

Dear Members of the Net-Zero, Energy and Transport Committee,

Thank you again for the opportunity to engage with yourselves on Tuesday last week (Tuesday 22 March 2022) around your ongoing Inquiry into the role of local government and its cross-sectoral partners in financing and delivering a net-zero Scotland.

On behalf of the college sector in Scotland, and further to the points I made in discussions, I want to provide you with a number of relevant documents which I trust will be informative for your work in this space moving forward.

This includes the ESP Strategy for 2021-26, providing insight into the work of ESP across Scotland in supporting the upskilling and reskilling agenda in alignment with the Climate Emergency Skills Action Plan as well as a table produced by ESP earlier this year providing an overview of the variety of activity colleges across Scotland are delivering around this agenda.

I have also attached a briefing produced by Colleges Scotland which evidences the role of the sector in supporting the Net-Zero agenda and the Just Transition, as well as touching on the current financial position of the sector, plus a briefing note around the work of Fuel Change in taking forward Climate Literacy and employability skills for Schools and Colleges.

Finally, and in response to the Committee's request for information to understand the wider context around courses and apprenticeships in this area, and projected increases, I have enclosed a number of presentations and graphics collated by ESP regarding this subject, which I trust will be of value to the Committee.

Should members of the Committee wish to explore these topics further I would be happy to engage in further discussions.

Best Wishes

Simon



ESP Strategy 2021-2026

Introduction

ESP was established in 2011 to coordinate a collaborative college response to the growth in skills demand across the energy sector with core funding from SFC matched by membership subscriptions from Scotland's colleges.

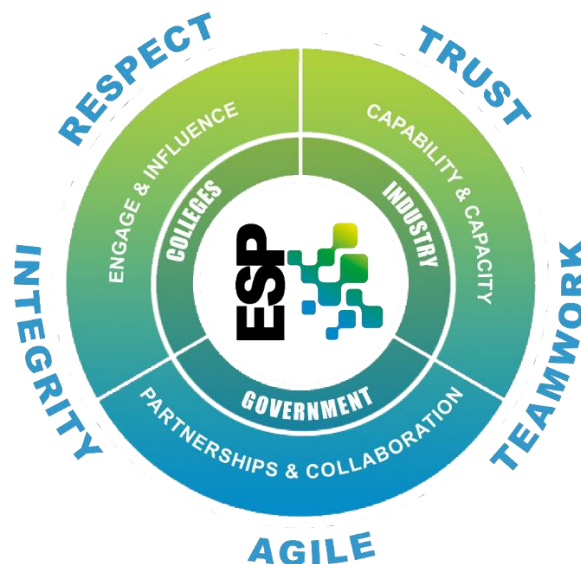
As ESP has developed, we have established a Management Board, Strategy Group, Engineering, Construction and STEM Leads Forums (in partnership with SFC) and a number of formal Training Networks with a renewed focus on the Climate Emergency and the Just Transition to Net Zero.

After ten years, ESP has increased our influence through engagement with Scottish Government, agencies, key strategic groups and established relationships with further additional strategic partnerships. These new relationships were formed to support new curriculum developments, promote careers and learn from Innovation Centres and Catapults to understand how research and development can translate into skills interventions to support both students and industry.

To ensure that supply and demand needs for a skilled workforce are met ESP work closely with SDS and industry bodies to understand the demand for a skilled workforce. ESP also leads on a number of co-ordinated initiatives to provide training to industry and staff through colleges to ensure there are industry ready students graduating from Scotland's colleges.

ESP's role has changed significantly since its establishment in 2011 through the natural evolution of the skills agenda and related skills priorities as set out in the Scottish Government's Energy Strategy, Climate Change Plan and aligning with the Climate Emergency Skills Action Plan. STEM is an intrinsic part of the work of ESP with key involvement with individual colleges, SFC and Scottish Government STEM Strategies where ESP will take on the Secretariat role.

Whilst our role has changed significantly over the ten years, we endeavour to support historical activity whilst adapting to meet emerging priorities stemming from our continued stakeholder and industry engagement.



Strategic Alignment

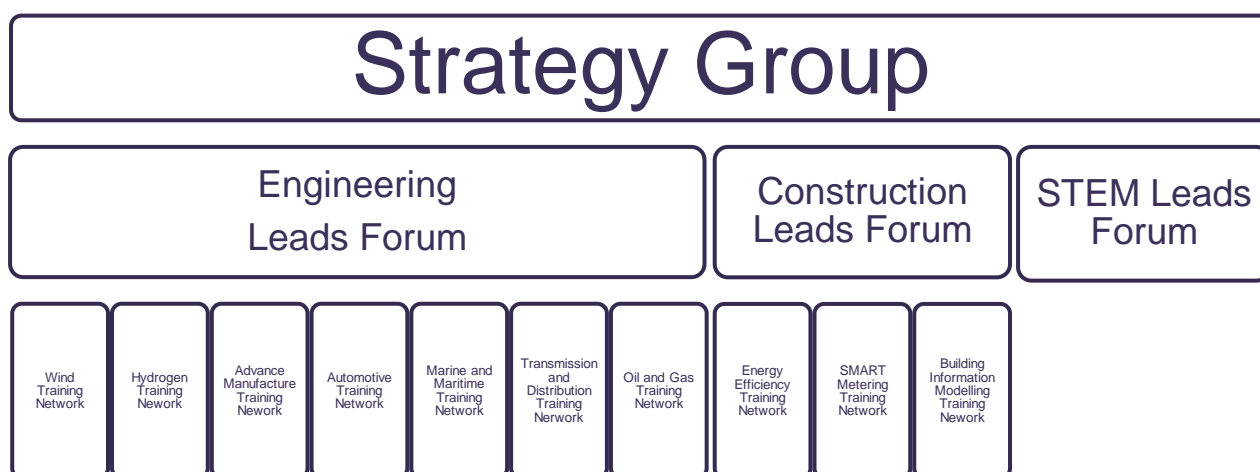
ESP is the college sector agency for the energy, engineering and manufacture and construction sectors whilst also being the college sector lead for STEM. Furthermore, the College Principals Group formally recognised ESP as the college sector agency to lead on the Climate Emergency Skills Action Plan.

Vision

Our vision is of a college sector working in partnership with Government, agencies and industry to meet national and regional skills needs, maximising investment and job opportunities aligned with

Governance

ESP has revisited its governance arrangements resulting in the establishment of a Management Board in support of the existing Strategy Group and three Leads Forums (Engineering, Construction and STEM). We support colleges in developing their capability, capacity and curriculum by establishing appropriate Training Networks as outlined below.



ESP works with colleges, government, agencies and industry and operate under 3 aims:

1. **Engage and Influence** - ESP will continue to engage and influence government, agencies, strategic groups and industry to continuously monitor the policy developments that impact our sectors allowing us to engage and respond. We will represent college interests across energy, engineering, construction, STEM and the Climate Emergency to position colleges by ensuring our operational plans are aligning with these priorities.
2. **Capability and Capacity** - ESP will work with member colleges to increase capability and capacity in order to support innovation and collaboration across existing and emerging technologies. We will seek to secure funds to allow provision of college staff CPD, development of curriculum and investment in capital equipment where there is an identified need, whilst integrating digital and blended materials in a post-COVID era.
3. **Partnership and Collaboration** - ESP will continue to foster strategic partnerships and collaborations through MOUs and membership of key public sector and industry stakeholder groups. We will continue to work with awarding bodies ensuring national and regional skills' needs are met. We will seek out new partnerships and collaborations that align with our role representing Scotland's colleges in the Climate Emergency and Just Transition to Net-zero.

1. Engage and Influence

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Priority	To achieve this we will:
Interface with government and agencies to support, inform and influence priorities and policies	<ol style="list-style-type: none"> 1. Continue to engage with government and agencies and their strategic groups. 2. We will continuously monitor policy developments impacting our sectors and engage and respond 3. Represent college interests and position the role of colleges 4. Engage with Industry Leadership Groups 5. Align operational plans
Engage with industry and sector bodies to understand future skills priorities and inform appropriate interventions	<ol style="list-style-type: none"> 1. We will continue to interact with sector skills bodies, industry bodies, professional institutions and associated organisations.
Influence & support developments across Scotland's colleges	<ol style="list-style-type: none"> 1. Continue to develop our governance arrangements to ensure openness and transparency in ESPs role and activities. 2. Improve communications with members through the implementation of our Comms Strategy. 3. Represent college interests and position colleges by developing capability, capacity and curriculum.
Respond to stakeholders' ambitions for energy, engineering, construction and STEM	<ol style="list-style-type: none"> 1. Establish working groups to respond to emerging priorities and engage existing groups and training networks.
Support and maximise economic benefit and job opportunities	<ol style="list-style-type: none"> 1. Develop a comprehensive and flexible approach that supports industry focused skills offers that brings together funding initiatives and wider support.

2. Capability and Capacity

ESP will work with member colleges to increase capability and capacity in order to support innovation and collaboration across existing and emerging technologies. We will seek to secure funds to allow provision of college staff CPD, development of curriculum and investment in capital equipment where there is an identified need, whilst integrating digital and blended materials in a post-COVID era.

Priorities	To achieve this we will:
Work with colleges to position them at the forefront of curriculum developments	<ol style="list-style-type: none"> 1. Work with our Management Board, Strategy Groups, Leads Forums, industry and relevant partners to: <ol style="list-style-type: none"> a. Identify emerging curriculum needs b. Develop new curriculum c. Facilitate the development of shared teaching resources
Support and enable innovation in education including digital online and blended learning	<ol style="list-style-type: none"> 1. Work with industry and partners to understand emerging technologies to: <ol style="list-style-type: none"> a. Raise awareness of technologies b. Develop products and services in a digital format (SFC report). 2. Work with Leads Forums and Training Networks to develop and implement: <ol style="list-style-type: none"> a. Online and blended learning b. Digital Ambition/Strategy
Develop curriculum pathways for transition to net zero, upskilling, reskilling and new and emerging jobs	<ol style="list-style-type: none"> 1. Work with industry and partners to understand emerging technologies to inform curriculum development areas. 2. Work with Leads Forums and Training Networks to develop curriculum to support the transition to net-zero.
Promote and deliver STEM activities in order to highlight careers in the energy, engineering & construction sectors.	<ol style="list-style-type: none"> 1. Work with industry and partners to understand emerging priorities. 2. Work with Leads Forums and Training Networks to develop, implement and embed STEM activities.
Lead on collaborative approaches for cross college working in emerging technologies	<ol style="list-style-type: none"> 1. Enhance Training Networks (and establish new ones where necessary) to respond to emerging technology needs.
Coordinate a cross college approach securing capital equipment and learning resources.	<ol style="list-style-type: none"> 1. Work with government, agencies, industry and colleges to secure capital resources.
Provide strategic direction for college leaders, lecturers and support staff	<ol style="list-style-type: none"> 1. Work with our Strategy Group to identify mechanisms/interventions and engagement strategy.

3. Partnerships and Collaboration

ESP will continue to foster strategic partnerships and collaborations through MOUs and membership of key public sector and industry stakeholder groups. We will continue to work with awarding bodies ensuring national and regional skills' needs are met. We will seek out new partnerships and collaborations that align with our role representing Scotland's colleges in the Climate Emergency and Just Transition to Net-zero.

Priorities	To achieve this we will :
Work with industry to ensure a national approach to meet local and regional and national future skills demands	<ol style="list-style-type: none"> 1. We will ensure our activities produce clear impacts to colleges and industry to support emerging priorities/opportunities. 2. We will continue to develop opportunities for colleges to upskill industry and students to develop skills of the future.
To be a partner of Choice	<ol style="list-style-type: none"> 1. We will secure Partnership Agreements to enhance our support government, agencies, industry and colleges. 2. We will work with partners to develop action plans, identify funding opportunities and secure and deliver projects that align with our aims and priorities.
Raise Awareness and profile of ESP and college activity in support of our key sectors and policy drivers	<ol style="list-style-type: none"> 1. Ensure ESP is recognised as a valued partner by implementing our revised Comms Strategy to maximise awareness via: <ol style="list-style-type: none"> a. Engagement with colleges, government, agencies and industry groups. b. Policy Responses c. Newsletters d. Social media channels e. Editorial articles in press/trade press f. Press releases around key activity and achievements

Review, Monitoring and Evaluation

ESP recently commissioned an independent stakeholder review of our activities over the past 10 years that provided very positive feedback and provides a baseline for future review and monitoring activities.

To ensure we maximise the benefits to be derived from this revised strategy we will:

1. Report annually to SFC on the key projects and activities.
2. Commission an independent stakeholder review at years 2 and 4
3. Undertake an annual internal review of activities for our Management Board and Strategy Group, reporting on:
 - a. **Engage and Influence**
 - i. Government and agencies – direct engagement, memberships of key groups, impacts and outputs.
 - ii. Colleges – direct engagement with individual colleges, College Principals Group, Vice Principals Group, Business Development Directors Group and our own Strategy Group.
 - iii. Industry – development of industry led programmes, impacts and outputs
 - b. **Capability and Capacity**
 - i. Training Networks
 1. Curriculum development
 2. Teaching material development
 3. Shared resources
 - ii. Project funding provided to colleges
 - iii. Leveraged funding
 - c. **Partnership and Collaboration**
 - i. Strategic partnerships and collaborations through MoU's and Collaboration Agreements with industry, government, agencies and wider stakeholders.
 - ii. Membership of key strategic groups both public and private sector.
 - iii. Reporting on impacts and outputs of partnership activities.

Current College Sector Green Skills Delivery – January 2022

Key

	Under Development
	Established

	Ayrshire College	Borders College	Clyde College	Dumfries & Galloway College	Dundee & Angus College	Edinburgh College	Fife College	Forth Valley College	Glasgow Kelvin College	Lewis Castle College	Moray College	NES College	Perth College UHI	South Lanarkshire College	West College Scotland	West Lothian College
Level 3 Award in Energy Efficiency Measures for Older and Traditional Buildings																✓
Air Tightness	✓	✓					✓							✓		✓
Thermal Imaging	✓	✓					✓	✓								✓
SMART Control systems	✓	✓	✓				✓	✓							✓	
Internal Wall Insulation					✓	✓								✓		✓
External Wall Insulation					✓	✓								✓	✓	✓
Battery Storage	✓	✓	✓			✓		✓							✓	
Ground Source Heat Pumps	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	

Air Source Heat Pumps	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Solar Thermal	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	
Solar Photovoltaic		✓	✓	✓		✓		✓						✓	✓	
Rainwater Harvesting			✓			✓		✓								
Mechanical Ventilation Heat Recovery		✓				✓										
Grey Water System						✓		✓								
Electric Boiler								✓								
Electric Vehicle Charging			✓	✓	✓					✓					✓	
Solid Biomass				✓												

ESP
January 2022

Colleges Scotland Briefing Note – Scottish Parliament Net-Zero, Energy and Transport Committee – March 2022

Key Points

Colleges as Green Civic Anchors

Scotland's economy and learners have already been significantly impacted because of Covid-19 and colleges, in their role as local civic anchors across the country, will be pivotal in driving economic recovery with their agility and ability to upskill and retrain people, providing them with the employability skills employers need.

It is important to recognise the start point we are at, as a result of the pandemic. Colleges are ideally placed to support organisations across Scotland to rebuild businesses and their confidence and to do this with the net zero targets in mind, whilst creating opportunities to develop resource efficient, inclusive and sustainable economic approaches, which help address inequality and poverty, in line with the goals of the Commission.

The college sector has also published a [Statement of Commitment on the Climate Emergency](#), jointly published by College Development Network, Colleges Scotland and ESP in February 2021, which incorporates ten key actions for the sector to deliver.

Given the college sector's extensive networks and unique reach to SMEs, colleges have a key role to play in supporting net-zero related innovation activity in these businesses, whilst driving regional economic developments and recoveries focused around moving towards a net zero economy and simultaneously maximising the opportunities for workers to develop their skills as part of these changes. Colleges can ensure skills and process innovations are carried to SMEs, a sector that does not have the capacity to dedicate staff to this, but which is vital for good practice to happen.

By acting as green civic anchors across Scotland, colleges are in a unique position in being role model organisations, by demonstrating to their communities, students and employers how sustainable buildings and supporting infrastructure can be used to achieve Net Zero. Some colleges for example are openly considering to acting as 'living labs' of sustainable practice so everyone engaged with the college experiences the best sustainable practices.

Role of Colleges in Supporting National Strategy for Economic Transformation (NSET) , Just Transition and Net-Zero

Scotland's response to the pandemic will require an economic transformation. The recently published NSET recognised the role of skills within that piece of work. As detail of the delivery is taken forward, it is vital that the college sector is at the discussions to develop what is required, and not just expected to deliver them at the end.

A new Just Transition Commission has been established for the duration of this parliamentary term, reporting annually on the progress Scotland is making against the recommendations.

As the Scottish Government takes forward the recommendations, colleges will ensure that the knowledge and thinking of the college sector, a sector which is increasingly supporting both the development of an inclusive, cohesive and resilient economy across Scotland, is utilised. Colleges can play a crucial role in planning, investing and implementing a transition to environmentally and socially sustainable jobs, sectors and economies, and in building on Scotland's economic and workforce strengths and potential.

For example, in relation to skills, the biggest impact on reducing carbon emissions in housing will be through retrofitting. Colleges are the leaders in providing construction skills and with investment from the Scottish Government will be in a prime position to support the construction sector to adopt new practices.

Skills Planning

To support this economic transformation and to address the emerging skills gaps this process will present there must be a consistent, aligned and informed skills planning system in Scotland, involving collaboration and co-operation between Scottish Government, associated agencies and all parts of the education and skills system, as well as employers.

According to findings of the Open University's [Business Barometer Report 2021](#) almost two thirds of organisations in Scotland (62%) are struggling to find people with the right skills. In particular, there is a shortage of specialist, entry level talent, including business-critical digital skills, and almost half of Scottish businesses (42%) think they will struggle to find people with the right skills in the next 12 months, with 36% saying skills shortages will continue to be a problem for the next five years.

The good news is that over half of the senior business leaders surveyed in Scotland (57%) think apprenticeships and work-based learning are critical to their long-term success. This demonstrates that employers are increasingly recognising that the best way to overcome skills shortages is to pursue a strategy of upskilling and reskilling and to build up internal talent pipelines, rather than buying in skills on a needs basis.

Colleges in their roles as local civic anchor institutions, with strong links in local and regional economic partnerships and with SMEs and business, can use these connections to profile their delivery to meet emerging skills demands and support the development and maintenance of future skills pipelines.

Whatever the skills required, going forward colleges across Scotland will continue to help Scottish workers, and Scottish apprentices, to keep pace with technological, environmental and labour market changes and to increase workforce and business resilience to future disruption as the economy both recovers from the impact of Covid-19 and transitions to a net-zero, low-carbon inclusive format in response to the Climate Emergency.

Careers Information, Advice and Guidance Requirements

To support both this economic transformation and Just Transition we must ensure that the college sector requirements for Careers Information, Advice and Guidance, regarding both finances and resources, are met by the Scottish Government. This will enable the college sector to provide CIAG support for all learners, and not just young learners, as part of a wider lifelong learning approach, and to provide the guidance and information to learners around the career opportunities available to them in the new emerging industries in Scotland, and in line with the ambitions of the [Career Review](#).

Flexible Workforce Development Fund (FWDF)

Recent changes to the FWDF allowed companies to pass the training opportunities to their supply chain, but this was not taken up. The FWDF is a key fund and has been successfully used by the college sector to upskill and reskill employees to increase productivity. But need to learn from this as to why the supply chain option was not utilised.

Scottish Government Engagement – Academic Year 2021/22

Following the Scottish Parliamentary Elections in May 2021, and the co-operation agreement between the Scottish Government and the Scottish Green Party Parliamentary Group, two new ministerial posts were created: the Minister for Zero Carbon Buildings, Active Travel and Tenant's Rights, Patrick Harvie MSP and the Minister for Green Skills, Biodiversity and Circular Economy, Lorna Slater MSP.

Colleges Scotland, with Angela Cox and Simon Hewitt representing the College Principals Group, have met with both Ministers, in addition to meeting with Richard Lochhead in his latest ministerial post as Minister for Just Transition, Employment and Fair Work.

Across all of these ministerial engagements Colleges Scotland and sector representatives have outlined the role of the college sector in supporting the Just Transition and the Net-Zero and Climate Change agendas for the Scottish Government, as well as touching on the existing context regarding college sector infrastructure and the need for investment for institutions to reach their incumbent targets as public sector bodies.

Conversations have also touched on the Scottish Government funds that have been outlined in this context, and around the ways in which colleges could gain access to the Green Jobs Fund and the Just Transition Fund, at a time when the central budgets for colleges are under pressure. Colleges Scotland is continuing to engage with the Scottish Government on this topic as further details around these funds become available.

Energy Skills Partnership

ESP, established in 2011, is a collaboration of Scotland's colleges and industry partners established to increase Scotland's capability and capacity to deliver the right skills for the construction, energy, engineering and STEM sectors to meet industry demand against emerging skills priorities. As the college sector agency for energy, engineering and construction ESP operate a cohesive partnership across Scotland's colleges to demonstrate a responsiveness and collective capability to provide the skills required by industry, working with government agencies in doing so.

Within the ESP Strategy 2021-2026, it is outlined that ESP will continue to engage and influence government, agencies, strategic groups and industry to continuously monitor the policy developments which impact our sectors allowing us to engage and respond. As part of this ESP will represent college interests across energy, engineering, construction, STEM and the Climate Emergency to position colleges by ensuring operational plans are aligning with these priorities.

ESP will also continue to foster strategic partnerships and collaborations through MOUs and membership of key public sector and industry stakeholder groups and will seek out new partnerships and collaborations that align with their role representing Scotland's colleges in the Climate Emergency and Just Transition to Net-zero.

Final Budget Allocations Academic Year 2022/23 and Implications

The budget position is disappointing and means a real-terms cut to college funding. Due to these cuts, noticeable changes to colleges are inevitable.

The Revenue and Capital available to the sector is a flat cash position and therefore represents a real-terms cut to the core budget of £23.9m in Academic Year 2022/23 due to inflation, even before rising costs related to increased pay and rising energy costs for Scotland's colleges are taken into account. Colleges were already facing a series of cost pressures prior to the impact of COVID-19, including increasing cost pressures from cost of living pay awards, employers' pension contributions, maintaining the college estate and the UK's exit from the European Union.

Colleges received COVID consequentials in early 2021 to support Deferred students, Foundation Apprenticeships, mental health and wellbeing initiatives and the provision of Digital equipment for students. This funding has not been continued into 2022/23, **leaving colleges with a further reduction of £28m on its baseline budget compared to AY 2021/22**. This is in addition to the cost of inflation. **Therefore, the total reduction in the college budget for 2022/23 is estimated at £51.9m.**

Infrastructure

In addition to these challenges the budget also saw the college sector receives the same level of infrastructure funding as last year, with only £33.7m made available for lifecycle maintenance across the sector, despite the last SFC Estates Conditions Survey estimating a total backlog cost of £360m in 2017 – a figure we believe is now closer to £700m, before additional costs to futureproof estates against net-zero requirements. The appropriate infrastructure is vital as an enabler for learners to have the best experience and be prepared for the modern workforce.

Colleges Scotland
March 2022

Climate Literacy and employability skills for Schools and Colleges

Introduction

Fuel Change is a social enterprise movement that taps into the potential of youth to help fight the climate crisis. We unleash the underestimated skills and energy of Scotland's Next Generation by partnering with educators and businesses to help solve their carbon challenges.

Fuel Change was formed through a collaboration between private business and Further and Higher Education. It received initial funding from SFC and SDS in June 2020 to pilot the Challenge Programme for a national cohort of over 200 Modern Apprentices. Since then, Fuel Change has successfully expanded its approach into 4 key pillars, Foundations, Challenges, Projects and Community with partial funding of £500,000 announced by the Scottish Government at COP26 in November 2021 to support this expansion.

A key outcome of the Fuel Change work to date is the need to change accepted habits and setting new long-term behavioural norms in our Next Generation. This is essential to meet the Net Zero targets set beyond 2030. If we are to achieve our global Net Zero targets, we must act now to instil behaviours in our future generations that will enable them to thrive in a more sustainable future. To achieve this, Scotland needs educators to deliver climate literacy throughout the entire curriculum to ignite the spark needed to drive the change needed to achieve these ambitious goals. Although there is a lot climate change activity in primary schools, what does not exist in secondary education is teaching the subject as part of the core curriculum, its impacts and the means by which it will affect all of our lives.

Current Observations

Through collaboration and discussions with teachers and pupils, Fuel Change have found that there are three key barriers to engaging all young people in climate and environmental related activities;

- Climate change is mainly taught in geography and science meaning that students who do not select these subjects during curriculum review will likely miss out on climate related education and activities.
- Existing climate change awareness programmes take a 'moment in time' approach and lack fundamental context, as has been seen recently with schools engaging in COP activities.
- Existing programmes only tackle students that are already 'switched on' to climate change. Often extra-curricular activities are targeted towards the eco-group and/or one or two Learning for Sustainability coordinators in the school – rather than targeting the entire school community.

With the above observations in mind Fuel Change has begun to develop in partnership with schools and teachers an integrated approach of working with the Next Generation throughout their secondary education, through their development phase and into the workplace, to generate a global community who are collaborating and supporting behaviours and action necessary to create a sustainable future.



Proposed Solution – Fuel Change Foundations

In August 2021, Fuel Change Foundations launched a pilot programme with 21 schools from across Scotland of which host roughly 21,000 pupils. The aim of this pilot programme was to gain a better understanding of the current landscape surrounding climate literacy within the Scottish educational system.

Working closely with teachers, we have created an educational offering that will allow schools to meet their responsibilities for Learning for Sustainability, Interdisciplinary Learning and Developing the Young Workforce all while increasing student's employability skills and awareness of how the climate crisis will impact their future.

Educational offering Summary;

- Development of core climate curriculum that is embedded throughout the entire broad general education (BGE) phase.
- Practical implementation of key cross curricular climate learnings from BGE phase in the "Fuel Change Challenge Programme" with an emphasis on employability and META skill development.
- Both of the above elements are in development the phase and at present Fuel Change are working in partnership with three colleges; Forth Valley, Dumfries and Galloway and Clyde and SCQF to credit level this activity and explore the possibilities of introducing a similar approach into full time FE/HE provision.
- Creating a strategic collaboration of existing key stakeholders in Climate Education and Net Zero Activities to support the above and accelerate the opportunities for the Next Generation and a Just Transition.

Additional Information

[Fuel Change partner with Scottish Secondary Schools to pilot challenge programme | Fuel Change](#)

1. Challenge Programme

As mentioned, Fuel Change initially started with the Challenge programme for apprentices. After considerable success through apprenticeship providers and interest shown by the education sector, Fuel Change are in the process of adapting the Challenge programme so that it is suitable for a school setting.

The Challenge Programme sees teams of 4 to 8 young people find solutions to real life climate challenges faced by industries. The programme is designed to enhance and develop young people's META skills and increase their levels of employability while exposing them to challenges posed by climate change.

Fuel Change has recently successfully run a condensed version of the soon to be 30-week Fuel Change Schools Challenge Programme aimed at Senior Phase pupils and is currently working with SCQF to get the programme credit levelled at level 6 with attached insight points.

Fuel Change is also working on having the Challenge Programme embedded throughout the college sector.



2. Core Education

Working with a team of teachers, Fuel Change is currently developing a core educational component that would see climate literacy embedded throughout the entire curriculum from S1 to S4.

The aim is to create a programme that offers the opportunity for true Interdisciplinary Learning by developing content that aligns to the learning outcomes of existing subject awards with a climate lens. The intention is that students will gather evidence from across all subject areas, regardless of their curriculum review choices, that will contribute to additional insight points. This will enable students to build on their climate literacy regardless of their areas of interest, from English, to Music, to Home Economics.

Credit Levelling

Both Challenge and Core Education have received significant interest from SCQF and from curriculum planners and headteachers within schools. SCQF are currently endorsing the programme as part of their report to the Scottish Government Learning Directorate regarding Learning for Sustainability in Scottish Education.

Fuel Change is currently scoping a piece of work that would see Forth Valley College, Dumfries and Galloway College and Clyde College come together to credit rate and level the content from Challenge and Core Education, with the intention that this joined up and integrated approach to climate literacy be pulled through into the Colleges' own curriculum offerings.

3. Strategic Collaboration of Existing Key Stakeholders in Climate Education and Net Zero Activities

Fuel Change is relatively new to the area of Net-Zero and sustainability and recognises the significant aims and achievements of established key stakeholders and the work that they have been able to do. Fuel Change are proposing that these stakeholders come together in a collaborative strategic national approach to align our aims and activities in education across Scotland. This integrated approach to schools and pupils would offer maximum benefit in terms of their Learning for Sustainability aims, it would also allow collaboration across stakeholders and opportunities of shared practise and reach as well as enabling Scotland to achieve its significant Net-Zero aims.

Fuel Change are currently working with over 70 employers and have delivered the Challenge Programme to over 500 Apprentices and graduates across Scotland and beyond. [Fuel Change | Fully engage our Next Generation](#)



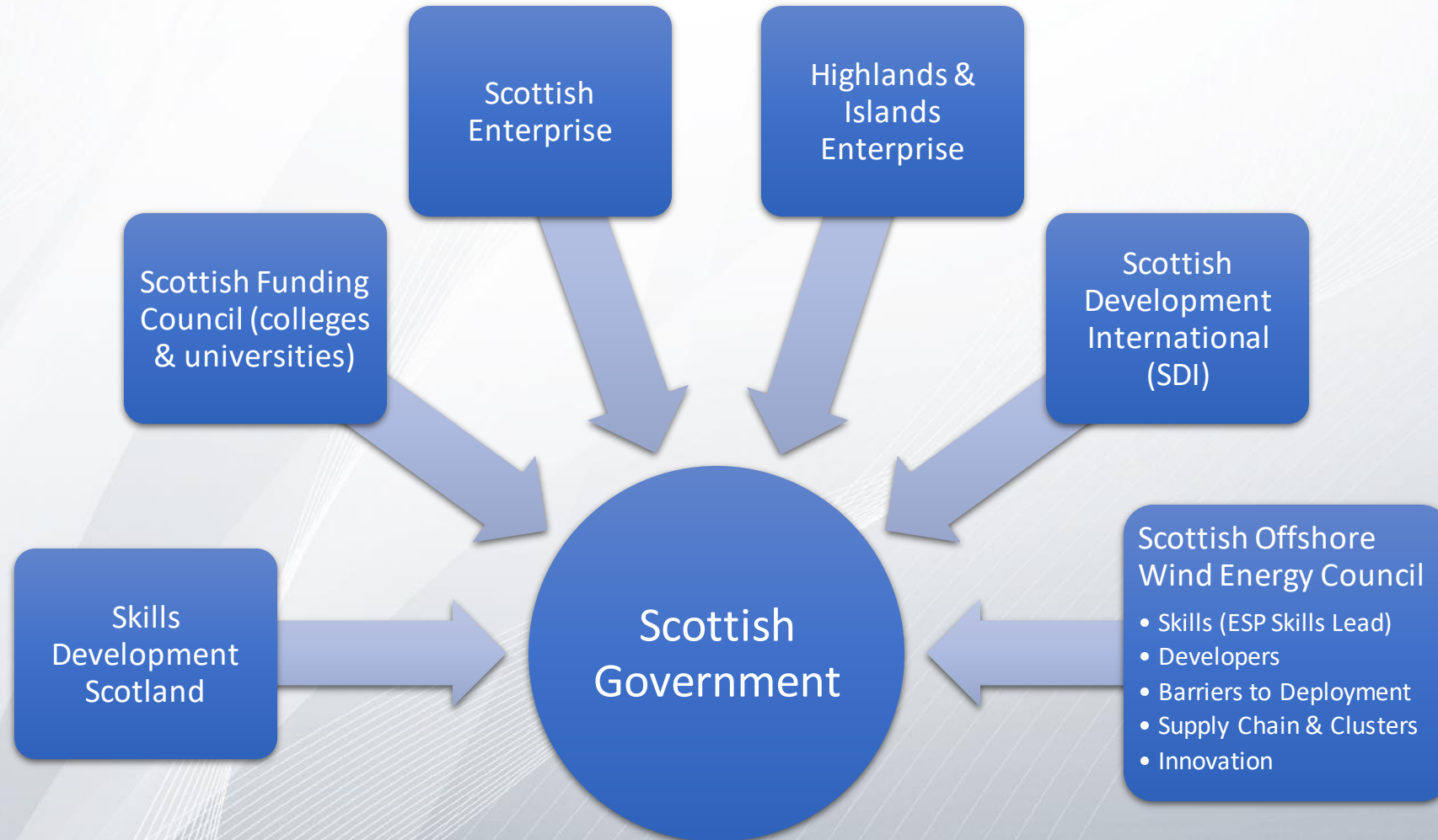
Fabrication & Welding

Scottish Training:-

- Capacity & Capability
 - Colleges
 - Training Centres



Team Scotland - Strategic Links



Scotland's colleges – delivering skills for the energy, engineering and construction sectors



Skills Road Map

SOWEC Skills Group members

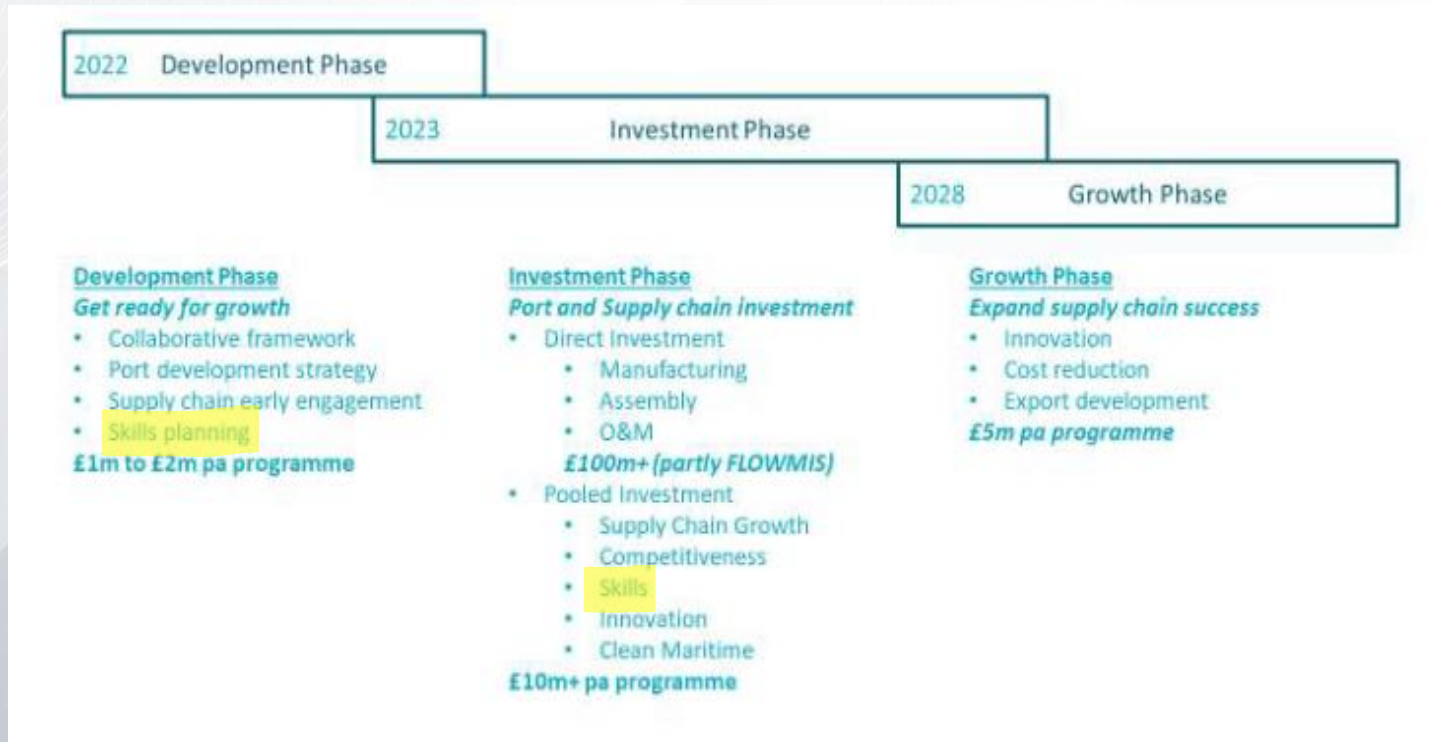
- ESP (Lead & Colleges)
- SDS
- SFC
- Universities Scotland
- Forth & Tay Cluster for Offshore Wind
- DeepWind Cluster
- Offshore Wind Industry Council (UK)
- Highlands & Islands Enterprise
- Scottish Enterprise

Strategic Partnerships

- National Manufacturing Institute Scotland
- Michelin Scotland Innovation Parc
- Crown Estates Scotland – ZeroFour
- Innovation Centres
- ORE Catapult
- Engineering Skills Leadership Group
- ESP - College Fabrication & Welding Training Network
- Scottish Engineering
- Scottish Hydrogen Fuel Cell Association (SHFCA)



Delivery Phases for Offshore Wind



- ❑ The results of the ScotWind leasing round can be found [here](#).
- ❑ The [Scottish Offshore Wind Energy Council](#) (SOWEC) is a partnership between the Scottish public sector and the offshore wind industry. Co-chaired by Ivan McKee, Minister for Business, Trade, Tourism & Enterprise, and Brian McFarlane of SSE
- ❑ SOWEC's mission is to coordinate and grow the sector, ensuring the Scottish offshore wind industry is more sustainable, competitive, and commercially-attractive, both domestically and in the global offshore wind market.
- ❑ The Strategic Investment Assessment can be found [here](#). The Collaborative Framework Principles can be found [here](#). SOWEC will work with ScotWind winners to develop these principles and put in place a framework with Scottish ports, with an initial focus on supply of floating offshore wind platforms.



Scottish Government Climate Emergency Skills Action Plan

The Climate Emergency

Skills
Development
Scotland



Net-Zero by 2045

In 2019, Scottish Government was the first Government in the world to declare a Climate Emergency, committing Scotland to become a net zero nation by 2045



A 'green recovery'

In 2020, Scottish Government updated its Climate Change Plan to reflect the profound impact of the pandemic, committing to a 'green recovery' from COVID-19 which captures the opportunities of a just transition to net zero.



A Just Transition

The transition to a thriving and inclusive net zero economy is a transformational opportunity, however the pace and scale of the transition will bring with it risks and disruptions as communities, industries and supply chains adapt.



Green jobs and skills

Green jobs, skills, training and reskilling are at the centre of Government's approach, driven by the [Climate Emergency Skills Action Plan](#)

Climate Emergency Skills Action Plan 2020-2025 Key Issues And Priority Actions



Ensuring our workforce has the skills for the transition to net-zero

Delivering on Scotland's Climate Change Plan

Embedding a partnership approach

Evidence-led



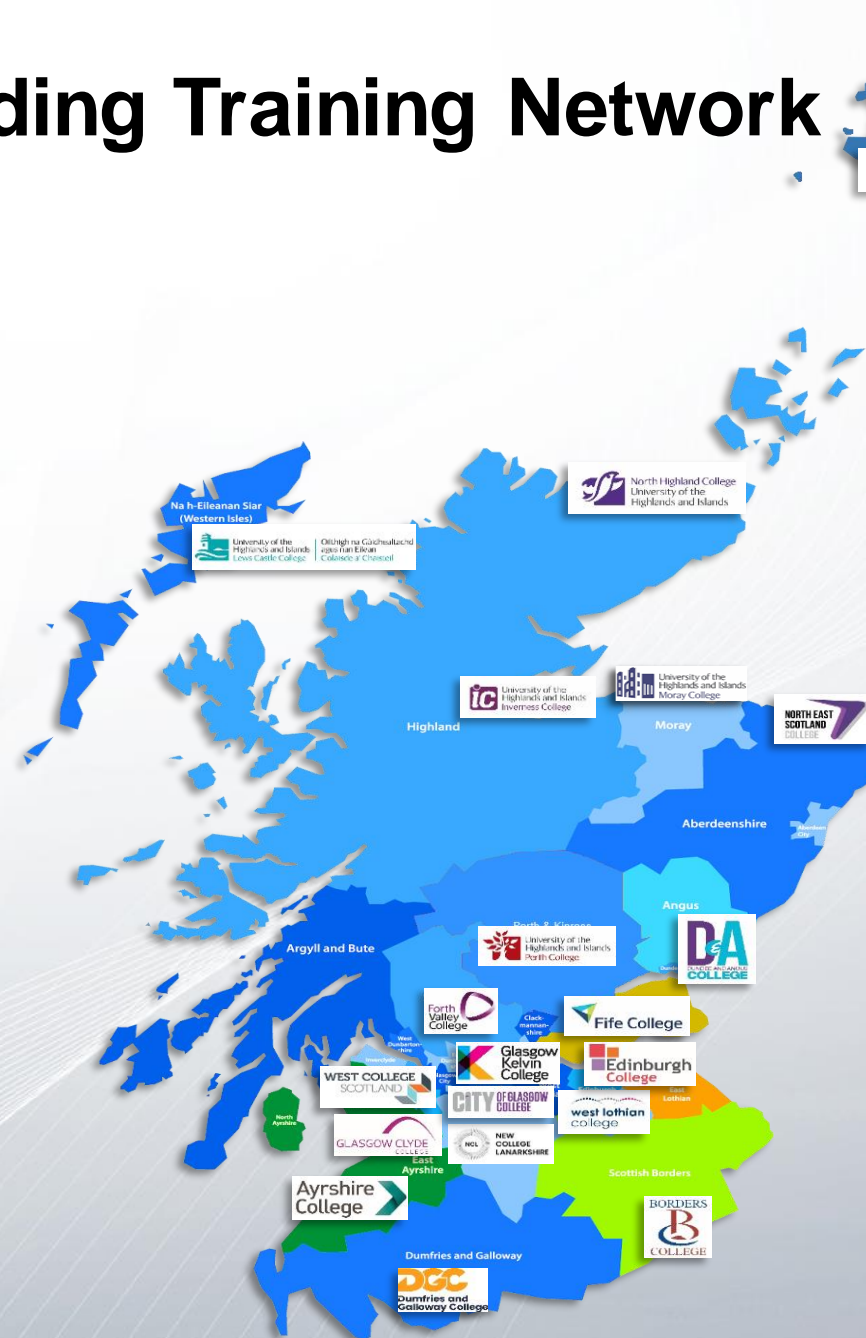
Fabrication and Welding Training Network



Colleges:

1. Ayrshire College
2. Borders College
3. City of Glasgow College
4. Dumfries and Galloway College
5. Dundee and Angus College
6. Edinburgh College
7. Fife College
8. Forth Valley College
9. Glasgow Clyde College
10. Glasgow Kelvin College
11. Inverness College UHI
12. Shetland College UHI
13. Lews Castle College UHI
14. Moray College UHI
15. New College Lanarkshire
16. North East Scotland College
17. North Highland College UHI
18. Perth College UHI
19. West College Scotland
20. West Lothian College

* = colleges with light weight Fab/Weld capability e.g. low numbers & limited processes



Scotland's colleges – delivering skills for the energy, engineering and construction sectors



Fabrication and Welding Training Network for Offshore Wind

Colleges:

1. Ayrshire College
2. City of Glasgow College
3. Dundee and Angus College
4. Edinburgh College
5. Fife College
6. Forth Valley College
7. Glasgow Clyde College
8. Glasgow Kelvin College
9. Lews Castle College UHI
10. New College Lanarkshire
11. North East Scotland College
12. North Highland College UHI
13. Perth College UHI
14. West College Scotland

Training Centres to be added:

1. ----
2. ----
3. ----

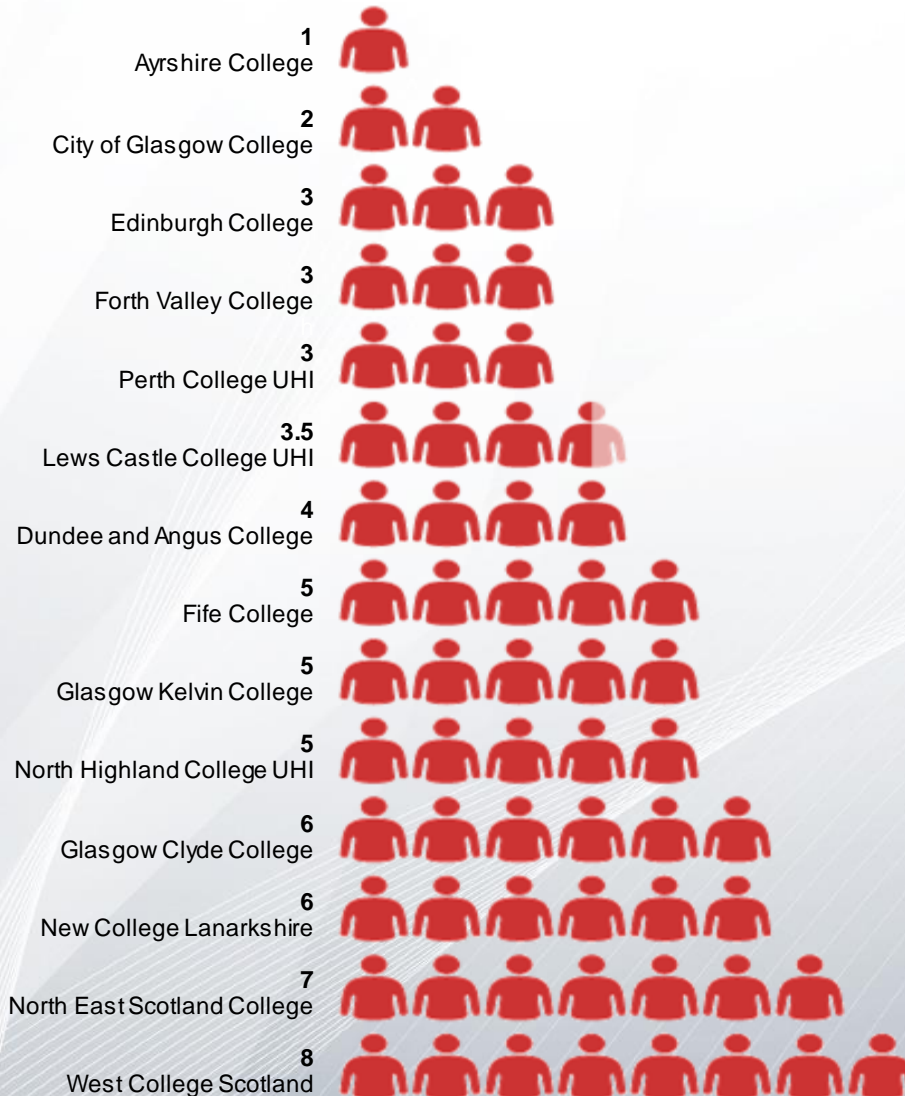


Scotland's colleges – delivering skills for the energy, engineering and construction sectors



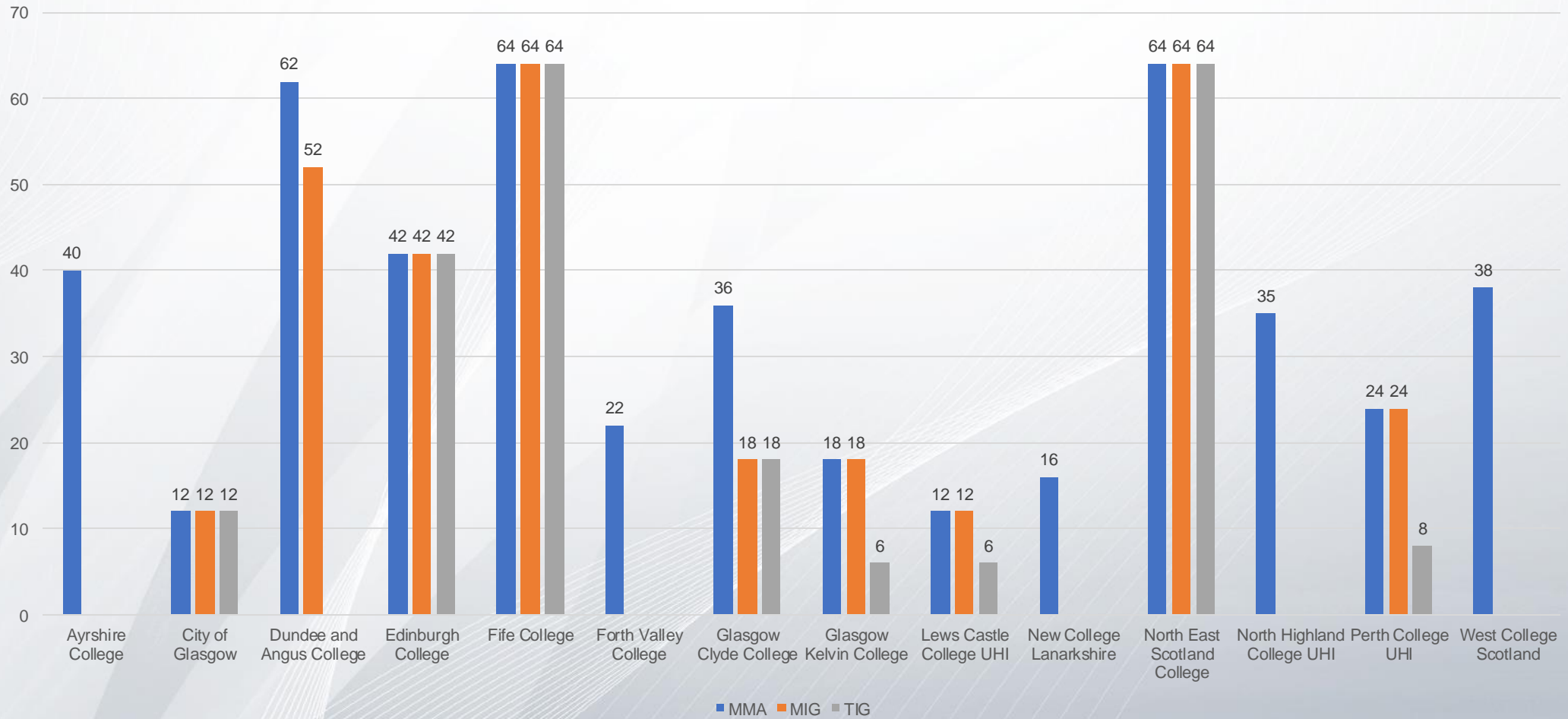
Number of Fabrication and Welding staff in college

Heavy





Number of Welding Stations





Heavy Fabrication and Welding college - capability matrix

	National Certificate in Fab/Weld	Higher National Certificate in Fab/Weld	PEO Level 2 Fab/Weld	Modern Apprentice Delivery	Coded welding	Services offered to industry (procedures)	NDT / testing
College Name							
Ayrshire	Yes (F/T, P/T)	Yes	Yes		Yes	Yes	Yes
City of Glasgow							
Dundee & Angus			Yes	Yes	Yes	Yes	
Edinburgh		Yes		Yes		Yes	Yes
Fife	Yes (F/T, P/T)	Yes	Yes	Yes	Yes	Yes	
Forth Valley	Yes (F/T, P/T)		Yes	Yes			
Glasgow Clyde	Yes (F/T, P/T)	Yes	Yes	Yes		Yes	
Glasgow Kelvin					Yes		
Lewis Castle	Yes	Yes	Yes	Yes	Yes		
New College Lanarkshire	Yes (F/T, P/T)	Yes (P/T)	Yes	Yes			
North East Scotland College	Yes (F/T, P/T)		Yes	Yes	Yes	Yes	
North Highland College	Yes	Yes	Yes	Yes			
Perth	Yes	Yes	Yes	Yes			
West College Scotland	Yes	Yes	Yes	Yes	Yes	Yes	



East Coast Cluster

Colleges:

1. Dundee and Angus College
2. Edinburgh College
3. Fife College
4. North East Scotland College
5. Perth College UHI



3 Fabrication and Welding shops
64 Welding stations
7 Staff members



6 Fabrication and Welding shops
62 Welding stations
4 staff members



2 Fabrication and Welding shops
24 Welding stations
3 staff members



3 Fabrication and Welding shops
64 Welding stations
5 staff members

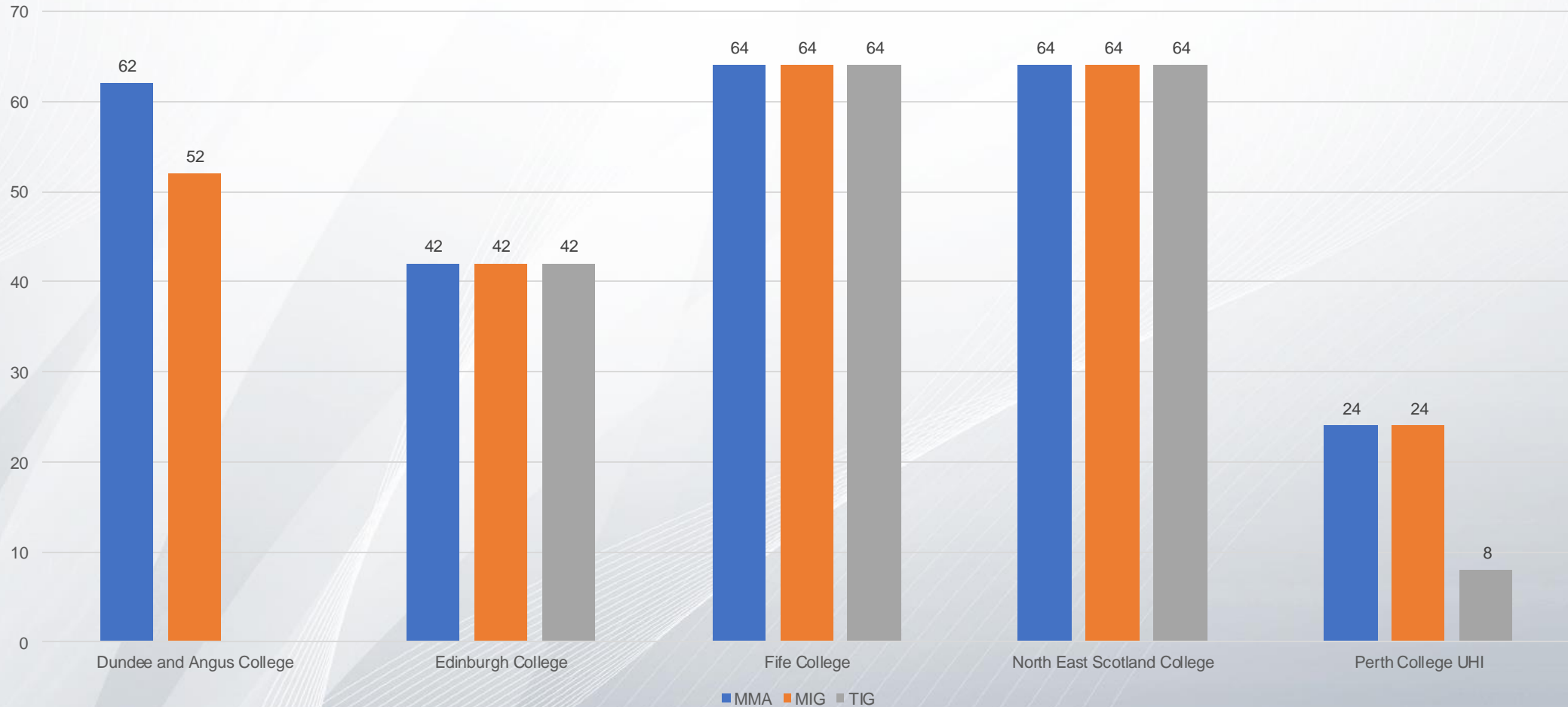


3 Fabrication and Welding shops
42 Welding stations
3 staff members

Total welding stations in cluster = **256**
Total Staff = **22**



Number of Welding Stations by Process - East Coast Cluster





East Coast Cluster - Fabrication and Welding college -capability matrix

	National Certificate in Fab/Weld	Higher National Certificate in Fab/Weld	PEO Level 2 Fab/Weld	Modern Apprentice Delivery	Coded welding	Services offered to industry (procedures etc)	NDT / testing
East Coast College Name							
Dundee & Angus	Yes		Yes	Yes	Yes	Yes	
Edinburgh		Yes		Yes		Yes	Yes
Fife	Yes (F/T, P/T)	Yes	Yes	Yes	Yes	Yes	
North East Scotland College	Yes (F/T, P/T)		Yes	Yes	Yes	Yes	
Perth	Yes	Yes	Yes	Yes			



North East / Highlands & Islands Cluster

Colleges:

1. Inverness College UHI
2. Lews Castle College UHI
3. Moray College UHI
4. North East Scotland College
5. North Highland College UHI
6. Shetland College UHI

1 Fabrication and Welding shop
12 Welding stations
3.5 staff members

2 Fabrication and Welding shops
16 Welding stations
4 staff members

Total welding stations in cluster = 143
Total Staff = 22



1 Fabrication and Welding shop
8 Welding stations
2 staff members

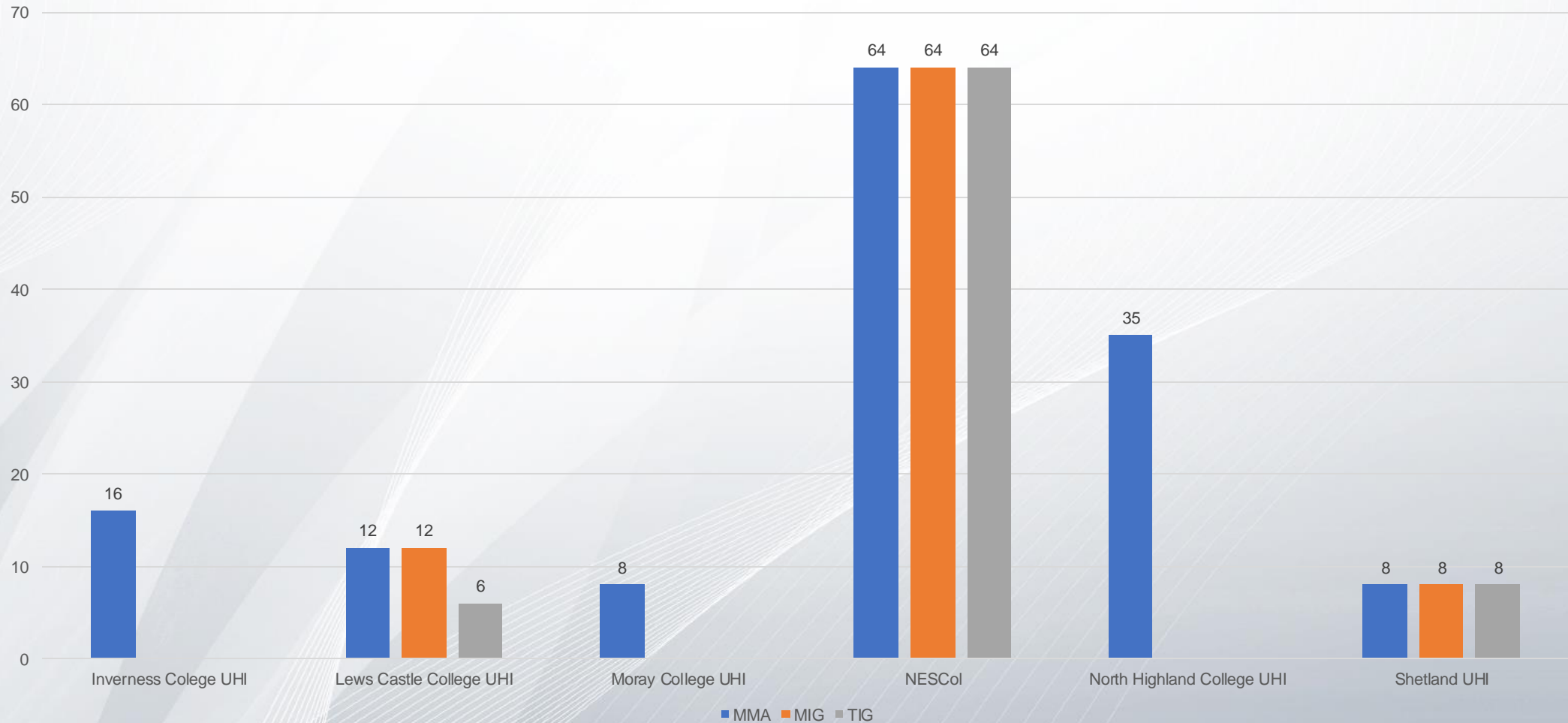
2 Fabrication and Welding shops
35 Welding stations
5 staff members

.5 Fabrication and Welding shop
8 Welding stations
.5 staff member

3 Fabrication and Welding shops
64 Welding stations
7 staff members



Number of Welding Stations - North East/ Highlands & Islands Cluster





North East / Highlands & Islands Cluster - Fabrication and Welding college -capability matrix

	National Certificate in Fab/Weld	Higher National Certificate in Fab/Weld	PEO Level 2 Fab/Weld	Modern Apprentice Delivery	Coded welding	Services offered to industry (procedures etc)	NDT / testing
North East / Highlands & Islands College Name							
Inverness	Yes		Yes	Yes			
Lews Castle	Yes	Yes	Yes	Yes	Yes		
North East Scotland College	Yes (F/T, P/T)		Yes	Yes	Yes	Yes	
North Highland College	Yes	Yes	Yes	Yes			
Shetland College			Yes	Yes			

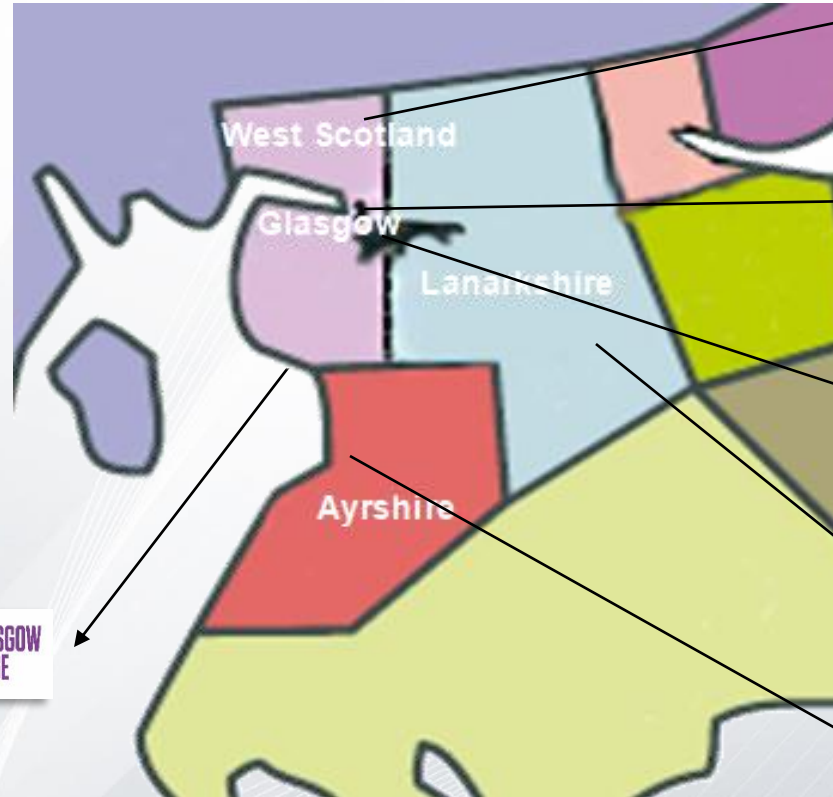


Central and West Cluster

Colleges:

1. Ayrshire College
2. City of Glasgow
3. Glasgow Clyde College
4. Glasgow Kelvin College
5. New College Lanarkshire
6. West College Scotland

1 Fabrication and Welding shop
12 Welding stations
2 staff members



5 Fabrication and Welding shop
38 welding stations
8 staff members



4 Fabrication and Welding shop
36 Welding stations
6 staff members



1 Fabrication and Welding shop
18 Welding stations
5 staff members



2 Fabrication and Welding shop
16 Welding stations
6 staff members

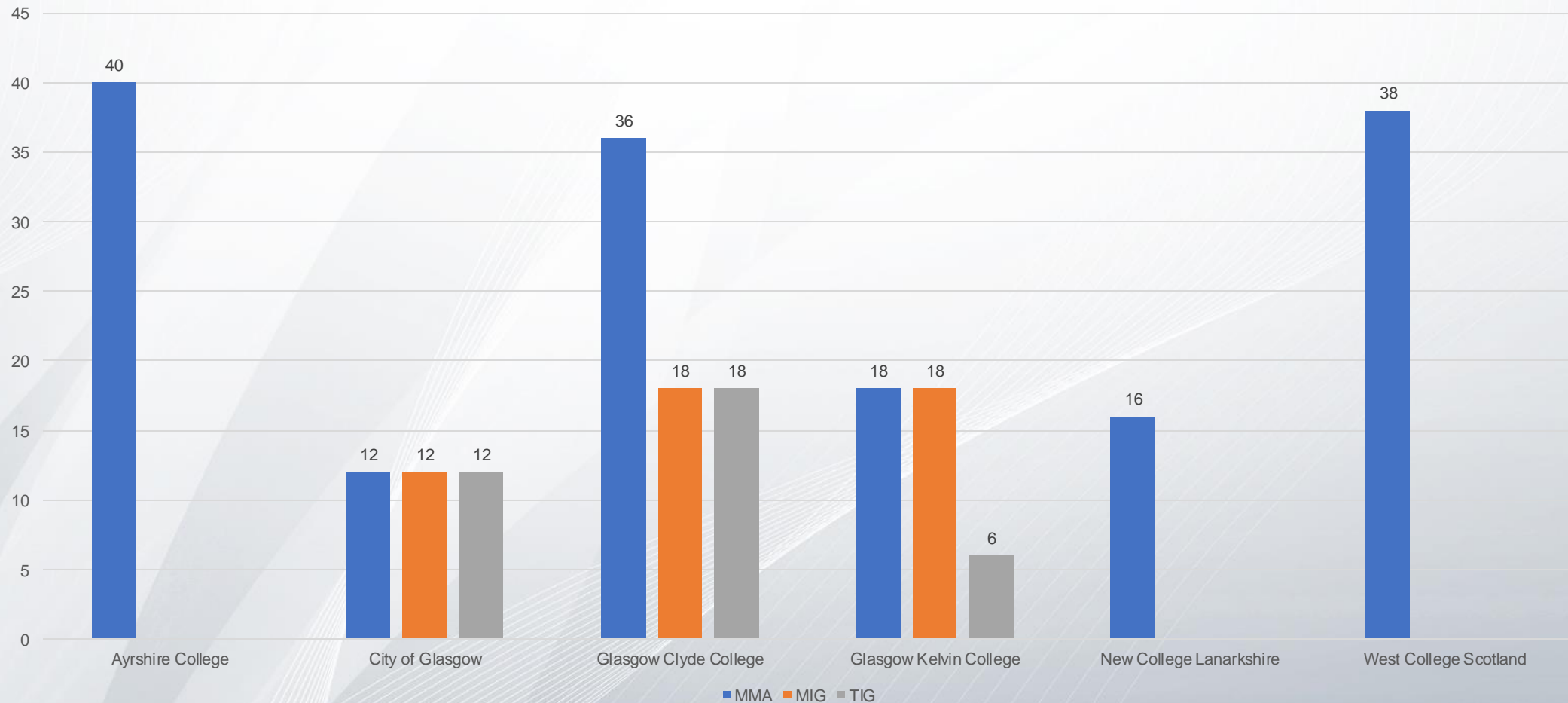


2 Fabrication and Welding shop
40 Welding stations
1 staff member

Total welding stations in cluster = 160
Total Staff = 28



Number of Welding Stations – Central and West Cluster



Scotland's colleges – delivering skills for the energy, engineering and construction sectors



Central Scotland Cluster

4 Fabrication and Welding shop
36 Welding stations
6 staff members



1 Fabrication and Welding shop
18 Welding stations
5 staff members



1 Fabrication and Welding shop
12 Welding stations
2 staff members

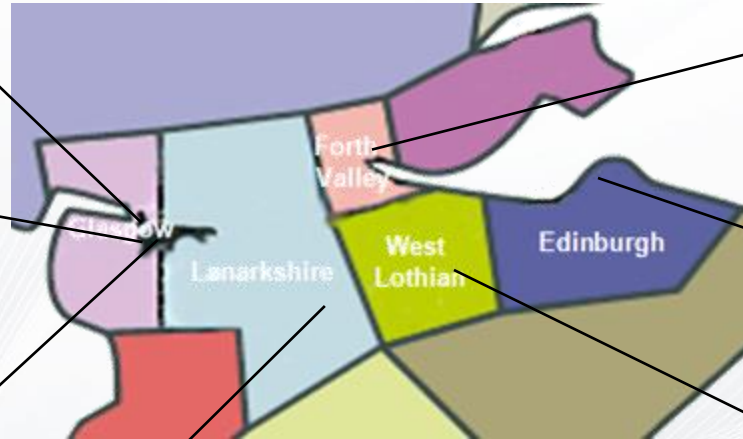


2 Fabrication and Welding shop
16 welding stations
6 staff members



Colleges:

1. City of Glasgow
2. Edinburgh College
3. Forth Valley College
4. Glasgow Clyde College
5. Glasgow Kelvin College
6. New College Lanarkshire
7. West Lothian College



1 Fabrication and Welding shop
22 Welding stations
3 staff members



3 Fabrication and Welding shop
42 Welding stations
3 staff members

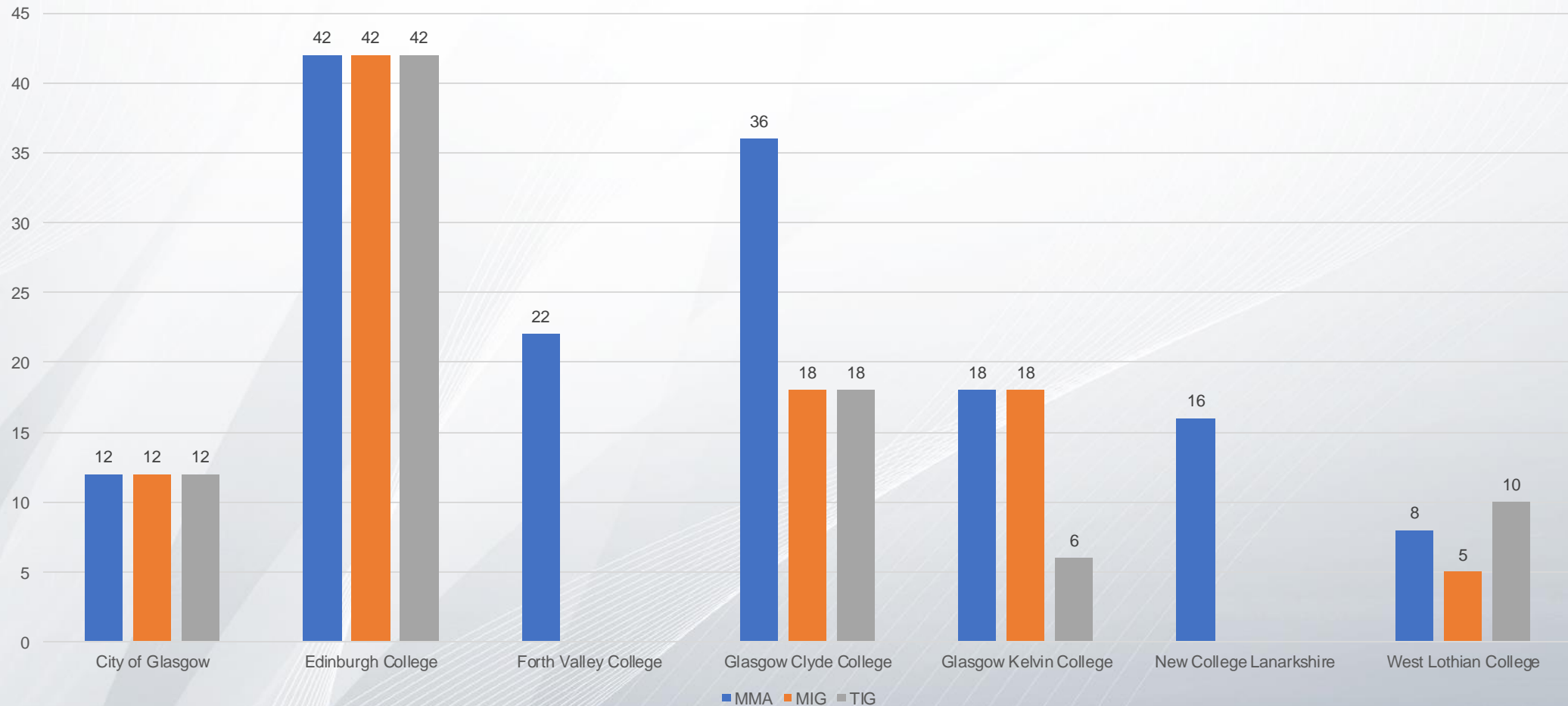


1 Fabrication and Welding shop
8 Welding stations
2 staff members

Total welding stations in cluster = 154
Total Staff = 27



Number of Welding Stations - Central Scotland Cluster



Scotland's colleges – delivering skills for the energy, engineering and construction sectors



Sector Attractiveness for Fabrication & Welding

- Scottish Government STEM Strategy
- STEM Regional Partnerships Steering Group
- ESP - STEM Leads Forum
 - SDS
 - Education Scotland
 - Association of Directors of Education Scotland



Action Plan

Update Curriculum ??

Equipment update/replacement

Welding services – codings, procedures, materials testing (NDT)

ESP Shared resources – Virtual welding equipment ?

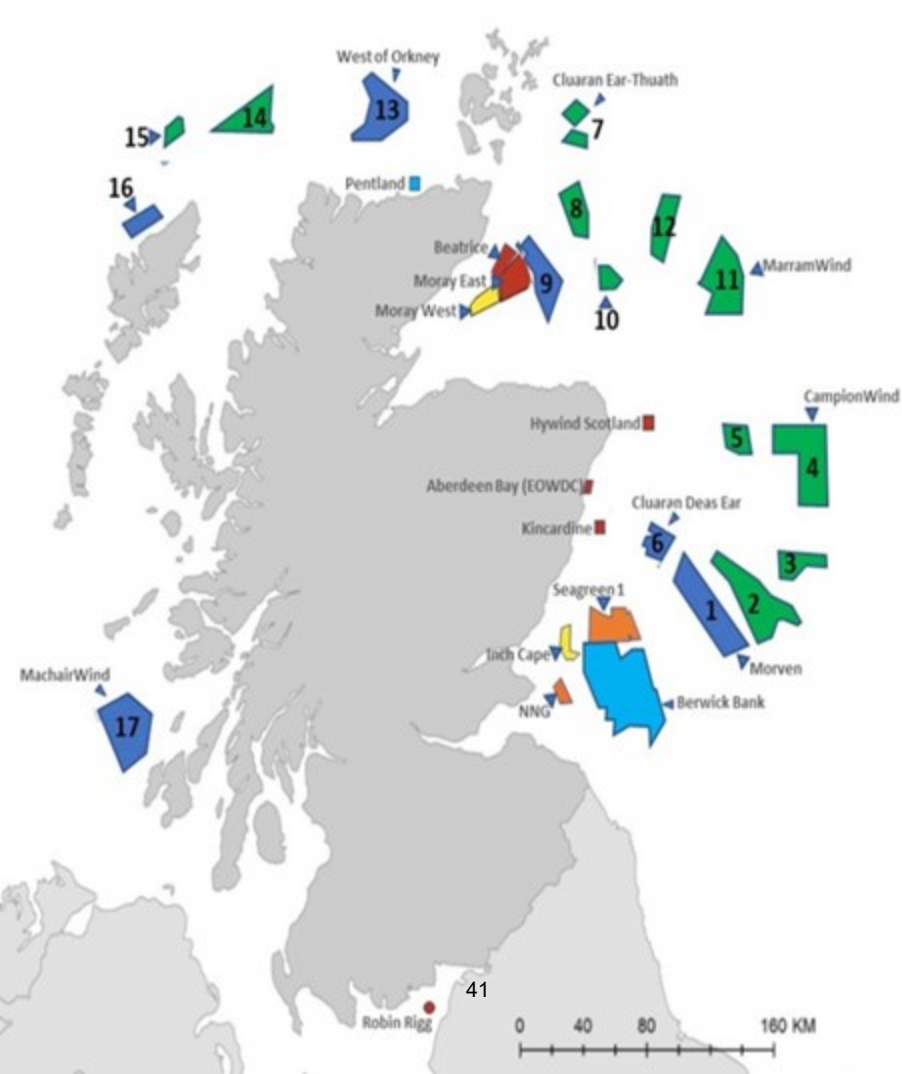
Collaborate on Sector attractiveness

Other



Roddy Scott

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website: <https://esp-scotland.ac.uk/>



ScotWind Awarded Sites

Green areas are those under option agreements.
Numbered labels indicate **successful bids** listed [here](#).

