☑ Election wish-list

IChemE CEO **David Brown** shares his five demands for the UK's incoming government

THOSE readers living in the UK – home to around half of IChemE's members – will probably have had more than enough of the longest-running general election campaign anyone in the country can remember. But bear with me, because elections matter. Not least because of the impact government policies can have on the many parts of the economy that depend on the skills of chemical and process engineers.

We often lament politicians' limited understanding of engineering and science, and the contribution they make to society – so it's worth thinking about what we would like the politicians and policymakers to do if that understanding were improved.

So here is my 'wish-list' for the UK election, outlining my top five 'asks' for whichever shade or coalition of government comes to power. Most, if not all, of the points will be equally applicable in any of the countries where IChemE has members.

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☑ wish one – get off the energy rollercoaster

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Energy costs and their volatility are probably the issues that exercise chemical engineers' minds the most. We face tough challenges whether the oil price goes up or down – particularly so for smaller enterprises that don't have the 'cushion' of large resources. There is a limited amount government can do to affect this directly, but it can help soften the effects by incentivising firms with cost-sharing measures to enable them to continue investing in recruitment, training and innovation during difficult times.

For many of the process industries, their energy sources are also their feedstocks, so it's doubly important to be able to cope with the ups and downs of energy pricing. Government should make it easier for firms to plan in the long term, setting a good example by establishing policy frameworks that are sustained over timescales longer than a typical electoral cycle.

☑ wish two – education spend

The importance of long-term thinking and planning brings up my second wish: for government to boost investment in universities to support first-rate engineering education. We've seen engineering student numbers rise. The need now is to ensure investment in teaching and infrastructure in departments rises in step with student numbers. Such investment is vital if we are to maintain the quality of learning outcomes and the opportunities for industry exposure in chemical engineering education. The investment will need to be accompanied by incentives for first-rate teaching equal with those for first-rate research. I'd like to see a TEF (teaching excellence framework) that's just as important for university funding and the promotion prospects of academics as the REF (research excellence framework).

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☑ wish three – school specialists

My next wish is also around education and skills, but this time at school level. I would like to see government mandate that every primary school must employ a science specialist, and by that I mean somebody with a science or engineering degree. Where science and maths teachers are in short supply, we need to boost wages. And for those young people who don't go to university, we must provide an accessible and simple-to-understand menu of skills training opportunities.

The government must also simplify the over-complicated array of skills organisations and quangos set up in recent years that led to confusion among employers and learners. The UK's engineering sector has a well-established network of professional organisations, which already work closely with employers to ensure learning outcomes are fit for purpose. By using them as the first port of call wherever possible, government can enable a smaller and more focussed set of sector skills councils to concentrate on addressing specific gaps – such as boosting the numbers of traineeships and apprenticeships, which the professional bodies would then accredit to ensure they're of quality, and merit the same esteem as more 'academic' qualifications.

☑ wish four – immigration sense

It's high time for some sense on the issue of skilled immigration. In many countries, including in Europe and Australia, recent years have seen an irrational and unpleasant upsurge of opposition to migration of any kind. This ignores the fact that on the grand scale, immigration is a source of great benefit to society, not harm. And when it comes to skilled migration, the position is even clearer. Chemical engineers work overwhelmingly for global employers, with career patterns that often take them around the world, facing technical and research challenges which are, by definition, global. The ability for skilled professionals to move between countries for work is a vital enabler for success, and those countries that put barriers in the way will lose investment and lose competitiveness as a result.

Professional Chartered Engineers should be welcomed with open arms, not face barriers of visa regulations, costs and delays. For our universities, the need is equally strong. The UK happens to have arguably the most successful university system in the world in relation to the resources that go into it: but it's at risk because of the difficulties being put in its way in attracting the best academics, the most promising researchers, and the brightest international students. Government must remove barriers to academic migration, and exclude from the controversial figures for net immigration international students coming to UK universities. And because those students will have large debts to pay back after they graduate, it's essential that they can work in the UK for several years afterwards – helping address the UK's shortage of engineers in some key areas.

☑ wish five – quit carbon

This is by far the most important of all. The UK is unique in one respect: it's the country where, in a valley in Shropshire in the early 18th century, the old high-carbon industrial economy was born. It would be very fitting for the UK – indeed a moral imperative – to take a bold lead in developing and applying the science and engineering necessary to build the new, low-carbon economy on which in the long run we all depend.

So I would like to see the government initiate a massive programme of research, demonstration and international leadership to mitigate climate change, adapt to its already-irreversible effects, and support a transition to a new energy economy. That doesn't involve moving away from fossil fuels any time soon – the sheer scale of the fossil fuel industry and its central place in the economy rules that out. But it does involve large-scale rollout of carbon capture, storage and utilisation, and full use of natural gas resources, including unconventional gas, to buy time while longer-term solutions are developed. Chemical engineers understand energy systems better than most: and our grandchildren will not easily forgive us if we fail to put that knowledge and understanding to good use.

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let's speak truth to power

These points are all very well, of course, provided that the science and engineering professionals will take the trouble to speak truth to power and articulate both the problems we perceive and the ways to solve them. IChemE's new Energy Centre is one move towards doing that better than before (*see p52*).

Launching the Centre, UK government chief scientific adviser Sir Mark Walport called on the engineering community to target our advice more precisely, framing it in the simple terms necessary to grab a politician's attention, rather than the lengthy and detailed reports that perhaps come more naturally to engineers.

Sir Mark also encouraged chemical engineers to engage with policymakers and politicians, and I would endorse that call.

It can be as simple as writing to your MP or putting in a response to one of the many government consultations on issues of relevance to our profession and our industries. Or maybe some IChemE members will even consider standing for public office. We could certainly do with more scientists and engineers in parliament. In the 2010–2015 parliament there were just two with chemical engineering degrees, and just before the 2010 election we sadly lost a great advocate in the political sphere with the untimely death of Ashok Kumar MP, a strong advocate for chemical engineering.

So there is a need for a louder voice for science and engineering, and for chemical engineering in particular, not only in UK politics but in a range of other countries where the chemical engineering profession is strong.

So whether you agree or disagree with my suggested wish-list, don't leave politics to the lawyers, the politicians, the pundits and the media. So stand up and speak out! Chemical engineering matters, and chemical engineers are part of the solution. **tce**

David Brown is CEO of IChemE