

## Summary of Demand from Industry for Skills / Training – December 2021

The SERSF has compiled the following information from feedback from industry, industry clusters/associations and data available from the Skills and Labour Market Research Unit (SLMRU) of SOLAS. It is presented for a number of key economic sectors that are of vital economic importance to the region.

In addition to the identified skills shortages / training needs, sectors have an ongoing need for a wide variety of other training which is being met by the various education and training bodies within and outside the region, internal training and private contracted training providers.

Employment in 'Industry' in the South East has remained steady from 29,200 in 2019 (quarterly average per CSO QLF) to 29,900 in 2021 (CSO QLF average for Q1-Q3)

### Quality Manufacturing / Engineering – (18,500 employed in SE)

(Note: additionally, Pharma & Medtech employs 11,400 in the SE – this sector, which is separately profiled, also has significant engineering related skills needs.)

This sector includes a variety of companies including:

- Precision Manufacturing
- Food & Drinks Manufacturing
- Agricultural Machinery Manufacture
- Bespoke Manufacture and Specialist Services.

This sector has an ongoing requirement for engineering professionals and associate professionals and craft qualified personnel. This demand is not being satisfied from within the region alone.

Roles in demand within the region

- |   |  |
|---|--|
| ➤ Manufacturing Engineers                                 | Various manufacturing companies                          |
| ➤ Automation Engineers                                    | High volume / precision manufacturing                    |
| ➤ Electrical Engineers                                    | Various in maintenance / process roles                   |
| ➤ Building Services Engineers                             | Various manufacturing companies & specialist contractors |
| ➤ Engineering Project Managers                            | Companies who operate on customer sites                  |
| ➤ Craft Qualified – Electricians, MAMF, Metal Fabrication | Various manufacturing                                    |
| ➤ Welders / Fabricators                                   | Companies engaged in metal fabrication                   |
| ➤ CNC Machine Operators                                   | Metal fabrication companies                              |
| ➤ Skilled Operatives                                      | Various manufacturing companies                          |

Identified skills shortages and a need to upskill staff in the following disciplines has been identified by employers:

- CNC Operators – Machine Centre / Press Break / Laser
- Basic / Intermediate & Advanced Welding / MIG & TIG
- 3D Computer Aided Design
- Automation – introduction for semi-skilled and craft qualified personnel
- Good Manufacturing Practice (GMP) / Quality Engineering
- LEAN & Six Sigma
- Estimating
- Project Management
- Fire Engineering
- Environmental Health & Safety.
- Supervisory Management & Management Development

In addition to the above skills needs there is a significant labour shortage of semi-skilled operatives, particularly in meat processing, in the region.

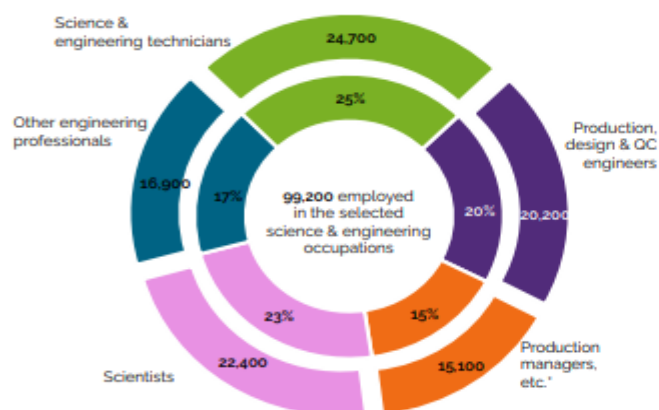
## Extracts from the National Skills Bulletin 2021

### 10.1 Science & Engineering Occupations

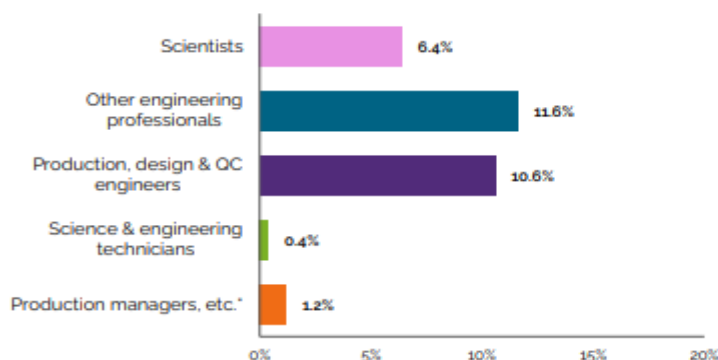
Overall employment: approximately 99,200 persons (70% male) were employed in the selected science and engineering occupations, representing 4.3% of the national workforce.

- **Sector:** 53% of overall employment was concentrated in industry, followed by 17% in professional service activities
- **Employment growth (5-year):** between 2015 and 2020, overall employment increased by 22,500 (5.3% on average annually compared to 2.2% nationally). The strongest rate of employment growth was observed for other engineering professionals (11.6%) during the period
- **Age:** the 25-54 age group accounted for the majority of those employed in these occupations, at 82%. The share of persons employed aged 55 years and over was 13%, below the national average of 19%
- **Education:** the share who had attained third level qualifications (79%) was significantly above the national average share (51%), while a further 15% had attained a higher secondary/FET qualification
- **Full-time/part-time:** 95% of those employed in science and engineering occupations were in full-time employment
- **Nationality:** the share of non-Irish workers (15%) was slightly below that of the national average of 17%, while 85% of workers were Irish nationals.

Numbers employed, 2020 (annual average)



Average growth rates (%) 2015-2020



Between 2015 and 2020, overall employment increased by 22,500 (5.3% on average annually compared to 2.2% nationally).

Source: SLMRU (SOLAS) analysis of CSO data

## Overall Outlook for these Occupations

Employment in this occupational group grew strongly over the five-year period with employment continuing to grow in 2020. Growth in employment was particularly driven by high-tech manufacturing, including the pharma segment. Strong export growth in pharmaceutical products in 2020 was primarily driven by COVID-19 products.<sup>37</sup> As such, employment may continue to grow in future years for these occupations, albeit at a more moderate pace than that observed in 2020. Demand for many of these roles continued to be evident during 2020 through the employment permit data, vacancy data and appearing frequently in the Recruitment Agency Survey and the Skills for Growth data as roles which are proving difficult-to-fill.

Provision from the third level education system remains strong overall: in 2019, there were over 12,800 science and engineering graduates from the third level education system (2,000 more than in 2015). However, the skillsets (critical analysis, problem solving, etc.) of scientists and engineers are highly sought after in a range of other occupations (e.g. public administration professionals, teachers, among others).

The shift towards a low carbon economy is expected to result in a demand for certain skills amongst scientists (e.g. ecology, environmental, conservation), electrical engineers (e.g. renewable and high voltage) and technicians (e.g. solar/wind), in addition to their existing skills profiles. Future demand for these occupations is anticipated to be strong, with shortages likely to continue. The shortages are expected to be small in number and, for some, will relate to those with experience in niche areas.

Occupation	Economic summary
Scientists  <b>Shortage:</b> <b>Analytical chemists, medical scientists</b>	<p>Employment grew strongly for this occupation over the five-year period, with an increase of 8% in the year since 2019. Employment permits issued in 2020 were across many scientific fields with analytical chemists and medical scientists the most frequently mentioned. While science roles accounted for a relatively small share of the job vacancy data, vacancies continued to arise for biologists and chemists. Education provision for scientists remained strong in 2019, with almost 5,500 graduates at levels 8-10 (a fifth more than in 2015). Of these, almost 1,600 graduates were in the areas of pharma/biopharma, chemistry, biochemistry and medical science, a 34% increase when compared to 2015.</p> <p>Demand for these skills in the life sciences is likely to continue to grow, with shortages occurring for roles that require a high level of experience and/or in niche areas.</p>
Production, design & QC engineers  <b>Shortage:</b> <b>Design, process and quality control/assurance engineer</b>	<p>The strong employment growth over the five-year period was primarily attributed to increases occurring since 2018. The number of new employment permits has also increased with 600 new permits issued in 2020. These primarily related to process, quality (QA/QC) and design engineers.</p> <p>Mentions of vacancies that were difficult-to-fill in the Recruitment Agency Survey related to process (including lean six sigma), manufacturing, quality, regulatory and design engineers. These roles were also cited as difficult-to-fill by employers in the Skills for Growth data, with mentions across a range of sectors (e.g. food processing, professional services). Online job vacancies related primarily to production/process engineers. Supply from the education/training system was broadly in line with preceding years, with approximately 900 graduates at levels 8-10 in 2019.</p> <p>Although COVID-19 had an impact on industrial employment, with a number of workers in receipt of income support payments, these engineers do not appear to have been affected, since employment in this occupation grew in 2020 and demand for these skills persisted. Future growth is likely as these engineers fulfil critical roles across a wide range of industries (e.g. regulatory standards, manufacturing operations) with shortages of those with relevant experience likely to occur.</p>

<p>Other engineering professionals (e.g. mechanical, electrical and electronic engineers)</p> <p><b>Shortage: Engineers (mechanical, electrical, automation, validation)</b></p>	<p>Employment growth was very strong for this occupation over the five-year period, although changes to the Labour Force Survey methodology in 2017 account for some of this change; employment declined between 2018 and 2019 and remained unchanged in 2020. Over 400 new employment permits were issued for this occupation in 2020 for engineering roles across a number of areas (mechanical, electrical, field service, automation and validation). Vacancies for these engineers were frequently mentioned as difficult-to-fill in both the Recruitment Agency Survey and by employers in the Skills for Growth data. Roles included engineers in automation, electrical, mechanical, validation, manufacturing, and EHS (Environmental Health and Safety). Many roles required specific software or industry (e.g. construction) experience. Vacancies also occurred in 2020 across this range of engineering roles. There were over 1,300 third level graduates at levels 8-10 in 2019, down slightly on the preceding year, but in line with earlier years.</p> <p>Demand is expected to be strong for these engineering roles, although with employment levels fluctuating, the magnitude of any shortages is difficult to determine and may relate primarily to those with industry-specific experience.</p>
<p>Science &amp; engineering technicians</p>	<p>Overall employment in this occupation saw little growth over the five-year period; employment grew in 2020 following a decline in 2019, with numbers returning to 2017 levels. A small number of new employment permits were issued in 2020 for manufacturing and quality technicians in both industry and the ICT sector. This occupation was cited in both the Recruitment Agency Survey and by employers in the Skills for Growth data as difficult to fill, where demand was for manufacturing, QA and design technicians across a range of manufacturing sectors. There was also a high volume of job vacancies for science and engineering technicians.</p> <p>While demand was evident in 2020, any future growth for these roles will be dependent on the performance of the manufacturing sector.</p>
<p>Production managers in manufacturing</p>	<p>Employment growth over the five-year period was below the national average, with a fall in employment in the year to 2020. There were a small number of new employment permits issued for this occupation in 2020. At 56%, these roles had the lowest share with third level qualifications across all science and engineering occupations indicating the importance of experience in these managerial positions.</p> <p>With employment concentrated primarily in industry, the outlook for this occupation post-COVID-19 will be dependent on a return to full activity in this sector.</p>

*\*For detailed table see Appendix A*

## 10.1 Science & Engineering Occupations

Bulletin description	Number Employed, 2020 (Annual Average)	Annualised Employment Growth Rate, 2015-2020	% Female (Q4 2020)	% Full-Time (Q4 2020)	Aged 55 years and over (Q4 2020)	% Irish Nationals (Q4 2020)	% Third Level Graduates (Q4 2020)	New Employment Permits Issued, 2020 (Number)	SLMRU Recruitment Agency Survey, Oct 2020
Chemical, biological & physical scientists	22,400	6.4%	54%	92%	-	78%	97%	156	X
Other engineering professionals	16,900	11.6%	-	96%	-	87%	84%	428	X
Production, design & QC engineers	20,200	10.6%	[36%]	95%	-	86%	93%	600	X
Science & engineering technicians	24,700	0.4%	30%	95%	-	88%	66%	20	X
Production managers in manufacturing, mining and energy	15,100	1.2%	-	99%	[25%]	87%	56%	32	
<b>Total</b>	<b>99,200</b>	<b>5.3%</b>	<b>30%</b>	<b>95%</b>	<b>13%</b>	<b>85%</b>	<b>79%</b>	<b>1,236</b>	