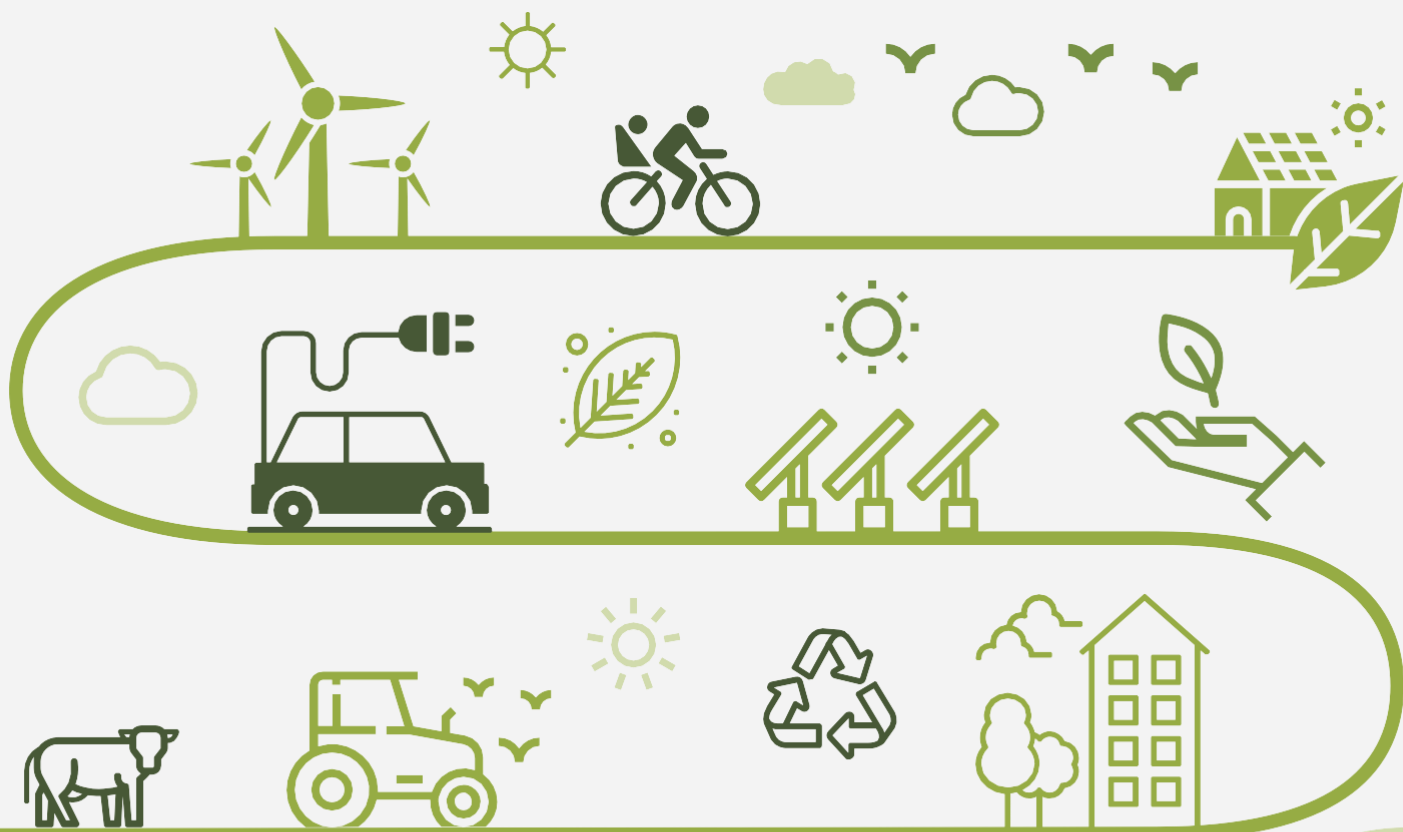


# Mapping green investments across Scotland

CESAP Pathfinder Work package 1: Action 1.2

November 2023



## Introduction

Building better understanding and evidence of future skill needs to support Scotland's transition to net zero is a priority area of focus for the Climate Emergency Skills Action Plan<sup>1</sup> (CESAP). The CESAP sets out the need for a detailed understanding of the investment likely to create job opportunities and drive the demand for skills.

In response to this, CESAP Pathfinder Work Package 1 was developed and sought to examine the breadth and quality of skills evidence in relation to the transition to net zero. As part of this programme of work, Skills Development Scotland commissioned a study to map green investments<sup>2</sup> across Scotland. Optimat were appointed and developed a thorough process to identify and classify green investment in Scotland, including the likelihood of the investment materialising and over what timeframe.

The research provided a regional, local authority, sectoral, and sub-sectoral breakdown of these investments. The sectors that were included in the research and were identified in the CESAP were: Construction; Manufacturing; Energy Transition; Transport, and Agriculture Land Use.

Projects focused on climate change and climate mitigation were included whilst nature recovery and biodiversity were out of scope and therefore not included. The research included investments that are already underway (but not yet completed) or planned to start within the next two-to-three years (although some projects had a duration of up to ten years).<sup>3</sup>

The research focused on investments of £0.5m or above, which were likely to create demand for green skills at scale. Investments were categorised depending on their likelihood to go ahead and split into the following groupings:

- 1 - Already proceeding
- 2 - High likelihood
- 3 - Medium likelihood
- 4 - Significant uncertainties

The categorisation of investments was based on several factors including whether the project was a high-level intention or had a firm business case developed, and the presence of significant

dependencies such as a realistic chance of obtaining investment funding within the two-to-three-year timescale, and similarly obtaining planning and consents.

The investment mapping took place between May 2022 and July 2022, and it is important to note that this captures a point in time. Any subsequent announcements in investment (confirmed or planned) will not be captured in the findings presented here.

## Findings

### **Overall investment**

The research identified 249 investments with known budget attached to them. These investments were either currently underway or planned to commence within the next 2-3 years. The total value of these investments was £89.9bn. Many of the investments included in this figure fall into the medium likelihood and significant uncertainties categories, so caution should be exercised with this figure.

Of the total £89.9bn<sup>4</sup>:

- £14.2bn was already underway.
- £33.5bn had a high likelihood of going ahead.
- £19.8bn had a medium likelihood of going ahead.
- £22.3bn had significant uncertainties associated with them.

Whilst capturing a point in time, the Optimat study has provided a good understanding of the scale and likelihood of investment that may drive demand for green jobs, and in turn a requirement for green skills. The analysis highlights significant uncertainties with some investments and its anticipated sectoral focus – and is subject to change as investment intentions and barriers to development are removed. Maintaining a clear picture of investment scale and likelihood should remain a key priority going forward.

### **High-level sectors and certainty of green investment**

Table 1 below details investment totals by CESAP sector and the likelihood of proceeding in the next 2-3 years.

<sup>1</sup> Skills Development Scotland (2020). [Climate Emergency Skills Action Plan](#).

<sup>2</sup> For the purpose of this study 'green investments' were defined as: projects where the total value is >£0.5M; projects that have already started (but not completed) or are likely to start in the next 2-3 years (although they do not need to be completed in that timescale, with some projects identified, such as large offshore wind projects, having

completion dates of 2032) and; projects focused on climate change mitigation or climate change adaptation. Projects focusing on nature recovery and biodiversity are not included in scope.

<sup>3</sup> The Optimat Work was undertaken between May and July 2022 therefore two-to-three years and ten years from this date.

<sup>4</sup> Figures do not sum due to rounding.

**Table 1: Investment value (£) by CESAP sector**

CESAP Sector	1 = Already proceeding		2 = High likelihood		3 = Medium likelihood		4 = Significant uncertainties		Total
Energy Transition	9,737	16.7%	32,363	55.4%	9,418	16.1%	6,949	11.9%	58,468
Transport	1,584	10.3%	70	0.5%	0	0.0%	13,701	89.2%	15,354
Construction	2,139	14.8%	808	5.6%	10,202	70.8%	1,265	8.8%	14,414
Agriculture Land Use	326	67.1%	160	32.9%	0	0.0%	0	0.0%	486
Manufacturing	103	56.9%	26	14.4%	51	28.2%	2	1.1%	181
Other	345	35.7%	67	6.9%	155	16.0%	399	41.3%	966
<b>Total</b>	<b>14,234</b>	<b>15.8%</b>	<b>33,495</b>	<b>37.3%</b>	<b>19,826</b>	<b>22.1%</b>	<b>22,315</b>	<b>24.8%</b>	<b>89,870</b>

Source: Optimat SDS Mapping of Green Investments across Scotland

**Energy transition** was the sector with the highest level of known investment, with £58.5bn of investments, accounting for 65% of all known green investment. Almost three-quarters of Energy Transition investments (72%) were either already underway or had a high likelihood of proceeding.

A total of £15.4bn investment was identified in the **Transport** sector, but 89.2% of this was in the significant uncertainties category, with less than 11% in the already proceeding or high likelihood categories.

Similarly, **Construction** had £14.4bn of investment identified through the research, however, approximately 80% of this was spread across the medium likelihood and significant uncertainties categories.

Across **Manufacturing and Agriculture and Land Use**, smaller investment sums were found. For Agriculture and land use, the research identified £486m of investments with over 67% of this already proceeding and nearly 33% having a high likelihood of going ahead. For manufacturing, £181m of investment was found, with nearly 57% in the already proceeding category, 14% in the high likelihood, 28% in the medium likelihood category, and the final 1% having significant uncertainties associated with it.

**Green investment by region**

Table 2 highlights the split of known green investment by region.

**Table 2: Green investment (£M) and share by region<sup>5</sup>**

Region	Total	%
Aberdeen City and Shire	5,252	5.8%
Ayrshire	1,282	1.4%
Edinburgh City Region	8,126	9.0%
Forth Valley	2,247	2.5%
Glasgow City Region	30,425	33.6%
Highlands and Islands	8,969	9.9%
Tay Cities	4,588	5.1%
South of Scotland	513	0.6%
Scotland-wide	460	0.5%
Offshore – not allocated to LA	28,786	31.8%
<b>Total</b>	<b>90,649</b>	<b>100.0%</b>

Source: Optimat SDS Mapping of Green Investments across Scotland

Unsurprisingly given the differences across local authorities, investment also varied significantly across the different regions, including both the scale of investment as well as likelihood of proceeding. Regional comparisons are complex due to the vast differences in population size across the regions and the rural/urban split, but it is worth highlighting some of the key regional findings.

The highest levels of investment were found in Glasgow City Region –home to around one third of Scotland’s population – accounting for £30.4bn. This is over three times the level of investment compared to the second highest in Highlands and Islands or third highest in Edinburgh City Region.

There is also a significant level of investment classed as ‘offshore’ (£28.8bn). This relates mainly to large wind generation projects where the supply chain strategies are not sufficiently developed (or at least available in the public domain) to identify the local authority areas where Scottish supply chain spend will take place. The 17 ScotWind lease projects are a good example of investments in this category.

Lower levels of investment are found in the South of Scotland, Ayrshire and Forth Valley Regions, albeit still significant.

In addition to the total value of investments, it is also important to consider investments according to their likelihood of proceeding.

<sup>5</sup> Scottish Borders Council is included in two regions (Edinburgh City Region and South of Scotland). Fife is included in Edinburgh City Region and North East Fife is included in Tay Cities. Totals of regional

data will exceed actual totals due to some double counting.

## Green investment in regions by certainty

Table 3 below concentrates only on regional green investments already proceeding or where there is a high likelihood of proceeding in the next 2-3 years. Despite Glasgow City Region having the highest value of overall regional green investment, only 9% of this total (£2.7bn) is assessed to be already proceeding or have a high likelihood of proceeding.

Looking at the likelihood of investments proceeding by investment value, the Highlands and Islands Region (£5.4bn) and Edinburgh City region (£5.2bn) are the leading regions for known green investment proceeding or highly likely to proceed. In the Highlands and Islands, this is due to significant offshore supply chain investment being apportioned to the Moray Council area with £2.6bn associated with the Moray West Offshore Wind Farm.

Even across relatively small regions, by population, the levels of known investment that is proceeding or likely to proceed are significant at £938m in Ayrshire, £763m in Forth Valley and £368m in the South of Scotland.

**Table 3 Green investment totals (£M) and % already proceeding and with a high likelihood of proceeding in the next 2-3 years, by region (including 'Offshore' and 'Scotland wide').<sup>6</sup>**

Region	1 = Already proceeding	2 = High likelihood	Total (£M) and %
Aberdeen City and Shire	1,661	2,280	3,941
	31.6%	43.4%	75.0%
Ayrshire	208	730	938
	16.2%	57.0%	73.2%
Edinburgh City Region	4,816	413	5,229
	59.3%	5.1%	64.3%
Forth Valley	722	41	763
	32.1%	1.8%	33.9%
Glasgow City Region	2,082	588	2,670
	6.8%	1.9%	8.7%
Highlands and Islands	2,011	3,409	5,420
	22.4%	38.0%	60.4%
Tay Cities	2,831	174	3,005
	61.7%	3.8%	65.5%
South of Scotland	99	269	368
	19.2%	52.4%	71.6%
Scotland-wide	325	135	460
	70.7%	29.3%	100%
Offshore – not assigned to LA	3	25,513	25,516
	<0.1%	88.6%	88.6%
<b>Total</b>	<b>14,757</b>	<b>33,552</b>	<b>48,309</b>

Source: Optimat SDS Mapping of Green Investments across Scotland

When considering known sector investment by

<sup>6</sup> Scottish Borders Council is included in two regions (Edinburgh City Region and South of Scotland). Fife is included in Edinburgh City Region and North East Fife is included in Tay Cities. Totals of regional

geography, the most significant **Energy** investment is happening in the Highlands and Islands, Tay Cities and Aberdeen City and Shire Regions. This includes investments in Offshore Wind as well as £2.2bn for a carbon capture power facility, £360m for a net zero technology centre and £89.7m for an energy transition zone.

**Transport** investment spans across the country, and covers electric charging infrastructure, and low carbon aviation, marine, rail and road fleet. This includes investment of £500m for a Bus Partnership Fund to deliver targeted bus priority measures on local and trunk roads and also £150m earmarked for Active Travel to make walking, wheeling, and cycling the natural choice for shorter everyday journeys.

Known **Construction** investment is situated mainly in the Glasgow City Region. This includes £115m for a Glasgow City Council Avenues Programme of improvement for 21 key streets and adjacent areas. This includes prioritised spaces for cyclists and pedestrians, reduced street clutter and intelligent smart lighting. There is also £113m for redeveloping the Glasgow City Council Clyde Waterfront and West End Innovation Quarter, including improvements to the local road network and the creation of new and enhanced pedestrian and cycle infrastructure.

Known Investment in **Agriculture and Land Use** is mainly located in the Glasgow City, Edinburgh City and Tay Cities Regions. They are focussed on the adoption of low carbon farming technologies and practices and forest planting and include £107m for the Clyde Climate Forest.

**Manufacturing** investment is concentrated in the Edinburgh City Region and includes £17.3m for the development of a facility to process by-products from the whisky and other sectors as well as a £15.3m investment planned for a heat pump factory.

## Available Data and Limitations

Although extensive, this study does not include all potential green investments. Green investments were identified on the basis of having a total value of greater than £0.5m and having either already started or are expected to start in the next two to three years. Projects focusing on natural capital and biodiversity have not been included.

The source and depth of evidence used in this research varies from detailed reports to publicity announcements. This means key data is not

data will exceed actual totals due to some double counting.

consistently available and therefore the scale of investment quoted should not be translated into job impacts.

More detail is needed on total expenditure figures of some projects; location of employment in some green investments; and occupational requirements of investments. The scale of green investment proposed in these projects is significant in the Scottish economy as a whole, however it is not yet possible to suitably assess the scale and timing of the employment requirement of these projects.

## Lessons Learned

1. It has been possible to estimate the scale and likelihood of green investments (either currently underway or planned to start in the next two to three years) across Scotland. This has been possible through desk-based research and a series of consultations with key stakeholders. This knowledge of investment can be used as a basis for prioritising evidence gaps and informing skills planning.
2. Evidence on known and certain investment is strong at CESAP sector level and allows disaggregation by region. In some cases, specific economic opportunities have been identified. The level of known investment is significant and should be of sufficient scale to signal the need to invest in anticipation of skill needs.
3. The analysis highlights significant uncertainties with some investments and their anticipated sectoral focus, and this is subject to change as investment intentions and barriers to development are removed.
4. The levels of known investment with a high likelihood of progressing are greatest in the Highlands and Islands, Edinburgh City Region, Aberdeen City and Shire, Tay cities and Glasgow City Region.
5. There are distinct geographical concentrations of known sectoral investment proceeding or likely to proceed by region. Energy transition is mostly concentrated in the north of Scotland and the east coast; known Construction investment concentrated in the Central belt while Transport investment is distributed around Scotland.
6. Even in relatively smaller regions such as Ayrshire, Forth Valley and the South of Scotland, the scale of known investment that is likely to proceed is of significant scale and is likely to drive demand for new jobs and skills as it progresses.

These lessons on known investment could be used as a basis for prioritising the filling of evidence gaps

and further skills planning pilot activity. It could also provide the basis for piloting specific sectoral skills interventions in regions where there is clear evidence of emerging activity.

At the same time there is sufficient investment that is known and highly likely to proceed across every region in Scotland over the next 3 years. This will require agility and responsiveness from the skills system.

## The way forward

There are some significant uncertainties about the timing and critical path to investment in some sub sectors, particularly in relation to hydrogen and Scotwind. Work is underway through the Hydrogen Programme and Scotwind Programme which should resolve some of these uncertainties going forward.

The Pathfinder identifies the following opportunity in relation to investment:

- *To take advantage of upcoming economic opportunities in ScotWind, Hydrogen, CCUS and Green Freeports, developing an understanding of the investment aligned to these opportunities should be an early priority. This should look to provide up to date detail on known investments within Scotland, specific locations, and the nature and timeframes for investment. This will provide a stronger basis for subsequent skills demand assessment and a strong signal of potential future skills demand to skills providers.*

Crucially, what is presented in this research is very much a snapshot of a point in time. The volume of known investment will change over time and maintaining a clear picture of investment scale and likelihood should remain a key priority going forward. This needs to be to be communicated and shared with partners in the skills system in a clear and accessible way that allows them to make plans to inform the shape for future provision.

## About the study

This study was undertaken by Optimat in May-July 2022 and was commissioned by Skills Development Scotland.

The study used a combination of desk research and stakeholder consultations. The desk-based research exercise was undertaken first, and this identified approximately 250 investments. To fill the data gaps arising from the desk research and to identify

---

additional investments, a list of stakeholders was compiled. These stakeholders were interviewed as part of the research and covered all 32 local authorities. A total of 51 interviews were completed, covering 47 organisations.

The outputs for this research were:

- A database containing information on all investments identified.
- A report which presented an analysis of the data collected.

## Linked research

The CESAP Work Package 1 Pathfinder has a suite of reports to share the insights, intelligence and lessons learned. These can be found [here](#).

This precis is supplemented by:

- *Pathfinder Report* - a comprehensive overview of the full range of activity that constituted the Pathfinder and opportunities identified for further action.
- *Executive Summary* – a short summation of the CESAP Pathfinder report and the opportunities identified for further action.
- *Preces Reports (Investment, Demand and Provision)* – succinct, accessible documents which provide the background to the work, summarise the main findings and identify key lessons learnt.
- *Mapping of Green Investments* – further detail on identified investments in Scotland to support the transition to net zero.
- *Supplementary Demand Evidence* – additional technical data from activity to estimate demand.
- *Supplementary Provision Evidence* – additional technical data from activity to quantify provision.