

Note of informal discussion with Stephen Breslin, Jenni Doonan, Joseph Dudley, Stuart McDowall and Gordon McGuinness – Monday 15 April 2024

[At the Committee’s hearing on Monday 15 April, part of the discussion was not formally recorded in Hansard as the Committee was not quorate. Some Committee members continued the discussion informally; a short summary of this discussion follows. The Hansard transcript of the earlier and later parts of the discussion can be read [here](#).

The discussion took place with the following witnesses:

- Joseph Dudley, Director, Space Skills Alliance
- Gordon McGuinness, Director of Industry and Enterprise Networks, Skills Development Scotland
- Jenni Doonan, Head of Projects, Fife College
- Stuart McDowall, Head of Innovation and STEM, City of Glasgow College
- Stephen Breslin, Chief Executive, Glasgow Science Centre

The witnesses have confirmed this summary is a fair and accurate reflection of the discussion.]

The **Chair** asked about the range of skills required by the skills sector. **Mr McDowall** explained the need to create more entrepreneurial mindsets across all parts of the student body, which would perhaps lay the foundations for a more innovative workforce. **Mr McGuinness** said that Skills Development Scotland encourages SMEs to partner with other organisations to fill some of these skills gaps. SDS has discussed with Space Scotland the potential to build capacity for this “induction” work via a reinvigorated skills subgroup, analogous to the Construction Industry Training Board’s Placement Officers to provide extra support to organisations.

The **Chair** asked about the attitude toward failure in Scotland, compared with the United States. **Ms Doonan** explained that a college cannot run a course unless they can fill it, as the sector does not have spare money to “try and fail”. In business, young people’s attitude toward risk depends on their background and whether it includes a safety net, and this informs their educational choices. For many college learners, it is more attractive to choose a large, established company than a newer sector. **Mr McGuinness** noted that enterprise education in Scotland tends to involve group activities, where the group fails rather than individuals. He also said that, in the UK, someone who has failed will struggle to attract reinvestment, whereas this is much easier in the US.

On the issue of risk, **Mr Dudley** contrasted the attitude toward several SpaceX launches which have resulted in explosions, to the attitude toward the Virgin Orbit launch from Spaceport Cornwall. A similar attitude, which holds back some actors in the sector, could emerge if a failed launch from Scotland occurs. **Mr Breslin** explained that entrepreneurs and innovators are commonplace in California, but not in Scotland. He said that Glasgow Science Centre works with a lot of young people for whom being able to identify as scientists, engineers or innovators is a significant hurdle, with high levels of deprivation leading some families perceiving science to not be “for them”.

The **Chair** asked how people in Scotland could be encouraged to develop commercialisation and entrepreneurship. **Mr McDowall** said that educational institutions have a role, through the entrepreneurial campus blueprint, in becoming hotbeds for entrepreneurial activity. He noted that there is no shortage of support for young people in Scotland to start their own business, with Scottish Enterprise’s “Entrepreneurial Ecosystem Guide” being a vast resource, but the challenge is navigating this support. It will be important to join up the ecosystem of innovation centres and

accelerator programmes, and City of Glasgow College is seeking to use the entrepreneurial campus blueprint to signpost as best it can.

Douglas Ross asked if enough is being done to raise awareness that there will be more failures than successes in the space sector. **Mr Dudley** replied that it is not, with the public already sceptical of the cost of undertaking space activities without being told that a rocket might explode, but it is necessary to be honest with people about that reality. **Ms Doonan** said it is important to tell a story of the space industry, including what has not worked. Envisat was an example of a big satellite failure, but this does not prevent the story being told of what it did prior to failure, and what its data can still be used for. She said the focus should be on explaining what comes after a failure, and how the sector has evolved. To build public support for the space sector, it is also necessary to explain how the use of space data benefits the public, rather than focussing on astronauts and rockets.

Douglas Ross asked whose job it should be to sell this positive vision of how space impacts people's lives. **Mr Breslin** said that for companies in various sectors to receive public support, there needs to be a case for acceptance. He used the example of renewable energy companies, who need to be able to explain to communities why a wind turbine should be constructed. Government, academic institutions and especially corporates all have a role in telling this story. **Mr McDowall** agreed that all players have a level of responsibility. He said it is necessary to identify where the jobs are, and work back from there. It is the responsibility of colleges and universities to create pathways, but these pathways need to be leading to jobs. He said that colleges can deliver, upskill and reskill at scale, and this adaptability has been showing through initiatives like the Flexible Workforce Development Fund. Companies also likely need a platform to promote themselves, and he was unsure whether space companies currently feel like they have this platform.

Douglas Ross asked if there is a risk in the public becoming more concerned about the collection of data. **Ms Doonan** replied that there is a need to educate the public on how to think critically about the use of data, and to make their own judgments on whether an instance is ethical. This issue goes beyond the space sector, and embedded a data ethics element in courses will be key. **Mr McDowall** noted that this exposure to data has likely been in the public consciousness for some time.

Douglas Ross asked the colleges whether demand currently exceeds the places they can offer. **Mr McDowall** said that City of Glasgow College has flexibility in the resource available to provide other courses. **Mr McGuinness** said that Scotland's ambitions for the space sector will necessitate more people being trained in advance, either through college or university provision, or a mix of funding around apprenticeships. More than doubling the workforce in the next 10 years will require increasing the pace of training, and increasing the specific focus on space-related activities.

Ms Doonan said that the Forth Green Freeport entails significant demand that the college sector will be challenged to meet, as well as competition for labour between key sectors like space and renewables. This kind of large national investment will require colleges to increase their capacity, and Fife College would welcome any government help with this. Whether educational institutions increase engineering provision generally or target one sector, she also said they need to be careful that they are not "cannibalising" the same group of people.

The **Chair** asked the witnesses for their views on the National Space Strategy and Scottish Space Strategy. **Mr McDowall** said that the themes emerging from the strategy documents are encouraging, with a core theme across both strategies being collaboration. He noted that Scotland's innovation strategy is built around cluster and regional development, and it will be necessary to

understand how space strategy filters down into the regions. The West of Scotland Space Cluster and the Glasgow City Region Innovation Action Plan are encouraging initial mechanisms.

Mr Dudley said that the ambitions for the space workforce are likely too ambitious, with the Scottish space workforce probably currently employing around 4,000 people (a higher figure of 8,000 includes the direct-to-home broadcasting sector). He said that more than doubling the figure by 2030 is quite unlikely, requiring a level of growth that has not been seen in the sector for some time, but it is nevertheless still right to be ambitious even if the goal is not met. He hoped that the Space Workforce Action Plan would address the lack of detail in previous strategies, but he noted that it had been in development for some time and had already been delayed several times.

Mr Breslin viewed the targets with a degree of cynicism, as they also exist in other sectors. He said that other sectors see no shortage of opportunity, but a shortage of skilled personnel. Multiple sectors (including shipbuilding, offshore wind, photonics and quantum) are trying to expand, with the only constraining factor being the availability of skilled personnel. He explained that college/university is too late a starting point for skills development, and it is necessary to look 10 years earlier to children entering secondary school, if a pool of talent is to be built. Sustained engagement is necessary, rather than simply exciting children by taking a spaceman and a rocket to schools. He also said it is necessary to “normalise” a career in science or technology, rather than it being seen as exceptional for young people.

The **Chair** asked whether someone with the skills to work in the space sector could also work in other sectors. **Mr McGuinness** noted that Scotland had seen a large percentage of engineering graduates moving to the financial services sector due to higher rewards. He said that employers need to be more active, creating internships and work placements, and engaging with young people in colleges and universities. The life sciences have seen programmes like this for SMEs, which have created a connection between the individual and the company, and a better understanding of what is required to succeed in the sector.

The **Chair** asked how the National Space Strategy and Scottish Space Strategy could be made more realistic and achievable. **Mr McDowall** replied that more should be done to learn from other sectors on a similar trajectory. **Ms Doonan** said that colleges should be given access to the Scottish Space Academic Forum, to ensure parity of esteem with universities. She also mentioned the importance of retention, and the need for employees to see a progression, with opportunities for upskilling and development. From her personal experience, she had chosen a larger company because she was more confident they would continue to develop her. It would be very useful to have investment that allows an ecosystem dominated by SMEs to support ongoing staff development.

Douglas Ross asked if there is a role, in engaging people in space, for both one-off events and longer-term projects. **Mr Breslin** replied that there is still a place for one-off events, but that most young people need more sustained engagement. A visit to Glasgow Science Centre is now a highlight of an extended engagement, so that a young person gets greater impact from the extended engagement but also more benefit from the visit by it being placed in context.