



ROYAL SOCIETY
OF **CHEMISTRY**

Chemistry higher education data & messaging pack

Updated 23 May 2025



Purpose and contents

The purpose of this document is to set out key information and data on chemistry provision in higher education. This includes:

1. Provision of chemistry in the UK
2. Undergraduate student numbers
3. Postgraduate student numbers
4. Research grants and contract income for chemistry in higher education institutions
5. Appendix 1: RSC's messaging on higher education
6. Appendix 2: Additional resources and links



Key takeaways from the data

- **Recent closures of chemistry departments have led to sparser provision, or “cold spots” in some areas of the UK.**
- Since 2019/20, the **total number of undergraduates studying chemistry has fallen.**
- However, in the **most recent two years, the total number of first year undergraduates has started to rise.** This is being driven by increases in students from the UK nations.
- The number of **undergraduates studying chemistry from the EU has fallen sharply in recent years**, while the number of **undergraduates studying chemistry from non-EU countries has risen.**
- The number of **postgraduates studying chemistry increased between 2019/20 and 2022/23 but has fallen in the most recent year of available data (2023/24).** This increase was driven by students from non-EU countries starting taught postgraduate chemistry courses.
- **In 2023/24, UK chemistry research in higher education institutes received £271,969,000 from research grants and contracts income.** Most of this was from EPSRC.

Information about the data sources

HESA:

- HESA data represented in this slide deck is from the open data and official statistics pages - <https://www.hesa.ac.uk/data-and-analysis>. More detail can be found on the HESA webpage.
- Data on PhD students has been taken from previous RSC analysis of purchased HESA data - https://www.rsc.org/globalassets/22-new-perspectives/inclusion-and-diversity/rsc_hesa_chemistry_demographics_2023.pdf. This link includes additional detail about the processing of the data.
- Student numbers are rounded to the nearest five in accordance with HESA's Rounding Methodology.

UCAS:

- The UCAS data represented in this slide deck is from UCAS Undergraduate end of cycle data resources 2024 page - <https://www.ucas.com/data-and-analysis/undergraduate-statistics-and-reports/ucas-undergraduate-end-cycle-data-resources-2024>. The sector-level end of cycle data resources cover applicants and applications to courses recruited through UCAS.

Additional information:

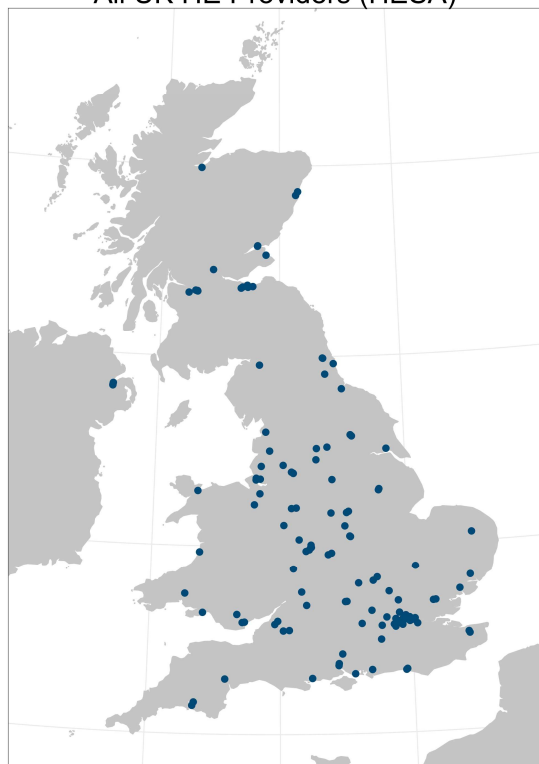
- HESA and UCAS both offer ways of measuring undergraduate student numbers but are slightly different. UCAS statistics are based on numbers of applications and acceptances on courses whereas HESA statistics are records of students who actually enrolled on courses. In some cases, accepted applicants never actually enrol on the course on which they have been accepted.
- All calculated percentages are rounded to the nearest whole figure.

Chemistry department maps

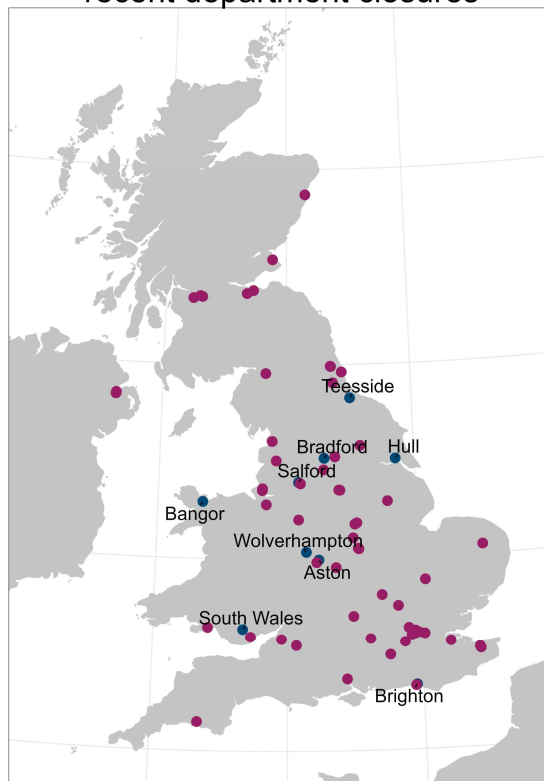
Higher education providers and chemistry departments

Universities with 2023/24 Chemistry undergraduates plus recent department closures

All UK HE Providers (HESA)



Source: HESA



• closed • open

Source: HESA, RSC internal research

Key points:

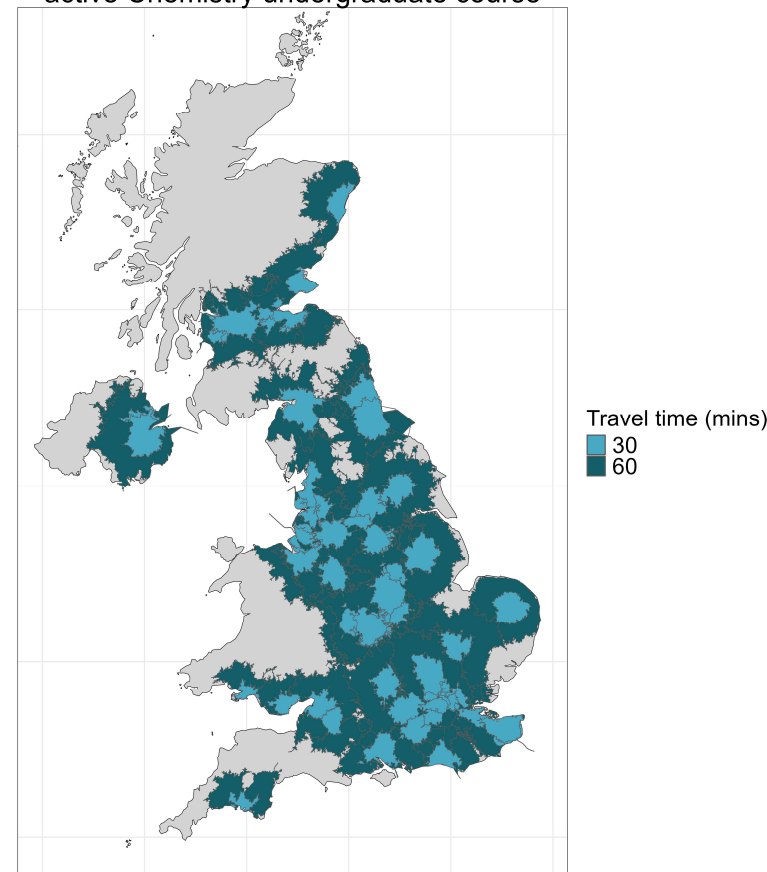
- Overall, in 2023/24 the provision of HE across the UK broadly matches the provision of chemistry undergraduate courses across the UK, but there are some areas where **recent closures have led to sparser provision, or “cold spots”**.
- A number of universities have recently announced redundancies, reduction in provision and/or mergers. Should any of these difficult decisions lead to closures of chemistry courses and/or departments, this could risk further cold spots.

Provision of chemistry undergraduate courses across the UK with travel time

Key points:

- We are starting to see **“cold spots” where no provision of the subject is available within a reasonable travel time.**
- This issue is emerging in East Yorkshire and the Humber with the closure of the University of Hull’s chemistry department, and in North Wales with the closure of Bangor University’s department.
- Other potential closures, particularly of lower-entry tariff institutions, could further worsen this picture.

Travel times by car to nearest university with active Chemistry undergraduate course



Source: Open Route Service
The Open University excluded

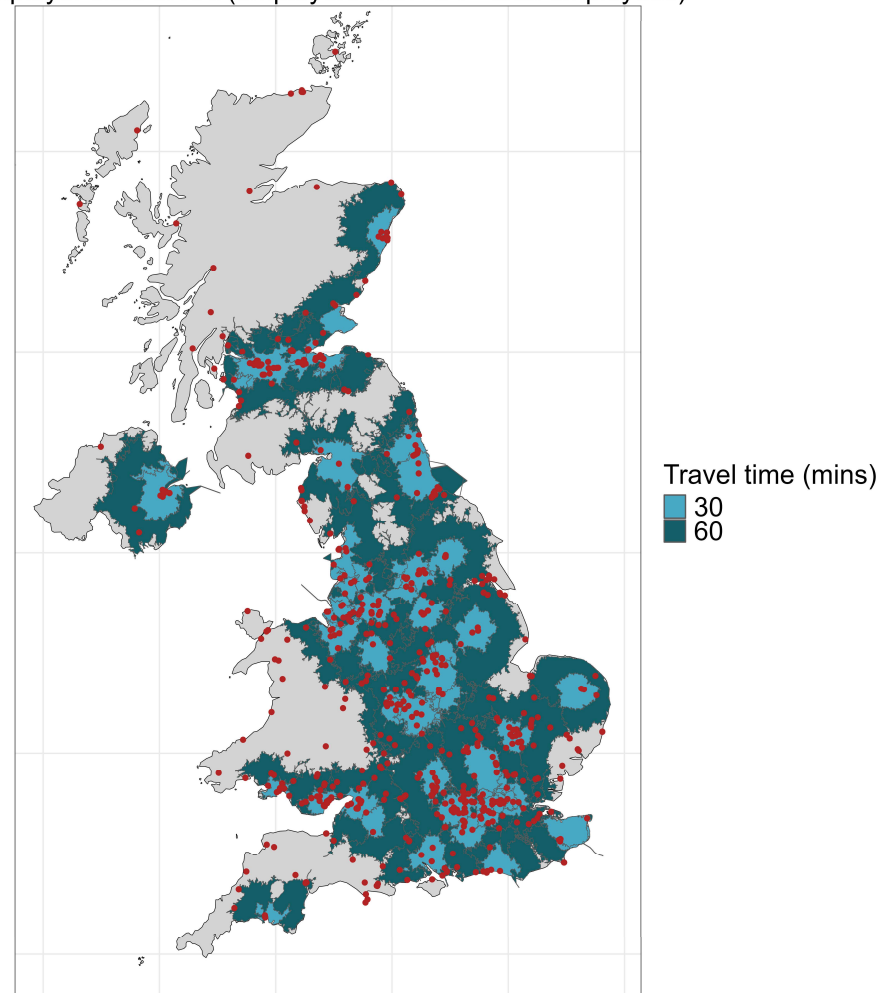
This map shows, for each institution with an active chemistry course, the 30-minute and 60-minute driving range. Grey areas indicate where there is a driving time of one hour or more.

Provision of chemistry undergraduate courses across the UK with travel time and employers

Key points:

- This map overlays internally-collected chemistry employer data, plotting employer sites from organisations with 251+ employees.
- The maps shows that **chemistry employers are often located close to chemistry departments.** If more chemistry cold spots were to emerge, this could have an impact on employers in their local area.

Travel times by car to nearest university with active Chemistry undergraduate course
Employer sites in red (employers with 251+ total employees)

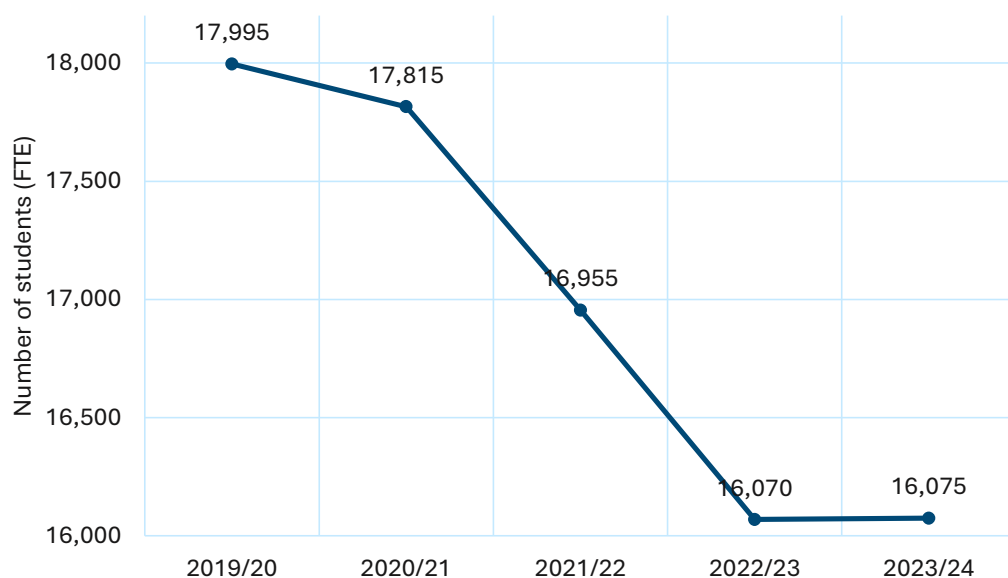


Source: Open Route Service, RSC internal research
The Open University excluded

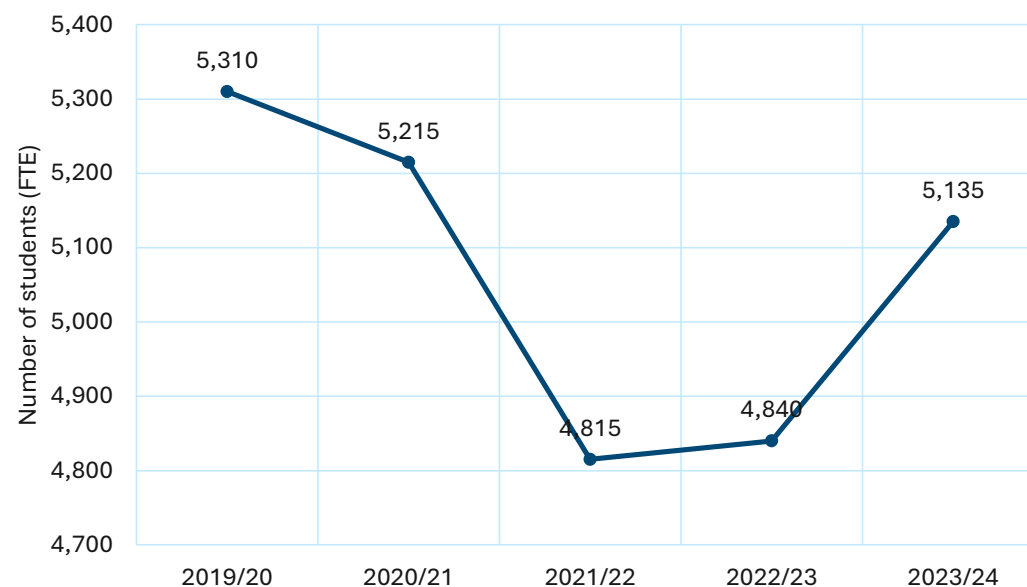
Undergraduate student numbers

Undergraduate enrolments in chemistry (HESA)

Total number of chemistry undergraduate enrolments, 2019/20 to 2023/24



Total number of chemistry first year undergraduate enrolments, 2019/20 to 2023/24

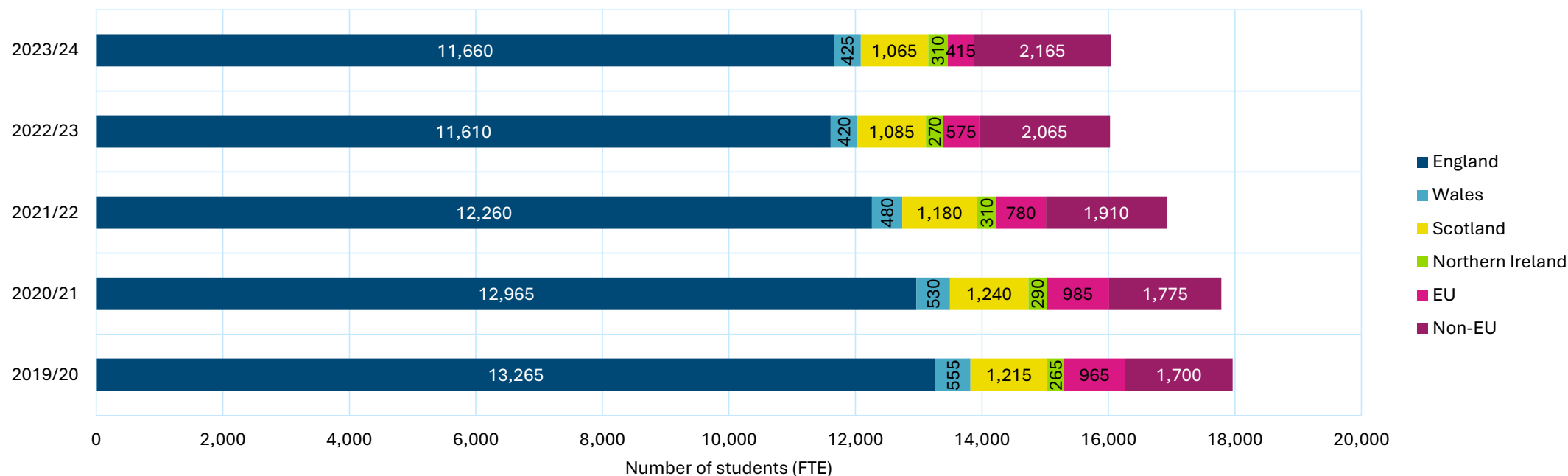


Key points:

- The **total number of chemistry undergraduate enrolments (i.e., chemistry undergraduates in all years) fell by 11% between 2019/20 and 2023/24.**
- The total number of **first year undergraduate chemistry students** fell between 2019/20 and 2021/22 but **has risen in the last two years (2022/23 and 2023/24).**

All years undergraduate enrolments in chemistry by domicile (HESA)

All chemistry undergraduate enrolments by domicile, 2019/20 to 2023/24

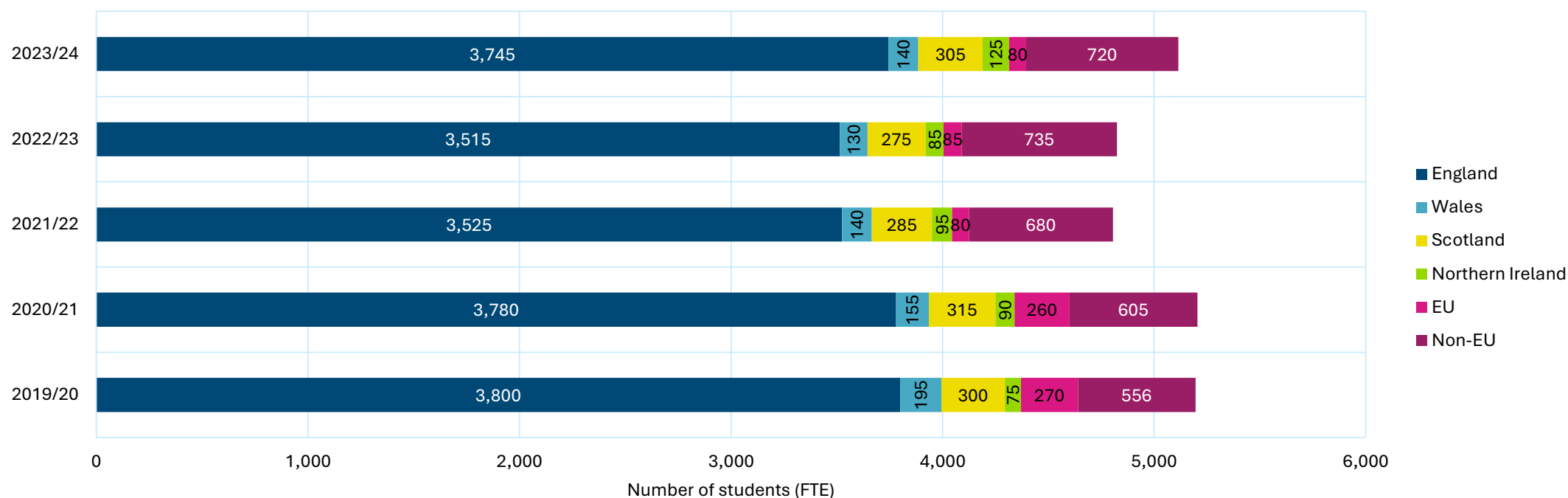


Key points:

- The **UK nations** have all seen a drop in overall chemistry undergraduate enrolments between 2019/20 and 2022/23, but there have been **small increases for England, Wales and Northern Ireland in 2023/24**.
- The number of chemistry undergraduate enrolments from the **EU** has **fallen by 57% between 2019/20 and 2023/24**.
- The number of chemistry undergraduate enrolments from **non-EU countries** has **risen by 27% between 2019/20 and 2023/24**.

First year undergraduates in chemistry by domicile (HESA)

All chemistry first year undergraduate enrolments by domicile, 2019/20 to 2023/24

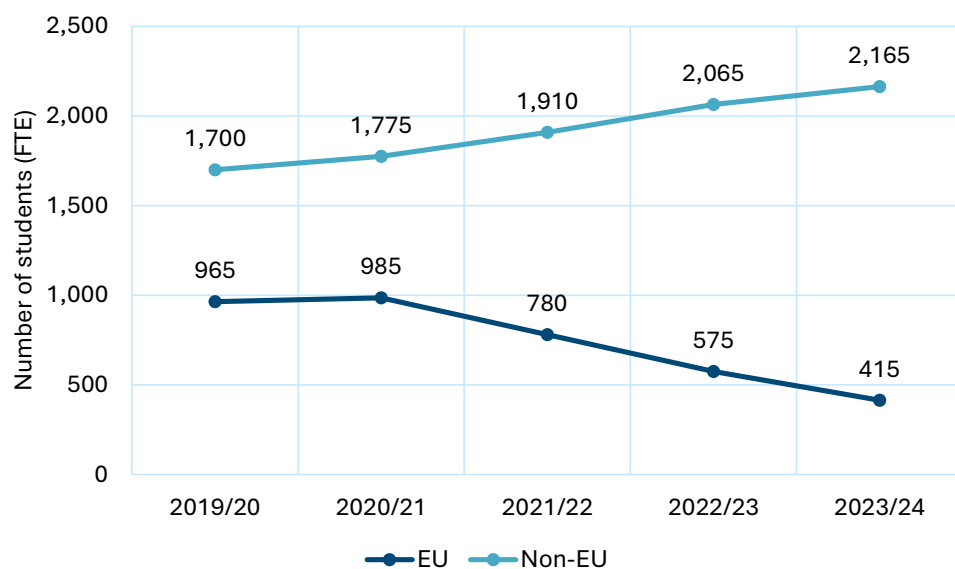


Key points:

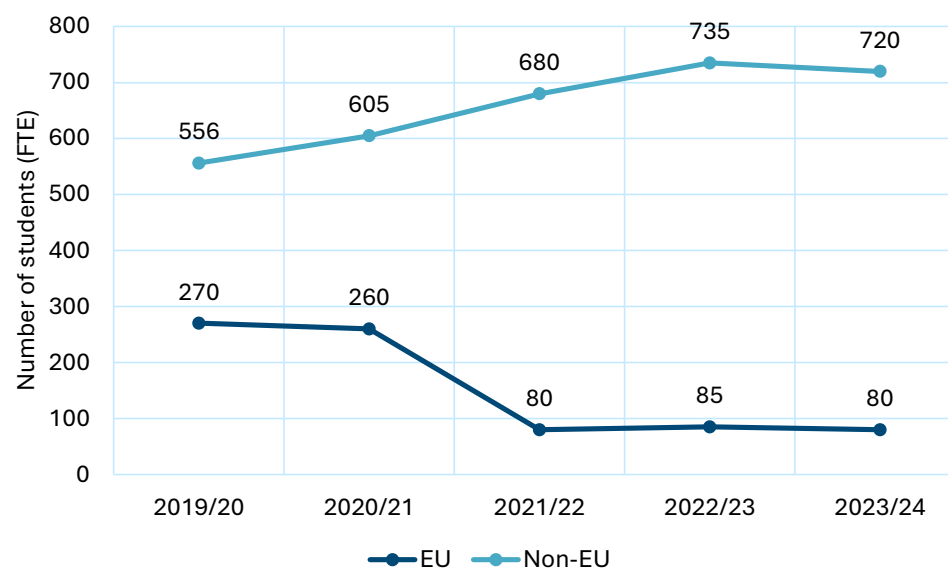
- **All UK nations have seen an increase in number of students who started an undergraduate chemistry degree in 2023/24** compared to the previous year. The biggest increase was seen in Northern Ireland which increase by 47%, followed by Scotland (11%), Wales (8%) and England (7%) respectively.
- The number of first year chemistry undergraduate enrolments from the **EU appears to have stagnated at around 80 students per year.**
- The number of first year chemistry undergraduate enrolments from **non-EU countries has fallen slightly in 2023/24.**

International undergraduates in chemistry (HESA)

Number of international chemistry undergraduate enrolments, 2019/20 to 2023/24

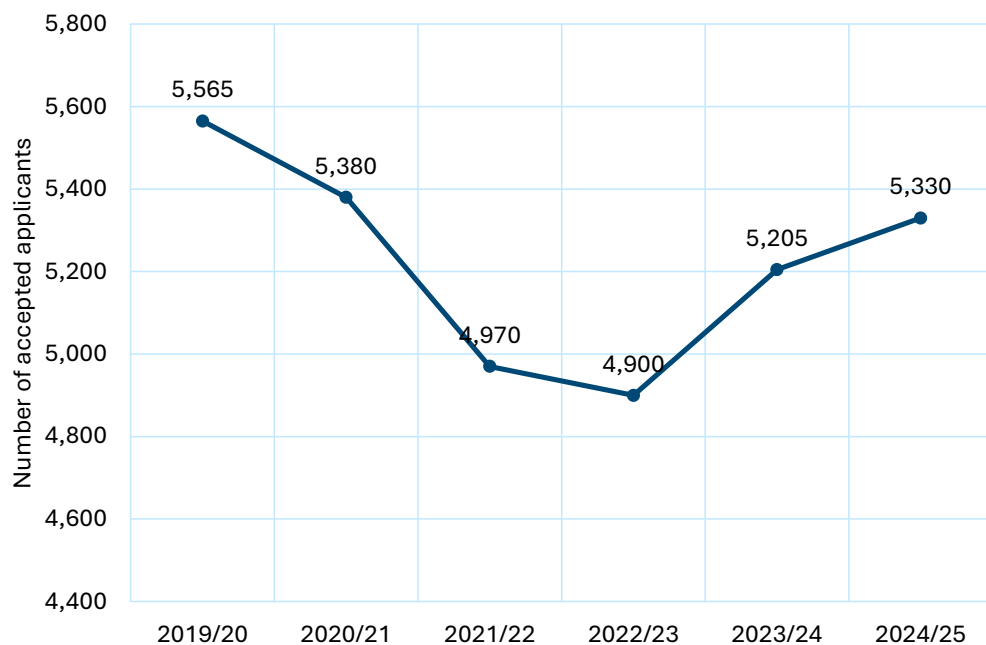


Number of international chemistry first year undergraduate enrolments, 2019/20 to 2023/24

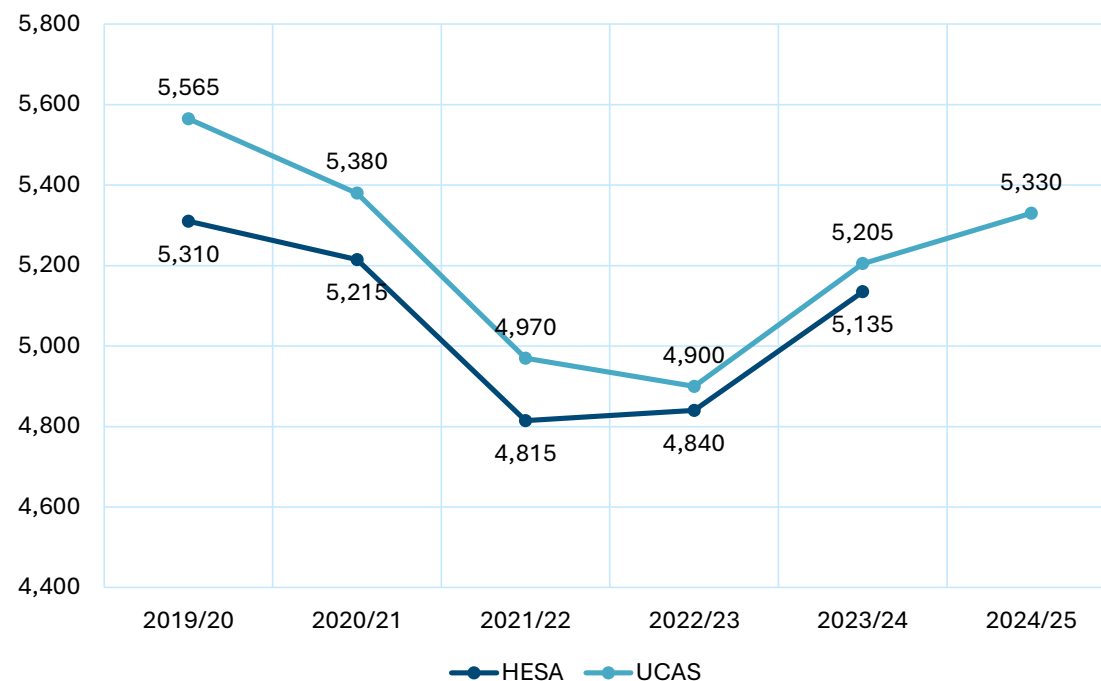


Undergraduate acceptances in chemistry (UCAS)

Total number of accepted applicants for undergraduate chemistry, 2019/20 to 2024/25



Comparison of HESA first year enrolments and UCAS acceptances for chemistry undergraduates

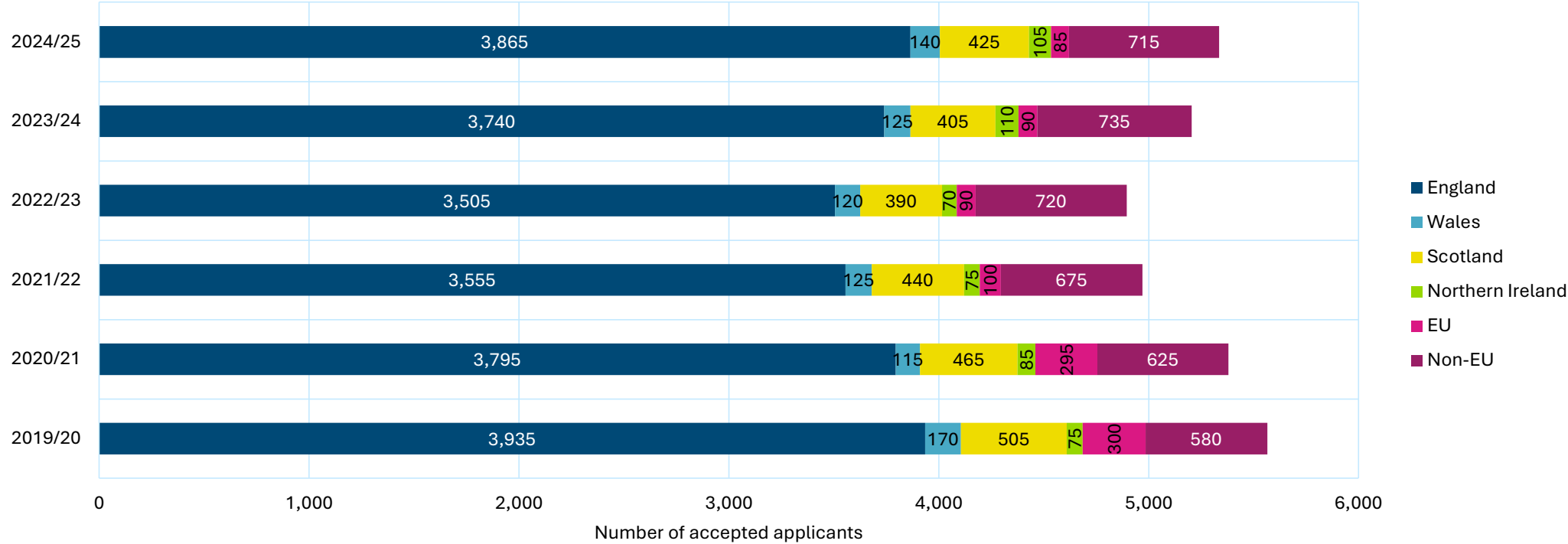


Key points:

- UCAS show the number of students that have been accepted on chemistry courses and hence will differ slightly from HESA statistics which measure the number of students that enrol on a course, but the general trend will be similar (see figure on the right).
- HESA data shows that the number of first year chemistry undergraduate enrolments has started to increase in 2022/23 and 2023/24, whereas UCAS acceptances only started to increase in 2023/24 (and also the most recent year, 2024/25).
- **The gap between acceptances (UCAS) and enrolments (HESA) has narrowed** in the most recent years we have available.

Undergraduate acceptances in chemistry by domicile (UCAS)

Total number of accepted applicants for undergraduate chemistry, 2019 to 2024

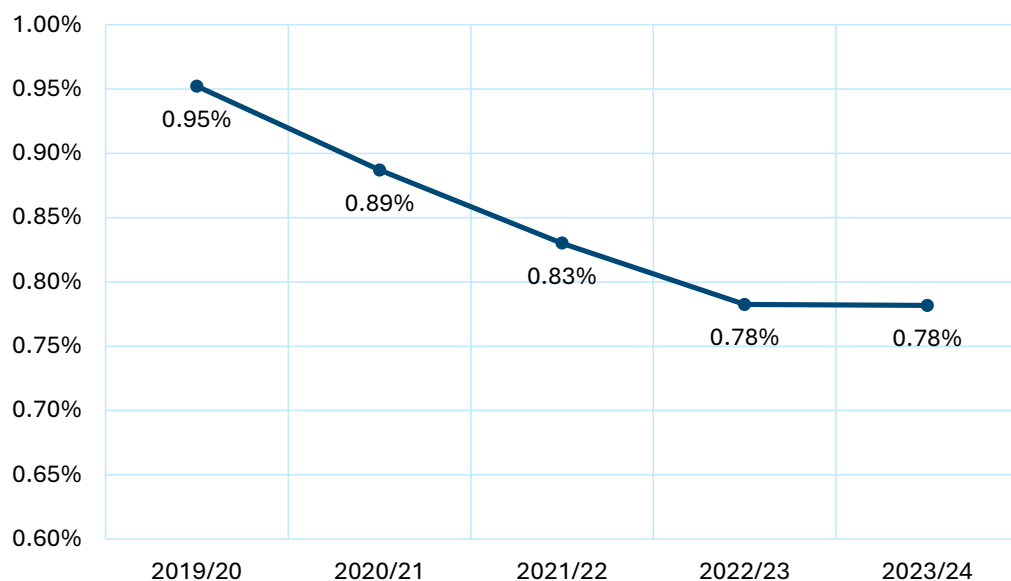


Key points:

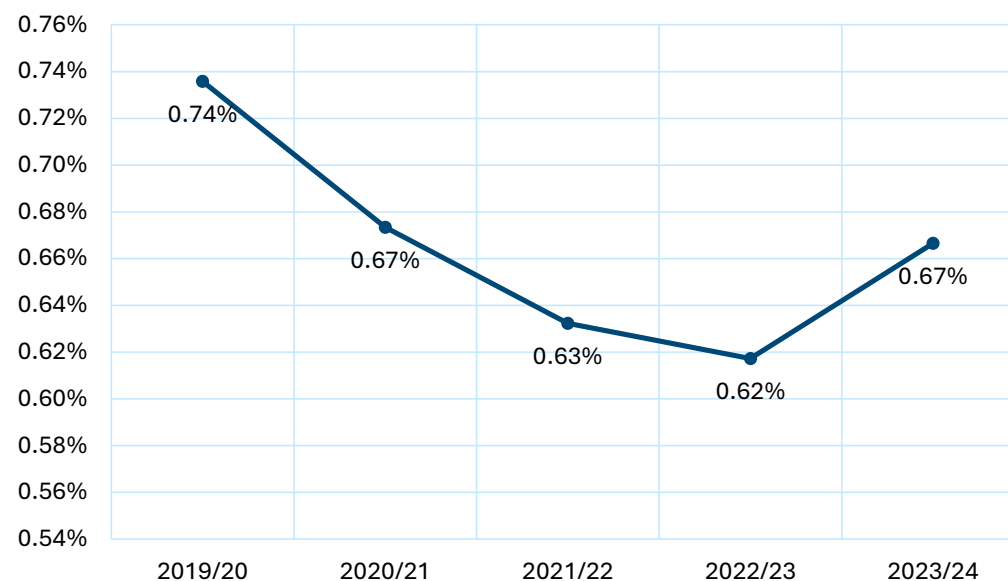
- The figure shows that the **number of chemistry undergraduate acceptances has started to increase in 2023 and 2024** compared to previous years, and this is largely driven by increases in students from UK nations.

Chemistry undergraduates as a percentage of the total undergraduate population

Chemistry undergraduate enrolments as a percentage of the total undergraduate enrolments



First year chemistry undergraduate enrolments as a percentage of the total first year undergraduate enrolments



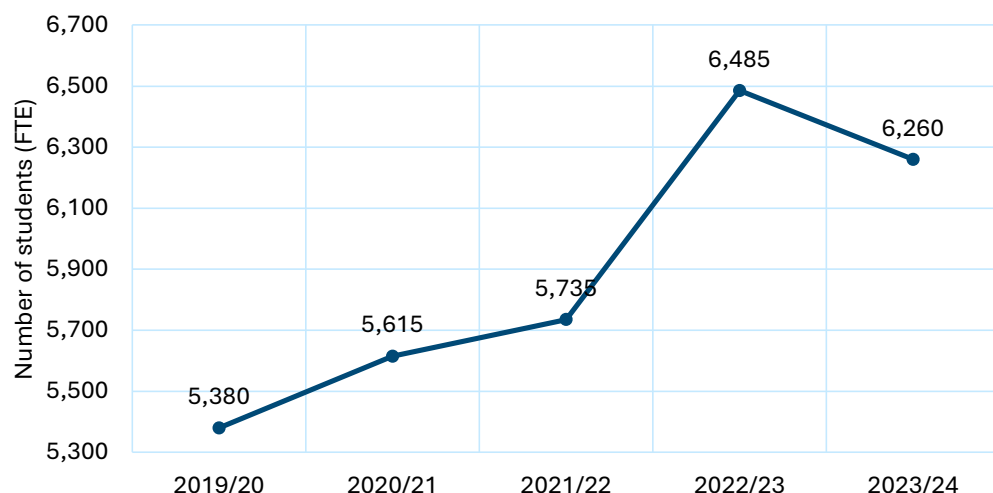
Key points:

- As a percentage of the total undergraduate enrolments, chemistry enrolments have been falling since 2019/20 but have stagnated in the most recent year.
- As a percentage of the total first year undergraduate enrolments, chemistry first year enrolments have risen in the most recent year.

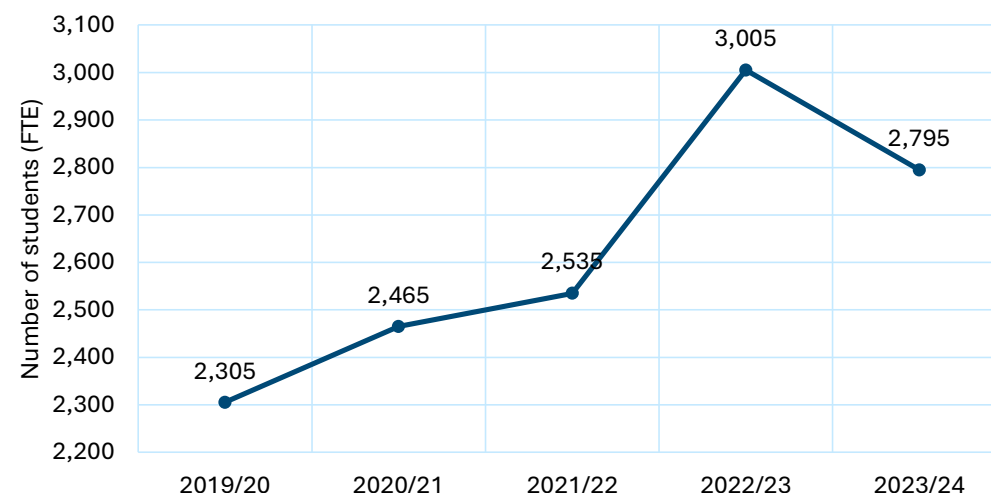
Postgraduate student numbers

Postgraduate enrolments in chemistry (HESA)

Total number of chemistry postgraduate enrolments, 2019/20 to 2023/24



Total number of chemistry first year postgraduate enrolments, 2019/20 to 2023/24

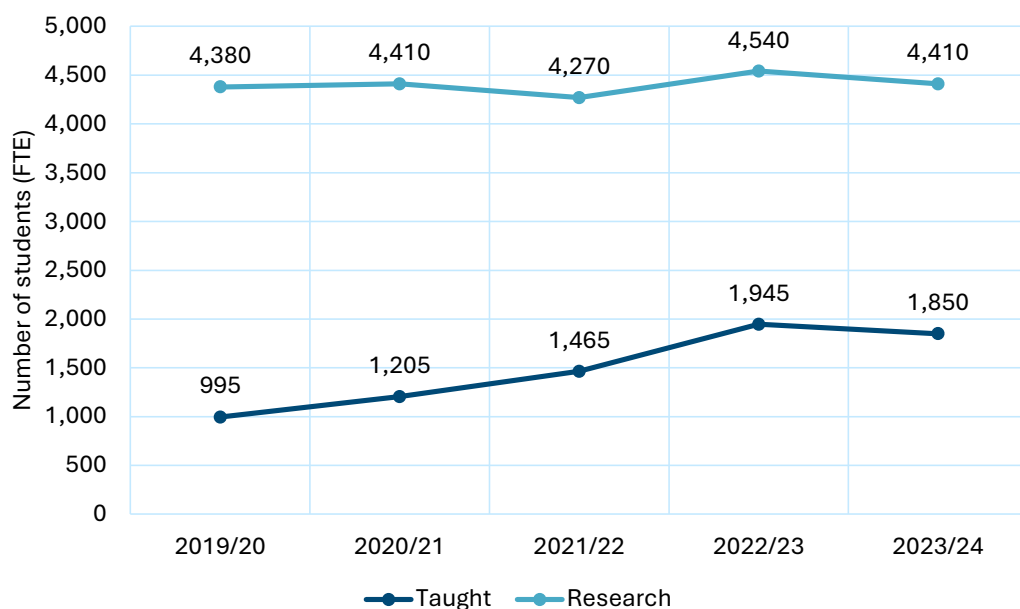


Key points:

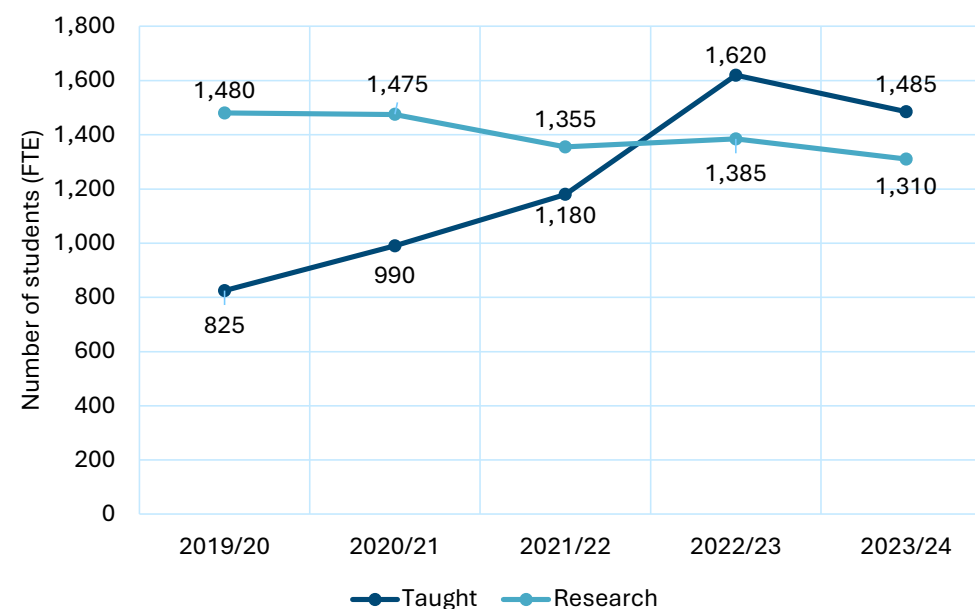
- The total number of chemistry postgraduate enrolments has **rose by 20%** between 2019/20 and 2022/23 but has fallen slightly in the most recent year (2023/24).
- The total number of chemistry **first year** postgraduates has **rose by 30%** between 2019/20 and 2022/23 but has fallen slightly in the most recent year (2023/24).

Research and taught postgraduate enrolments in chemistry (HESA)

Total number of chemistry postgraduate enrolments (taught and research), 2019/20 to 2023/24



Total number of chemistry first year postgraduate enrolments (taught and research), 2019/20 to 2023/24

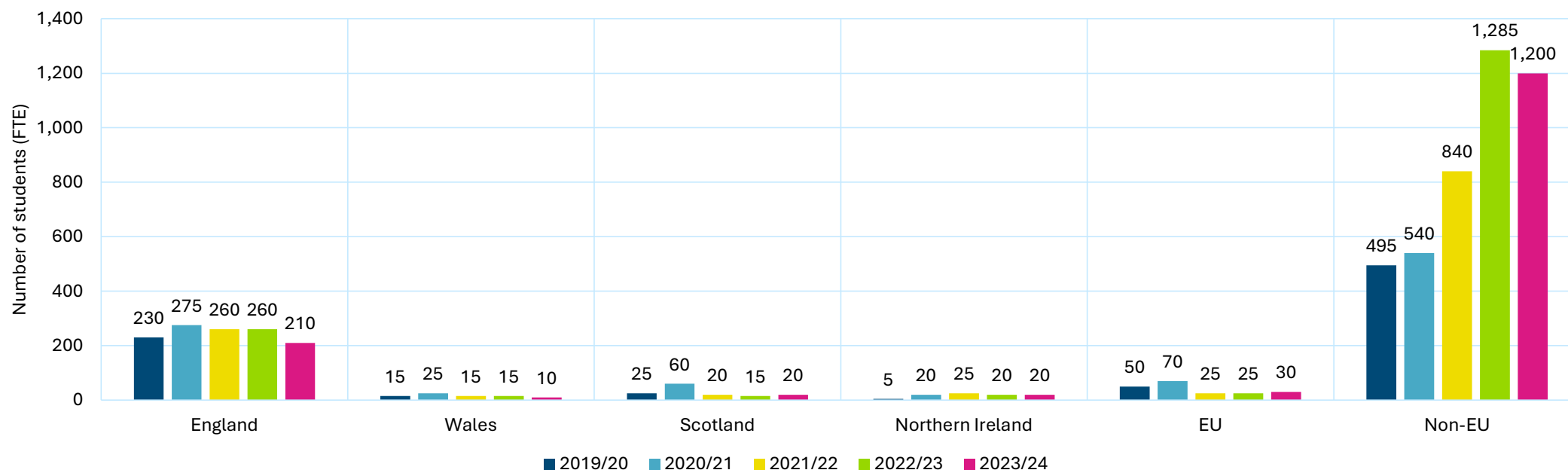


Key points:

- The total number of **research** postgraduate enrolments has **remained relatively constant** over the last five years. The number of first year research postgraduate enrolments has fallen slightly between 2019/20 and 2023/24 by 11%.
- However, the number of **taught** postgraduate enrolments has **risen significantly**, almost doubling between 2019/20 and 2022/23. There has been a decrease of 8% for the number of first year taught postgraduate enrolments between 2023/24 and 2022/23.

Taught postgraduate enrolments in chemistry by domicile (HESA)

Total number of first year chemistry postgraduate taught enrolments by domicile, 2019/20 to 2023/24

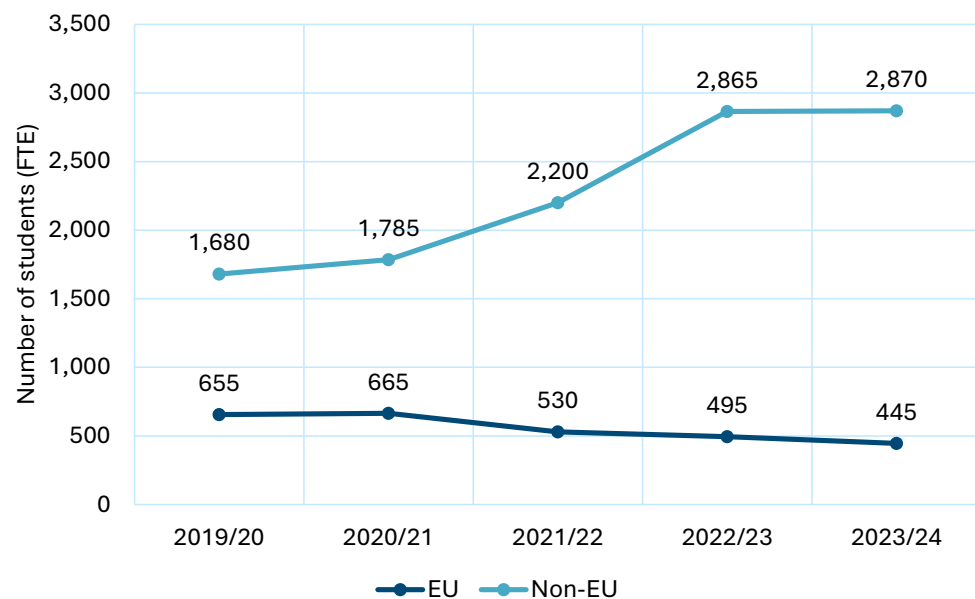


Key points:

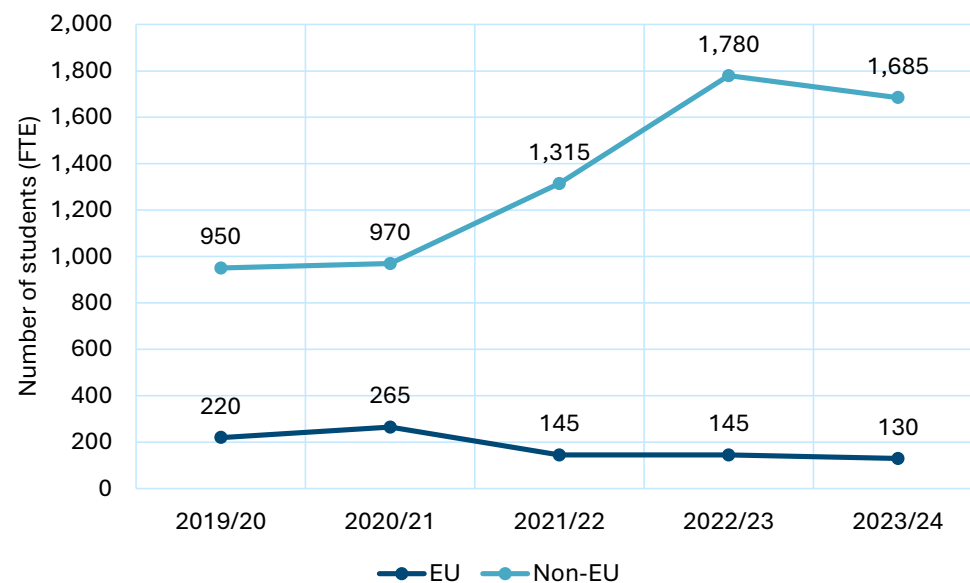
- The driver behind the large increases seen in taught postgraduate enrolments is **a rapid increase in the number of first year students from non-EU countries**.
- In the most recent year (2023/24), there has been a **decline** in the number of first year taught postgraduate enrolments. This is **due to a drop in students from England and non-EU countries**.

International postgraduate enrolments in chemistry (HESA)

Total number of international chemistry postgraduate enrolments, 2019/20 to 2023/24

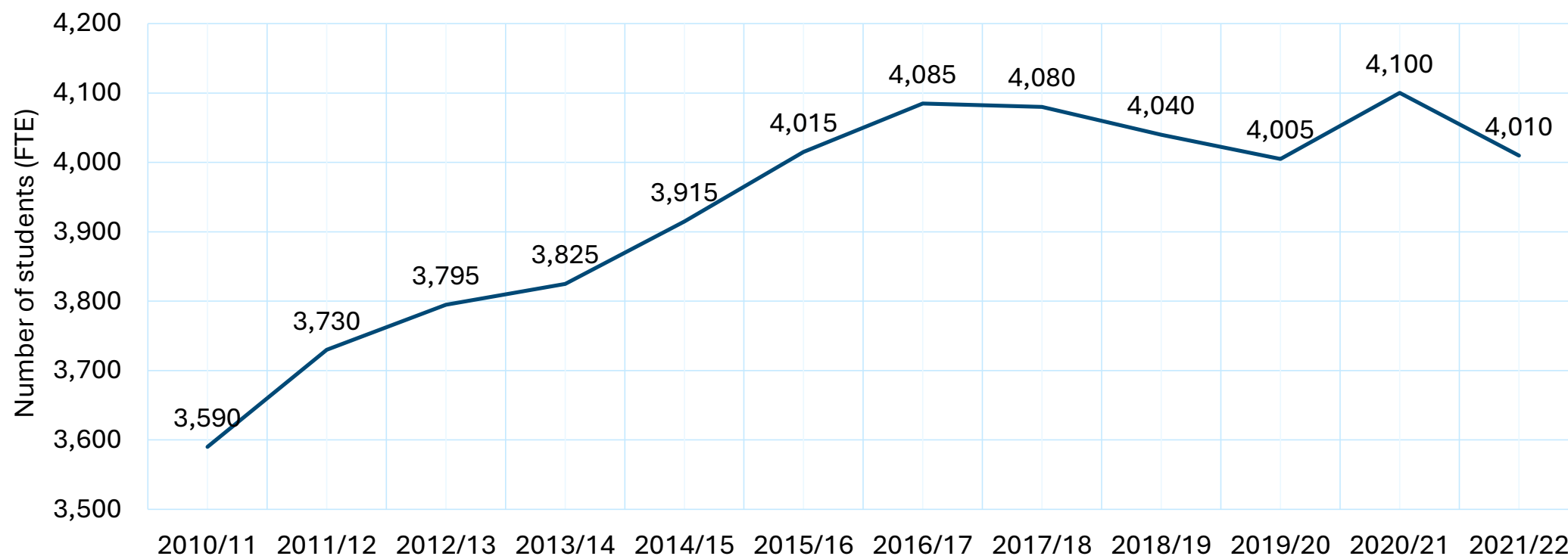


Total number of international chemistry first year postgraduate enrolments, 2019/20 to 2023/24



PhD students in chemistry (HESA)

Total number of chemistry PhD students in the UK from 2010/11 to 2021/22

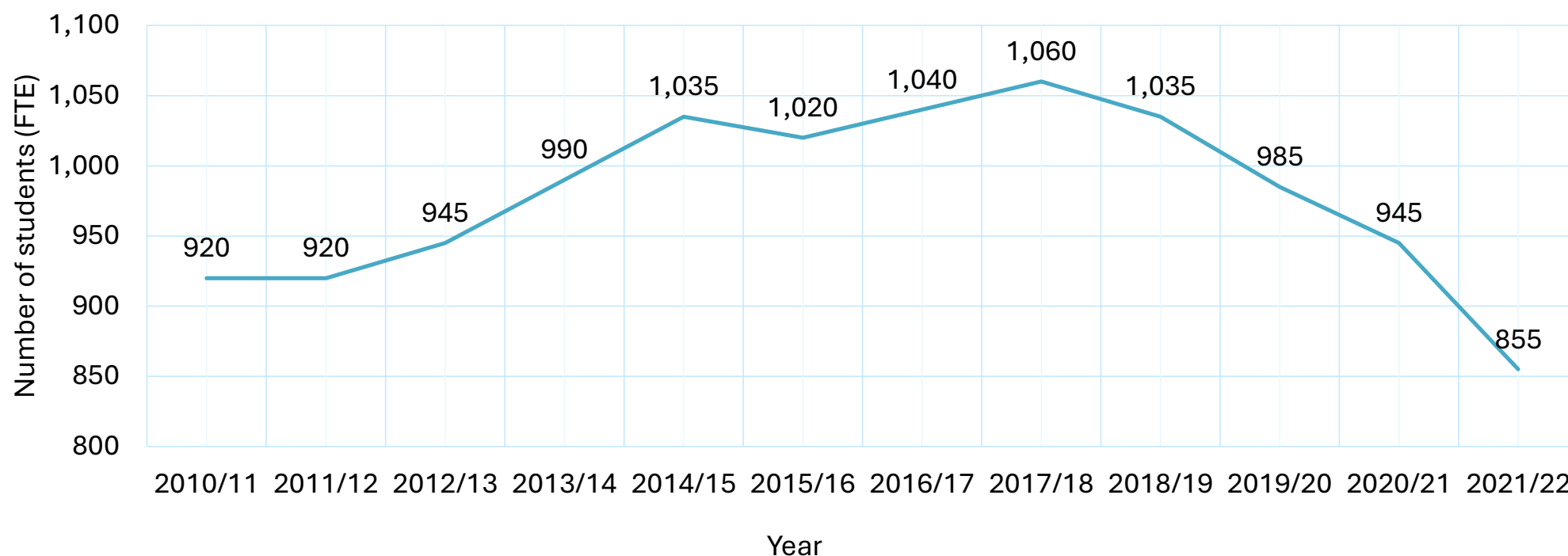


Key points:

- The total number of **chemistry PhD students has stagnated** since ~2015/16

First year PhD students in chemistry (HESA)

Total number of first year chemistry PhD students in the UK from 2010/11 to 2021/22

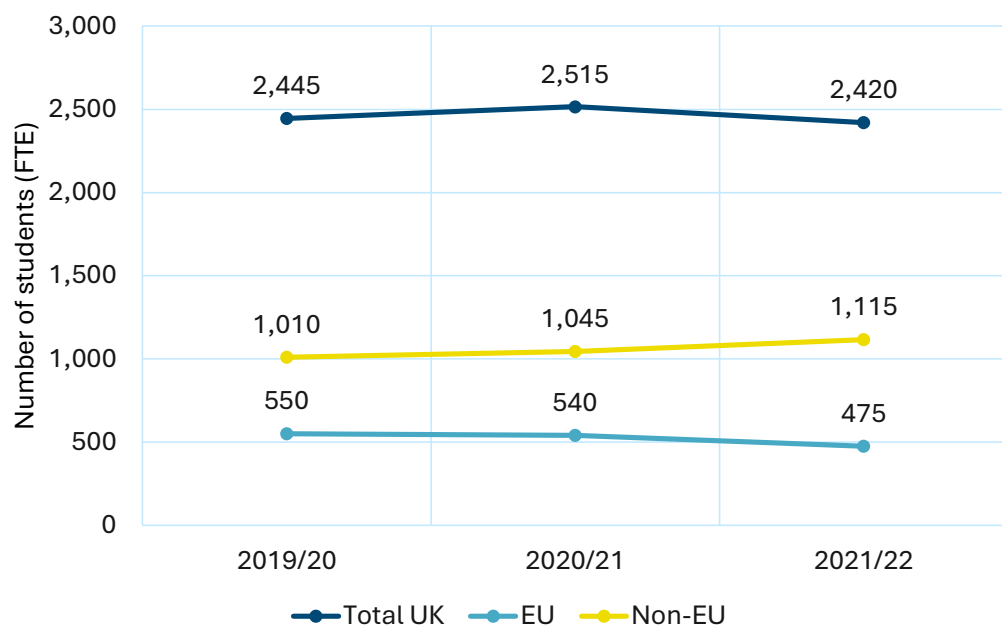


Key points:

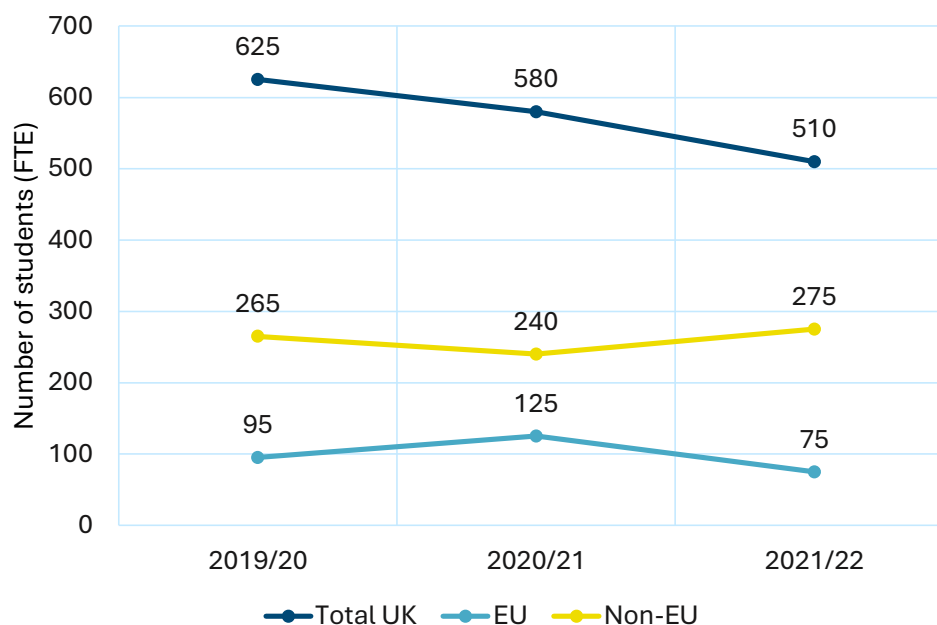
- Looking at **first year** PhDs only, we can see that the numbers **are falling**.
- It is likely that we are not seeing a corresponding fall in the total number of PhD students (across all years) as students could be taking longer to finish their PhDs (potentially in part, due to covid).

PhD students in chemistry by domicile (HESA)

Total number of chemistry PhD students studying in the UK, 2019/20 to 2021/22



Total number of first year chemistry PhD students studying in the UK, 2019/20 to 2021/22



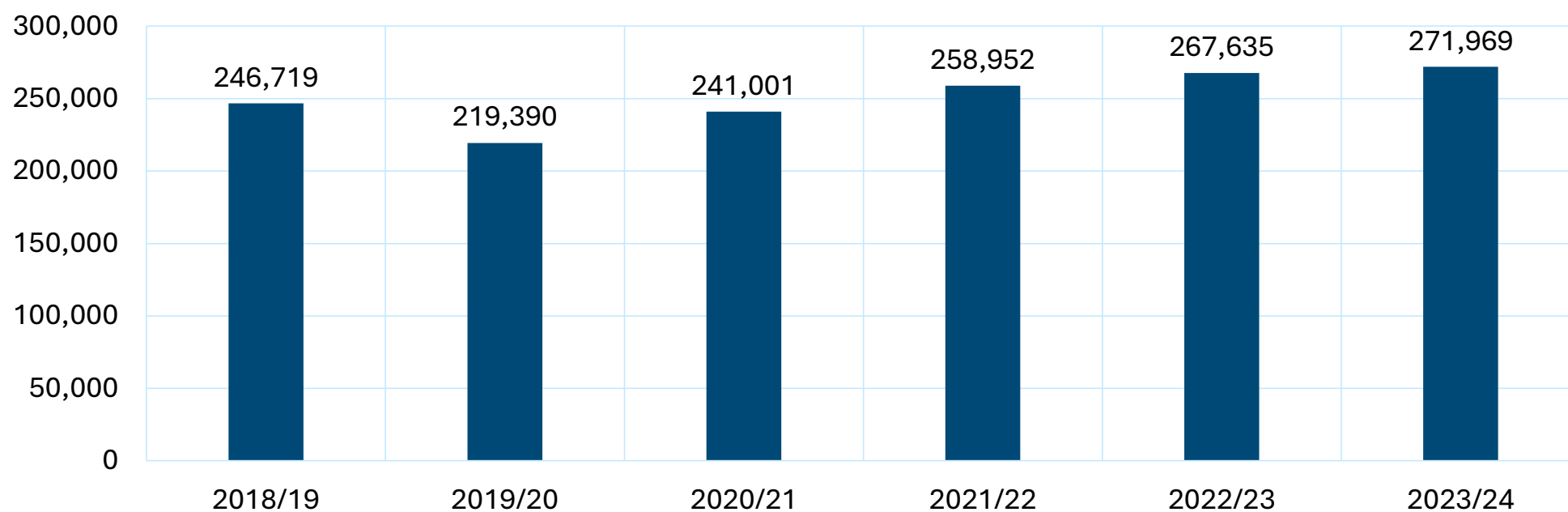
Research grant and contracts income for chemistry

What is research grant and contract income?

- The research grant and contract data displayed in the next slides includes all income in respect of externally sponsored research carried out by the HE provider or its subsidiary undertaking for which directly related expenditure has been incurred.
- Research grant and contract data excludes research funding from Research England, The Scottish Funding Council (SFC), The Higher Education Funding Council for Wales (HEFCW) and The Department for Education Northern Ireland (DfE (NI)).
- Definitions can be found on the HESA website - <https://www.hesa.ac.uk/support/definitions/finances>

Chemistry research grants and contracts

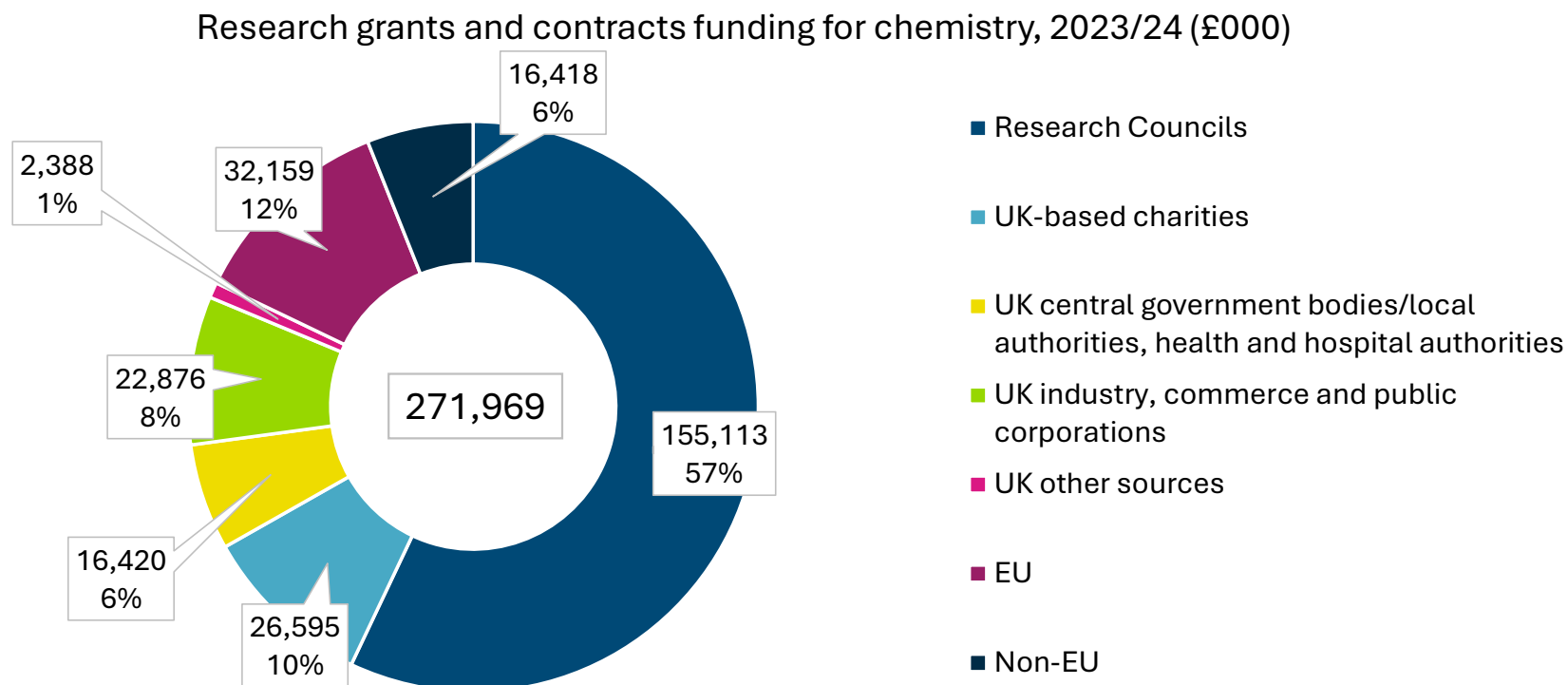
Total research grants and contracts income at UK higher education institutions for chemistry, 2018/19 to 2023/24 (£000)



Key points:

- Since 2019/20, the income chemistry departments received for research has increased.

Chemistry research grants and contracts

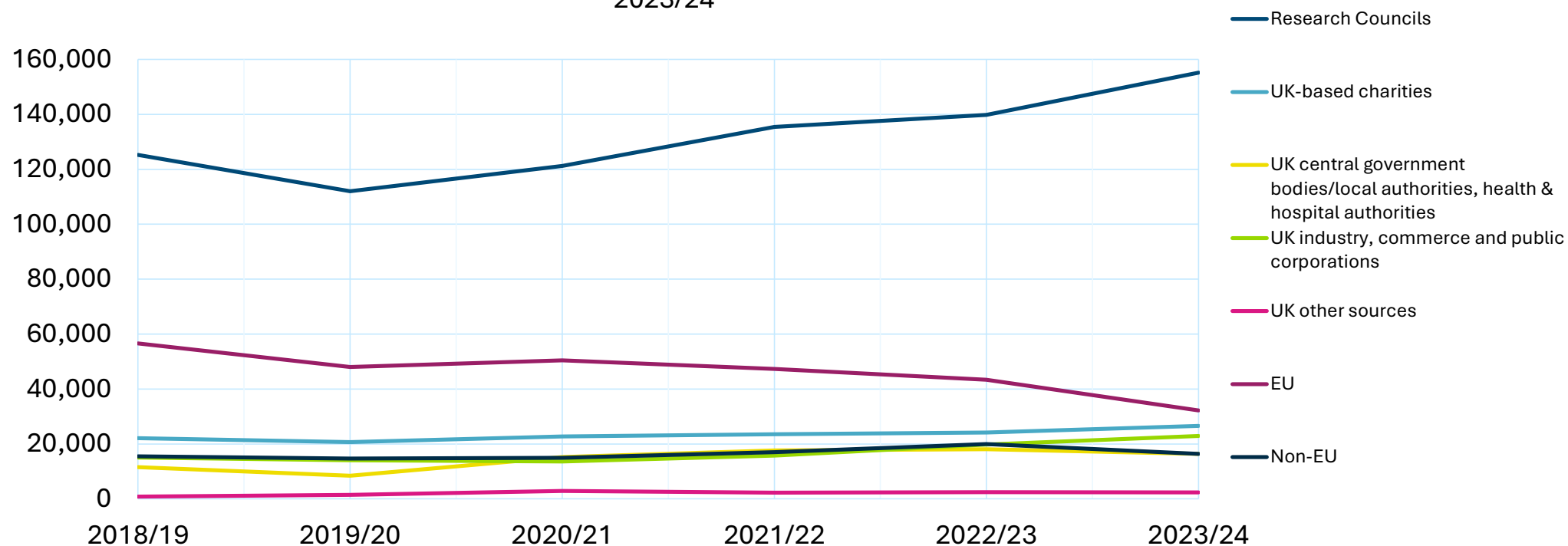


Key points:

- Chemistry departments receive over half their income for research from Research Councils.

Chemistry research grants and contracts

Research grants and contracts income at UK higher education institutions for chemistry, 2018/19 to 2023/24

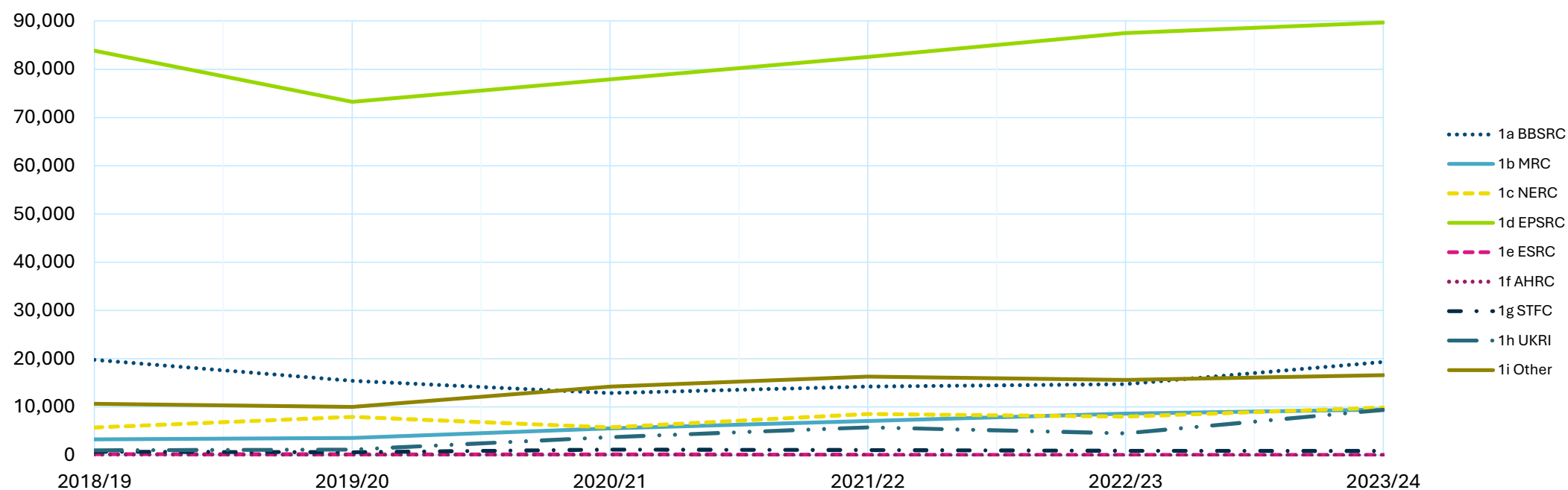


Key points:

- Other the period shown, income from Research Councils has increased (see next slide for a break down between Councils)
- Income from the EU has fallen during the period, likely as a result of uncertainty around association to Horizon Europe.

Chemistry research grants and contracts

Research Council income for chemistry research grants and contracts at UK higher education institutions, 2018/19 to 2023/24 (£000)



Key points:

- Chemistry receives most of its income for research grants and contracts through EPSRC.
- The next biggest sources of income for chemistry for research grants and contracts is through BBSRC and 'Other' which includes income from National Academies.

Appendix 1: RSC messaging

RSC messaging

- Chemistry research is **improving lives by enabling innovation and advances in fields including healthcare, environment, and sustainability**. It plays an important role in the innovation economy by accelerating knowledge exchange, impact, and innovation, delivering a more productive, more R&D intensive economy that benefits business and residents across local regions and across the UK.
- Chemistry departments **make a strong contribution to regional and local economies**, for example through partnerships with local industry (e.g. collaborative R&D), especially SMEs, through knowledge exchange, innovation and impact and by providing access to the infrastructure and facilities that are necessary for research and development.
- Chemistry departments also **provide employers in all sectors with a pipeline of highly skilled employees necessary for sustained economic growth**. This is particularly important for sectors driving green innovation and better health. Employers in the chemical sciences are especially dependent upon employees with graduate-level skills
- There is a growing need for chemical scientists in future, as evidenced by both the Skills England's work and the RSC's report on the future chemistry workforce.

RSC messaging

- We are extremely concerned that one impact of the immediate financial challenges facing higher education is the **risk of universities closing departments such as chemistry** that provide substantial long-term benefits to the UK economy.
- Some of the institutions likely to be at risk **have a strong track record of supporting underrepresented groups** to achieve degrees.
- **It is vital that people can access higher education and vocational training in all regions and nations.** Many students and graduates are not mobile. We are concerned that the recent closure of the chemistry department in Bangor University and the planned closure in the University of Hull are creating ‘chemistry deserts’ where it is impossible to study chemistry. This will inevitably also affect employers of chemistry graduates in these regions.
- We recognise the **need for change in higher education** and will work with Government and other actors to shape this, whilst seeking to ensure the skills and capabilities we need in future through training chemical scientists.

RSC messaging

We call on Government to:

1. **Urgently address the financial sustainability of higher education** in a way that ensures quality chemistry teaching and research remain available in all regions to meet economic, employer and student needs.
2. **Address the cost-of-living issues affecting undergraduate and postgraduate chemistry students.**
3. **Ensure quality provision of both higher education and vocational and technical routes for chemistry in all nations and regions**, so that higher education in chemistry is accessible locally to all potential students.

Appendix 2: Additional resources and links

Additional resources and links

- Demographics of chemistry students and staff at UK higher education institutions 2012/13 to 2021/22
 - This provides additional data including protected characteristics
 - https://www.rsc.org/globalassets/22-new-perspectives/inclusion-and-diversity/rsc_hesa_chemistry_demographics_2023.pdf
- Future workforce and educational pathways (2025)
 - This report uses quantitative and qualitative data to identify what the chemical sciences industry needs and how we can ensure the workforce of tomorrow as well as today has the skills needed to fulfil their ambitions in the chemical sciences.
 - <https://www.rsc.org/policy-evidence-campaigns/discovery-research-and-innovation/discovery-research-innovation-reports-surveys-campaigns/future-workforce-and-educational-pathways/>
- Insights from REF2021 (2023)
 - This considers the features of the chemistry submissions to REF2021. It provides an aggregated view and provides examples that consider the impact from, and research environment for, chemistry research in the UK. It also sets out what REF data tells us about social and economic impacts of chemistry research
 - <https://www.rsc.org/globalassets/22-new-perspectives/discovery/insights-into-research-excellence-framework-2021/rsc-ref-insights-report.pdf>
- A future in chemistry: Making the difference
 - Our webpage showing some of the ways chemists are making a difference to our world, including job profiles, how to find work experience and information for teachers and employers.
 - <https://edu.rsc.org/future-in-chemistry>
- What do chemists earn?
 - Our members' Pay and Reward Report gives you the facts to support your next career decision.
 - <https://www.rsc.org/careers/whatchemistsearn/>
- Science Horizons (2021)
 - Our report shows how leading-edge scientific research is helping the economy, society and the environment.
 - <https://www.rsc.org/policy-evidence-campaigns/discovery-research-and-innovation/discovery-research-innovation-reports-surveys-campaigns/science-horizons/>