



# Analysis and Use of Evidence

## Research and analysis in government

This document is maintained by the Analytical Coordination Working Group (ACWG) who provide support to the Heads of Analysis group.  
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# 1

## The Analytical Community

There is an analytical community within government to support those involved in strategy, policy and delivery to develop and use an evidence base.

Analysts are organised differently in different departments, but generally there are five different groups:

- Economists (members of the Government Economic Service)
- Operational Researchers (members of the Government Operational Research Service)
- Social Researchers (members of the Government Social Research Service)
- Statisticians (members of the Government Statistical Service)
- Scientists and engineers.

Each of the five analytical disciplines work together to provide the best possible evidence. Each have different, skills and backgrounds – summarised later – but all should be able to look at the problem and indicate which team of analysts would best be able to answer a problem, or signpost to the appropriate analyst for each particular question.

The most robust and thorough evidence base for a problem will most often come from considering it from a number of perspectives / evidence streams. This can be achieved by ensuring that a multi-disciplinary group of analysts consider the problem. Many departments now ensure analysts work within multi-disciplinary teams to facilitate this approach, although currently scientists and engineers are less likely to sit within such a structure.

Developing or implementing strategy and policy is, of course, possible without the input of the analytical community, but there are risks associated with this course of action. These risks include implementing a policy that does not work; that is more costly than expected or need be; that has unexpected consequences or poor public acceptance. Working collaboratively with government analysts can help mitigate these risks.

Signed:

Government Economic Service Team (GEST)

Government Social Research Unit (GSRU)

Government Operational Research Service (GORS)

Government Statistical Service (GSS)

Government Office for Science (GO-Science)

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# Coordinating Research and Analysis

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There are currently two key groups responsible for joining up research and analysis within government: the Heads of Analysis group and the Analytical Coordination Working Group.

### Heads of Analysis group (HoA)

The membership of the Heads of Analysis group is as follows:

Nick Macpherson	Permanent Secretary, HM Treasury (chair)
Tony O'Connor	Head of the Government Operational Research Service
Paul Wiles	Head of the Government Social Research Service
John Beddington	Chief Government Scientific Advisor
Karen Dunnell	National Statistician, Head of Government Statistical Service
Dave Ramsden	Joint Head of the Government Economic Service
Vicky Price	Joint Head of the Government Economic Service
Catriona Mirrlees-Black	secretary

The HoA group aims to champion first rate analysis across government to ensure policy and delivery of government services is as effective as possible.

Its objectives are to:

1. Deliver more consistency between disciplines to achieve the goal of working more effectively together.
2. Identify emerging issues and new trends through the joining up of issues raised by each discipline and the research councils.
3. Tackle issues of common interest to all, for example engagement with the Research Councils.

Thus, the group will tackle how to collaborate effectively and champion coordinated analysis as well as what should be collaborated on. This coordination is both within and across departments.

# Coordinating Research and Analysis

## Analytical Coordination Working Group (ACWG)

The membership of ACWG is as follows:

Catriona Mirrless-Black	Government Social Research Unit (chair)
Tony O'Connor	Government Operational Research Service
Vivienne Raven	Government Operational Research Service
Andy Ross	Government Economic Service Team
Jill Eckersley	Government Statistical Service
Liz Cooper	GO-Science

The ACWG aims to coordinate the activities of the analytic support units to promote the development of more effective joined-up analysis and analysts across government and jointly respond to the persistent barriers to the effective use of analysis and evidence.

**Its objectives are:**

1. To support the Heads of Analysis group
2. To share learning across the analytical professions
3. To join up on key challenges and issues facing all analytical professions
4. To identify and make efficiencies of scale where possible.

# Government Economic Service – GES

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The Government Economic Service is the professional body for economists in the UK public sector. Its Joint Heads are Dave Ramsden (Chief Economist at HM Treasury) and Vicky Pryce (Director General of Economics at BERR).

GES promotes the use of economics in government, maintains high standards of fast stream entry and has an externally moderated continuous professional development scheme.

For government, economics is the art and science of choosing one action or thing over another on the basis of analysis, use of evidence and explicit weightings on both ethical considerations and expected outcomes. Economists are equipped with powerful analytical frameworks and tools for empirical studies and have particular strengths in:

- Setting and analysing the effects of incentives
- Understanding and applying the strengths and weaknesses of market based processes
- Making explicit the weightings being given to estimates and ethical considerations
- Option appraisal and evaluation/cost benefit analysis
- Region, sector and macro economic policy
- Econometrics and Forecasting

For more information on the Government Economic Service contact:

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## Government Operational Research Service – GORS

Operational Research Services are provided in most government departments to improve their efficiency and effectiveness.

Operational Research is the application of scientific methods to management problems. It aims to provide a rational basis for decision-making, by understanding and structuring complex situations. Often this involves building mathematical models to predict system behaviour and thereby assist the planning of changes to the system.

Operational Research originated in Britain during World War II when it was used to apply mathematical techniques to the planning of military operations. Since then it has become recognised as an important input to decision-making in business, industry and government.

Examples of Operational Research skills and techniques include:

- manpower planning and pay modelling
- modelling and estimation
- simulation
- linear and mathematical programming
- other optimising techniques
- soft systems
- output and performance management
- using statistical methods in research or for prediction
- forecasting e.g. using time series, multiple regressions and other methods

There are now over 360 Operational Research staff in 17 departments and agencies, working on all areas of policy, operations and corporate functions.

For more information please see the GORS website:

[www.operational-research.gov.uk](http://www.operational-research.gov.uk)

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# Government Social Research Service – GSR

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Social research is scientific enquiry which measures, describes, explains and predicts changes in social structures, attitudes, values and behaviours and the factors which motivate and constrain individuals and groups in society. Good social science research helps make good government strategy, policy and delivery.

Social science research informs the development, implementation and evaluation of a wide range of government policies. The best results are often the result of teamwork, with GSR members and policy/delivery officials working together throughout the development and implementation of an idea to ensure it is as evidence based as possible. Engagement as early as possible in this process helps ensure the results of any analytical work are as useful as possible.

The Government Social Research (GSR) community consists of roughly 1,000 social scientists with a background in many contributory disciplines (e.g. sociology, psychology, statistics, anthropology, criminology, social geography). The research commissioned and conducted by GSR uses the methods of social scientific enquiry including surveys, qualitative research, analysis of administrative and statistical data, case studies, controlled social experiments and trials.

Members of GSR are based in 20 government departments and the devolved administrations. The service is led by the head of the Government Social Research Service, Professor Paul Wiles, who is supported by the Government Social Research Unit – GSRU. GSRU is responsible for harnessing existing learning and knowledge across the analytical community; setting professional standards for GSR members; setting recruitment and promotion standards and ensuring training and development opportunities and the continuous development of its members.

More information can be found on [www.gsr.gov.uk](http://www.gsr.gov.uk).

Otherwise, please contact:

Teresa Williams (head of the Government Social Research Unit)

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## Government Statistical Service – GSS

The Government Statistical Service is a decentralised body spread across 30-plus government departments, administrations and agencies. The National Statistician – Karen Dunnell - as well as being the Chief Executive of the UK Statistics Authority with responsibility for the Office for National Statistics, is Head of the GSS. The 1,300 professional statisticians are known collectively as the Government Statistician Group, and the group's primary function is to collect, analyse and disseminate statistics on all aspects of national life.

Through the production and dissemination of statistics, statisticians make a crucial contribution to good government in a modern democracy, assisting in the formulation and evaluation of policies, in the management of services for which government is responsible, encouraging and informing debate, and allowing people to judge whether the Government is delivering on its promises. High quality statistics are also a key resource for business, academia, and the wider community. With increasing emphasis on evidence-based policy making and effective performance management, statistics have a greater importance than ever before, and ever increasing scrutiny is placed on them.

Government Statisticians have a responsibility to the National Statistician for the professional quality of their work. The Continuing Professional Development Framework for Government Statisticians helps to maintain professional standards through the development of statistical and broader competences.

For more information on the GSS, contact the Statisticians in Government Team (SiGT):

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# Science and Engineering

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## What do scientists and engineers contribute?

The science and engineering profession encompasses a vast range of disciplines from water management to mobile phone technology. Scientists and engineers can be involved at any stage of a department's work on policy or delivery.

Broadly speaking science and engineering add value in five key areas, supporting strategic and operational delivery through:

- Contribution to the knowledge base;
- Policy development;
- Longer-term research to inform or develop policy and delivery;
- Identifying (and communicating) risks; and
- Setting standards / benchmarking.

Depending on what is needed, scientists and engineers' advice or input on topics may range from providing comprehensive and robust sets of options and recommendations based on in-depth investigations and knowledge to giving 'quick and dirty' views based on their existing knowledge to address policy questions that have, for example, a two-hour turnaround.

## Which policies use science and engineering?

Government scientists and engineers may be leading experts in their chosen fields working in specialist posts, or have general science or engineering backgrounds that can be applied to address more wide-ranging policy or delivery needs.

The professions play a part in a wide variety of issues across government, from those with an obvious scientific or engineering angle such as climate change or better traffic management, to those that may be less obvious, such as creative industries or the development of artificial limbs.

They contribute to a broad range of work throughout government departments, agencies and laboratories, spanning a wide range of policy and delivery activities, including inspection, policy making, secretariat functions for scientific advisory committees and research.

If you are unsure where to go for science or engineering advice, contact your departmental Chief Scientific Adviser's (CSA's) office or Head of Science and Engineering Profession (HoSEP) who will be able to help. In some cases it may be necessary to go through formal mechanisms to contact scientists and engineers working in arm's-length bodies, again your departmental CSA or HoSEP can offer you advice on this.

## When should you call on them?

Scientists and engineers contribute at all stages of the policy and delivery cycles, but should be called upon for new work, by default, and as early as possible. Whilst it may be possible for answers to be 'pulled off the shelf', new research often takes much longer than you may think to conduct.

It is worthwhile getting-to-know and maintaining contact with scientists and engineers working in your area. This will better enable them to keep you informed about the results and implications of new research in your area and suggest where further research might provide greater insight. It also offers opportunities for them to find out about your work, so that they can anticipate issues that might arise and understand the context of any requests from you for information.

You might also consider inviting scientists and engineers along to meetings that you attend, where their knowledge and expertise could usefully inform discussions.

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## Science and Engineering (continued)

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### Risk, uncertainty and the unknown

It can take many years for knowledge about an issue to be well understood. For this reason it is often necessary to make recommendations and decisions with the best information or knowledge available at the time. Scientists usually indicate the uncertainty and unknown in research or knowledge as caveats, which, for example, indicate the conditions under which the same findings may (or may not) be expected to occur. Scientists may hold different views on how risk, uncertainty or gaps in knowledge should be interpreted; whilst it can be frustrating, this debate plays an important role in developing the knowledge base.

It is also worth remembering that changes in technology or other factors, such as people's body size, may have an impact on even mature subject areas, and change the advice that scientists may give in relation to it.

### Other specialisms

Science and engineering should be considered, as appropriate, as part of the evidence base along with other analytical streams, such as economics and social research. It is worth noting that some specialist scientific streams, such as veterinary scientists and healthcare professionals, are managed and usually consulted separately from the wider profession.

