



Regional Transformational Opportunities in the South of Scotland

 **Insight**



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Report completed/submitted by:	Ross Mawhinney; Harry Gover; Alexander Robertson
Proof check completed by:	Alexander Robertson
Date:	16/10/2026
Report reviewed by:	Ross Mawhinney
Date:	16/10/2026
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Contents

1	Introduction and background information.....	4
2	Strategic context.....	10
3	Regional Transformational Opportunities	15
4	Enablers for Transformational Opportunities	54
5	Assessing potential economic impacts	64
6	Workforce and Skills Implications	81
7	Conclusions and priorities for action.....	98
A.1	Appendix 1: Assessing Potential Impacts	108

1 Introduction and background information

Overview and study objectives

- 1.1 GC Insight was commissioned by South of Scotland Enterprise, working with strategic partners across the region including Dumfries and Galloway Council, Scottish Borders Council, the South of Scotland Regional Economic Partnership and Skills Development Scotland to undertake research on Regional Transformational Opportunities (RTOs) in the South of Scotland. The study identified transformational development opportunities across the region, and estimated the scale of impact that these will bring.
- 1.2 The study:
- Identifies and articulates the development opportunities that have the greatest potential to transform the South of Scotland economy;
 - Maps and quantifies opportunities to identify the socio-economic and wider impact that projects will generate, individually and collectively;
 - Considers the investment, jobs and Gross Value Added (GVA) impacts arising from both the development, construction and installation phase, and the operational lifespan of projects;
 - Identifies the likely skills requirements for development projects, and the implications this will have on workforce demand and the labour market in the South of Scotland;
 - Determines the strategic alignment of identified investment projects – giving particular consideration to the Regional Economic Strategy (RES), the Borderlands Inclusive Growth Deal and Edinburgh and South East Scotland City Region Deal, and the South of Scotland Regional Land Use Framework;
 - Articulates the critical enablers for fully realising development opportunities, as well as the inhibitors that will serve to constrain the development opportunities; and
 - Establish priorities for action by strategic partners to help unlock the identified project pipeline.

Approach

- 1.3 The research has adopted a mixed methodology, comprising a combination of primary and secondary research. The work undertaken as part of this methodology included:
- A comprehensive review of secondary literature, strategies and data relevant to the region, the opportunities in scope (see below) and the strategic context underpinning the development of these opportunities;
 - A programme of consultations with public sector stakeholders and key informants with detailed knowledge of opportunities within scope. This consultation programme included:
 - Three scoping consultations with members of the South of Scotland Regional Economic Partnership (SOSREP);
 - 16 one-to-one consultations with South of Scotland Enterprise (SOSE) sectoral leads and key external partners to identify key developments underpinning each of the RTO themes;
 - Two additional drop-in sessions for Dumfries and Galloway Council and Scottish Borders Council members to sense check emerging opportunities and provide additional developments;

- Four touchpoints with the SOSREP to test emerging findings; and
- A presentation to the SOSE Youth Advisory Forum, seeking to gain feedback on the most significant opportunities for young people
- Working with SOSE, a data gathering exercise of all available data and information relating to current and proposed opportunities identified throughout the consultation programme; and
- A bespoke economic impact assessment to estimate the scope, scale and value of the pipeline of proposed opportunities for the region (see the introductory section of Chapter 5 for further information).

1.4 The study relied on information and intelligence provided by stakeholders and consultees, as well as information that could be sourced from material in the public domain. In some instances, information on projects was restricted due to commercial sensitivity. There was limited project information available regarding costs, timescales and anticipated employment for some projects at a very early stage of development. The research did not involve engagement with private sector organisations or private investors, and should therefore be considered as an assessment of potential impacts, rather than commercial due diligence or full investor market testing.

1.5 In the absence of detailed information provided directly by private sector organisations responsible for developing and delivering identified projects, GC Insight used appropriate proxy measures and benchmarks to estimate impacts. These were based on available comparator data (including data from SOSE's historical CRM system) and other intelligence from government and academic sources, and other accepted industry and research sources.

1.6 For the purposes of this study, “the region” is defined by the South of Scotland Regional Economic Partnership geography – i.e. the local authority areas of Dumfries and Galloway, and the Scottish Borders.

Defining “Transformational”

1.7 In identifying Regional Transformational Opportunities (RTOs), it has been recognised by both the study team and the client steering group that the majority of opportunities are of significant scale in terms of size and investment value. They are typically major development and regeneration projects that will bring large investment, generate considerable employment opportunities, and will consequently generate a quantum of additional GVA for the South of Scotland (and in turn, the Scottish) economy. Transformation may arise from securing an anchor investor, creating a new market or cluster, commercialising innovation, strengthening regional supply chains or unlocking follow-on investment. However, it must also be recognised that other, smaller, developments will, when considered with projects and investments of a similar nature, contribute to impacts where the cumulative level of investment is the key to transformation.

1.8 Thus, this research has considered two categories of projects:

- Major and large-scale development projects of regional or national significance; and
- Projects of local or regional significance that demonstrably contribute to a cumulative transformative effect.

Characteristics of a Transformational Opportunity

- 1.9 For projects to be truly transformational, and therefore to be considered as RTOs, they should comprise the following features:
- They will deliver clear and substantial economic shifts as opposed to incremental change;
 - Impacts will be major, visible, cross-cutting, and regional or even national in scale, either individually or cumulatively across sectors or thematic areas;
 - A systems-based, collaborative and co-ordinated South of Scotland approach across public sector partners will be required to support their realisation through the removal of barriers and inhibitors, and ensuring that required enablers are in place;
 - They will be complex and add to the diversity of the region's economy;
 - The activities will be of scale (either individually or cumulatively across sectors or thematic areas) and will be realised in the medium to long term;
 - They may require new structures, processes, policies, and attitudes to risk and risk sharing; and
 - They have the potential to make a significant contribution to key regional, Scottish and UK policy objectives.
- 1.10 It is also worth noting that it is implied that conventional economic development activity (e.g. provision of additional industrial and commercial land or floorspace) is excluded from this definition. Whilst this is an important component of economic development that can be central to securing further investment, this activity in isolation is not typically considered sufficiently transformative to be in scope for this study. In instances where these developments have significant strategic value (for example the Borderlands Business Infrastructure Programme), the transformational potential of this activity has been considered.

Themes and sectors in scope

- 1.11 The brief for this commission provided an indicative overview of **eight** sectors/thematic areas that are in scope for the region, as detailed in Table 1.1 below. Following discussions with the project steering group, it was understood that some opportunities may be more prevalent than others and therefore may have more evidence to demonstrate potential impacts. It was agreed that, following the primary research phase, if there is a lack of evidence for some of the more nascent opportunities presented here, some RTOs may be excluded from the analysis.
- 1.12 It should be noted that, while evidence was more readily sourced for some sectors than others, each of the eight sectors/thematic areas was considered to be relevant for this study. However, the eight themes vary in maturity, scale and available evidence, and therefore are not necessarily eight equally mature propositions. There is also some overlap across these themes (particularly regarding Health and Life Sciences and Industrial Biotechnology, as well as Creative and Cultural and the Visitor Economy) and therefore projects were assigned to a lead theme based on the definitions provided below to avoid double counting.
- 1.13 In some instances, for example the Creative and Cultural theme, investments and activity are more revenue-led and where this is relevant, the distinctions in activity have been mentioned.

Table 1.1: RTO Sectors and Definitions

Sector	Definition/scope
Natural Capital Innovation Zone	With an abundance of natural capital assets, the Natural Capital Innovation Zone (NCIZ) is a nationally recognised region spanning the South of Scotland, established to accelerate solutions to the twin global challenges of biodiversity loss and climate change. The NCIZ acts as a catalyst for innovation around natural capital, and the designation of the Zone is intended to attract responsible private investment, support innovation and entrepreneurship, create jobs and skills, strengthen local businesses and communities, and develop a pipeline of investment-ready opportunities related to responsible and sustainable development. Projects that are likely to arise from this opportunity include those that are part of the Borderlands Natural Capital Programme (as part of the Borderlands Inclusive Growth Deal) such as the Borderlands Riverwoods Investment Demonstrator Pilot, which aims to deliver 420ha of new native woodlands in the Scottish Borders.
Energy Transition	The Energy Transition sector/opportunity covers all terrestrial and marine renewable energy projects, i.e. offshore wind, wave and tidal energy, onshore wind, geothermal energy, hydro, solar, hydrogen and battery energy storage schemes (BESS). Many technologies – and particularly onshore wind – are well-established in the South of Scotland, and so careful consideration would need to be given to how these investments would be transformative rather than ‘business-as-usual’. Nevertheless, it is anticipated that the scale of potential investment will in itself be transformative, and that such investment will bring additional cumulative impacts such as supply chain investment, community benefits, enabling benefits for follow-on investment (e.g. transport, heat decarbonisation, hydrogen and derivative fuels production, or developments that require off-take solutions and/or power purchase agreements (PPAs)), and development of shared revenue models. The Energy Transition opportunity also refers to wider initiatives that are being taken to improve sustainability and lead to positive Net Zero-related outcomes, such as through heat and place-based decarbonisation, industrial decarbonisation and the development of the energy knowledge economy.
Creative and Cultural	The South of Scotland boasts a wide-ranging creative ecosystem that includes fashion and textiles, film, music, publishing, software development, visual arts, crafts, gaming and more. In 2023, it was estimated that the sector delivers £280m per annum in value to the region. Growth and innovation in the cultural and creative sector has been underpinned by recent strategies developed by SOSE and the two Local Authorities, such as the 2025 South of Scotland Screen Strategy. Projects will be deemed “transformative” if they contribute to developing significant economic growth in the creative and cultural sector.
AI/Deep Tech and Advanced Manufacturing	Projects within this opportunity will likely relate (but not be limited to) the development of data centres, infrastructure to support the companies involved in developing robotics and autonomous systems, and support for the Scottish Government-proposed critical technologies supercluster. Projects such as the Borderlands Deep Tech Accelerator Hub, based in Hawick, as well as the Advancing Innovative Manufacturing in the South of Scotland (AIMS) project, based at the Dumfries and Galloway College Dumfries campus, are likely to feature.
Health Innovation and Life Sciences	The Health and Life Sciences sector is recognised as a key opportunity for the South of Scotland, with an aim for the region to develop a distinctive and growing role within Scotland’s wider health innovation and life sciences ecosystem. Activities underway in the region such as the development of Breathe Life Science’s first Scottish manufacturing and distribution centre in the Scottish Borders, which aims to help the region develop as an innovation hub for life sciences, and also the NHS Borders’ involvement in the Health Innovation South East Scotland (HISES) testbed network offer relevant projects that could be deemed “transformative”.

Sector	Definition/scope
Industrial Biotechnology	Biotechnology uses biological systems to develop products that improve health, sustainability, and the environment. The South of Scotland, with its abundance of natural and agricultural assets, is well placed (with the support of national organisations such as the Industrial Biotechnology Innovation Centre) to deliver growth in this sector. One key example of Industrial Biotechnology includes the development of an beef processing facility at Ecclefechan, to support the Dumfries and Galloway (and wider South of Scotland's) abundant food and agricultural sector, with the development using anaerobic digestion and renewable energies to power the asset.
Business and Professional Services	The Business and Professional Services (BPS) sector is a diverse and knowledge-intensive sector which provides specialised support to other businesses and organisations. Given its central geographic position, with a population of 14 million people within a three-hour drive, the South of Scotland is well-positioned to attract BPS talent to the region. An example of a relevant project is likely to include the Borderlands Business Infrastructure Programme, a £13.4m Borderlands Inclusive Growth Deal project which seeks to build new business units in Coldstream, acquire and service land in Hawick, build-out of business space in Castle Douglas and Newton Stewart and site servicing in Annan.
The Visitor Economy	While the South of Scotland has a long-established history of tourism and heritage, there is a stated ambition within the South of Scotland Responsible Tourism Strategy to become Scotland's "fastest growing visitor economy" by 2034, aiming to grow regional tourism spend by £1bn to £1.76bn, and employment from 14,000 jobs to 20,000 jobs over this period. "Transformational" projects related to the visitor economy will be those that make significant contributions to these ambitions, such as 7 Stanes centres for cycle tourism, the proposed Star of Caledonia project at Gretna Green, Destination Tweed or the Center Parcs Scottish Borders development between Hawick and Selkirk.

1.14 In addition to these sectors, it was also agreed that the following are included as "enabler projects" as they are also critical to realising the ambitions and investment in projects in the above sectors/thematic areas:

- Energy grid infrastructure upgrades, through both transmission level and distribution level network connections, which are critical to the realisation of proposed renewable energy investments and ensuring that there is sufficient energy to meet the needs of the region, particularly regarding energy-intensive projects;
- Port infrastructure improvements, which underpin other strategically important sectors and investment projects;
- Major land (road and rail) infrastructure improvements, which will serve as enablers for other strategically important investments across the thematic areas outlined above; and
- Strategic housing developments and planning, which act as enablers in ensuring there is adequate provision for an increased workforce demand in both the construction and the operational periods of investments.

Remainder of report

1.15 The remainder of the report is structured as follows:

- **Chapter 2** sets out the strategic context for RTOs in the South of Scotland;
- **Chapter 3** summarises the RTO thematic areas, current activity and opportunities for each theme;

- **Chapter 4** explores the range of enablers that are critical for realising investments across the RTO thematic areas;
- **Chapter 5** details the potential economic impacts arising from the pipeline of identified projects under each RTO;
- **Chapter 6** considers the workforce and skills implications for the region; and
- **Chapter 7** sets out the concluding remarks and priorities for consideration in future development of these opportunities.

1.16 Appended to this document is **Appendix 1: Impact Methodology**, which sets out the approach to estimating economic impacts as part of Chapter 5.

2 Strategic context

Introduction

- 2.1 This chapter provides an overview of the strategic context underpinning the Regional Transformational Opportunities in the South of Scotland. This includes a range of broad overarching economic and spatial strategies which aim to leverage opportunities in the south of Scotland for regional growth, as well as growth deal strategies from the Borderlands Growth Deal and the Edinburgh and South East Scotland City Region Deal. This chapter also details a range of sector specific strategies relevant to the South of Scotland.

Overarching economic and spatial strategies

- 2.2 The **Programme for Government 2026-2031** was produced in September 2026, and outlines the Scottish Government's four key priorities over the period.¹ These are: eradicating child poverty; growing the economy; tackling the climate emergency; and delivering a stronger NHS and public services. Tackling the climate emergency will have the clearest impacts on RTOs through targets which include restoration of 400,000 and 18,000 hectares of peatland and woodland respectively, significant investments in decarbonising transport systems and delivery of renewable energy, and just transition projects. Delivery of a stronger NHS will support health innovation and life sciences through reducing strain on the service and increasing innovation capacity, while the growing the economy theme will include supporting small businesses and supporting AI capacity for example.
- 2.3 The **South of Scotland Regional Economic Strategy**, published in 2021 is the South of Scotland Regional Economic Partnership's strategy to boost innovation and support the South of Scotland to take advantage of economic opportunities, over the ten years to 2031.² Key objectives of the strategy include supporting a green and circular economy, supporting local supply chains and achieving net zero objectives; improving fair work, reducing inequality and improving connectivity and accessibility; and improving the identity of and opportunities in the South of Scotland, increasing migration into the region. The accompanying Inclusive Growth Evidence Base identifies a number of important opportunities for the region including through developing digital connectivity and capacity, and supporting strategic partnerships.
- 2.4 The **Regional Economic Strategy Delivery Plan (2022 – 2025)** is the first phase of the South of Scotland Regional Economic Partnership's plan for delivering the outcomes outlined in the Regional Economic Strategy.³ It sets out coordinated actions around six themes covering people and skills, enterprise, fair work, culture, the green economy and thriving communities. It highlights existing investment commitments which provide momentum to build on, for example, a £6.6m investment supporting the creation of a digital learning and skills network. It also highlights existing funding for identified opportunities such as £19m into the Mountain Bike Innovation Centre and Adventure Bike Park and Trail Lab project at Innerleithen in the Scottish Borders, and £8m into the Dairy Nexus project near Dumfries. The second phase of the delivery plan, **Collaborating to Deliver Delivery Plan (2025 - 2027)** was published in November 2024, outlining key progress to date, and current targets.⁴ It builds on the previous plan but takes a more focused approach, bringing partners together around three critical priorities: housing,

¹ <https://www.gov.scot/publications/programme-government-2026-2031/documents/>

² <https://www.southofscotlandrep.com/media/fsyhgtnv/south-of-scotland-regional-economic-strategy.pdf>

³ https://www.southofscotlandrep.com/media/0b1pqw0n/res-delivery-plan_2022-2025-archive.pdf

⁴ <https://www.southofscotlandrep.com/media/vvudr0qm/regional-economic-strategy-delivery-plan-2025-2027.pdf>

transport and skills, seen as the foundations for creating greater opportunity and wellbeing for South of Scotland communities, businesses and people. Good practice case studies identified from the first phase of delivery include the launch of a net zero investment guide to promote natural capital and renewable energy investment opportunities in the region, and the responsible tourism strategy, which aims to boost the South of Scotland visitor economy while ensuring this is done in a sustainable and equitable way which will support the visitor economy to a value of £1bn, and employ over 6,000 people by 2031.

2.5 **Let's Build Our Future Together** is South of Scotland Regional Economic Partnership's regional housing prospectus, set in the context of a lack of supply of new homes and pent up demand for housing that employers are struggling to deal with.⁵ The aim is to deliver over 9,000 new homes over ten years, recognising the plethora of funding options to support this, including the Edinburgh and South East Scotland City Region Deal. The prospectus has identified a range of key sites with significant potential to support housing development, and the region will aim to harness enablers such as a large supply of available brownfield land, and high degree of owner residency.

2.6 The **South of Scotland Regional Land Use Framework**, published by the South of Scotland Regional Economic Partnership aims to understand land use challenges impacting on the region and support decision making.⁶ The vision outlined in the framework is to support the south of Scotland to use land use as a vehicle to deliver improved benefits for all. This will support broader Scottish Government objectives such as protecting at least 30% of land and sea for nature by 2030, creating 3-5,000 hectares of new forestry per year. The framework is also aligned with national net zero targets. One of the actions within the RLUF proposes the development of regional catchment plans which link and inform policy. There will need to be improved resources developed, such as up to date, publicly accessible data, and increased funding for land reform.

Regional Growth Deals

2.7 There are two growth deals impacting the South of Scotland region, which will support the development of RTOs. The Borderlands Inclusive Growth Deal covers the Scottish and English Borderlands including both the Scottish Borders and Dumfries and Galloway, while the Edinburgh and South East Scotland City Region Growth Deal includes the Scottish Borders only. These are Scottish and UK Government funded projects, working with local government, which have the purpose of supporting regional economies. Both growth deals support collaborative working across the public, private and third sectors and aim to drive economic growth and sectoral development, through developing local supply chains, including skills, for example.

2.8 The **Borderlands Growth Deal Heads of Terms** sets out the joint commitment of the UK and Scottish Governments to support a transformational programme of investment across the Borderlands region, covering Carlisle City and Cumbria County (now Cumberland and Westmorland and Furness), Dumfries & Galloway, Northumberland, and Scottish Borders.⁷ The Deal recognises the region's distinctiveness, a population of over 1 million people spread across a geography equivalent to 10% of the UK landmass, characterised by rurality, low density, and dispersed communities. This creates unique challenges but also substantial strategic opportunities for inclusive and sustainable growth. The Deal aligns with wider national priorities around productivity, population retention, rural innovation, and balanced regional development,

⁵ https://www.southofscotlandrep.com/media/rixpyoyo/final-sose-rep-housing-prospectus-2025_digital-version.pdf

⁶ https://www.southofscotlandrep.com/media/kpsbxf2b/rluf_v1_240919.pdf

⁷ https://assets.publishing.service.gov.uk/media/5d28a5fb40f0b64a8099e167/Borderlands_Growth_Deal_-_Heads_of_Terms_2019.pdf

as well as energy transition with multiple Borderlands Growth Deal funded projects supporting this. The intention is to support projects and interventions delivering clear, substantial, and lasting regional impacts at scale.

- 2.9 The **Edinburgh and South East Scotland City Region Deal** is a vehicle for delivery of £1.3bn of Scottish and UK Government, and local partner funding into the region over 15 years.⁸ Key themes for allocation of the funding are research, development and innovation; Integrated Regional Employability and Skills Programme; transport; culture; and housing. This aims to leverage and grow key sectors and strengths across the region such as health and social care, advanced manufacturing and the visitor economy for example. This provides a network of funding and expertise which the Scottish Borders can utilise and benefit from to develop Regional Transformational Opportunity sectors.

Thematic and sectoral strategies

- 2.10 The **South of Scotland Cycling Partnership Strategy** is South of Scotland Regional Economic Partnership's vision to ensure that communities are shaped around and include everyone, and that cycling is the most popular choice for shorter everyday journeys, and is embedded into daily life for residents and experiences of visitors.⁹ This is critical to the visitor economy in the South of Scotland, and will also provide a range of benefits to support and enable the development of other transformational opportunities. The strategy recognises the significant environmental, economic and public health benefits which increased cycling can bring, identifying £158m that mountain biking alone was anticipated to bring into the South of Scotland economy in 2025, an increase of over 50% over ten years. Some key vehicles to support this have already been achieved, such as hosting the 2023 UCI Cycling Championship, with partners also producing a range of strategies and action plans to support the cycling sector. These include a cycling-specific inward investment strategy, an event strategy, an infrastructure delivery plan and support plans for helping cycling clubs to developing sustainability, inclusion and diversity 10-year plans.
- 2.11 The **South of Scotland Creative Economy guide** is a clear overview of the creative economy produced by South of Scotland Enterprise, which aims to ensure the creative economy is well understood to inform planning and developments.¹⁰ The creative economy in the South of Scotland is significant, with 1,882 enterprises, employing 6,327 people, and contributing a turnover of £280m, with significant subsectors including fashion and textiles, heritage, and software/electronics publishing. Priorities of the guide aim to diversify and improve conditions for the sector and include exploring opportunities for CreaTech, support the creation of a Creative Placemaking Framework, and mapping the creative opportunity to improve shared understanding of the sector.
- 2.12 **Scotland Starts Here: A Responsible Tourism Strategy for the South of Scotland** is South of Scotland Regional Economic Partnership's ten-year strategy to use the region's assets to grow the visitor economy from £1bn to £1.76bn by 2034, supporting 6,000 further jobs to 20,000 FTEs.¹¹ This is underlined by three key objectives which are for the South of Scotland to become a year-round destination, for it to become a 'go-to' rather than 'go-through' destination, and to radically increase the number of international visitors, all while ensuring that this is done responsibly. Key activities to support the sector include developing a coordinated programme of needs-led business support for the region, improving knowledge and collaboration through

⁸ <https://esescityregiondeal.org.uk/>

⁹ https://www.southofscotlandrep.com/media/pipl54ta/res_cycling_strategy_final.pdf

¹⁰ https://www.southofscotlandrep.com/media/3u1hodu0/south_of_scotland_creative_economy_guide.pdf

¹¹ https://www.southofscotlandrep.com/media/qf4eyvqq/tourism_strategy_final_v32.pdf

data, for example, and strengthening destination management and development capacity across the region.

- 2.13 South of Scotland Enterprise's **Strategic Space Sector Growth Plan**, published in 2024, outlines the organisation's plan to leverage the space sector by focussing on growing space technologies and activity, and how this will help to stimulate a range of other sectors, especially those within the NCIZ.¹² The strategy identifies the existing space sector in Scotland, and the opportunities presented by this, and aims to support the region to become a key link in this supply chain. Being in the middle of two space clusters, the South of Scotland can become a key actor in the supply and design of space technology, and net zero projects which leverage these, as well as take advantage of its geography to support observation activities. Actions to support this will include the development of sectoral innovation hubs, gathering and sharing insights and data, and developing a network of stakeholders to grow sectors.
- 2.14 The **South of Scotland Screen Strategy** sets out a clear vision for the region to become a recognised hub for screen production, skills development, and creative enterprise. As with other transformational opportunities, the screen sector represents an area where the region can deliver substantial and cross-cutting economic, cultural, and social impacts, rather than solely incremental growth. It aligns strongly with national ambitions articulated in Creative Scotland's Screen Scotland programme and Scotland's wider creative industries strategies. The strategy recognises that the creative and cultural industries such as film, TV, animation, and digital content, represent a rapidly expanding global market, driven by increased production demand, technological change, and shifts in audience consumption. The South of Scotland's distinct landscapes, strong cultural heritage, emerging infrastructure, and vibrant creative communities position the region well to capture a greater share of this growth.

Summary

- 2.15 There is a strong regional policy basis for advancing Regional Transformational Opportunities across the South of Scotland. The Regional Economic Strategy places green and circular growth, innovation, fair work, connectivity, population attraction and stronger local supply chains at the centre of the region's economic ambitions. Its delivery plans provide a framework for achieving investment across RTOs, including support for digital skills, natural capital, renewable energy and energy ready investment, responsible tourism, dairy innovation and place-based development. The current delivery plan targets mapping regional experience, opportunities and gaps, while the sector strategies identify the importance of better data, shared understanding and partnership networks.
- 2.16 The Regional Land Use Framework and regional housing prospectus further demonstrate that economic growth must be planned alongside sustainable land use, environmental restoration and sufficient housing provision. Together, these strategies provide a clear rationale for prioritising opportunities that can diversify the economy, generate higher-value employment and support inclusive and sustainable regional growth.
- 2.17 The Borderlands Inclusive Growth Deal and Edinburgh and South East Scotland City Region Deal provide important investment and partnership mechanisms through which these ambitions can be realised. Both promote collaborative, place-based development and support activity relevant to the RTOs, including research and innovation, employability and skills, transport, housing, culture, energy transition, natural capital and business infrastructure.

¹²https://www.southofscotlandenterprise.com/media/n2jb3uc1/version_4_strategic_space_sector_growth_plan_01_08_compressed-5mb.pdf

However, the South of Scotland sits across overlapping administrative and investment geographies, with the Scottish Borders participating in both deals while Dumfries and Galloway is included only within the Borderlands programme. Strong regional coordination will therefore be essential to connect these programmes to a coherent South of Scotland proposition and ensure that individual investments contribute to shared regional outcomes.

- 2.18 Thematic strategies across the South of Scotland provide particularly strong support for responsible tourism, energy transition, cycling and active travel, creative enterprise, screen production and space-enabled activity, among others. These also demonstrate that transformation should be measured more broadly than through capital investment alone. Responsible tourism, creative activity, screen production, cycling and natural capital can improve the region's profile, quality of place and attractiveness to residents, visitors, workers and investors, while supporting wider economic opportunities. Investment readiness and enabling infrastructure will be as important as sector development. The regional housing prospectus identifies housing supply as a response to employer demand and aims to support substantial new provision, while the Regional Land Use Framework seeks to align future development with nature recovery, forestry and net zero priorities.
- 2.19 Overall, this network of strategy and policy provides a strong broad framework for investment into the region, as well as dedicated public funding streams, including two overlapping region deals. The range of sector specific policy and strategy further support development of individual RTOs in the South of Scotland as described in the following chapter, recognising the individual needs and challenges of these.

3 Regional Transformational Opportunities

Introduction

- 3.1** This chapter provides an overview of the Regional Transformational Opportunities (RTOs) in the South of Scotland, within the strategic context set out in Chapter 2. It presents each in turn, considering the existing activities and assets across the region, the wider context in which the RTOs exist, and provides observations on RTO-level opportunities and priorities for action. The findings for each have been informed by desk-based research of project information and supplemented by a review of previous business support activity in each of the identified RTO themes from CRM data supplied by SOSE, and consultation with key stakeholders through a number of workshops and one-to-one discussions.
- 3.2** In the “Current activity and assets” subsection of each of the identified themes, an initial, non-status adjusted total investment value is described, with the overarching non-status adjusted values being discussed in further detail in Chapter 5. These figures should be treated as indicative and may evolve as projects progress through development and delivery stages.
- 3.3** As set out in Chapter 1, the RTO thematic areas are:
- The Natural Capital Innovation Zone;
 - Energy Transition;
 - Creative and Cultural;
 - AI, Deep Tech and Advanced Manufacturing;
 - Health Innovation and Life Sciences;
 - Industrial Biotechnology;
 - Business and Professional Services; and
 - The Visitor Economy.
- 3.4** In addition to these thematic areas, the analysis also considers other major development investments that comprise development across multiple different sectors and economic activity.

Natural Capital Innovation Zone

Context and drivers

- 3.5** Natural capital is significantly important in the South of Scotland. The sector generates 27% (£3bn) of the South of Scotland’s economic output, and employs an estimated 19% (21,700FTE) of the employment base in the South of Scotland. This is comprised largely of Agriculture; Fish and fruit processing; Electricity; Meat processing; and Water and sewerage.¹³ In terms of agriculture, the South of Scotland has a significant dairy farming industry including being home to over a quarter of Scottish dairy product processing, also being a prime location for seafood processing and smokehouses.
- 3.6** The entire South of Scotland (15% of the country’s land mass) has been designated the Natural Capital Innovation Zone (NCIZ), recognising the significant ecological and environmental diversity in the region.¹⁴ This includes peatland, forest, marine and coastal areas, with over

¹³ <https://www.gov.scot/publications/importance-natural-capital-scottish-economy-regional-analysis/pages/8/>

¹⁴ <https://investinsouthofscotland.com/why-the-south-of-scotland/nciz>

1,000km of coastline.¹⁵ This supports the region's prominence across a range of other sectors such as the visitor economy, with the Galloway International Dark Sky Park providing clear views of the stars, as well as strong mountain biking heritage and infrastructure. The region also produces three times more renewable energy than its total electricity usage with onshore and offshore wind comprising the vast majority of this.¹⁶

3.7 Natural capital is a key vehicle for delivery of Scottish Government decarbonisation and wider environmental objectives, and there are multiple funds and targets towards natural capital investment and project activity. These include:

- The Nature Restoration Fund (NRF) is a core Scottish Government grant scheme for biodiversity and ecosystem restoration, to help meet national biodiversity targets.¹⁷ The NRF was established in 2021 and has been extended into 2026/27. It has supported over 240 projects with £65 million of funding to date, and has supported at least 9 projects across the South of Scotland.¹⁸
- Peatland ACTION is a national programme for funding peatland restoration projects across Scotland and is administered by NatureScot.¹⁹ The programme has been supported by £250m and will fund projects until 2030. There are at least 8 projects/sites that have been supported by Peatland ACTION in the South of Scotland, with a particular focus on restoration projects delivered through the Tweed Forum.²⁰
- The Facility for Investment Ready Nature in Scotland (FIRNS) is a development fund programme to support projects in becoming investment-ready, to attract private finance into nature restoration.²¹ Launched in 2023 and delivered with NatureScot and the National Lottery Heritage Fund, it has awarded almost £6.5 million across 44 projects to date, supporting the development of business cases and financial models for natural capital investment. Projects funded through FIRNS in the South of Scotland include the Solway Coast and Marine Pilot Project (SCAMPP)²², the Annan Riparian Restoration Network delivered through Galloway Rivers Trust²³ and the Tweed Forum's Eddleston Water Project.²⁴
- The Scottish Marine Environmental Enhancement Fund (SMEEF) is a marine nature finance mechanism established in 2021 to facilitate public and private investment in the restoration and enhancement of Scotland's coastal and marine environments.²⁵ It has secured and distributed close to £10 million in funding, supporting marine and coastal restoration projects, including habitat restoration and native oyster beds. This has included support for the Solway Firth Partnership to undertake habitat classification for restoration planning.²⁶

3.8 These programmes are in line with broader national ecosystem recovery ambitions. Under the Scottish Biodiversity Strategy and aligned Scottish Government policies: woodland creation is targeted at around 18,000 hectares per year to expand forest cover and support net zero²⁷;

¹⁵ https://www.digitaldairychain.co.uk/wp-content/uploads/2026/01/Intro-to-SOSE_Information-session-9-Jan-2026.pdf

¹⁶ https://www.scottishrenewables.com/assets/000/002/138/Renewable_Energy_-_Delivering_for_South_Scotland_MSP_original.pdf?1644324543

¹⁷ <https://www.nature.scot/funding-and-projects/scottish-government-nature-restoration-fund-nrf>

¹⁸ <https://www.nature.scot/funding-and-projects/nature-restoration-fund/nature-restoration-fund-nrf-supported-projects>

¹⁹ <https://www.nature.scot/climate-change/nature-based-solutions/nature-based-solutions-practice/peatland-action>

²⁰ <https://www.nature.scot/climate-change/nature-based-solutions/nature-based-solutions-practice/peatland-action/peatland-action-data-research-and-monitoring/peatland-action-0>

²¹ <https://www.nature.scot/funding-and-projects/firns-facility-investment-ready-nature-scotland>

²² <https://www.solwaycoastmarine.co.uk/>

²³ <https://gallowayfisheriestrust.org/news.php?nID=1124>

²⁴ <https://tweedforum.org/our-work/projects/the-eddlestone-water-project/>

²⁵ <https://www.nature.scot/SMEEF>

²⁶ <https://smeef.scot/projects/mini-buoy-monitoring/>

²⁷ <https://www.scotlink.org/biodiversity-action/19-1/>

peatland restoration aims to bring 250,000 hectares of degraded peatland into recovery by 2030²⁸; and marine policy is focused on scaling up active restoration of habitats such as seagrass and oyster beds.²⁹ Together, these contribute to a national objective to halt biodiversity loss by 2030, protect at least 30% of land and sea for nature, and fully restore ecosystems across Scotland by 2045.

Market activity

- 3.9 The NCIZ was designated in 2024 with the purpose of driving existing (and identifying emerging) natural capital innovation in the region, including across renewable energy and AgriTech for example. Bids for any projects leveraging natural capital to produce products and services through innovation, and research and development are invited in the NCIZ. The Local Innovation Partnerships Fund (LIPF) provided another potential funding stream for NCIZ projects that are specifically aligned with clean and distributed energy systems; and advanced technologies for land-based production and processing.³⁰
- 3.10 From a review of projects which SOSE has supported from June 2023 to March 2026, there have been a total of 26 projects delivered under the Natural Capital Innovation Zone theme, with an investment value of £1.14m of SOSE Capital Funding. This has leveraged £2.14 million in funding from private sources and elsewhere, representing a value of £1.88 per £1 of SOSE investment.

Challenges and constraints

- 3.11 Scotland has a historically high level of nature depletion, with the presence of over 400 species declining by 15% on average since 1994, and one in nine Scottish species being threatened with extinction.³¹ Despite recent slight upturns in historic loss of habitat, this is still at a critical level for many species. Projects leveraging Scotland's natural capital will need to be highly cognisant of any potential negative impacts that this will have on local wildlife.
- 3.12 Despite a broad range of research indicating the economic potential of natural capital, there are challenges in measuring this which may constrain investment into the sector. Traditional economic metrics such as GVA are not well suited to measuring the economic value of natural capital. Instead, value is often felt through wellbeing benefits, for example, which can be challenging to measure. Much of the value of natural capital itself is seen through what it provides to other sectors, for example, to renewable energy, the visitor economy and increasingly to AI and digital technology.³² This can make it challenging to encourage private investment into natural capital as economic benefits are not directly visible.
- 3.13 Carbon credits have been used to combat this. Companies can purchase a carbon credit worth a certain tonne of carbon dioxide (tCO₂e) that they produce, the money is then invested in a carbon offsetting project, hence cancelling out the equivalent tCO₂e.³³ However, critics suggest that effectiveness of carbon offsetting methods worldwide such as carbon credits have been overestimated by up to tenfold.³⁴

²⁸ <https://www.gov.scot/publications/peatland-action-five-year-partnership-plan-2025-2030/>

²⁹ <https://www.gov.scot/publications/scottish-biodiversity-strategy-2045/>

³⁰ <https://www.digitaldairychain.co.uk/wp-content/uploads/2026/01/Richard-Dewhurst-slides-LIPF-webinar.pdf>

³¹ <https://www.gov.scot/publications/making-case-nature-insights-scotlands-natural-capital-analyses/>

³² <https://www.gov.scot/publications/importance-natural-capital-scottish-economy/>

³³ <https://www.gov.scot/publications/public-bodies-climate-change-duties-statutory-guidance/documents/>

³⁴ <https://www.annualreviews.org/content/journals/10.1146/annurev-environ-112823-064813>

3.14 The lack of concise definition of the nature-based workforce in Scotland, as well as inconsistency in evidence surrounding it contribute to challenges in measuring it. However, the sector likely comprises a broad range of activities including, but not limited to:³⁵

- Peatland restoration;
- Flood risk management;
- Blue carbon;
- Coastal ecosystems;
- Woodland restoration;
- Low carbon and regenerative land use including agriculture, forestry and wildlife management;
- Sustainable marine management and fisheries;
- Green finance;
- Urban green infrastructure, including planning, ecological engineering, active travel networks; and
- Sectors highly dependent on natural capital (especially tourism and food and drink).

3.15 NatureScot estimates that this comprises around 7.5% of Scotland's workforce, however, this is likely an under estimation due to the high concentration of small and often unregistered businesses in the sector.³⁶ This workforce is likely to see rapid growth in activities such as peatland and woodland restoration, and NatureScot research from 2020³⁷ indicates that there is an existing dearth of applications for operational roles, lack of experience in what applicants there were, and high competition for required skills from adjacent sectors.

Current activity and assets in the South of Scotland

3.16 This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. The current Natural Capital Innovation Zone project pipeline comprises 10 identified projects and investments, with a combined recorded investment value of approximately **£40.6 million**.

3.17 NCIZ project activity can be categorised based on funding streams, with a range of projects supported through Borderlands Inclusive Growth Deal: Natural Capital Programme funding including:

- The Solway Coast and Marine Pilot Project (SCAMPP) is based at the Solway Coast within the NCIZ. This has assets including a wild oyster fishery, diverse areas of seagrass, and an expanse of saltmarsh, which will be pivotal to R&D in these areas. The project has an investment value of £8m, and will produce five years of research and innovation into the range of natural capital assets present in the Solway Coast. Phase 2 will see the construction of The Stranraer Marine Research Centre. Key objectives of the research will include identifying habitats for restoration, and delivery of restoration techniques; local awareness raising of marine capital; and developing sustainable tourism in line with natural capital of the coast. The proposed innovation centre in Phase 2 will support future development of these objectives. The project will see 2.4 FTE jobs created and one PhD opening, as well as a raft of training opportunities. This will include

³⁵ <https://www.nature.scot/doc/naturescot-research-report-1257-supporting-green-recovery-initial-assessment-nature-based-jobs-and>

³⁶ <https://www.climateexchange.org.uk/publications/climate-change-the-land-based-labour-market-and-rural-land-use-in-scotland/>

³⁷ <https://www.nature.scot/doc/naturescot-research-report-1257-supporting-green-recovery-initial-assessment-nature-based-jobs-and>

five work experience placements, over 40 volunteers, 1,280 internship hours, and lecture sessions for over 200 people.³⁸

- The River Woodlands Investment Demonstrator Pilot will have the objective of delivering 420ha of new native woodlands in the Scottish Borders, over six years (from April 2025 – March 2031). The project aims to demonstrate better integration of woodlands into the landscape and farm or estate business. Investment value will be just under £4.2m with £0.8m sourced through growth deal funding. The remaining budget will be sought throughout the life of the project, and it is a key project objective to encourage more private investment into river woodland development.³⁹ Estimated GVA of the project could reach £11.9m.
- The Species Rich Grassland Pilot is being delivered by Scottish Borders Council and Butterfly Conservation to develop a more sustainable approach to hill livestock farming. This will pilot nature-based solutions to overgrazing of certain grasslands that have other benefits of improved food quality, enhanced pollination, increased biodiversity and improved soil management and carbon storage. The project will have an investment value of £0.7m sourced entirely through Borderlands Inclusive Growth Deal funding. Additional funding will also be sought throughout the life of the project to add value where possible.⁴⁰ There is the potential for up to £4m of additional income through investment into natural capital through the project, as well as 1,000 volunteering days valued at £140,000.

3.18 There are also two projects which applied for albeit were unsuccessful in seeking funding from the Local Innovation Partnership Fund, which was a £500m UK Research and Innovation programme to develop local innovation.⁴¹ These are:

- Anaerobic Digestion Plant, hydrothermal carbonisation and microgrid, which will aim to produce off-grid electricity, liquid fertiliser, biogas and biochar. This project has a total investment value of £17m and will provide a significant number of direct and indirect jobs in the region through operation and maintenance.⁴²
- An insect based animal feed project which aims to increase food supply chain resilience through the use of local by-products for feedstock, stabilising the cost of this, as well as supporting decarbonisation.⁴³

Opportunities and priorities for action

Opportunity 1: Maximise the value of current NCIZ activity and assets

3.19 The existing NCIZ project pipeline provides a strong foundation for accelerating natural capital innovation in the South of Scotland. As noted above, current activity already spans marine restoration, native woodland creation, species-rich grassland management, anaerobic digestion, circular land-based production and investment-ready nature finance. There is therefore an opportunity to maximise the value of this existing activity by improving coordination across projects, using live pilots as demonstrators, and identifying where learning, supply chains, skills and investment models can be shared across the wider zone. This would help

³⁸ Natural Capital Programme - A Sustainable Solway Economy - Solway Coast and Marine Pilot Project (SCAMPP), *Borderlands Natural Capital Programme*

³⁹ [https://scottishborders.moderngov.co.uk/documents/s89044/Item No. 7 - BRP - Report - Council - 27 February 2025.pdf](https://scottishborders.moderngov.co.uk/documents/s89044/Item%20No.%207%20-%20BRP%20-%20Report%20-%20Council%20-%2027%20February%202025.pdf)

⁴⁰ [https://scottishborders.moderngov.co.uk/documents/s81976/Item No. 11 - Council Report Natural Capital Grassland Project - Council - 28 March 2024.pdf](https://scottishborders.moderngov.co.uk/documents/s81976/Item%20No.%2011%20-%20Council%20Report%20Natural%20Capital%20Grassland%20Project%20-%20Council%20-%2028%20March%202024.pdf)

⁴¹ <https://www.ukri.org/what-we-do/browse-our-areas-of-investment-and-support/local-innovation-partnerships-fund/>

⁴² South of Scotland Enterprise Annex 4 - Operational capability [SOSE Internal Document]

⁴³ *ibid*

ensure that NCIZ is an active regional platform for scaling natural capital innovation and attracting further public and private investment.

Opportunity 2: Support NCIZ to boost the growth of adjacent sectors

- 3.20 The ‘Natural Capital Asset Index’ (NCAI) helps assess the capacity of terrestrial ecosystems to provide benefits to society (excluding the marine environment).⁴⁴ The current Scottish NCAI is 2.8% above 2000 levels, suggesting an increased capacity for Scottish natural capital to deliver economic benefits. Given the importance of natural capital to key sectors in the South of Scotland including agriculture and energy, the potential to deliver economic benefits in the region are likely even higher than Scotland as a whole.

Opportunity 3: Leverage the health benefits provided by natural capital to address persistent regional health challenges

- 3.21 The NCIZ presents significant potential in improving health and wellbeing outcomes for residents in the South of Scotland. Twenty-eight per cent of the South of Scotland population are over 65, significantly higher than the percentage of people over 65 in Scotland (+7pp) and the UK (+9pp).⁴⁵ This is compounded by high and complex rural poverty in the South of Scotland which can be very detrimental to health and wellbeing outcomes.⁴⁶ Developing the NCIZ could present an opportunity for helping to tackle some of the health challenges often associated with an ageing population and rural poverty. Research suggests that nature-based health benefits in Scotland currently prevent £140m worth of healthcare costs annually.⁴⁷
- 3.22 Natural capital restoration and creation can lead to greater use of areas for leisure outdoor activities, thus further diversifying land usage whilst bringing benefits for individuals’ physical and mental health, and their social wellbeing. It is reported that typically, when compared with urban environments, natural environments such as forests and woodlands improve human mood states, concentration and performance.⁴⁸ Scotland also has the highest average health benefits gained through outdoor exercise per person in the UK, estimated at £310 in 2020. There are examples which illustrate how natural capital can work in tandem with healthcare to be mutually beneficial for both sectors. For example, research from Public Health Scotland suggests that people spend 87 million hours annually in NHS Scotland green spaces providing value of around £82m.⁴⁹
- 3.23 It will therefore be important that any development or use of land and natural capital in the South of Scotland, also works in the interests of the local population to ensure this can still support health benefits. For example, establishing community needs and rights in each case, through consultation or a working group.

Opportunity 4: Encourage local ownership and involvement of NCIZ projects through volunteering

- 3.24 In cases where projects aim to preserve and boost flora and fauna, for example the rivers, and woodlands restoration projects, this should be done in a way which allows local communities to enjoy these environments, participate in them, encouraging community ownership and management. This has already been implemented in some cases such as SCAMPP and the

⁴⁴ <https://www.nature.scot/professional-advice/social-and-economic-benefits-nature/natural-capital/scotlands-natural-capital-asset-index>

⁴⁵ NOMIS, Population estimates - local authority based by single year of age (2024)

⁴⁶ https://www.centreforsocialjustice.org.uk/wp-content/uploads/2026/01/CSJF-Voices_From_The_Margins.pdf

⁴⁷ <https://www.gov.scot/publications/making-case-nature-insights-scotlands-natural-capital-analyses/>

⁴⁸ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2793342/>

⁴⁹ <https://publichealthscotland.scot/news/2025/june/phs-commissioned-research-highlights-health-benefits-of-nhs-scotland-outdoor-spaces/>

Species Rich Grassland Pilot which will facilitate volunteering opportunities, and these can provide examples of how this can be promoted elsewhere.

Priorities for Action

Priority	Required Action(s)
Communities are consulted and engaged throughout natural capital projects	Build on existing partnerships such as the Natural Capital Community Partnerships, and South of Scotland Regional Land Use Partnership to ensure promotion of community interests in natural capital projects, supporting local consultation.
Volunteering opportunities provided to support projects and overcome potential workforce challenges	Facilitate local volunteering opportunities in natural capital projects to build community bonds between project partners, as well as leveraging local interest and needs to support project completion.

Summary

- 3.25 The Natural Capital Innovation Zone represents one of the most distinctive RTOs within the South of Scotland, reflecting the scale and diversity of the region's natural assets and their importance to the wider economy. Natural capital already underpins major sectors including agriculture, food production, renewable energy and the visitor economy, while the designation of the whole region as the NCIZ provides a platform for coordinating innovation, investment and restoration activity across peatland, woodland, coastal, marine and land-based assets.
- 3.26 The existing project pipeline demonstrates emerging momentum, with activity spanning rivers restoration, native woodland creation, species-rich grassland management, anaerobic digestion and circular land-based production. Realising the opportunity will require continued support for investment readiness, community engagement and workforce development, alongside careful management of biodiversity risks and the challenge of evidencing the economic value generated by natural capital. If progressed effectively, the NCIZ has the potential to deliver environmental restoration while also supporting rural economic diversification, wellbeing benefits and growth across adjacent sectors.

Energy Transition

Context and drivers

- 3.27 Scotland has a diverse and well-developed renewable energy sector, with assets and capacity which will support decarbonisation within Scotland, and the broader UK. In 2022, renewable technologies generated the equivalent of 113% of Scotland's gross electricity consumption, making Scotland a net exporter of renewable electricity through a range of technologies including onshore and offshore wind, marine energy, and hydropower. This is even more pronounced in the South of Scotland. By 2022, the South of Scotland reached 5.2TWh of renewable energy production, more than four times that of consumption.⁵⁰
- 3.28 Scotland's mix of high-quality existing energy transition infrastructure, strong availability of natural capital and research and development capacity make it very well prepared to take advantage of economic opportunities emerging through the renewable energy transition.⁵¹
- 3.29 In the South of Scotland there is a particular concentration of capacity and expertise. In 2024, the region had 10% of the UK's onshore wind capacity, but outperformed this producing over

⁵⁰ <https://www.gov.uk/government/statistics/total-final-energy-consumption-at-regional-and-local-authority-level-2005-to-2024>

⁵¹ <https://www.scottish-enterprise.com/media/e5vlp4u/the-economic-impact-of-scotlands-energy-transition.pdf>

3.7TWh (10.7%) of UK onshore energy. Dumfries and Galloway, and the Scottish Borders are respectively the third and fourth most productive local authorities in the country for onshore wind generation.⁵² The South of Scotland also has growing potential in solar, anaerobic digestion, and grid-balancing storage projects.⁵³ The South of Scotland benefits from large tracts of open land with often high winds, as well as strong strategic links as a net exporter and key node in the UK grid network.⁵⁴ There is also supportive infrastructure for renewable energy usage in the South of Scotland. The region has, on average, better EV charging provision than the rest of the UK, with 85.0 and 55.5 charging devices per 100,000 people in Dumfries and Galloway and Scottish Borders, respectively; the UK average is 51.6 charging devices per 100,000 people.⁵⁵

Market activity

- 3.30** A Just Transition to Net Zero and a commensurate increase in renewable energy generation capacity is a fundamental aspect of UK and Scottish Government strategy over the next two decades and beyond. Much of this is focussed around developing opportunities in Scotland. There is a large variety of funding streams from the UK and Scottish Governments which aims to support the renewable energy transition in line with net zero objectives. This includes for example the Emerging Energy Technologies Fund (£180m, although this closes in 2026), and the Community and Renewable Energy Scheme (£67m). As well direct funding streams, the UK Government has committed £8.3bn to develop Great British Energy which will be headquartered in Aberdeen, with local funding being channelled via Scottish Government to CARES for distribution to projects.
- 3.31** A total of 13 projects have been identified under the Energy Transition theme following a review of CRM data supplied by SOSE on projects SOSE has supported from June 2023 to March 2026, with an investment value of £2.13 million of SOSE Capital Funding. This has leveraged £4.17 million in funding from private sources and elsewhere, representing a value of £1.95 per £1 of SOSE investment.

Challenges and constraints

- 3.32** Recently, there have been community concerns regarding some renewable energy developments across Scotland and specifically in the South of Scotland and Highland regions, with the campaign against being more pronounced in the Highland area to date. Concerns have included the ‘industrialisation’ impacts that developments will have in their rural communities, as well as personal impacts, with some residents linking developments to their properties being at an increased risk of flooding for example.⁵⁶ It should be noted however, that research from DESNZ shows that on the national level, Scottish residents are more likely to support the development of a local on-shore windfarm (43%) or solar farm (52%) than the UK average (37% and 46%, respectively).⁵⁷
- 3.33** SOSE recognise that community consultation and public buy-in are vital to supporting the energy transition, and the projects required.⁵⁸ This will be an important factor to consider in realising this RTO, and will require both articulating the necessity of these projects to support decarbonisation, as well as the opportunity for local communities in direct employment opportunities, and future energy security. Community consultation and engagement is also an

⁵² <https://www.gov.uk/government/statistics/total-final-energy-consumption-at-regional-and-local-authority-level-2005-to-2024>

⁵³ <https://investinsouthofscotland.com/key-sectors/energy-transition>

⁵⁴ Ibid.

⁵⁵ <https://www.southofscotlandenterprise.com/media/jg4izngy/invest-in-south-of-scotland-net-zero-investment-guide.pdf>

⁵⁶ <https://www.bbc.co.uk/news/articles/ceqz2v22gpeo>

⁵⁷ <https://www.gov.uk/government/statistics/desnz-public-attitudes-tracker-spring-2026>

⁵⁸ <https://committees.parliament.uk/writtenevidence/135108/pdf/>

important step in project design, and ensure projects work for all parties. This may also include, for example, ensuring a strong supply of community energy projects, taking advantage of Scottish Government support available and the pipeline stemming from GB Energy. Community energy projects have shown to garner significantly more support from local communities than those owned and operated by large companies. They also have the benefit of much higher economic benefits for those communities and increase participation, strengthening local supply chains and increasing local energy transition progress.⁵⁹

- 3.34** The South of Scotland is subject to similar challenges with regard to national grid connection as many other areas of the country. Current infrastructure is not sufficient to accommodate the suite of renewable energy projects across the country. Despite intentions of creating a more equitable system, recent movement of the connection queue system from a "first-come, first-served" system to a "first ready and needed, first connected" model has likely been to the significant detriment of the South of Scotland. A project's value to the South of Scotland does not necessarily align with its prioritisation within national plans, and as a consequence of this, the shift has likely hampered potential economic impacts in the region.
- 3.35** Use of pumped storage hydropower schemes could present an opportunity for projects to address this, as curtailed energy can be stored in these systems until needed. The Glenmuckloch pumped storage hydropower project, for example, will have a storage capacity of 210MW and could support in addressing these challenges by reducing the curtailment of renewable energy and reducing grid congestion.⁶⁰ However, it should be noted that the site will still require a grid connection, and is currently in the process of appealing an Ofgem decision not to shortlist for support.
- 3.36** There may be challenges for current and future projects with sourcing sufficient qualified staff, and in providing local employment opportunities due to this. South of Scotland Enterprise recognise that it will be important to engage with sectors where decarbonisation may impact people and explore opportunities for transitional jobs, where people can reskill and upskill to take advantage of emerging opportunities.

Current activity and assets in the South of Scotland

- 3.37** This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. The current Energy Transition project pipeline comprises 137 identified projects and investments, with a combined recorded investment value of approximately **£19.9 billion**.
- 3.38** There is a significant portfolio of energy transition projects within the South of Scotland, all at varying stages of readiness. This includes 32 projects under construction or in development with a combined capacity of over 3GW and investment value of around £1.9bn. There are also 99 projects at the planning/consenting/FBC stage with a combined capacity of just under 6GW and investment value of £5.8 billion, as well as a significant, early-stage development of renewable energy generation planned as part of the Chapelcross development.
- 3.39** There is a cluster of projects at construction/development phase based around Eccles in the Scottish Borders including a battery energy storage system and two large substations. The 500MW project is operated by Zenobe, and will be the first of several in Eccles and the

⁵⁹ <https://www.regen.co.uk/insights/three-changes-to-unlock-the-grid-for-community-energy-in-scotland>

⁶⁰ https://www.scottishrenewables.com/assets/000/003/039/The_Economic_Impact_of_Pumped_Storage_Hydro_original.pdf?1683649197

company's fourth site in Scotland including multiple in Dumfries and Galloway. This will bring their total Scottish investment to £750m.⁶¹

- 3.40 There are nine onshore wind projects currently under construction, with a proposed capacity of 781MW, and an investment value of £875m. Once operational, the Sanquhar 2 Community Wind Farm, will be the fourth largest onshore windfarm in the UK, currently providing around 100FTE jobs in construction, and will provide enough energy to power 335,000 homes with clean energy.⁶² Also recently completed is a fourth phase of development to the Crystal Rig Wind Farm, which will bring total site capacity up to almost 300MW. Further, a repowering of the original first phase of the Windy Standard Complex, Brockloch Rig, which was Scotland's first consented wind farm, with an additional 88MW extension, will bring installed capacity up to over 100MW. The Glenmuckloch Hill Wind Farm in Kirkconnell is being developed alongside a 210MW pumped storage hydro unit. A number of companies have already entered into Power Purchase Agreements (PPAs) with onshore wind sites in the region, which demonstrates the importance of onshore wind to the region.
- 3.41 To support delivery and maximise regional benefits, SOSE has recently established the South of Scotland Developer Forum (SoSDF), which it co-chairs with industry. Its membership includes 13 developers, two turbine manufacturers, Natural Power and both local authorities, with further supply chain partners and statutory agencies expected to join. The forum promotes collaboration on skills and supply chain development, wider socio-economic benefits and natural capital investment, alongside addressing deployment barriers such as abnormal-load transport. It will also explore how onshore wind can support energy demand at employment sites, including hydrogen and e-fuels production.

Opportunities and priorities for action

Opportunity 1: Grow local supply chain through retrofitting opportunities

- 3.42 The South of Scotland is a region rich in natural capital with a strong heritage in renewable energy production, and portfolio of emerging projects. This context makes the South of Scotland well placed to develop an economy which is powered by locally sourced renewable energy which is affordable, and benefits communities at all stages of production. This will include for example, retrofitting housing in the South of Scotland, which could potentially create around 2,700 jobs, and contribute £135m in GVA by 2032, increasing to over 6,500 direct jobs and £340m in direct GVA by 2045.⁶³ In addition to this SOSE, alongside Dumfries and Galloway, and Scottish Borders Councils, has commissioned the production of the region's first Heat network prospectus in 2025/26. This has focused on £120m of initial, commercially viable district heating and community shared ground loop projects, which could transform local delivery of renewable heat, and stimulate local supply chain development.⁶⁴

Opportunity 2: Promote the South of Scotland as a renewable energy region, using retrofitted infrastructure to bypass grid challenges

- 3.43 Further retrofitting, promoting use of electric charging devices and moving to electric powered public transport for example, can allow the South of Scotland to bypass grid challenges and use curtailed energy locally. Through this, the South of Scotland can become a best practice example for a local energy system that supports community wellbeing. An example from outside of the region to draw from is the H2 project in Orkney. With its wealth in renewable energy

⁶¹ <https://electrek.co/2025/03/25/zenobe-completes-220-million-raise-for-scottish-bess-project/>

⁶² <https://cwpenergy.uk/construction-begins-on-uks-fourth-largest-wind-farm-in-the-south-of-scotland/>

⁶³ <https://cles.org.uk/wp-content/uploads/A-roadmap-to-decarbonisation-FINAL.pdf>

⁶⁴ <https://www.southofscotlandenterprise.com/media/gaffpja/final-heat-networks-prospectus-for-the-south-of-scotland-ose-compressed.pdf>

infrastructure, and poor grid connection relative to this, the Orkney Islands have instead focussed on using curtailed energy to produce hydrogen. Several initiatives have been used to support this including a project to host hydrogen powered flights out of the airport at Kirkwall in 2027, and retrofitting other infrastructure to support hydrogen use.⁶⁵ Within the South of Scotland, the range of activity at Chapelcross can provide an avenue for this as planned activity on site can utilise curtailed energy through private wire agreement or PPAs.

Opportunity 3: Support communities and address concerns through community energy projects, and further public engagement

- 3.44 As well as strong public engagement and consultation surrounding large-scale renewable energy developments, it will be important to build community participation and ownership into delivery. The South of Scotland should actively develop a pipeline of community-led and shared-ownership energy projects, rather than relying exclusively on externally owned developments. This could involve feasibility support, introductions to finance, landowner engagement, project aggregation and support through relevant Scottish community-energy programmes.

Priorities for Action

Priority	Required Action(s)
Local supply chain development	Connect skill supply with project timescales to ensure that skills are available as they are required. This will help to maintain economic benefits from local projects remain in the South of Scotland.
Develop transition infrastructure	Ensure that projects are developed to schedule to take advantage of the recent shift in grid connection priority, however, where this isn't possible, further invest in pumped storage hydropower options to provide an alternative use for curtailed energy.
Increase awareness and utilisation of existing infrastructure	Current localised strategies to improve EV uptake and charging point use ⁶⁶ should be standardised across the region, and awareness raising improved through a public campaign. This could include funding support for EV uptake for example.
Support community ownership and engagement	Grow a pipeline of community owned and delivered renewable energy developments to support community participation in the sector to help inform and address concerns surrounding the impact of projects.

Summary

- 3.45 Energy Transition represents one of the largest and most strategically important RTOs within the South of Scotland, reflecting the region's scale of renewable energy generation, strong onshore wind base and growing pipeline of energy infrastructure projects. The South of Scotland already produces significantly more renewable electricity than it consumes and hosts 10% of the UK's onshore wind capacity and generating 10.7% of onshore wind energy. This provides a strong platform for further investment in wind, solar, battery storage, hydrogen, microgrid and pumped storage hydro projects.
- 3.46 The current project pipeline demonstrates substantial momentum in the Energy Transition theme, with 137 identified projects and investments and a combined recorded investment value of approximately £19.9 billion. Realising the opportunity will require continued investment in grid, storage and transition infrastructure, alongside stronger community engagement, support

⁶⁵ [How hydrogen is transforming these tiny Scottish islands - BBC Future](#)

⁶⁶ <https://www.dumfriesandgalloway.gov.uk/council-elections/strategies-policies-plans/ev-charging-strategy-south-scotland>

for community-owned energy projects and workforce development to ensure local people and businesses can benefit from the transition. If progressed effectively, Energy Transition has the potential to support decarbonisation, strengthen energy resilience and generate significant employment, GVA and supply chain opportunities across the region.

Creative and Cultural

3.47 The Creative and Cultural sector represents a distinctive RTO within the South of Scotland. The sector is a significant economic opportunity for the South of Scotland with the potential to generate businesses in a range of industries, producing unique cultural exports. However, unlike several of the other opportunities considered within this assessment, its transformational potential does not primarily stem from a pipeline of major capital investments. Instead, its value lies in its ability to enhance the profile, attractiveness and distinctiveness of the region, creating the conditions that support wider economic development, visitor growth, talent attraction and inward investment.

Context and drivers

3.48 The creative economy is increasingly recognised as an important contributor to economic growth, innovation, place attractiveness and quality of life. Across Scotland and the UK, creative industries encompass activities ranging from screen production, music and digital content creation through to heritage, design, visual arts and cultural events. In addition to their direct economic contribution, these sectors play an important role in shaping how places are perceived by residents, visitors, businesses and investors.

3.49 Stakeholders consistently highlighted the importance of the creative and cultural sector in helping tell the story of the South of Scotland. Consultation evidence suggested that creative activity can help showcase the region's unique landscapes, heritage, communities and businesses, while also strengthening its appeal as a place to live, work, visit and invest. This role is particularly important given the wider challenges identified elsewhere in this assessment around population retention, skills attraction and inward investment.

3.50 The South of Scotland has a number of assets that provide a platform for future growth, including a strong cultural identity, internationally recognised landscapes, a growing screen sector, established creative businesses, active cultural organisations and increasing collaboration between education providers and industry. Stakeholders also highlighted opportunities linked to film and television production, music, digital content creation, heritage assets and emerging creative technologies.

3.51 The opportunity within the Creative and Cultural sector therefore contributes directly to stated strategic aims within the South of Scotland to:

- Improve place attractiveness and liveability, a key aim of the Borderlands Inclusive Growth Deal's Place Programme⁶⁷;
- Enhance talent attraction and retention as outlined within the Regional Economic Strategy⁶⁸;
- Further develop the visitor economy as indicated within the South of Scotland Responsible Tourism Strategy⁶⁹;

⁶⁷ <https://www.borderlandsgrowth.com/place-programme>

⁶⁸ <https://www.southofscotlandenterprise.com/media/y/hoz1xp/south-of-scotland-regional-economic-strategy.pdf>

⁶⁹ <https://www.southofscotlandrep.com/what-we-do/south-of-scotland-responsible-tourism-strategy-2024-2034>

- Enhance the region's profile and reputation, as per SOSE's role outlined in the Regional Economic Strategy⁷⁰;
- Deliver creative enterprise growth as envisaged as part of the South of Scotland's Creative Economy Guide⁷¹; and
- More widely promote the region for wider investment opportunities⁷².

Market activity

- 3.52** The UK screen and creative industries continue to experience significant growth. Evidence provided by stakeholders highlights increasing interest in developing Scottish-originated content, attracting investment into production companies and strengthening Scotland's role within international screen markets. The screen sector was estimated to contribute £718 million to the Scottish economy in 2023⁷³ and is projected to continue expanding over the coming decade.
- 3.53** Within the South of Scotland, several emerging opportunities seek to build greater production capability and retain more economic value within the region. The most prominent example that was identified in consultation was the development of FFAH Films⁷⁴ in Hawick, which aims to establish a portfolio of film productions rooted in the South of Scotland. Over the longer term, the company aims to create supporting studio, post-production, training and production facilities. Stakeholders emphasised that these ambitions are intended not simply to generate individual productions but to establish a sustainable creative production ecosystem within the region.
- 3.54** Consultation evidence also highlighted opportunities associated with screen tourism, inward trade missions, creative clusters, digital content creation, music and performance activity, and partnerships involving Further and Higher Education institutions. Whilst many of these initiatives are relatively small in scale compared with infrastructure projects elsewhere in this assessment, the collective impact of these activities could be potentially significant in strengthening the region's visibility and attractiveness, thereby having the creative and cultural sector acting as enabler which unlocks further investment in the region in the future.
- 3.55** From a review of projects which SOSE has supported from June 2023 to March 2026, there have been a total of 318 projects delivered under the Creative Industries theme, with an investment value of £1.75 million of SOSE Capital Funding. This has leveraged £5.21 million in funding from private sources and elsewhere, representing a value of £2.98 per £1 of SOSE investment. The Creative and Cultural opportunity therefore is an area that SOSE can achieve significant leverage from other sources.

Challenges and constraints

Skills and workforce

- 3.56** Stakeholders identified challenges relating to skills retention, creative career pathways and attracting younger people into creative industries. The rural nature (and as discussed below, the lack of dedicated facilities) of the region can create barriers to employment opportunities, networking and access to specialist facilities, contributing to talent leakage towards larger urban centres. This is supported by the 2025 Sector Skills Assessment for the creative

⁷⁰ <https://www.southofscotlandenterprise.com/media/y/hoz1xp/south-of-scotland-regional-economic-strategy.pdf>

⁷¹ https://www.southofscotlandrep.com/media/3u1hodu0/south_of_scotland_creative_economy_guide.pdf

⁷² <https://www.southofscotlandenterprise.com/news/investment-in-south>

⁷³ <https://www.screen.scot/binaries/content/assets/screen-scot/funding--support/research/economic-value-of-the-screen-sector-in-scotland-in-2023/economic-value-of-the-screen-sector-in-scotland-report-2023---oct-2025-v2.pdf>

⁷⁴ <https://ffahfilms.co.uk/>

industries, which shows that the South of Scotland has one of the lowest densities of people working in the sector across Scotland.⁷⁵ People in the sector are also on average more qualified when compared to the entire workforce, suggesting that creative workers may be pushed out of the region towards large cities which can provide greater opportunities for further and higher education.

- 3.57 However, it should be noted that, recognising the opportunity in the sector, Dumfries and Galloway College has multiple creative industry-related courses and support offerings⁷⁶, while Borders College has also been delivering the Edinburgh and Borders Innovation Corridor to improve entrepreneurship in multiple sectors, including creative industries.⁷⁷ As noted in the South of Scotland Creative Economy guide, there are 1,882 creative enterprises in the South of Scotland and 6,327 people working in the sector, with relatively large opportunities in the Fashion and Textile (28% of all creative sector employment) and Heritage (19%) subsectors, and 31% of creative enterprises in the South of Scotland being part of the Digital Economy.⁷⁸
- 3.58 With increasing priorities in “CreaTech” and film in the South, combined with supply of skills it is anticipated that demand for Creative and Cultural roles will grow in the South to help meet the above workforce challenges.

Infrastructure and facilities

- 3.59 Evidence derived from both the South of Scotland Music Sector Report⁷⁹ and the South of Scotland Screen Strategy⁸⁰ highlighted constraints relating to creative infrastructure, including access to production space, recording facilities (36% of music survey respondents stated this was lacking), performance venues and specialist creative workspaces. Whilst activity exists across the region, stakeholders highlighted opportunities to strengthen that infrastructure base in order to support future growth.

Access to finance

- 3.60 Creative businesses and cultural organisations often face challenges accessing investment and funding. Stakeholders noted that many opportunities do not align neatly with traditional inward investment models, and 80% of music survey respondents in the Music Sector Report cited financial grants as being the most beneficial factor to their development.⁸¹ Access to finance may therefore require alternative approaches that recognise wider social, cultural and economic benefits.

Profile and critical mass

- 3.61 Despite significant creative activity taking place across the South of Scotland, stakeholders suggested that external awareness of the region’s creative strengths remains relatively limited. Increasing the visibility of the region and building critical mass around creative clusters could therefore be viewed as both an important challenge to tackle, and an opportunity to further develop the sector.

⁷⁵ https://www.skillsdevelopmentscotland.co.uk/media/oqzlyrwj/sectoral-skills-assessment-creative-industries.pdf?_gl=1*103z3yf*_up*MQ.*_ga*MTE1NDkzNTM5Ni4xNzg5Mzk0MjMz*_ga_2CRJE0HKFQ*cze3ODkzOTQyMzMkbzEkZzAkdDE3ODkzOTQyMzMkajYwJGwwJGgw

⁷⁶ <https://www.dumgal.ac.uk/study/subject-areas/creative-industries/>

⁷⁷ <https://www.ecosystemfund.co.uk/success-stories/borders-college>

⁷⁸ https://www.southofscotlandrep.com/media/3u1hodu0/south_of_scotland_creative_economy_guide.pdf

⁷⁹ https://www.southofscotlandenterprise.com/media/5dfe1c3h/final_south_of_scotland_music_sector_report-1401.pdf

⁸⁰ https://www.southofscotlandenterprise.com/media/0wfo4ytc/final_south_of_scotland_screen_strategy_april_2025_v7.pdf

⁸¹ https://www.southofscotlandenterprise.com/media/5dfe1c3h/final_south_of_scotland_music_sector_report-1401.pdf

Current activity and assets in the South of Scotland

- 3.62 This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. The current Creative and Cultural project pipeline comprises six identified projects and investments, with a combined recorded investment value of approximately **£56.6 million**, where estimates are available.
- 3.63 The South of Scotland already supports a diverse creative economy that includes cultural organisations, festivals, music, visual arts, screen production, heritage assets and creative enterprises. Survey evidence from the South of Scotland Music Sector Report⁸² identified approximately 261 music enterprises and around 614 people working within the music sector across the region, illustrating the presence of an established creative base from which further growth can occur.
- 3.64 Several emerging initiatives demonstrate ambitions to strengthen the region's creative infrastructure and profile. These include the development of FFAH Films' production activities and longer-term film hub aspirations, creative skills initiatives, screen-sector partnerships and collaborative projects involving education providers and creative businesses. Stakeholders involved in the consultation also highlighted opportunities associated with major film and television producers operating (and planning to operate) within the Borders and Dumfries and Galloway.
- 3.65 Unlike several of the other RTOs, the Creative and Cultural opportunity is not primarily defined by a pipeline of major capital investments. Consultees instead viewed many of the creative and cultural initiatives within the region through the lens of wider economic development rather than solely sector-specific outcomes. Activities such as film production, festivals, cultural programming and creative content creation were described as opportunities to strengthen the profile of the South of Scotland, increase visitor interest and attract future investment into other sectors.

Opportunities and priorities for action

Opportunity 1: Promoting the South of Scotland through screen, film and television

- 3.66 Screen production represents one of the clearest opportunities identified for the Creative and Cultural sector through consultation. Stakeholders highlighted the potential for film and television productions to showcase the South of Scotland to both national and international audiences, increasing awareness of the region as a location for tourism, living and investment. Beyond the direct economic impacts associated with productions themselves, screen activity was viewed as a mechanism for enhancing the wider profile of the region.

Opportunity 2: Developing creative enterprises and commercial creative production

- 3.67 The growth of creative businesses, production companies and cultural enterprises offers opportunities to generate employment, support entrepreneurial activity and retain creative talent within the region. Opportunities exist to strengthen commercial creative activity across areas including screen production, music, digital content and creative services.

Opportunity 3: Strengthening place attractiveness and talent retention

- 3.68 Creative and cultural activity contributes directly to quality of life, community vibrancy and regional identity. As a result, the sector can play an important role in supporting population attraction and retention objectives, particularly amongst younger people and skilled workers.

⁸²Ibid.

Stakeholders consistently linked creative activity with broader ambitions around making the South of Scotland an attractive place to live and work.

Opportunity 4: Supporting growth across other RTOs

- 3.69 The sector also provides significant spillover benefits to other opportunity areas. Screen production, cultural programming and creative storytelling can help promote visitor destinations, support place branding, strengthen investment propositions and communicate the assets underpinning opportunities in sectors such as Visitor Economy, Natural Capital, AI and Deep Tech, and Business and Professional Services.

Priorities for action

Priority	Required Action(s)
Expand screen production and creative content creation	Support the development of film, television and digital content production activity that showcases the South of Scotland and increases external awareness of the region.
Strengthen creative enterprise and commercial activity	Support the growth of creative businesses, cultural enterprises and production companies capable of generating sustainable economic impacts.
Invest in creative infrastructure and skills	Improve access to production facilities, creative workspaces, recording facilities and skills development opportunities.
Build stronger links between culture, education and innovation	Continue supporting collaborations between creative businesses, education providers and emerging creative technology initiatives.
Use culture and creativity to support wider regional growth	Position creative and cultural activity as a core element of place promotion, talent attraction, visitor economy development and investment attraction activity across the South of Scotland.

Summary

- 3.70 Unlike other RTOs, which are more focused on capital investment, the transformational potential of the Creative and Cultural sector lies in its ability to enhance the profile, attractiveness and distinctiveness of the South of Scotland, supporting talent attraction, visitor growth, business development and wider economic ambitions. Screen production, creative enterprise, cultural programming and heritage assets all contribute to strengthening how the region is experienced and perceived by residents, visitors and investors.
- 3.71 Future opportunities are likely to be realised through the development of a stronger creative ecosystem that supports screen production, creative entrepreneurship, cultural infrastructure and skills development. Whilst many of the individual projects identified are smaller in scale than those seen in other RTOs, their collective contribution has the potential to support growth across multiple sectors by enhancing the South of Scotland's profile, increasing place attractiveness and helping position the region as a distinctive location for investment, innovation and quality of life.

AI, Deep Tech and Advanced Manufacturing

- 3.72 AI, Deep Tech and Advanced Manufacturing represents one of the most ambitious RTOs identified within the South of Scotland. The opportunity combines major digital infrastructure investments, emerging innovation assets, advanced manufacturing activity and growing interest in artificial intelligence technologies. Unlike some of the other RTO themes, the opportunity is

strongly linked to the region's emerging role as a location for large-scale energy-intensive industries, data infrastructure and technology-enabled production.

Context and drivers

- 3.73** Global demand for digital infrastructure, AI computing capacity and advanced manufacturing capability is growing rapidly. The increasing adoption of artificial intelligence, cloud computing, automation and digital technologies is creating demand for large-scale data processing facilities⁸³, resilient energy supplies⁸⁴ and specialist manufacturing activities⁸⁵. These trends are reshaping patterns of investment and creating opportunities for locations with suitable infrastructure, land availability and renewable energy resources.
- 3.74** The South of Scotland possesses a number of characteristics that align strongly with these market drivers, including significant renewable energy generation capacity (as indicated in the Energy Transition section above), available development land as outlined in the Dumfries and Galloway Local Development Plan⁸⁶ and the Scottish Borders Local Development Plan⁸⁷, strategic connectivity to the rest of the UK⁸⁸, and growing digital infrastructure capability. Stakeholders consistently identified energy availability and space as key competitive advantages, particularly for energy-intensive activities such as data centres and advanced manufacturing.
- 3.75** The opportunity also aligns closely with wider regional ambitions around innovation-led growth, inward investment, high-value employment creation and economic diversification. Consultation evidence suggested that the South of Scotland is increasingly being viewed as a location capable of attracting technology-intensive investment which may previously have focused on larger urban centres.
- 3.76** The opportunity contributes directly to strategic aims within the South of Scotland, including:
- Innovation-led economic growth, as part of SOSE's vision to establish the region as a centre of opportunity, innovation and growth⁸⁹;
 - High-value employment creation and boosting/diversifying local supply chains, as part of the Regional Economic Strategy's Delivery Plan Priority Actions⁹⁰;
 - Digital transformation as outlined as a key focus in SOSE's Digital Strategy⁹¹; and
 - Community wealth building through local procurement and skills development, as outlined in a framework developed by SOSE and CLES.⁹²

Market activity

- 3.77** Several long-term trends support growth within AI, Deep Tech and Advanced Manufacturing, including:
- Rapid growth in artificial intelligence application and adoption⁹³;

⁸³ <https://stlpartners.com/articles/data-centres/digital-infrastructure-market-trends/>

⁸⁴ <https://www.techuk.org/resource/future-proofing-digital-infrastructure-climate-resilience-in-the-data-centre-sector.html>

⁸⁵ <https://commonslibrary.parliament.uk/research-briefings/cdp-2025-0216/>

⁸⁶ <https://www.dumfriesandgalloway.gov.uk/planning-building/planning/planning-policy/local-development-plan/local-development-plan-3-ldp3>

⁸⁷ <https://www.scotborders.gov.uk/plans-guidance/local-development-plan>

⁸⁸ <https://investinsouthofscotland.com/>

⁸⁹ <https://www.southofscotlandenterprise.com/about>

⁹⁰ <https://www.southofscotlandrep.com/media/vvudr0qm/regional-economic-strategy-delivery-plan-2025-2027.pdf>

⁹¹ <https://www.southofscotlandenterprise.com/media/qbcp3bqr/sose-digital-strategy.pdf>

⁹² <https://www.southofscotlandenterprise.com/media/s0olsjna/community-wealth-building-framework-from-renewables.pdf>

⁹³ <https://www.gov.uk/government/publications/ai-adoption-research/ai-adoption-research>

- Expansion of cloud computing and hyperscale data centre development⁹⁴;
- The rapid growth in battery technologies and energy storage, with grid-scale systems increasing capacity by 45% in the UK in 2025 alone⁹⁵;
- Expansion of low-carbon manufacturing; and
- Growing demand for specialist innovation and product development facilities.

3.78 Stakeholders highlighted major opportunities linked to data infrastructure. Consultation evidence identified proposals for a large-scale data centre development at the Roxburghe Estate (the Southside Data Centre) and a major AI-focused data centre cluster at Chapelcross, alongside a third proposed data centre at Coldstream. These projects were repeatedly referenced as potentially transformational investments capable of changing external perceptions of the region and creating significant long-term economic impacts.

3.79 Alongside these infrastructure investments, stakeholders highlighted opportunities to build a wider innovation ecosystem through initiatives such as the Borderlands Deep Tech Accelerator, AI adoption support programmes and specialist innovation facilities. Collectively, these projects aim to support business growth, product development and commercialisation activity across a range of sectors.

3.80 As per anonymised CRM data supplied by SOSE on projects that SOSE has supported from June 2023 to March 2026, there have been a total of 43 projects delivered under the AI, Deep Tech and Advanced Manufacturing theme, with an investment value of £1.62 million of SOSE Capital Funding. This has leveraged £5.04 million in funding from private and other sources, representing a value of £3.12 per £1 of SOSE investment. The sector therefore is a sector which SOSE has historically achieved above-average (£2.91) leverage when compared to all other sectors.

Challenges and constraints

Skills and workforce challenges

3.81 A consistent theme across consultations was the availability of workforce and specialist skills. Stakeholders identified challenges relating to population change, skills attraction and retention (particularly in respect to stronger digital sectors nearby in areas such as Edinburgh), while also highlighting the need to develop pathways that encourage young people to remain within, return to or relocate to the South of Scotland. Skills Development Scotland's Sector Skills Assessment for Digital Technologies⁹⁶ predicts larger long-term employment growth in the sector than nationally, while research from the Data Lab indicates that AI literacy in over half of Scottish businesses is reported to currently be moderate or low.⁹⁷ Therefore competition for these skills is likely to continue.

Infrastructure and development sites

3.82 Whilst the region benefits from significant land availability and energy resources, stakeholders emphasised the need for additional strategic employment sites, business premises and supporting infrastructure. Several consultees highlighted the importance of ensuring that investment-ready sites are available if opportunities are to be successfully secured.

⁹⁴ <https://www.gov.scot/publications/green-datacentres-and-digital-connectivity-vision-and-action-plan-for-scotland/>

⁹⁵ <https://ratedpower.com/blog/how-saturated-is-the-uk-bess-market/>

⁹⁶ <https://www.skillsdevelopmentscotland.co.uk/what-we-do/skills-planning/sectoral-skills-assessments>

⁹⁷ <https://thedatalab.com/academy/professional-development/skills-framework/>

Environmental concerns

- 3.83** The Environmental Rights Centre for Scotland estimates that the data centres currently in the Scottish planning system (as of December 2025) would double the energy demands from Scotland.⁹⁸ Given the concerns about grid infrastructure raised in the Energy Transition section above (and in the grid “enablers” section of Chapter 4), it is likely that the development of data centres will exceed current and projected output. Further to this, there is an increasing concern about water usage by data centres in Scotland, with consumption of water from data centres quadrupling from 2021 to 2025.⁹⁹
- 3.84** It should be noted, however that the Scottish Government’s focus is on developing “Green” data centres which are powered by renewable energy (ideally from off-grid and/or local renewable energy sources) and use waste water, thereby helping to alleviate some of the environmental pressures around development.¹⁰⁰ Recognising this, developers for the Southside¹⁰¹ and Chapelcross¹⁰² sites both state aims to be delivered through zero-carbon and local renewable energy sources, while the Coldstream design scheme plans to preserve existing natural capital onsite as far as possible, ensuring the protection of key ecological corridors.¹⁰³ The progress of the environmental aspects of these proposed developments should be regularly monitored.

Social Licence

- 3.85** In addition to these technical and environmental considerations, the development of data centres in the South of Scotland (and Scotland, more widely) faces challenges in securing and maintaining an effective social licence to operate. There are widespread community concerns regarding the scale, resource intensity and lack of perceived local benefits gained from data centre development.^{104,105} Early and transparent engagement with local residents and communities, which demonstrates any proposed social and economic benefits relating to these developments, is required and may help to improve public confidence in digital, data centre and AI-related activity.

Innovation ecosystem development

- 3.86** Stakeholders noted that whilst there is growing momentum around innovation and technology activity, many projects remain at relatively early stages of development. Continued investment in innovation infrastructure, skills and commercialisation support will therefore be important in helping the sector reach critical mass.

Current activity and assets in the South of Scotland

- 3.87** This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. The current AI, Deep Tech and Advanced Manufacturing project pipeline comprises five identified projects and opportunities. The project database records investment values of approximately **£9.5 billion** where estimates are available, making this one of the largest identified RTO pipelines by investment value.
- 3.88** The largest identified investments are the proposed Southside Data Centre, Coldstream Data Centre and Chapelcross Data Centre developments. Publicly available evidence suggests these

⁹⁸ <https://www.ercs.scot/news/data-centres-in-the-scottish-planning-system-would-double-scotlands-energy-demands-press-release/>

⁹⁹ <https://www.bbc.co.uk/news/articles/c9q0j07l9dxo>

¹⁰⁰ <https://www.gov.scot/publications/green-datacentres-and-digital-connectivity-vision-and-action-plan-for-scotland/>

¹⁰¹ <https://southsidedc.com/location/>

¹⁰² <https://www.southofscotlandenterprise.com/news/chapelcross-strategic-developer>

¹⁰³ <https://www.bordertelegraph.com/news/25295810.digital-green-data-centre-coldstream-moves-closer-reality/>

¹⁰⁴ <https://www.dng24.co.uk/region-backs-ai-data-centre-demo>

¹⁰⁵ <https://aprs.scot/chapelcross-data-centre/>

investments are linked closely to the region's renewable energy resources, available land and strategic infrastructure.^{106,107,108} It should be noted that each of these projects is currently at an early stage of development, and as such any benefits and impacts (for example on power supply, grid and fibre capacity, water and cooling, environmental impacts) will require independent assessment beyond the scope of this research.

- 3.89 The project pipeline also includes the proposed BIOHAUS Production Facility which aims to expand Hemspan's industrial hemp building material manufacturing to the Scottish Borders, the Borderlands Deep Tech Accelerator (an innovation, startup and scale up support facility that will support business in developing new technologies), AI-enabled battery technologies and circular economy technologies for lithium-ion battery recycling. Together these reflect a wider portfolio of innovation, manufacturing and technology opportunities.
- 3.90 The database identifies approximately 175 jobs linked to the BIOHAUS facility and approximately 700 jobs linked to AI-enabled battery technologies, although estimates remain subject to project development and refinement.

Opportunities and priorities for action

Opportunity 1: Assessing Potential for Responsible Data Infrastructure Development

- 3.91 The proposed development of large-scale data infrastructure centred around the Southside, Coldstream and Chapelcross is an opportunity for economic development within this sector. While still at an early stage, stakeholders stated that the South of Scotland is an attractive location for energy-intensive digital infrastructure investments due to a combination of renewable energy generation, available land, grid connectivity and strategic location. Several consultees described Chapelcross as one of the most significant transformational opportunities currently under consideration across the various RTOs in the South of Scotland.

Opportunity 2: Building a Deep Tech innovation ecosystem

- 3.92 The Borderlands Deep Tech Accelerator provides an opportunity to strengthen the region's innovation infrastructure and support the commercialisation of emerging technologies, by establishing an incubator and collaboration space, as well as startup and scaleup support businesses seeking to develop innovative projects and entrepreneurial technological activity in the region, which in turn can help support other key RTO themes (such as Industrial Biotechnology and Health and Life Sciences). Stakeholders highlighted the importance of creating pathways through which innovative businesses can develop, scale and remain within the South of Scotland. The proposed accelerator and wider innovation support ecosystem may play an important role in achieving this.

Opportunity 3: Growing the region's Advanced Manufacturing capability

- 3.93 Aligned to the Energy Transition opportunity, the region has the potential to attract and develop advanced manufacturing activity linked to renewable energy, batteries, specialist engineering and low-carbon technologies. Projects such as the BIOHAUS facility (utilising Natural Capital assets to deliver an innovative, sustainable building material solution) and battery technology proposals illustrate potential pathways through which higher-value manufacturing activity could expand within the region.

¹⁰⁶ <https://southsidedc.com/proposal/>

¹⁰⁷ <https://datacentrereview.com/2026/10/cx-tech-submits-plans-for-1gw-chapelcross-data-centre-campus/>

¹⁰⁸ <https://www.bordertelegraph.com/news/25295810.digital-green-data-centre-coldstream-moves-closer-reality/>

Opportunity 4: Accelerating AI adoption across the economy

- 3.94 The opportunity for the AI, Deep Tech and Advanced Manufacturing RTO extends beyond technology businesses themselves. AI and digital technologies are expected to influence productivity and innovation across many other sectors that are relevant within this report (and to the South of Scotland), including agriculture, manufacturing, natural capital and energy. Stakeholders highlighted opportunities to support adoption of AI technologies within existing businesses while also attracting new firms operating within emerging technology sectors.

Priorities for Action

Priority	Required Action(s)
Develop a regional innovation and deep tech ecosystem	Progress the Borderlands Deep Tech Accelerator and related innovation programmes to support commercialisation, business growth and inward investment.
Grow advanced manufacturing capability	Support the development of advanced manufacturing opportunities linked to renewable energy, battery technologies, specialist engineering and emerging production facilities.
Strengthen skills and talent pipelines	Work with education providers, employers and skills agencies to attract, retain and develop the skilled workforce required to support technology-intensive sectors.
Deliver enabling infrastructure	Continue investment in grid capacity, strategic employment sites, transport connectivity and housing provision to support future business growth and inward investment.

Summary

- 3.95 AI, Deep Tech and Advanced Manufacturing represents one of the most significant transformational opportunities identified within the South of Scotland. The opportunity combines major digital infrastructure investments, emerging innovation assets and advanced manufacturing activity with the region's strengths in renewable energy generation, available development land and strategic connectivity. The identified project pipeline includes approximately £9.5 billion of recorded investment, making this one of the largest opportunities considered through this assessment.
- 3.96 Projects such as the Chapelcross and Southside data centre developments, the Borderlands Deep Tech Accelerator and emerging advanced manufacturing investments have the potential to reshape the regional economy and strengthen the South of Scotland's position as a location for innovation-led growth. Realising this opportunity will require strong communication about the potential community benefits of development, as well continued investment in enabling infrastructure, workforce development and innovation support, ensuring that businesses and communities across the region are able to capture the benefits of future growth.

Health Innovation and Life Sciences

- 3.97 Health Innovation and Life Sciences represents an emerging opportunity within the South of Scotland, combining strengths in health innovation, biotechnology, advanced manufacturing, food systems and rural innovation. While the sector is currently less developed in the region than some of the other RTOs identified through this study, growing activity across life sciences, health innovation and pharmaceutical manufacturing suggests opportunities to establish a more significant presence within the wider Scottish life sciences ecosystem.

Context and drivers

- 3.98** Life sciences and health innovation are recognised as strategically important sectors within both Scotland and the UK. The sector contributes to health outcomes, productivity growth, research and innovation, and the development of high-value employment opportunities. Continued growth in areas such as medical technologies, biotechnology, pharmaceutical manufacturing, precision medicine and digital health is creating opportunities for regions able to provide suitable skills, innovation assets and business environments.
- 3.99** The South of Scotland benefits from a number of assets which support future growth opportunities within Health Innovation and Life Sciences, including links to regional universities and research institutions, growing activity within biotechnology and agricultural innovation, and access to wider life sciences activity within the South East Scotland economic area. The sector also aligns closely with ambitions around innovation-led growth, rural diversification and business investment.
- 3.100** Consultation and project evidence identified opportunities relating to life sciences manufacturing, medicinal cannabis production, health innovation, food-based health products and participation in wider research and innovation programmes. Whilst many of these opportunities remain at an early stage of development, they provide indications of potential future growth directions for the sector.
- 3.101** The Health and Life Sciences opportunity also supports wider regional objectives relating to:
- High-value employment creation, as outlined in the South of Scotland Regional Economic Strategy¹⁰⁹;
 - Innovation and commercialisation, which are key aims of the Regional Economic Partnership's Delivery Plan¹¹⁰;
 - Rural diversification, a key strategic aim of the Life Sciences Strategy for Scotland 2035¹¹¹;
 - Health and wellbeing outcomes, as identified by Health Innovation South East Scotland's mission¹¹²;
 - Inward investment attraction, as part of the aims of the Scottish Government regarding the Life Sciences sector¹¹³; and
 - Knowledge-intensive business growth, as identified in the Regional Skills Investment Plan for the South of Scotland.¹¹⁴

Market activity

- 3.102** Several long-term trends support the future growth potential of Health Innovation and Life Sciences within the South of Scotland, including:
- Increasing demand for innovative healthcare solutions;
 - Growth in pharmaceutical and biotechnology markets;
 - Expansion of personalised and precision medicine;
 - Growing collaboration between healthcare providers, academia and industry;

¹⁰⁹ <https://www.southofscotlandrep.com/what-we-do/regional-economic-strategy>

¹¹⁰ <https://www.southofscotlandrep.com/what-we-do/regional-economic-strategy/rep-delivery-plan-key-themes>

¹¹¹ <https://www.lifesciencesscotland.com/wp-content/uploads/2025/11/2025-11-20-Life-Sciences-Strategy-final-high-resolution.pdf>

¹¹² <https://hises.edinburghbioquarter.com/>

¹¹³ <https://www.gov.scot/news/growing-a-25-billion-industry/>

¹¹⁴ <https://www.skillsdevelopmentscotland.co.uk/media/av4lyulx/regional-skills-investment-plan-for-the-south-of-scotland.pdf>

- Increasing public and private investment in research and development; and
- Rising interest in the commercialisation of health-related innovation.

- 3.103** A notable recent development is the investment by Breathe Life Sciences in a new manufacturing and distribution facility planned for development in Galashiels.¹¹⁵ Publicly available information indicates that the facility is expected to create 36 initial skilled jobs, with ambitions to increase employment to approximately 100 jobs over a three-year period.¹¹⁶ The project is intended to support the manufacture of cannabis-based medicinal products and represents one of the clearest examples of life sciences investment currently identified within the region.
- 3.104** The South of Scotland also benefits from participation within wider regional health innovation networks. Health Innovation South East Scotland (HISES) brings together NHS Borders, NHS Fife and NHS Lothian to support the development, testing and adoption of innovative health and care solutions. This provides pathways through which health innovation activity developed within the region may be tested, adopted and commercialised.
- 3.105** Whilst several additional opportunities have been identified through consultation and project mapping work, limited publicly available evidence was identified regarding the scale, status or anticipated impacts of these opportunities at the time of writing. This includes elements of the proposed hemp and medical cannabis cluster, development of a food hub cluster and future Horizon Europe-related opportunities.
- 3.106** From a review of anonymised project data which SOSE has supported development of from June 2023 to March 2026, there have been a total of 93 projects delivered under the Health Innovation and Life Sciences theme, with an investment value of £2.13 million of SOSE Capital Funding. This has leveraged £5.46 million in funding from private and other sources, representing a value of £2.57 per £1 of SOSE investment. The Health and Life Sciences sector therefore is one in which SOSE can support investment in areas which support other sectors (e.g. agriculture and aquaculture, pharmaceutical developments) and lead to improvements in wellbeing and health.

Challenges and constraints

Skills and workforce

- 3.107** Life sciences businesses often require highly specialised scientific, technical, regulatory and manufacturing skills. Attracting and retaining these skills within rural areas can be challenging, particularly given wider demographic trends affecting the South of Scotland that were identified in consultation, namely an ageing workforce and outward migration patterns.
- 3.108** In the most recent Sectoral Skills Assessment conducted by Skills Development Scotland for the Life Sciences sector (October 2025), it identified that, across Scotland, the sector's workforce is expected to grow by 4.7% from 2025 to 2028 (compared to average national growth of 2.5%), and by 9% between 2028 and 2035 (compared to average national growth of 4%).¹¹⁷
- 3.109** While there is a reasonable degree of replacement demand expected to be required to replace workers leaving the labour market (e.g. for retirement or changing jobs), the majority of demand for new workers in the sector is anticipated to stem from expansion demand (65% by 2028 and

¹¹⁵ <https://www.southofscotlandenterprise.com/news/breathe-life-sciences>

¹¹⁶ While this information was publicly available, we were unable to obtain investment values and as a result these have not been factored into the impact assessment and workforce analysis at Chapters 5 and 6, respectively

¹¹⁷ <https://www.skillsdevelopmentscotland.co.uk/media/kkmba3hl/sectoral-skills-assessment-life-sciences.pdf>

60% by 2035) as a result of economic growth within the sector.¹¹⁸ This shows that the Life Sciences sector is a high growth sector for Scotland, and as a result there will be an increase in demand for scientific and technology-related roles.

Research and commercialisation

- 3.110** The majority of the opportunities identified within the Health Innovation and Life Sciences sector remain at an early stage of development in the South of Scotland, and it was raised in consultation that many R&D companies (globally, and typically those that are formed as research spinouts from colleges and universities) seek support in moving from proof of concept to producing a viable product. Ensuring that research activity can be translated into commercially viable products, services and businesses will be important if the sector is to achieve long-term growth.

Scale and critical mass

- 3.111** Compared with more established Scottish life sciences locations such as Edinburgh, Dundee, Glasgow and Aberdeen, the South of Scotland currently has a relatively limited concentration of life sciences businesses and research infrastructure. Building sufficient scale to support cluster development will therefore require sustained investment and collaboration.
- 3.112** No publicly available evidence was identified which quantifies a regional life sciences cluster of significant scale within the South of Scotland at present, although it should be noted that consultation identified that SOSE is supporting the development of a medical cannabis cluster in the South of Scotland, with SOSE investing £848,250 in supporting Breathe Life Sciences¹¹⁹ and a £690,000 capital investment in supporting Hilltop Leaf.¹²⁰ By focusing on particular subsectors such as this, there are opportunities for the South of Scotland to be a leading region in particular niches within Life Sciences.

Investment readiness

- 3.113** A significant proportion of opportunities identified within the sector remain concept-stage proposals or are still emerging. As a result, evidence around project maturity, funding requirements and anticipated impacts remains limited in a number of cases.

Current activity and assets in the South of Scotland

- 3.114** This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. The current Health and Life Sciences project pipeline comprises two identified projects and investments, with a combined recorded investment value of approximately **£19.4 million**.
- 3.115** As noted in the previous Market activity section above, previous investment indicates a rough scale of historical investment of £9.45 million in total since March 2023. It is therefore a growing sector within the South of Scotland.
- 3.116** The strongest existing assets are centred around the region's dairy sector. Dairy Nexus provides a dedicated innovation facility supporting collaboration between researchers, businesses and farmers, while Digital Dairy Chain seeks to transform dairy production and processing across

¹¹⁸ Ibid.

¹¹⁹ <https://www.southofscotlandenterprise.com/news/breathe-life-sciences>

¹²⁰ <https://www.southofscotlandenterprise.com/case-studies/sose-supports-medicinal-cannabis-farm-to-create-local-jobs>

South and West Scotland and Cumbria through the adoption of digital technologies and innovation.

- 3.117 Job impacts from both the Digital Dairy Chain and Dairy Nexus will be largely indirect given the nature of the projects, primarily focused on driving innovation. Despite this, when considered together as a regional opportunity, these projects will be transformational. They will significantly increase innovation capacity within health and life sciences through dairy farming by increasing uptake of technologies, and creating a regional hub for collaboration and innovation. This will support in commercialising innovation, strengthening regional supply chains in Health Innovation and Life Sciences, and potentially unlocking follow-on investment.
- 3.118 The region also benefits from access to wider innovation infrastructure through Health Innovation South East Scotland (HISES), which provides links between NHS organisations, academia, industry and innovators. NHS Borders is one of the partner organisations within this system.
- 3.119 Additional opportunities identified through stakeholder engagement include the development of a medicinal cannabis cluster within the region, food and health innovation, small producer development and participation in wider innovation programmes such as Horizon Europe. However, insufficient evidence was available to assess the scale or maturity of these opportunities in detail.

Opportunities and priorities for action

Opportunity 1: Establishing a nationally significant dairy innovation cluster

- 3.120 The strongest opportunity identified relates to the continued development of a nationally significant dairy innovation cluster centred on Dairy Nexus and Digital Dairy Chain. Stakeholders highlighted the transformative potential of these investments, which support innovation across the dairy supply chain, from animal health and nutrition through to processing, manufacturing and distribution. The facilities provide opportunities to attract research activity, secure investment and support commercialisation of new technologies and products.

Opportunity 2: Developing a Life Sciences manufacturing base

- 3.121 The investment by Breathe Life Sciences demonstrates the potential for the South of Scotland to attract internationally-connected life sciences businesses seeking locations that offer available land, skilled labour and business support. Successful delivery of this project could create a platform for further investment within related subsectors, related to the development of pharmaceutical and life sciences manufacturing activity within the region.

Opportunity 3: Health innovation and clinical collaboration

- 3.122 Through participation in Health Innovation South East Scotland (HISES), the region has opportunities to strengthen collaboration between healthcare providers, academia and industry. This could support the testing, adoption and commercialisation of innovative health and care technologies while helping local organisations access wider research and innovation programmes.

Opportunity 4: Linking health, food and biotechnology innovation

- 3.123 The evidence suggests opportunities at the interface between food production, biotechnology and health innovation. Several opportunities identified through consultation sit across these sectors, including medicinal cannabis and hemp, food innovation and biotechnology-related

activity. There may therefore be opportunities to build stronger linkages between the Health Innovation and Life Sciences and Industrial Biotechnology themes. However, the scale of these opportunities is not yet sufficiently evidenced.

Opportunity 5: Attracting research and innovation investment

- 3.124 Participation in wider UK and European innovation programmes provides opportunities to attract external funding, strengthen research partnerships and build innovation capability. Opportunities relating to Horizon Europe and wider innovation funding programmes were identified during consultation activity, although specific projects and impacts have not yet been evidenced.

Priorities for Action

Priority	Required Action(s)
Strengthen the dairy innovation cluster	Continue supporting Dairy Nexus and Digital Dairy Chain activities and commercialisation opportunities.
Support life sciences investment	Continue attracting businesses operating within pharmaceutical and life sciences manufacturing.
Strengthen innovation partnerships	Build stronger connections between NHS organisations, academia, businesses and innovation networks.
Develop workforce capability	Support development of scientific, technical and manufacturing skills.
Improve commercialisation pathways	Help translate innovation and research activity into market opportunities.
Increase participation in external funding programmes	Support access to research, innovation and collaborative funding opportunities.

Summary

- 3.125 Health Innovation and Life Sciences represents an emerging but potentially significant opportunity for the South of Scotland. Although the current evidence base is less developed than for several other RTO themes, investments into particular clusters and participation in Health Innovation South East Scotland (HISES) demonstrate the potential for growth in high-value, innovation-led activities.
- 3.126 The current lack of quantified project information makes it difficult to assess the overall scale of future impacts. Nevertheless, the sector aligns strongly with wider ambitions around innovation, diversification and high-value employment creation. Future development is likely to depend on attracting additional investment, strengthening research and innovation partnerships, and improving the region's ability to commercialise emerging opportunities.

Industrial Biotechnology

- 3.127 Industrial Biotechnology represents an emerging RTO within the South of Scotland. The sector utilises biological systems, renewable feedstocks and advanced processing technologies to develop products and services that improve productivity, sustainability and environmental outcomes. Building upon the region's extensive agricultural base, natural capital assets and food production strengths, Industrial Biotechnology presents an opportunity to create higher-value products, develop new markets and improve resilience across rural supply chains.

Context and drivers

- 3.128 Industrial Biotechnology is increasingly recognised as a strategic growth sector across Scotland and the UK. The sector supports ambitions around sustainable food production, resource

efficiency, net zero delivery, circular economy development and the commercialisation of biological innovation. National organisations such as the Industrial Biotechnology Innovation Centre (IBiolC) have highlighted the sector's potential to develop new products, reduce waste and improve industrial sustainability.

3.129 The South of Scotland possesses several characteristics that align strongly with future growth opportunities in Industrial Biotechnology. These include a significant agricultural sector, a large dairy industry, natural capital assets, established food and drink production, and an emerging ecosystem of research, innovation and business support organisations. Consultation evidence highlighted the potential for the region to become a leading centre for innovation within dairy, agricultural biotechnology and bio-based production systems.

3.130 The opportunity also supports wider regional ambitions relating to:

- Net zero and climate resilience, as well as sustainable food production, which are both key aims of the South of Scotland Regional Land Use Framework¹²¹;
- Circular economy development and supply chain resilience, as outlined in Zero Waste Scotland's Circular Bioeconomy mission¹²²;
- Rural economic diversification, a key outcome detailed in the South of Scotland Regional Economic Strategy¹²³;
- Research and innovation, as outlined in Scotland Development International's National Plan for Industrial Biotechnology¹²⁴; and
- Natural capital utilisation in a manner that is linked to the South of Scotland's Regional Land Use Framework,¹²⁵

Market activity

3.131 The Industrial Biotechnology sector is being driven by a range of global and national trends, including:

- Growing demand for sustainable and low-carbon production and biorefinery systems;
- Increased focus on food security and supply chain resilience;
- Rising demand for bio-based materials and products;
- Expansion of adjacent technologies in precision agriculture and digital farming;
- Increased recognition of waste as a valuable resource within circular economy systems; and
- Growing private and public investment in biotechnology innovation.

3.132 In the South of Scotland, much of the current activity is focused around dairy innovation, agricultural productivity and circular bioeconomy approaches. The region has already established important assets in this area through Dairy Nexus and Digital Dairy Chain, which are supporting innovation throughout the dairy supply chain and helping to position the region as a centre for agricultural and food-system innovation.

3.133 The sector also benefits from a growing innovation ecosystem involving SRUC, regional colleges, businesses, research organisations and strategic partners. The Local Innovation Partnership Fund (LIPF) process has identified a wider bio-innovation cluster spanning food production,

¹²¹ https://www.southofscotlandrep.com/media/kpsbxf2b/rluf_v1_240919.pdf

¹²² <https://www.zerowastescotland.org.uk/business/sector/bioeconomy>

¹²³ <https://www.southofscotlandenterprise.com/media/ylhoz1xp/south-of-scotland-regional-economic-strategy.pdf>

¹²⁴ <https://www.sdi.co.uk/media/ejci5hme/nationalplusplanplusfinalplusscreenpluscopy.pdf>

¹²⁵ https://www.southofscotlandrep.com/media/kpsbxf2b/rluf_v1_240919.pdf

regenerative materials, marine resources and low-impact bioprocessing, reinforcing the longer-term growth potential of the sector.

- 3.134 From a review of projects developed with support from SOSE from June 2023 to March 2026, there have been no projects delivered under the “Biotechnology” theme. However, many projects that are relevant to this sector will have been captured under part of the “Health and Life Sciences” classification (e.g. through agricultural, animal care and environmental life sciences subsectors).

Challenges and constraints

Skills and workforce

- 3.135 Industrial Biotechnology requires a combination of scientific, engineering, agricultural and commercial skills. Stakeholders highlighted the importance of retaining technical talent within the region and ensuring that education and training provision aligns with the needs of emerging industries. As with several other RTOs, demographic change and a declining working-age population present longer-term challenges to workforce availability. The 2025 Sector Skills Assessment for Life Sciences indicates that the South of Scotland has one of the lowest densities of Life Sciences workforce in the country, with modern apprenticeship starts in Chemicals & Biotechnology falling by over a quarter between 2023/24 and 2024/25 academic years.¹²⁶

Research and commercialisation

- 3.136 Although the South of Scotland possesses strong agricultural and natural capital assets, successful sector growth will depend on converting research activity into commercially viable products, processes and businesses. Continued support for innovation, product development, commercialisation and scale-up will therefore remain critically important.

Access to finance and investment

- 3.137 Many industrial biotechnology opportunities involve emerging technologies, pilot projects or novel production systems. This can create challenges around investment readiness and access to finance, particularly where commercial models are still being developed or demonstrated. Collaboration with innovation centres, particularly the Industrial Biotechnology Innovation Centre (IBioIC), can help to move projects from pilots and demonstrators, to investable propositions.

Infrastructure and scale-up capacity

- 3.138 Commercialisation of industrial biotechnology products often requires specialist processing, testing and manufacturing infrastructure. Ensuring that businesses can access suitable facilities and support as projects move from research and development towards commercial deployment will be important in fully realising sector growth.

Current activity and assets in the South of Scotland

- 3.139 This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. The current Industrial Biotechnology project pipeline comprises two identified projects and investments, with a recorded investment value (from one project) of approximately **£25 million**.

¹²⁶ <https://www.skillsdevelopmentscotland.co.uk/what-we-do/skills-planning/sectoral-skills-assessments>

- 3.140 The project that has identified values relates to the development of a beef processing facility to support the food sector in Ecclefechan, in Dumfries and Galloway. This project, strategically located along the A74(M) corridor, decreases journey time for livestock in the South of Scotland that would otherwise have to travel further distances, either into England¹²⁷ or to other facilities such as in Paisley or Wishaw.¹²⁸ This therefore demonstrates a stronger, locally sourced, food chain development in the South of Scotland and retains a greater proportion of the value chain in the region.
- 3.141 The wider Industrial Biotechnology ecosystem also includes emerging projects focused on circular bioeconomy principles, biofertiliser production, anaerobic digestion, renewable energy generation and sustainable agricultural systems. Taken with the strong links to the agricultural sector (similarly to the Life Sciences focus on dairy, through the Dairy Nexus and Digital Dairy Chain) shows how the Industrial Biotechnology opportunity ties in with the South of Scotland's natural resources, and with other RTOs such as those found within the Energy Transition and Natural Capital Innovation Zone opportunities. Together, these projects demonstrate growing momentum within bio-based innovation and processing activities across the region.

Opportunities and priorities for action

Opportunity 1: Developing a circular bioeconomy

- 3.142 Linked to the Natural Capital Innovation Zone opportunity, the South of Scotland is well positioned to develop circular bioeconomy solutions that maximise value from agricultural by-products, waste streams and biological resources.
- 3.143 Projects such as the South of Scotland Micro-Bioenergy and Biofertiliser Living Lab and wider anaerobic digestion proposals demonstrate opportunities to generate renewable energy, produce biofertilisers and reduce dependency on imported inputs. These approaches support both net zero ambitions and agricultural productivity objectives.

Opportunity 2: Bio-Based products and advanced processing

- 3.144 Industrial Biotechnology also presents opportunities to develop high-value bio-based products and materials from regional natural resources and agricultural outputs. The emerging bio-innovation ecosystem highlights opportunities in regenerative materials, food processing innovation, marine resources and low-impact bioprocessing. These activities provide opportunities to diversify rural economies and develop higher-value manufacturing activity linked to local resources.

Opportunity 3: Strengthening research, innovation and commercialisation

- 3.145 A recurring theme across the evidence base is the opportunity to strengthen connections between research, innovation and commercial activity. Building on assets such as SRUC, and other RTOs related to agriculture such as the Dairy Nexus and Digital Dairy Chain could help establish the South of Scotland as a leading location for agricultural and industrial biotechnology innovation.

¹²⁷ <https://ahdb.org.uk/efoodchainmap>

¹²⁸ <https://www.gov.scot/publications/abattoir-provision-opportunities-mobile-slaughterhouses-scotland-scottish-animal-welfare-commission/pages/3/>

Priorities for action

Priority	Required Action(s)
Develop circular bioeconomy projects	Progress biofertiliser, anaerobic digestion and bioenergy projects to commercial scale.
Improve commercialisation pathways	Strengthen links between research, business support and private investment.
Build processing and manufacturing capacity	Support development of bio-based manufacturing and processing infrastructure.
Grow specialist skills and talent	Develop a pipeline of scientific, engineering and agricultural innovation skills.

Summary

- 3.146** Industrial Biotechnology represents a significant emerging opportunity for the South of Scotland, building upon the region's agricultural strengths, natural assets and growing innovation infrastructure. The combination of dairy innovation, circular bioeconomy development and bio-based manufacturing capability provides a strong platform for future growth.
- 3.147** Whilst challenges remain around commercialisation, investment and skills availability, the existing project pipeline demonstrates clear momentum and strong alignment with wider regional ambitions around net zero, rural economic diversification and innovation-led growth. If fully realised, Industrial Biotechnology has the potential to become a distinctive knowledge-intensive growth sector in the region.

Business and Professional Services

- 3.148** Business and Professional Services (BPS) is a diverse and knowledge-intensive sector that provides specialised support to other businesses and wider organisations. Expanding the region's BPS business base represents a significant opportunity to diversify the regional economy, create high-value employment, and both attract and retain skilled workers, while also reducing reliance on urban centres for provision of these specialist business and professional services, such as financial, legal, digital and consultancy services.
- 3.149** The sector also plays an important cross-cutting and enabling role within the RTOs, by providing services which support the wider economic diversification across each of the themes described throughout this chapter, enabling business growth and supporting the businesses in each of these themes to obtain investment across the wider regional economy. The opportunity found within BPS is therefore centred around improving the availability of modern business infrastructure, attracting and retaining knowledge-intensive businesses, and strengthening professional and technical supply chains which support growth across the other transformational opportunity themes.

Context and drivers

- 3.150** The Business and Professional Services opportunity aligns closely with wider regional ambitions around productivity improvement, inward investment attraction and the development of higher-value employment opportunities.
- 3.151** The sector encompasses a broad range of professional, technical, financial, legal, digital and consultancy activities which support business growth across multiple industries. The South of Scotland's strategic location between Scotland's Central Belt and Northern England provides strong transport links, with hubs such as Galashiels and Lockerbie providing cross border

connections with Edinburgh, Glasgow and Manchester, and access to a population of approximately 14 million people within a three-hour drive time, creating opportunities to attract investment and business activity which may otherwise locate within larger urban centres.

3.152 Consultation evidence highlighted the importance of creating conditions which encourage businesses and skilled workers to locate within the South of Scotland while maintaining connections to larger city economies. Stakeholders noted that improved transport connectivity, hybrid working patterns and the availability of modern business facilities create opportunities to attract businesses, entrepreneurs and skilled workers seeking alternatives to major urban locations.

3.153 The opportunity has strong alignment with regional objectives relating to:

- Economic diversification, higher-value employment creation and population retention and attraction, as outlined in the South of Scotland Regional Economic Strategy¹²⁹;
- Rural business growth, particularly in relation to hybrid working, digital adoption, productivity aims and enabling rural firms to reach wider markets detailed in SOSE's Digital Strategy¹³⁰;
- Inward investment attraction, particularly through anchor sites such as the Border Innovation Park¹³¹; and
- Most crucially, supporting growth across other RTOs, particularly where significant Business and Professional Services will be required.

Market activity

3.154 Several trends support the future growth potential of the Business and Professional Services sector within the South of Scotland, including:

- Continued growth in hybrid and flexible working models;
- Increasing demand for high-quality business accommodation outside major city centres;
- Growing requirements for specialist technical, digital and professional services;
- Increased focus on local supply chain development;
- Opportunities arising from major investment programmes within other RTO sectors; and
- Ongoing investment in regional digital and transport connectivity.

3.155 Consultation evidence suggests that the South of Scotland may be increasingly well positioned to capture some of the benefits associated with changing working patterns. Stakeholders identified emerging opportunities to attract skilled workers and businesses seeking improved quality of life, while maintaining access to Edinburgh and other major economic centres. However, it was also recognised that the region is not yet fully realising these opportunities and that additional investment in infrastructure and business accommodation will be required.

3.156 The Business and Professional Services opportunity is also linked closely to the success of the wider RTO portfolio. Growth in sectors such as Natural Capital, Energy Transition, AI and Advanced Manufacturing, Health Innovation and Visitor Economy will generate demand for advisory, consultancy, engineering, legal, digital, planning, financial and professional services.

¹²⁹ <https://www.southofscotlandenterprise.com/media/yhloz1xp/south-of-scotland-regional-economic-strategy.pdf>

¹³⁰ <https://www.southofscotlandenterprise.com/media/4w2dvju/sose-digital-strategy.pdf>

¹³¹ <https://investinsouthofscotland.com/why-the-south-of-scotland/available-properties-land/borders-innovation-park-tweedbank>

As a result, strengthening regional BPS capacity has the potential to increase local economic value retention while supporting wider sector growth.

- 3.157 A total of 118 projects delivered under the Business and Professional Services theme have been identified from a review of projects with support from SOSE from June 2023 to March 2026, with an investment value of £0.17 million of SOSE Capital Funding. This has leveraged £0.03 million in funding from private and other sources, representing a value of £0.17 per £1 of SOSE investment. The Business and Professional Services sector therefore is a sector which SOSE does not necessarily achieve significant leverage in itself, but is still recognised as a highly important and necessary sector for driving and supporting growth across the wider economy.

Challenges and constraints

Skills and labour market challenges

- 3.158 The Business and Professional Services opportunity is also linked closely to the success of the wider RTO portfolio. Growth in sectors such as Natural Capital, Energy Transition, AI and Advanced Manufacturing, Health Innovation and Visitor Economy will generate demand for advisory, consultancy, engineering, legal, digital, planning, financial and professional services. As a result, strengthening regional BPS capacity has the potential to increase local economic value retention while supporting wider sector growth.

Commercial property and workspace

- 3.159 The availability of modern business accommodation was identified as both a challenge and an opportunity. Consultation evidence highlighted the importance of creating high-quality business space capable of accommodating knowledge-intensive firms and supporting business expansion. Without such investment, the region may struggle to capture opportunities arising from changing working patterns and business relocation trends.

Transport connectivity

- 3.160 Transport connectivity was identified as an important enabling factor for future sector growth. Efficient connections to Edinburgh, Carlisle and wider regional markets are viewed as important in supporting labour mobility, business investment and economic integration. Projects such as the Borders Railway Extension and improvements to the A75 and A77 corridors were highlighted as potentially significant long-term enablers.

Investment readiness

- 3.161 Compared with several of the other RTO themes, the Business and Professional Services opportunity currently has a relatively limited pipeline of developed transformational projects as defined as part of the scope of this research, although a number of strategically important investments have been identified. Stakeholders highlighted the importance of business support, infrastructure investment and continued partnership working in helping to develop future opportunities and attract private-sector investment.

Current activity and assets in the South of Scotland

- 3.162 This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. The current project database identifies five projects and opportunities within the Business and Professional Services theme, representing approximately **£21.3 million** of recorded investment, where values have been identified. Recorded projects include the Borderlands Business Infrastructure Programme in Coldstream

and Hawick, Borders Innovation Park at Tweedbank, commercial property development proposals at West Linton, and enabling transport and connectivity investments.

3.163 A particularly significant project is the Borders Innovation Park at Tweedbank, which forms part of wider City Region Deal investment activity. The project seeks to deliver high-quality business space and development land capable of supporting innovative businesses and attract inward investment. This project requires multi-agency funding (predominantly via the Edinburgh and South East Scotland City Region Deal), requiring cross-organisational collaboration to be delivered. The project also contributes to and is aligning with the wider place-based development objectives outlined in the broader Tweedbank Masterplan, providing additional supporting and enabling infrastructure through provision of a phased development of 400 homes, a care village and wider community facilities.^{132,133}

3.164 The Borderlands Business Infrastructure Programme also represents an important intervention, supporting the development of business accommodation and serviced sites across locations including Coldstream and Hawick. These investments are designed to strengthen the region's capacity to attract and retain business activity and support future growth opportunities.

Opportunities and priorities for action

Opportunity 1: Developing modern business infrastructure

3.165 The most immediate opportunity for the BPS sector in the South of Scotland lies in the continued development of modern, flexible business space capable of accommodating growing businesses and inward investors. Projects including Borders Innovation Park and the Borderlands Business Infrastructure Programme provide important foundations for future growth and are likely to help strengthen the South of Scotland's competitiveness as a business location.

Opportunity 2: Leveraging connectivity and hybrid working

3.166 Changed working patterns were highlighted by stakeholders as a model that may create new opportunities for the South of Scotland to attract entrepreneurs, remote workers and professional services businesses seeking high-quality environments while retaining connections to larger urban markets.

3.167 In addition to this, the long-term development of transport projects including the Borders Railway Extension, alongside wider digital connectivity improvements, could further strengthen the attractiveness of the region for knowledge-intensive business activity. This can therefore help to mitigate against working-age population decline and outmigration patterns described in more detail in Chapter 6.

Opportunity 3: Capturing value from other Transformational Opportunities

3.168 As investment progresses across the wider RTO portfolio, there is significant potential to develop local professional, technical and business service capabilities which support project development, operation and supply chains.

3.169 Stakeholders identified opportunities to develop stronger regional supply chains which can support sectors including Natural Capital, Energy Transition, Visitor Economy, Health Innovation

¹³² https://www.scotborders.gov.uk/downloads/download/1220/tweedbank_expansion

¹³³ <https://investinsouthofscotland.com/why-the-south-of-scotland/available-properties-land/borders-innovation-park-tweedbank>

and Advanced Manufacturing. Successfully capturing this activity could help retain a greater proportion of economic value within the South of Scotland economy.

Priorities for action

Priority	Required Action(s)
Develop modern business space	Continue investment in Borders Innovation Park and Borderlands Business Infrastructure Programme sites.
Strengthen regional supply chains	Build BPS capabilities that support growth across the other RTO themes.
Improve connectivity	Progress strategic transport and infrastructure investments that improve access to regional markets.
Attract and retain skilled workers	Promote the South of Scotland as a location for knowledge-intensive employment and hybrid working.
Support business growth	Continue targeted business support and inward investment activity to grow high-value firms.

Summary

- 3.170** Business and Professional Services represents an important enabling opportunity within the South of Scotland economy. While the scale of identified investment is smaller than several other RTO themes, the sector plays a critical supporting role in enabling growth across the wider portfolio of transformational opportunities. The combination of business infrastructure investment, improved connectivity and opportunities arising from changing working patterns provides a platform for future growth.
- 3.171** Realising this opportunity will require continued investment in modern business accommodation, transport connectivity, skills and business support. Strengthening local professional and technical supply chains would help maximise the economic benefits arising from other transformational investments and contribute towards a more resilient and diversified regional economy.

Visitor Economy

- 3.172** The Visitor Economy represents one of the most mature and substantial transformational opportunities identified across the South of Scotland. The region possesses a combination of natural, cultural, heritage and recreational assets that are distinctive within Scotland and increasingly aligned with emerging visitor preferences around authentic experiences, active travel, outdoor recreation and place-based tourism.

Context and drivers

- 3.173** The opportunity within the Visitor Economy in the South of Scotland aligns strongly with Scottish Government ambitions around rural economic development, place-based investment and regional economic growth underpinning VisitScotland's strategies for development of sustainable tourism. At a regional level, VisitScotland, the South of Scotland Destination Alliance (SSDA), South of Scotland Enterprise (SOSE), local authorities and other partners have identified tourism as a priority sector capable of supporting inclusive growth and increasing economic resilience.
- 3.174** The South of Scotland has a strong portfolio of events, spanning a range of areas. For example, Wigtown is designated Scotland's National Book Town, and hosts the annual Wigtown Book Festival which, in 2023, was estimated to have generated £50m for the region, with the region

also hosting the Borders Book Festival in Melrose.¹³⁴ Stranraer Oyster Festival has been an annual event since 2017, generating over £5m and supporting local jobs since then¹³⁵ and the region is also set to host the Grand Départ of the 2027 Tour de France. This heritage of high-profile events creates a strong background for the development of the Visitor Economy in the South of Scotland as a transformational opportunity.

- 3.175 Consultation evidence highlighted that whilst the South of Scotland attracts significant visitor numbers, the region does not currently capture the full economic value associated with its assets. Stakeholders consistently identified opportunities to increase visitor spend, extend length of stay, improve destination recognition and attract new domestic and international markets.
- 3.176 Importantly, the opportunity extends beyond tourism growth alone. Investment in the visitor economy has the potential to contribute towards wider regional objectives around population retention, town centre regeneration, community wealth building, rural economic diversification and inward investment. Stakeholders emphasised that tourism offers one of the few opportunities capable of generating economic benefits across a broad range of settlements, including rural communities, market towns and coastal locations. Visitor Economy growth therefore aligns strongly with ambitions to create a more inclusive and resilient regional economy.
- 3.177 The current Visitor Economy project pipeline suggests that the region is entering a period of significant investment activity, with a range of destination-scale developments emerging alongside investments in active tourism, heritage attractions, waterfront regeneration and supporting visitor infrastructure. Collectively, these projects have the potential to reposition the South of Scotland as a higher-value, year-round destination rather than a location that is primarily experienced as part of wider travel itineraries.
- 3.178 The development of the Visitor Economy also supports wider regional ambitions around:
- Place-based regeneration and town centre renewal, a key aim of the Borderlands Inclusive Growth Deal's Place Programme¹³⁶;
 - Rural economic diversification, as indicated as a main outcome of the South of Scotland Regional Economic Strategy¹³⁷;
 - Cultural and heritage enhancement, and community wealth building and inclusive growth principles, as identified through the South of Scotland's Responsible Tourism Strategy¹³⁸;
 - Active travel and outdoor recreation, as evidenced through the South of Scotland Cycling Partnership Strategy¹³⁹; and
 - Net zero and sustainable tourism, a significant national ambition for development as shown in Scotland Outlook 2030.¹⁴⁰

¹³⁴ <https://www.wigtownbookfestival.com/other-pages/wigtown-book-festival-has-generated-50m-for-region>

¹³⁵ <https://www.ssdalliance.com/a-greener-stranraer-oyster-festival-on-the-menu/>

¹³⁶ <https://www.borderlandsgrowth.com/place-programme>

¹³⁷ <https://investinsouthofscotland.com/media/mccdc10s/south-of-scotland-regional-economic-strategy.pdf>

¹³⁸ <https://www.southofscotlandrep.com/what-we-do/south-of-scotland-responsible-tourism-strategy-2024-2034>

¹³⁹ <https://www.southofscotlandrep.com/what-we-do/cyclingpartnershipstrategy>

¹⁴⁰ <https://www.visitscotland.org/tourism-events-industry/strategies/national-tourism>

Market activity

- 3.179 Several long-term market trends support the future growth potential of the South of Scotland Visitor Economy, including the:
- Growing demand for experiential and place-based tourism across Scotland;
 - Rising participation in active tourism, particularly cycling, walking and outdoor recreation;
 - Continued growth in heritage and cultural tourism;
 - Increased demand for nature-based and wellness tourism experiences;
 - Growth in slow tourism and longer-duration stays; and
 - Strong international demand for authentic Scottish cultural and landscape experiences.
- 3.180 These trends align closely with the South of Scotland's existing strengths and reinforce stakeholder confidence regarding the future growth trajectory of the sector.
- 3.181 The region is also supported by a network of tourism businesses, accommodation providers, destination management organisations and public-sector agencies engaged in sector development.
- 3.182 From a review of anonymised CRM data provided by SOSE, there have been a total of 118 projects delivered under the Visitor Economy theme from June 2023 to March 2026, with an investment value of £4.49 million of SOSE Capital Funding. This has leveraged £18.57 million in funding from private and other sources, representing a value of £4.14 per £1 of SOSE investment. The Visitor Economy sector therefore is a sector which SOSE can achieve significant leverage from other sources.

Challenges and constraints

Skills and labour market

- 3.183 Stakeholders identified ongoing challenges around recruitment and retention across hospitality, tourism and visitor-serving businesses. Seasonal demand patterns and wider demographic challenges compound these issues. It was noted in consultation (and as evidenced by the SSDA's Seasonality Campaign throughout 2025-2026) that there is a need to highlight the uniqueness of the region's offerings in autumn, winter and early spring to lengthen the season for the region. This is compounded by a recent drop in the number of apprenticeships in the Tourism sector at a national level, which is likely to further impact future workforce capacity.¹⁴¹

Accommodation capacity

- 3.184 Several consultees identified accommodation shortages and limited investment in visitor accommodation as barriers to growth, particularly if major destination projects proceed. This was viewed as a particular constraint should major destination investments successfully increase visitor demand, and therefore bedstock in the region should be actively monitored to ensure that there is sufficient capacity for any large-scale investments and improvements to overnight visitor numbers in the region.

Transport and connectivity

- 3.185 Internal connectivity, public transport provision and broader visitor infrastructure accessibility remain challenges across parts of the South of Scotland. These issues can affect visitor dispersal and reduce the economic benefits generated from tourism activity. Consultees noted

¹⁴¹ <https://www.skillsdevelopmentscotland.co.uk/what-we-do/skills-planning/sectoral-skills-assessments>

that improving accessibility and enhancing these visitor facilities would be important in supporting the future growth of the regional visitor economy.

Investment readiness

- 3.186 Whilst several major projects are progressing, tourism stakeholders noted that many smaller-scale opportunities require additional development support, funding and business assistance to either reach delivery stage, scale-up or provide innovative experiences for visitors.

Destination awareness/market visibility

- 3.187 Despite possessing significant assets, stakeholders highlighted that the South of Scotland remains under-recognised compared with competing Scottish destinations, and that ambitions around developing the region should be focused on changing the perception of the South of Scotland to somewhere to “drive to, not drive through”. Continued investment in destination development and promotion will therefore be essential.

Current activity and assets in the South of Scotland

- 3.188 This section includes operational assets, projects in delivery, consented developments, proposals in planning and early-stage concepts. There is a significant identified portfolio of visitor economy projects. The current project database identifies approximately 19 Visitor Economy projects with a combined recorded **investment value of almost £872.6 million**, where impact estimates have been identified.
- 3.189 A large share of this figure is driven by the Center Parcs project in the Scottish Borders, representing a £450m investment with the site currently under construction. The site will be based around Hawick and Selkirk, and as part of the development, Center Parcs will create an entirely new forest, planting approximately 750,000 trees across the site and delivering significant long-term biodiversity and environmental benefits.
- 3.190 The scale of this pipeline distinguishes Visitor Economy from many other RTO themes and provides evidence of both public and private-sector confidence in the sector. Major investments into the sector provide evidence that the South of Scotland is entering a period of substantial tourism-related activity, as described in the “Opportunities and priorities for action” section below.
- 3.191 Importantly, the opportunity is geographically dispersed across both the Scottish Borders and Dumfries and Galloway, ensuring that benefits have the potential to be realised across a wide range of communities. This distinguishes the Visitor Economy from more geographically concentrated opportunities and strengthens its contribution to inclusive regional growth.

Opportunities and priorities for action

Opportunity 1: Destination-scale visitor investments

- 3.192 The largest opportunity arises from a small number of destination-scale projects capable of significantly increasing visitor numbers and economic activity.
- 3.193 Most notably, Center Parcs represents an identified investment of approximately £450 million and is associated with around 1,200 jobs within the current project pipeline. Alongside other large-scale investments such as the Scottish Dark Skies Observatory visitor attraction and associated events such as the Dark Sky Festival in October, these projects have the potential to materially alter the scale and profile of tourism activity within the region.

- 3.194 Beyond their direct impacts, such investments can also increase market awareness of the South of Scotland, stimulate supply chain activity and support further investment by providing confidence in the region's Visitor Economy proposition.

Opportunity 2: Active and adventure tourism

- 3.195 Active tourism represents one of the strongest and most distinctive opportunities identified through stakeholder consultation and project analysis.
- 3.196 The combination of the Mountain Bike Innovation Centre (MTBIC), Destination Tweed, 7stanes, Glentress, Three Rivers Active Tourism projects and associated recreation investments have the potential to establish the South of Scotland as one of the UK's leading active tourism destinations.
- 3.197 The MTBIC is particularly significant as it combines tourism, product innovation, research activity, events and skills development. This differentiates it from traditional visitor attractions and creates linkages with wider economic development objectives.
- 3.198 Destination Tweed similarly demonstrates the shift towards experience-led tourism, connecting communities, landscapes and heritage assets through a coherent destination proposition.
- 3.199 Together, these projects support a move towards year-round tourism activity and higher-value visitor markets.

Opportunity 3: Cultural, heritage and place-based tourism

- 3.200 The South of Scotland possesses a number of underutilised cultural and heritage assets capable of supporting a stronger destination narrative.
- 3.201 Consultation evidence identified particular opportunities around:
- Robert Burns heritage (specifically around developing a themed package, with sites such as the Robert Burns Ellisland Museum & Farm as an anchor asset);
 - Wider cultural storytelling about the South of Scotland;
 - Dark skies, leaning on the Scottish Dark Sky Observatory;
 - Heritage-led placemaking; and
 - Destination branding.
- 3.202 Projects including the Robert Burns Ellisland Museum & Farm, Burns tourism initiatives, Star of Caledonia and broader place-based investments provide opportunities to strengthen the region's cultural offer whilst supporting wider economic development objectives.
- 3.203 A recurring theme within consultation was the need to better connect individual attractions into coherent visitor experiences capable of attracting national and international audiences.

Opportunity 4: Coastal and waterfront regeneration

- 3.204 Significant opportunities were identified around coastal destinations, particularly Stranraer and Loch Ryan, with the most significant developments representing a substantial programme of waterfront regeneration, including:
- Stranraer Marina;
 - Loch Ryan Water Sports Hub;
 - East Pier proposals;

- Stranraer George Hotel; and
- Annan Harbour and related developments.

3.205 Stakeholders highlighted the potential for these projects to reposition western parts of the region as visitor destinations whilst simultaneously contributing to wider regeneration, business growth and place-making objectives.

Priorities for action

Priority	Required Action(s)
Deliver major destination investments	Supporting progression and delivery of Center Parcs, Stranraer Marina and other anchor developments.
Strengthen active tourism	Continued investment in MTBIC, Destination Tweed, cycling and outdoor recreation infrastructure.
Develop a distinctive destination proposition	Better connection of heritage, cultural and natural assets into coherent visitor experiences.
Support coastal regeneration	Progressing waterfront and marine tourism developments within Stranraer, Loch Ryan and other coastal locations.
Address accommodation and infrastructure gaps	Encourage investment in visitor accommodation and supporting infrastructure.
Increase destination visibility	Strengthening destination marketing, branding and promotion activities through regional partnerships.
Support tourism business growth	Expanding business support, innovation support and supply chain development activity.

Summary

3.206 The Visitor Economy represents one of the strongest RTOs identified through this study. The combination of a substantial investment pipeline, strong alignment with market trends, distinctive regional assets and clear stakeholder support provides a credible pathway towards significant growth in visitor numbers, visitor spend, employment and GVA. Importantly, the opportunity also provides wider benefits through place regeneration, business growth, cultural development and community resilience.

3.207 Whilst several barriers remain around skills, accommodation, connectivity and investment readiness, the scale of existing momentum suggests that the Visitor Economy is well-positioned to play a central role in the future economic development of the South of Scotland.

4 Enablers for Transformational Opportunities

Introduction

- 4.1** The Regional Transformational Opportunities (RTOs) identified throughout this assessment vary considerably in terms of sector focus, scale and geography. However, consultation evidence consistently highlighted a common set of enabling factors that will influence the extent to which these opportunities can be realised and the benefits captured within the South of Scotland. These enablers cut across multiple sectors and project types, affecting business investment, workforce availability, supply chain development and broader economic resilience.
- 4.2** While individual RTOs have specific infrastructure and investment requirements, stakeholders identified transport infrastructure, digital connectivity, investment-ready sites and premises, water and waste water capacity, housing provision, planning systems and wider strategic collaboration as particularly important. These factors influence not only whether projects can proceed, but also whether local communities and businesses are well positioned to benefit from future investment.

Transport infrastructure

- 4.3** Transport infrastructure is a recurring theme across many of the identified RTOs. Stakeholders highlighted the importance of road, rail, port and active travel connectivity in supporting labour mobility, supply chain development, visitor access and inward investment. As a largely rural region, the South of Scotland faces particular challenges relating to accessibility and connectivity, both internally and in relation to wider Scottish and UK markets.
- 4.4** Several consultations highlighted longstanding concerns regarding strategic transport routes, particularly regarding the A75, the A77 and (more broadly) east-west connectivity in general within the region. This has been recognised in the South of Scotland indicative Regional Spatial Strategy¹⁴² which acknowledges that there is a lack of high-quality east-west transport routes. Visitors (as well as commuters) are unlikely to perceive or experience a coherent journey across the South of Scotland. Towns across the region are also regularly separated by large swathes of rural and upland areas. This also amplifies the potential for rural isolation without effective transport networks. An action detailed within the indicative Regional Spatial Strategy is to undertake road capacity enhancements to improve the networks between the Scottish Borders and Dumfries and Galloway (namely the A708 and B7068), to provide better links to the strategic road network and services.
- 4.5** Stakeholders emphasised that improving transport connections would support multiple RTOs, including Visitor Economy, Business and Professional Services, Advanced Manufacturing and Creative and Cultural opportunities. Road connectivity has also been recognised as a constraint by Transport Scotland, who are delivering improvements to the A75 and A77, improving junctions, enhancing overtaking opportunities through wide single carriageway 2+1 lane arrangement sections or climbing lanes at locations where slow-moving traffic can lead to risky overtaking manoeuvres, and widening or realigning carriageways to address route constraints and pinch points such as narrow structures or sections of older-standard single carriageway.¹⁴³ Both routes connect Dumfries and Galloway (and south-west Scotland more generally) and the

¹⁴² <https://scottishborders.moderngov.co.uk/documents/s45958/Item%20No.%2011%20-%20Appendix%201%20South%20of%20Scotland%20IRSS.pdf>

¹⁴³ <https://www.transport.gov.scot/projects/south-west-scotland-strategic-corridor-improvements/project-details/>

ferry ports at Cairnryan to the wider UK network, and therefore these improvements will help strengthen supply chain links with the rest of the UK.

- 4.6 The improvements will be a critical asset to the Cairnryan ferry corridor between Scotland and Northern Ireland, which serves as the primary logistical connection between Northern Ireland, and (via the A75 and A77) Great Britain. The corridor has an annual footfall of 1.3 million with Cairnryan port handling 2.7 million tonnes of domestic cargo in 2020.¹⁴⁴ This infrastructure project will therefore have significant potential impacts for all regional transformational opportunities.
- 4.7 The proposed extension of the Borders Railway was also cited as a potentially transformative intervention capable of strengthening labour market connectivity and supporting growth across the Borders. This will improve transport links to towns such as Hawick, Melrose and Newcastleton, which continue to face the effects of recent economic downturns, offering improved connectivity for commuters and residents to Scottish Borders towns, as well as encouraging greater Visitor Economy outcomes by increasing accessibility for tourists.¹⁴⁵ By extending the rail corridor, freight and supply chain connectivity will be improved, offering an alternative or complementary option to local road networks for regional distribution. The Borders Railway Extension business case is anticipated for publication by the end of 2027.¹⁴⁶
- 4.8 In addition to road and rail infrastructure, the proposed £250m Eyemouth Harbour Extension will drive regional economic growth and bolster maritime supply chains by transforming the harbour into a modern, deep-water facility capable of servicing large-scale renewable energy and marine industries. The port is strategically located near major offshore wind developments, including having closest landfall to SSE Renewables' 4.1 GW Berwick Bank project. With proposed upgrades to deep-water berthing and two hectares of flexible laydown space proposed¹⁴⁷, this can help act as an ideal operations and maintenance base for cross-border Energy Transition-related opportunities, while also helping to establish Eyemouth as a strategic hub for Scotland's blue economy and driving regional growth.
- 4.9 Transport investment should therefore not be viewed just as a supporting measure, but a critical economic development tool that can improve accessibility and connectivity, increase labour market catchments and enhance the attractiveness of the South of Scotland as a location for business investment and growth.

Grid infrastructure

- 4.10 The National Energy System Operator (NESO)'s Pathway to 2030 outlines a strategy to achieve a near-zero carbon electricity system by 2030. It focuses on increasing onshore wind and solar power capacity and accelerating offshore wind deployment, combined with dispatchable low-carbon power to ensure and enhance security of supply. This is supported by significant grid upgrades for transmission and distribution, with a build-out rate that is significantly faster than in previous decades.¹⁴⁸ In addition, NESO's transitional Regional Energy Strategic Plan (tRESP) sets out a framework for managing the shift towards a net zero energy generation model, and providing a link between current local energy planning and holistic full Regional Energy Strategic

¹⁴⁴ <https://www.transport.gov.scot/publication/strategic-assessment-report-a75-springholm-and-crocketford-improvements/strategic-review-direct-relevance-to-the-a75-trunk-road/>

¹⁴⁵ <https://www.scotborders.gov.uk/news/article/4755/business-case-for-potential-extension-of-the-borders-railway-to-be-produced-following-key-appointment>

¹⁴⁶ <https://scottishborders.moderngov.co.uk/documents/s99980/No.7-Border%20Railway%20Update%20Report.pdf>

¹⁴⁷ <https://www.eyemouth-harbour.co.uk/masterplan/>

¹⁴⁸ <https://www.neso.energy/publications/clean-power-2030>

Plans (RESPs), which will deliver comprehensive, whole-energy, regional blueprints.¹⁴⁹ The tRESP identifies that the spatial planning priorities for the South of Scotland are to protect environmental assets and stimulate investment in solutions and nature restoration, whilst decarbonising transport and buildings, and creating a low carbon network of towns and sustainable rural development.

- 4.11 In addition to NESO's tRESP, Scottish Power Energy Networks' Revenue = Incentives + Outputs + Innovation Transmission Period 3 (RIIO-T3) plan represents a significant enabling infrastructure programme, given the scale and timing of proposed transmission investment across central and southern Scotland. The plan commits up to £12 billion across Scotland to upgrading and expanding transmission infrastructure, including new substations, circuit upgrades, overhead line reconductoring and underground cable replacement between 2026 and 2031.¹⁵⁰ Projects to be delivered under the RIIO-T3 plan are described in 4.14 below. The RIIO-T3 plan has the potential to ease existing grid constraints, unlock additional renewable generation capacity, and improve the deliverability of investment projects that are currently dependent on timely reinforcement of the transmission network. RIIO-T3 is therefore an enabling factor for future low-carbon investment in the region, but also a key delivery dependency, requiring continued engagement between project sponsors, Scottish Power Energy Networks and wider stakeholders to ensure that grid reinforcement aligns with the South of Scotland's developing pipeline of energy generating, storage and wider energy-intensive projects.
- 4.12 It was raised in discussions with stakeholders engaged in the primary research that grid infrastructure is a current constraint to the realisation of projects. Stakeholders suggested that there is a focus on the delivery of immediate projects (e.g. those found within the Borderlands Inclusive Growth Deal) with a more limited consideration as to how the developing wider portfolio of projects would be effectively connected to the grid, given concurrent and overlapping timescales. There is a need to work collaboratively across this portfolio and with network operators and NESO providing up to date project information including forecasting of impacts and generation, and timescales. Sufficient management of these relationships will help to ensure that projects can demonstrate technical compliancy, are aligned to network provider requirements, and facilitate grid connection, understanding any necessary trade-offs to achieve this.
- 4.13 These grid improvements are seen as paramount to a successful energy transition in the region, although there are wider opportunities for delivery of energy systems that can handle some of the extra transmission that onshore wind developments provide. This includes the use of green hydrogen systems and battery energy storage schemes (BESS), in line with identified RTO investment projects, to create dispatchable energy storage. The South of Scotland's current and proposed renewable energy generation schemes have the potential to contribute to dispatchable energy as well as contributing to meeting the demand for low carbon energy.
- 4.14 As a way of mitigating against some of the impacts of these grid constraints, there are several supporting infrastructure projects in the South of Scotland of varying sizes and readiness, with a review of the UK Government's Renewable Energy Planning Database¹⁵¹ identifying 42 BESS projects within the pipeline for the region. Of these, 12 are currently under development, anticipated to deliver 879MW of storage capacity for the region, with an unadjusted estimated investment value of over £533 million. Of those currently under development, the most significant include the 500MW consented project currently under construction at Eccles, the

¹⁴⁹ <https://www.neso.energy/what-we-do/strategic-planning/regional-energy-strategic-planning-resp/transitional-regional-energy-strategic-plan-tresp>

¹⁵⁰ <https://www.spenetworks.co.uk/userfiles/file/RIIO-T3%20Business%20Plan%20-%20SP%20Energy%20Networks%20-%20Website%20-%20December%202024.pdf>

¹⁵¹ <https://www.gov.uk/government/publications/renewable-energy-planning-database-quarterly-extract>

Gretna Green Battery Storage project (delivering 456MW of storage capacity) and the Kilgallioch Battery Energy Storage project, delivering 100MW of storage capacity. These projects represent a significant proportion of the total BESS investment. The remaining 30 BESS projects are all in the planning/consenting phases, will see an unadjusted estimated investment value of over £1.2bn, and are anticipated to deliver 1,940MW of combined storage capacity. While this increased storage capacity provides flexibility and partially mitigates against some of the grid constraints, this does not remove the need for grid infrastructure in the region to be upgraded.

- 4.15 In relation to grid upgrades, nine projects have been identified through Scottish Power Energy Networks' Strategic Network Design, with an unadjusted estimated investment value of £653 million.¹⁵² The most significant of these include a cross-border 400kV connection extended from Gala North to the Scottish border, a 400kV reinforcement of the Glenmuckloch to ZV line under RIIO-T3, and development work for substations in Teviot and Wyseby, associated with significant clusters of onshore wind and solar projects, respectively, and Dumfries North.
- 4.16 There are also opportunities for alternative offtake routes to use energy locally without it being fed into the grid, through private wire agreements which provide a commercial framework for purchasing electricity directly from suppliers, hence bypassing the national grid. This would support the use of constrained energy generated within the region. This would, however, require any potential users to be within reasonable proximity to the energy generation site. Alongside these, Power Purchase Agreements (PPAs), which typically involve grid-delivered electricity between a generator and a consumer, can offer buyers price certainty and generators greater revenue certainty. However, it must be remembered that alternative offtake routes are not a total replacement for grid connection challenges; they are an additional way of transporting and using energy.
- 4.17 Critically, the scale of energy-related developments in the South of Scotland, and those that depend on enabling grid infrastructure mean that grid upgrades to increase capacity are vital to the realisation of proposed RTO investment projects. Without this increased capacity, the scale of impact associated with projects not progressing is significant. This is illustrated further in the scenario analysis shown in Chapter 5.
- 4.18 A further consideration is transmission charges for energy generation. These can often be a disincentive for renewable energy development. Total Transmission Network Use of System (TNUoS) costs are anticipated to have increased by 60% in 2026/27 compared to the previous year, disproportionately affecting high-energy business users.¹⁵³ The UK Government's Review of Electricity Market Arrangements (REMA) aims to reform Great Britain's electricity market for a decarbonised, secure, and cost-effective net-zero system. It definitively ruled out zonal pricing, deciding instead to retain a single national wholesale price while implementing reforms to improve investment signals, network charging, and flexibility, with full implementation expected by 2029.¹⁵⁴

Investment-ready sites, premises and utilities

- 4.19 The availability of investment-ready sites and premises is an important cross-cutting enabler for the RTO portfolio. Although the South of Scotland has a portfolio of available land and property, the readiness of individual locations varies. The regional investment property portfolio includes fully serviced sites such as Cargenbridge Business Park and serviced development plots at

¹⁵² https://www.spenergynetworks.co.uk/pages/strategic_network_design.aspx

¹⁵³ <https://npowerbusinesssolutions.com/resources/the-tnuos-shake-up-electricity-costs-set-for-record-increases-from-april>

¹⁵⁴ <https://www.gov.uk/government/collections/review-of-electricity-market-arrangements-rema>

Borders Innovation Park, alongside sites where infrastructure and servicing are still being progressed.

- 4.20 Different RTOs will also require different forms of land and premises. Business and Professional Services and Creative and Cultural opportunities may require high-quality office, production and flexible workspace, while Advanced Manufacturing, Industrial Biotechnology, Energy Transition and food-processing developments may require serviced industrial land, specialist production space, storage, access for freight and sufficient utility capacity. Borders Innovation Park, for example, provides serviced plots for business, industrial, storage and distribution uses, while Cargenbridge Business Park offers up to ten acres of fully serviced industrial development land close to the A75 and wider education, health and manufacturing assets. These examples demonstrate the importance of matching the type, scale and specification of sites and premises to the needs of prospective occupiers.¹⁵⁵¹⁵⁶
- 4.21 Infrastructure requirements should therefore be considered at an early stage when assessing the readiness of strategic development sites. National Planning Framework 4 adopts an “infrastructure first” approach, placing infrastructure considerations at the heart of placemaking. Its definition of infrastructure includes digital and telecommunications connections, transport, water supply, drainage and sewerage, energy supplies, health and education provision, and green and blue infrastructure. This supports an integrated approach in which sites are assessed in terms of planning status and available land, but also in their ability to connect to the services necessary to accommodate development.¹⁵⁷¹⁵⁸
- 4.22 Water and wastewater capacity will be particularly important for developments with substantial operational or cooling requirements, including potential data infrastructure, manufacturing, food processing and some Industrial Biotechnology opportunities. The Scottish Government has identified water consumption as one of the considerations associated with data-centre development, alongside energy use, hardware requirements and wider environmental effects. Since September 2026, proposals for new data centres exceeding 50MW power capacity have required an Environmental Impact Assessment, reflecting the potential significance of effects relating to energy, water resources, landscape, biodiversity, soils, noise and air quality. The guidance also notes that closed-loop cooling systems can significantly reduce the amount of water required for cooling, although the appropriate approach will depend on the specific project and location.¹⁵⁹
- 4.23 Scottish Water advises developers to consider water and wastewater requirements at the earliest stage of project development. Its Readiness Indicator can provide an initial indication of asset capacity, while a Pre-Development Enquiry allows Scottish Water to assess the anticipated water and drainage demands of a proposed site and provide guidance that may influence its layout, pipework design and connection points. However, an initial response does not guarantee network capacity, which must be secured through formal water and wastewater applications. This means that early evidence of infrastructure availability should form part of site-readiness assessments, rather than being left until detailed development proposals have already been prepared.¹⁶⁰

¹⁵⁵ <https://investinsouthofscotland.com/why-the-south-of-scotland/available-properties-land/cargenbridge-business-park>

¹⁵⁶ <https://investinsouthofscotland.com/why-the-south-of-scotland/available-properties-land/borders-innovation-park-tweedbank>

¹⁵⁷ <https://www.gov.scot/publications/guidance-planning-obligations-good-neighbour-agreements-draft-comments/pages/6/>

¹⁵⁸ <https://www.gov.scot/publications/national-planning-framework-4/>

¹⁵⁹ <https://www.gov.scot/publications/chief-planner-letter-eia-direction-on-data-centres/>

¹⁶⁰ <https://www.scottishwater.co.uk/Business-and-Developers/NEW-Connecting-to-Our-Network/Developing-housing-and-commercial-properties/Preparing/Readiness-Indicator>

- 4.24 Scottish Water's 2021–2027 investment programme provides for more than £6bn of maintenance and improvements to water and wastewater infrastructure, including investment intended to support growth. However, the presence of a national investment programme does not ensure that sufficient capacity will be available at every prospective development location or within the timescales required by individual projects. Where local capacity is constrained, upgrades or alternative solutions may affect development costs, phasing and deliverability.^{161 162}
- 4.25 A coordinated approach will therefore be required involving the relevant local authorities, Scottish Water, the Scottish Environment Protection Agency, utility and network providers, landowners and project developers. Developing a shared regional understanding of site and premises readiness would help partners identify where investment can be accommodated, where enabling works are required and where infrastructure constraints could affect delivery. This should consider site ownership, planning status, environmental constraints, transport access, digital and energy connections, water and wastewater capacity, drainage, available premises and the cost and timing of necessary servicing. It would also help ensure that the availability of sites and premises is aligned with the particular requirements of the identified RTOs, rather than relying on a general measure of available employment land. Scottish Water Horizon's also has the potential to supply finally treated effluent (TFE) by pipeline or HGV tanker for industrial, data centre and hydrogen projects, reducing reliance on potable water or abstraction where feasible.

Digital infrastructure

- 4.26 Digital connectivity underpins many of the opportunities identified throughout this assessment. Increasingly, businesses require access to reliable and high-capacity digital infrastructure regardless of location. This is particularly important for sectors such as AI and Deep Tech, Business and Professional Services, Creative and Cultural Industries and Health Innovation.
- 4.27 The expansion of hybrid working patterns has also increased the importance of digital infrastructure as a determinant of location decisions by businesses and workers. The ability to combine high-quality digital connectivity with the South of Scotland's environmental assets and quality of life offers creates opportunities to attract entrepreneurs, professionals and remote workers who may otherwise locate within larger urban areas.
- 4.28 As digital dependence increases across both businesses and public services, continued investment in connectivity will be necessary to ensure that rural communities and businesses are not disadvantaged relative to competing locations elsewhere in Scotland and the wider UK.
- 4.29 Access to fast and reliable broadband is a necessity for boosting business and helping to underpin economic growth and drive productivity. As of August 2026 data¹⁶³, the Scottish Government's R100 programme for ensuring superfast broadband (30Mbps+) for hard-to-reach areas has delivered 20,853 upgrades to premises in the South of Scotland (11,826 in Dumfries and Galloway, 9,027 in the Scottish Borders), which is 28.7% above the total premises intended for R100 contracts of 16,203.¹⁶⁴ While these targets have been surpassed, 1.67% of premises in Dumfries and Galloway¹⁶⁵ and 0.75% of premises in the Scottish Borders¹⁶⁶ continue to operate

¹⁶¹ <https://www.scottishwater.co.uk/about-us/who-we-are/investment-programme>

¹⁶² <https://www.gov.scot/publications/investment-planning-prioritisation-delivery-group-progress-report-performance-against-committed-list-quarter-1-2023-24/pages/2/>

¹⁶³ <https://digitalconnectivity.campaign.gov.scot/data-insights>

¹⁶⁴ R100 contract additional build is classified as additional premises that were not in the contracts, but have been connected as a result of nearby R100 contract build.

¹⁶⁵ <https://labs.thinkbroadband.com/local/S12000006>

¹⁶⁶ <https://labs.thinkbroadband.com/local/S12000026>

below this threshold. Continued investment through the R100 programme¹⁶⁷ is required to ensure increased broadband speeds and achieve the Scottish Government's aim of 100% coverage.¹⁶⁸

- 4.30 In addition to R100, Project Gigabit is a UK Government programme to provide fast, reliable broadband across the UK. The programme will support areas of poor connectivity through targeting homes and businesses that are not included in broadband companies' commercial plans.¹⁶⁹ The Scottish Government is supporting local and regional roll-out of the programme, awarding a £26m project for the Scottish borders and East Lothian in February 2025, with a large number of activity clusters around the Scottish Borders.¹⁷⁰ Dumfries and Galloway is also receiving an investment of £18m, through Project Gigabit, connecting 12,500 homes and businesses in the local authority area to gigabit-capable broadband.¹⁷¹
- 4.31 Similarly, some rural areas of the South of Scotland currently do not receive access to reliable 4G mobile data reception. As of July 2025, Ofcom reports a lack of 4G coverage in 4% of both Dumfries and Galloway and the Scottish Borders.¹⁷² This problem is amplified when looking at 5G coverage, with only 39% of Dumfries and Galloway and 31% of the Scottish Borders being listed as having high confidence in being able to access reliable 5G mobile data. Since the publication of this data, both local authorities have received significant mast upgrades through the UK Government's Shared Rural Network programme, including Lockerbie, Tundergarth and Newton Stewart in Dumfries and Galloway, and Crosslee, Duns, Lammermuir, Innerleithen and near Heriot in the Scottish Borders to reduce these "not-spots."¹⁷³

Housing

- 4.32 Housing also emerged as one of the most consistently cited enablers throughout the consultation process. Stakeholders repeatedly highlighted concerns regarding housing availability, affordability and the supply of appropriate housing in locations where economic growth is anticipated. Housing challenges were identified not only as a social issue but increasingly as an economic development constraint.
- 4.33 Several consultees linked housing directly to workforce attraction and retention. The ability to attract skilled workers into the South of Scotland, retain younger people and support population growth was viewed as being heavily dependent on increasing housing supply and ensuring a suitable mix of housing products. These issues were particularly relevant given the region's ageing population profile and concerns around future workforce availability.
- 4.34 Housing demand is already recognised as a strategic priority for the South of Scotland, with the South of Scotland Regional Economic Partnership's Housing Action Plan identifying an urgent need to create "more homes and more choice of homes" where they are needed across the region. The Action Plan expects that more than 9,000 homes may be required over the next decade and explicitly links housing delivery to economic growth, workforce attraction and retention, enabling young people to remain in the region, supporting key public services, and underpinning planned investment.¹⁷⁴ It should be noted, however, that delivering this will require

¹⁶⁷ <https://digitalconnectivity.campaign.gov.scot/about-r100>

¹⁶⁸ <https://www.gov.scot/publications/digital-scotland-reaching-100-programme/>

¹⁶⁹ <https://digitalconnectivity.campaign.gov.scot/about-project-gigabit>

¹⁷⁰ <https://digitalconnectivity.campaign.gov.scot/borders-and-east-lothian>

¹⁷¹ <https://www.gov.scot/news/gigabit-boost-for-dumfries-galloway/>

¹⁷² <https://www.ofcom.org.uk/phones-and-broadband/coverage-and-speeds/connected-nations-interactive-report-2025>

¹⁷³ <https://www.gov.uk/government/news/ring-it-on-rural-scots-get-mobile-signal-boost-as-50th-uk-government-funded-mast-goes-live>

¹⁷⁴ https://www.southofscotlandrep.com/media/cncpfn4x/sos-rep-housing-action-plan-2024_digital-version.pdf

a significant construction workforce that may otherwise have been deployed in the development of the RTOs described throughout this report. While the Action Plan acknowledges the two growth deals that the region is part of and how this represents an exciting opportunity for the South of Scotland, it does not necessarily consider the additional (temporary) housing need that may be required for the additional construction workforce that will be required as discussed in Chapter 6.

- 4.35** Significant investment projects may also generate additional short-term and long-term housing demand. Learning from examples elsewhere in Scotland suggests that closer integration between economic development, infrastructure planning and housing delivery may be required to ensure that housing supply does not become a constraint on economic growth. There are examples in other parts of Scotland where employers, for example during construction phases, as well as for operation and maintenance, have invested in housing for staff to ensure they can access the volume and types of skills they need. SSEN Transmission's housing strategy and approach in the Highlands is a very good example of this.¹⁷⁵ In some cases, there has been partnership working and co-investment between employers, local communities and local authorities to tackle short term housing requirements of employers (for construction phases) and boost long term housing supply in local areas.
- 4.36** As well as helping to meet increased demand from increased employment in the opportunities explored in Chapter 3, there are also significant interlinkages between the housing market and some of the RTO themes. This includes the Natural Capital Innovation Zone and Industrial Biotechnology themes. The South of Scotland is home to pioneering hemp construction manufacturing, most notably through IndiNature Mill's Jedburgh facility, which is the UK's first dedicated natural fibre insulation mill, and is currently producing thermal insulation batts made from industrial hemp sourced from local farms.¹⁷⁶ Linked to the South of Scotland's decarbonisation of heat goals, this sustainable building material can also therefore play a significant role in both new build and retrofitting housing to help improve energy efficiency in a sustainable manner.

Planning

- 4.37** The planning system plays an important enabling role in the delivery of transformational opportunities. Stakeholders generally recognised the importance of robust planning processes but highlighted concerns relating to complexity, capacity and the timescales associated with major developments. Planning decisions ultimately sit with the relevant local authorities, therefore are not within the capacity of SOSE or the Regional Economic Partnership to determine. However, their engagement and supporting the readiness of project supply chains, among other factors, can support coordination of planning and help to streamline the process.
- 4.38** Several consultees argued that delivering transformational projects will require increasingly proactive approaches to site assembly, infrastructure coordination and strategic planning. This includes identifying investment-ready sites, coordinating infrastructure requirements and coordinating planning processes with project timelines to ensure streamlining with opportunity realisation.
- 4.39** The South of Scotland Regional Land Use Framework¹⁷⁷ provides an important reference point for this more strategic approach to planning. It recognises that the region's land-based

¹⁷⁵ See: <https://www.enlighten.scot/energy-housing-and-a-legacy-for-the-future/>; also: <https://www.bbc.co.uk/news/articles/crelwg11qldo>

¹⁷⁶ <https://www.indinature.co/news/welcome-to-the-indinature-mill>

¹⁷⁷ https://www.southofscotlandrep.com/media/kpsbxf2b/rluf_v1_240919.pdf

economy, including agriculture, forestry and tourism, is facing increasing pressure from climate change, biodiversity loss and competing demands on land, and that future land use decisions will need to deliver multiple benefits for businesses, communities and visitors. In this context, planning for transformational projects cannot be considered solely in terms of development consent or site availability; it also needs to reflect wider land-use priorities, including sustainable food and timber production, renewable energy generation, nature restoration, carbon storage, clean water, recreation and tourism.

- 4.40 The Framework also reinforces the need for more joined-up, evidence-led and inclusive approaches to decision-making. It identifies priority land-use changes such as native woodland creation, peatland restoration, renewable energy generation and more efficient, environmentally friendly food production, while recognising that decisions about land use affect a wide range of interests. This is directly relevant to the delivery of transformational opportunities in the South of Scotland, particularly where major developments may create tensions between economic growth, environmental stewardship and community priorities. Aligning strategic planning with the South of Scotland Rural Land Use Framework could therefore help to ensure that investment-ready sites, infrastructure requirements and development opportunities are assessed in a way that supports long-term regional resilience and maximises wider public value.
- 4.41 In particular, the growth of sectors such as AI and Deep Tech, Energy Transition and the Visitor Economy will require coordinated planning responses that balance economic development objectives with environmental stewardship and community interests. It should be recognised that data centres have specific environmental and regulatory requirements that are not shared by the wider AI or innovation sector.

Wider strategic enablers

- 4.42 Alongside physical infrastructure, stakeholders identified a range of wider strategic enablers that will influence the realisation of the RTO portfolio. These include partnership working, workforce development, investment readiness, place promotion and collaborative leadership across organisations.
- 4.43 A recurring theme throughout consultations was the importance of maintaining a coordinated regional approach. Stakeholders emphasised the value of the existing partnership structures within the South of Scotland while also noting the need for continued alignment between local authorities, SOSE, education providers and national agencies. Successful delivery of the RTO portfolio will require sustained collaboration across sectors and institutions.
- 4.44 Skills and workforce development also cut across many of the opportunity areas, as identified throughout Chapter 3. Workforce shortages were identified within the Visitor Economy, Advanced Manufacturing, Digital Sectors and Creative Industries. Creating pathways that encourage people to remain within, return to or relocate to the South of Scotland will therefore be an important component of future success. This is explored further in Chapter 6.
- 4.45 Finally, stakeholders highlighted the importance of raising the profile of the South of Scotland as an investment location. While individual opportunities may attract investment independently, there is also value in promoting the region as a coherent proposition built around quality of life, innovation, natural assets, connectivity and business opportunity.

Summary

- 4.46 The South of Scotland possesses a diverse portfolio of transformational opportunities across a range of sectors/themes as explored in Chapter 3. Realising these opportunities will depend not only on the projects themselves but also on the availability of enabling infrastructure, supportive policy frameworks and coordinated delivery mechanisms.
- 4.47 Transport connectivity, grid capacity, investment-ready sites, water and waste water facilities, digital infrastructure, housing provision, planning systems and wider strategic collaboration emerged as the most significant cross-cutting enablers identified through this assessment. While these factors may not generate transformational economic impacts in isolation, they create the conditions necessary for investment, business growth, workforce attraction and community benefit. Addressing these constraints alongside sector-specific interventions will therefore be critical to ensuring that the South of Scotland captures the full value of its RTOs.

5 Assessing potential economic impacts

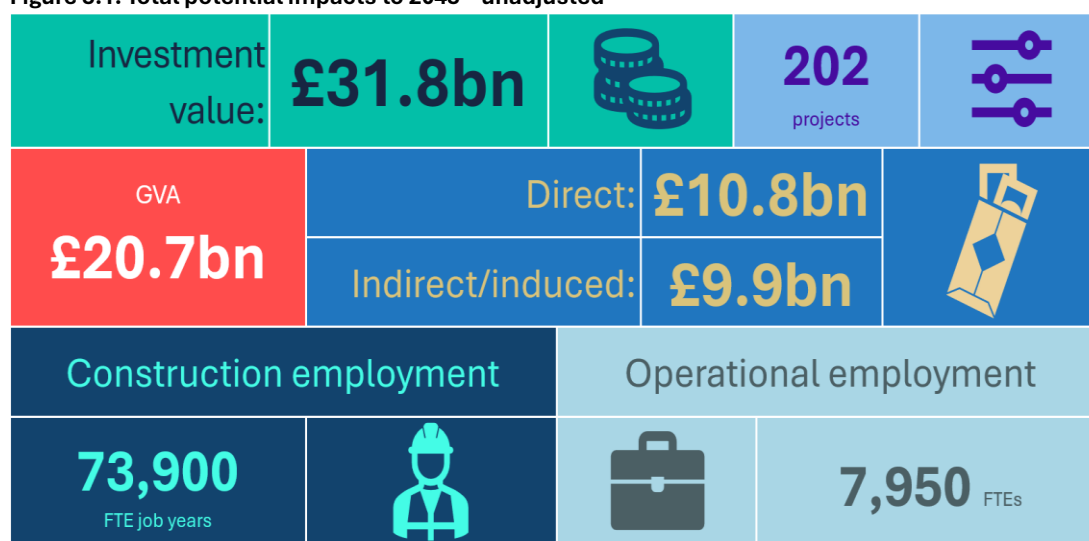
Introduction

- 5.1** The study identified 202 investment projects within the Regional Transformational Opportunity (RTO) thematic areas being explored for the South of Scotland. As shown in Chapter 1, the projects were identified through a combination of desk research and engagement with stakeholders in the region. These relied on information and intelligence provided by stakeholders and consultees, and information that could be sourced from material in the public domain. In some instances, information on projects was restricted due to commercial sensitivity. There was limited project information available regarding costs, timescales and anticipated employment for some projects at a very early stage of development. In the absence of detailed information provided directly by private sector organisations responsible for developing and delivering identified projects, GC Insight used appropriate proxy measures and benchmarks to estimate impacts.
- 5.2** Each investment project stands to contribute to the realisation of potential benefits for the region. Some projects are of such scale that they are transformative in their own right. Others will collectively drive transformational change in the region. It is important to note that this does not cover all planned activity in the region. There are other planned and live projects across the South of Scotland, some public sector driven and others private sector led, and many of these will be of significance at a local area level, and will drive positive change for the region's communities and businesses. They are, however, outside the scope of this study. It is also recognised that the investment projects will also have wider impacts such as environmental, social and community effects which have not been quantified as part of this research.
- 5.3** The potential anticipated economic impacts arising from these 202 identified investments are set out in this chapter. In particular, the following are considered:
- The total investment value;
 - Estimated direct GVA; and
 - Estimated indirect/induced GVA.
- 5.4** Total estimated employment in FTE job years¹⁷⁸ across the development, construction and installation (DCI) phase of projects, and the estimated number of ongoing operational and maintenance FTE jobs created for the operational lifespan of projects, are discussed in more detail in Chapter 6.
- 5.5** The estimates presented in this chapter should be interpreted as indicative modelled scenarios rather than precise forecasts. They are based on the project information available at the time of the research, supplemented by assumptions and proxy measures where detailed information on investment, timescales or employment was unavailable. There is particular uncertainty around the timing, scale and delivery of early-stage investments, including the proposed data centre developments. The scenario analysis is therefore intended to illustrate the potential scale and timing of impacts under different development conditions, rather than predict the precise outcomes that will be realised.

¹⁷⁸ An "FTE job year" refers to one full-time job that lasts for the duration of a year. This is a standard measurement for construction industry employment, where one job could mean (for example) one person working full-time for one full year, or two people working part-time for one full year, or two people working full-time for six months each.

The potential for the South of Scotland

Figure 5.1: Total potential impacts to 2045 – unadjusted



Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 5.6** The potential investment pipeline across the **202** projects totals **£31.8bn**. This is an unadjusted total impact of project investment. It is based on the raw project data collected and assumes each project will progress as planned and to the scale stated. This reflects the current modelled economic value for the projects that have been identified through this research, and is indicative of the overall investment value of these projects. However, it is acknowledged that, in reality, delays to some projects are inevitable and the scale of opportunity may not be fully realised. In recognition of this, status-adjusted impacts are presented later in the chapter. It must be considered that the eight regional transformational opportunities vary in maturity, scale and available evidence, and therefore are not necessarily eight equally mature propositions.
- 5.7** Overall, there is estimated to be a cumulative direct gross GVA¹⁷⁹ impact of **c.£10.8bn**, and an additional indirect/induced GVA of **c.£9.9bn** arising from supply chain spend and the spend of workers as a result of project development and construction, over the impact period to 2045. Construction job years capture temporary employment accumulated over the development period, whereas operational FTEs describe the ongoing workforce once projects are operational.

Geographic distribution

- 5.8** The geographic spread of investment is similar across the region, with 56% of the total potential investment pipeline located within Dumfries and Galloway, and 42% of the investment pipeline located in the Scottish Borders. A smaller proportion of investment (2%) is anticipated in South of Scotland-wide projects. However, in considering the unadjusted investment pipeline, it is worth noting that this is arguably skewed by available project data, and specifically a relatively small number of early-stage high-value potential investments, including proposed investments in data centres. The higher proportion of projects in Dumfries and Galloway (59%) compared to Scottish Borders (34%) can be anticipated, given it is a more populous area.

¹⁷⁹ Gross GVA in this research does not account for the public-sector cost of enabling infrastructure, environmental mitigation, displacement of other land or grid uses, housing and service pressures. This is particularly relevant to energy-intensive and infrastructure-heavy developments.

Table 5.1: Unadjusted project impacts by local authority area

	Projects/ investments	Average project investment (£m)	Investment value (£m)	Direct GVA (£m)	Indirect/ induced GVA (£m)
Scottish Borders	69	195.0	13,453.4	4,492.2	4,056.6
Dumfries and Galloway	119	149.6	17,808.1	6,165.5	5,625.4
South of Scotland-wide	14	38.25	535.5	187.2	170.3
Total	202	157.4	31,797.0	10,845.0	9,852.3

Figures may not sum due to rounding. Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Sectoral and thematic distribution

- 5.9** The most significant drivers of economic impacts are through Energy Transition projects throughout the region, and this is reflected in the £19.9bn (62% of the overall investment pipeline) investment value and subsequent GVA impacts (£13.1bn direct and indirect/induced, 63% of overall GVA) from construction and development in the unadjusted pipeline. However, there is also significant concentration in AI, Deep Tech and Advanced Manufacturing, driven by the proposed data centre developments previously mentioned. The AI, Deep Tech and Advanced Manufacturing accounts for over £9.5bn of investment (30%), and over £5.9bn of GVA (direct, indirect and induced). However, as highlighted above, these investments are still early stage, and are not certain to come forward, at least in the near term. Investments in advanced manufacturing, renewables and grid infrastructure in particular are at a much more advanced stage, and thus more likely to come forward.
- 5.10** Alongside Energy Transition projects, grid infrastructure upgrades as described in Chapter 4 account for a considerable proportion of the potential investment pipeline (c.£653m; 2%).

Table 5.2: Unadjusted project impacts by RTO thematic area

	Projects/ investments	Investment value (£m)	Direct GVA (£m)	Indirect/ induced GVA (£m)
AI, Deep Tech and Advanced Manufacturing	5	£9,511.9	£3,088.7	£2,829.3
Business and Professional Services	5	£21.3	£10.3	£6.3
Creative and Cultural	6	£56.6	£19.6	£18.0
Energy Transition	137	£19,853.9	£6,853.2	£6,277.7
Health and Life Sciences	2	£19.4	£7.6	£6.2
Industrial BioTech	2	£25	£7.9	£7.3
Natural Capital Innovation Zone	10	£40.6	£29.6	£13.4
Other	3	£143	£45.4	£41.6
Supporting Infrastructure: Grid Infrastructure	9	£653.1	£225.4	£206.5
Supporting Infrastructure: Other Enablers	1	£2.6	£1.6	£1.1
Supporting Infrastructure: Ports and harbours	1	£250	£86.3	£79.0
Supporting Infrastructure: Transport Infrastructure	2	£347	£119.8	£109.7
Visitor Economy	19	£872.6	£349.5	£256.2
Total	202	£31,797.0	£10,845.0	£9,852.3

Figures may not sum due to rounding. Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Adjusting for project status

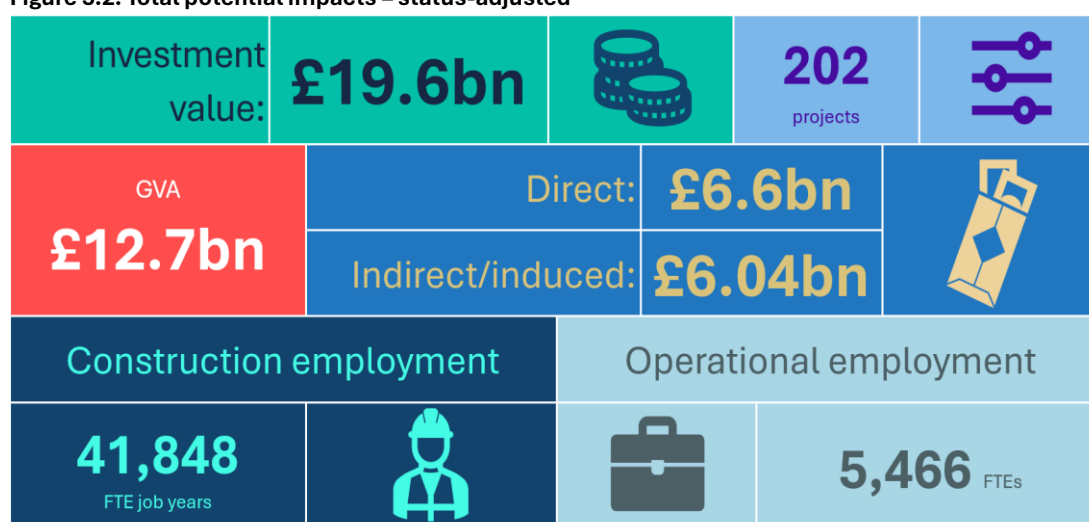
- 5.11** The total potential investment pipeline for the South of Scotland set out above does not consider the current development status of projects. A range of factors may negatively impact project delivery meaning that not all projects will come to fruition. This may include planning and other legislation, skills planning, grid connection, availability of required infrastructure and facilities, housing for workers, and a collaborative approach to enabling economic development across strategic organisations. Some early-stage projects may have a relatively low likelihood of being developed at the outset, with the certainty of the investment being realised increasing as projects progress along the development life cycle. External and macro-economic factors may also change such that currently proposed projects become unviable. Given the differences in status across the project portfolio, it is likely that actual investment levels realised across the portfolio of projects under consideration will be lower than the overall “maximum economic opportunity” outlined earlier.
- 5.12** To account for this, an adjustment has been made to the total investment pipeline and associated impacts using a set of factors to reflect project status and the likelihood of project progression and completion. Early-stage projects have larger adjustment factors (that is, they have been discounted to reflect the likelihood of a project being developed), with projects further along the development pathway being subject to progressively smaller adjustments.¹⁸⁰
- 5.13** Consultation and the available evidence indicated a high level of uncertainty around the scale, timing and deliverability of the data centre proposals identified through the research. Their large

¹⁸⁰ The following adjustment factors were applied on a project-by-project basis: Unknown/Early stage – 50%; Scoping/pre-application – 60%; Planning/consenting phase – 70%; Project under construction or in development – 80%; Pre-operational – 95%; Operational – 100%.

indicative capital values have a disproportionate effect on the unadjusted pipeline totals and may obscure the contribution of smaller projects that are at a more advanced stage of development. Evidence from data centre developments elsewhere also indicates that the extent to which capital investment and wider economic benefits are retained locally varies considerably, depending on factors including construction procurement, operator requirements, workforce availability, supply-chain capacity and links to local innovation and skills activity.¹⁸¹

- 5.14** Data centres can generate substantial construction activity, but permanent direct onsite employment is generally more limited relative to the scale of capital investment.^{182,183,184} Wider benefits may arise through supply chains, business rates, digital infrastructure, skills, research and innovation, although these are project-specific and should not be assumed without supporting evidence. An additional adjustment was therefore applied to the data-centre proposals to reflect their early stage of development and the uncertainty surrounding their deliverability and locally retained economic impacts.¹⁸⁵ The basis and scale of this adjustment is differentiated to reflect its status as a relatively new area of investment with fewer comparable examples, and therefore uncertainty is necessarily higher.
- 5.15** This ‘status-adjusted’ estimate reduces the total investment pipeline to **£19.6bn**, around **62%** of the overall opportunity. Resulting GVA from the status-adjusted development pipeline is anticipated to be around **£12.7bn** (**£6.7bn** direct GVA and **£6.0bn** indirect/induced GVA).

Figure 5.2: Total potential impacts – status-adjusted



Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 5.16** Dumfries and Galloway remains the most highly represented area in terms of anticipated investment levels, with **£10.3bn**, or around **53%** of total potential investment, followed by Scottish Borders at roughly **£9.0bn** (**46%**).

¹⁸¹ <https://news.harvard.edu/gazette/story/2026/04/why-are-communities-pushing-back-against-data-centers/>

¹⁸² <https://www.ft.com/content/1a48f0db-b667-4746-83eb-0c4c04e2584f>

¹⁸³ <https://natureforward.org/data-centers-are-said-to-create-jobs-but-people-need-to-know-what-kind-and-how-many/>

¹⁸⁴ <https://www.brookings.edu/articles/new-evidence-on-data-center-employment-effects/>

¹⁸⁵ Identified data centre projects were subject to an adjustment factor of 25%; that is, the identified impacts were reduced by three quarters

Table 5.3: Status-adjusted project impacts by local authority area

	Projects/ investments	Average project investment (£m)	Investment value (£m)	Direct GVA (£m)	Indirect/ induced GVA (£m)
Scottish Borders	69	£130.4	£8,997.7	£2,986.0	£2,688.9
Dumfries and Galloway	119	£86.2	£10,253.5	£3,551.5	£3,237.8
South of Scotland- wide	14	£26.7	£373.8	£130.8	£118.9
Total	202	£97.2	£19,624.9	£6,668.3	£6,045.6

Figures may not sum due to rounding. Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

5.17

Energy Transition remains the largest RTO thematic area in terms of anticipated investment. There is around **£11.7bn** of investment anticipated when taking project status into consideration (c.59% of total potential investment), followed by **c.£6.2bn** of investment in AI, Deep Tech and Advanced Manufacturing (c.32%).

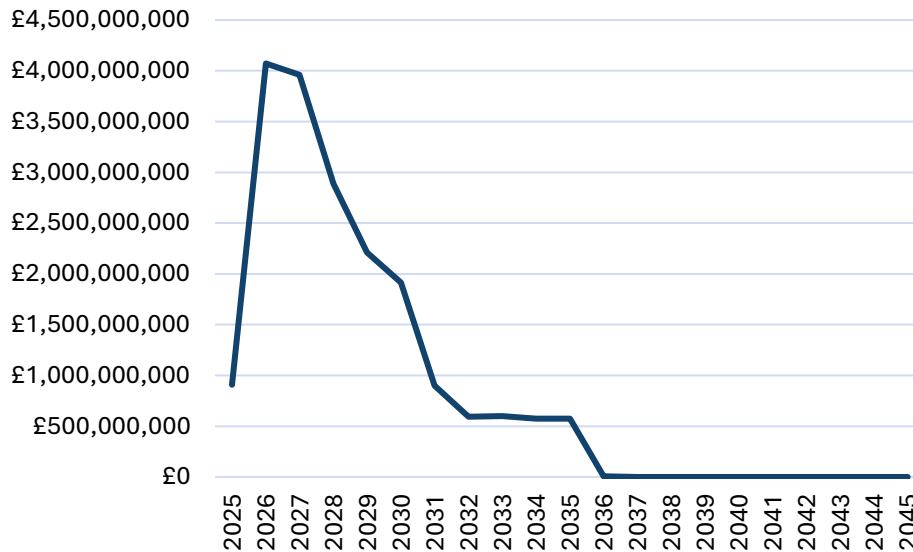
Table 5.4: Status-adjusted project impacts by RTO thematic area

	Projects/ investments	Investment value (£m)	Direct GVA (£m)	Indirect/ induced GVA (£m)
AI, Deep Tech and Advanced Manufacturing	5	£6,232.3	£1,995.7	£1,828.0
Business and Professional Services	5	£18.6	£9.1	£5.5
Creative and Cultural	6	£37.3	£12.9	£11.8
Energy Transition	137	£11,655.2	£4,023.1	£3,685.3
Health and Life Sciences	2	£19.4	£7.6	£6.2
Industrial BioTech	2	£17.5	£5.5	£5.1
Natural Capital Innovation Zone	10	£26.3	£21.4	£8.7
Other	3	£108.7	£34.5	£31.6
Supporting Infrastructure: Grid Infrastructure	9	£479.3	£165.4	£151.5
Supporting Infrastructure: Other Enablers	1	£2.6	£1.6	£1.1
Supporting Infrastructure: Ports and harbours	1	£125	£43.1	£39.5
Supporting Infrastructure: Transport Infrastructure	2	£276.6	£95.5	£87.5
Visitor Economy	19	£626.1	£252.8	£183.7
Total	202	£19,624.9	£6,668.3	£6,045.6

Figures may not sum due to rounding. Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

5.18

Figure 5.3 sets out the profiled status-adjusted project investment during the study period. Available project information indicates that the majority of investment impacts are scheduled to occur during the period to 2031. Beyond 2031, there is a reduced level of investment. This is to be expected, since there will necessarily be less intelligence on longer-term development projects. After this point, investment is typically accounted for by other enabler projects and renewable energy installations.

Figure 5.3: Profiled investment over time, status-adjusted

5.19 It should be noted that whilst detailed financial intelligence was sought for each project identified, a ‘flat’ spend profile has been assumed for all projects under consideration, given the variance in the availability of different project information. Additionally, the project information available may reflect optimistic assumptions regarding project timing and delivery. As projects develop, investment profiles may therefore become flatter and extend over a longer period. This means that, as projects progress and come to fruition, it is likely that the timeline investment profiles for projects and RTO sectors will be flatter and stretched over a longer time period. However, in the absence of any other evidence, no adjustments or assumptions have been made to the investment timelines. Doing so would introduce too much subjectivity, which could be misleading in terms of interpreting the findings.

5.20 The pipeline of investment identified (unadjusted, **£31.8bn**; status-adjusted **£19.6bn**) is a transformational level of potential investment. Yet it is worth noting that this investment timeline shows the currently known investments. That is, the data represents the **202** projects identified in the study only. Further, it should be remembered that this identified pipeline of investment is effectively a ‘snapshot in time’ and therefore should not be considered an exhaustive list of projects. There will undoubtedly continue to be investment projects announced and added to the investment pipeline for the region (for example, project concepts that are at very early stages of discussion) and that are commercially sensitive. In addition, it can reasonably be assumed that there will also be further cycles of energy-related investment, for example, the repowering of onshore wind farms, or greater certainty around the hydrogen industry leading to projects being re-established or new projects proposed.

5.21 In some respects, the project pipeline as presented can be considered a reflection of what may be required to stimulate longer-term investment in the region. However, without considerable efforts to address barriers to development and ensure that the right conditions are in place to create the conditions for investment to be made, many of the projects identified through this research will not come to fruition. If the potential investment can be positively influenced here, then this will make future, longer-term investment seem a more attractive proposition for developers, given the right conditions.

Scenario modelling

5.22 To maximise the realisation of benefits from the economic opportunity open to the South of Scotland, there needs to be the right policy environment and appropriate enablers and sequencing in place. A series of scenarios were modelled, based on the status-adjusted estimates, to explore potential impacts if the optimal policy environment and appropriate structures, support or interventions are not available at the right points in time. These scenarios are illustrative, designed to demonstrate the impact of various policy, regulatory, infrastructure and other potential factors to ‘switch on’ certain project investment levels and timescales. The switches are drawn from a range of enablers identified through the desk research and consultation phases of the study. The switches include:

- Legislation and regulation, including planning and consenting;
- Grid connection;
- Evidence-based skills and workforce planning (employment impacts and skills requirements are discussed in Chapter 6);
- Infrastructure, including road, rail and ports, housing, and communication;
- A quadruple helix approach to collaboration;
- Supply chain stimulation; and
- Research and innovation.

5.23 The scenarios modelled are:

- **Scenario 1:** The extant policy environment is in place (i.e., there is no change to the current policy, legislative or regulatory frameworks) but barriers to major electricity grid upgrades are also assumed – many identified projects are developed, but grid constraints inhibit projects where a new grid connection is critical to their realisation.
- **Scenario 2:** ‘Policy-on’ – there is implementation of a more supportive policy regime and pro-active economic development activity across partners, within a short- to medium-term timeframe for full switch-on (e.g. 18-24 months); almost all projects in the pipeline are developed broadly according to their intended timescales, with few barriers.
- **Scenario 3:** ‘Delayed policy-on’ – there is eventually a realisation of an encouraging development environment for projects, but with switch-on over a delayed or longer time period (e.g. 5+years) - projects in the pipeline are developed but with increased timescales; however, some barriers persist.

5.24 The scenarios are illustrative and should not be interpreted as forecasts of the precise investment, employment or GVA impacts that will arise. They demonstrate the potential scale and timing of impacts under different policy, regulatory, infrastructure and development conditions, based on the information and assumptions available at the time of the assessment. Actual outcomes will depend on the timing, scale and delivery of individual projects, particularly large early-stage proposals, as well as the extent to which investment and employment are retained within the South of Scotland.

Range of impacts

5.25 Figure 5.4 shows the investment profile of each modelled scenario. There is a considerable difference between the scenarios, with total project investment in the period to 2045 ranging from **£2.7bn** (Scenario 1) to **£13.5bn** (Scenario 2). Even considering the overall difference between Scenario 2 as the most ‘positive’ scenario and the status-adjusted investment value of £19.6bn, this effectively demonstrates the importance of a conducive development environment and proactive, regionally co-ordinated economic development support.

Figure 5.4: Profiled investment impacts over time under each scenario

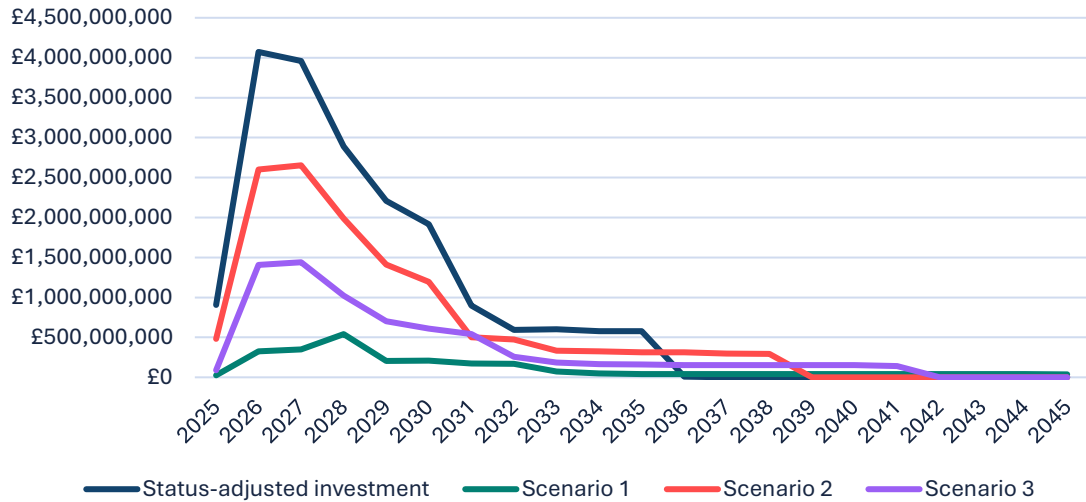
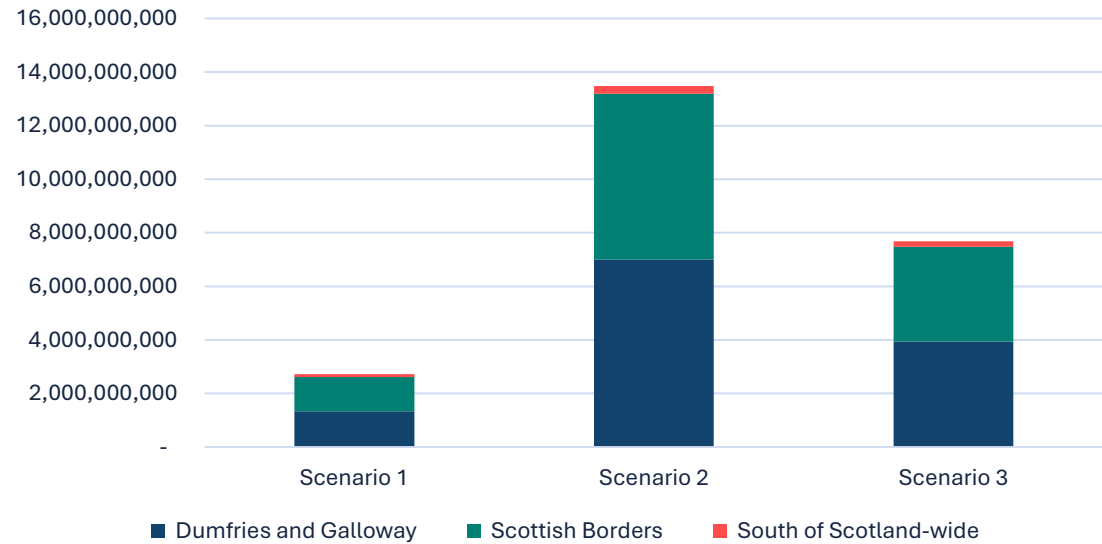


Figure 5.5: Investment impacts by area under each scenario



Scenario 1: Sub-optimal development environment with grid upgrade constraints

Table 5.5: Project investment pipeline impacts, Scenario 1

Impacts	
Total investment value	£2.7bn
Proportion of status-adjusted investment value	14%
Total GVA from development	£1.8bn
Direct	£0.9bn
Indirect/induced	£0.8bn
Construction employment	6,155
Operational employment	1,156

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 5.26 Under this indicative scenario, total modelled investment could be in the region of £2.7bn, taking into consideration both project status and the scenario assumptions. This is equivalent to less than 15% of the status-adjusted project investment total, reflecting the more constrained development conditions modelled under Scenario 1. The modelling indicates that the development, construction and installation phase could support approximately 6,100 FTE job years over the assessment period.
- 5.27 Total modelled GVA could be around £2.8bn, comprising direct, indirect and induced impacts. By 2045, projects progressing under this scenario could support almost 1,200 ongoing operational FTE jobs. These estimates illustrate the potential scale of impacts under the scenario and should not be interpreted as precise forecasts, as actual outcomes will depend on which projects proceed, their final scale and timing, and the extent to which employment and economic activity are retained within the South of Scotland.

Table 5.6: Project investment impacts by RTO thematic area, Scenario 1

	Investment value (£m)	Total GVA (£m; direct, indirect/induced)
AI, Deep Tech and Advanced Manufacturing	£799.3	£490.2
Business and Professional Services	£6.3	£4.9
Creative and Cultural	£12.0	£7.9
Energy Transition	£1,495.6	£989.1
Health and Life Sciences	£6.5	£4.6
Industrial BioTech	£5.9	£3.6
Natural Capital Innovation Zone	£8.8	£10.1
Other	£18.3	£11.1
Supporting Infrastructure: Grid Infrastructure	£30.7	£20.3
Supporting Infrastructure: Other Enablers	£0.3	£0.4
Supporting Infrastructure: Ports and harbours	£34.1	£51.7
Supporting Infrastructure: Transport Infrastructure	£93.0	£61.5
Visitor Economy	£210.6	£146.8
Total	£2,721.5	£1,774.0

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 5.28 Investment in Dumfries and Galloway accounts for 49% of all investment under this scenario, with 47% occurring in the Scottish Borders. Pan-regional investment accounts for 4% of investment value.
- 5.29 This scenario illustrates the crucial nature of a positive, enabling policy and regulatory environment being in place to help create the right conditions for investment to come to fruition, along with proactive and regionally collaborative economic development activity and interventions by strategic partners. It also demonstrates how critical planned grid infrastructure upgrades are for unlocking and enabling development across the region. Without this, many projects, particularly those related to energy, are simply not viable. The timeline of investment is also greatly extended for those projects that do progress.
- 5.30 In such a scenario, economic development interventions should:
- Focus on existing strengths in the region, such as anchor Energy Transition projects and more certain projects such as the Center Parcs development, to increase likelihood of projects being delivered, secure socio-economic impacts for the South of Scotland, and reduce investment risk as far as possible;

- Take opportunities to unlock major regeneration sites such as Chapelcross as they arise, to help bring these forward and secure greater levels of investment;
- Prioritise investment in supporting infrastructure to remove barriers for RTO and other investments, giving particular consideration to transport and grid infrastructure; and
- Target investments such as those in the Visitor Economy to ensure positive “quick-win” impacts are realised.

Scenario 2: Short-term realisation of near-optimal development conditions

Table 5.7: Project investment pipeline impacts, Scenario 2

	Impacts
Total investment value	£13.5bn
<i>Proportion of status-adjusted investment value</i>	70%
Total GVA from development	£8.7bn
<i>Direct</i>	£4.6bn
<i>Indirect/induced</i>	£4.2bn
Construction employment	28,961
Operational employment	3,912

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 5.31 Under this indicative scenario, total modelled investment could be in the region of £13.5bn, taking into consideration both project status and the scenario assumptions. This is equivalent to around 70% of the status-adjusted project investment total, reflecting the more favourable development conditions modelled under Scenario 2. The modelling indicates that the development, construction and installation phase could support approximately 29,000 FTE job years over the assessment period.
- 5.32 Total modelled GVA could be around £8.7bn, comprising direct, indirect and induced impacts. By 2045, projects progressing under this scenario could support over 3,900 ongoing operational FTE jobs. These estimates illustrate the potential scale of impacts under the scenario and should not be interpreted as precise forecasts, as actual outcomes will depend on the timing, scale and delivery of individual projects, particularly large early-stage proposals, and the extent to which employment and economic activity are retained within the South of Scotland.

Table 5.8: Project investment impacts by RTO thematic area, Scenario 2

	Investment value (£m)	Total GVA (£m; direct, indirect/induced)
AI, Deep Tech and Advanced Manufacturing	£4,237.9	£2,600.0
Business and Professional Services	£14.4	£11.3
Creative and Cultural	£28.8	£19.1
Energy Transition	£7,925.1	£5,241.4
Health and Life Sciences	£15.0	£10.6
Industrial BioTech	£13.5	£8.2
Natural Capital Innovation Zone	£20.3	£23.3
Other	£84.1	£51.1
Supporting Infrastructure: Grid Infrastructure	£343.0	£226.9
Supporting Infrastructure: Other Enablers	£1.8	£1.9
Supporting Infrastructure: Ports and harbours	£96.7	£63.9
Supporting Infrastructure: Transport Infrastructure	£213.9	£141.5
Visitor Economy	£484.2	£337.5
Total	£13,478.4	£8,736.7

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

5.33 Energy Transition projects, followed by AI, Deep Tech and Advanced Manufacturing projects, account for the greatest share of impacts, together comprising c.£12.2bn (90%) of anticipated investment. As with other scenarios, Dumfries and Galloway accounts for the greatest share of investment value (c.52%), with 46% in the Scottish Borders and around 2% is considered pan-regional investment.

5.34 This scenario, as the most positive, gives strategic partners most scope to support a wider range of project and investment types. Given this, economic development interventions should:

- Seek opportunities to maximise the synergies between projects in different thematic areas so that geographical clusters of activity come forward, to drive a higher order of impact and benefits through delivery at scale;
- Deliver interventions as necessary to ensure projects aligned with the South of Scotland's strengths can progress rapidly, so that the region maintains its national, UK and global competitiveness;
- Explore opportunities to support large-scale but early-stage propositions such as data centres, where these are able to demonstrate strong direct and indirect impacts for the region through robust evidence. This should be where such developments align with and complement similar developments elsewhere in Scotland, where additional benefits can accrue through cluster development and co-location of ancillary services, and where environmental and community concerns can be addressed satisfactorily; and
- Design interventions that can accelerate the development of major development and regeneration sites in the South of Scotland.

Scenario 3: Delayed timeframe for realising more favourable development conditions

Table 5.9: Project investment pipeline impacts, Scenario 3

	Impacts
Total investment value	£7.7bn
Proportion of status-adjusted investment value	40%
Total GVA from development	£5.0bn
Direct	£2.6bn
Indirect/induced	£2.4bn
Construction employment	16,739
Operational employment	2,492

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 5.35 Under this indicative scenario, total modelled investment could be in the region of £7.7bn, equivalent to around 40% of the status-adjusted investment total. Energy Transition and AI, Deep Tech and Advanced Manufacturing could account for the largest share, with a combined modelled investment of approximately £6.8bn, or 89% of the total. Geographically, around 51% of modelled investment could be located in Dumfries and Galloway, 46% in the Scottish Borders and 3% in South of Scotland-wide projects.

Table 5.10: Project investment impacts by RTO thematic area, Scenario 3

	Investment value (£m)	Total GVA (£m; direct, indirect/induced)
AI, Deep Tech and Advanced Manufacturing	£2,370.3	£1,454.3
Business and Professional Services	£9.9	£7.8
Creative and Cultural	£20.9	£13.9
Energy Transition	£4,432.8	£2,931.7
Health and Life Sciences	£10.9	£7.7
Industrial BioTech	£9.3	£5.6
Natural Capital Innovation Zone	£14.7	£16.9
Other	£61.0	£37.1
Supporting Infrastructure: Grid Infrastructure	£170.9	£113.0
Supporting Infrastructure: Other Enablers	£1.0	£1.0
Supporting Infrastructure: Ports and harbours	£70.1	£46.4
Supporting Infrastructure: Transport Infrastructure	£155.1	£102.6
Visitor Economy	£351.2	£244.8
Total	£7,678.1	£4,982.8

Figures are indicative modelled estimates and should not be interpreted as precise forecasts. Totals may not sum due to rounding

- 5.36 Under this indicative scenario, the modelling indicates that the development, construction and installation phase could support over 16,700 FTE job years. Total modelled GVA could be around £5.0bn, comprising direct, indirect and induced impacts. By 2045, projects progressing under this scenario could support just under 2,500 ongoing operational FTE jobs. These estimates illustrate the potential scale of impacts under the scenario and should not be interpreted as precise forecasts.

- 5.37 Consequently:

- Careful prioritisation of RTO thematic areas and investments will be required. As in other scenarios, there is a logic in supporting investments that align with the region's existing strengths, but wider interventions should focus on supporting a suite of projects that minimise risk of investment (those that have the greatest likelihood of progressing to development and operation, and those that present the most realistic opportunity for securing local- and regional-level impacts);
- Whilst early-stage or speculative investment proposals should not be ignored, greater evidence and certainty on investment plans and the impacts they will create should be secured; and
- Careful consideration should be given to interventions that unlock wider development. Under this scenario, it is arguable that enabling infrastructure and wider enabling works are at their most critical, as it is under this scenario's conditions that they will have most influence on the amount of development potential realised.

Summary observations

Table 5.11: Scenario summary

Scenario	Assumptions/basis	Investment value (£bn)	FTE job years (DCI)	Total GVA (£bn)	Total operational FTE jobs
Overall opportunity	All projects progress fully as planned and to the scale of identified investment; does not consider policy environment, external factors	31.8	73,900	20.7	7,950
Status-adjusted	Overall opportunity adjusted to reflect likelihood of project progression and completion, based on known project status	19.6	41,848	12.7	5,466
Scenario 1	No substantive change to current policy, legislative or regulatory frameworks; less-than-favourable development environment assumed; barriers to delivery of electricity grid infrastructure upgrades also assumed	2.7	6,155	2.8	1,156
Scenario 2	'Policy-on' – short to medium timeframe (18-24 months) associated with policy 'switches' essential for creating a favourable development environment, and thus catalysing investment	13.5	28,977	8.7	3,912
Scenario 3	'Delayed policy-on' – as per Scenario 2 but switch on over a longer time period, and persistence of some barriers	7.7	16,739	5.0	2,492

Figures are indicative modelled estimates based on the project information and assumptions available at the time of the assessment. They should not be interpreted as precise forecasts.

The opportunity

5.38

With 202 known proposed transformational investments, the economic pipeline of the RTOs is considerable. The scale of opportunity in financial terms is significant. There is a total potential of c.£32bn known investment in the identified pipeline, and there is undoubtedly more that may be in motion, or not identified during the course of this research. The breadth of the pipeline is significant, spanning Energy Transition; AI, Deep Tech and Advanced Manufacturing; the Visitor Economy; the Natural Capital Innovation Zone; Industrial Biotechnology; Health Innovation and Life Sciences; Creative and Cultural activity; Business and Professional Services; and enabling

infrastructure. This diverse portfolio of projects across different sectors and industries provides a degree of resilience in that investment is not overly concentrated in one or two sectors.

- 5.39 The most highly represented quantified opportunity through this research is Energy Transition, which accounts for the largest number of identified projects and the majority of potential investment. This reflects the region's established renewable energy base, strong pipeline of wind, battery storage and grid-related projects, and the strategic significance of Chapelcross as a long-term energy transition and regeneration opportunity. Alongside this, AI, Deep Tech and Advanced Manufacturing includes a small number of very high-value proposals, including data centre and advanced technology opportunities linked to the region's renewable energy assets, land availability and strategic connectivity.
- 5.40 However, the opportunity is not defined only by the largest capital projects. Visitor Economy investments, natural capital projects, creative and cultural activity, business infrastructure, health innovation and industrial biotechnology all contribute to a wider regional proposition based on quality of place, rural innovation, natural assets, heritage, culture and distinctive local supply chains. Some of these opportunities generate lower direct capital investment than energy or data infrastructure, but they are important because they can support more geographically dispersed benefits across towns, rural communities and coastal locations.
- 5.41 Also, there is opportunity for people (and companies within wider supply chains) across the South of Scotland to work or operate in a range of sectors and potentially move between them in response to emerging opportunities. For example, there are clear synergies between Health and Life Sciences and Industrial Biotechnology, or between Energy Transition and AI, Deep Tech and Advanced Manufacturing, as indicated by the innovative work underway at the Chapelcross Energy Transition Zone and Technology Campus. The increasing level of digitalisation across the economy also means that digital skills are constantly in demand.
- 5.42 Further, construction supply chain companies (especially engineering, procurement, and construction (EPC) companies that can provide services across a range of sectors) will be able to respond to demand in a number of RTO thematic areas. Resultingly, there will be synergies in investment and supply chain development that can be exploited by public and private sector actors for the benefit of the region's business base. This will help to create multiple employment and career opportunities at a time when career pathways are being more diverse and less linear and will also allow organisations to de-risk their own investment and provide more stability.
- 5.43 On balance, it may be unrealistic to assume that all identified projects will come forward and be fully developed as planned. However, it must be stressed that there is scope to realise a significant number of projects that have the capacity to transform the South of Scotland economy.
- 5.44 The potential for these projects is supported by a range of existing infrastructure across the region. This includes physical infrastructure such as ports and harbours (with the Eyemouth Harbour Extension subject to its own investment proposals) and good road and rail links (also subject to their own investment proposals such as the Borders Rail extension and road improvements along the A75/A77). It also includes education institutions including Borders College, Dumfries and Galloway College, as well as specialised higher education institutions such as the University of Glasgow's Dumfries Campus and Scotland's Rural College's Barony Campus (particularly supporting environmental sustainability and life sciences), and the University of the West of Scotland's Dumfries campus (supporting business and life sciences) that will support necessary skills development. There are also existing sectoral assets (existing

clusters or activity, facilities, or even anchor businesses or institutions) for each RTO that can contribute to the development and success of investment projects.

Challenges and risks

- 5.45 There are a number of issues and challenges to consider in light of the identified pipeline of investments. Some of these are external factors outwith the control of strategic partners in the South of Scotland, that will need to be mitigated and managed as far as possible.
- 5.46 There are other regions in Scotland that are identifying, articulating and pursuing transformational opportunities. Given that there may be overlap between thematic priorities in different regions, the South of Scotland region must successfully promote its unique offer within each RTO, to work with other regions to provide a coherent national landscape. For example, it will be necessary to navigate the significant amount of investment and strong transport links with the South of Scotland that the Central Belt has, using these to the regions advantage by forming strategic connections and promoting the South of Scotland offer to the rest of Scotland.
- 5.47 It was noted in consultation that many of the region's residents will travel to Glasgow or Edinburgh for employment or education; however, Census 2022 data suggests that a considerable proportion of the working population work mainly at or from home (Dumfries and Galloway at 28.5% and Scottish Borders at 32%).¹⁸⁶
- 5.48 This proximity to the Central Belt and English cities can also be used to the South of Scotland's advantage, however. The region is home to 260,000 people, but is locationally advantaged by connections to key transport corridors north and south, connecting 14 million people within a three hours' drive of the region.¹⁸⁷ Availability of development land, a readily available workforce, comparatively lower costs, and factors such as quality of life mean that the South of Scotland does have a competitive advantage in some regards that can be used (and is being used) to attract inward investment. Further, emerging investments demonstrate how the South of Scotland can be an integral part of Scotland-wide development opportunities. Cross-regional synergies and corridors of innovation – for example, in health and life sciences through the Digital Dairy Chain and the Dairy Nexus, or through cross-border projects such as the Borderlands Deep Tech Accelerator project. This presents an opportunity to stimulate inter-regional and cross-border collaboration to strengthen the proposition for the South of Scotland, and for Scotland overall. It would also augment the case for future investment through Scottish and UK Government funds. Partners should therefore give due consideration to how the South of Scotland can be positioned effectively to maximise its competitiveness, and exploit synergies with activities elsewhere in Scotland for the benefit of the region.
- 5.49 Nevertheless, the proximity of the South of Scotland to major developments elsewhere in Scotland may potentially impact on the likelihood of some identified schemes fully coming forward. For example, the regeneration of Hunterston PARC in North Ayrshire¹⁸⁸ is a nationally strategic redevelopment site, and its focus on clean energy may lead to competition of resources and the required workforce for construction and installation at key energy investment sites such as the Chapelcross Energy Transition Zone developments. The operation of these two key nationally significant sites, however, can be considered complementary by splitting their strategic focus between marine-heavy industrial logistics (at Hunterston PARC) and land-based digital/agricultural energy integration (at Chapelcross). Rather than competing for the exact

¹⁸⁶ <https://www.scotlandscensus.gov.uk/search-the-census#/explore/snapshot>

¹⁸⁷ <https://staging.investinsouthofscotland.com/why-the-south-of-scotland/regional-advantages>

¹⁸⁸ <https://www.hunterstonparc.com/>

same investment, their unique geographical positions, infrastructure, and natural assets allow them to pursue related, but distinct, strategic opportunities.

- 5.50 Transport connectivity within the region is potentially an issue. Despite good links with Glasgow, the wider Central Belt and England, consultees involved in this research repeatedly stressed the limitations of east-west connectivity within the region. The connectivity of the South of Scotland's rural areas may also present a barrier to development. Many of the region's rural settlements are underserved by the road and rail network, and access to appropriate development sites for future renewable energy installations is constrained by narrow and poor-quality roads.
- 5.51 Transport infrastructure upgrades are not only critical for existing businesses and communities, but they are also vital for proposed developments and their supply chains. They are also a critical part of the region's attractiveness in terms of attracting people into work, and in attracting inward investment.
- 5.52 The investment pipeline cuts across sectors and geographies, and delivery will require prioritisation, sequencing and active management of common constraints. If these conditions are met, the RTO portfolio has the potential to diversify the regional economy, strengthen productivity, support population attraction and retention, and improve the long-term resilience of communities across the South of Scotland.
- 5.53 The research identified instances which will benefit from the existing collaborative and co-ordinated South of Scotland approach undertaken across SOSE, Dumfries and Galloway Council, Scottish Borders Council, the Regional Economic Partnership, education and skills providers, national agencies, private investors and community partners. There needs to be a collaborative, holistic, and place-based approach to planning how the RTOs can be realised and to ensure that the infrastructure and enablers are in the right place, and at the right time, and this must happen at pace. There is an unprecedented opportunity for the wide range of organisations and partners who can and must play a role. Realising the pipeline of projects identified through this research needs partnership working in true collaboration, and not in isolation. Public sector intervention must be guided by the needs of the region's extant business base and potential inward investors, on a demand-led basis rather than a more supply-led approach. The impact of strong collaborative working for the benefit of the region is illustrated clearly in the scenarios above.

6 Workforce and Skills Implications

Introduction

- 6.1** Research to identify and quantify the Regional Transformational Opportunities (RTOs) in the South of Scotland has identified the scale and breadth of opportunities presented by the proposed projects across the region, both during construction and as projects move into operation and maintenance. Realising these opportunities, and achieving the potential value for the South of Scotland and Scotland, will require a significant uplift in the available workforce across the region to ensure that the right skills are available in the right place and at the right time. There will be clusters of activity where workforce demand and skills requirements will be particularly concentrated, for example around major Energy Transition developments across Dumfries and Galloway and the Scottish Borders, AI and data infrastructure proposals at Chapelcross and Southside Data Centre, visitor economy developments centred around locations such as Hawick and Stranraer, and emerging opportunities linked to Natural Capital, Industrial Biotechnology and Health Innovation. For people across the South of Scotland to benefit from the employment and career opportunities created through these investments, they must have the right skills and access jobs through appropriate transport, housing and digital infrastructure.
- 6.2** Therefore, perhaps the single most important lever for enabling the RTO projects will be having the workforce in place to fuel growth across the identified opportunities and the wider regional economy. Developing and securing this workforce is an economic imperative and will also contribute to the wider social fabric, resilience and long-term sustainability of communities across the South of Scotland. This chapter considers how residents and businesses can benefit from the employment that will flow from the South of Scotland RTOs, their associated supply chains and the critical supporting infrastructure requirements, during both the development, construction and installation (DCI) phases of projects and throughout their operational lifespan.
- 6.3** The challenge facing the South of Scotland is not solely a skills challenge that can be addressed through additional courses or qualifications. It is a wider workforce planning challenge encompassing the availability of labour, participation in the labour market, workforce attraction and retention, career development and transitions, employer recruitment and workforce practices, and access to enabling factors such as housing and transport. Meeting the potential demand generated by the RTOs will therefore require coordinated action across economic development, skills, employability, education, infrastructure and place-based policy.
- 6.4** In this chapter, a labour shortage refers to an insufficient number of people available to fill jobs, while a skills shortage refers to a lack of people with the specific capabilities, qualifications or experience required by employers. These issues are closely related but require different and complementary responses. Meeting future demand is likely to require a combination of developing the existing workforce, widening labour-market participation, retaining young people, attracting and retaining workers, supporting career transitions and aligning education and training more closely with evidenced employer demand.

Potential workforce demand

- 6.5** The workforce estimates presented in this chapter are indicative modelled scenarios rather than precise forecasts or independently verified employment outcomes. They draw on a combination of available project information, developer estimates and proxy assumptions, with the strength of the evidence varying between projects. There is particular uncertainty around the timing and

scale of large early-stage investments, including the proposed data centre developments. The estimates are therefore intended to illustrate the potential scale, timing and distribution of workforce demand under different development conditions. Actual requirements will depend on which projects proceed, their scale and timing, the extent to which projects overlap, and the proportion of employment secured within the South of Scotland.

- 6.6 Construction job years, peak annual construction workforce demand, ongoing operational employment are presented separately, with indirect impacts only being expressed as GVA as part of the impact calculations in Chapter 5. Workforce figures represent different measures and should not be combined into a single employment figure.

Construction and development

- 6.7 When considering the full potential unadjusted project pipeline, the modelling indicates that the development, construction and installation phase could support approximately 73,900 FTE job years over the assessment period. On a status-adjusted basis, this reduces to almost 41,900 FTE job years, of which around 83% are associated with Energy Transition projects. These totals are indicative of the cumulative volume of construction employment that could be supported and do not represent permanent jobs or the number of workers required at a single point in time.
- 6.8 These figures represent temporary employment sustained across the construction periods of different projects, rather than 41,900 permanent jobs or workers required at one point in time. The associated demand will create distinct requirements relating to recruitment, skills provision, temporary accommodation, housing and transport, particularly during periods when several major projects overlap. The long-term population impact will depend on how much of this demand is met by existing residents, workers relocating to the region and workers travelling into the region temporarily.

Table 6.1: Overall potential construction workforce requirement by RTO thematic area (status-adjusted)

RTO Thematic area	Status-adjusted job years (DCI)
AI, Deep Tech and Advanced Manufacturing	395.5
Business and Professional Services	71.0
Creative and Cultural	289.5
Energy Transition	34,629.7
Health and Life Sciences	87.0
Industrial BioTech	59.5
Natural Capital Innovation Zone	127.9
Other	371.7
Supporting Infrastructure: Grid Infrastructure	1,963.1
Supporting Infrastructure: Other Enablers	25.0
Supporting Infrastructure: Ports and harbours	512.5
Supporting Infrastructure: Transport Infrastructure	1,134.4
Visitor Economy	2,181.9
Total	41,848.6

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

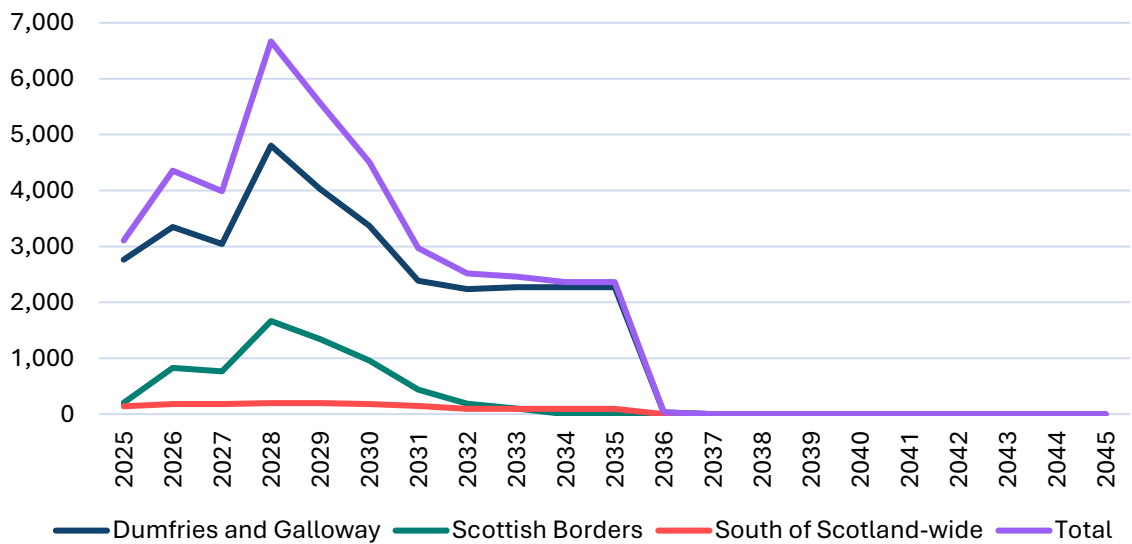
- 6.9 Similar to investment and associated economic impacts, anticipated employment for development and construction of projects is highest in Dumfries and Galloway, which accounts for over 79% of anticipated temporary construction employment. Scottish Borders' share of this employment is 17%, while jobs which are South of Scotland-wide are 4%.

Table 6.2: Overall potential construction workforce requirement by local authority area (status-adjusted)

Area	Status-adjusted job years (DCI)
Dumfries and Galloway	33,166.3
Scottish Borders	6,984.1
South of Scotland-wide	1,698.2
Total	41,848.6

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 6.10 Based on current project timescales, peak annual construction workforce demand could reach approximately 6,700 FTE workers in 2028, before falling to around 5,600 in 2029 and 4,500 in 2030. The timing and scale of this peak are indicative and could change if major projects are delayed, brought forward, delivered at a different scale or overlap differently from that assumed in the modelling.

Figure 6.1: Profiled construction employment impacts by local authority (status-adjusted)

Annual profiles are indicative and are sensitive to assumptions regarding project timing, duration and overlap.

- 6.11 The following scenarios illustrate how the potential scale and timing of construction workforce demand could change under different development conditions. They are not forecasts of the precise number of workers who will be required. In particular, the annual profiles are sensitive to assumed project start dates, construction periods and the extent to which major developments overlap.

Scenario 1: Sub-optimal development environment with grid upgrade constraints

- 6.12 Under this indicative scenario, the modelling indicates that the development, construction and installation phase could support over 6,150 FTE job years over the assessment period. This is substantially lower than both the unadjusted and status-adjusted pipeline estimates, reflecting the more constrained development conditions modelled under Scenario 1. Energy Transition projects could account for around 72% of these job years, followed by the Visitor Economy at 12% and Supporting Transport Infrastructure at 6%. These figures illustrate the potential scale and distribution of construction activity under the scenario and should not be interpreted as precise forecasts.

Table 6.3: Construction workforce requirement by RTO thematic area, Scenario 1 (status-adjusted)

RTO Thematic area	Status-adjusted job years (DCI)
AI, Deep Tech and Advanced Manufacturing	50.7
Business and Professional Services	23.9
Creative and Cultural	97.4
Energy Transition	4,443.5
Health and Life Sciences	29.3
Industrial BioTech	20.0
Natural Capital Innovation Zone	43.0
Other	62.5
Supporting Infrastructure: Grid Infrastructure	125.9
Supporting Infrastructure: Other Enablers	3.2
Supporting Infrastructure: Ports and harbours	139.7
Supporting Infrastructure: Transport Infrastructure	381.5
Visitor Economy	733.8
Total	6,154.5

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

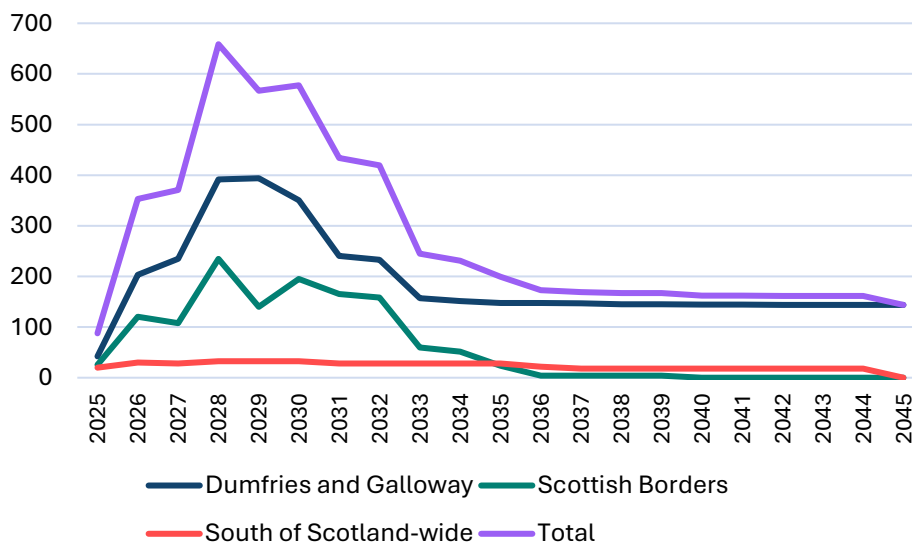
- 6.13 Dumfries and Galloway (70%) accounts for the largest share of employment under this scenario, with c.21% expected in Scottish Borders, and South of Scotland-wide anticipated to account for c.8% – larger shares than when solely considering status-adjusted project impacts.

Table 6.4: Construction workforce requirement by local authority area, Scenario 1 (status-adjusted)

Area	Status-adjusted job years (DCI)
Dumfries and Galloway	4,322.5
Scottish Borders	1,330.0
South of Scotland-wide	501.9
Total	6,154.5

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 6.14 Construction employment demand peaks during 2028-30, with almost 660 FTE job years required at the highest demand point.

Figure 6.2: Profiled construction employment impacts by local authority (Scenario 1)

Annual profiles are indicative and are sensitive to assumptions regarding project timing, duration and overlap.

Scenario 2: Short-term realisation of near-optimal development conditions

- 6.15 Under this indicative scenario, temporary development and construction employment demand could be highest under Scenario 2. At almost 29,000 FTE job years, it would remain almost 13,000 FTE job years below the unadjusted project pipeline estimate. Energy Transition projects could account for the largest share, at over 81% of the total, with Visitor Economy projects accounting for almost 1,700 FTE job years, almost 6%.

Table 6.5: Construction workforce requirement by RTO thematic area, Scenario 2 (status-adjusted)

RTO Thematic area	Status-adjusted job years (DCI)
AI, Deep Tech and Advanced Manufacturing	268.9
Business and Professional Services	54.9
Creative and Cultural	223.9
Energy Transition	23,546.8
Health and Life Sciences	67.3
Industrial BioTech	46.0
Natural Capital Innovation Zone	98.9
Other	287.4
Supporting Infrastructure: Grid Infrastructure	1,405.1
Supporting Infrastructure: Other Enablers	17.0
Supporting Infrastructure: Ports and harbours	396.3
Supporting Infrastructure: Transport Infrastructure	877.2
Visitor Economy	1,687.1
Total	28,976.7

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

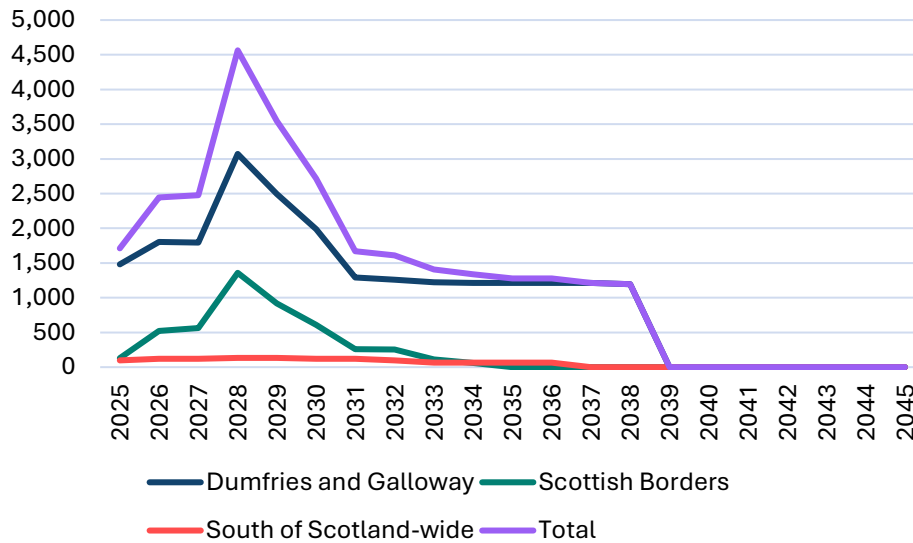
- 6.16 As in other scenarios, Dumfries and Galloway (78%) accounts for the largest share of employment under this scenario, with 17% expected in Scottish Borders, and South of Scotland-wide jobs anticipated to account for c.4%.

Table 6.6: Construction workforce requirement by local authority area, Scenario 2 (status-adjusted)

Area	Status-adjusted job years (DCI)
Dumfries and Galloway	22,683.2
Scottish Borders	5,011.4
South of Scotland-wide	1,282.1
Total	28,976.7

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 6.17 Construction employment demand peaks during 2028, with almost 4,600 FTE job years required at the highest demand point.

Figure 6.3: Profiled construction employment impacts by local authority (Scenario 2)

Annual profiles are indicative and are sensitive to assumptions regarding project timing, duration and overlap.

Scenario 3: Delayed timeframe for realising more favourable development conditions

- 6.18 Under this indicative scenario, the modelling indicates that the development, construction and installation phase could support over 16,700 FTE job years over the assessment period. This is considerably lower than the status-adjusted pipeline estimate and also lower than under Scenario 2. Energy Transition projects could account for the largest share, at 79%, with Visitor Economy projects accounting for 7%, and Supporting Transport Infrastructure and Supporting Grid Infrastructure each accounting for 4%.

Table 6.7: Construction workforce requirement by RTO thematic area, Scenario 3 (status-adjusted)

RTO Thematic area	Status-adjusted job years (DCI)
AI, Deep Tech and Advanced Manufacturing	150.4
Business and Professional Services	37.6
Creative and Cultural	162.4
Energy Transition	13,170.6
Health and Life Sciences	48.8
Industrial BioTech	31.5
Natural Capital Innovation Zone	71.7
Other	208.5
Supporting Infrastructure: Grid Infrastructure	700.0
Supporting Infrastructure: Other Enablers	9.5
Supporting Infrastructure: Ports and harbours	287.5
Supporting Infrastructure: Transport Infrastructure	636.3
Visitor Economy	1,223.8
Total	16,738.6

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

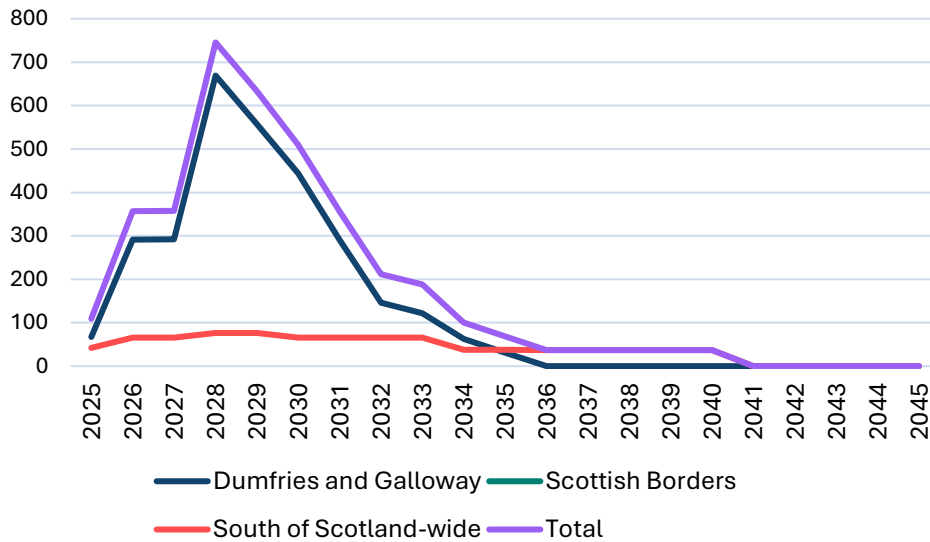
- 6.19 Dumfries and Galloway (76%) accounts for the largest share of employment under Scenario 3, with c.18% expected in Scottish Borders, and South of Scotland-wide anticipated to account for c.5%.

Table 6.8: Construction workforce requirement by local authority area, Scenario 3 (status-adjusted)

Area	Status-adjusted job years (DCI)
Dumfries and Galloway	12,757.2
Scottish Borders	3,088.9
South of Scotland-wide	892.5
Total	16,738.6

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 6.20 Construction employment demand under Scenario 3 peaks similarly to under Scenario 2 during 2028, with 745 FTE jobs required at the highest demand point.

Figure 6.4: Profiled construction employment impacts by local authority (Scenario 3)


Annual profiles are indicative and are sensitive to assumptions regarding project timing, duration and overlap.

Operational lifespan workforce requirements

- 6.21 When considering the full project pipeline, the modelling indicates an unadjusted potential for approximately 7,900 ongoing operational FTE jobs. Applying the status adjustment reduces this to approximately 5,400 operational FTE jobs by 2045. These figures are indicative rather than predictive and reflect the information currently available for projects at varying stages of development. Actual operational employment will depend on which projects proceed, their final scale and operating models, and the extent to which employment is located within the South of Scotland.
- 6.22 While a relatively small number of large projects account for a substantial share of the estimated operational employment, no additional assumptions about excluding individual projects from the analysis have been made. Doing so would require subjective judgements regarding project delivery. Instead, we applied a consistent status-adjustment methodology across the project portfolio to reflect differing levels of project maturity and delivery risk.
- 6.23 Scottish Borders has the largest share of expected operational employment (56%) in the status-adjusted pipeline. The remaining permanent operational employment is anticipated to be seen in Dumfries and Galloway (37%), with 7% of jobs being South of Scotland-wide.

Table 6.9: Overall potential operational workforce requirement by local authority area (status-adjusted)

Area	Total status-adjusted O&M FTEs
Dumfries and Galloway	2,017.1
Scottish Borders	3,053.7
South of Scotland-wide	375.6
Total	5,446.4

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 6.24 Over time, there is a slower ramp-up of operational employment in Dumfries and Galloway and South of Scotland-wide compared with the Scottish Borders.

Table 6.10: Operational workforce requirement increase over time by local authority area (status-adjusted)

Area	Operational FTEs			
	2030	2035	2040	2045
Dumfries and Galloway	1,097.5	1,717.1	2,017.1	2,017.1
Scottish Borders	2,473.9	3,053.6	3,053.6	3,053.6
South of Scotland-wide	187.5	375.6	375.6	375.6
Total	3,759.0	5,146.4	5,446.4	5,446.4

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 6.25 Much of this slow ramp-up is due to the comparatively long anticipated development timescales for Energy Transition projects. Creative and Cultural, and Supporting Infrastructure for Ports and Harbours projects also have a slower ramp-up in terms of operational employment.

Table 6.11: Operational workforce requirement increase over time by RTO thematic area (status-adjusted)

Thematic area	Operational FTEs			
	2030	2035	2040	2045
AI, Deep Tech and Advanced Manufacturing	603.8	672.5	672.5	672.5
Business and Professional Services	9.0	9.0	9.0	9.0
Creative and Cultural	191.3	382.5	382.5	382.5
Energy Transition	1,256.4	2,132.4	2,432.4	2,432.4
Health and Life Sciences	0.0	0.0	0.0	0.0
Industrial BioTech	63.0	63.0	63.0	63.0
Natural Capital Innovation Zone	1.9	3.3	3.3	3.3
Other	72.0	72.0	72.0	72.0
Supporting Infrastructure: Grid Infrastructure	0.0	0.0	0.0	0.0
Supporting Infrastructure: Other Enablers	0.0	0.0	0.0	0.0
Supporting Infrastructure: Ports and harbours	0.0	250.0	250.0	250.0
Supporting Infrastructure: Transport Infrastructure	0.0	0.0	0.0	0.0
Visitor Economy	1,561.7	1,561.7	1,561.7	1,561.7
Total	3,759.0	5,146.4	5,446.4	5,446.4

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

- 6.26 Operational employment is clearly grouped by thematic area across each area within the South of Scotland. In Dumfries and Galloway, most employment is expected to occur in Energy Transition; in Scottish Borders, investment in the Visitor Economy will drive operational

employment; and in relation to South of Scotland-wide projects, investment in Creative and Cultural projects will drive almost all operational employment.

Table 6.12: Operational workforce requirement by RTO thematic area and local authority area (status-adjusted; 2045)

Area	Operational FTEs, 2045			
	Dumfries and Galloway	Scottish Borders	South of Scotland-wide	Total
AI, Deep Tech and Advanced Manufacturing	0.0	672.5	0.0	672.5
Business and Professional Services	0.0	9.0	0.0	9.0
Creative and Cultural	0.0	7.5	375.0	382.5
Energy Transition	1,775.3	657.1	0.0	2,432.4
Health and Life Sciences	0.0	0.0	0.0	0.0
Industrial BioTech	63.0	0.0	0.0	63.0
Natural Capital Innovation Zone	2.7	0.0	0.6	3.3
Other	72.0	0.0	0.0	72.0
Supporting Infrastructure: Grid Infrastructure	0.0	0.0	0.0	0.0
Supporting Infrastructure: Other Enablers	0.0	0.0	0.0	0.0
Supporting Infrastructure: Ports and harbours	0.0	250.0	0.0	250.0
Supporting Infrastructure: Transport Infrastructure	0.0	0.0	0.0	0.0
Visitor Economy	104.2	1,457.5	0.0	1,561.7
Total	2,017.1	3,053.7	375.6	5,446.4

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Scenario 1: Sub-optimal development environment with grid upgrade constraints

6.27

Under this indicative scenario, the modelling indicates that projects could support just under 1,200 ongoing operational FTE jobs by 2045. The Scottish Borders could account for the largest share, followed by Dumfries and Galloway, with Visitor Economy and Energy Transition projects potentially supporting most of the operational employment

Table 6.13: Operational workforce requirement increase over time by local authority area, Scenario 1

Area	Operational FTEs			
	2030	2035	2040	2045
Dumfries and Galloway	74.3	289.1	295.2	295.2
Scottish Borders	121.2	662.6	698.6	734.5
South of Scotland-wide	0.0	126.3	126.3	126.3
Total	195.5	1,078.0	1,120.1	1,156.0

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Table 6.14: Operational workforce requirement increase over time by RTO thematic area, Scenario 1

Thematic area	Operational FTEs			
	2030	2035	2040	2045
AI, Deep Tech and Advanced Manufacturing	1.6	14.4	50.4	86.3
Business and Professional Services	0.0	3.0	3.0	3.0
Creative and Cultural	2.5	128.6	128.6	128.6
Energy Transition	49.7	304.2	310.3	310.3
Health and Life Sciences	0.0	0.0	0.0	0.0
Industrial BioTech	21.2	21.2	21.2	21.2
Natural Capital Innovation Zone	0.0	1.1	1.1	1.1
Other	6.1	12.1	12.1	12.1
Supporting Infrastructure: Grid Infrastructure	0.0	0.0	0.0	0.0
Supporting Infrastructure: Other Enablers	0.0	0.0	0.0	0.0
Supporting Infrastructure: Ports and harbours	0.0	68.2	68.2	68.2
Supporting Infrastructure: Transport Infrastructure	0.0	0.0	0.0	0.0
Visitor Economy	114.5	525.2	525.2	525.2
Total	195.5	1,078.0	1,120.1	1,156.0

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Scenario 2: Short-term realisation of near-optimal development conditions

6.28

Under this indicative scenario, the modelling indicates that the Scottish Borders could account for the largest share of operational employment, with over 2,200 ongoing FTE jobs by 2045. Dumfries and Galloway could account for almost 1,400 ongoing FTE jobs, while South of Scotland-wide projects could support around 290 ongoing operational FTE jobs. Energy Transition and Visitor Economy projects could account for most of the operational employment supported under the scenario.

Table 6.15: Operational workforce requirement increase over time by local authority area, Scenario 2

Area	Operational FTEs			
	2030	2035	2040	2045
Dumfries and Galloway	693.0	1,328.9	1,384.5	1,384.5
Scottish Borders	533.7	1,856.4	2,046.8	2,237.2
South of Scotland-wide	0.0	290.4	290.4	290.4
Total	1,226.7	3,475.7	3,721.8	3,912.2

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Table 6.16: Operational workforce requirement increase over time by RTO thematic area, Scenario 2

Thematic area	Operational FTEs			
	2030	2035	2040	2045
AI, Deep Tech and Advanced Manufacturing	8.5	76.5	266.9	457.3
Business and Professional Services	0.0	7.0	7.0	7.0
Creative and Cultural	5.8	295.8	295.8	295.8
Energy Transition	844.8	1,644.3	1,644.3	1,644.3
Health and Life Sciences	0.0	0.0	0.0	0.0
Industrial BioTech	48.7	48.7	48.7	48.7
Natural Capital Innovation Zone	0.0	2.6	2.6	2.6
Other	55.7	0.0	55.7	55.7
Supporting Infrastructure: Grid Infrastructure	0.0	0.0	0.0	0.0
Supporting Infrastructure: Other Enablers	0.0	0.0	0.0	0.0
Supporting Infrastructure: Ports and harbours	0.0	193.3	193.3	193.3
Supporting Infrastructure: Transport Infrastructure	0.0	0.0	0.0	0.0
Visitor Economy	263.2	1,207.5	1,207.5	1,207.5
Total	1,226.7	3,475.7	3,721.8	3,912.2

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Scenario 3: Delayed timeframe for realising more favourable development conditions

6.29

Under this indicative scenario, the modelling indicates that the Scottish Borders could account for the largest share of operational employment, with around 1,472 ongoing operational FTE jobs by 2045. Dumfries and Galloway could account for over 800 ongoing operational FTE jobs. Energy Transition and Visitor Economy projects could account for most of the operational employment supported under the scenario.

Table 6.17: Operational workforce requirement increase over time by local authority area, Scenario 3

Area	Operational FTEs			
	2030	2035	2040	2045
Dumfries and Galloway	190.0	720.1	808.7	808.9
Scottish Borders	371.5	1,212.4	1,365.9	1,472.4
South of Scotland-wide	0.0	210.7	210.7	210.7
Total	561.5	2,143.2	2,385.3	2,492.0

Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

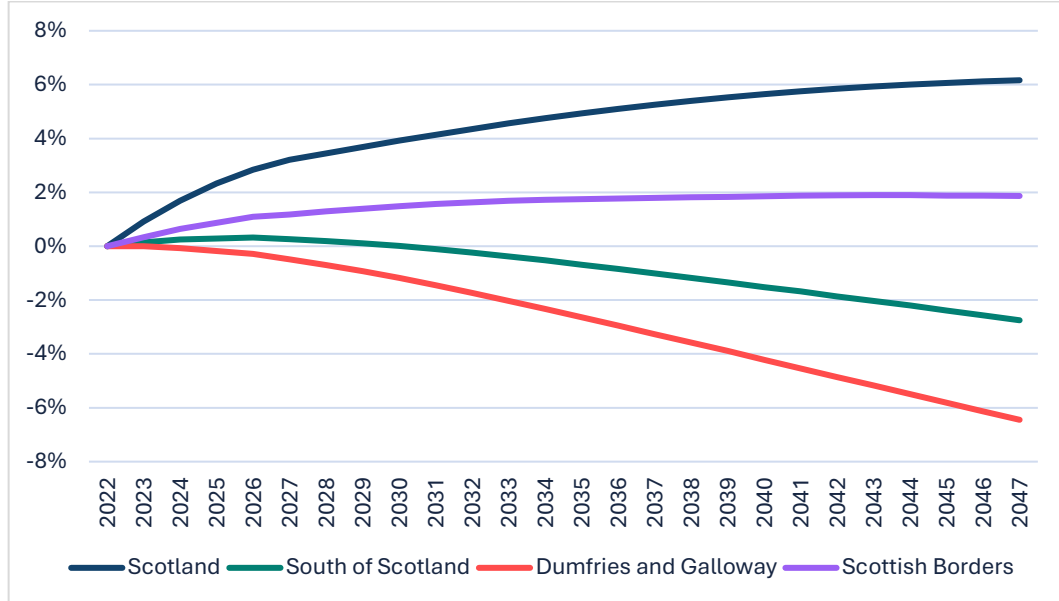
Table 6.18: Increase in operational workforce requirement over time by RTO thematic area, Scenario 3

Thematic area	Operational FTEs			
	2030	2035	2040	2045
AI, Deep Tech and Advanced Manufacturing	4.8	42.8	149.3	255.8
Business and Professional Services	0.0	4.8	4.8	4.8
Creative and Cultural	4.2	214.5	214.5	214.5
Energy Transition	188.1	789.3	924.9	925.1
Health and Life Sciences	0.0	0.0	0.0	0.0
Industrial BioTech	33.4	33.4	33.4	33.4
Natural Capital Innovation Zone	0.0	1.9	1.9	1.9
Other	0.0	40.4	40.4	40.4
Supporting Infrastructure: Grid Infrastructure	0.0	0.0	0.0	0.0
Supporting Infrastructure: Other Enablers	0.0	0.0	0.0	0.0
Supporting Infrastructure: Ports and harbours	140.2	140.2	140.2	140.2
Supporting Infrastructure: Transport Infrastructure	0.0	0.0	0.0	0.0
Visitor Economy	190.9	875.9	875.9	875.9
Total	561.5	2,143.2	2,385.3	2,492.0

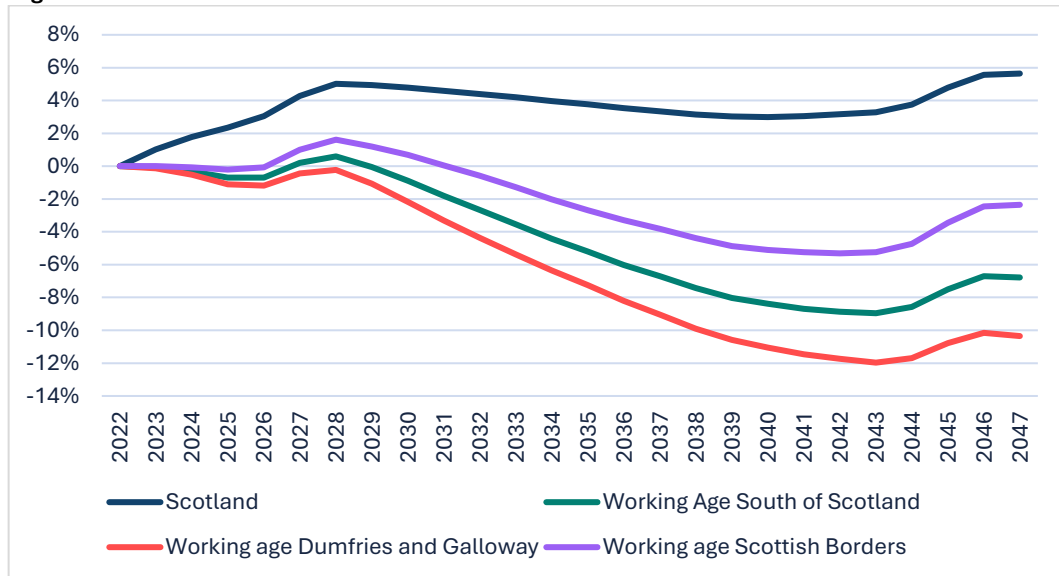
Figures are indicative modelled estimates and should not be interpreted as precise forecasts.

Demographic and labour-market context

- 6.30** The scale and timing of potential workforce demand must be considered in the context of the South of Scotland's demographic and labour-market position. The projected decline in the working-age population, alongside relatively low unemployment, means that the challenge extends beyond providing the required skills and qualifications to ensuring that sufficient workers are available to meet potential demand.
- 6.31** Figure 6.5 sets out the current population projections for the South of Scotland as a whole and each constituent local authority. It shows an overall decline of 2.8% in the period to 2047, which equates to over 7,000 people. The most significant decrease is projected for Dumfries and Galloway (6.4%). This is against a projected increase of 6.2% for Scotland as a whole, while the Scottish Borders will see a population increase of 1.9%.
- 6.32** By 2047, the total South of Scotland population is estimated to be 255,367 (decreasing from 262,590 currently), of which 145,183 will be of working age. Figure 6.6 shows that the working-age population in the South of Scotland is projected to decline steadily by 7% to 2047, most steeply in Dumfries and Galloway (10% decrease). This is compared to an overall growth in the working-age population of 6% in Scotland.

Figure 6.5: 2022-based total population projections (indexed), Scotland and South of Scotland region


Source: National Records of Scotland (2025)

Figure 6.6: 2022-based working-age population projections (indexed), Scotland and South of Scotland region


Source: National Records of Scotland (2025)

6.33 Potential workforce demand, combined with the projected decline in the working-age population, points to the need to develop and retain the existing workforce, retain young people, attract people to move or return to the South of Scotland, support career transitions and maximise labour-market participation among the existing working-age population.

6.34 Since Covid-19, and in common with other parts of the UK, Scotland has faced high and persistent rates of economic inactivity driven by factors such as mental and physical ill health, caring responsibilities, and people of working age choosing to retire. In the year to December 2025, economic activity in the South of Scotland was 80.6%, which is higher than the Scottish average of 77.7% and conversely, economic inactivity in the South of Scotland was lower than the Scottish average, 19.4% and 22.3%, respectively.¹⁸⁹ Economic inactivity was highest in

¹⁸⁹ [NOMIS, Annual Population Survey – Economic Inactivity \(2026\)](#)

Dumfries and Galloway at 19.6%, although in Scottish Borders it is close at 19.2%. Whilst more positive than the Scottish average, these levels of economic inactivity will still have implications for the availability of labour and the size of the potential recruitment pool available to the RTOs, their supply chains and the wider economy. They may also represent an opportunity where appropriate support can help people move into or return to employment.

- 6.35 At 2.6%, the rate of unemployment in the South of Scotland is lower than for Scotland (3.8%). It is lowest in Scottish Borders at 2.2% and highest in Dumfries and Galloway at 2.9%.¹⁹⁰ There is scope for unemployed people to find employment through the RTOs if they have or are provided with the required skills and can access the opportunities.
- 6.36 Residents' earnings in the South of Scotland are below the national average at £34,248 compared to a Scottish average of £39,905. In both Dumfries and Galloway and the Scottish Borders, they are below the Scottish rate, at £34,895 and £33,600 respectively.¹⁹¹ Average workplace earnings for organisations based in the South of Scotland are £33,202 which is below the rate for Scotland (£39,719).¹⁹² This indicates that some residents are travelling out of the region to access higher-paid employment, for example, to Glasgow or Edinburgh, or their respective wider city regions.
- 6.37 Lowest workplace earnings are in the Scottish Borders (£33,164) and the highest are in Dumfries and Galloway (£34,239). If the RTOs can provide a greater supply of higher-paid jobs in the South of Scotland, it may encourage more residents to work in the region rather than travel out of it.

Anticipated local workforce and skills implications

- 6.38 For illustrative purposes, if the status-adjusted employment associated with the identified pipeline were treated as additional to the existing regional workforce and projects progressed broadly in line with current modelled timescales, peak annual construction workforce demand could be around 6,800 FTE workers. This is equivalent to approximately 4.7% of the projected regional working-age population. However, this should not be interpreted as an additional 6,800 resident workers or permanent jobs, as demand may be met through a combination of existing residents, recruitment from established employers, inward migration and temporary workers travelling into the region.
- 6.39 Research surrounding the occupational groups required for the development of specific projects will be required, as this was beyond the scope of the current study. Broad, cross-cutting occupational groups applying to multiple RTOs will likely include for example:
- Construction managers and procurement managers;
 - Engineers, architects, planners, surveyors and construction project managers; and
 - Engineering technicians, architectural technicians and health and safety officers.
- 6.40 By 2045, the status-adjusted modelling indicates potential for approximately 5,400 ongoing operational FTE jobs, equivalent to around 3.7% of the projected regional working-age population. This represents an indicative scenario rather than a forecast, and the final level of employment will depend on the projects that proceed and the extent to which operational roles are located and filled within the region.

¹⁹⁰ [NOMIS, Annual Population Survey – Employment and Unemployment \(2026\)](#)

¹⁹¹ [NOMIS, Annual Survey of Hours and Earnings – Resident Analysis \(2025\)](#)

¹⁹² [NOMIS, Annual Survey of Hours and Earnings – Workplace Analysis \(2025\)](#)

Table 6.19: Employment demand compared to South of Scotland population and working-age population

	N	% of working age population
South of Scotland population	255,367	-
Working-age population	145,183	-
Peak annual construction demand (status-adjusted)	6,800	4.7%
Peak operational employment demand (status-adjusted)	5,400	3.7%

Workforce estimates are indicative modelled scenarios. Percentages are provided to illustrate potential scale relative to the projected working-age population and should not be interpreted as forecasts of additional resident workers.

- 6.41** It is also worth noting that these figures do not include family members who may accompany workers who move to the region either on a time-limited, temporary basis, or more permanently. This means that the population growth increases driven by the RTOs will likely be higher, coupled with additional employment arising from supply chain impacts for the project pipeline, and any other regional activity outside of the RTOs, including in other sectors not included in the scope of the research and highly represented in the South of Scotland – and thus of regional importance. It also does not take into account replacement demand for construction skills and in other sectors, as workers leave the labour market, for example, to retire. The construction sector is facing a period of almost unprecedented opportunity driven by factors such as net zero infrastructure, retrofitting, cladding remediation work, and policy commitments to ease the housing pressure.
- 6.42** Oxford Economics forecasts within SDS Sectoral Skills Assessments figures indicate a construction workforce in 2025 in Scotland of 190,000 people, accounting for 7% of Scottish employment.¹⁹³ Forecasts indicate that this workforce will grow by 5% between 2025 and 2028 to a total workforce of 200,000. This equates to a total requirement of 25,300 workers, comprising 15,300 people as replacement demand and 10,000 as expansion demand.¹⁹⁴ By 2035 the Scottish construction workforce is projected to be 217,200, representing a growth of 8.6% between 2028 and 2035. The total requirement will be 54,200 people, 37,000 as replacement demand and 17,200 for expansion.¹⁹⁵ In comparison, there is, across the Scottish economy, a projected replacement demand of 1,103,100 and expansion demand of 180,500 by 2035.
- 6.43** With a declining working-age population, there is a significant risk that existing regional labour and skills supply may be insufficient to meet the potential demand generated by the RTOs, particularly during periods when major projects overlap across the construction and operations and maintenance phases. As noted above, detailed information on skills shortages was not readily available from developers, due to the limited number of developers actively engaged in the research. However, it is important to note that there is already evidence of skills shortages in specific construction and engineering occupations, as well as roles associated with renewable energy developments more widely.
- 6.44** In responding to this challenge, maximising opportunities for local residents and attracting workers from outside the region will need to happen in parallel. Even with strong local training, reskilling and recruitment activity, the scale, timing and specialist nature of some projects mean

¹⁹³ <https://www.skillsdevelopmentscotland.co.uk/media/kxyjmayx/sectoral-skills-assessment-construction.pdf>

¹⁹⁴ Total requirement for people is made up of expansion and replacement demand. Expansion demand is the number of people required as a result of economic growth or contraction. Replacement demand is the number of people required to replace workers leaving the labour market (those who retire, move away, or change jobs). Figures are rounded to the nearest 100 and so totals may not equal the sum of the constituent parts.

¹⁹⁵ This is based on Oxford Economics projections which are policy neutral, and will therefore not consider opportunities such as those detailed in this RTO report.

that inward labour is likely to remain necessary, particularly during periods when multiple construction projects overlap. Furthermore, workforce demand generated by the RTOs may not solely result in net additions to employment. Some projects may recruit workers from existing employers within the South of Scotland, creating opportunities for higher wages, skills progression and career development, but also increasing recruitment pressures for SMEs, construction firms, hospitality businesses, public services and established manufacturers.

6.45 Workforce attraction and retention will also depend on a wider set of factors than job availability alone. The ability of the South of Scotland to attract and retain workers will be influenced by the availability and affordability of housing, transport connectivity, childcare provision, digital infrastructure, access to health and public services, opportunities for partners and families, and the overall quality of place offered by communities across the region. These factors will therefore be important considerations in translating labour demand into a sustainable workforce.

6.46 We also know that there is greater demand for experienced, skilled workers rather than entrants. This intelligence has arisen through research on transformational opportunities elsewhere in Scotland, and sectoral research relating to renewable energy developments, as well as in regional skills evidence baselining work. This raises a question of how to deliver education and training for young people and new labour market entrants, and also build in the necessary live experience that employers are increasingly seeking, indicating the need for collaboration between industry and academia surrounding forthcoming opportunities. One solution is for a higher degree of work-based or project-based learning for FE/HE students and apprentices, and ongoing supervised operational experience as education leavers (and apprentices) enter the workplace. Other solutions can include secondments or other arrangements to allow workers to gain exposure to specialist tasks and competencies, to build their understanding.

Workforce development and education provision implications

6.47 The need for a skilled workforce is a cross-cutting requirement for all the South of Scotland RTOs, and they share a great many similar skill needs, particularly in the construction phases. This covers both general and specialist construction and engineering skills, as well as the more permanent operations and maintenance phase once projects are up and running, such as service technicians and skilled machine operatives. There will also be a need for skills in the supply chain, e.g. logistics, transport, and support functions.

6.48 Labour and skills shortages could be exacerbated by the projected decline in the working-age population, with competition for workers likely to arise between RTOs, established regional employers, other sectors and employers elsewhere in Scotland. Responses will therefore need to address both the availability of workers and whether those workers have the particular skills, qualifications and experience required.

6.49 Regional businesses will also need the appropriate skills, systems and accreditations to access supply-chain opportunities arising from the RTO pipeline. This may require targeted support for SMEs in areas such as tendering and procurement, accreditation, health and safety, environmental compliance, quality assurance and wider supply-chain readiness. Building these capabilities will help local businesses meet the requirements of major projects and retain a greater share of RTO-related expenditure within the South of Scotland.

6.50 It is therefore crucial that early and well-resourced workforce planning is undertaken to prepare for the potential scale and timing of demand. This should consider the volume of workers required, the occupations and skills needed, the availability of the existing workforce, labour-market participation, attraction and retention, career transitions, and the education and training

provision required. Limited insight into detailed provision requirements was gained during consultations. However, whilst there is already provision targeting the South of Scotland's key sectors, including through the Borderlands Inclusive Growth Deal and Edinburgh and South East Scotland City Region Deal, greater consideration should be given to the potential workforce requirements associated with the development and construction phases of projects.

- 6.51 This planning must be underpinned by sustained employer engagement and robust evidence on the occupations, skills, experience and timing of potential demand. Employers will have an important role in providing clearer workforce intelligence, supporting work-based learning and entry routes, investing in workforce development and adopting recruitment practices that widen access to opportunities. This would help education and training providers align provision more closely with evidenced employer demand and reduce the risks associated with investing in new or expanded provision.
- 6.52 The indicative operational and maintenance workforce requirement of approximately 5,400 FTE jobs illustrates the potential scale of the challenge in the context of the South of Scotland's demographic profile and projected decline in the working-age population. Ensuring that residents can access these potential long-term opportunities will be important to maximising the economic benefits retained within the region. This will require coordinated workforce planning that combines workforce development, wider labour-market participation, attraction and retention, career transitions, and education and training provision aligned with evidenced employer demand. Housing, transport connectivity, childcare, services and quality of place will also influence whether workers can relocate to and remain within the South of Scotland.
- 6.53 Construction workforce requirements present a different challenge. Under the status-adjusted modelling, peak annual construction workforce demand could be around 6,800 workers, while the existing construction workforce in the South of Scotland was approximately 7,500 workers in 2024. However, much of this workforce is already engaged in existing construction activity and will continue to be required to support ongoing development across the region. Given the potential scale of the identified pipeline, with more than 41,800 construction job years modelled, a significant proportion of the construction workforce may need to be sourced from outside the South of Scotland, including from elsewhere in Scotland and potentially further afield. While opportunities should be maximised for local firms, apprentices and workers, inward labour may be required during peak construction periods if projects progress at the scale and to the timescales assumed in the modelling.

7 Conclusions and priorities for action

Introduction

- 7.1 The research has confirmed that the South of Scotland has a substantial opportunity to capitalise on a diverse portfolio of Regional Transformational Opportunities (RTOs), with impacts that could be felt across both Dumfries and Galloway and the Scottish Borders. The region already has significant assets to build from, including its natural capital, renewable energy capacity, visitor economy, land-based sectors, emerging innovation infrastructure, creative and cultural strengths, and distinctive quality of place. Harnessing the project pipeline identified in this report can support enterprise growth, new employment, inward investment, community benefit and wider place-based regeneration across the region.
- 7.2 This final chapter sets out the conclusions arising from the research and the priorities for action that should be considered by regional partners. It also highlights the importance of evidence-based strategic planning, enabling infrastructure, workforce development, investment readiness and coordinated delivery at a regional level.
- 7.3 The potential for the South of Scotland is significant. The analysis has identified 202 projects and investments, with an unadjusted pipeline value of £31.8bn and a status-adjusted value of £19.6bn. This level of potential investment is transformational in scale, but it will only translate into lasting regional benefit if partners are able to capture and retain more of the value locally. This will require bold, confident and coordinated decision-making, alongside trust, collaboration and cooperation across SOSE, local authorities, national agencies, education and skills providers, investors, businesses and communities.
- 7.4 The South of Scotland economy is not defined by a single dominant sector or urban centre. Its opportunity lies in the cumulative strength of a distinctive regional portfolio: Energy Transition; AI, Deep Tech and Advanced Manufacturing; the Natural Capital Innovation Zone; Visitor Economy; Industrial Biotechnology; Health Innovation and Life Sciences; Creative and Cultural activity; and Business and Professional Services.
- 7.5 While it is acknowledged throughout this report that the opportunities analysed as part of this research are at varying stages of development, and that there are higher levels of activity identified in some thematic areas (particularly Energy Transition projects), relevant transformational opportunities have been identified across each of the opportunity areas. Supporting these opportunities can help diversify the regional economy, strengthen productivity, improve resilience, create higher-value employment pathways and enhance the South of Scotland's attractiveness as a place to live, work, visit and invest.

Conclusions

- 7.6 With an identified status-adjusted pipeline value of **£19.6bn**, there is a significant opportunity to transform the South of Scotland economy. The scale of the opportunity is substantial in its own right, but particularly significant in the context of the region's rurality, dispersed settlement pattern, demographic challenges and need to strengthen productivity, business growth and population retention. The pipeline identified through this research therefore represents a major opportunity to support long-term economic diversification and resilience across both Dumfries and Galloway and the Scottish Borders.

- 7.7 Across the RTO sectors considered within this report, there are clear and significant opportunities to pursue and realise. The strongest (identified) quantified opportunities are in Energy Transition and AI, Deep Tech and Advanced Manufacturing, reflecting the scale of renewable energy, battery storage, grid infrastructure, data centre and advanced technology proposals. However, the transformational potential of the South of Scotland is not limited to these largest capital investments. Opportunities in the Visitor Economy, Natural Capital Innovation Zone, Industrial Biotechnology, Creative and Cultural activity, Health Innovation and Life Sciences, and Business and Professional Services all contribute to a broader regional proposition based on natural assets, innovation, quality of place, land-based sectors, culture, heritage and strategic connectivity.
- 7.8 Strategic partners in the South of Scotland must therefore remain committed to realising these opportunities and working as a region to ensure that investable, deliverable projects are progressed. The portfolio of projects under consideration in this analysis (and others that will undoubtedly emerge over time) has the potential to bring transformative change for the region and to position the South of Scotland as a nationally significant contributor to Scotland's net zero, natural capital, rural innovation, visitor economy and inclusive growth ambitions.
- 7.9 Investment is spread across both local authority areas and across a wide range of thematic opportunities. This creates an opportunity to distribute benefits across towns, rural communities, coastal settlements and strategic development locations, rather than concentrating impacts in a small number of places. This will be particularly important in the South of Scotland, where transformational economic development must respond to the realities of rurality, dispersed populations, variable infrastructure capacity and localised labour market challenges. Future delivery should therefore focus not only on the scale of investment secured, but on the extent to which value is retained locally through supply chains, employment pathways, community benefit, fair work, local procurement and community wealth building.
- 7.10 It is recognised that investing in RTO sectors alone will not be sufficient. The analysis highlights the importance of supporting infrastructure and wider enablers, including grid capacity, transport connectivity, housing, digital infrastructure, planning capacity, land-use coordination, business premises and workforce development. As highlighted in Chapter 6, there will be significant demand for construction workers, which will likely involve temporary recruitment from outside the region. This might cause further strain on housing demand. These enablers are therefore essential to converting the RTO pipeline from a set of potential opportunities into realised economic impact. They are also critical to ensuring that the South of Scotland is attractive as a place to live, work, study, visit and invest.
- 7.11 However, there are significant constraints and risks to growth. These include grid connection and capacity challenges, transport limitations, housing availability and affordability, skills shortages, planning complexity, uncertainty around some early-stage projects, and competition with other regions for investment, labour and supply-chain capacity. These issues are particularly acute where major opportunities are dependent on the same enabling infrastructure, workforce or land-use decisions. Realising the RTO portfolio will therefore require a sustained collaborative and coordinated approach across SOSE, Dumfries and Galloway Council, Scottish Borders Council, the Regional Economic Partnership, education and skills providers, national agencies, investors, businesses and communities.
- 7.12 The research has also highlighted the importance of evidence-based planning and live intelligence. There is uncertainty amongst education and skills providers, supply-chain companies and potential investors about when opportunities will materialise, what skills will be required, and where demand will be concentrated. This makes it difficult for businesses to

invest in capacity, for education providers to plan provision, and for potential learners or workers to make informed choices about future career pathways. A stronger shared evidence base, supported by ongoing project pipeline monitoring and sector-specific intelligence, will therefore be essential to de-risking investment and enabling partners to respond at pace.

- 7.13 The South of Scotland already has strong foundations on which to build, including established partnership structures, active regional strategies, significant natural capital assets, renewable energy strengths, Borderlands Inclusive Growth Deal (and, through the Scottish Borders, Edinburgh and South East Scotland City Region Deal) investments, innovation projects and a growing profile in responsible tourism, land-based innovation and creative activity. The challenge now is to convert these foundations into coordinated action, ensuring that the identified RTOs are progressed in a way that is investable, deliverable, inclusive and aligned with the long-term needs of communities across the region.

Considerations and priorities

- 7.14 Chapter 3 sets out opportunities and priorities for each RTO theme. While some actions are specific to individual sectors, the research has identified a number of common issues that cut across the portfolio. These include the need for enabling infrastructure, stronger regional coordination, improved skills planning, investment readiness, local supply-chain development, community benefit and a clearer regional proposition. The key to unlocking the South of Scotland's growth potential will be to take a place-based and systems-led approach, rather than treating each RTO theme in isolation.
- 7.15 This is particularly important given the nature of the South of Scotland economy. The region is large, rural and polycentric, with opportunities distributed across towns, rural communities, coastal areas, strategic employment sites and major land-based assets. Some opportunities, such as Energy Transition and proposed data infrastructure, are highly capital-intensive and dependent on grid, land and planning decisions. Others, such as the Visitor Economy, Natural Capital Innovation Zone, Creative and Cultural activity, Industrial Biotechnology and Business and Professional Services, may generate more dispersed and cumulative impacts. The priorities for action therefore need to support both large-scale strategic investments and smaller, distributed opportunities that collectively contribute to transformation.
- 7.16 It should be noted, however, that the research has predominantly focused on the economic impacts of proposed capital investment, and as a result, there is additional value that has not been captured through this model. Capital investment is only one measure of transformation, and there is additional economic value that can be gained through increased innovation, strengthened and resilient supply chains, as well as population attraction and retention.
- 7.17 There must also be acknowledgement that delivering the full potential of the pipeline will require prioritisation and, in some cases, trade-offs. Infrastructure capacity, grid connection, planning resources, housing supply, workforce availability and public investment are all finite. Decisions may therefore be required about which opportunities should be accelerated, which should be sequenced over a longer period, and where regional partners should focus effort to maximise economic, social and environmental value for the South of Scotland as a whole.
- 7.18 Given that Chapter 3 considers specific priorities relevant to each thematic opportunity, the priorities set out below are not sector-specific. They are provided as cross-cutting priorities for regional partners to consider in developing an RTO Action Plan for the South of Scotland. They are not presented in order of importance or timing. In practice, many will need to be progressed in parallel and will be mutually reinforcing.

- 7.19 Each priority includes suggested actions for consideration by SOSE, Dumfries and Galloway Council, Scottish Borders Council, the South of Scotland Regional Economic Partnership, education and skills providers, national agencies, businesses, investors and community partners. These actions are not exhaustive, and some are already underway in some form. The intention is to consolidate the evidence from this report and identify the areas where coordinated regional action will have the greatest impact.

Priority 1: Develop a live RTO intelligence and risk framework

- 7.20 It is recognised throughout this report that the RTO portfolio is subject to a degree of uncertainty. Many projects are at different stages of maturity, and there are gaps in information around timing, investment value, employment demand, skills needs and infrastructure dependencies. This creates risk for public sector partners, education providers, businesses and investors. Without a stronger evidence base, it will be difficult to make confident decisions about when to invest in skills, infrastructure, sites, supply-chain development or promotional activity.
- 7.21 A live, quality-assured, intelligence function would help partners track the project pipeline, monitor risk, update assumptions and provide a stronger basis for decision-making. This would be particularly valuable given the scale of the Energy Transition and AI/data infrastructure pipeline, and the uncertainty around early-stage proposals.

Priority 1 actions

- **RTO pipeline dashboard:** Develop a live dashboard tracking project status, investment value, employment impacts, timescales, infrastructure dependencies and delivery risks. This should also include a risk framework, which considers potential constraints such as grid connectivity, planning considerations, financial risks, community licence, skills needs and transport considerations.
- **Early warning indicators:** As part of the risk framework, identification of early warning indicators for projects that have the potential to be delayed, or are at-risk. This could include stalled planning, grid constraints, finance gaps or community opposition.
- **Evidence refresh process:** Establish a process for refreshing project data regularly, updating status-adjusted impacts to help inform decision-making.
- **Information sharing:** Create a protocol for sharing non-commercially sensitive intelligence gathered through the dashboard with partners including education providers and wider business support agencies.

Priority 2: Strengthen South of Scotland coordination and delivery

- 7.22 Realising the potential of the RTO portfolio will require a coordinated regional approach across public, private, education, community and third sector partners. As has been acknowledged throughout this research, South of Scotland already has important partnership structures in place, including SOSE, the two local authorities, the Regional Economic Partnership, Borderlands Inclusive Growth Deal arrangements and links to the Edinburgh and South East Scotland City Region Deal. However, the scale and complexity of the RTO pipeline means that delivery will require even further coordination, clear ownership and a shared view of priorities.
- 7.23 This is particularly important because many of the opportunities cut across local authority boundaries and sectoral responsibilities. Energy transition, natural capital, visitor economy development, housing, transport, skills and digital infrastructure cannot be delivered effectively in isolation. A stronger collaborative and co-ordinated South of Scotland approach would

provide a single regional framework for aligning investment, sequencing interventions and ensuring that the benefits of major projects are retained across the region.

Priority 2 actions

- **Regional coordination:** Establish a clear regional coordination process for the RTO portfolio, with defined roles for SOSE, the Regional Economic Partnership, local authorities, national agencies, education providers and private sector partners.
- **RTO Action Plan:** Develop a South of Scotland RTO Action Plan that translates the findings of this report into a prioritised, time-bound and accountable programme of activity.
- **Cross-sector delivery groups:** Create delivery groups around the most cross-cutting themes, including enabling infrastructure, skills, investment readiness, natural capital and community benefit.
- **Community and VCSE involvement:** Ensure community and third sector organisations are involved in shaping delivery, particularly where projects affect land use, local services, natural assets, community wealth and place identity.

Priority 3: Coordinate enabling infrastructure to unlock investment

7.24 The report identifies enabling infrastructure as one of the most critical determinants of whether the RTO pipeline can be realised. Grid capacity and connection are fundamental to Energy Transition, potential data infrastructure, advanced manufacturing and future industrial development. Transport connectivity is essential for visitor economy growth, labour mobility, supply chains, business services and access to strategic sites. Housing is increasingly an economic infrastructure issue, affecting workforce attraction, retention and the ability to deliver major projects. Digital connectivity is critical for RTO themes, including AI, Deep Tech and Advanced Manufacturing, Business and Professional Services, Creative and Cultural, and Health Innovation and Life Sciences, as well as broader rural enterprise activity.

7.25 The South of Scotland's infrastructure challenges are not limited to any one sector. They are systemic and interdependent. A coordinated infrastructure approach is therefore required to ensure that investment decisions are sequenced, mutually reinforcing and aligned with the highest-value opportunities.

Priority 3 actions

- **Grid sequencing and prioritisation:** Work with transmission and distribution network operators to map RTO-related demand and develop a coordinated approach to grid connection, reinforcement and flexibility.
- **Local energy use and offtake:** Explore opportunities for local energy offtake, PPAs, hydrogen, storage, microgrids and demand-side use to retain more value from renewable generation within the region.
- **Strategic transport priorities:** Prioritise transport interventions that unlock cross-sector benefits, including the A75, A77, Borders Railway extension, public transport, active travel and access to visitor destinations and employment sites.
- **Housing as an enabler:** Align housing delivery with anticipated workforce demand, major investment locations and the South of Scotland housing prospectus.
- **Digital connectivity:** Continue targeted action to address broadband, mobile and 5G gaps, particularly where these constrain rural enterprise, digital adoption, hybrid working and innovation.

Priority 4: Investment-ready portfolio development

- 7.26 The RTO pipeline includes major opportunities that will require suitable, serviced and investment-ready land and premises. This includes strategic opportunities at Chapelcross, potential data infrastructure sites, Borders Innovation Park, Borderlands Business Infrastructure Programme sites, visitor economy assets, industrial biotechnology facilities, and sites linked to natural capital and renewable energy. The availability of land alone will not be sufficient. Sites must be supported by infrastructure, planning certainty, utilities, transport access, digital connectivity and a clear investment proposition.
- 7.27 This priority should tie into the South of Scotland Regional Land Use Framework. The challenge is to ensure that economic development, land use change, nature restoration, renewable energy, housing, tourism and community priorities are planned in a way that supports long-term regional resilience.

Priority 4 actions

- **Site readiness assessments:** Undertake site readiness assessments covering planning, utilities, transport, grid, digital connectivity, housing and skills implications.
- **Land use alignment:** Use the Regional Land Use Framework to manage potential tensions between energy, natural capital, agriculture, forestry, tourism, housing and development.
- **Planning capacity and coordination:** Strengthen planning coordination for priority projects, including early engagement with statutory consultees and infrastructure providers.
- **Portfolio approach to premises:** Develop a regional view of business premises requirements, including space for expansion, production space, creative workspaces, innovation facilities and specialist manufacturing premises.

Priority 5: Cross-sectoral skills and workforce pathways

- 7.28 As has been shown through Chapter 6, the RTO portfolio could create significant demand for construction, engineering, digital, energy, hospitality, creative, scientific, technical, land-based and professional skills. However, the South of Scotland faces demographic and labour market challenges, including an ageing population, retention issues, rurality, limited specialist labour pools and competition from larger urban economies. The development of these projects requires a blended response of both experienced workers and also an increase in new entrants to the respective sectoral workforces. Apprenticeships, employer-led training, upskilling and reskilling should therefore form an explicit part of the workforce response, particularly in areas where there is likely to be cross-sectoral demand such as construction, engineering, energy and digital skills.
- 7.29 Skills planning must therefore be proactive, cross-sectoral and linked to the project pipeline. It should not focus only on the operational jobs created by major projects, but also on the significant identified construction and development-phase demand, supply-chain roles, replacement demand and opportunities for people currently outside the labour market. South of Scotland partners have for a number of years, co-ordinated regional skills planning activity through the Education and Skills Strategic Coordination Group (ESSCG). The recommendations under this priority are therefore designed to build upon and complement progress to date. In August 2026, the ESSCG approved a concept around a “Workforce South” initiative; which would respond to the recommendations above. This RTO report should support the development of “Workforce South” further.

Priority 5 actions

- **RTO skills forecasting model:** Develop a regional model that forecasts skills demand across RTO themes, using live project pipeline intelligence and scenario planning. This should be considered a complementary tool to SDS' established labour-market intelligence and skills forecasting, rather than duplicating this forecasting.
- **Construction and engineering pipeline:** Prioritise construction, civil engineering, electrical, mechanical, grid, retrofit and energy-related skills due to their relevance across multiple RTOs.
- **Industry-education alignment:** Strengthen formal links between employers, schools, colleges, universities, SDS and training providers to align provision with emerging demand.
- **Inclusive workforce development:** Connect RTO employment pathways to employability support, targeting young people, returners, economically inactive residents and under-represented groups.

Priority 6: Maximising local supply chain and community benefit capture

- 7.30 The scale of investment identified in the report creates a major opportunity to retain more economic value within the South of Scotland. However, without deliberate intervention, there is a risk that much of the value from large capital projects will be captured by firms and labour outside the region. This is particularly relevant to Energy Transition, potential data infrastructure, construction, grid, visitor economy and advanced manufacturing opportunities.
- 7.31 A coordinated approach to supply chain development, procurement, community benefit and fair work will be required. This should build on Community Wealth Building principles, but be tailored to the South of Scotland's rural business base, microbusiness profile and dispersed communities.

Priority 6 actions

- **Supply chain mapping:** Map local and regional supply-chain capacity across energy, construction, visitor economy, digital, natural capital, creative industries, life sciences and professional services.
- **Procurement and local benefit:** Use public procurement, planning agreements and voluntary developer commitments to maximise local employment, apprenticeships, community benefit and supply-chain participation.
- **SME readiness support:** Support SMEs to meet supplier requirements, including accreditation, digital systems, tendering, health and safety, net zero standards and finance.
- **Community benefit framework:** Develop a consistent regional approach to community benefits from major developments, particularly renewable energy, potential data infrastructure and visitor economy projects.
- **Fair Work and inclusive employment:** Continue to embed Fair Work and inclusive recruitment expectations across RTO-related development and supply chain activity.

Priority 7: Alignment of land use (particularly for Energy Transition and Natural Capital)

- 7.32 Energy Transition and the Natural Capital Innovation Zone are two of the South of Scotland's most distinctive RTOs, but they are also closely linked to wider land use decisions. The region's land must support multiple objectives, including providing renewable energy, biodiversity restoration, forestry, agriculture, food production, housing, tourism, recreation, carbon storage

and community wellbeing. The challenge regarding this is to manage trade-offs and deliver multiple benefits. The Natural Capital Zone, acts as a catalyst for innovation around natural capital, and is intended to attract responsible private investment, support innovation and entrepreneurship, create jobs and skills, strengthen local businesses and communities, and develop a pipeline of investment-ready opportunities related to responsible and sustainable development.

- 7.33 This priority is central to the South of Scotland context. If well managed, the region can become a recognised leader in integrated land use, clean energy, natural capital innovation and rural economic transformation.

Priority 7 actions

- **Integrated land-use decision-making:** Use the Regional Land Use Framework to guide decisions on renewable energy, natural capital, agriculture, forestry, housing and visitor economy development.
- **Natural capital investment readiness:** Support natural capital projects to become investment-ready, including through robust data, governance, community benefit models and financial structures.
- **Energy and nature co-benefits:** Encourage renewable energy and grid projects to incorporate biodiversity, landscape, access and community benefit measures from the outset.
- **Community energy and shared ownership:** Develop a pipeline of community energy, shared ownership and local benefit models.
- **Nature-based workforce development:** Build skills pathways linked to peatland, woodland, marine, river restoration and land management.

Priority 8: Strengthening the South of Scotland's proposition

- 7.34 The South of Scotland has strong assets, but the evidence suggests that these are not always articulated as a coherent regional proposition. The region's offer spans renewable energy, natural capital, rural innovation, cycling and active tourism, culture, heritage, creative production, potential data infrastructure, life sciences, dairy innovation, quality of life and strategic connectivity between Scotland and northern England. These strengths should be brought together into a sharper proposition for investors, residents, workers, visitors and national partners.

- 7.35 As the marketing material from Invest in South of Scotland identifies¹⁹⁶ a stronger regional proposition would support inward investment, skills attraction, visitor growth, business relocation and partnership development.

Priority 8 actions:

- **Promote priority investment opportunities:** Package key opportunities such as Chapelcross, potential green data infrastructure, renewables, NCIZ, visitor economy assets, Dairy Nexus, deep tech and business infrastructure into investor-facing materials.
- **Talent attraction narrative:** Link the economic proposition to housing, quality of life, culture, landscape, schools, digital connectivity and career pathways.
- **Visitor and place narrative:** Align RTO messaging with Scotland Starts Here, responsible tourism, active travel, creative and cultural assets, and destination development.

¹⁹⁶ <https://investinsouthofscotland.com/>

- **National positioning:** Engage Scottish and UK Government, enterprise agencies and investors around the region's contribution to national priorities.

Priority 9: Accelerating innovation and commercialisation

- 7.36 Several RTO themes depend on the region's ability to move from ideas and demonstrators into commercial products, services and scalable businesses. This is particularly relevant to Industrial Biotechnology, Health Innovation and Life Sciences, AI and Deep Tech, Natural Capital, creative technologies and dairy innovation.
- 7.37 The South of Scotland has important innovation assets, including Dairy Nexus, Digital Dairy Chain, Borders Innovation Park, the Borderlands Deep Tech Accelerator, HISES links and emerging natural capital demonstrators. The priority is to connect these assets into a stronger commercialisation pathway that can support wider regional development.

Priority 9 actions

- **Commercialisation support:** Provide targeted support for businesses and researchers moving from proof of concept to market.
- **Cross-sector innovation challenges:** Establish challenge-led innovation programmes around energy, natural capital, dairy, health, tourism, digital adoption and circular bioeconomy.
- **Scale-up finance:** Improve access to investment, grants and patient capital for early-stage and scale-up businesses.
- **University, college and industry links:** Strengthen collaboration between education providers, research partners, NHS organisations, businesses and investors.
- **Anchor project leverage:** Use major projects such as Chapelcross, Center Parcs, Dairy Nexus, NCIZ pilots and Borderlands infrastructure to stimulate innovation demand.

Priority 10: Communicating opportunities

- 7.38 The success of the RTO portfolio will depend partly on whether people, businesses, investors and communities understand what is coming and how they can benefit. This includes potential workers making career decisions, businesses deciding whether to invest, communities responding to development proposals, and national partners choosing where to allocate support.
- 7.39 A communications approach should therefore be built into delivery. It should explain the opportunity, manage expectations, build confidence and make clear how local people and businesses can participate.

Priority 10 actions

- **South of Scotland RTO communications plan:** Develop a communications plan aimed at communities, businesses, investors, learners and public sector partners.
- **Careers campaign:** Promote future career pathways across energy, digital, construction, visitor economy, natural capital, creative industries, biotechnology and professional services.
- **Project visibility:** Provide accessible updates on major RTO projects, timelines, employment and supply chain opportunities and community benefits.
- **Community engagement:** Support early, honest and meaningful engagement around projects likely to affect local communities, landscapes or land use.

A.1 Appendix 1: Impact Methodology

Introduction

This appendix sets out the methodology and approach for the impact assessment as provided in Chapter 5. The assessment is based on primary and secondary information gained during the course of the research, provided by the SOSE client team and partners in Scottish Borders Council, Dumfries and Galloway Council, other strategic stakeholders, consultees, and our own extensive desk research.

Approach

The research team included notable projects and significant investments across each of the regional transformational opportunities (RTOs) identified, as well as significant supporting infrastructure developments (particularly in relation to grid connectivity and wider enablers) and developments that are adjacent to the relevant RTOs. In total, 202 relevant projects were identified throughout this research.

Projects were identified through a combination of consultation with stakeholders (nine targeted consultations and two stakeholder workshops), desk research and analysis, and also in liaison with the SOSE-led client team to source additional information that was available.

Projects were categorised in multiple different ways. These included categories based on:

- The RTO thematic areas to be assessed;
- Local authority area;
- Project status (where the project is either unknown/early stage, scoping/pre-application, planning/consenting phase, in development and pre-operational). Where unclear, the best estimate of project status has been made based on available information and anticipated timelines for delivery, drawing on available proxies and metrics where possible.

Methodological challenges

It should be noted that the availability of information varied on a project-by-project basis. This was often determined by status of project, with early-stage projects often having particularly limited data. Some of the projects' data availability was also constrained for confidentiality/commercial sensitivity reasons. In such instances, data was estimated based on info for comparable projects elsewhere, where this was available.

Where gaps existed in data provided by the SOSE-led team, informants from the local authorities, consultees, etc. and were unable to be filled through desk research, estimates were made based on available proxy and comparator data and other industry intelligence. This included:

- The UK Business Register and Employment Survey (BRES)¹⁹⁷, for information on Full Time Employment (FTE) ratios;
- The Scottish Annual Business Statistics (SABS)¹⁹⁸ for sectoral employment, Turnover: Employment and Turnover: Gross Value Added (GVA) ratios, as well as GVA per FTE and Gross Wages/Salaries per FTE estimations; and

¹⁹⁷ <https://www.nomisweb.co.uk/sources/bres>

¹⁹⁸ <https://www.gov.scot/publications/scottish-annual-business-statistics-2022/documents/>

- Relevant desk-based resources, including ClimateXchange¹⁹⁹, the Department for Energy Security and Net Zero²⁰⁰, and relevant proxy values found in academic journals such as the Renewable and Sustainable Energy Review.²⁰¹

Investment and employment for each project have been apportioned across the projects' respective development years. In the absence of other intelligence and for modelling simplicity, an equal spread has been apportioned across each year of investment for the project.

It should be noted that in some instances, programmes of work have been recognised as one single project for the purposes of this research. While it is recognised that the portfolio of possible investment spans multiple RTO thematic areas and including the potential investment in this way distorts the findings, it was considered necessary to preserve the commercial sensitivity of possible inward investment as far as possible.

Accurate data on operational employment and associated impacts were only available for a minority of projects identified during the research. This meant that there were insufficient data available to robustly scale up from those projects where information was available. Nevertheless, the research team estimated likely operational employment for projects to provide an indication of the possible long-term employment demand from the identified development projects. Estimated operational employment is presented with regard to status-adjusted impacts for projects. Given the limited availability of robust proxy/comparator data, estimates of operational impact GVA values were omitted from analysis as this would affect reliability of calculated impacts for the operational lifespan of projects.

Once profiled by the above categories, data regarding investment value (in £), employment (FTEs both in terms of construction and operational/maintenance), timescales for construction/development (with development start and end dates) were then identified or estimated and populated for each project.

This information has been gleaned from a variety of sources, including:

- Reports and background information provided by the Regional Economic Partnership;
- Information provided by consultees regarding planned investment projects and investment propositions; and
- A desk-based web search for available information for each project.

Impact assessment

The impact assessment conducted has been based on available information for each project. It has considered each individual project's investment, and construction impacts in terms of employment (direct) and GVA (direct, and indirect/induced).

There are a number of components to the impact assessment:

- An **unadjusted** impact assessment, which considered the raw data for each project;
- A **status-adjusted** impact assessment, which adjusted the investment levels for projects based on their current status and the probability of the projects progressed sufficiently to then be started/completed;

¹⁹⁹ <https://www.climateexchange.org.uk/wp-content/uploads/2024/05/CXC-Skills-requirements-in-Scotlands-onshore-industry-May-2024.pdf>

²⁰⁰ <https://www.gov.uk/government/publications/electricity-generation-costs-2023>

²⁰¹ https://www.researchgate.net/publication/330936819_Co-located_deployment_of_offshore_wind_turbines_with_tidal_stream_turbine_arrays_for_improved_cost_of_electricity_generation

- **Scenarios** were then modelled to reflect the impact of various policy, regulatory, infrastructure and other potential factors to “switch on” certain project investment levels and timescales. These scenarios are illustrative, to demonstrate the impact of supportive/restrictive policy, regulatory and economic environments.

Across the impact assessment, monetary values for investment and GVA impacts have been rounded. It should be noted that some of the investment for projects under consideration falls out with the time period for the assessment (2025-2045; with some investment occurring either before or after the period). Therefore, the totals within the scenario modelling section will necessarily differ somewhat from total (status-adjusted) investment levels.

The results should be read as indicative comparisons between development environments, not as forecasts of precise investment, employment or GVA outcomes. They describe the potential scale, distribution and timing of impacts under the stated assumptions and the evidence available at the time of assessment. Actual outcomes will depend on which projects proceed, their final scale and timing, the delivery of enabling measures, and the extent to which investment, supply-chain activity and employment are retained within the South of Scotland. The underlying pipeline is a snapshot of currently known projects rather than an exhaustive or fixed programme; commercially sensitive or very early-stage projects may be absent, future projects may be added, and large early-stage proposals can have a disproportionate influence on totals.

Unadjusted impact assessment

This impact assessment considered the raw project data that had been sourced and assumes each project will progress as planned and to the scale stated. The impacts considered under this assessment include:

- The total investment value (£);
- Total employment in FTE job years across the development, construction and installation (DCI) phase of projects;
- Estimated direct GVA (£) from capital investment and construction;
- Estimated indirect/induced GVA (£) from capital investment and construction; and
- Operational employment.

These values do not consider the current status of projects. It is unlikely that all projects will come to fruition, for a variety of reasons, such as constraints on available company finance to deliver projects, more advantageous economic opportunities elsewhere, changes in the natural environment impacting on the feasibility of delivery, macro-economic conditions negatively impacting delivery, etc. It is therefore likely that lower actual investment levels will be achieved across the portfolio of projects under consideration. Rather than discounting projects on a subjective basis, this has been assessed on an objective basis via the status classification as described below.

Status-adjusted impact assessment

In order to adjust the projects by status classification, projects were grouped into the following categories, set out in Table A1.1. Adjustment factors used to reflect project status and the likelihood of project progression and completion are also provided. Early-stage projects may have a relatively low likelihood of being developed at the outset, with the certainty of the investment being realised increasing as projects progress along the development life cycle.

The types of impacts that were then calculated were the same as in the unadjusted impact assessment, as set out above, that is:

- The total investment value (£);
- Total employment in FTE job years across the development, construction and installation (DCI) phase of projects;
- Estimated direct GVA (£) from capital investment and construction;
- Estimated indirect/induced GVA (£) from capital investment and construction; and
- Operational employment.

Table A1.1: Adjustment factors for project status

Project status	Summary	Adjustment factor
Data centre proposition only	Reported impacts treated with caution to reflect uncertainty in assumed impact estimates associated with data centres.	25%
Unknown	Limited information about the projects is available and the current status of the project is unknown; it is likely that the project is conceptual or at a very early stage of development	50%
Early stage project development	Project is at an early stage of planning and design. Potentially at SOC stage of business case development.	50%
Scoping/pre-application	Project planning and design has progressed, and project developers are scoping out planning and consenting requirements for the project. Potentially at OBC stage of business case development.	60%
Planning/consenting phase	Projects are sufficiently advanced and are moving through the planning and consenting phase. Potentially at FBC stage of business case development.	70%
Project under construction or in development	Projects have received permission/consenting (and/or FBC approval), and are under development – either in terms of pre-construction activity, or are under construction.	80%
Pre-operational	Construction is complete, and projects are ready to commence their operational phase	95%
Operational	Projects have commenced their operational phase	100%

Scenario Development

Scenarios were used to test how the scale and timing of impacts from the identified project pipeline could vary under different policy, regulatory, infrastructure and development conditions. They were modelled from the status-adjusted estimates rather than the unadjusted maximum opportunity, so that project maturity and the likelihood of progression were reflected before alternative delivery environments were considered. The scenarios are intended to show the implications of different combinations and timing of enabling conditions, including planning and consenting, grid connection, workforce planning, transport, housing and communications infrastructure, collaboration, supply-chain development, and research and innovation.

Project maturity and deliverability were handled through the preceding status adjustment. Early-stage projects were subject to greater discounting, while projects further along the development pathway received progressively smaller adjustments. An additional adjustment was applied to data-centre

proposals because consultation and the available evidence indicated particular uncertainty around their scale, timing, deliverability and locally retained impacts. Where project-level timing information varied or was limited, investment was profiled evenly across the stated development years. No further adjustment was made to project timelines in the absence of supporting evidence, as doing so would introduce undue subjectivity; the profiled timing may therefore prove flatter and more extended as projects develop. Overall discounting factors for each scenario are presented in the respective Tables A1.2, A1.3 and A1.4.

Scenario 1 represents the extant policy environment, with no change to current policy, legislative or regulatory frameworks and with barriers to major electricity grid upgrades. Many projects may still proceed, but projects for which a new grid connection is critical are constrained.

Table A1.2: Adjustment factors for Scenario 1

Project type	Adjustment factor (value)	Adjustment factor (timescales)
Natural Capital Innovation Zone	0.336	1.805
Energy Transition	0.128	2.051
Creative and Cultural	0.336	1.805
AI, Deep Tech and Advanced Manufacturing	0.128	1.958
Health and Life Sciences	0.336	1.805
Industrial BioTech	0.336	1.805
Business and Professional Services	0.336	1.805
Visitor Economy	0.336	1.805
Other	0.168	1.805
Supporting Infrastructure: Ports and harbours	0.273	1.891
Supporting Infrastructure: Transport Infrastructure	0.336	1.887
Supporting Infrastructure: Grid Infrastructure	0.064	2.238
Supporting Infrastructure: Other Enablers	0.128	2.051

Scenario 2 is a 'policy-on' case in which a more supportive policy regime and proactive economic development activity are implemented across partners, with full switch-on in the short to medium term (for example, 18–24 months); almost all projects are assumed to progress broadly to their intended timescales with few barriers.

Table A1.3: Adjustment factors for Scenario 2

Project type	Adjustment factor (value)	Adjustment factor (timescales)
Natural Capital Innovation Zone	0.773	1.145
Energy Transition	0.680	1.218
Creative and Cultural	0.773	1.145
AI, Deep Tech and Advanced Manufacturing	0.680	1.188
Health and Life Sciences	0.773	1.145
Industrial BioTech	0.773	1.145
Business and Professional Services	0.773	1.145
Visitor Economy	0.773	1.145
Other	0.773	1.145
Supporting Infrastructure: Ports and harbours	0.773	1.145
Supporting Infrastructure: Transport Infrastructure	0.773	1.145
Supporting Infrastructure: Grid Infrastructure	0.716	1.188
Supporting Infrastructure: Other Enablers	0.680	1.218

Scenario 3 is a 'delayed policy-on' case in which a more encouraging development environment is eventually achieved, but switch-on takes place over a longer period (for example, five years or more); projects progress on extended timescales and some barriers remain.

Table A1.4: Adjustment factors for Scenario 3

Project type	Adjustment factor (value)	Adjustment factor (timescales)
Natural Capital Innovation Zone	0.561	1.408
Energy Transition	0.380	1.531
Creative and Cultural	0.561	1.408
AI, Deep Tech and Advanced Manufacturing	0.380	1.477
Health and Life Sciences	0.561	1.408
Industrial BioTech	0.530	1.408
Business and Professional Services	0.530	1.408
Visitor Economy	0.561	1.408
Other	0.561	1.408
Supporting Infrastructure: Ports and harbours	0.561	1.408
Supporting Infrastructure: Transport Infrastructure	0.561	1.458
Supporting Infrastructure: Grid Infrastructure	0.357	1.566
Supporting Infrastructure: Other Enablers	0.380	1.531

