



Royal Academy
of Engineering | Policy
Fellowships

Policy Fellowships Programme

Engineering better policy

The Policy Fellowships programme inspires policymakers to think differently and to use engineering and systems thinking to frame complex and wicked problems, and design resilient solutions.

The programme has grown a unique network of policymakers, engineers and other experts who are working together to develop fresh insights and approaches to economic, social and technical problems.

Twice a year the Royal Academy of Engineering will select exceptional policymakers to become Policy Fellows. We welcome applications from civil and public servants who have a variety of insights, expertise and backgrounds from across the policy community.

“The Royal Academy of Engineering’s Policy Fellowships Programme could not be more timely with its mission to develop the ability of policy professionals to connect with leaders in engineering. We welcome the creation of a generation of high-calibre Policy Fellows across all levels of government. They will champion the role of engineering approaches such as systems thinking to develop better, evidence-based policy.”

Sir Patrick Vallance FRS FMedSci FRCP HonFREng
Former Government Chief Scientific Advisor

Professor Sir Jim McDonald FREng FRSE
President of the Royal Academy of Engineering

An inspiring development programme

The **Core Programme** consists of ten days of individual and group-activities over a four-month period. At its heart, the Policy Fellowships Programme offers a series of one-to-one meetings with leading engineers across industry and academia, and researchers with deep cross-disciplinary expertise, tailored to meet the needs of a chosen policy challenge. The programme also includes workshops, individual coaching sessions, and peer-to-peer meetups.

The **Alumni Programme** is open to successful graduates of the programme. It includes further development opportunities such as the chance to be involved in shaping the Academy's policy work, building new networks, alumni-led events and special projects. Flagship events include the annual Alumni Networking Dinner in March and the public Policy Fellowships Showcase in October. All alumni of the Policy Fellowships Programme are expected to play an active role in this experience.

Benefits of becoming a Policy Fellow

The Policy Fellowships Programme inspires policymakers to think differently and to use engineering and systems thinking to and frame complex and wicked problems and design resilient solutions

The programme has a unique network of experienced policymakers, leading engineers and other experts who work together to develop fresh insights and approaches to a variety of economic, social and technical problems.

Benefits to becoming a Policy Fellow include:

Better policy outcomes

- Use engineering and systems thinking to progress policy challenges.
- Discover different approaches to define problems and design agile solutions.
- Learn about the value of multidisciplinary thinking and how to create multidisciplinary teams.
- Share and apply what you learn with your team and organisation.

Expanded network

- Meet industry leaders, innovative technology entrepreneurs, and prominent academics and learn firsthand how they tackle difficult problems.
- Connect with like-minded peers across government and establish professional links between the engineering and policymaking professions.
- Engage with the work of the Academy and its partners in addressing society's most pressing issues.

Developing professional skills

- Benefit from mentoring and engineering-based advice to develop your knowledge and skills.
- Discover new perspectives and improve the understanding of your policy area and its context.
- Learn how the engineering communities, industry leaders and academics use systems approaches to solve complex problems.
- Enhance your career development opportunities.

For more information about the benefits of the programme, please see *Engineering Better Policy*, an insights report written by five Policy Fellowships alumni, available [here](#) and the programme's [2022 Annual Report](#).

What to expect during your Policy Fellowship

Core Programme Months 1 to 4



Onboarding call: Refine your policy challenge with the Academy's specialist policy advisors and discuss your bespoke programme. (1 hour)



Kick-off workshop: an interactive online seminar, with an introduction to the programme, meetups with engineers and other Policy Fellows and a workshop on how to apply systems approaches to policy (1 day)



One-to-one meetings: Connect with up to 12 leaders in engineering and subject matter experts in a series of one-to-one video calls, specifically matched to meet the different aspects of your policy challenge. (over 4-6 days)



Policy Fellows meetups: Throughout the programme, engage in regular peer-to-peer exchange and start creating unique connections with ambitious policy professionals from your cohort.



Programme report: Reflect and capture your personal experiences in a written programme report. After submission, share findings, challenges, and lessons learnt with your cohort in a peer review session.



Reporting workshop: Share your experiences and learnings from the programme with peers and engineers in an interactive online seminar. (0.5 day)



Bespoke coaching: Engage in individual coaching sessions on applying systems approaches to your policy challenge. (1h)

Alumni Programme Months 5+



Engineering policy work: Influence and shape live policy work undertaken by the Academy and the National Engineering Policy Centre (NEPC)¹.



Mentoring: Improve your links with the engineering community through mentoring opportunities from world-leading engineers, as well as the chance to advise engineering experts on the policy landscape.



Academy networks: Expand your professional networks, and strengthen your evidence base, with special access to the Academy's global network of leaders in industry and academia and access to a diverse programme of online and onsite events.



Events and projects: Access a mixed programme of online and onsite engineering policy events, deep-dives into systems approaches, workshops and roundtables, and co-create publications and showcase events to share on your insights and experience.



Alumni network: Join peers to nurture and grow a talented alumni network designed to foster closer connections between government and engineering, engage in peer-to-peer meetups to exchange on topics of interest and enjoy the alumni's annual gala dinner.

¹ The National Engineering Policy Centre connects policymakers with critical engineering expertise to inform and respond to policy issues of national importance, giving policymakers a route to advice from across the whole profession, and the profession a unified voice on shared challenges.

Case studies: Policy Fellow

Ragne Low

How can we design a coherent set of policies that achieve buildings-level heat decarbonisation and local energy systems change?



Ragne Low is the Deputy Director of the Onshore Electricity, Strategy and Consents division in the Scottish government, with responsibility for developing Scotland's Energy Strategy and facilitating the deployment of onshore renewables across the nation. At the time of her fellowship, she led on a range of heat decarbonisation policies for the Scottish Government in the Heat in Buildings Division.

Learning journey

The Policy Fellowships programme is all about connecting people together. I attended high-value workshops on engineering mindsets and met 12 engineers in one-to-one conversations.

Those and other experiences exposed me to perspectives that felt really fresh and useful. I got to grips with systems thinking, and I learnt that engineering is concerned with problem solving *for people*, not just for problem-solving's sake.

In that respect, it's very similar to policymaking, and there are other parallels as well: risk assessment, scenario-planning, iteration and modelling, to name a few. It was rewarding and useful to see where our worlds overlap, albeit that the similarities are often obscured by differences in language and jargon.

Impact

I've been drawing on my experience and the new contacts I made from the fellowship since the end of the programme. It's helped me to contribute to Scottish Government-wide improvement projects, incorporate systems thinking into our policy work and connected me with a fantastic network of experts – still an invaluable resource, even though I've moved roles since finishing the programme.

“The Policy Fellowships programme is all about connecting people together. I attended high-value workshops on engineering mindsets and met 12 engineers in one-to-one conversations.”

Case studies: Policy Fellow

Matthew Pullen

To understand the policies, systems, skills and partnerships needed to deliver future utility networks that meet the needs of growth, the net-zero agenda and social demands.



Matthew Pullen is the Head of Infrastructure Planning at the London borough of Tower Hamlets. He is responsible for the long-term planning for the infrastructure needed to support major growth in east London over the next 20 years. He is also responsible for an in-house development viability service that maximises public benefits from development, and infrastructure and development coordination services that pilot initiatives to increase efficient delivery of development and minimise negative impacts.

Learning journey

High levels of development, the net-zero agenda and growing social requirements are putting pressure on our utility systems to be fit for purpose in the future. Existing regulatory and policy approaches lead to inconsistent results. My policy challenge sought to understand how partnership and collaboration could improve the policy and delivery systems in place and specifically what role local government might have in facilitating and/or leading this.

Through sessions with experienced engineers, reflecting on partnership work already undertaken and the challenges ahead, I gained great insight into the role that engineering and systems thinking can have in improving the system. Fellows recommended establishing a framework to support system mapping, and problem and needs definition, utilising learning from existing tools and approaches.

Further advice included how to embed value definition, resilience and scenario testing into a complex set of issues and potential solutions.

Impact

Learning regarding systems thinking and the matters detailed above is already shaping our approaches as we enter partnership work regarding a wide range of utilities. It has also provided a key insight into the skills and organisational requirements that we, as a local authority, will need to meet.

“Through sessions with experienced engineers, reflecting on partnership work already undertaken and the challenges ahead, I gained great insight into the role that engineering and systems thinking can have in improving the system.”

Case studies: Policy Fellow

Jo Bray

What is the shape of the policy framework that BEIS should develop to help the UK chemical sector decarbonise and achieve net zero by 2050?



Jo Bray joined BEIS in 2017 to lead the Chemicals and Plastics team, championing UK manufacturing, driving growth and productivity and supporting commercialisation of the best of UK science and research. She also worked with the sector on its contribution to Net Zero. Recently, she moved to head up BEIS's Automotive Unit, to work with the sector on their transformation to low carbon, connected and autonomous technologies.

Learning journey

The engineering and systems approaches I deployed during the analysis of this policy challenge have been particularly valuable. Chemical production is well suited to this concept because it is a process industry and is composed of a series of interconnected plants and processes to form an integrated system. Systems thinking also works well when there is no "silver bullet" to solve a policy challenge as it can help demonstrate several ways of reaching a solution. I also appreciated the access I got to some of the preeminent thinkers, engineers and scientists in this field who provided ideas and constructive challenge.

One of my main takeaways was using different lenses to look at the issue including environmental, economic, scientific and behavioural. As well as analysing opportunities for decarbonisation in the production of chemicals, the systems approach allowed me to build in consideration of support processes such as the transport used to move feedstocks and product around and the carbon impact of HQ buildings and offices.

Impact

This work was valuable in subdividing a complex issue into its constituent parts and demonstrating that action to reduce carbon usage and emissions is possible at each stage in the system – from adapting to lower carbon and greener feedstocks to the energy production used in the process and use and end of life. It also provoked a series of further questions to usefully explore.

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Who should apply

Successful Policy Fellows are civil or public servants with responsibility for policy or service design in any sector, with the ability to influence and impact public policy in their field. The Academy is committed to diversity and inclusion. We welcome applications from a range of backgrounds for example economics, politics, sociology, health, planning, digital, science or engineering; and from a range of institutions with a public service mission, including central, devolved, and local government, arm's length bodies or public agencies, and public benefit non-profits.

How to apply

Policy Fellows are selected through a competitive process on the strength of their application. We may offer deferred places on the programme to help with the balance of a cohort.

Successful Policy Fellows must have:

- A well-defined challenge or issue which will benefit from engineering expertise.
- Clear expectations for how they intend to apply their learning.
- The support of a sponsoring manager and employer commitment to fund your participation in the programme. Please note there is no option to self-fund your enrolment at this time.
- A commitment to play an active role as a Policy Fellow and future alumni of the programme.

Application support

Contact our team at policyfellowships@raeng.org.uk for further information or to join one of our drop-in information sessions designed to assist prospective applicants. Sessions will take place every Wednesdays at 15:00-16:00 until 1 December 2023.

Attend the free Policy Fellowships Showcase on 20 October 2023, meet alumni and discover their experience first-hand, and hear a special panel of senior civil servants and experts discuss the value of using systems thinking in government. Registrations open in September.

Key dates

We will be running two cohorts each year, typically starting in March and September. The key dates and fee for the next confirmed Policy Fellowships cohort are:

Programme starts March 2024	Programme fee £3,100	Applications deadline 1 December 2023	Kick-off workshop April 2024	Reporting workshop June 2024
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For more information, please visit: www.raeng.org.uk/policyfellowships or contact policyfellowships@raeng.org.uk



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The Royal Academy of Engineering is harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

Royal Academy of Engineering

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