Chemical Engineering's contribution to public policy - Roundtable

Executive Summary

At ChemEngDayUK 2025, IChemE hosted a first-of-a-kind introduction to public policy session. This was well supported and included talks on how to get involved in policy work and a panel session chaired by Deputy President, Raffaella Ocone.

Chemical engineers need training and support to fully engage with public policy, including how to get involved, and gain greater awareness of the incentives and constraints operating on policymakers. Organisations such as IChemE and the Royal Academy of Engineering have a key role to play in connecting chemical engineers to opportunities to get involved in policy working groups. We look forward to running further policy engagement sessions in future.

Background

Chemical engineering offers technologies, ways of thinking and solving problems that are well matched to the complex challenges that occur regularly in public policy. Yet chemical engineers are not as commonly thought of in connection with policy as some other fields (such as lawyers, economists, or communications professionals). They are also less likely to be exposed to the world of public policy, or to be shown how they can contribute as part of their training.

At this year's ChemEngDayUK held at the University of Sheffield, IChemE hosted a session on chemical engineering and public policy, giving attendees a chance to learn more about this work and how they might get involved. Key themes emerging are summarized below.

Chemical engineering's contribution to policy

Participants agreed that chemical engineering has a wide range of contributions to make to public policy, particularly in fields where chemical engineers possess technical knowledge critical to the policy area such as energy and water.

Further, chemical engineers possess ways of thinking are valuable to approaching policy questions- for instance, a whole systems thinking approach, scale up and approaches to risk. The transition to net zero presents a particular complex systems challenge to which chemical engineers are particularly suited.

Health emerged as a recurring theme during discussion of less obvious/potentially overlooked areas where chemical engineers can contribute. For example, the role of chemical engineering in the Covid response (e.g. chemical engineers possessing

insight to understand and manage risks), and when looking at large volume of chemicals consumed and waste produced by the health system.

Challenges to more chemical engineering in public policy

Some challenges to greater involvement of the profession in public policy were noted. On the part of chemical engineers, it was noted that there can be a lack of training in and exposure to policy during degree programmes. Stemming from this, it was felt that chemical engineers could too often feel that policy was 'not for them' and that they should 'leave it to people who have more of a background in it'. There was also sometimes seen to be an apprehension about 'saying the wrong thing', or anxiety about navigating the unfamiliar set of systems and structures presented by policy.

Differences in incentives and communication styles

The challenges arising due to the differences in approaches to communication were discussed. Chemical engineers speak a different professional language to policymakers, illustrated by their differing approaches to risk and evidence.

It was particularly noted that academics and policymakers may value different things, and that when engaging with policymakers, academics should be sensitive to what is most helpful. Policymakers, it was observed, are typically not interested in a single piece of research or a single academic, no matter how creative or trailblazing, and are more likely to be interested in quickly gaining an adequate grasp of the state of evidence in the field.

Supporting greater engagement

To help chemical engineers from industry and academia engage more effectively with policy, training is critical. Key skills to develop include:

- the ability to communicate effectively with policymakers,
- a good understanding of the policy process,
- an understanding of the breadth of inputs contributing to policymakers' decisions (for instance, cost, legislative implications, social impact and public opinion),
- an appreciation of the constraints, incentives and priorities of policymakers (for instance, currently in the UK, a clear focus on economic growth and job creation).

It was noted that such training is often available via universities and their policy/engagement teams.

How to promote greater engagement with ethics and policy among undergraduates in their training was discussed. It was felt that real life scenarios can be helpful in this regard.

Several opportunities for chemical engineers to get involved in policy were identified, including:

- direct engagement – e.g. through submitting evidence to government consultation responses or parliamentary committee calls for evidence or engaging with the researchers at the Parliamentary Office of Science and Technology when they are producing a POSTnote.
- people introducing themselves and their work to those running All Party Parliamentary Groups, and the Clerks running committees and inquiries, to make sure that they were 'on the radar' to be called on for evidence if needed.
- engaging as part of working groups such as those hosted by the National Engineering Policy Centre or feeding into the work of organisations including IChemE.
- the Ashok Kumar Fellowship at the Parliamentary Office of Science and Technology (sponsored by IChemE and the Materials Processing Institute).

Conclusions from the sessions

- IChemE has a key role to play in raising awareness of policy work among members and increasing awareness of the wide range of careers to which chemical engineering can lead including public policy.
- Chemical engineers can better equip themselves for policy debates by developing a deeper appreciation of the pressures on and interest of politicians, appreciating the wider context of policy conversations, and deepening their understanding of behavioural science to give them a richer appreciation of how human beings behave and how government interventions may play out in the real world.

About IChemE

The Institution of Chemical Engineers (IChemE) is the qualifying body and learned society for chemical, biochemical, and process engineers in the UK and worldwide, with over 32,000 members. Our mission is to champion the input of chemical engineers to create a sustainable future. Find out more about IChemE and our strategic vision of engineering a Sustainable World at icheme.org