



## **Engineers Ireland’s Submission to the Department of Further and Higher Education, Research, Innovation and Science’s Public Consultation on the Action Plan on Apprenticeship 2026 – 2030**

### **What criteria should guide decisions to create new apprenticeship or traineeship programmes?**

Purely academic, university-style teaching does not suit everyone. The tradition in Ireland is to push all students through the academic third-level system, due to lack of alternative options. This can be, on one hand counter-productive economically, and on the other, unfair.

Ireland will require significantly more engineers in the years to come. Engineers Ireland estimates that this country will need 22,300 additional engineers over the next ten years - equivalent to around 30% of the current engineering workforce. The shortfall is stark and highlights the urgency of addressing the talent pipeline.

While Engineers Ireland’s primary focus is, understandably, on the engineering profession and its various professional grades, the delivery of nationally critical infrastructure depends on the strength of the entire engineering ecosystem. Only by reinforcing all elements of this system can such projects be successfully realised. It is therefore essential that this broader ecosystem is fully understood so that opportunities for apprenticeships can be properly identified and developed.

Therefore, the development of engineering apprenticeships is of essential importance to ensure a diverse range of pathways into the profession, capable of drawing talent from all sections of society and amongst all types of learners.

### **How can apprenticeships and WIL (Work Integrated Learning) options be promoted as first-choice education and training pathways?**

At present, relatively few engineering apprenticeships are available and the shortage is particularly acute in programs that are tied to level 8 and level 9 NFQ qualifications.

An expansion of the availability of programs at this level would have the potential to broaden the appeal of engineering apprenticeships if they are embedded in educational culture at third-level as a first-choice pathway.

Coupled with this is the need for clear and accessible ladders of opportunity, ensuring that apprenticeships do not present artificial barriers or “glass ceilings” to progression. Equally important is the creation of bridging pathways that allow those with strong technical foundations to move into other areas of the infrastructure ecosystem. The practical, hands-on skills developed through apprenticeships are highly transferable and can play a significant role in supporting this mobility.



Where such pathways exist, Engineers Ireland is ideally positioned to underpin their quality assurance, ensuring that each route fosters the consistent development of appropriate competences as individuals advance through the system.

**What supports or incentives would encourage learners to engage and stay engaged?**

Strategies must also place a strong emphasis on encouraging greater participation by women, who remain significantly under-represented in the sector. This is particularly important given the consistent anecdotal evidence that, when they do enter the field, women perform exceptionally well and progress strongly.

**What supports or incentives would encourage employers to engage and stay engaged?**

Greater industry partnership with apprenticeships programmes, in conjunction with third-level institutions, would allow for employers to develop strong relationships with third-level institution and thus help to ensure that apprenticeships in engineering are in touch with the latest technological developments and workplace challenges.

**What targeted measures would improve participation among under-represented groups?**

The lack of uptake of the engineering apprenticeship exposes a gap in the engineering education and outreach system. A similar pattern is observed in the STEPS Engineering Your Future transition year program where a survey of 244 students (who were likely already planning on studying engineering at third level) was conducted. 95% of female students and 88% of male students indicated they would like to study at a Higher Education Institute, as opposed to an apprenticeship, at 2% and 4% respectively. This bias is likely largely due to misinformation on, or misunderstanding of, apprenticeship routes.

All students should be aware of the engineering apprenticeship as a route, and its benefits. This should be executed through a public awareness campaign focusing on engineering degree apprenticeships only (to distinguish the course from a traditional (craft) apprenticeship. e.g. an electrician, mechanic etc.), as well as through engineering education and outreach. To increase the numbers studying engineering, all study-styles should be accommodated and encouraged, and the range of routes to engineering should be known and understood by all students so they can make informed decisions.

A further challenge relates to enabling informed decisions: many prospective apprentices - and indeed their parents, teachers, and advisors - have limited visibility of the career trajectories available post-apprenticeship. To address this, there is a need for a comprehensive, sector-wide framework that clearly maps the pathways *into, through, and beyond* engineering, including those that begin with apprenticeships. Developing such a framework should be a coordinated effort involving all relevant stakeholders - SOLAS, the National Apprenticeship Office, the IUA, THEA, Engineers Ireland, employers, and Higher Education Institutions — to ensure that opportunities are transparent, coherent, and trusted across the entire engineering ecosystem.



**What mechanisms would make apprenticeships more adaptable to emerging skills and occupations, and technological and workplace changes?**

Work with industry partners would help to ensure that apprenticeships in engineering are in touch with the latest technological developments and workplace challenges.

While Engineers Ireland is not a partner on the programme, it is worth pointing to the REEdI engineering degree at Munster Technological University as an example of such industry partnership, where industry partners collaborate and supports the ongoing design, development of the REEdI framework. Such approaches can help that engineering graduates are appropriately equipped to meet future engineering skills requirements.

Additionally, engineering apprenticeships - with their strong emphasis on practical competence and skills development - produce graduates with attributes that are both highly adaptable and readily transferable across the wider engineering landscape.

**What specific actions will best strengthen quality assurance across apprenticeships and WIL (Work Integrated Learning) options?**

Engineers Ireland accredits over 250 engineering programmes across Ireland to ensure they meet the high standards required of modern engineering professionals. Engineers Ireland undertakes accreditation visits to higher education institutions (HEIs) to ensure engineering and engineering technology programmes meet appropriate international standards. Before the accreditation visit, the HEI must submit detailed documents covering all aspects of the programmes for accreditation, focusing largely on compliance with programme outcomes.

This process is the most robust way of ensuring that the quality of engineering apprenticeships is assured and new engineering apprenticeships should be developed with Engineers Ireland accreditation in mind.

Additionally, the accreditation process is delivered in partnership with HEIs, practising professional engineers, and academic staff. This collaborative model provides an ideal mechanism for disseminating and embedding best practices identified across HEIs into an academic's own institution, thereby strengthening consistency and raising standards across the sector.

Commented [KS1]: The emphasis is shifted to practice rather than academics...

**How can the apprenticeship system maintain its national character while expanding to meet diverse regional and sectoral needs?**

This may be achieved through readiness for sectoral engagement. One perspective argues for bespoke, sector-specific apprenticeships; however, such an approach is unlikely to be sustainable in the long term. A more effective model would be a hybrid framework that develops strong, shared core skills across engineering sub-sectors while still providing structured opportunities for targeted specialisation. This may strike the right balance between breadth and depth, ensuring adaptability without compromising sector-specific competence.

**Where should additional investment be focused to deliver the greatest impact?**

As indicated above, both (i) an expansion of the availability of programs at this level would have the potential to broaden the appeal of engineering apprenticeships are embed them in educational culture at third-level as a first-choice pathway; and (ii) a public awareness campaign focusing on engineering degree apprenticeships only (to distinguish the course from a traditional (craft) apprenticeship. e.g. an electrician, mechanic etc.) should be prioritised.

There also exists a need for joined-up opportunities that offer apprentices clear pathways to progress and further develop their careers. Alongside this, there is a significant need for stronger, more effective communication and promotion. Despite recent improvements, apprenticeships are still too often perceived primarily as a route into construction, which limits their appeal and undermines the breadth of opportunities they offer. Greater coordination among stakeholders - supported by consistent, standardised messaging - is essential to ensure the value and potential of apprenticeships are widely understood and recognised.

**Are there innovative ideas or international best practices Ireland should adopt?**

Most third-level students in Ireland qualify from a university. This is in contrast with many strong engineering economies, like Germany, Sweden and Switzerland where over 50% of the student population choose vocational education, or 'dual system' study. The Dual System combines periods of internship work with academic study. For engineering, and other professions, the term 'Dual Studies' is commonly used to emphasise the academic element of the course and to acknowledge that student is conferred with a Bachelor's or Master's degree on successful completion of the program.

International attempts to replicate Germany's renowned dual system have fallen short of expectations, as the German system is built on a tradition of industry buy-in, and is complicated by funding structures, which are difficult to implement (Oltermann, 2021). In Ireland, in recent years, an increasing emphasis has been put on encouraging people to study engineering through alternative routes such as an engineering apprenticeship. Under the 'Action Plan to Expand Apprenticeship' 2016-2020, major reforms to the apprenticeship structure took place, which included adding a suite of 'dual studies' style courses, offered through Consortia (industry and university partners) (Skills, 2016). For example, civil engineering apprenticeships up to level 9 are being offered from 2024, as well as manufacturing, industrial and electrical consortia-led engineering apprenticeships. While this is encouraging, uptake has been slow and the numbers low.