

## Summary of Demand from Industry for Skills / Training – February 2023

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.

Nationally employment is at a record level (2.55 million in Q3 2022) and there is now 217,000 employed in the South East (CSO Q3 2022). The unemployment rate for January 2023 stood at 4.4% (10.4% for 15-24 year olds). The rate of staff turnover / churn has been accelerated by the pandemic. Given the tight labour market, in addition to skills and training needs some sectors are now experiencing significant labour shortages.

**Manufacturing / Engineering – (17,700 employed).**  
(Excluding Pharma & Medtech who employ 12,000)

This sector includes a variety of companies including:

- Precision Engineering / Manufacturing – 5,500
- Food & Drinks Manufacturing – 9,500
- Other Manufacturing – 2,700

This sector has an ongoing requirement for engineering professionals and associate professionals, craft qualified personnel and skilled operatives. There is significant evidence that the pipeline of engineering skills within the region is not sufficient to meet the demand from enterprise.

Between 2016 and 2021 strong average annual employment growth was experienced in 'Other Engineering Professional' at 14.1% and 'Production, Design & QC Engineers' at 13.4% nationally (National Skills Bulletin 2022).

Roles in demand within the region include:

- Manufacturing Engineers
- Process Engineers
- Automation Engineers
- Project Engineers
- Electrical Engineers
- Engineering Project Managers
- Craft Qualified – Electricians, MAMF, others

- Welders / Fabricators
- CNC Machine Operators , Metal Fabricators
- Skilled Operatives

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

- Good Manufacturing Practice (GMP)
- LEAN & Six Sigma & Operational Excellence
- Project Management
- Sustainable Manufacturing Practices
- Automation – introduction for semi-skilled and craft qualified personnel
- Digitisation & Data Analytics for process improvement
- Basic / Intermediate & Advanced Welding
- CNC Operators – Machine Centre / Press Break / Laser
- Additive Manufacturing for prototype development
- Environmental Health & Safety
- Supervisory Management & Management Development

### Availability of Graduates

The Higher Education Authority statistics reveal a modest and static pipeline of graduates in **Engineering related disciplines** graduating in the South East in recent years.

### Graduates from SETU vs Engineering Graduates National

Engineering Graduates South East (SETU)							
Isced Discipline	2017	2018	2019	2020	2021	2021%	
Certificate Total	189	190	203	122	119	21%	
Higher Certificate Total	58	44	52	34	26	4%	
Honours Degrees Total	183	160	145	179	189	33%	
Ordinary Degrees Total	164	129	191	207	244	42%	
Grand Total	594	523	591	542	578	100%	
Engineering Graduates National							
Isced Discipline	2017	2018	2019	2020	2021	2021%	
Certificate Total	797	791	1,240	1,199	1,288	19%	
Higher Certificate Total	329	294	296	276	311	5%	
Honours Degrees Total	2,934	3,056	3,121	3,551	3,405	50%	
Ordinary Degrees Total	1,526	1,442	1,684	1,830	1,686	25%	
Undergraduate Diplomas Total	143	144	112	89	123	2%	
Grand Total	5,729	5,727	6,453	6,945	6813	100%	

Note. All awards awarded in All HEA-Funded Institutions in the Calendar Year by field of study (ISCED): full-time & part-time (including distance and e-learning). It is noted that the SE has a high proportion of certificates in these figures reflecting strong participation levels by part time learners.

## Higher Education graduates.....'Engineering, manufacturing & construction'- South East

Isced Discipline	2017	2018	2019	2020	2021
(0710) Engineering and engineering trades not further	46	35	34	18	21
(0712) Environmental protection technology	40	26	24	23	39
(0713) Electricity and energy	107	44	30	28	51
(0714) Electronics and automation	156	117	106	124	110
(0715) Mechanics and metal trades	54	43	55	46	50
(0716) Motor vehicles, ships and aircraft	95	123	120	83	69
(0721) Food processing	9				16
(0722) Materials (glass, paper, plastic and wood)		11	9	11	15
<b>Engineering Other</b>	<5				
(0730) Architecture and construction not further defin	5	8	28	36	35
(0731) Architecture and town planning	20	62	43	33	44
(0732) Building and civil engineering	61	54	142	140	128
<b>Grand Total</b>	<b>594</b>	<b>523</b>	<b>591</b>	<b>542</b>	<b>578</b>
<b>As a percentage of National</b>	<b>10%</b>	<b>9%</b>	<b>9%</b>	<b>8%</b>	<b>8%</b>

The number of apprenticeship registrations relevant to engineering & manufacturing have been growing steadily in the South East as can be seen from the following figures.

Engineering / Manufacturing Trades	Annual Average (2019/2020/2021)	2021 South East
Electrical	307	342
Electrical Instrumentation	20	18
Engineering Services Management	2	1
Industrial Electrical Engineer	3	1
Instrumentation	1	0
M.A.M.F.	35	42
Manufacturing Engineering (Level 7)	1	1
Manufacturing Technology (Level 6)	3	4
Metal Fabrication	59	73
OEM Engineer	3	3
Pipefitting	25	31
Polymer Processing Technology	0	1
Refrigeration and Air Conditioning	7	9
Sheet Metalworking	3	4
Toolmaking	10	8

Source: SOLAS

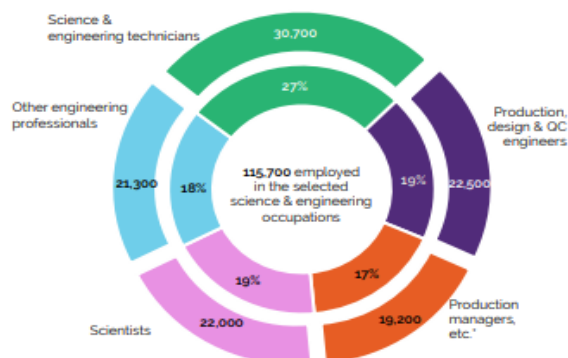
## Extracts from the National Skills Bulletin 2022

### 10.1 Science & Engineering Occupations

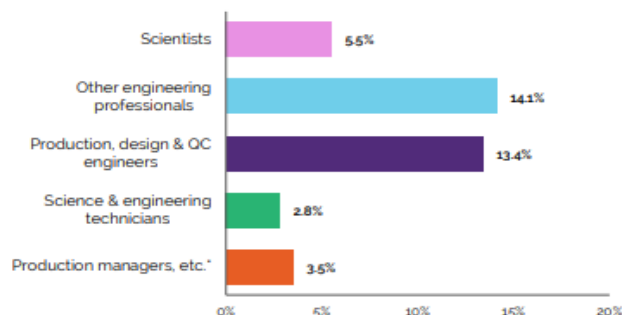
Overall employment: approximately 115,700 persons (67% male) were employed in the selected science and engineering occupations, representing 4.8% of the national workforce.

- **Sector:** 47% of overall employment was concentrated in industry, followed by 21% in professional service activities and 8% for ICT
- **Employment growth (5-year):** between 2016 and 2021, overall employment increased by 33,000 (6.9% on average annually compared to 2.3% nationally). The strongest rate of employment growth was observed for other engineering professionals (14.1%) during the period
- **Age:** the 25-54 age group accounted for the majority of those employed in these occupations, at 83%. The share of persons employed aged 55 years and over was 12%, below the national average of 19%
- **Education:** the share who had attained third level qualifications (86%) was significantly above the national average share (53%), while a further 11% 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 Irish national workers was 82%, slightly below the national average of 83%.

Numbers employed, 2021 (annual average)



Average growth rates (%) 2016-2021



Between 2016 and 2021, overall employment increased by 33,000 (6.9% on average annually compared to 2.3% nationally).

Source: SLMRU (SOLAS) analysis of CSO data

## Overall Outlook for these Occupations

Employment grew strongly in this occupational group over the five-year period, particularly in the year since 2020 with an additional 16,000 persons employed. This has been driven primarily by growth in employment in high tech manufacturing. Although the volume of pharma exports slowed in 2021, they remain the largest goods exporting sector according to the Spring Economic Insights series, which also reported a surge in exports of semiconductors and medical devices in 2021<sup>38</sup>. Provision from the third level education system for science and engineering graduates remains strong. However, the strong employment growth for these occupations and the demand for the skillsets associated with scientists and engineers (e.g. critical analysis, problem solving) across a range of other occupations (e.g. public administration professionals, teachers, among others), will ensure continued demand and job opportunities for these roles. Furthermore, the shift towards a low carbon economy is expected to result in a demand for additional skills amongst scientists (e.g. ecology, environmental, conservation), electrical engineers (e.g. renewable and high voltage) and technicians (e.g. solar/wind).

Future demand for these occupations is anticipated to be strong, with shortages likely to persist. The shortages are expected to be small in number and for some will relate to those with experience in niche areas.

Occupation	Economic summary
Production, design & QC engineers  <b>Shortage:</b> <b>Quality control/assurance, process, and design engineer</b>	<p>Employment in this occupation has seen strong annual growth since 2018, resulting in a 13% annual average growth rate over the five-year period. Over 600 new employment permits were issued in 2021 in roles including quality, design, and process engineers. This occupation group had the highest number of mentions of vacancies that were difficult to fill in the Recruitment Agency Survey, especially for quality, compliance and process engineering roles. Mentions in the Skills for Growth data related to quality (in food, pharma and medical devices), process (across packaging, medical devices and electrical) and design (e.g. equipment manufacturing) engineers. The volume of advertised vacancies in the OVATE data increased in 2021 on the previous year and were mostly for production and process engineers. Almost 3,900 engineering awards at NFQ levels 8-10 were awarded in 2020, an increase of over 800 since 2016.</p> <p>Demand appears to be particularly strong for this occupation and with employment levels increasing, issues in attracting candidates with relevant experience are likely to persist.</p>

<p>Other engineering professionals (e.g. mechanical, electrical and electronic engineers)</p> <p><b>Shortage: Engineers (mechanical, electrical, automation, validation)</b></p>	<p>The strong employment growth for this occupation is partly due to changes to the Labour Force Survey methodology in 2017; however, there was also strong employment growth between 2020 and 2021. Employment permits issued in 2021 included automation, electrical, mechanical and validation engineers. There is evidence of difficulties in filling vacancies for this occupation from the Skills for Growth data and Recruitment Agency Survey; roles in electrical, validation, automation, mechanical, and environmental health &amp; safety (EHS) engineers are in particular demand, especially for, although not confined to, those with skills and experience in specific industries (e.g. high voltage electricity, manufacturing engineering). Strong demand for these engineering roles is expected to persist particularly for those with industry-specific experience.</p>
<p>Science &amp; engineering technicians</p> <p><b>Shortage: Maintenance/lab technicians</b></p>	<p>Employment growth over the five-year period was marginally above the national average although growth was strong in the year to 2021. The Recruitment Agency Survey identified vacancies for maintenance technicians in manufacturing with electrical/mechanical skills as difficult-to-fill; Skills for Growth data also highlighted issues with maintenance technicians (in food manufacturing) along with laboratory technicians (also in food), and technicians in bio-pharma and injection moulding. Advertised vacancies in the DSP and OVATE data referred to various technician roles including maintenance, manufacturing and lab. Demand for these high-skilled technicians is likely to persist, although new manufacturing engineering apprentices at level 6 and 7 for the medical devices sector may assist with alleviating some shortages.</p>
<p>Production managers in manufacturing</p>	<p>Employment growth was above the national average, with strong growth occurring between 2020 and 2021 for this occupation. Employment permits issued in 2021 mainly related to engineering directors. There was one mention of a difficult-to-fill vacancy in the Recruitment Agency Survey for a production manager. There was a large increase in the volume of advertised vacancies in the OVATE data, albeit from a relatively small base.</p> <p>Demand for these roles will be dependent on the strength of the manufacturing sector across all technology levels, although supply chain issues and rising inflation may temper demand for some manufacturing sub-sectors, particularly those outside the high-tech segment.</p>

From National Skills Bulletin 2022. October 2022