



# Science and the next government

**The chemical sciences have a critical role to play in the global challenges we face and in the technological advances being developed to help meet these challenges. We are calling on the next Government to place science and technology at the heart of the political agenda to create a resilient, sustainable economy and allow UK science to thrive.**

**We are calling on the next Government to:**

- 1** Create an ambitious, inclusive, and stable R&D policy environment for UK science and innovation.
- 2** Ensure a world class chemistry education for all.
- 3** Implement a strategic, science-informed approach to sustainability, chemicals and a circular economy of materials.

Chemistry makes a significant contribution to the UK economy, so it is vital that government creates the right conditions for chemistry-using companies, including SMEs, to flourish, and to educate the current and future chemistry workforce. Research by Cambridge Econometrics for the RSC in 2020 showed that over the period 2013-19:

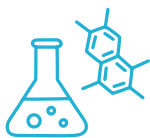
- The chemistry workforce contributed an average of £83 billion per annum to UK GDP
- It contributed an average of £39 billion per year of GVA.<sup>1</sup>

The RSC is in a unique position to consult, and gather evidence from, our membership. We promote and contribute to the development of evidence-based science policy. We would be pleased to meet with you and talk through these research findings and the rest of our evidence base. If you have any questions or would like to discuss our work in more detail, please contact our Parliamentary Affairs Adviser Emily Wood on [woode@rsc.org](mailto:woode@rsc.org).

<sup>1</sup> See Chemistry's Contribution Summary report p.8 retrieved 12.10.2023 11:45  
<https://www.rsc.org/globalassets/22-new-perspectives/talent/chemistrys-contribution-workforce-trends-and-economic-impact/workforce-summary-report>

# 1

**Create an ambitious, inclusive, and stable R&D policy environment for UK science and innovation to thrive, advancing economic growth and productivity, maximising the benefits created by R&D and becoming a leading science and technology nation globally.**



## Funding and landscape

Enable the UK to be a leading | G7 country on RDI investment and aim to be among the top science nations globally.

Long-term investment: once the Government has achieved its commitment to invest £20 billion per year on RDI by 2024/25, this should increase to £22 billion per year by 2026/27, in line with previous commitments.

Create a stable policy environment to boost confidence in the UK for public and private investors, and high-skilled workers, to locate their lives and businesses in the country.

Ensure that increased investment and support is felt across all regions and nations of the UK and supports a science culture that prioritises good scientific practice and individual wellbeing, as well as heightening participation in science and innovation.

Support UK researchers and business to make the most of Horizon Europe participation and ensure any underspend is ringfenced for research and innovation.



## Talent and workforce

Attract the best talented researchers and innovators through an internationally competitive visa scheme and ensure the UK workforce is equipped with skills to tackle the health and sustainability challenges of our time and to make the most of the opportunities and manage the risks that new technologies present in chemistry sector.

Implement an immigration system that supports research, development, and innovation activity in the UK to enable economic growth. It must be flexible, affordable, and welcoming.

Increase provision of skills required for green jobs in the future via an updated curriculum to avoid a potential knowledge gap.

Work with leaders in diversity and inclusion and organisations in the research landscape, including employers (universities, institutions and companies), funders, learned societies, academies and publishers, to ensure that policy levers and organisational practice make a step change in diversity in research and innovation environments.



## Ecosystem and resources

Address the critical shortage of laboratory facilities in the UK, ensuring chemical scientists can access appropriate laboratory space across the entire country.

Increase financial support for innovative RDI-driven SMEs, particularly at the scale-up stage to maximise economic growth and allow for SMEs to thrive.

Mandating sustainable laboratory practices that are realistic, ambitious and embed sustainability in organisational culture.

# 2

**A world class chemistry education for all, ensuring that future generations are equipped for the emerging economy, to guarantee an effective labour pipeline and maintain the strength of the chemical sciences.**



## **An empowered expert workforce**

Ensure teachers and technicians have the resources, skills, expertise and motivation so that all students have access to an excellent chemistry education.

Address the teacher recruitment and retention crisis with long-term solutions that can withstand population and economic fluctuations.

Stem the flow of teachers leaving the profession by tackling the problem of unsustainable workload and promoting a culture of support and development in schools, where teachers are trusted to take ownership and control of their own development.

Invest in high-quality, subject-specific professional development for teachers. This should:

- Meet the needs of a broad range of teachers to account for differing prior knowledge, and
- Include professional development opportunities to help teachers with a background in one science discipline, gradually gain the expertise needed to teach curriculum content in one or both of the other school science disciplines.

High-quality, subject-specific training and development should be an ongoing entitlement for all teachers, whatever stage they are in their teaching career.

Address the shortage of school science technicians through improvements in conditions and pay.



## **A relevant and adequately resourced curriculum**

Reform the curriculum to ensure it is fit-for-purpose, engaging and relevant, while avoiding content overload; it should provide young people with skills and understanding that enables them to become scientifically literate citizens, and that prepares them for further study and/or careers in the chemical sciences.

Prepare all young people to fully participate in efforts to tackle climate change and sustainability challenges.

Include relevant and regular practical chemistry activities which are sustainable, inclusive, accessible and have a clear purpose, and whose consumables and equipment are sufficiently funded.

Foster a sense of identity and belonging in the chemical sciences through better use of contexts, examples and role models; students see that a future in chemistry is 'for people like me'.



## **Accessible routes and equal pathways**

Equip students with core chemistry knowledge and skills that are understood and valued by employers, via both academic and vocational options at level 3 and above.

Adopt a 'single route' science qualification to the age of 16, giving learners equal opportunity to study science by addressing existing gatekeeping and perception problems.

Broaden children's horizons and ambitions by ensuring they understand the wide range of careers and opportunities that science enables.

Teachers and careers professionals are confident to talk about the full range of academic and vocational routes to those careers.

# 3

## A strategic approach to the management of chemicals resources for a robust and sustainable economy, protecting our health and environment by driving a just transition to a circular economy.



### International cooperation and leadership on chemicals

Continue to support UK leadership in UNEP's work in global framework for chemicals (GFC) and the process of developing the UN Science Policy Panel (SPP) on chemicals, waste and pollution prevention.

Address the global pollution and waste crisis driven by excessive use of problematic, unnecessary and avoidable plastics.

Show leadership on the global pollution and waste crisis driven by excessive use of problematic, unnecessary and avoidable plastics, by continuing to engage with the international plastics treaty process, and acting decisively in the UK to enable a circular economy of plastic.

Strengthen research and development efforts into long-term monitoring programmes and measurement technologies that increase our understanding of the impacts of indoor and outdoor air quality.

continue commitment to international collaborations regarding antimicrobial resistance (AMR) research and surveillance programmes, and to maintain a strong science base to enable a comprehensive approach to AMR.



### Circular economy

Develop policies that support the transition to a circular materials economy, including investment in a domestic recycling infrastructure.

Incentivise resource-efficient design and production alongside assessments of criticality and substitutability of materials.

Map and track critical mineral streams and regularly assess the criticality of minerals and other raw materials, taking into account the needs of different sectors.

Support a moratorium on commercial exploitation of minerals through deep seabed mining whilst work continues to understand its impacts.



### Chemicals Strategy and management

Give a timeframe for the release of the long-awaited chemicals strategy.

Provide necessary bespoke training and upskilling of regulatory professionals to deliver high quality regulatory regimes for chemicals.

Set up a national chemicals regulation approach to provide better strategic coordination of monitoring and regulation of all chemicals.

Improve the quality of drinking water by lowering safe thresholds for PFAS in drinking water, maintaining a national inventory, and imposing stricter limits on PFAS discharges.

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