feasibility studies** (£500k), which determine the practicality and viability of progressing with the project through market analyses, cost estimation and risk assessment; and **fundamental research** (£500k), supporting experimental work to gain new knowledge without focus on immediate practical applications. This distribution of funding is skewed towards low technological maturity ideas which could be disruptive, rather than funding continued development of incumbent products and solutions, as per the objectives of NSIP.

In the initial Pilot calls, the UK Space Agency supported **15 SMEs, 5 large companies, and 8 universities** who led NSIP Pilot projects. In these calls, project teams also included a total of **64**

partner organisations. These included 28 SMEs, 13 large companies, 22 universities or other research organisations, as well as 5 government agencies. The high concentration of SMEs in the Pilot indicates the role of public funding in building a diverse UK space sector. The concentration of SMEs may indicate they are primed to take risks on low-TRL space research to develop novel solutions in emerging sub-sectors, or could indicate that the role of public space innovation funding at this scale is especially key for smaller companies, which are less likely to have access to dedicated internal R&D budgets.

Since receiving NSIP Pilot funding, the UK arms of five funded organisations have since dissolved, including one lead organisation and four partners (Lynk Global, RCML, Virgin Orbit, S4, Durham Precision Optics). This indicates a survival rate of 91% for NSIP Pilot-funded SMEs, which is significantly higher than the than the three-year survival rate for all UK SMEs, which is 47%.[6] While this survival rate cannot be solely attributed to NSIP Pilot, it highlights that UK Space Agency funding may be a factor in supporting the long-term sustainability of SMEs in the UK space sector.

Over two thirds (69%) of project teams in the initial funding calls featured industry-academia collaboration (universities and other research organisations). In the subsequent Implementation phase, which down selected a subset of these projects to pursue follow-on activities, this figure rises to 82%. While the overall proportion of academic-industry collaborations across projects is not a standalone impact, it demonstrates collaboration and synergy between companies and research organisations, that together can strengthen innovative R&D.

Technology development

NSIP Pilot funding has enabled TRL progression across all projects, to varying degrees. Technology development is a key aim across NSIP calls, with the overall objective of the programme being to support an average improvement in TRL of two or more over the lifetime of each project. However, due to data not being captured in early NSIP Pilot reporting and documentation, and challenges in collecting data several years after the event, we have limited data for TRLs in these projects – especially for original Pathfinder and International calls. Pilot TRL data is more comprehensive at the Implementation level, where an internal UK Space Agency report outlined that **anticipated TRL increases have been met across the board**.[7]

> *NSIP Pilot acted as a catalyst, enabling early technical validation, unlocking follow-on funding and leading to an operational service.*

In the initial Pathfinder call, we have starting TRL data for **6 projects, at an average TRL of 2.3**. Within this average, figures range from TRL 1-5. We have end TRL data for seven projects in the Pathfinder call, at an average **TRL of 3.7**. While the sample size is limited, this would indicate an average TRL increase of 1.4. We lack TRL data for the International call, so are limited in our assessment of these projects.

We have better data for the down-selection of projects in the subsequent Implementation phase. From a sample size of 8/11 projects, **the average starting TRL is 3.3**. The same 8 projects ended the Implementation phase with a TRL of 5.1, **leading to an average TRL increase of 1.8**. A further 2 projects progressed into a second Implementation phase, reaching final **TRLs of 5 and 8**. For these two projects, successive rounds of NSIP Pilot funding led to significant de-risking and

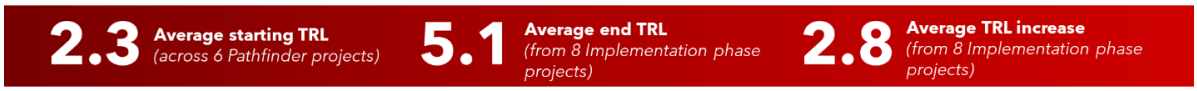
[6] Warwick Business School, 2025. *Business growth faltering as just 2% of UK start-ups reach £1m turnover*. Available at: https://www.wbs.ac.uk/news/business-growth-faltering-as-just-2-of-uk-start-ups-reach-1m-turnover-since-2020/

[7] UK Space Agency, 2021. *Monitoring & Evaluation Report National Space Innovation Programme Pilot Year 20/21* and UK Space Agency, 2022. *Monitoring & Evaluation Report National Space Innovation Programme – Implementation Phase 2021/2022*.

enhancements in technological maturity, taking both projects from early-stage concepts (TRLs 1 and 2 at initial pilot stage) towards commercialisation and enhanced UK competitiveness.

While it would not be robust to take the average starting Pathfinder TRL and compare it to the end of the Implementation phase, we see evidence of at least 4 projects increasing their TRL by 3 over both calls. If we assume the average starting TRL in the Pathfinder stage applies to all projects, this **would represent an average TRL increase of 2.8 across all NSIP Pilot calls**, though this also reflects better data availability for the projects which progressed through subsequent stages.

Figure 2 *Average TRL start, end and increase across NSIP Pilot projects*



Beyond system-level averages, there is evidence that NSIP Pilot support has played a key role in developing specific subsystems. While overall TRL data is patchy, we have evidence that one project was successful in bringing three components from a low maturity up to flight-proven status. These subsystems related to image processing, ground support, and satellite tech, and were taken from early analytical studies (TRL 1, 2 and 3) up to TRL 9 status as a result of Pathfinder and Implementation funding, alongside other sources. Moreover, one international project developed a magnetometer which is now operational in a space science mission, and hence has reached TRL 9 after the project concluded, which is discussed further in Section 2.6.1.

A common theme in interviews was that while system-wide TRL measures provide a useful and standardised measure of technological maturity, they can also mask technological development at the subsystem level, which is often a key sign of project impact, especially at the early R&D level.

Generation of new intellectual property

New IP has been developed across most projects. However, stakeholders stressed that this was primarily held within organisations as **informal know-how**, as short project durations limited the potential to file for patents, which can take several years to be submitted, processed and accepted. Patenting technologies is still an ambition for some projects, with one team meeting with a patent attorney in early 2026 to file an application based on the IP they created. Other project teams expressed intentions to patent laser optical communications systems and thermal imaging camera technologies, but had not filed for patents during their projects.

> *We would like to emphasise the importance of this funding in bringing new concepts into fruition, even at early stages.*

The unregistered nature of IP is partly due to the early TRL of many Pilot projects, though may also reflect missing information from concluded projects, a desire to produce open-source findings, or a lack of incentive to formally patent technologies. Not all stakeholders shared ambitions to patent, citing high costs and risk of publicly sharing sensitive design details as barriers.

Current and future productivity benefits

Due to a small sample size, we have **limited information on Pilot project team perceptions of productivity gains**. However, projects undertook knowledge exchange and capability development, which are known productivity boosting mechanisms. The inclusion of project partners meant that project activities could be led by those with the most relevant expertise. Furthermore, **consortia were often structured around complementary expertise** rather than overlapping skills, enabling knowledge exchange that helped streamline project delivery and

supportive productivity. In many interviews we heard how enhanced capabilities and skills (see Section 2.4.1) were often disseminated through organisations, leading to **improved technical know-how and more efficient processes** for future projects. For example, one project noted that improved production timelines and satellite engineering capabilities from NSIP will be leveraged for follow-on work to grow their satellite constellation.

Pilot funding aided at least 6 facility upgrades, which enhanced both within-project activities and **wider research capacity at an organisational level**. For example, a stakeholder at Northumbria University regarded Pilot funding as a direct catalyst for large investments into a regional space facility (highlighted further in a case study below). In addition, at least 3 digital assets and £20.8k in software procurements were supported. These assets can be leveraged beyond the lifetime of Pilot projects to improve efficiency in future activities. One team developed a data compression algorithm, which was noted as valuable for enhancing other instruments and missions.

Investment and North Star Metric outcomes

Capturing leveraged investment and in-kind contributions helps to measure the level of private sector support, informing the **UK Space Agency's principal measure of success, the North Star Metric**. This measure assesses outcomes of programmes by the amount of private investment[8] generated. North Star Metric reporting was introduced as a condition of funding in 2022 and therefore Pilot projects predate reporting requirements, with the exception of the two down-select projects. Reflecting this, our data on investment outcomes is patchy, relying in places on examples of impact, rather than consistent data capture. Funded organisations provided match funding with contributions differing according to organisation size. Across calls, **matched funding totalled £13.6m**, with contributions varying from £0[9] to £7.5m[10] across multiple phases of funding.

Evidence of internal investment for Pilot projects is extremely limited, since most projects were not required to submit North Star Metric reporting. We have just one monetised estimate of a down-select project investing £448k internally, though qualitative evidence suggests internal investment was in reality more widespread. One SME, for example, noted that they reinvest all their revenues from their NSIP-developed technology back into the technology.

A minority of project teams have achieved notable successes in generating external investment. In total, **six project teams generated external investment worth a combined £122m**, after adjusting for attribution (see Section 3.2.1 and Annex). Of this total, £81m is private investment (contributing to the North Star Metric) and the remainder (£41m) is public. This total is driven by a small number of large investment events, as is typical for R&D grant funding programmes. One firm recently closed a £30m ($40m) funding round bringing total equity investment to £60m ($80m).[11] Whilst not wholly attributable to NSIP, we heard how Pilot funding has played a key role in the company's development. Leveraged public funding came from a range of sources from the UK (UK Space Agency, Defence and Security Accelerator) and internationally (ESA, European Union, NASA, JAXA).

Assessing the extent to which leveraged external investment is attributable to NSIP funding is challenging. Pilot projects built on earlier projects funded through other sources and in many cases the technologies have since been progressed further with other funding. Pilot projects were typically one element in a broader programme of technology development. As such, attribution shares are necessarily somewhat arbitrary. Nonetheless, some project teams could point to clear examples of the link between NSIP funding and leveraged investment.

[8] The North Star Metric also measures matched funding, internal investment and revenues.
[9] One international body joined a Pilot consortium and was not required to provide matched funding.
[10] This project team were awarded funding through multiple funding phases.
[11] SatVu, 2026. *NATO Innovation Fund backs Thermal Intelligence with multi-million SatVu investment*. Available at: https://www.satellitevu.com/news/nato-innovation-fund-backs-thermal-intelligence-with-multi-million-satvu-investment

> *It is impossible to isolate how much of the funding we've got to date is linked to NSIP.*

Whilst external investment achieved to date is substantial, many **project teams expect to generate more investment in future**, building on existing successes. One firm noted that they are "always talking to investors", whilst another university team explained that they are actively seeking finance for their spin-off company. Other project teams are interested in public funding opportunities, notably through ESA programmes. For example, one team explained that they are in a strong position to bid for ESA ARTES contracts following their Pilot project. Nonetheless, there may be optimism bias in these expectations. Other project teams have not progressed their technology beyond the timeline of their NSIP projects and are not expected to generate external investment, instead focussing on other opportunities. As with any innovation programme, **a portfolio view is required, with a mix of successes and failures to be expected.**

Several project teams felt that NSIP funding had boosted their likelihood of securing external investment, with one project team describing how securing NSIP funding was a condition of their private funding. Those project teams still seeking to develop their NSIP technology further are pursuing investment in different ways, with some more focussed on securing further public funding and others more focussed on private equity.

At this stage, the private sector leverage ratio[12] for Pilot projects is 4.9, meaning that for every £1 of public investment, an additional £4.90 investment has been generated. We expect this to be an underestimate given gaps in reporting and this total being driven by a few large external investment events.

Autonomous Laser Intersatellite Gigabit Network (ALIGN)

Project consortium: Northumbria University (lead), Durham University Centre for Advanced Instrumentation, SMS Electronics, Telespazio UK, Lockhead Martin UK (collaborator).

NSIP Pilot funding has enabled Northumbria University to advance their laser optical communications technology from **TRL1 to 5.** In the process, they developed **new IP,** which the team plans to leverage by **registering a joint patent** and **creating a spin-out company.**

Source: Northumbria University

NSIP funding was noted by the project team as a key catalyst for the investments that supported the creation of the **£50m North-East Space Skills and Technology (NESST) centre**. The partnerships and capabilities developed under NSIP were crucial for unlocking £10m in investments into NESST from UKSA, £15m from their NSIP-project partner Lockheed Martin Space UK and £25m of internal university investment. The facility is forecast to create ~350 high-skilled jobs. Alongside NESST, the project also supported further regional benefits through catalysing a **£600k investment from the Office for Students**, for the creation of a new space technology facility at Northumbria University. This investment was secured by the university to support further developments on their NSIP-technology, and has enabled wider research and teaching. This new facility and its associated capabilities have enabled the university to launch **new aerospace and satellite engineering undergraduate and master's degree programme**s beginning in 2026-2027, with 70 applications received so far.

The project has led to plans for a Northumbria University spin-out company, Laser Orbit, which is expected to be established in 2026 and will focus on the scalable mass production of laser

[12] This is the sum of matched funding, internal investment and external investment, divided by grant funding.

communication technologies for satellites. The university is **in discussions with four primes** in the space industry. Telespazio have expressed interest in investing equity and completing software developments on the project for a stake in the spin-out company.

The NSIP-developed technology has defence-applications, with the ability to be leveraged for satellite optical links, precise laser ranging, and laser dazzling. The project has, consequently, attracted interest from NATO, and other defence customers. The team is working with BAE Systems, who have identified defence customers for the NSIP-developed payload. Several other organisations have shown interest in the project, including Blue Origin, SpaceX, Seraphim, North Star ventures and Filtronic. The NSIP-project has secured £15k for a scoping study on hybrid RF-optical communication technology with Filtronic and a further £65k for a collaborative project with Open Works Engineering to apply their ALIGN project to drones. Market analysis from the project team estimates **potential annual revenues of £6m-10m** based on sales of around 150 terminals per year, with hopes to scale up to ~1,000-4,000 in servicing mega-constellations of small satellites. The team is also involved in a **£4m NASA commercial lunar payload proposal** for establishing the first lunar laser communication network between a lander and a rover, expected to launch in 2031.

2.2.2 ETP projects

Distribution of ETP funding by activity and organisation type

The UK Space Agency allocated a total of £8.5m to ETP projects, and there are variations in the types of research funded between Pilot and ETP, reflecting their different objectives. While £490k was allocated to non-profit research and technology organisations (RTOs) and £2m to industrial research, **the majority of funding was used for academic research (£5.6m)**. Unsurprisingly, this is also influenced by the organisations in receipt of ETP support – as 55% of all organisations funded (leads and partners) are universities. Universities and other research organisations also led 62% of ETP project teams overall, and even more in calls 1 and 2, where universities and other research organisations led 8/9 and 12/14 projects respectively. This suggests ETP was key in supporting academic teams to move academic research closer to commercial solutions, but that market entry in the short term would be less likely, as is explored below.

Technology development

ETP projects began with low starting levels of technological maturity by design, in line with the UK Space Agency's aim to fund the R&D of cutting-edge technologies at a low-TRL (1-4) through the programme. The 41 ETP projects **started at an average TRL of 1.9**. Within the ETP project portfolio, 39% of projects began at the least mature stage of technology development (TRL1), where only basic principles had been observed. The same proportion of projects (39%) began at TRL 2, where these principles has been translated into a practical technology concept or application. The remainder of projects started at TRL 3 (20%), except for one TRL 4 project.

ETP funding has enabled project teams to further refine and mature technologies, by providing them with the capital required to complete requirements analyses, design reports, experimental tests, integration analyses, hardware/software development, and road mapping. For the 36 projects we have data for, **ETP projects ended with an average TRL of 4.3 - representing an average TRL increase of 2.5**. For some projects, ETP enabled significant step changes in the market readiness of novel technologies – with one project progressing a mechanical testing platform for space materials from TRL 1 to 9, and who are now pursuing long-term adoption and commercial use (see the case study below for more detail). This average TRL increase through ETP projects **exceeds the broader NSIP programme objective of raising TRLs by at least 2 and represents growth from the average increase of 1.8 we identified in the 2024 interim evaluation**, when several projects were still ongoing.

Figure 3 *Average TRL start, end and increase across ETP projects*

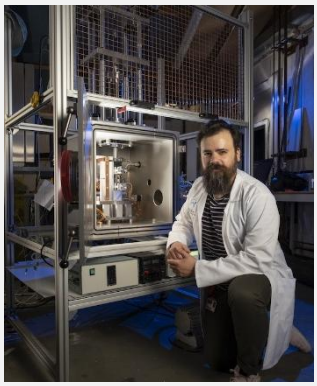
Alongside advancements in system-level TRLs, funded organisations also noted TRL advancements in a total of **seven adjacent technologies and systems**. These include 3D printed X-ray mirrors, vacuum testing equipment, RADAR sensors, and laser welding technologies, representing additional **spillover benefits** to organisations, which could be applied to other projects.

Given the ETP call was designed to target low TRL projects, many teams are now exploring public funding avenues to support continued technology development and commercialisation, due to challenges finding private investment at this level of maturity. With approximately 4/5 of ETP projects at TRL 5 or below, some project leads have raised concerns that they are entering a **'TRL Valley of Death'**, where follow-on funding and contract opportunities are essential to further mature and commercialise new products and solutions developed through the programme.

However, some projects have continued to raise TRLs beyond the lifetime of their ETP projects. For example, one project that developed medical hardware for human spaceflight **secured flight heritage** through the private SpaceX *Fram2* mission, taking the technology initially developed through ETP from **TRL 4 to 8**. This is discussed further in a case study (Section 2.3.1).

NextSpace Testrig

Project consortium: University of Glasgow (lead), The Manufacturing Technology Centre.



Source: University of Glasgow

The University of Glasgow's NextSpace Testrig started as an early-stage concept at **TRL 1 and reached TRL 9** through ETP funding, far exceeding the project's original technical objectives. The facility tests additively manufactured (3D-printed) components under combined vacuum and thermal conditions, and is currently the **world's first dedicated facility** for testing the structural integrity of such materials in space. Beyond improving understanding of material behaviour and reducing the risk of in-orbit failures, it provides the infrastructure for raising the maturity of other associated technologies through testing and validation.

The success of the NSIP-funded work and the speed at which the technology matured attracted follow-on funding and opened new opportunities. The project has leveraged over **£600k in total funding across programme, university, and follow-on sources**, including **£150k for a feasibility study** demonstrating circular manufacturing approaches for space infrastructure. The core technology and validation credibility also underpinned the creation of the **Orbital Arrays spin-out**, which is preparing to raise **£3–10m in private investment** to demonstrate large-scale infrastructure manufacturing in orbit.

The facility now supports technology development and validation for a range of users, including industrial partners and international academic collaborators, generating income through these. Four researchers, including PhD students and research staff, are **directly employed by the organisation**, which also enables further bidding for additional projects and funding.

The project has also attracted significant visibility, including a BBC radio interview and **over a hundred other media mentions**. It was recognised as the Manufacturing Technology category winner at The Engineer's C2I Awards 2025.[13]

[13] The Engineer, 2026. *C2I Manufacturing Technology winner – NextSpace Testrig*. Available at: https://www.theengineer.co.uk/content/in-depth/c2i-2025-manufacturing-technology-winner-nextspace-testrig

Generation of new intellectual property and research breakthroughs

ETP funded activities have generated new knowledge, including testing of first-of-a-kind solutions, and experimental results which have challenged the status quo within specific fields of research. Project teams identified at least **21 research breakthroughs** across their ETP projects, including new techniques and the novel integration of existing technologies. As with Pilot projects, IP was widely regarded as **informal know-how** at this level of technological maturity, with uncertainty regarding future patenting given the time and costs associated. For example, one project internally documented ETP-enabled IP in additive manufacturing, yet were unsure if they would pursue a patent. Other teams noted the need to continue technology developments beyond the end of their ETP project, to identify first if their solutions were novel enough to patent.

At this stage, **no ETP-related patents have been identified**. Notably, several teams, most often in academia, shared that their intention to not patent IP was driven by wanting to keep solutions open access, and that commercialisation was not an end goal. Other stakeholders were unsure on feasibility, based on costs and expected returns. Despite this, 7 teams shared expectations to patent ETP-related technology in the future. This highlights that ETP funding has supported **limited but evidenced steps toward formal patent generation, alongside wider development of internal know-how, both of which support commercialisation routes**.

Current and future productivity benefits

76% of project teams (22 out of 29 respondents) agreed or strongly agreed that ETP had directly improved their organisation's productivity, with many highlighting how the partnerships, skills and capabilities developed under NSIP could be leveraged for future projects. This compares to 65% of teams (20 out of 31 respondents) in 2024, showing an increase in perceived productivity gains as organisations embed new skills and processes into ongoing and future work. ETP funding has supported the **enhancement of in-house skills, capabilities and capacities**. ETP-enabled partnerships have also enabled organisations with complementary capabilities to collaborate, improving networks for integration and testing of technologies, alongside having readily established consortia to bid for future work together. These productivity benefits can aid organisations to capture further follow-on work and quality of activities for increased efficient use of investments into the space sector and enhanced organisational outputs for the space sector and wider economy.

> *"Funding has enabled strong complementary collaboration across the consortium to support unique insights into technical solutions.*

6 facility upgrades have been supported by the funding, helping to increase organisational capacity for ETP projects and longer-term additional R&D activities. In addition, **15 digital assets** have been developed through ETP projects, including tools and algorithms that teams can reuse and adapt for future research and technology developments. £17k in software procurement has also been enabled by ETP. With the expectation that these can be leveraged beyond project teams' ETP activities, there is potential for long-term increased organisational capacity and tools, for continued productivity benefits beyond project duration.

Investment and North Star Metric outcomes

ETP project teams contributed a total of **£2.3m in matched funding** across all calls, compared to grant funding costs of £8.2m. This relatively low matched funding total reflects the organisational make-up of project consortia, with many academic institutions funded (subject to a 0.8 matched funding rate, i.e. they must contribute 20p of matched funding for every £1 of project costs).

Beyond match funding contributions, we have evidence of **internal investment of at least £2.0m** from 22 ETP-funded organisations. The majority of investment comes from lead organisations (£1.8m) with the remainder (£180k) from partner organisations. Internal investment covered staff costs and enabled recruitment; improved facilities including lab spaces; and, in one case, funding for a flight test demonstration. Beyond our monetised estimate, some project teams noted internal investments into staff and facilities which they struggled to quantify.

ETP project teams also reported **£23m in attributable leveraged external investment** of which £16m is from public sources and £7.7m from private sources. The focus on public funding sources likely reflects the lower TRLs targeted by ETP and the number of academic organisations funded relative to commercial entities. 12 organisations received further public funding with attribution-adjusted amounts varying from £65k to £7.5m. Funding sources include later NSIP calls, other UK Space Agency programmes (e.g. the International Bilateral Fund), other UK government sources (e.g. the Foreign, Commonwealth & Development Office; the Engineering and Physical Sciences Research Council) and international sources, notably ESA contracts.

Private investment was generated by 12 organisations, with funding amounts varying from £10k to £3.3m. Total **private investment is dominated by two larger investment events**, with one firm securing £3.3m in attributable seed funding and another attributing £3m of their notable £23m Series A raise to ETP. This Series A funding will allow the company to build their next satellite. Most ETP project teams have not raised private investment, but many hope to do so in future.

Currently, there are **at least six ongoing conversations with investors** and ETP project teams, despite the final projects having concluded around a year ago at the time of writing (March 2026). Among project teams there was greater near-term interest in securing further public funds. Several teams have applied for additional public funding and are awaiting a decision. One team explained that they were awaiting to hear the outcome of one ESA proposal which could be worth £500k, as well as a Science and Technology Facilities Council (STFC) grant. Both projects would use hardware built through their ETP project. A significant number of project teams are not actively pursuing further funding but are "keeping a look out" for potential appropriate funding opportunities, for example, a suitable ESA tender. One project lead told us she scans opportunities for appropriate ESA tenders every few months, but until an opportunity appears, the technology development is on hold.

There was **broad consensus among project teams that ETP enhanced their likelihood of securing external investment**, with 93% of organisations surveyed agreeing or strongly agreeing. Project teams pointed to the technology development enabled by ETP, as well as the reputational boost of having secured funding and completed their projects, as key enablers. Still, some project teams noted that further investment was into technologies tangentially linked to their ETP technology, rather than a direct investment.

At this stage, the private sector leverage ratio for ETP projects is 3.2, meaning that **for every £1 of public investment, an additional £3.20 of investment has been generated**, of which the majority is external investment. Whilst lower than the Pilot ratio, this should not be interpreted as worse performance, given TRL differences and that Pilot projects started earlier, allowing more time to these benefits to be realised.

2.2.3 Discussion

Impact Evaluation Question	RAG Rating	Performance
To what extent have NSIP Pilot and ETP catalysed innovation and the		The Pilot and ETP have catalysed widespread innovation across funded projects, with evidence of TRL-targets being met across the board, and the generation of new informal IP

development of disruptive technologies?		which may be patented in the future. Both programmes are catalysing notable investment in the sector. Many technologies require further progression, and teams hope to raise investment and generate more substantive revenues in future, though we view progress is in line with expectations for this point in time.

Pilot and ETP funding is distributed across different development stages and actors in the space sector, reflecting the respective programme designs. Pilot funding is concentrated in industrial research and experimental development, supporting the commercialisation of innovative ideas. ETP funding often targeted lower-TRL and academic-led research, supporting a strengthened pipeline from concept to building and testing. This diversified funding has allowed NSIP to support the broader space ecosystem and mature innovations at different stages.

Evidence assessed suggests that NSIP **Pilot and ETP have been effective in catalysing early-stage innovation and technology development**. ETP projects achieved an average TRL increase of 2.5 while Pilot projects achieved an average increase of 2.8, showing strong progression across low to mid-TRLs. This progression not only shows NSIP enabling technology development, but also **de-risking of innovative projects**, positioning them for further research, commercialisation, and investment, which may not have been possible otherwise.

Funding has supported the development of new IP and research breakthroughs, even though there is limited evidence of formal patenting. The **creation of informal know-how and digital assets** signals meaningful knowledge creation that **strengthens wider organisational capabilities**. Several projects are continuing developments of disruptive technologies in areas including quantum communications, in-orbit servicing, and microgravity science.

Pilot and ETP funding has already supported productivity gains across organisations and has given teams **mechanisms to continue efficient and effective activities** beyond their NSIP projects. Funding has driven facility upgrades and software procurements which increase research capacity at an organisational level. In addition, knowledge-exchange, upskilling and spin-in of talent to the space-sector, highlights NSIP providing **a strong foundation for high-performing teams and sustained innovation**.

Both programmes are **catalysing investment in the sector**, with the Pilot generating £122m in external investment, of which £81m is private, and ETP generating external investment of £23m, of which £7.7m is private. External investment drives notable private sector leverage ratios of 4.9 for the Pilot and 3.2 for ETP. Funding is **also supporting organisations to secure further public funding** with Pilot funded organisations securing £41m in further public funding and ETP organisations generating public funding of £16m. At this stage, Pilot project teams are relatively more focussed on private investment and ETP teams are generally seeking public investment.

These findings must however be contextualised within the longer-term nature of innovation processes. New and improved products and services can take years to reach market or full operational capability, often (or typically) requiring follow-on funding to do so. This is an expected outcome of Pilot and ETP funding. Our assessment is one of strong progress to date, though as ever the longer-term success (and value for money) of Pilot and ETP will depend on the longer term success of new and improved products and services, on which it is too early to draw definitive conclusions at this stage. Nevertheless, when viewed from the perspective of what would have been expected to be achieved by this point in time, our conclusion on innovation-related outcomes is that both Pilot and ETP have led to numerous positive outcomes to date, in line with (or potentially exceeding) original expectations. Tracking investment, revenues and follow-on developments will be important to continue to strengthen the evidence base on impact.

2.3 Capturing market share

Summary of key findings

- **Reflecting early-stage starting technological maturity, Pilot and ETP projects show early but limited commercialisation.** 6 Pilot and 5 ETP projects have brought products or services to market to date, with most projects at an earlier stage, but with clear routes to market.
- **Projects have secured early interest from new clients and customers**. ETP projects have secured 17 new clients and have identified 25 further potential customers, while Pilot projects have gained 3 new customers since 2022, potentially reflecting a growing commercial readiness.
- **Market access impacts remain modest but emerging, laying the foundations for future entry into new sectors and geographies.** 2 Pilot projects have accessed new sectors and 4 accessed new markets, while ETP supported entry into 4 new sectors and 6 new international markets. Notably more entries into new markets are expected in the future as projects commercialise, including entry into EO markets, alongside defence and security.
- **Both streams show early signs of spillovers from the space sector to industries, though these may take longer to emerge.** We identify developments following project completion to transfer technologies to other sectors, though many remain focussed on advancing space-focussed research, technologies and commercialisation.
- **While some projects are beginning to secure revenue, this has generally not yet scaled to the long-term expectations of project teams.** Pilot and ETP projects have secured initial revenues of £1.15m and £1.4m, respectively. Future revenue estimates suggest significant potential value to the UK.
- **There has been uneven knowledge transfer, though this may be a longer-term narrative.** NSIP Pilot generated 2 spin-out companies, with varying success, while no spin-outs have yet been created from ETP projects, despite widespread long-term intention. ETP funding showed a spin-in impact, bringing 2 new organisations into the space sector, with potential to broaden the space sector's capabilities.

Evaluation Question: *To what extent have NSIP Pilot and ETP supported organisations to capture an increased market share in target sectors/ sub-sectors?*

NSIP Pilot and ETP have supported early progress toward market-readiness, with some projects achieving commercial traction. However, overall realised impacts remain limited, and projected future gains, while potentially significant, are subject to uncertainty and optimism bias. This is, however, not unexpected at this point in time and these impacts should continue to be monitored.

2.3.1 NSIP Pilot projects

Commercialisation

Commercialisation impacts are a long-term story and, for many projects, still emerging. This pattern is typical of early-stage R&D programmes, where commercial returns take time to emerge and a handful of projects become success stories. Evidence collected shows that **7 Pilot-developed products or services have been brought to market, across 6 projects** since completing their funded activities. This is an increase from zero at the point of project completion, reflecting the early to mid-TRLs at which many began. One project in secure satellite communications had acquired clients across the UK, Japan and Australia by 2024, while another

reported active commercialisation with multiple industrial partners engaged. Several other projects are in discussions with potential clients, including NASA and BAE Systems, though without confirmed contracts.

> *We are starting to commercialise, with multiple industrial partners and prospective customers currently engaged in integration and adoption activities.*

Reaching late-stage TRL does not equate to captured market share, however, as organisations must still scale production and secure customers, meaning full commercial impacts continue to unfold. Several teams noted that Pilot funding either **accelerated their route to commercialisation or enabled activity that would not have been possible otherwise**. However, accurately assessing the overall reduction in time to market supported by NSIP remains challenging due limited data and various influencing factors. **6 further funded organisations** are expected to reach market in the near future. However, while a subset are actively commercialising, many continue to undertake testing and development, building on what was initiated under NSIP. While achieving marketisation was often considered dependent on further funding, NSIP Pilot has **laid the foundations for future commercial impacts**, even if these remain limited to date. Time lags between project completion and the present day, combined with low stakeholder responses, also suggest that additional commercial outcomes may not yet be fully captured.

There is a similar emerging story with securing new clients. One commercialised down-select project, having advanced through Pathfinder and Implementation funding calls, **gained 3 new clients**, including a Japanese entity, which catalysed further internationally collaborative opportunities for the NSIP project team. Funding has also successfully catalysed the identification of **17 new potential clients**, currently at the discussion stage. Projects remain optimistic that their NSIP projects will secure new clients as developments, testing, and validation continue, suggesting that this Pilot-enabled impact will grow in the future.

Market access and technology transfers

Broader market access remains limited at this stage, but the Pilot has **laid foundations for future entry into new sectors and geographies**. Of the 6 projects that have reached market following completion of NSIP Pilot activities, **2 have expanded into new sectors.** Both of these have entered sectors related to secure quantum communications. Beyond this, 2 projects strengthened their capabilities in weather forecasting, with expectations that this will support their future entry into EO markets – a new segment for both teams. Realised and expected market entry into secure communications and EO align with the targeted thematic areas of the Pilot calls: EO and Ubiquitous Communications, highlighting that the programme has had **some success in directing innovation toward strategically prioritised sectors**.

In terms of international reach, **4 projects have entered new international markets** (US, Canada and Australia), contributing Pilot-developed products or services to international customers and missions. This includes one project delivering their Pilot-developed instrument for involvement in a NASA mission. A further 4 international markets are expected to be unlocked by one Pilot project in the near future, which aims to provide their service to small island states. Though modest, this reflects Pilot project attracting international commercial traction.

Pilot funding has also supported continued investigation into non-space applications of technologies. However, **realised spillover benefits so far are limited**, with project teams continuing to focus on their original space-applied developments before diversifying portfolios. Nonetheless, pilot-enabled activities are opening potential for technologies and expertise to be applied to non-space sectors such as agriculture, and oil and gas. With spillover benefits often

accounting for a substantial proportion of overarching innovation funding programme returns, these will again be important to continue to track in future.

Two spin-out companies have been identified across Pilot projects, with NSIP Pilot supporting the transfer of academic knowledge into commercial ventures. These have had mixed fortunes since completion: one has gone on to secure NSIP Major Project funding, whilst the other was dissolved in 2023. One further project intends to develop a spin-out company based on their Pilot-project.

Revenue

There is limited evidence of realised revenue creation enabled by Pilot funding. This may be due to the long timelines for revenue impacts to materialise, first requiring technology validation, commercialisation, and customer development stages. Limited engagement with Pilot stakeholders beyond 2024 likely exacerbated limited evidence of revenue impacts, as well as the lack of North Star Metric requirements for Pilot teams (excluding the two Down-Selects). Only **one project reported attributable revenues, totalling £1.15m**, split between £600k in 2022 and approximately £500-600k in 2024. Expected revenue over the next six years is similarly limited, largely due to Pilot projects predating the introduction of North Star Metric reporting. However, one Implementation project **estimated future annual revenues of £6m-£10m.** These indicate that Pilot has laid foundations for potentially significant economic returns – though optimism bias may mean that these expectations are over-optimistic, and they will be unlikely to be fully attributable to Pilot funding alone. Nevertheless, they remain sizeable.

2.3.2 ETP projects

Commercialisation

ETP has begun to generate early commercialisation impacts, though these remain limited and vary across projects. While ETP funding targeted relatively low maturity technologies, we have identified **5 projects that have brought products or services to market**, demonstrating that commercialisation is happening, albeit at different rates. For example, one project developed a coating technology for space components and has since found **spillover commercial applications** in motorsport and the ultra-high vacuum semiconductor industry. Terrestrial spin-out applications are helping accelerate revenue opportunities for the organisation. Another is currently transitioning from a successful pilot to a fully commercialised satellite-enabled technology that supports farmers detect nitrogen levels in soil, demonstrating that ETP-funded technologies have the potential to build commercial success in sectors at the cross section with space. Despite most projects being several years away from full commercialisation, with further technology development, testing and identification of customers required, many have planned routes toward this. **26 products or services are expected to reach market**, bringing disruptive technologies to across several sub-sectors of the space industry and – potentially - beyond. This indicates **potential for strong future commercial returns on ETP**. These include greener propulsion systems (offering non-toxic alternatives to conventional propellants), novel sterilisation techniques and LIDAR-advancements.

Early interest from clients also reflects early commercial traction. Across all ETP projects, **17 new clients have been secured to date**, with a further **25 potential clients identified** and under active engagement. The relatively narrow gap between realised and expected clients suggests that commercialisation pipelines are advancing. As projects mature towards higher TRLs and increase their focus on client acquisition, the pipeline of prospected clients is expected to grow at an increasing pace. Notably, the range of identified potential clients extends well beyond the space sector, spanning international space agencies, the launch sector, defence actors, hospitals, the automotive industry and international development agencies.

Market access and technology transfers

Despite early signals of potential for commercial success, few ETP projects have been fully brought to market. Consequently, most activity to date has focussed on markets that organisations are already established in to support commercialisation. Expansion into new markets has emerged for a subset of projects, reflecting expanded activities and strategic targeting of terrestrial markets for accelerated marketisation. **4 new market segments have so far been accessed** by projects, including opportunities in healthcare and automotives. This indicates how ETP funding has supported some organisations to translate space-focused innovation into adjacent non-space sectors. The scale of this, however, remains small at present, and most projects are either continuing to advance their space-focused technologies or investigating potential terrestrial applications for faster commercialisation opportunities. Of these new markets, the one accessed by a Call 1 ETP project remained aligned with the call's thematic area (optics). The markets entered by projects under the other calls were more diverse, reflecting the broader remit of these calls. A further **37 new market segments are expected** to be accessed by project teams, as they continue developing their technologies beyond the period of ETP funding, highting that market access impacts are an emerging story, with larger impacts expected on a longer timeline. A **key application being investigated by several projects is defence**, discussed further in Section 2.6.

ETP-enabled activity is enhancing the international visibility and the reputation of many project teams, supporting routes to capturing international markets, although meaningful market access is again a longer-term story. ETP funding has so far supported entry into **6 new international markets**, including Canada and Germany, across 5 projects, with products or services being supplied to international customers and involved in international missions. **10 further projects expect to access 14 new internal markets** as teams engage with potential international customers and identify target missions, while they advance technologies toward market.

A modest spin-in impact of knowledge and expertise from other sectors into the space sector was found. Across **3 teams, ETP involvement was the team's first exposure to space projects**. One academic institution reported that the specific team involved in NSIP had not worked on a space-related project previous to their ETP project. At an organisational level, one academic institution and one company both entered the space sector through their ETP project.

Although no ETP-enabled spin-out companies have been identified to date, **7 spin-out companies are expected** in the future. ETP's commercial impacts are still emerging and are likely to require more time to materialise, given the early-stage technologies and formal processes required to form a university spin-out. The finding of a higher potential spin-out impact from ETP compared to NSIP Pilot is consistent with the profiles of funded organisations. Since ETP funded a higher proportion of academic institutions, it is expected that more spin-out companies would emerge as academic organisations pursue routes to commercialisation. In contrast, NSIP Pilot funded a larger number of SMEs, which would often not seek to create spin-outs as they are already commercial entities.

Personalised Tourniquet System for Spaceflight Technology (PTSS)

Project consortium: Northumbria University (lead), Kayser Space and Western Clinical Engineering Ltd.

The University of Northumbria's 'Project PTSS' was enabled by ETP funding, beginning at TRL 1 with the goal of adapting Delfi Medical's existing commercial Personalised Tourniquet System for safe and effective use in human spaceflight. Over the duration of the ETP project, the team investigated International Space Station requirements, redesigned components, and validated the system, advancing the technology to TRL 4 by producing the PTS for Spaceflight (PTSS).

Continued technological developments, catalysed investment and engagement with potential customers is positioning the project team to capture space-focused markets. The development

Source: Northumbria University

under ETP enabled the project team to showcase innovative technological developments that raised their profile and catalysed external engagements, including interest from **3 potential customers**. One of these – SpaceX – selected and qualified the system for their Fram2 mission, which launched in 2025.[14] This was provided in-kind (free of charge) given their interest in the hardware technology and the exercise countermeasure it enabled. SpaceX Fram2 was the first human spaceflight to orbit the Earth's polar regions, aiming to enhance understanding of human health in space, help advance capabilities for long-duration space, and ultimately enabled in-orbit validation of the ETP project. This advanced Northumbria's ETP technology toward commercialisation, with expected **entry into 2 sectors** that are new to several of the project team: **human spaceflight and commercial (and public) space stations**. This highlights how the project team are translating ETP-developed technologies into prospective commercial ventures. In collaboration with the Canadian Space Agency (CSA), the hardware has also been flown on two parabolic flights, with the campaigns successfully completed in 2024 and 2025.

During these flights, the PTSS was used and validated, enabling the first blood-flow-restriction exercise in orbit to be undertaken, and bringing the hardware to TRL 8. The team **won £287,000 in grant funding** from the UK Space Agency's International Bilateral Fund to continue refining the PTSS for enhanced operation, working with ESA, NASA and CSA as partners.

Revenue

Commercialised ETP projects are showing early revenue growth, with **almost £1.4m in income secured**. This includes one project which has incorporated ETP-developments into their company product range and since seen increased sales. Another project secured several revenue-generating pilot commercial contracts. Revenue impacts are largely an emerging story, with several projects emphasising that products and services had not yet commercialised, requiring further technological developments and customer identification. This is expected given that several projects ended as recently as 2025 and revenue impacts take time to materialise as projects must progress through validation, commercialisation and market adoption. Many teams remain optimistic about future revenues once fully commercialised.

2.3.3 Discussion

Impact Evaluation Question	RAG Rating	Performance
To what extent have NSIP Pilot and ETP supported organisations to capture an increased market share in target sectors/ sub-sectors?		Pilot and ETP support has enabled organisations to make early progress toward capturing market share, with a subset of projects fully commercialised, securing clients and accessing new markets. However, realised impacts remain limited overall and the highest impact metrics reflect future expectations. While these indicate possible significant NSIP-enabled commercial value, the potential for optimism bias in self-reported forward-looking impacts should be acknowledged. The lag in impacts is consistent with the early R&D focus of the programme, where impacts depend

[14] Fram2, 2025. *Fram2 Selects 22 Science and Research Experiments to Further Long-Duration Space Exploration*. Available at: https://f2.com/research-announcement.pdf

		on continued technology development and market entry. Therefore, it is not unexpected that the most significant commercial outcomes have yet to fully materialise. Longer term potential is significant, however, and findings should be seen within this context.

Market-share impacts catalysed by Pilot and ETP funding are an **emerging story**, with some projects successfully commercialised, some identifying potential customers, and others remaining at earlier TRLs and further from commercialisation. While only a subset of projects have reached market, **NSIP has supported progression along the commercialisation pathway**. Both funding streams have generated early commercial interest, with some projects securing initial customers and early revenues. The broader commercial narrative is still emerging, as most teams continue to focus on further technical developments, testing and validation. This remains **in line with NSIP's objectives of capturing market share through bringing products and services to market by 2030**. **Programme design successfully shaped commercialisation pathways**, with Pilot and ETP Call 1-funded projects entering or expecting to enter markets closely aligned with the programmes' thematic areas, while projects funded under ETP calls 2, 3 and 4 entered and expect to enter more diversified markets.

ETP projects show higher realised impacts than Pilot projects, likely due to the larger number of ETP-funded projects and more consistent data capture thanks to the requirement for most ETP projects to report North Star Metric impacts. Pilot findings, in particular, reflect engagement with only a limited number of project teams through to 2026 and therefore present a fragmented picture, with potentially underestimated impacts. Unlike the innovation metrics, Pilot market share impacts are not driven by the projects that received sustained funding from feasibility study through to Implementation phases, but rather by the subset of Pilot projects that have already reached market. This highlights that, for captured markets, **impacts often materialise long after projects have concluded**, even where funding and continued support through TRLs have been highest.

ETP projects show early commercial impacts and **signals of potential future commercial successes**, with established routes to market, anticipated clients, and exploration of new markets. However, these remain predominantly forward-looking rather than large realised market-share impacts, and attribution to ETP funding will more made more complex as projects rely on further investments to realise marketisation.

Both streams show **early investigation of spill-over applications and technology transfers**. Teams are investigating dual-use applications and applications of their space-technologies into adjacent sectors, such as agriculture and automotives. Funding is therefore, setting the stage for early investigations into teams diversifying their portfolios. Spin-out companies provide evidence, albeit from a subset of projects, of **Pilot and ETP funded advancements being transferred into industry**, setting the stage for potential further commercial impacts associated with company growth, including attracted investment and job creation. The extent of technology transfer impacts differ across Pilot and ETP. Notably, spin-outs as a potential route to commercialisation is more prevalent among ETP-funded organisations, given that more academic institutions were funded under this pathway compared to Pilot.

2.4 Skills and employment

Summary of key findings

- **Project funding enabled teams across both programmes to dedicate significant resource to novel technology development**. NSIP Pilot funding supported almost 157 FTE years of employment across streams, while ETP supported 76 FTE years.
- **ETP, and Pilot to a lesser extent, have led to significant job creation, with the potential for larger but less attributable organisational growth in the future.** Stakeholders reported that NSIP Pilot funding directly created 63 jobs, while ETP created 108. For ETP, this is still an emerging story – as stakeholders highlighted challenges in hiring within project cycles.
- **Our quasi-experimental analysis demonstrates a causal job creation impact for smaller Pilot firms** of around 2 new jobs per firm, significant at the 10% level. This signals a broader robust 'NSIP effect' of funding. No significant effect was found for ETP but given data limitations, this should not be interpreted evidence of a lack of impact.
- **Project teams featured varied levels of seniority, offering potential for knowledge exchange and upskilling.** We identify 25 early-career workers and 8 students across NSIP projects, and 35 early-career workers and 28 students working across ETP projects.
- **NSIP funding has supported technical and project management skills development**, with 100% of respondents reporting improved technical skills across both programmes. 73% of ETP teams also introduced new project management processes. These skills are now being applied to enhance broader company efficiency and secure further work.

Evaluation Question: *What impacts has NSIP had on skills, knowledge, and capabilities within the UK space sector?*

NSIP Pilot and ETP funding have supported meaningful employment across project teams and played a clear role in enabling organisational growth through job creation. Upskilling and capability development is also evident. Longer term job creation and skills development will again depend on the future success of new products and services, which remains to be seen.

2.4.1 NSIP Pilot projects

Employment impacts

NSIP Pilot funding supported many jobs directly throughout project delivery, enabling teams to dedicate the resources needed to progress their technology. Throughout out their duration, Pilot projects directly supported almost **157 years of employment (over 42,000 working days)**.[15]

Funding also laid the foundation for continued job creation, allowing organisations to expand as they built on the outcomes of their NSIP projects. Shortly after project completion, Pilot Pathfinder projects reported **31 FTE jobs created**, of which 11 were permanent.[16] As of March 2026, we have identified **63 FTE jobs created** across all Pilot calls, as a result of NSIP funding.[17] Job creation impacts are concentrated across a few projects, with one creating 42 and another project team doubling from 6 to 12 employees. This likely represents a lower bound estimate of true Pilot job creation, given gaps in reporting and limited engagement since 2024 (see Caveats).

[15] Based on the assumption that each year includes 270 working days.
[16] UK Space Agency, 2021. *Monitoring & Evaluation Report National Space Innovation Programme Pilot Year 20/21*.
[17] Without further information, we cannot comment on the extent to which the new roles reported immediately after projects completed match those reported in our own data collection activities.

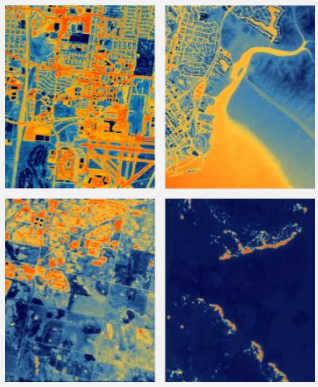
Although there are data gaps, the concentration of job creation across a few firms suggests that – similar to innovation and commercialisation– aggregate outcomes are driven by a small number of 'big wins'. Our research highlighted that funding can be particularly impactful for smaller commercial entities. Pilot funding has enabled these organisations to achieve rapid organisational growth and progression from micro-entities to almost medium-enterprise status. For these SMEs, we heard how job creation related to NSIP funding represents (in the words of one interviewee) "a seismic change" in the composition and capability of an organisation as project teams encompass a majority of the organisation. As these projects approach marketisation and seek to expand their market share, there is potential for this significant job creation to continue.

Pilot funding largely supported those in engineering roles, though there is diversity in the types of engineers supported, including electrical, mechanical and systems engineers. University teams included academics at all levels (professors, research fellows, lecturers, post docs and PhD students). The **average day rate of those employed on Pilot projects is £400**. However, there is large variation, with rates ranging from under £100/day to well over £1,000. The average day rate reflects that most project teams were composed of a small number of highly experienced staff, with significant involvement of more junior, early career workers. The average day rate of commercially-led Pilot projects was 17% higher than that of academic organisations.

Development of Novel High-Resolution Infrared Constellation for Heat Loss Detection

Project consortium: Global Satellite Vu Ltd (lead), Surrey Satellite Technology Ltd, KISPE.

SatVu designs and builds high-resolution, thermal operational intelligence satellites. Through the National Space Innovation Programme (NSIP), the company has achieved rapid organisational growth, culminating in the successful delivery of satellite imagery to paying customers.



Source: SatVu

NSIP funding enabled SatVu to **design, de-risk, and launch its first satellite and payload**, HotSat-1. This support also accelerated the manufacture of a second HotSat satellite. Over successive pilot funding calls, SatVu advanced its processing pipeline from **TRL 3** to **TRL 9**, its ground and operations systems from **TRL 1** to **TRL 9**, and its satellite platform from **TRL 2/3** to **TRL 9**.

The programme also served as a powerful signal to the market. To date, SatVu has **secured over £60 million in funding** from a diverse range of organisations, including the British Business Bank and the NATO Innovation Fund. Stakeholders credit NSIP as a pivotal factor in securing this investment. This backing facilitated rapid expansion, with the **team growing to 35 employees** and the company securing contracts for its next four HotSat satellites.

Following the **successful launch of HotSat-2** in March 2026 on the SpaceX Transporter-16 mission, HotSat-3 is scheduled to launch later this year. Once operational, these satellites will provide unique, high-resolution intelligence to global customers. While optical and radar-based satellites identify what is on the ground, the HotSat constellation captures the thermal signatures of human activity, providing vital insights into what is operational. This intelligence is critical for **sovereign defence** (SatVu joined NATO's Alliance Persistent Surveillance from Space (APSS) initiative in October 2025), **economic intelligence, and climate resilience applications**.

Upskilling

Pilot funding has provided a key route to upskilling for early career workers and students, with the involvement of at least **25 early career workers and 5 students** directly supported by Pilot funding. University teams also included strong involvement from PhD students and post-doctoral researchers, providing valuable hands-on experience that supported their upskilling and helped them progress in the sector. For example, one student shifted their career focus toward their NSIP

research area, and is now employed at a UK satellite facility. Two students on another project have since moved into the space industry, including roles in engineering consulting and satellite manufacture, where they leverage skills developed working on their Pilot project. Commercial organisations also supported early careers workers, with one project hiring 6 recent graduates, including through internships. In both cases, **academia and industry have leveraged Pilot funding to support the UK space sector's skills pipeline**, and in turn, broader economic activity in the UK.

> *Many of the project team have progressed internally, some who started at a junior level are now senior scientists, and the project manager is progressing to senior project manager.*

Beyond early career involvement, there is some evidence that NSIP Pilot has supported technical skills development. While only 4 organisations responded to this question, all of them **agreed or strongly agreed that technical skills were enhanced during their Pilot project**, including in cybersecurity, optics, and instrument testing. An aggregate skills narrative remains limited, particularly around project management tools and processes, as the elapsed time since funding was received made it difficult for project teams to report measurable skills impacts.

Quasi-Experimental (QE) Analysis: the causal effect of Pilot funding on job creation

Context

To complement our theory-based approach, we used **quasi-experimental econometric methods** to test with greater rigour whether NSIP Pilot funding has led to measurable employment growth among funded organisations relative to comparable unfunded organisations. This is the **first application of quasi-experimental methods to a UK Space Agency funding programme**, providing highly robust, albeit narrower, lens for assessing impact. Our analysis covers FY 2018/19 to FY 2024/25, with two pre-treatment years before funding commenced and five post-treatment years. Employment changes are measured relative to headcount at the point of funding (FY2019/20). Due to data limitations, we only present results for commercial organisations.

We explored **four regression model specifications**, each taking a different approach to constructing the counterfactual and measuring impact. The results presented here are from our **preferred specification (Dichotomous Regression Discontinuity Design, or RDD)**, which offers the strongest basis for causal inference as it controls for application quality through reviewer scores and does not require parallel trends assumptions. Our methodology, caveats, descriptive statistics and results from all specifications are provided in the Annex.

Findings

All results are subject to strong assumptions, outlined in the Annex.

When applying our preferred model on the full sample, the estimated treatment effect is not statistically significant (Table 1). To investigate whether this aggregate result masked **heterogeneity in employment effects across firm size**, we split the treatment group at a threshold of 15 employees before treatment[18].

For larger firms (over 15 employees before funding), the **estimated treatment effect is close to zero and not statistically significant**. This is likely because Pilot grants were smaller relative to the scale of these organisations, making any employment effect difficult to isolate statistically. This does not imply that funding was less beneficial for larger firms, but rather that an effect of this magnitude is not detectable with the sample available.

For smaller firms (15 or fewer employees before funding), we find a **statistically significant positive effect** at the 10% level. Pilot funding is associated with **approximately two additional employees per organisation**. This finding is supported by sensitivity analysis using alternative model specifications, detailed in the Annex. While subject to the limitation of small sample sizes

[18] This is the median number of employees per organisation in our wide control group.

and strong assumptions, this provides credible evidence of a positive causal link between Pilot funding and job creation, complementing self-reported employment impacts from project teams. Moreover, whilst this finding is limited to employment impacts in smaller firms, it demonstrates a **causal link between Pilot funding and economic activity**. Importantly, the results seek to ascertain a broader 'NSIP effect' on job creation, above and beyond a pure contract value / employment impact.

Table 1 *Dichotomous Regression Discontinuity Design (RDD) specifications – Results*

Term	All firms	Larger firms (>15)	Smaller firms (≤15)
Treatment effect	**-5.6** (-11.6, 0.3) [p=0.119]	**-2.1** (-28, 23.9) [p=0.896]	**2*** (0.2, 3.7) [p=0.076]
Adj. R2	0.06	-0.06	0.1
N (observations)	281	125	155
Number of firms	51	25	26

*Notes: The "Treatment effect" row reports the estimated coefficient, 90% confidence interval (in parentheses), and the p-value in square brackets. The p-value helps us assess the likelihood that results are due to a real effect rather than chance. Significance level is denoted by asterisk: * p <0.10, ** p < 0.05, *** p < 0.01*

Adjusted R^2 is the share of variation explained by the model; values of -0.06 to 0.10 reinforce the need to interpret results cautiously. The negative adjusted R^2 for the larger firms implies a poor model fit for this specification. See Annex for details.

N is the number of firm-year observations. The sample covers 15 (9 larger and 6 smaller) treatment and 36 (16 larger and 20 smaller) control organisations observed across up to 7 financial years.

The pooled specification trims the top 5% of residuals from the combined sample, while the size-stratified specifications each trim independently. As a result, the pooled N may not equal the sum of the two sub-group Ns.

Estimated effects that are not statistically significant should be interpreted as indistinguishable from zero.

2.4.2 ETP projects

Employment impacts

Based on proposal stage expectations of project teams, ETP funding directly supported almost **76 years of employment (over 20,000 working days)**, averaging 499 days supported per ETP project. This demonstrates the level of resource organisations were able to dedicate to progressing their technology as a result of funding.

Academia, of which the majority of ETP projects consisted, noted short funding windows as a limitation to hiring new staff, thereby creating a potential barrier to realising larger employment impacts and hires directly during ETP projects. As of 2026, we have identified **108 FTE jobs created** to work on ETP projects, with a mix of temporary and permanent positions. While a notable impact, ETP job creation is an emerging story. As with Pilot projects, we expect ETP-involved organisations to continue growing beyond their NSIP projects, with longer-term growth partially attributable to the expertise, activities and technologies developed through funding.

Funding has supported a range of roles, with 'Co-investigator' as the most common job description for employees supported under ETP - a role commonly found within research projects, reflecting the large number of academic organisations. On average, **those employed on ETP projects had day rates of £430**, though this ranged from £100/day to well over £1000. Most project teams members had day rates of under £500, likely reflecting that teams were largely made up of more junior staff, often early career workers (see below), along with a smaller number of highly-experienced senior team members, as also seen for Pilot projects.

Upskilling

ETP funding supported the upskilling of **35 early career workers** across 27 projects and **28 students** across 13 projects. This supported new graduates beginning their careers in the space sector, alongside PhD students and post-doctoral researchers. This enabled measurable career

progression, with one PhD student and one post-doc moving into full time roles at their respective institutions, alongside a post-doc who is leveraging experience to apply for an ESA grant.

> *After our ETP project finished, this lab has facilitated PhD research and educated postgraduates and undergraduates, training future talent in autonomous space navigation.*

Project teams consistently view that their ETP project facilitated technical upskilling. **100% of respondents (30) in our 2026 engagements and 95% (35 of 37) respondents during our 2024 engagement agreed or strongly agreed that their technical skills improved as a result of ETP-related work.** Teams noted that a range of enhanced hardware and software-related skills.

Teams reported more positively on new project management tools and processes developed in NSIP in our 2026 engagements compared to our 2024 engagements, with 76% (of 15 respondents) disagreeing with the statement in 2024, compared to 73% (22 of 30 respondents) agreeing or strongly agreeing to the statement in 2026. This included teams leveraging milestone reporting for other projects, and team members being promoted to project managers.

Fluidic, electrical connectivity, and biocompatibility upgrade studies for the SpaceLab microgravity laboratory

Project consortium: Frontier Space (lead), Cranfield University

ETP enabled Frontier Space to take SpaceLab, an autonomous microgravity laboratory for life-science experiments in orbit, from a promising idea at **TRL 2** to a more mature **TRL6** product.

ETP funding provided a significant boost to organisations technology, team, and skillset, having **created 11 jobs since the project started,** with attribution shared across a range of UKSA funding, including ETP, IBF, and NSIP Kick Starter. Frontier Space state that this increased organisational capability has been positive attributable influence on all following work. Among the achievements this made possible, the team **launched on a SpaceX Falcon 9** in April 2025 inside an ATMOS Space Cargo re-entry capsule, the first European capsule of its kind. The launch saw strong **media attention**, including a BBC feature. Without ETP support and broader UKSA support, none of these demonstrations would have been achievable.

Starting as a spin-out from Cranfield University, funding has supported key knowledge transfer through the partnership, while NSIP-enabled job creation includes engineers from Cranfield, demonstrating the development of a pipeline from academia to industry.

Source: Frontier Space

Frontier Space is now working toward commercial service delivery, with **pharma companies and broader biotech firms** as primary target markets. Adjacent sectors such as skincare are also being explored. A recent strategic partnership with Azenta Life Sciences, a global provider of automated storage and handling systems for biological samples, aims to validate SpaceLab's capabilities under **real spaceflight conditions**, reflecting the growing interest from established industry players in the platform.

The team expects to generate **5-6 figures of revenue in 2026,** having validated their product to prospective customers through the demo launch with SpaceX. An Earth-based microgravity simulator is also being considered to demonstrate value to non-space customers and broaden demand for microgravity-enabled R&D.

As for Pilot funding, below we present a summary of the QE analysis undertaken for ETP funding:

Quasi-Experimental (QE) Analysis: the causal effect of ETP funding on job creation

Context

Following the same specification as for the analysis of the Pilot phase, we used QE analysis to test whether ETP funding has a statistically robust causal effect on job creation. Our ETP analysis uses organisational-level employment data from FY2022/23 to FY2024/25, measuring outcomes relative to the pre-funding baseline year (FY2022/23). We present our core results here. Our details, caveats, and results of all specifications are provided in the Annex.

Findings

All results are subject to strong assumptions, outlined in the Annex.

To ensure consistency with the Pilot analysis, we opted to use the same RDD specification as our preferred regression model. Using this model, we found **no statistically significant effect of ETP funding on employment** across organisations of all sizes.[19] To explore whether effects varied by organisation size, we applied a 13-employee threshold which represents the median organisation size for our wider control group in our FY2022/23 pre-treatment baseline.[20] Results were statistically insignificant for both groups. However, **this should not be interpreted as evidence that ETP funding has no impact on employment**.

Significant data limitations and structural differences between ETP and the Pilot reduce the feasibility of QE analysis and increase the likelihood of a **Type II error.**[21] Thus, meaning it may be too soon to tell if funding did in fact generate employment effects. ETP funded fewer commercial organisations, less time has elapsed since treatment and funding amounts were lower compared to the Pilot. This results in a smaller sample size, limited post-treatment data (limiting our ability to observe effects that may take time to fully materialise) and likely a smaller effect size.

The **absence of a detectable effect could reflect these data limitations**, rather than an absence of an effect. Our theory-based analysis suggests that ETP has had a positive impact on job creation with more substantial job creation expected in future. Future analysis once more time has elapsed since funding was received may be able to provide stronger conclusions.

Table 2 *Dichotomous Regression Discontinuity Design (RDD) specifications - Results*

Term	All firms	Larger firms (>15)	Smaller firms (≤15)
Treatment effect	**-1.4** (-3.8,1) [p=0.339]	**0.2** (-9.8,10.1) [p=0.979]	**-0.5** (-1.4,0.4) [p=0.391]
Adj. R2	0.1	0.1	0.23
N (observations)	244	76	167
Number of firms	62	17	45

*Notes: Each "Treatment effect" cell reports the estimated coefficient, 90% confidence interval (in parentheses), and p-value in square brackets. The p-value helps us assess the likelihood that results are due to a real effect rather than chance. Significance level is denoted by asterisk: * p <0.10, ** p < 0.05, *** p < 0.01*

N is the number of firm-year observations. The sample covers 11 (8 larger and 3 smaller) treatment and 51 control (9 larger and 42 smaller) organisations observed across up to 5 financial years.

The pooled specification trims the top 5% residuals from the combined sample, while the size-stratified specifications each trim independently. As a result, the pooled N may not equal the sum of the two sub-groups.

[19] Using a continuous RDD model for all firm sizes as a sensitivity check, we found a significant effect of funding on employment. However, because both the smaller and larger firm variants of this specification are not significant and our main model specification also finds no effect, this result should be interpreted cautiously and in the context of all other results. See Annex for more details.

[20] 13-employee represents the median number of employees per organisation in our wide control group at the baseline. Using the 15-employee cut-off used for the Pilot QE analysis does also finds no significant effect.

[21] A Type II error (or "false negative") occurs in statistical testing when one cannot reject a null hypothesis that is actually false i.e. concluding there is no effect on employment when there truly is.

2.4.3 Discussion

Impact Evaluation Question	RAG Rating	Performance
What impacts have NSIP Pilot and ETP had on skills, knowledge, and capabilities within the UK space sector?		We find strong performance across all ETP and Pilot calls. NSIP funding has supported more than 233 years of employment and has created an additional 171 FTE jobs to date, with the vast majority of these roles being permanent positions that have been retained after projects have concluded. Our quasi-experimental analysis provides further (albeit limited / modest) evidence of employment effects. NSIP project work has also delivered significant skills development across teams with diverse levels of seniority. 100% of respondents for ETP and Pilot reported improvements in technical capability, and many highlighted that skills gained on projects helped secure further work and enhance wider organisational operations. Projects also reported improved project management skills, particularly in navigating grant-funding processes. Upskilling was especially important for the early-career workers, equipping them with practical experience needed to progress within the project and the wider space sector.

NSIP Pilot funding **supported meaningful employment across project teams and played a clear role in enabling organisational growth**. Job creation has been concentrated within a small number of projects, reflecting the high-risk, low-TRL nature of the investment and differences in the scale and duration of funding received. Our quasi-experimental analysis reinforces this, finding a causal association between Pilot funding and **approximately 2 additional jobs in small commercial organisations (fewer than 15 employees)**, significant at the 10% level and persistent long after project completion. For ETP, it is likely too soon to detect employment effects through this approach.

The largest employment impacts are second-order effects from projects that received Implementation funding and have had more time for impacts to materialise, most notably **42 jobs created through GSV and the 350+ roles expected from Northumbria University's new facility** (see Section 2.2). Comparable **ETP impacts are still emerging**, with early positive signals through spin-out activity and catalysed investment as projects progress beyond the programme. Attribution to NSIP becomes more complex at this stage, given the range of other factors shaping outcomes, but this does not diminish the significance of these wider impacts.

Beyond headcount, the quality and diversity of employment supported is notable, with ETP and Pilot teams including 60 early career workers. Project teams span **a mix of seniority levels and complementary capabilities**, creating opportunities for both technical and project management upskilling. This diversity contributed to substantial variation in day rates, with averages remaining relatively high due to the prevalence of small, highly skilled teams.

This exposure has strengthened practical expertise in specialised niches, while **providing students and early career professionals with skills transferable to adjacent sectors such as aerospace**. This helps retain talent within the sector and supports the longer-term pipeline from space training into space employment. Given the well-documented skills shortages in the UK space sector, this represents an important contribution to building the capacity of the sector and retaining talent.

2.5 UK competitiveness and reputation

Summary of key findings

- **Stakeholders reported NSIP Pilot and ETP funding as crucial for strengthening relationships with partnering organisations**, with 38 Pilot and 30 ETP respondents agreeing (of 42 and 41 total projects respectively), despite some gaps in reporting.
- **ETP and Pilot funding has strengthened the competitive offering of UK organisations, and catalysed international partnerships to leverage technologies in global missions.** Funding, especially through the international call, was seen by relevant projects as central to securing NASA, ESA, and CSA mission roles. While some faced challenges, other projects have led to successful demonstrations, launches, and follow-on opportunities.
- **Stakeholders were (almost) unanimously of the view that funding had improved their organisational reputation** (100% Pilot respondents, 95% of ETP respondents in 2026), with teams receiving a total of 6 awards with a credible attribution link to funding.
- **Broader reputational benefits to UK industry –** 4/5 of ETP respondents felt the programme had benefitted the reputation of the UK space sector, especially through signalling early leadership in emerging subsectors and novel technologies.

Evaluation Question: *How has NSIP contributed to the development and international competitiveness of the UK space sector?*

We assess Pilot and ETP as developing the UK's competitiveness in the subsectors targeted by both programmes, enhancing knowledge spillover through partnerships. Stakeholders view this has enhanced their reputation and strengthened their competitive offering, though competitiveness may fade quickly in absence of follow-on activities. Our 'green' rating should be seen as an indication of progress related to expectations for progress at this stage, rather than an indication of fully realised international competitiveness impacts.

2.5.1 NSIP Pilot projects

Partnerships and collaborations

NSIP Pilot has supported cross-sector collaboration and knowledge spillovers. Of the 22 original Pilot 2020 projects (i.e. Pathfinder and International funding calls), only one did not involve a partner, while the Pilot Implementation phases provided an opportunity both to **further existing relationships and bring new partners on board**. In the initial Pathfinder phase, 80 organisations were involved in 22 projects. In the down-selected Implementation phases, 62 organisations participated in 13 projects – bringing in 13 new partners. In the International phase, a further 23 organisations were involved across 7 projects, including 8 international partners.

UK partnerships supported through NSIP generally built on existing relationships between organisations, though there were exceptions. **At least six new UK partnerships were enabled by the NSIP Pilot**. Given the time passed since Pilot projects first started (and hence an incomplete evidence base), this is likely to be an underestimation of the true number of new partnerships. While relatively few new UK partnerships were created, Pilot funding played a more widespread role in strengthening existing partnerships. We found evidence of **at least 38 partnerships which project teams agreed were strengthened** through Pilot project work.[22]

[22] This is likely an underestimate, given gaps in reporting.

This included the formation and strengthening of valuable **academic-industry partnerships**, which in the view of stakeholders, helped to transfer cutting-edge research undertaken in universities towards commercial solutions through mutual learning and knowledge sharing. For example, Craft Prospect – a satellite engineering firm - worked with the Universities of Strathclyde and Bristol, as well as the Fraunhofer Centre for Applied Photonics, to develop and advance a Quantum Key Distribution system. The project included the development of an Optical Ground Station and Payload Flight model, leveraging academic expertise in software, ground-based systems, and testing. This expertise has since been transferred to follow-on activities through ESA ARTES funding, where Craft Prospect are advancing towards launch of their Versatile Optical Laboratory for Telecommunications (OPS-SAT VOLT) mission in 2026.[23]

Pilot funding often allowed the continuation and deepening of partnerships, where further funds were required for organisations to continue working together. Within larger organisations, Pilot funding also allowed different departments or groups to work together for the first time, facilitating knowledge sharing within organisations. For example, one project brought together (for the first time) computational experts and geoscientists operating within different Schools within the same university, facilitating interdisciplinary research.

NSIP Pilot was also a mechanism for **expanding international partnerships** between the UK and key strategic nations (e.g. USA, Japan, Canada, and India), which were targeted specifically through the Pilot International call.[24] UK organisations partnered with both foreign space agencies and industrial partners, as well as one project involving the United Nations. The international call provided the only opportunity across both programmes to work in international consortia, though organisations have since pursued this through other routes (e.g. ESA missions, and more recent International Bilateral Fund calls since 2023).

In one project, the International call enabled a partnership between UK-based Inmarsat and Japan's Mitsubishi Heavy Industries (MHI), Safran Data Systems (France) and Haigh-Farr Inc. (USA) to develop InRange, a satellite-based launch telemetry system. The partnership led to Inmarsat and MHI going on to **successfully secure additional funding and institutional support** from the UK Space Agency, NASA, and JAXA. The project has progressed from an initial feasibility study to a successful operational demonstration in 2025,[25] and new partnerships between Inmarsat, Blue Origin (USA) and Skyrora (UK) have been established. While the longevity of these partnerships has been contingent on obtaining additional funding, **NSIP Pilot provided the initial catalyst for international collaborations which remain strong to this day (2026)**.

> *"We have strengthened our working relationship with NASA JPL and Caltech, and have gained commercial interest as a result.*

Some International projects faced **challenges aligning project timelines and funding** (both through the Pilot International call and follow-on sources) with the **requirements of their international partners**. For instance, UK organisations secured international mission roles through the Pilot international call, though the timeline of these missions remained **largely outside the control of UK organisations**. This posed challenges in relation to Pilot funding milestones. For one project, which would have enabled a partnership with NASA, these challenges could not be overcome, and the project had to be cancelled due to condensed timelines. Another university-led team faced significant difficulties in their collaboration with NASA after delays to the mission. In this case, the team were granted a cost extension and project work was able to proceed, enabling the

[23] Craft Prospect, 2026. *OPS-SAT VOLT*. Available at: https://www.craftprospect.com/ops-sat-volt

[24] The call targeted specific country/technology pairings e.g., Australia- Earth Observation and Canada- Robotics. UK Space Agency, 2020. *National Space Innovation Programme (NSIP) - International Funding Call FAQs*. Available at: https://www.gov.uk/government/publications/call-for-proposals-national-space-innovation-programme-international/national-space-innovation-programme-nsip-international-funding-call-faqs

[25] Viasat, 2025. Viasat Successfully Tests HaloNet Launch Telemetry Solution for NASA Onboard Blue Origin's New Glenn. Available at: https://www.viasat.com/news/latest-news/government/2025/viasat-newglenn2-nasa-launch-telemtry-relay/

UK to play a key role on a NASA mission, delivering one of two payloads. Some of these challenges extended beyond the duration of NSIP projects, with UK teams having to withdraw from further partnerships with IRSO and NASA due to an absence of follow-on funding.

For many organisations, NSIP Pilot activities have continued with alternative funding sources and continue to leverage partnerships strengthened through their initial projects. In one example, a partnership between a university and a not-for-profit is still active five years later, despite failing to proceed to the Implementation phase. They successfully proved the concept through Pilot funding and managed to progress technology development via CEOI (Centre for Earth Observation Instrumentation) and ETP funding. Currently, they are looking to participate in potential 2027 ESA Stepping Stone, Earth Explorer and Scout call, to progress this mission concept further.

Beyond these partnerships, **Pilot funding supported the UK space sector through broader supply chain involvement**. 25 organisations funded through the Pilot reported that funding resulted in their organisation procuring goods or services from new UK suppliers[26], indicating increased contract opportunities for UK space organisations, strengthened national capability and resilience, and – while we lack hard evidence to verify **– anecdotal evidence suggests potentially reduced dependency on overseas suppliers**. Given the time which has passed since most projects concluded and our reliance on interview insights, we have limited data on the extent to which supply chains were UK-based overall. Still, (for example) one Glasgow-based company noted that 80% of their supply chain is based in Scotland, supporting regional growth.

Competitiveness, leadership and reputation

While our sample size is limited, project teams were **unanimously of the view that NSIP Pilot funding has improved their organisation's reputation** within their relevant sub-sector when interviewed in 2024, with 100% (of 7 respondents) agreeing that Pilot funding had led to reputational gains for their organisation. Project teams felt that funding had helped to build international credibility, strengthening the potential for follow-on activities. These include stronger commercial interest in their technologies as well as securing future mission opportunities with US partners, as discussed further in the Imperial College London case study, in Section 2.6.1.

One project team also **received two awards which were in-part attributable** to their NSIP Pilot activities – including a *Scottish EDGE business award*, and an *ESA rising star award*. The latter award was given to a handful of start-ups across Europe demonstrating exceptional innovation and high-growth potential[27]. Another project was featured on BBC News, focusing on the innovative aspects of the technology, and its future application potential. Organisations also presented findings at international conferences (e.g. the ESA Living Planet Symposium), helping to raise the profile of UK capabilities developed through the Pilot.

Though the role of NSIP Pilot funding in improving the reputation of UK organisations is nuanced, several stakeholders from the International call stressed that funding increased the UK space sector's soft power on the global stage, by helping to showcase UK capabilities to international partners such as NASA, ESA, JAXA, CSA and SpaceX. This has positioned UK organisations for roles on **at least 9 follow-on mission opportunities, of which 3 have now launched and have successfully returned operational data, 4 have been secured for future launch, and 2 and are progressing, but unconfirmed**. However, intermittent grant funding was a significant barrier to continued international collaboration in some cases.

Relationships between UK-based organisations and international space agencies strengthened through NSIP Pilot, though stakeholders highlighted the **risk of being perceived as an inflexible**

[26] UK Space Agency, 2021. *Monitoring & Evaluation Report National Space Innovation Programme Pilot Year 20/21* and UK Space Agency, 2022. *Monitoring & Evaluation Report National Space Innovation Programme – Implementation Phase 2021/2022*.
[27] Craft Prospect, 2024. *Press Releases*. Available at: https://www.craftprospect.com/news-1

or unreliable partner due to funding constraints. These challenges are not unique to NSIP, though these risks have implications for the UK's global leadership in specific instrument development, the credibility of the UK as a trusted space partner of choice, and the opportunity to secure roles on international missions at relatively low cost.

2.5.2 ETP projects

Partnerships and collaborations

Of the 41 ETP projects, **30 were delivered in consortium partnerships**. Reflecting the nature of funded organisations, the most common partnership type was between academic organisations, followed by academic-industry partnerships. **At least 16 of these partnerships were new**, reflecting the role of ETP funding in translating informal conversations and relationships into concrete work. We heard that niche fields of research with close-knit academic networks were important in building project teams, given the relatively short window in which to submit an ETP application. Several teams noted that they could only build a consortium quickly enough by leveraging these informal links, while solo organisation projects commented on the short application window as a barrier to creating new partnerships.[28]

Beyond the creation of new partnerships, ETP funding was credited by stakeholders as strengthening those already existing. Stakeholders reported **at least 30 partnerships having been strengthened** by ETP, building mutual trust between organisations, and laying the foundations for collaboration on a greater scale in the future.

While the programme has now concluded, at least 63% (of 24 ETP survey respondents) are **continuing their partnerships through follow-on opportunities** (as of early 2026). Many have continued to progress projects through alternative funding sources, including NSIP calls, ESA contracts, and the UK Space Frontiers 2035 programme. Several ETP teams have since expanded their consortia further, including the introduction of additional UK universities, collaborations with other space agencies such as ESA, NASA and CSA, while others have established new industry partnerships. A further two organisations intend in principle to continue these partnerships, though note this is likely contingent on securing additional funding.

ETP funding has also supported UK supply chains, with funded organisations on average reporting that **70% of their supply chain is UK-based**. This high UK share means that most of the project economic activity remains in the UK, minimising leakage and maximising the potential for UK benefit. With some projects also being internationally-collaborative, a fully UK-based supply chain would in these cases be unrealistic, and UK organisations can benefit from the greater scale of projects with international partners. This implies a larger aggregate benefit with substantial UK 'capture' can be seen as a positive outcome, with ancillary non-UK benefits. Given the nature of the innovative technologies being developed, projects often required niche materials or components. This means that for some teams, developing a supply chain has been a significant element of project work and ordering components or materials requires establishing a relationship with suppliers. Where project teams used non-UK suppliers, several noted that they only sourced components or materials from abroad because they could not find what they needed in the UK.

Competitiveness, leadership and reputation

Both during ETP projects and at their close, we found examples of reputational benefits associated with funding. Most funded organisations who responded to our surveys agreed that funding had **improved the reputation of their organisation** (85% in 2024, and 96% in 2026). Some respondents highlighted that the ability to present and disseminate findings at international conferences was a key initial benefit, helping to raise the visibility of their ongoing research and

[28] This report does not cover process evaluation, and these issues will be discussed further in subsequent M&E deliverables.

capabilities internationally. Stakeholders identified **156 conferences, events, and media engagements** which were undertaken as a result of their ETP projects, including Europlanet Science Congress, International Aeronautical Congress (IAC), and BBC News.

> *We had no footprint with ESA prior to ETP, now we have secured awards and are in the directory of developers. We are also working with our partner on a future project, and this would not have happened without ETP funding.*

Across ETP project teams, we also identify **at least 4 awards** received by project teams attributable to funding – including a *best oral presentation* award at the SPIE conference in Japan,[29] the 2024 *ENDECAN award for Scientific and Technological* Talent for image slicer technology,[30] a Manufacturing Technology *Collaborate to Innovate Award*,[31] and a university 'best research paper' award. Stakeholders reported that these awards, alongside wider publicity and conference presentations, provided evidence of their growing reputation and visibility at national and international levels within their relevant domains.

We also asked ETP lead and partner organisations whether ETP funding had led to improvements in the global reputation and leadership of the UK space industry within their relevant sub-sector. Across both the 2024 and 2026 editions, **79% of respondents agreed that the UK's reputation improved in their relevant sub-sectors**. While responses from funded organisations are likely to feature a degree of optimism bias, project teams provided several examples of areas the UK has strengthened through ETP support – including internationally recognised capabilities such as synchrotron analysis and quantum communications.

Despite ETP projects starting at a very early stage of technological maturity, teams held **positive views on the role of funding in strengthening their competitive offering**, with over 85% of project team respondents agreeing in 2024. Stakeholders highlighted that ETP funding was used to conduct market and supply chain analyses, develop novel technologies, and build early leadership that cannot be found elsewhere in the European or global space sector.

In 2026, several respondents also highlighted the benefits of the consortia they had developed to deliver the project, with organisations demonstrating global competitiveness through further engagement with international partners in follow-on ESA work, and wider networks of potential customers (e.g. large aerospace primes) in new addressable markets.

Stakeholders also highlighted how ETP had, in their view, strengthened **early global leadership in emerging fields**, such as in-orbit servicing and manufacturing (ISAM) and in-situ resource utilisation (ISRU). This highlights how the ETP funding's focus on advancing technologies with novel and disruptive potential translated into perceived reputational benefits to the UK space industry as supporting a 'race to market'. However, due to the programme's low TRL focus, respondents who 'neither agreed nor disagreed' indicated that its distance from market made it premature to assess any reputational benefits for the wider UK space industry associated with ETP funding specifically.

[29] Durham University, 2024. *CfAI Head of Optical Design gives award winning talk at the SPIE conference in Japan*. Available at: https://www.durham.ac.uk/departments/academic/physics/news/award-winning-presentation-at-spie-conference-in-japan/

[30] Durham University, 2025. *Ariadna Calcines Rosario receives the ENDECAN Award for Scientific and Technological Talent*. Available at: https://www.durham.ac.uk/departments/academic/physics/news/ariadna-calcines-rosario-receives-the-endecan-award-/

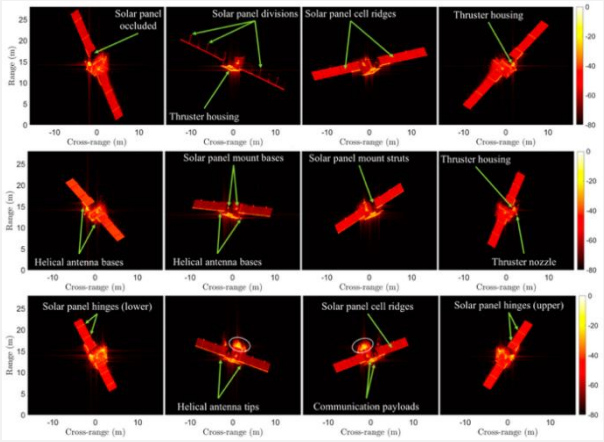
[31] The Engineer, 2025. *C2i Awards 2025*. Available at: https://awards.theengineer.co.uk/live/en/page/2025-winners

Sub-Terahertz Inverse Synthetic Aperture Radar for monitoring of GEO assets (STAR)

Project consortium: University of Birmingham (lead), Electrodynamic Solutions Cambridge Ltd.

The University of Birmingham's STAR project is strengthening UK competitiveness in Space Domain Awareness by enabling high-resolution imaging of GEO assets.

With ETP support, the team integrated orbital modelling, antenna design and radar image simulation into a **single end-to-end concept**, creating a distinctive UK capability with dual-use relevance. The project has strengthened links between academia, government and industry, including engagement with Dstl, Airbus and BAE Systems Digital Intelligence, while also opening discussions on **commercialisation and potential spin-out routes**. ETP has moved work closer to private investment, although further proof points are still needed.



Source: University of Birmingham

This momentum has translated into clear gains for UK capability and reputation. STAR underpinned a **£1.6m EPSRC grant** and a **£610k follow-on NSIP award with the Alan Turing Institute**, and generated **six conference papers and three journal papers**, building the UK's profile in space-based radar imaging.

ETP also supported skills and talent retention. One postdoctoral researcher moved to **Rolls-Royce** as an engineer and won a **best student paper prize**, while another progressed to an **assistant professor role at Birmingham**. The project also supported **two PhD students**, including one now partly employed as a research fellow on follow-on NSIP work.

2.5.3 Discussion

Impact Evaluation Question	RAG Rating	Performance
How have NSIP Pilot and ETP contributed to the development and international competitiveness of the UK space sector?		NSIP Pilot and ETP funding has enhanced knowledge spillover through partnerships, developing and de-risking novel capabilities. Stakeholders were of the view this had enhanced their reputation and strengthened their competitive offering. We assess Pilot and ETP as developing the UK's competitiveness in the subsectors targeted by both programmes, though these capabilities could quickly fade without targeted support to further commercialise these technologies. This green rating represents an assessment of positive impacts relative to those that would reasonably be expected at this stage of time, recognising that 'full' competitiveness impacts will take years to materialise.

Through Pilot and ETP programmes, project teams have strengthened partnerships with their consortia to co-deliver technology development, testing, and validation activities. While the benefits of these enhanced networks and knowledge exchange may seem intangible, they have led to concrete opportunities for UK-based organisations, who have secured follow-on funding and key mission roles which often would not have been possible without the initial catalyst of Pilot and ETP funding. ESA programmes and missions have been a key route for follow-on activity, though attributability of the benefits associated with ongoing opportunities is likely to fade over time.

The vast majority of stakeholders reported perceived enhancements in their global reputation and influence associated with Pilot and ETP funding, which were inherently project dependent. UK Space Agency investment through the programmes was credited as developing strategic advantages in emerging and disruptive technologies and raising the profile of UK-based capabilities to new international partners and customers. This strongly indicates that organisations have improved their global reputation through the programmes, though reputation is a dynamic concept, and is likely influenced by factors wider than any individual project.

2.6 Scientific and societal

Summary of key findings

- **NSIP is primed to help tackle global challenges such as climate and space sustainability.** The Pilot's strongest societal contribution arises from climate and environmental monitoring technologies now entering commercialisation, while ETP plays a more prominent role in advancing space sustainability, an expected distinction reflecting the different thematic focus of their respective calls. Dual-use applications across both programmes mean these same technologies also strengthen UK defence and national security capabilities. Few solutions have reached market yet, so are not yet tangibly tackling global issues.
- **NSIP funding has increased both the quantity and quality of UK academic research, and has helped secure leadership roles on major international science missions.** Growing publication outputs with high citation rates, alongside confirmed roles on future ESA and NASA missions, indicate that funded research is reinforcing the UK's standing as a space science partner of choice.
- **NSIP's contribution to delivering benefits across the UK is mixed: Pilot outcomes are concentrated among a few high performers in established hubs, while ETP has generated more geographically distributed economic impacts.** Both programmes catalysed significant external capital, though ETP's structure appears to have been more effective at supporting activity beyond traditional space sector clusters, a relevant move towards broader regional development objectives.

Evaluation Question: *'To what extent has NSIP delivered scientific or societal benefits in the UK?'*

We assess that both NSIP Pilot and ETP funding have delivered early but meaningful scientific and societal benefits across major global challenges, academic research and regional economic outcomes, with stronger returns expected as funded technologies and research efforts mature.

2.6.1 NSIP Pilot projects

Addressing global challenges

70% of NSIP Pilot-funded activities were relevant for efforts to tackle climate change or its consequences, partly reflecting the programme's requirement for Earth Observation projects to also advance climate change objectives. Through NSIP funding, projects have matured technologies with direct applications to environmental monitoring, climate resilience and disaster risk reduction. This includes thermal Earth observation capabilities, now in early commercialisation, that detect energy usage at industrial facilities and track ship heat signatures. They also include data processing workflows producing geospatial products for monitoring ecosystems and land degradation, as well as prototypes for broadcasting weather alerts to remote populations, such as agricultural warnings tested with smallholder farmers in rural Kenya.

At least eight technologies or sub-components being developed through NSIP Pilot have potential dual use applications. Notably, most if not all Earth Observation projects have identified dual-use potential, given the inherent relevance of their technologies to defence and intelligence. This further reinforces the fact that the global challenges addressed by Pilot projects are not mutually exclusive: technologies developed for climate or environmental applications have the potential to simultaneously strengthen national security capabilities. One project has partnered with intelligence and defence agencies in both the UK and the US, while another has attracted

interest from major defence actors and NATO for its laser communications technology, with its UK-built sovereign capability cited as a key factor. No confirmed defence contracts have materialised to date, likely reflecting the time required to adapt dual-use technologies and undertake customer development in the sector, though limited engagement with Pilot projects since 2024 means that further progress may not have been captured.

> *Our thermal infrared imagery also allows users to monitor national and enemy territory both day and night.*

15% of Pilot projects focused on technologies contributing to space sustainability, lower than the programme-wide average of 39%, likely reflecting the Earth observation and Communications targeting of Pilot calls. One notable example is a project developing a quantum accelerometer to measure atmospheric drag, improving understanding of the orbital decay of space debris in low Earth orbit and helping address the growing challenge of orbital congestion. Overall, however, space sustainability contributions across Pilot projects tended to be secondary or spin-off applications rather than the original focus of funded work.

Each Pilot project contributes to **at least 4 UN Sustainable Development Goals (SDGs)**. More than 30 projects contribute to Goals 8 (Decent Work and Economic Growth), 9 (Industry, Innovation, and Infrastructure), and 17 (Partnerships for the Goals) individually. This is expected and reflects the programmes focus on economic growth, innovation, and collaboration.

Supporting academic research

As highlighted in Section 2.2.1, 30 NSIP Pilot projects featured universities or other research organisations as leads or partner organisations. While the role of these organisations varied by project, NSIP Pilot funding was highlighted as key to advancing existing academic expertise in bespoke instrument development, helping to secure key UK roles in international science missions and programmes.

Interstellar Mapping and Acceleration Probe (IMAP)

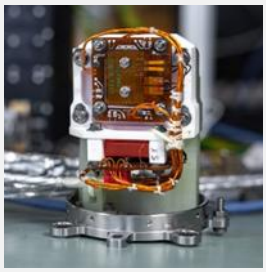
Project Consortium: Imperial College London (Lead), NASA, Princeton University

The IMAP magnetometer project has led to the design of a magnetic field instrument, which has subsequently been launched and is now operational in orbit. While not solely attributable to NSIP Pilot funding, the instrument now provides real-time magnetic field data for space weather forecasting.

Source: Imperial College London

Imperial College London, supported by the UK Space Agency, has established and maintained delivery heritage in Magnetometer operations, and analysis for space science missions. This expertise has been **developed over decades**, through five prior ESA mission roles, from Ulysses (1990-2009) to the JUICE mission (2023-). As a result of this specialist expertise, the team at Imperial **were approached by the PI of a NASA mission** – IMAP - to provide a magnetometer (MAG). The magnetometer is one of 10 instruments on the mission, which aims to better understand the heliosphere boundary and interactions of the solar wind.

Through the NSIP Pilot International programme, the team at Imperial received an initial grant to work with NASA and Princeton University to design the MAP magnetometer. Following this, Imperial secured additional financial commitments (totalling £4.5m) from the UK Space Agency to build and deliver the instrument by 2024. The NSIP Pilot grant was a **key prerequisite for this additional UK Space Agency investment**, and secured a key UK mission role. As a result of this collaboration, the same team at Imperial also **secured a follow-on role** on the NASA HelioSwarm mission, which was selected in 2022, due to launch in 2029.



Source: UKSA

Source: Imperial College London

While further public funding was essential in reaching this objective, the IMAP mission **successfully launched in 2025** from the NASA Kennedy Space Centre, on board a Falcon 9 rocket. The mission is now operational, and the MAG instrument is returning real-time data. The IMAP project also helped to unlock further opportunities, with a lossless data algorithm developed through the project improving data return by a **factor of three**. The team at Imperial have also had recent discussions with a US spacecraft manufacturer to supply a similar instrument for a future mission, though these remain at an early stage.

While publication of research findings was not a priority for all project teams, we identified **9 peer-reviewed journal articles** published due to NSIP Pilot funding, an increase from the 3 identified in 2024. While this sample remains limited, we have identified **276 citations** on these publications, indicating wider engagement with Pilot-funded research. One university partner produced two papers on satellite quantum key distribution,[32] [33] accumulating a total of 186 citations, with these publications cited **27 and 24 more times than the average publication** in the field (from their respective years). As these publications are highly referenced, this indicates NSIP Pilot funding has played a role in advancing emerging quantum research globally, and is one (albeit limited) indicator that NSIP pilot funding has supported high-quality academic research.

Regional impact

Of the £28.1m in total Pilot grant funding, £27.9m was distributed to UK-based organisations, with the remainder supporting international collaborators. As shown in the figure below, funding is **concentrated in the South East (~£15.0m)**, followed by North East England (~£4.0m), London and Scotland (both ~£2.7m), with several regions receiving no Pilot funding. This suggests that Pilot funding has primarily supported established regional hubs of space sector activity, with limited reach into other parts of the UK. We note that geography was not a factor in the NSIP Pilot or ETP project selection process.

Pilot projects have **leveraged at least £122.4m in external investment** to date, representing approximately 4.4 times the value of UK grant funding and a strong signal for the programme's ability to catalyse private and non-government capital. This total is driven by a small number of high-performing projects: one organisation in the South East secured £48.5m, two in London secured over £64m, with further investment in Scotland (£5.9m) and North East England (£3.8m). These figures are not wholly attributable to NSIP Pilot funding, however, as funded organisations have also benefited from other grants, partnerships, and commercial activities since project completion. Nonetheless, the scale of investment points strongly to the **programme's role in building capabilities that attract substantial further capital**. We expect external investment to

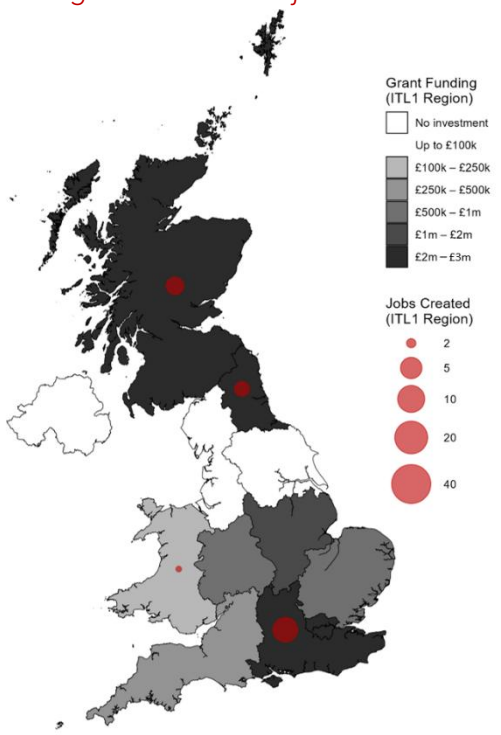
[32] Sidhu, J.S., Brougham, T., McArthur, D., Pousa, R.G. and Oi, D.K., 2022. Finite key effects in satellite quantum key distribution. *npj Quantum Information*, *8*(1), p.18.

[33] Gündoğan, M., Sidhu, J.S., Henderson, V., Mazzarella, L., Wolters, J., Oi, D.K. and Krutzik, M., 2021. Proposal for space-borne quantum memories for global quantum networking. *npj Quantum Information*, 7(1), p.128.

grow as further projects mature and progress towards commercialisation, though limited response rates from Pilot projects in our most recent engagement round, and a lack of North Star Metric reporting data mean that additional investment may already have been secured but not captured.

Employment impacts of lead organisations follow a similar pattern but with broader regional spread. Of the **63 new jobs created by project leads and attributed to Pilot funding**, the largest contributor is the same South East organisation that attracted the most external investment, with the second-largest being one of the Scotland-based projects that also leveraged significant capital, reinforcing that **investment and employment tend to go hand in hand** as indicators of commercial success. Interestingly, one academic organisation created seven jobs without reporting external investment, hinting that employment growth can precede and signal future commercial activity. As job creation data is reported by lead organisations through North Star Metric reporting, and may include consortium-wide figures in some cases, regional attribution should be interpreted with caution.

Figure 4 *Distribution of NSIP Pilot grant funding and attributable job creation*



Realised additional income remains limited, with £1.15m reported by a single organisation (the same project featuring prominently across multiple indicators). This is consistent with most Pilot projects not yet reaching the revenue-generating stage, though attribution challenges likely mean this understates the full picture.

Overall, initial outcomes are evident but concentrated among a small number of high-performing organisations, with the broader distribution of employment across seven regions suggesting early signs of wider economic spillover. This is expected from an early R&D-focused programme, where a small number of success stories often drive initial benefits. The longer-term success of funded projects – which cannot be fully judged at this time – will determine the overarching impact of Pilot funding.

2.6.2 ETP projects

Addressing global challenges

15% of ETP projects were directly relevant to efforts tackling climate change, significantly lower than the 70% observed across the Pilot. This difference reflects the distinct scope of ETP calls, which were oriented towards enabling technologies for in-orbit servicing, space science, and space sustainability rather than terrestrial environmental challenges. Nonetheless, ETP has supported projects with clear climate relevance, including a team advancing satellite-based flood hazard modelling that has since secured a partnership with the Foreign Office for faster disaster response, and another focused on coastal monitoring for climate-related risk and adaptation. These projects tend towards climate resilience and adaptation rather than emissions reduction, consistent with the programme's scope. The Wheat Biomass Estimator case study (below) offers a further example of ETP-funded technology with direct environmental and food security applications, where early-stage funding laid the foundation for subsequent commercial development.

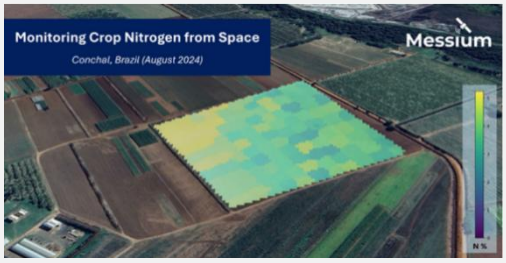
> *We try to lead by example in space sustainability […] making our methods easy for others to copy so the whole community can operate more safely.*

Contributions to **space sustainability are more prominent**, reflecting the objectives of ETP Call 3 in particular. Funded projects are developing in-orbit repair and life-extension capabilities that could reduce the need for costly replacement launches, high-resolution monitoring to improve collision avoidance and orbit management, and enabling technologies for in-orbit servicing, assembly and manufacturing (ISAM). Several projects also carry **dual-use potential** for defence and national security. While the dual-use nature of space technology meant that some projects anticipated defence applications from the outset, defence interest has in many cases emerged later in the project lifecycle, as technologies were de-risked and teams began exploring new market and collaboration opportunities. Shifting geopolitical conditions may have also heightened demand for sovereign space capabilities. One project's monitoring capability has attracted interest from the US Air Force and US Space Command for its potential to detect interference with satellites on orbit. Another is developing refuelling technology originally focused on space sustainability, but whose ability to extend a satellite's operational life and alter its orbit has since attracted interest for its defence and security applications. Separately, a project advancing radar sensing for object tracking on-orbit is in active contact with the UK Ministry of Defence.

Each ETP project contributes to **at least one UN Sustainable Development Goal**. All 41 projects align with SDG 9 (Industry, Innovation, and Infrastructure) and 37 with SDG 17 (Partnerships for the Goals), reflecting the programme's emphasis on technological progress and collaboration.

Wheat Biomass Estimator

Project Consortium: Messium (lead)



Source: Messium

Messium's ETP-funded Wheat Biomass Estimator project demonstrated the application of machine learning to hyperspectral satellite data for estimating crop biomass – a tool which can be used for **optimising nitrogen use in agriculture**. The project team advanced the technology from **TRL 2 to TRL 6**, providing early validation and establishing the foundation for the company's approach to precision nitrogen management.[34] The team's satellite-enabled approach to nitrogen optimisation offers a highly scalable way to reduce excess agricultural emissions and nutrient pollution from excess fertiliser, **delivering potential environmental benefits**.

Building on the ETP-enabled capability, Messium has since undertaken successful trials across Europe and Australia, validating their solution across over 13,000 crop samples. In 2025, the team scaled its approach, developing a **commercial minimum viable product** with follow-on support from the ESA InCubed programme, alongside securing **£3.2m in private investment**.[35] This product provides real-time insights on crop nitrogen levels and biomass. By enabling early validation, ETP funding played a foundational role in advancing Messium's technology and supporting its marketisation. While further capital was needed, ETP funding

[34] Peters, E.J, 2024. *Messium uses space-based nitrogen analysis as an enabling technology for farmers*. Available at: https://space.blog.gov.uk/2024/12/04/messium-uses-space-based-nitrogen-analysis-as-an-enabling-technology-for-farmers/

[35] ESA, 2025. *Improving precision nitrogen management with Messium.* Available at: https://incubed.esa.int/improving-precision-nitrogen-management-with-messium/

helped bring a precision fertiliser solution to farmers, aimed at reducing emissions and environmental pollution, helping address food security and climate change challenges globally. This aligns most notably with SDGs 2 (Zero Hunger), 12 (Responsible Consumption and Production), and 13 (Climate Action).

Supporting academic research

As over half of funded ETP organisations are universities, the programme provided early support for researchers to advance novel systems through domain-specific calls. We identify a total of 25 publications and conference abstracts linked to ETP funding, rising from a total of 15 identified in 2024. This highlights the role of ETP in supporting (mostly) academic researchers to present project findings and emerging mission concepts at international conferences, such as the International Aeronautical Congress, International Electric Propulsion Conference, and the AIAA SciTech Forum 2026 – helping to raise the profile of UK academic space research.

With many ETP projects recently concluding, citation impacts are still emerging, though we identify **119 citations on ETP-related publications**, a significant increase from the 8 identified in 2024. The most highly cited ETP-related publication was a descriptive publication of a future UK-led international network of ground-based telescopes for space weather research and forecasting, which has received 35 citations to date.[36] Stakeholders highlighted how both technology development and publishing of findings enabled by programme had helped to position academic organisations for future opportunities, including confirmed roles on **two future ESA space science missions**, as well as two proposals for roles on the NASA Habitable Worlds Observatory and ESA SPARK M-Class candidate missions (which are currently awaiting outcomes).

Advancing Metal Optics for Space Systems

Project consortium: Durham University (lead), University of Sheffield AMRC, Diamond Light Source ltd.

ETP funding enabled Durham University to advance metal-optics manufacturing techniques from an early-stage concept to a technically mature process selected for high-profile international science missions. From the start of the project the technology has increased **from TRL 2/3 to TRL 6**, while also enabling major technical achievements such as contributing to the first 3D printed aluminium X-ray mirror with an incorporated cooling system.

Source: Durham University

The technical progress achieved through ETP has already secured significant opportunities. Durham recently secured a tender with OIP Space Systems (Belgium) to **contribute to ESA's EnVision mission to Venus**, attributing this opportunity to their ETP project. The team has also been selected, alongside University of Oxford, for **the BEBOP instrument for ESA's LIGHTSHIP-1 mission to Mars**.

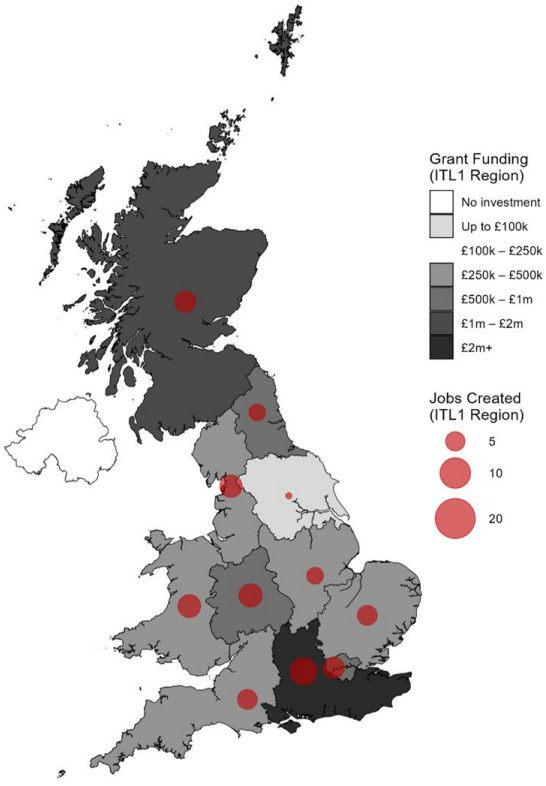
The project generated new skills and research output. It provided hands-on experience for a PhD student and an apprentice, and achievements of the project were widely disseminated: producing three published papers (receiving 27 citations to date), with an additional paper to be published, and through 5 workshop and conference talks, some held internationally. This global publicity has boosted the UK's reputation for metal optic manufacturing and partly enabled Durham's involvement in these future ESA missions.

[36] Erdélyi, R. et al., 2022. The solar activity monitor network–SAMNet, *Journal of Space Weather and Space Climate*, 12(2). Available at: https://doi.org/10.1051/swsc/2021025

Regional impact

ETP grant funding totalled approximately **£8.5m across UK / Devolved Administration regions** and, in contrast to NSIP Pilot, is distributed much more broadly. While the South East (~£2.8m) and Scotland (~£1.4m) received the largest allocations, funding reached nearly every UK region, with only Northern Ireland receiving no ETP funding. This broader distribution likely reflects the smaller grant sizes and thematic breadth across four distinct calls, which enabled a wider range of organisations to participate.

Figure 5 *Distribution of NSIP ETP grant funding and attributable job creation*



ETP projects have leveraged £23.2m in external investment, representing approximately 2.7 times the value of ETP grant funding. While lower in absolute terms than the £82.5m recorded for the Pilot, this leverage ratio suggest that ETP-funded technologies are also attracting significant further capital. Notably, investment is **spread much more broadly**, with ten regions reporting some level of leveraged investment. The South West leads with £8.9m, followed by Wales (£3.5m), London (£3.4m), the South East (£2.2m), and the West Midlands (£1.9m). The fact that some of the largest investment totals sit outside the traditional space sector hubs suggests that ETP funding is supporting the development of commercially attractive capabilities across a wider geography.

Perhaps the most notable finding is on additional income. **Seven ETP projects have reported attributable revenue from their projects, totalling £1.3m**, more projects than under the Pilot despite ETP targeting lower TRLs. The largest contributor is an academic project in the North East generating approximately £900k, whose technology has been selected for multiple future space exploration missions and is in discussions with the UK government and a major European defence company. **Income was reported across six regions**, suggesting that the commercial potential of ETP-funded technologies is not confined to any single hub.

Job creation is also more evenly distributed than under NSIP Pilot, with approximately 108 new jobs reported. Several projects reported between 10 and 12 new jobs, split between academic and private organisations, with other smaller but consistent contributions of 4 to 5 jobs across multiple regions. Over a quarter of projects, however, **reported no new jobs**, which is not unexpected given the early-stage, research-intensive nature of much ETP-funded work and the prevalence of academic organisations, which typically face more constrained hiring processes.

Ultimately, ETP presents a different regional profile to the Pilot: **smaller amounts of funding spread more broadly**, with **economic outcomes distributed across a wider set of regions and organisations** rather than concentrated among a few high performers. The leverage ratio of 2.7x is comparable to the Pilot's 3.0x, and the geographic breadth of investment is considerably wider, suggesting that ETP's smaller grant sizes have enabled a more distributed pattern of commercial development. The breadth of both income-generating and investment-attracting projects suggests a healthy foundation for future commercial returns.

2.6.3 Discussion

Impact Evaluation Question	RAG Rating	Performance
To what extent have NSIP Pilot and ETP delivered scientific or societal benefits in the UK?		NSIP Pilot and ETP funding has delivered early but meaningful scientific and societal benefits. The programmes have strengthened the UK's research base, with modest increases in research output linked to breakthroughs across funded projects. Pilot projects have generated notable citation impact (partly due to the fact more time has elapsed relative to ETP). Influenced by call design, societal benefits are evident through technologies addressing global challenges - particularly climate and environmental monitoring under the Pilot, and space sustainability under ETP. Funded projects are advancing capabilities such as in-orbit repair and life extension, collision avoidance, and ISAM, which have the potential to protect space assets, and support critical on-Earth services. Many technologies across both market segments have latent dual use potential, with early interest from the defence sector. In terms of the regional distribution of impacts underpinned by funding, Pilot outcomes are relatively concentrated in the South East of England, while ETP represents a broader spread of outcomes across the UK. However, neither programme used geography as a criterion for project selection.

NSIP funding has delivered measurable scientific and societal benefits across both programmes, though these remain at different stages of maturity. At an organisational level, NSIP has been instrumental in positioning funded projects to secure roles on wider space missions, strengthening the UK's reputation and standing in international space research. The programme's contribution to academic research has been significant in specialised areas, though concentrated among a subset of funded projects. The Pilot's strongest contributions are to **climate change and environmental monitorin**g, with 70% of funded activities relevant to tackling climate change and technologies now beginning to enter commercialisation, while ETP has played a more prominent role in advancing technologies supporting the **long-term sustainability of space operations**. **Dual-use applications are widespread**, with technologies developed for environmental or sustainability purposes also strengthening the UK's defence and national security posture, itself a key societal benefit in addressing global threats.

Direct societal benefits beyond the organisational level (such as jobs and leveraged funding) remain limited at this stage, with most funded products and services yet to reach market. Nonetheless, the two programmes have collectively created over 170 jobs and leveraged significant external investment, with Pilot achieving a leverage ratio of 4.4x and ETP 2.7x against grant funding. Regionally, Pilot outcomes are concentrated among a few high-performing organisations in established hubs, demonstrating strong ability to catalyse capital but limited broader reach. ETP's outcomes are spread more widely, with a more distributed pattern of high-skilled job creation in particular, suggesting its **programme structure has supported commercially attractive capabilities across a broader geography**.

A growing pipeline of potential solutions addressing climate change and other global challenges indicates that broader societal returns are expected to follow as these technologies mature and are commercialised. The foundations laid by both programmes suggest wider benefits will accrue as funded technologies continue to develop.

3 Economic Evaluation

Summary of key findings

- **The impact story is still ongoing,** with substantial future benefits expected as more technologies are commercialised and commercial operations are scaled up. Therefore, it is too early to provide firm conclusions on the extent to which the Pilot or ETP have offered value for money or confidently answer the question, "was it worth it"?
- **We estimate that the real, discounted and attribution-adjusted UK benefit of the Pilot is at least £119m to date**. The nominal economic cost of the Pilot has been £41.2m, of which £27.6m was grant funding and £13.6m came from matched funding.
- **For ETP, we estimate that the real discounted and additionality-adjusted benefit to date has been at least £12.2m**. The nominal economic cost of the ETP has been £10.4m, of which £8.2m was grant funding and £2.3m came from matched funding.
- **Monetisable benefit estimates are driven by a few large external investment events and do not include the substantial non-monetisable benefits** outlined in earlier chapters. Cost estimates include only the costs of project delivery and do not include the total economic cost of bringing technologies to market after funding ends.
- **A comparison with expectations at proposal stage for ETP demonstrates strong optimism bias** in estimated internal and external investment, revenues and job creation.
- **Costs are broadly in line with those expected at Business Case stage**, though the Pilot grew in scope with additional phases of funding added, whilst there is limited basis for comparison of anticipated benefits and value for money with realised outcomes.

Our economic evaluation builds upon our impact evaluation and the Interim Economic Evaluation, to provide a rounded view of the success of the NSIP Pilot and ETP. We combine an assessment of monetisable impacts, with the qualitative insight to provide insight into the key question, '**was it worth it**?'.

Whilst this report represents the Full Evaluation of the Pilot and ETP and all projects have concluded, the **impact story is still ongoing** with project teams continuing to progress their technologies beyond the timelines of their projects. The true value for money offered by the NSIP Pilot and ETP will be determined in the long run, years from now. It will ultimately hinge on the success in bringing technologies developed under the programme to end users.

The benefits we can see at this point in time are still concentrated on funded organisations themselves. In future, as more products reach end users, we might expect the spillover benefits (for example, as new ideas are translated to other space-domain uses, or non-space applications) to society to far outweigh private benefits. Additionally, we expect any **monetised benefit estimates to underestimate the benefit of Pilot/ETP funding**, given the significance of non-monetisable benefits. These challenges are not unique to Pilot/ETP or space funding but apply to public R&D funding more broadly. For details of our approach, see the Annex.

3.1.1 Attribution of benefits

All results presented have been adjusted for attribution. The appropriate level of attribution is considered for individual benefits, and our totals are also subject to a **90% additionality**

assumption[37] to account for deadweight, since our interviews suggested that a small minority of projects may have gone ahead without NSIP/ETP funding.

Given the importance of external investment, we individually researched investment events and assigned an attribution share based on qualitative insight. These decisions are necessarily arbitrary, and results are sensitive to these assumptions. Given this sensitivity, we should not overly rely on monetised estimates to assessing the extent to which the Pilot or ETP have offered value for money.

***Table 3** Dimensions of additionality*

Dimension	Assessment
Leakage (extent to which benefits accrue outside the UK)	Only benefits to UK based organisations and individuals are included. Project teams were asked to report UK-based revenues and job creation. External investment events were investigated to ensure investment was going into the UK.
Crowding out (public funds displacing private funds)	Crowding out is deemed to be insignificant based on conversations with project teams, who consistently made it clear that private investors would not be interested in their technology without prior de-risking through government funding at the relatively lower TRLs funded by Pilot and ETP.
Displacement (extent to which economic activity generated by NSIP displaces other activity)	For revenues, external and internal investment, we assume zero displacement, as the UK is capturing a share of emerging global markets which brings new activity to the UK. For job creation, our wage premia methodology implicitly assumes 100% displacement. This is a reasonable assumption given the economy was operating near full employment in much of the period of analysis.
Deadweight (extent to which activity would have occurred regardless of NSIP)	Deadweight is likely to be low, with most projects not going ahead in the absence of funding. However, some teams indicated at interview that they may have found funding through other sources, so we apply a 90% additionality adjustment to our totals.

3.2 NSIP Pilot

3.2.1 Monetisable benefits

We estimate that the **real, discounted and attribution-adjusted UK benefit of the Pilot is at least £119m** to date. This total is **overwhelmingly driven by external investment into the UK** which accounts for 99% of total benefit. Of this, 54% is UK private investment (£66.6m) and 45% is foreign public and private investment (£53.5m)[38]. A few large investment events drive investment totals. Wage premia benefits from job creation account for around £517k in benefit, GVA is estimated to be £478k and internal investment is £416k.

Reflecting the **importance of a few large investment events** driving outcomes, benefits fluctuate year-on-year, depending on whether an investment event took place and its magnitude. It is notable that despite the final Pilot projects concluding in 2024/25 (the majority having concluded far earlier), **over £27m in benefits were realised in 2025/26**. Six projects have commercialised and at least six more expect to commercialise in future (see Section 2.3). Thus, there is ongoing economic activity associated with Pilot funded activity, despite NSIP funding having concluded. Whilst the evaluation is being conducted just under a year after funding concluded, we would expect further substantial benefits to be realised in future as more products reach market and those organisations already commercialising scale up activities.

[37] This assumption is necessarily somewhat arbitrary and based on a subjective assessment.
[38] Totals only include private and non-UK public investment, and have been attribution-adjusted, so may not match those represented in the Impact section.

Table 4 *Real discounted benefit from the Pilot by year*

	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Total real discounted UK benefit	£0.1m	£40.9m	£23.3m	£12.6m	£15.3m	£27.2m

For more detail on our methodology and how these benefits were estimated, see the Annex.

3.2.2 Non-monetisable benefits

We have focussed on monetisable benefits, but **non-monetisable benefits are central to evaluating the value for money** offered by the Pilot. Key benefits of Pilot funding are intrinsically non-monetisable, notably the facilitation of crucial steps towards commercialisation. Furthermore, data gaps limit the robustness of our quantitative assessment of benefits, so we should not over rely on monetised estimates. Our impact evaluation provides an in-depth analysis of benefit creation, demonstrating the considerable benefits arising from funding, so we do not repeat this analysis here, but note that these benefits are highly significant.

3.2.3 Economic cost of the Pilot

We estimate that the total **nominal economic cost of the Pilot has been £41.2m**[39,40], of which £27.6m came from grant funding and £13.6m came from matched funding. Of this total 43% (£17.5m) is associated with the two Pilot Implementation phase projects taking place from 2022/23 to 2024/25. We do not include any additional economic costs to private organisations likely to be associated with commercialisation, but note that these could be significant.

Table 5 *Pilot costs by year*[41]

Cost type	2020/21	2021/22	2022/23	2023/24	2024/25
UK Space Agency grant funding	£10.7m	£6.8m	£0.4m	£4.7m	£5.0m
Matched funding	£3.3m	£2.9m	£0.2m	£3.1m	£4.1m

3.2.4 Value for money

Whilst this represents the Full Evaluation of the NSIP Pilot, the **benefits from the programme are still emerging**, with the most substantial benefits expected in future, as more products developed through the programme reach market and those who have already reached market scale up operations. Therefore, it is too early to conclude definitively whether the programme has offered value for money.

As with any R&D programme, **benefits accrue over long timescales** of years or even decades, whilst substantial costs are borne earlier to finance technology development. As we outline above, the **programme has achieved notable success in generating leveraged investment** which will be crucial to financing the next stage of technology development and ultimately unlocking a route to commercialisation and commercial scale-up for many project teams. However, in assessing value for money, this investment can be considered a cost since it is money which could usefully have been spent on other things (investment has an 'opportunity cost'). Nonetheless, we consider it to be positive because **investment unlocks other benefits** both to funded companies (e.g. GVA, job creation etc.) and ultimately society (new products, consumer surplus, UK sovereignty, etc.). Leveraged investment also provides a strong signal from investors that ideas developed through the Pilot are commercially credible. At this stage, the significant volume of leveraged investment is

[39] Note that whilst we include external and internal investment as a benefit, DSIT appraisal advice considers UK external and internal investment as a cost, reflecting the opportunity cost of investment.
[40] The real, discounted cost of the Pilot is estimated to be £47.2m in 2025/26 prices.
[41] Note: this total does not include in-kind contributions from project teams, for example, use of facilities or staff overtime. These totals are designed for the purposes of our economic evaluation, rather than accurate financial accounting.

a positive sign of the potential for future value for money, though it remains to be seen the extent to which investment will translate into substantial benefit and value for money.

Whilst project teams' expectations may be subject to optimism bias, Northumbria University alone expect to £6-£10m in revenues from their NSIP-developed terminal. Meanwhile, another project has secured millions worth of future revenue through formal reservations for their technology. Once fully commercialised, **the benefits from just one or two successful projects could outweigh the cost of the programme**, and ultimately, exceed total public and private investment into these technologies. Tracking benefits in future will be key to providing firmer conclusions on the extent to which the Pilot has ultimately offered value for money.

3.3 ETP

3.3.1 Monetisable benefits

We estimate that the **real, discounted and additionality-adjusted benefit of ETP to date has been at least £12.2m**. External investment is the most significant benefit class, accounting for 78% of total benefit. Foreign external investment is valued at £5.1m (42% of overall benefit), and UK external investment is valued at £4.5m (37% of overall benefit). Internal investment is notable at £1.8m (15% of total). GVA and wage premia from job creation are worth £500k and £390k respectively.

ETP projects started in 2023/24 with the final projects concluding at the end of 2024/25. As such, we have fewer years of impacts to draw conclusions from relative to the Pilot. ETP projects are relatively less mature than the Pilot having started earlier and targeting lower TRLs.

Table 6 *Real discounted benefit from ETP by year*

	2023/24	2024/25	2025/26
Total real discounted UK benefit	£0m	£5.9m	£6.3m

For more detail on our methodology and how these benefits were estimated, see the Annex.

3.3.2 Non-monetisable benefits

We consider the **non-monetisable benefits of ETP funding to be considerable**, to the extent that they should drive any evaluation of the extent to which ETP has delivered value for money. Given the **low TRLs targeted by ETP**, just five project teams (out of 41) have brought technologies to market, though many project teams still intend to reach market. As such, we expect far greater benefits to project teams when more technologies reach market and scale operations. Moreover, as we have outlined, these technologies are expected to confer large benefits on end-users and wider society.

3.3.3 Economic cost of ETP

We estimate that the total **nominal economic cost of the ETP has been £10.4m**, of which £8.2m came from grant funding and £2.3m came from matched funding[42]. ETP in total cost around a quarter of what the Pilot cost (£41.2m); the relatively lower scale of benefits associated with ETP should be considered in this context. As with the Pilot, we do not include any additional economic costs to private organisations likely to be associated with commercialisation but note that these could be significant.

[42] The real, discounted cost of ETP is estimated to be £11.0m in 2025/26 prices.

Table 7 *ETP costs by year*

Cost type	2023/24	2024/25
UK Space Agency grant funding	£4.0m	£4.2m
Matched funding	£1.1m	£1.2m

3.3.4 Value for money

ETP targeted short 18-month projects and the last projects concluded just under a year ago at the time of writing (March 2026). Given the low TRLs targeted, projects were not expected to commercialise their technologies immediately after the programme and were expected to need further financing to reach market. For these reasons, we would expect the **most substantial benefits from funding to not be realised for several years at a minimum**. It is still early days for benefit realisation, even more so for ETP than the Pilot. Nonetheless there are **positive signs of substantial future benefit**, most notably the further investment project teams have leveraged enabling them to continue to develop their technologies and, in some cases, commercialise.

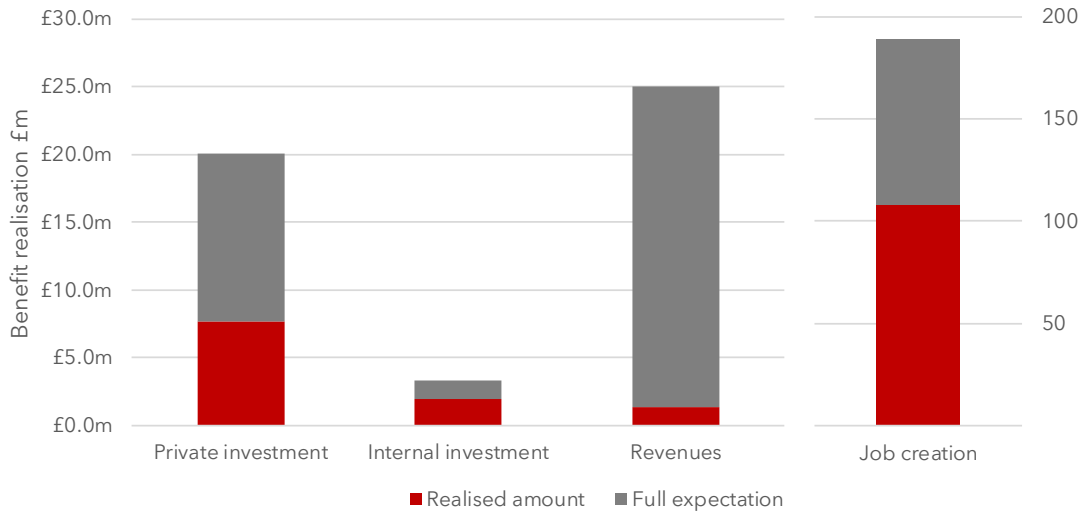
Whilst not all project teams have continued to develop their ETP projects beyond the timeline of ETP funding, many have, with five already reaching market and others hoping to do so in future. Not all projects are expected to ultimately be successful but many project teams are optimistic about the potential of their technologies. Whilst these expectations may be subject to optimism bias, just a **handful of success stories could in future more than cover the cost of ETP**. Frontier Space alone expect to generate five to six figures of revenue in 2026 (see case study in Section 2.4). For these reasons, it is too soon to make firm conclusions about the ultimate value for money offered by ETP, but the early signs are promising.

3.3.5 Comparison to expectations

From ETP call 2 onwards, applicants were required to provide estimates of future economic impact over the next 6 years as part of North Star Metric reporting[43]. With the **important caveat that there are gaps in reporting**, our evidence suggests that **these estimates were generally highly optimistic**, though some benefits have been realised to a greater extent than others. This could reflect optimism bias on behalf of applicants; every applicant hopes that their technology will succeed but in reality (across all R&D programmes) some technologies will not achieve technological and/or commercial success. It could also reflect an incentive in applications to overstate potential benefits in order to secure funding.

[43] Note: we do not have any data on expected external investment for ETP Call 2.

Figure 6 *Comparing expected and realised benefits to 2025/26*



Note: graph compares total expected benefits across ETP calls 2-4 from 2022/23 to 2025/26 with realised benefits over the same period across all ETP calls.

3.4 Discussion

Economic evaluation question	RAG Rating	Performance
What is the socio-economic benefit of NSIP Pilot and ETP to the UK?		The Pilot and ETP have generated £119m and £12.2m in real discounted economic benefit respectively, as well as significant non-monetisable benefits to date. Notable non-monetisable benefits include TRL development, generation of new IP, supporting steps towards commercialisation, skills development, facilitating stronger partnerships and collaborations and new academic knowledge. Further benefits are expected in future as technologies developed through NSIP and ETP reach a greater pool of end users.
What has been the total UK cost of NSIP Pilot and ETP (including both public and private costs)?		We estimate that the total nominal economic cost of the Pilot and ETP has been £41.2m and £10.4m respectively. £27.6m of Pilot costs came from grant funding and £13.6m came from matched funding. £8.2m of ETP costs came from grant funding and £2.3m came from matched funding. These totals include only spending directly associated with the programmes. We expect more funding to be needed for project teams to successfully commercialise their technologies.
To what extent do the net social benefits from NSIP Pilot and ETP (those that have been realised to date and those that are expected) justify public investment?		It is too early to conclude whether the net social benefits from the Pilot and ETP justify the public investment, with the benefits story still evolving. The most substantial benefits are expected to be realised in future as more technologies reach market and those already commercialised reach a wider audience. Given the early stage of benefits realisation, we do not present the Net Present Social Value (NPSV) associated with the programmes. However, the substantial investment generated to date provides an indication of the potential benefits which could accrue from the technologies developed through the Pilot and ETP. Comparing to other programmes is challenging given differences in timelines, objectives and evaluation methodologies. However, we note that our quasi-experimental analysis finds a significant positive effect of Pilot funding on employment outcomes for small firms despite a small sample size. Similar evaluations do not always find a significant effect.

To what extent do the benefits from NSIP Pilot and ETP outweigh the costs?		As noted above, we expect the full economic cost of bringing NSIP and ETP-developed technologies to market to exceed the costs of the programmes alone. The benefits story is still evolving but so are total economic costs. It is too soon to conclude whether the benefits from the Pilot and ETP will ultimately outweigh the costs.
How do the actual outcomes differ from anticipated costs and benefits?		Both programmes costed approximately the amount expected at Business Case stage. There is limited basis for comparison of expected benefits and value for money, though the Pilot appears to be performing well. For the Pilot, it is too soon to draw conclusions on how realised benefits compare to anticipated benefits since the 2020 Pilot Business Case[44] appraised benefits over a 19-year period with a four-year lag in benefits realisation. Narrowly comparing benefits realised from 2020/21 to 2024/25 shows the Pilot is exceeding benefit expectations, given the assumed four-year lag before any benefits are realised. With regard to costs, the 2020 Business Case requested £15m for 2020/21. In reality, £10.7m in grant funding was allocated in 2021/21 but the programme was subsequently extended with Implementation calls added. Total grant funding across all Pilot calls totalled £27.6m. For ETP, the case for investment stated only that returns on public space investments typically exceed 1:1[45], providing limited basis for comparison. ETP was envisioned to cost £5m per year for two years, compared to actual spend of £8.2m on grant funding. We also compared expectations from project teams at proposals stage for ETP. Project teams estimated expected revenues, private investment, internal investment and job creation for the first six years following funding as part of the application process. To date, realised impacts are lower than expectations across all metrics, perhaps demonstrating optimism bias in initial estimates.

[44] UK Space Agency, 2020. *National Space Innovation Programme (NSIP) -Business Case.*
[45] UK Space Agency, 2023. *Enabling Technologies Programme: Financial Commitment Report Request*.

4 Discussion

Whilst this report represents the Full Evaluation of the NSIP Pilot and ETP, with the final projects having concluded around a year ago at the time of writing (March 2026), the **impact story is still evolving**. These long timelines are to be expected – a core aim of NSIP is to generate new products and services sold to the fastest growing markets by 2030. Not all project teams have continued to develop their technologies beyond the timelines of their funded projects, but those who have been able to have generated notable benefits. As such, the magnitude of overall benefit is considerably larger than that reported in our Interim Evaluation as projects were drawing to a close (data collected in late 2024). Whilst comparisons with other programmes are inherently challenging, the Pilot and ETP have generated substantial and wide-ranging benefits. To date, **the programmes have performed well against their objectives**, though the achievement of some objectives must be judged in the long run.

Both the Pilot and ETP are innovation programmes, with a core aim of increasing the technological readiness of funded solutions. Both programmes have exceeded the broader NSIP objective of raising TRLs by an average of two per project. **At project conclusion, Pilot Implementation projects averaged TRL 5.1 and ETP projects TRL 4.3** (where we have data). As expected, most project teams require follow-on investment to fully develop and commercialise their technologies. An exception is the Pilot down-select projects where successive rounds of funding have enabled them to achieve end-to-end technology development across the TRL scale (both achieved TRL 9).

To date, **six Pilot teams have brought their technologies to market**, as well as **five ETP teams**, with more expected to commercialise in future. Five ETP project teams commercialising is particularly notable given the low TRLs targeted by the programme. For those who have reached market, the benefits story is still evolving, as companies intend to scale up their operations. These organisations are just beginning to generate revenue, with **nine companies having generated a total of £2.6m in attributable revenues to date**. Many of these companies are buoyant in their expectations for future revenues, though these expectations should be viewed cautiously given potential for **optimism bias**. As we have demonstrated, project teams' initial estimates of future revenues (and investment and job creation) have so far proven to be overly optimistic. However, one project shows strong signs of market demand, with millions of pounds in formal orders already secured, which, if realised, would represent a notable commercial success for NSIP.

Nonetheless, there are promising signs of potential – some funded organisations' **success in securing private funds is a signal of investor belief** in the commercial potential of NSIP and ETP technologies, particularly Pilot technologies. Catalysing private investment was core to the ETP value proposition and encouraging private investment into the UK was an objective of the Pilot, as well as contributing to the Agency's North Star Metric. To date, Pilot funded organisations have secured **£81m in private investment** and **ETP organisations £7.7m**. Whilst ETP private investment is lower, fewer commercial organisations were funded through ETP, low TRLs were targeted and overall programme funding was around a quarter that of the Pilot. ETP and Pilot teams have also secured public funding of £16m and £41m respectively. For those yet to reach market, external investment is in most cases necessary to **finance the steps to commercialisation**, whilst investment will be key to **unlocking the scale up potential** of commercialised technologies.

Aggregate investment totals **are driven by a small minority of very successful project teams**. This is true of both Pilot and ETP. 94% of private investment associated with the Pilot comes from just two firms, whilst 82% of total ETP private investment is associated with two organisations. This is true, though to a lesser extent, for other impacts. This pattern is **not unusual for a portfolio R&D funding programme** and is to be expected. In the long run, we expect the aggregate benefit of

the programmes to be driven by a handful of success stories who achieve commercial scale up and deliver widespread societal benefit. At this stage, we are seeing **signs of potential frontrunners**.

Some projects have not progressed beyond the timelines of their Pilot or ETP funding. In a few cases, organisations learned through their project activity that their ideas did not have the potential which they had hoped and do not intend to pursue this work further. This should not be considered a failure – within a broader portfolio, it should note be expected that all R&D projects will be successful. Other projects are on pause until further funding is secured. Many who have not yet secured follow on funding hope to do so and are **actively applying for further funding** and talking to investors. Some are waiting for the right opportunity, be this an appropriate ESA tender or international mission. Whilst many were optimistic, there are concerns around entering a 'TRL **Valley of Death'**, with future commercialisation contingent on further funding. The earliest Pilot projects finished in 2020/21 whilst the final ETP and Pilot projects finished at the end of 2025/26. A year after funding concluded, many are still optimistic but as time passes and institutional knowledge is lost, the likelihood of these technologies being progressed will diminish. Nonetheless, whilst some projects are not expected to progress further, substantial impacts were generated within project timelines.

Increasingly tangible and diverse benefits have materialised as more time has elapsed with widespread de-risking of early-stage concepts evident across programmes. Collaboration has been key to project delivery, with a high prevalence of academic-industry partnerships, supporting mutual learning, though transferring IP from academia to industry (including spin-off companies) has in some cases been challenging. For some Pilot projects, successive rounds of funding have enabled the addition of new partners, while the International call allowed the UK to secure mission roles at relatively low-cost, compared to ESA routes. Some projects experienced challenges which, while not unique to the Pilot, proved insurmountable. This reinforces that international collaboration is not risk-free to the UK's reputation as a reliable partner. However, **funding has helped to demonstrate UK capabilities on the global stage**, including instruments which are now returning data on NASA missions. Project teams were almost unanimous in reporting that **funding enhanced their reputation.** The ability to disseminate findings through conferences, events, and the media was frequently cited as a key benefit. In some cases, this increased visibility has translated into tangible outcomes, including new customer engagement and opportunities.

Pilot and ETP have also supported a **cumulative 172 years of employment**, mostly in highly skilled roles. There is evidence of significant upskilling, laying the foundations for future organisational activity and supporting career paths. Funded organisations have also created new jobs, scaling organisational R&D capabilities and supporting more highly skilled employment in the sector. Attracting and retaining talent was an explicit objective of ETP, against which the programme has performed well. While still emerging, we find examples of **potential for orders-of-magnitude larger job creation through commercialisation**, in some cases through spin out companies, though attributability to initial UK Space Agency funding is likely to fade over time.

Our approach has been primarily theory-based but we also conducted a **quasi-experimental analysis of job creation**. This analysis provides a robust, albeit narrower, lens with which to assess impact. We find a **statistically significant effect of NSIP pilot funding on employment for smaller organisations at the 10% level of around two new jobs per funded company** (with this representing an 'NSIP effect' beyond a standard contract-employment relationship). We did not find a statistically significant relationship for ETP, though this should not be interpreted as evidence that ETP funding has no impact on employment given data limitations. While caveats apply, this analysis demonstrates a causal link between Pilot funding and economic activity. Moreover, this represents one of the first times that econometrics has been used in UK space programme evaluation. The detection of significant results for the Pilot despite data limitations suggests that these methodologies can be applied to a small population with success, demonstrating the **broader potential for these methodologies in evaluation.**

Whilst there is evidence of significant benefit creation to date, **we expect the largest benefits to accrue as more technologies reach end users and those already on the market reach a**

greater pool of users. Whilst organisations face challenges in reaching this goal, there is potential for widespread economic and societal benefit. For example, 70% of Pilot-funded activities support efforts to fight climate change. These societal impacts could outweigh private benefits.

We judge that the NSIP Pilot and ETP are **generally performing well against their objectives at this stage**, though we can only assess performance against some objectives in the long run. Both programmes have enabled significant innovation and catalysed investment, as well as promoting stronger collaboration and supporting skilled employment. The Pilot, via the International Call has also boosted bilateral cooperation. Through the programmes, **ground-breaking new space-based products** have been developed, though technologies developed have yet to reach a wider audience through scaled commercialisation. See Table 8 and Table 9 for a fuller summary.

At this stage, it is **too early to provide firm conclusions on value for money**. As we have outlined, the largest benefits are expected to accrue in future, with long benefit realisation lags associated with R&D activity. Nonetheless, the early signs are promising. The volume of leveraged raised, in particular, is a strong signal of future potential benefit. Continuing to **track the evolution of benefits in future** will be essential to provided firmer conclusions on value for money. Whilst engaging project teams long after funding has ended is challenging, quasi-experimental methods could provide a future avenue for evaluation without the need to re-engage all project teams.

Table 8 *Pilot performance against Business Case objectives*

Pilot objective (summary)	RAG Rating	Performance
Stimulate UK R&D activity in space innovation across the space sector.		In total, the Pilot awarded £27.6m in grant funding and £13.6m in matched funding, which has enabled six Pilot organisations to generate £81m in leveraged investment, including £122m in private finance and £41m of public investment. Pilot funding has spurred further R&D activity in the space sector.
Accelerate the development of ground-breaking space-based products and services.		Whilst data on TRL increases is patchy for earlier calls, at project conclusion, Pilot Implementation projects averaged TRL 5.1, an average increase of 2.8. The two Down-Select projects reached TRL 9. Other organisations have boosted the TRL of their technologies beyond the timeframe of their NSIP projects. Many projects have also developed IP, though most do not intend to formally register IP.
Encourage knowledge spill-over between UK industry and academia and vice versa through collaborative projects.		While just one new industry-academia partnership was enabled by the Pilot, at least 18 individual industry-academia partnerships were strengthened by the Pilot. These partnerships allowed cutting-edge research undertaken in universities to be translated into commercial solutions through mutual learning and knowledge sharing. However, these were not without challenges, such as the transfer of IP between universities and industrial partners.
Strengthen the space sector's contribution to UK science, security and trade by carrying out bilateral projects.		In the International Call, 23 organisations were involved across 7 projects, including 8 international partners. NSIP funding has strengthened the UK's academic research base and helped secure leadership roles on major international missions. Additionally, across the Pilot, four project teams have entered new international markets (US, Canada and Australia), with one project delivering their Pilot-developed instrument for involvement in a NASA mission.
Establish and deepen strategic partnerships with priority countries.		The Pilot enabled partnerships with strategic countries including the US, Canada, Japan and India. UK organisations partnered with both foreign space agencies and industrial partners, as well as one project involving the United Nations. However, some stakeholders felt that a lack of follow-on funding limited opportunities to maintain and build on these partnerships.
Provide further evidence of innovation and bilateral opportunities.		The subsequent creation of the International Bilateral Programme arguably demonstrates the success of the Pilot International in fostering bilateral cooperation for mutual benefit, while the creation of NSIP Major Projects and Kick Starters evidences the overall success of the Pilot in supporting innovation in the sector.

***Table 9** ETP performance against initial objectives*

ETP objective	RAG Rating	Performance
Stimulate innovation and commercial opportunities.		On average, ETP project teams achieved TRL development of 2.5, with the average TRL at project conclusion 4.3. Technologies therefore needed further development to realise commercial opportunities, but the early signs are promising with five ETP teams already bringing their ETP-developed technologies to market.
Inspire, attract, and retain talent.		ETP funding directly supported almost 76 years of employment, demonstrating retention of highly skilled jobs. At least 35 early workers and 28 students were supported, boosting the skills pipeline. We also estimate that the programme led to the creation of 108 FTE roles.
Grow the UK space sector.		ETP projects have leveraged £23m attributable external investment, of which £16m is public, and £7.7m is private. Whilst notable relative to programme costs of £10.4m, this is not hugely significant at the level of the space sector as a whole. In 2024, the sector generated £481m in investment[46]. ETP is one element of a broader suite of UK Space Agency programmes helping to grow the sector.
Accelerate launch to market of space innovations.		At the time of writing five ETP project teams have brought their technology to market, with a further 26 products or services expected to reach market. Seven spin-out companies are expected to be created. While project teams struggled to quantify accelerated progress, there was general consensus that ETP funding accelerated technology development or enabled activity which would not otherwise have taken place.

Overall, we assess strong performance against most impact evaluation questions – with objectives largely met or exceeded across both the Pilot and ETP. In a Red-Amber-Green (RAG) assessment of performance, 6 (out of 7) are green, with the caveat that 'green' represents progress to date and with the (uncertain) longer-term potential still to be seen. We assess one question – the extent to which organisations have captured increased market share – as amber, reflecting the additional stages required to scale commercial activities and significantly disrupt industry status quo. **Whilst it is too soon to draw firm conclusions on value for money**, with the most significant benefits expected to accrue when technologies are commercialised at scale, we find evidence of substantial benefit.

Evaluation Question	RAG Rating	Performance
What lessons can be learned from the impacts of NSIP (e.g. types of impacts, magnitude, timing etc.)?		While both Pilot and ETP have successfully advanced technologies (often exceeding TRL targets), most projects have not reached commercial readiness at time of writing (March 2026). R&D is a long process. Relative to expectations at proposal stage, ETP projects have generated less internal and external investment, revenue and job creation than expected by applicants (though we note incentives to overstate expected benefits are likely to have a strong influence here). Projects have shown significant de-risking, though sustained funding is often required to reach market . Portfolio approaches also inherently produce uneven outcomes. This is not a weakness, but an expected feature. Tracking and supporting high-performing projects is therefore essential to future commercialisation. Similarly, some projects fail and (provided it is not due to factors such as poor project management) this should not be seen as a negative outcome, but as a natural part of the innovation process. A portfolio approach is imperative.

[46] London Economics, 2025. *Size & Health of the UK Space Industry*. Available at: https://assets.publishing.service.gov.uk/media/6874f724b1b4ebc2c2e4656f/LE-UKSA_-_Size_and_Health_of_the_UK_Space_Industry_2024_-_Final_Summary_Report_S2C11072025.pdf

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