Scottish Enterprise

NECCUS

# Voice of the Supply Chain

## White Paper

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**Images:**

- Front cover: DCS25 Supply Chain Panel
- Page 4 (from left to right): Whittaker Engineering, Tarmac cement plant, Greenock Ocean terminal
- Page 8: Viridor Energy from waste plant

## The Scottish Government has set itself an ambitious target of reaching net zero emissions of all greenhouse gases by 2045 – in order to achieve this goal, there are many challenges that need to be overcome.

One of these is the decarbonisation of industry, which contributes around a quarter of Scotland's carbon dioxide ($CO_2$) emissions. A pathway towards decarbonisation for 80% of Scottish industrial emissions was developed by Scotland's Net Zero Roadmap (SNZR)[1]. However, a key aspect to achieving these pathways is the supply chain readiness for the delivery of these decarbonisation actions. To ensure that the voice of the supply chain is adequately heard, this paper focuses on the responses and outputs from two roundtable events that were held in late 2024, one in the central belt of Scotland (Glasgow) and another in the Northeast (Aberdeen).

The Scottish supply chain is a key asset with decades of expertise and knowledge across a wide range of industrial sectors; and the Scottish Government is committed to a just transition for this work force[2]. By building on these strengths and investing in the opportunities that the supply chain provides, Scotland can establish a robust and sustainable low carbon industrial ecosystem, enhancing its role in global climate solutions and supporting its commitment to a net zero future. It is an imperative that this resource is given full access to the new opportunities that this net zero transition will create. In addition, a more detailed understanding of the supply chain needs for meeting this net zero ambition is vital, as without it many projects may end up being delayed or stranded due to limits to the availability of labour or materials.

The Carbon Capture and Storage Association (CCSA) recently undertook an analysis of the supply chain in its '2024 Supply Chain - Initial Forecast'[3]. This report raised some concerns around the current level of preparedness in the UK supply chain's ability to meet the UK's net zero ambitions; they also highlighted some of the requirements of the Carbon Capture, Utilisation and Storage (CCUS) industry including the need to receive clearer signals from government on the timelines for delivery of Track-2 cluster projects.

In their 2024 workforce census the Engineering Construction Industry Training Board (ECITB) highlighted that 71% of employers were already experiencing issues in recruiting, a jump from 53% just three years earlier[4]. This skills shortage highlights the need for the supply chain to be properly understood and action to be taken from STEM in schools, through apprenticeships and to standardisation.

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[1] Scottish Net Zero Roadmap - snzr.co.uk
[2] Just Transition - A Fairer, Greener Scotland: Scottish Government response - gov.scot
[3] CCSA publishes Supply Chain Initial Forecast Report - CCSA, 2024
[4] 2024 Workforce Census, 2025

In this report a wider view of the supply chain is considered. One of the recurring points raised by participants in the Supply Chain Roundtables held by NECCUS, was that there is a focus on the supply chain in verticals, when other decarbonisation and infrastructure projects require the same skillsets – welders, pipefitters, electricians, etc. For this reason, a sector-by-sector view may not capture the full range of challenges, as many end-use sectors—including CCUS and hydrogen—could find themselves in competition for access to key skillsets, manufacturing and fabrication within the supply chain.

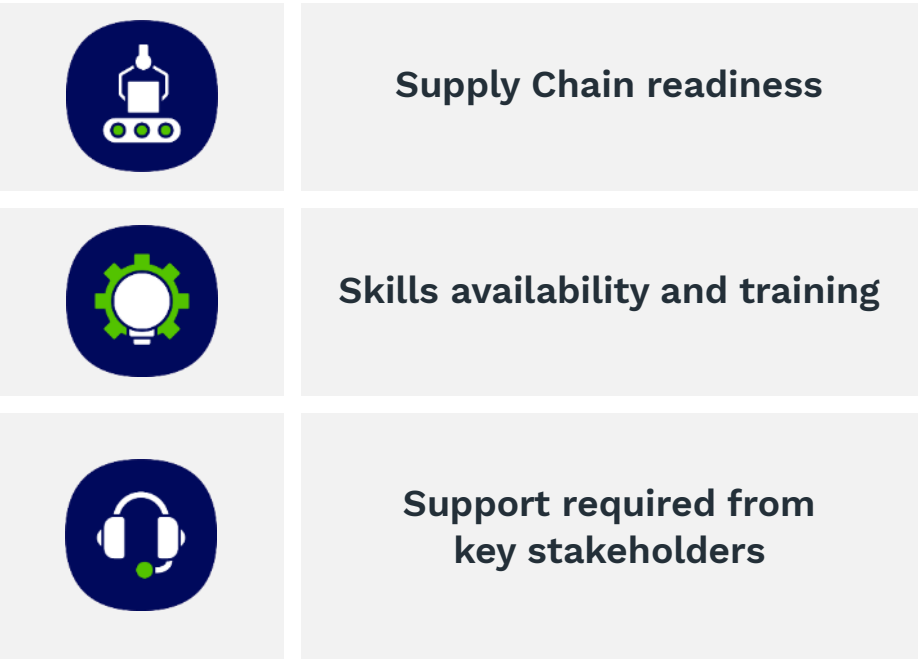
# Key Themes

A number of representatives of the supply chain, including both NECCUS members and non-members, attended two roundtable events in November 2024, in Glasgow and Aberdeen. The meetings were conducted under the Chatham House Rule, so none of the statements or responses are attributed to particular attendees.

Each of the round table events were focussed around two overarching questions:

- What are the key challenges and barriers to delivering the large number of upcoming infrastructure projects to deliver net zero?
- What do we need to do to ensure 50% local content or more in decarbonisation projects in Scotland?

In order to gain an appropriate understanding of the supply chain's view on these two key issues the discussion was split into three key themes:




These themes were structured as three sessions at each of the Supply Chain Roundtable events, and the attendees discussed the themes in the context of the overarching questions. The sections below summarise points made by the participants at these events.

# Supply Chain readiness: Scale up and 50% local content

- What does 50% local content mean, and how can we achieve it? There was a feeling that other countries have much tighter requirements as to what is meant by 'local content'
- For local content to be successfully implemented the full chain environmental impacts of the manufacture of components must be considered, as competing with imported products purely on price is not appropriate
- Large projects are not under obligation to use local supply chains and as such will commonly revert to using their existing suppliers
- Development of local supply chains should focus on existing manufacturing capability and resource; investment in large-scale manufacturing, for example capture columns, will be costly and may not be competitive with places that already manufacture these components
- Supply chain organisations are being asked to undertake design and costings by the large projects, which feels like they are being asked to do free consultancy as this often does not lead to a contract
- Smaller companies feel as if they do not have enough of a chance to engage with the project developers to get their products into the projects
- The verticals involved for the supply chain do not matter as described by one of the attendees:

> "...it doesn't matter if it's $CO_2$ or $H_2$. Components are universal across different verticals. The team doing coded welding in one vertical will be doing the same coded welding in another vertical"

- Health and safety requirements along with potential ethical concerns can cause prices for locally manufactured goods to be much higher than imported ones. Can standards for this help to ensure the use of local supply chains?
- There is currently too much uncertainty on project, timescales and regulations which is hindering progress. Supply chain companies need more visibility of the opportunity so that they can prepare for it
- Many of the current projects have not completed their Final Investment Decisions (FID) and as such there is no guarantee for the supply chain that the projects will even reach implementation

# Skills and training: Availability and Scope

- Skills needed will change over time, with the lag that exists due to the training times (5-10 years for a welder[5]) there is the risk that the required skills will change as a result of automation
- Decline of UK manufacturing overall has had a negative effect on the supply chain as there are less trained professionals with the required skills in the workforce
- Workforce is less transient than in the past with fewer workers willing to relocate or travel for jobs
- Concern over how hard it can be for large organisations to hire apprentices and that small organisations may find it impossible. Part of the issue is that the financial assistance available to companies is determined at local government level[6]
- There is concern about how Science, Technology, Engineering, and Mathematics (STEM) is discussed in schools, that there is not enough discussion of industry jobs and how pupils can get involved. This will tie in with the Scottish curriculum that has a major requirement for STEM[7] to be taught at all ages
- The need to address Equality and diversity across future training and skills programmes as there are many individuals who may have missed out in the past and we cannot afford for this to be case in the future
- Can industry provide materials for schools to build up the understanding of what the supply chain opportunities are?
- There is currently an issue with the public perception of CCUS, the Supply chain believed that better engagement with the education sector and awareness of the opportunity would help young people view it as a potential career path

[5] Comment from NE roundtable
[6] Recruit an apprentice in Scotland - CITB
[7] STEM in Curriculum for Excellence | Curriculum areas | Curriculum in Scotland | Parentzone Scotland | Education Scotland

# What support is required from key stakeholders

- The supply chain, particularly smaller organisations within it, felt that the current match funding model is overly restrictive on the development of new, novel technologies
- External stakeholders need access to information showing the current state of the supply chain in order to more effectively distribute resources when looking to develop the sector
- The supply chain needs sight of project timelines and government funding timelines
- Paying less for services does not necessarily deliver the best value and that other factors such as carbon footprint should be included in the procurement process
- What happened to the Green Industry Growth Accelerator (GIGA)? If it is not still going ahead, then similar funding may be needed to scale up the supply chain to meet the demands of CCUS and the energy transition
- The supply chain feel that much of the risk for projects is being directly applied to them and that going forward they need more assurance that this is not the case

# Recommendations

A number of recommendations were identified, based on these discussions, directed at a range of stakeholders and representing a list of activities that the supply chain believe would assist them in making the net zero targets of Scottish and UK Governments a reality.

| Supply chain readiness: Scale up and 50% local content | |
|---|---|
| **1** | A review by UK and Scottish governments of how local content is defined; how this is defined in other countries; how the economic value to the UK is assessed; how the carbon footprint is factored into this, and can obligations on projects be strengthened |
| **2** | Ensure that there is clarity from government and large projects on their timescales and keep the supply chain informed of these timescales and support |
| **3** | Enable NECCUS to share this information and keep the supply chain informed |
| **4** | Development agencies and NECCUS to engage with small companies to raise awareness of opportunities in the supply chain for CCUS |
| **5** | Map the supply chain capabilities and expertise across Scotland to highlight the strengths and potential areas for growth |

| Skills and training: Availability and scope | |
|---|---|
| **1** | Use industrial decarbonisation and the energy transition as a learning and future careers opportunity in schools at all levels, and build in equality, diversity and inclusion to develop skills across society |
| **2** | Provide more support to SMEs to access apprenticeships and make the overall process more transparent and accessible |
| **3** | Develop further CPD and transitional courses to enable the development of hydrogen and carbon capture utilisation and storage (CCUS) skill sets |

## What support is required from key stakeholders

| | |
|---|---|
| **1** | Funding bodies to provide more diverse funding to enable the development of projects through pilot feasibility and front-end engineering design (FEED) |
| **2** | Provide a procurement framework for energy transition projects that focusses on more than just the lowest price including local content provisions |
| **3** | There is a need to complete the award of the Green Industry Growth Accelerator (GIGA) funding or develop a programme based on the learnings from the consultation |
| **4** | Work to develop standardisation to reduce costs, risks, and improve efficiency of project delivery |

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