

A Short Guide to the

Government Office for Science





About this guide and contacts

This Short Guide summarises what the [Government Office for Science](#) does, how much it costs, recent and planned changes and what to look out for across its main business areas and services.



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Overview



Key facts



About the Government
Office for Science



Organisational
structure and staffing

Key facts



£4.6 million

spent by the Government Office for Science in 2016-17.



Around 60

permanent staff employed by the Government Office for Science.



More than 20

departmental chief scientific advisers in the cross-government network coordinated by the Government Office for Science.



365,787

page views of the Government Office for Science website in 2016-17.



294

research publications by the Government Office for Science between 2003 and June 2017.



Emerging technologies, waste, aging and skills

are some of the key topics covered by the Government Office for Science in 2016-17.

About the Government Office for Science

The role of the Government Office for Science (GO-Science) is to ensure that government policies and decisions are informed by the best scientific evidence available and strategic long-term thinking.

GO-Science is led by the **Government Chief Scientific Adviser (GCSA)** who reports to the Cabinet Secretary and also co-chairs the Council for Science and Technology. GO-Science's responsibilities include:

- giving scientific advice to the Prime Minister and Cabinet through a programme of projects that reflects the priorities of the GCSA;
- ensuring and improving the quality and use of scientific evidence in government;
- providing the best scientific advice in emergencies through the Scientific Advisory Group for Emergencies (SAGE); and
- helping the independent Council for Science and Technology provide high-level advice to the Prime Minister.



How does the GO-Science differ from a government department?

GO-Science is not funded directly by HM Treasury. It receives its funding from the Department for Business, Energy & Industrial Strategy (BEIS) Parliamentary Supply Estimate.

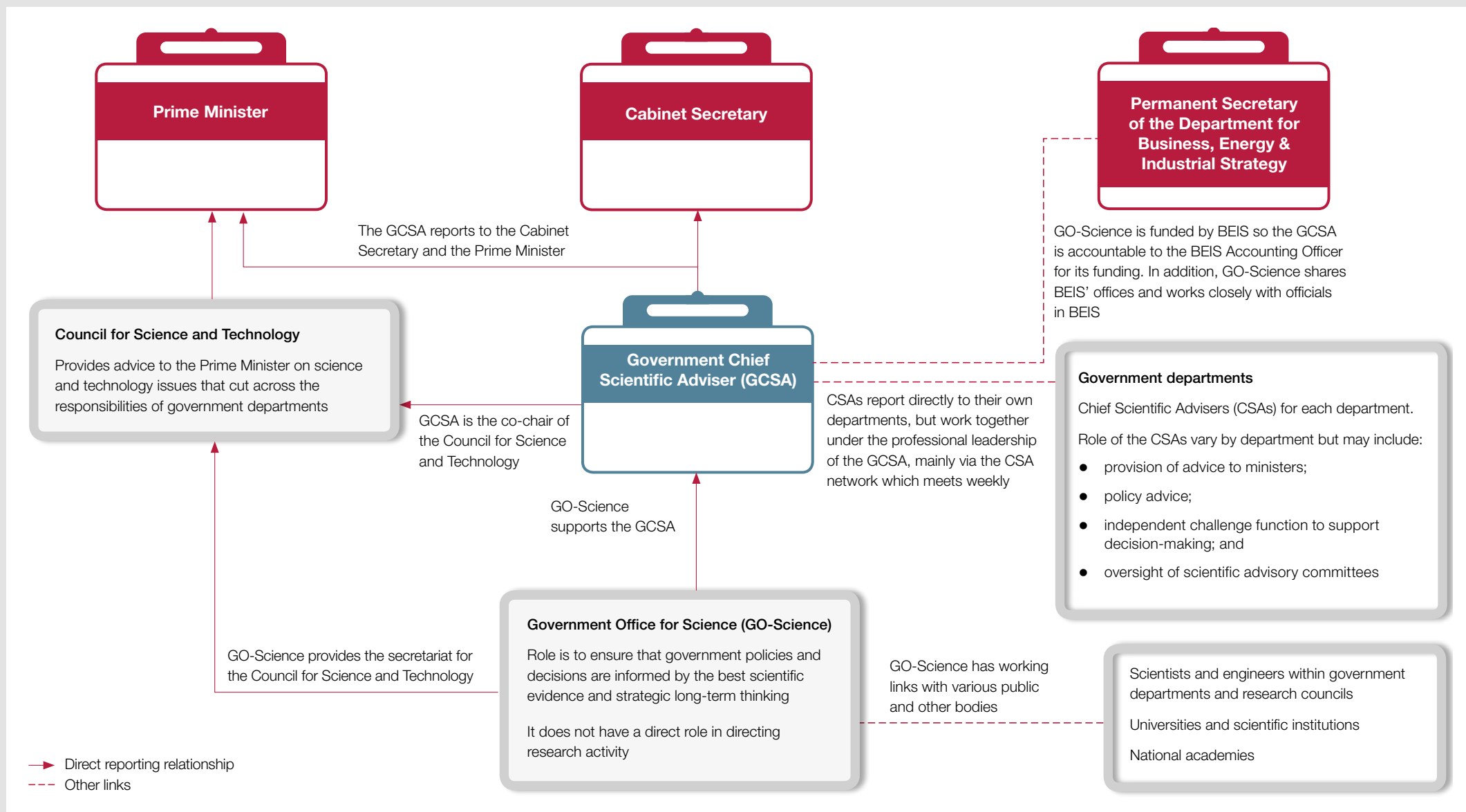
The GCSA is not an Accounting Officer. He or she is accountable to the BEIS Permanent Secretary for management of GO-Science, use of its funding and stewardship of its assets.

However, GO-Science is not an executive agency of BEIS. The GCSA reports to the Cabinet Secretary and the Prime Minister. As such, GO-Science could be thought of as a Cabinet Office unit that is embedded within BEIS given the synergies with the work of the Minister for Universities, Science, Research and Innovation.

GO-Science does not play a direct role in taking decisions on the funding of UK science. BEIS has responsibility for the majority of government investment in science, principally funding research through its partner organisations, the research councils and Innovate UK. BEIS also provides research funding to the Higher Education Funding Council for England (HEFCE) via the Department for Education. Other government departments fund research specific to their policy areas.



About the Government Office for Science *continued*

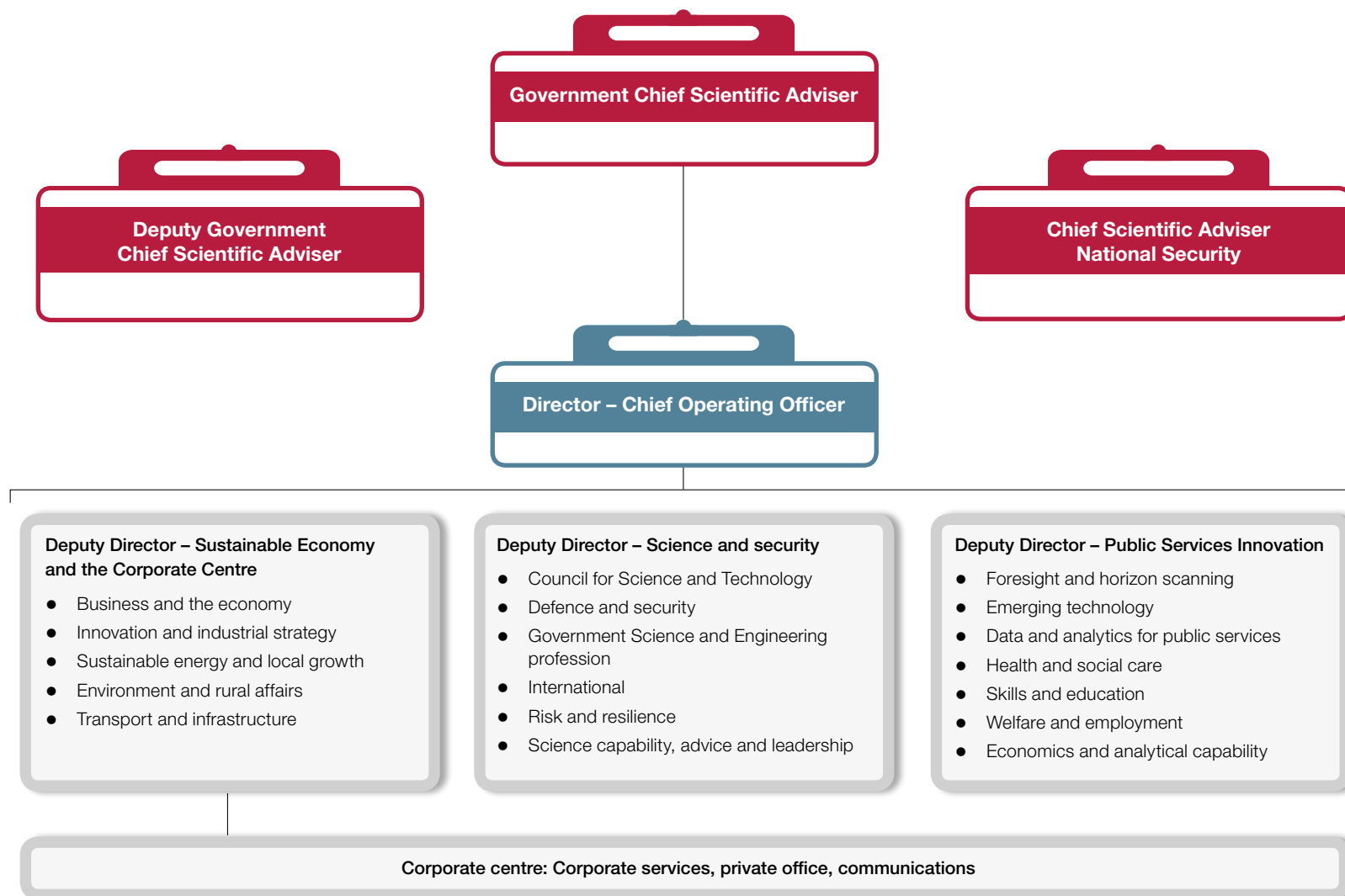


Organisational structure and staffing

GO-Science is structured around three main programme directorates.

The organisation employs around 60 permanent staff, who are civil servants from a variety of backgrounds including academic research and analysis.

GO-Science takes successful candidates from the Civil Service Fast Stream programme (Science and Engineering Fast Stream) and also works with the research councils to offer three-month internships to research council-funded PhD students.



Spending

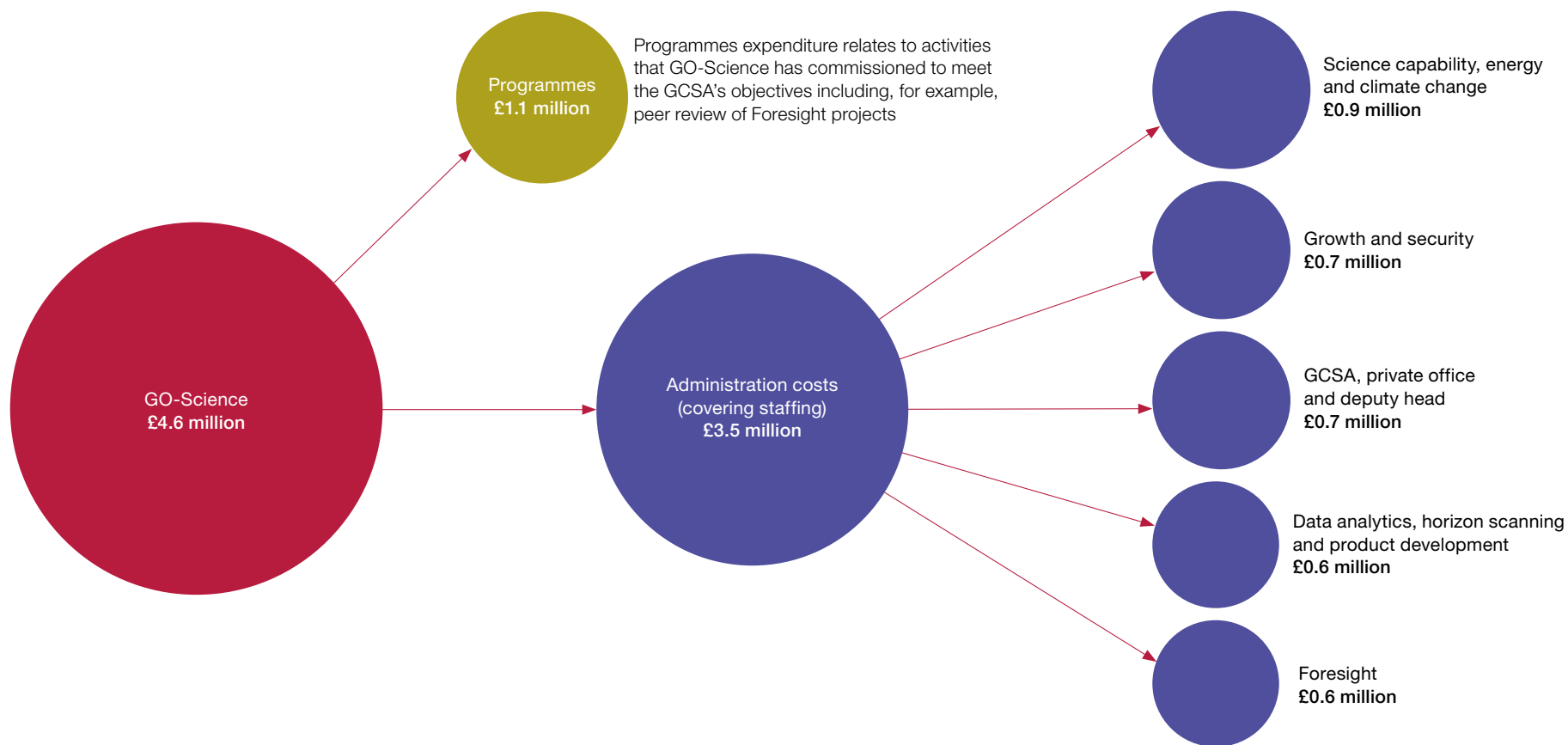


Where the Government
Office for Science
spends its money



Spending patterns

Where the Government Office for Science spends its money



Notes

- GO-Science does not produce separate accounts. It receives its funding from BEIS and its expenditure is included within BEIS' annual accounts, which are audited by the National Audit Office. GO-Science's expenditure is too small to be separately identifiable within BEIS' annual accounts.
- GO-Science expenditure includes expenditure associated with the Council for Science and Technology (CST). CST members are not remunerated and its secretariat comprises 2.5 full-time equivalent staff.

Source: Government Office for Science Annual Report 2016-17. Available at: www.gov.uk/government/publications/government-office-for-science-annual-report-2016-to-2017

Spending patterns

GO-Science spent a total of £4.6 million in 2016-17 (the latest date for which expenditure figures are available).

Spending by GO-Science has reduced by 27% since 2011-12 from £6.3 million to £4.6 million in 2016-17.

Most of the reduction has been on programme costs (activities that GO-Science has commissioned to meet the objectives of the government Chief Scientific Adviser), which have reduced from £2.3 million in 2011-12 to £1.1 million in 2016-17.

GO-Science has aimed to reduce its expenditure to follow a similar profile to that of BEIS, which provides its funding.

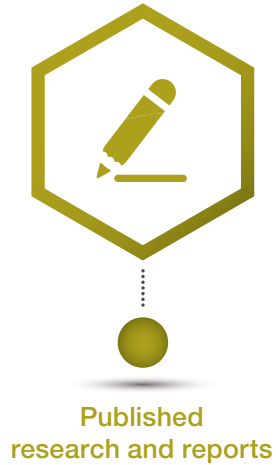
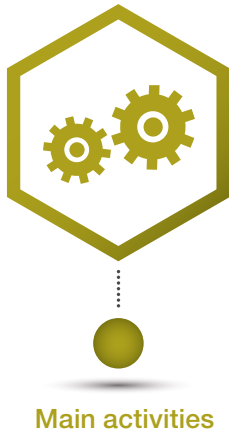
In particular, GO-Science attributes the reduction in programme spend to more efficient procurement of expert science advice. In January 2017 the GCSA told the House of Commons Science and Technology Committee that some work was carried out by external experts on a pro bono basis.

Expenditure by the Government Office for Science

Spending by GO-Science has reduced by 27% since 2011-12



Main activities



Main activities



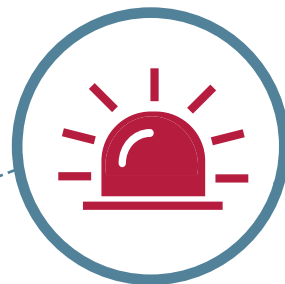
Research and analysis

GO-Science's research and analysis projects cut across its programme directorates. The results of research projects are published in various summary and more detailed reports (annual themed reports, Blackett reviews, Foresight projects). More details and examples are provided in the section on Published research and reports. The reports are available to the public on GO-Science's website which it reports was viewed 365,787 times in 2016-17.



Horizon scanning programme

GO-Science supports the government in identifying and responding to future challenges by deploying the expertise of specialists at the centre of government. In 2014, the Cabinet Office's Horizon Scanning Secretariat and the GO-Science Horizon Scanning Centre were merged to form the [Horizon Scanning programme team](#). The work of the programme is steered by the Cabinet Secretary Advisory Group, which is chaired by the Cabinet Secretary and meets three times a year. The programme included a horizon scanning review for policy-makers on artificial intelligence in 2016 and research into the social attitudes of young people in 2014.



Responses to emergencies

The Scientific Advisory Group for [Emergencies](#) (SAGE) is chaired by the GCSA and is responsible for ensuring that timely and coordinated scientific advice is available to decision-makers to support cross-government decisions in the Cabinet Office Briefing Room (COBR). For example, in 2014, SAGE provided advice to COBR on the Ebola outbreak in West Africa.



Secretariat for the Council of Science and Technology

The GCSA co-chairs the [Council](#) with Dame Nancy Rothwell, who is also Vice-Chancellor of the University of Manchester, and a non-executive director at Astra-Zeneca. The Council provides advice to the Prime Minister primarily through correspondence. Most recently, in 2016, the co-chairs wrote to the Prime Minister with advice on [important issues the industrial strategy should address and how government might do so](#).

Main activities *continued*



Science networks across government and support to government departments

GO-Science works with a network of more than 20 chief scientific advisers, scientists and engineers within government departments, national academies, research councils, universities and scientific institutions. Projects include a [joint review](#) with the Department for Environment, Food & Rural Affairs on animal and plant health and a [review of defence research capability](#).



Government science and engineering profession

GO-Science is responsible for managing the profession of around 10,000 civil servants, including the Science and Engineering fast stream. The role of GO-Science is primarily to provide a coherent strategy for developing the profession.



Communication and public engagement

For example, talks and seminars, public engagement project and social media to ensure that key evidence and decisions are transparent and effectively communicated.



Published research and reports

GO-Science published **294 research reports** and accompanying evidence reports between 2003 and June 2017. For example, the 2016 Foresight report on *Future of an Ageing Population* was accompanied by 22 evidence reviews, four essays and 14 seminar reports covering specific or local issues such as retirement income, health trends in the North East, and housing.

GO-Science considers policy-makers to be the main audience of these reports.

Major thematic reports

Reflecting the big science themes that are priorities of the GCSA

Since 2015, the GCSA has published themed reports on:

- The 2015 themed annual report on ***Forensic science and beyond: authenticity, provenance and assurance***. The report was intended for policy-makers, legislators, business people, professionals, researchers and other individuals whose interests include use of forensic analysis in the criminal justice system. The report explored how forensic analysis can be applied more effectively to provide assurance on the provenance and authenticity of the goods and services we buy and use such as food, medicines and online services. The report was based on seminars, expert advice and individual case studies.
- The 2016 report on **waste** is expected to be published in autumn 2017.

Blackett reviews

Focused reviews delivered to shorter timescales (6–12 months) to answer specific technical questions

Since 2012, GO-Science has carried out a total of **six Blackett reviews** on subjects including wide-area biological detection, opportunities and risks offered by the Internet of Things, the future of financial technology (fintech), distributed ledger technology, and high-impact low-probability risks.

The most recent Blackett review published in 2016 was The quantum age: technical opportunities. This review examined how technologies using quantum physics are being applied and how they will develop in the future. It looks at how applications such as quantum computing and simulation are being commercialised and opportunities for further growth.

The evidence for the reports is usually drawn from panels of experts, case studies, literature reviews, and so forth. The reports are in a non-technical style and are aimed at, for example, permanent secretaries.



Published research and reports *continued*

Foresight projects

In-depth studies looking at major issues 50–80 years into the future

Since 2003, GO-Science has published **22 Foresight reports** (and accompanying evidence documents), covering issues such as:

- tackling obesity;
- opportunities and challenges facing UK cities; and
- how changes in environmental conditions will affect patterns of human migration.

GO-Science's 2016 report on the Future of an ageing population aimed to provide evidence to inform policy on maintaining well-being throughout life, improving quality of life for older people and ensuring all people can access the tools and facilities needed for a long and healthy life. This report was supplemented with public seminars across the UK.

A current project on Skills and lifelong learning is examining how changing technology and an ageing population will affect the skills the UK needs in the future. While this project is ongoing, GO-Science published a number of evidence reports and essays in 2016 and 2017.



Future developments



Major programmes
and developments



GO-Science
future priorities



Exiting the
European Union

Major programmes and developments

Significant developments in the wider UK research landscape will impact on GO-Science

In 2015, [Sir Paul Nurse's review of research councils](#) recommended better coordination of the research landscape and new cross-government arrangements to facilitate strategic research priorities.

In response, the government is establishing a new body, UK Research & Innovation (UKRI) to bring together the seven research councils, Innovate UK and Research England (HEFCE's research funding functions). Once legally established on 1 April 2018, UKRI will become a single organisation with nine distinct councils and a strategic centre.

While the creation of UKRI will have no direct effect on GO-Science's functions and responsibilities, it will be a major part of the UK science landscape. Establishing a strong working relationship between UKRI and GO-Science will be an important priority in the coming years.

A new government chief scientific adviser

Sir Mark Walport, currently Government Chief Scientific Adviser, was appointed Chief Executive Designate of UKRI in February 2017 and will formally take up the chief executive role when UKRI is established in April 2018. He will act as a single Accounting Officer and lead the overall direction of UKRI across research disciplines.

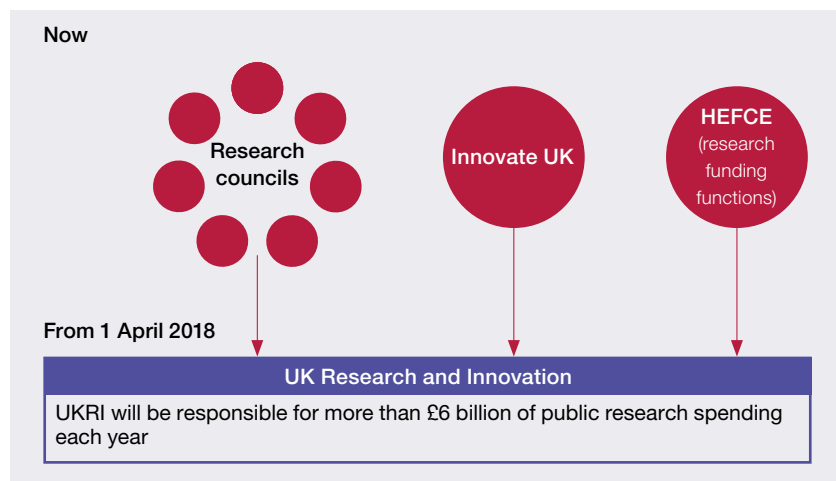
As at August 2017, a new government chief scientific adviser, to lead GO-Science, had not yet been appointed. In the meantime, the Chief Scientific Adviser at the Department of Health has been appointed deputy GCSA to support Sir Mark as he takes on more of his UKRI responsibilities. He will become acting GCSA when Sir Mark moves full time to his new role in September 2017 pending the appointment of his permanent successor.

The GCSA is a civil service appointment, and is made on the basis of recommendations by a panel chaired by the Cabinet Secretary.

How will the new UKRI affect GO-Science?

In January 2017, the GCSA told the House of Commons Science and Technology Committee that he **did not expect GO-Science's fundamental role of providing scientific advice to government to change** following the establishment of UKRI. He anticipated that GO-Science would **work closely** with UKRI, and the Council for Science and Technology (CST) would be asked for advice around the different issues that face UKRI.

In addition to the establishment of UKRI, the government proposed a reformed CST with stronger links with government and responsibility for horizon scanning, advice on risks and opportunities, and evaluation of priorities. Reforms to the CST had included a fuller and more explicit scope and changes in membership to include, as observers, the interim chair of UKRI, the director general in BEIS with responsibility for science and the second permanent secretary at HM Treasury.



GO-Science future priorities

GO-Science plan for 2015–2020

The 2016-17 annual report highlighted battery technology, quantum technology, responding to emergencies and the future of the sea as areas of ongoing focus. In addition, GO-Science published a five-year plan in 2015 setting out its priorities for the next five years. These were organised around four themes:



Supporting national growth and increasing the UK's productivity. GO-Science aims to help ensure that the UK gets the best possible benefit of emerging technologies, work with Infrastructure UK to ensure that UK science infrastructure is fit for purpose and provide advice on how to strengthen technical skills so that the UK can recruit and retain the next generation of top-class researchers.



Using technology to develop modern and cheaper public services. GO-Science plans to work with health partners to use science to transform and deliver high-quality healthcare, improve the evidence base on the implications of an ageing population, work with the Government Digital Service, the Cabinet Office and the Office for National Statistics to encourage the use across government of data science, and support departments' research and development needs.



Supporting regional growth. GO-Science will help map strengths in all the sciences across the UK, in partnership with city regions and government funders of research to catalyse regional science and innovation activity. Through the Foresight programme, GO-Science will continue working with cities, aiming to ensure that today's decisions are robust for the future.



Preventing or addressing crises and mapping national security risks. GO-Science will work with departments to help the UK anticipate and manage infectious diseases of humans, animals and plants. It plans to work with key departments to tackle global climate change challenges and to address systemic and national security risks such as those relating to energy supply.



Exiting the European Union

Implications for UK science of exiting the European Union

The UK is a net receiver of EU funding for research and development. Between 2007 and 2013, the UK contributed €5.4 billion to EU science and received €8.8 billion.

The extent to which the UK will be able to access EU funding in the future depends on the outcome of its negotiations for withdrawal. In addition, withdrawal could affect the UK's access to skills and the freedom of movement of researchers, as well as access to EU facilities and research programmes.

In response to [questions from the House of Commons Science and Technology Select Committee in January 2017](#), the GCSA set out the ways in which the UK's exit of the EU was influencing his work and that of GO-Science:

- Working in partnership with BEIS on the role of science in the UK industrial strategy.
- Sitting on a High-Level Stakeholder Working Group on EU exit, universities, research and innovation. This group was set up by the Science Minister to look into the consequences for science, engineering and technology of exit from the EU.
- Providing advice to the Department for International Trade and the Department for Exiting the European Union on the implications for science of the UK's exit from the EU.

Appendix

Key themes from NAO reports

In the last Parliament

Our most recent work on science was our 2016 report on the former [Department for Business, Innovation & Skills' Capital investment in science projects](#). This report shone a light on issues which, working with the Department for Business, Energy & Industrial Strategy, the GCSA and GO-Science can influence:

- how government decides science capital spending priorities; and
- how government assesses the impact of investment in science and research.

The report raised concerns about the **lack of a clear process for deciding which projects are investment priorities**, and the **absence of good-quality information to support spending decisions**, such as what projects could cost to run.

The report also highlighted the **lack of adequate analysis on whether investment in a portfolio of science capital projects is optimising scientific and economic benefits**.

Forthcoming work

[Sir Paul Nurse's review of the research councils](#) recommended better coordination of the research landscape and new cross-government arrangements to facilitate strategic research priorities.

The National Audit Office has work under way [examining the funding and oversight of research and development across government](#). A report is due to be published in autumn 2017.

The NAO report will be accompanied by an evaluative framework that identifies the **principles of well-coordinated funding of research and development**.