

EEA-workers in the UK labour market

CaSE response | October 2017 | Migration Advisory Committee consultation

About CaSE

The Campaign for Science and Engineering (CaSE) is the leading independent advocate for science and engineering in the UK. CaSE believes the UK Government should support a healthy and flourishing science base.

CaSE works to ensure that the UK has the policies, funding and skills to enable science and engineering to thrive. It is funded by individuals and around 100 organisations including businesses, universities, learned and professional organisations, and research charities. Collectively our members employ 360,000 people in the UK, and our industry and charity members invest around £34.9bn a year in R&D globally¹.

Summary

We were pleased that the Prime Minister confirmed her government's commitment "to ensuring a positive outcome for UK science as we exit the European Union."² Companies, universities, charities and research institutes alike see the ability to retain, access, move and attract skilled people as essential if this aim is to be achieved. To achieve this, negotiations and domestic policy must work together to create a migration system and environment that actively supports science, research and innovation.

The EU referendum debate provided an opportunity to see the extent to which conflicting 'facts' about immigration were firmly held to be true. The Government could support consensus building by promoting the good use of evidence. We were therefore very pleased that the Government commissioned the MAC to undertake this work and have consulted widely with our members to shape this submission.

Beyond policy

Tone and messaging

Ongoing consultations with CaSE members have highlighted some key issues around the messages that the Government is giving to non-UK nationals who may be considering a career in the UK. While the Government continues to refer to welcoming the 'brightest and best' to the UK post-Brexit, our members believe that the tone of the message will isolate a prospective future workforce. In addition, the overall message from the UK seems to focus on allowing a select few to live and work in the UK, such as many of the messages that appeared in the leaked Home Office paper³, rather than having a progressive immigration policy that values migrants.

¹ Figure calculated in October 2016 from latest available data

² http://www.bbc.co.uk/news/science-environment-36915846

³ <u>https://www.theguardian.com/uk-news/2017/sep/05/leaked-document-reveals-uk-brexit-plan-to-deter-eu-immigrants</u>



The decisions and discussions happening in the UK are seen and heard internationally. In a globally competitive environment, the UK must ensure that it can continue to access the necessary workforce to drive productivity and growth. A concern of our members across the community is that amidst the uncertainty surrounding the rights of EEA citizens in the UK, in combination with unwelcoming messaging towards migrants from some areas of the press and media, the UK is becoming an unattractive place for scientists and their families to live and work and visit. Although the strength of the UK's science base has continued to attract staff from around the world, migration is a decision made around a number of factors⁴ and the UK is in an international competition for talent.

Evidence

The Government will want to ensure that decisions on the long-term arrangements are based on evidence. One of the challenges facing Government, and facing employers, businesses and those seeking to feed into this call for evidence is that none routinely have robust systems to record the data now needed to make fully informed decisions. Part of the solution must be for Government to improve its migration statistics. Work is already underway, but this is essential if decisions over the long-term are to be well informed by evidence.

Economic and social impacts of the UK's exit from the European Union

Trends in Migration

The UK is a global science leader. The Prime Minister has recognised this by including maintaining the UK's science and innovation strength in her flagship Brexit speech in January 2017⁵. Developing an effective migration policy will be an essential component of future success for science and engineering in the UK. This is because immigration is both essential to meet skill demand and because scientific breakthroughs are not developed in isolation – mobility is crucial to the highest standards of performance. Easy movement of researchers, innovators and specialist technicians gives the UK a competitive advantage by opening up access to skills, ideas and international networks.

International movement is a feature of researchers' careers - 72% of UK-based researchers⁶ spent time at non-UK institutions between 1996 and 2015⁷. Over 27% of academic staff at universities are from outside the UK – 31,600 from other EU nations and 23,000 non-EU internationals⁸. And the UK attracts high quality researchers based on their citation rates⁹. And the UK's new flagship £650 million Francis Crick Institute in London currently has 65 different nationalities in its 1,500 strong workforce¹⁰. This varies by career stage, with for instance 81% of post-doctoral researchers at the Francis Crick Institute being non-UK nationals¹¹. This international mobility is not because scientists and engineers are particularly fickle about where they live or with whom they work; it is because it is integral to research.

⁴ <u>http://www.migrationobservatory.ox.ac.uk/resources/briefings/election-2015-briefing-why-do-international-migrants-come-to-the-uk/</u>

⁵ https://www.gov.uk/government/speeches/the-governments-negotiating-objectives-for-exiting-the-eu-pm-speech

⁶ Includes UK and non-UK nationals - only published researchers from academia and industry were analysed

⁷ Elsevier, International comparative performance of the UK research base, 2016

⁸ Staff by geographic region of nationality, HESA 2014/15

⁹ Elsevier, International comparative performance of the UK research base, 2016

¹⁰ Figures provided by Cancer Research UK

¹¹ https://acmedsci.ac.uk/file-download/41594-57f62e9b755f0.pdf



Internationalism brings huge benefits to research and to the productivity of science and engineering in academia and industry^{12,13,14}.

The ability of the UK to attract the best researchers in a field is critical to the maintenance of a solid UK research base. Specific EU projects encourage the international mobility of researchers and the UK is successful in obtaining these. For example, 3,454 British researchers were funded through Marie Curie Actions between 2007- 2014, through which transnational, intersectoral and interdisciplinary mobility is encouraged¹⁵. These can often be important building blocks in researchers' career development and facilitate the sharing of knowledge across international and sectoral boundaries.

Research is an international endeavour and academics from across the world undertake research in UK universities. In science and engineering disciplines, the academic researcher population is even more international than in other subjects. Engineering has a greater proportion of non-EU academics (20% compared with 9% across other subjects) and science has a greater proportion of non-UK EU staff (21% compared with 13% across other subjects).



Proportion of academic staff by nationality by discipline in 2013/14 (Source: HESA)

The number of non-UK EU nationals and international academic staff at UK HEIs has increased by 13% between 2007/08 and 2013/14. Over this time the number of non-UK EU nationals has doubled but the number of UK nationality staff has only increased by 3%.

However, there are already some concerning issues arising that could, if not addressed affect the quality of the UK research base. We already hear from some members of advertised posts receiving far fewer, or no applications from researchers based in the rest of the EU. Quality EU candidates are choosing to apply elsewhere. We are yet to see significant numbers of researchers leaving the UK for work elsewhere, however our members have shared examples of senior postholders sitting on job offers from other countries waiting to see whether the situation improves in the UK before making a decision to leave. This is not simply a concern that relates to EU talent. Researchers want to work with leaders in their field. If they are no longer in the UK, UK and non-EU researchers may also choose to follow. Such an event is not inevitable, but I state it to underline how interconnected the

¹² <u>http://www.demos.co.uk/publications/knowledgenomads</u>

¹³ <u>http://www.nber.org/chapters/c13405</u>

¹⁴ http://www.nature.com/nature/journal/v497/n7451/full/497557a.html

¹⁵ The role of EU membership in UK science and engineering research, CaSE-EPC, 2015



Immigration for science and engineering positively contributes to the UK

The most conservative estimates suggest that the fiscal impact of migration in the UK is small (less than +/-1% of GDP) and differs by migrant group (e.g. EEA migrants vs non-EEA migrants, recent migrants vs all migrants)¹⁶. CaSE is not aware of studies of the fiscal contribution specifically made by immigrant scientists and engineers to the UK economy but as they are more likely to be higher-skilled and employed in an above-average wage job, it can be reasonably assumed that their net contribution is positive.

Science and engineering are a central pillar of the UK economy and deliver great social, cultural, environmental and health benefits. The fruits of research and innovation enrich all our lives in countless ways. Nurturing a strong science base is vital for preparing the nation for future challenges, from climate change, food security and future cities, to antimicrobial resistance, national security and meeting the needs of an ageing population. R&D and human capital are universal drivers of productivity¹⁷ and a wide range of industries, from manufacturing and agriculture to digital technology, rely on research to innovate, grow, and create high-value jobs¹⁸.

UK residents benefit from EEA migrants across all sectors and in a variety of ways. EEA nationals have a crucial role in teaching and training the next generation in the UK. For example, in 2016/17, 27,229 new teachers successfully qualified to teach in England, of which 4,795 were EEA nationals¹⁹ (17.6%) up from 2,018 in 2010/11. This is explored later in the industrial strategy skills section.

We know that policy decisions affect the desirability of the UK as a place to study. Recent research has shown a 20% decline in undergraduate level enrolment due to the changes to post-study work options²⁰. An impact of exiting the EU could be a diminished view of the UK as a desirable place to choose to study. This could reasonably be seen as an impact on universities and the wider UK rather than on EU students, as they will simply undertake their studies elsewhere in countries actively seeking to increase their share of the valuable and growing education export market. International students coming to the UK to study now generate more than £25 billion for the economy and provide a significant boost to regional jobs and local businesses²¹.

The Government have indicated they are looking to crack down on student migration²² which would be damaging to the UK and our universities. In our opinion, this is a conflation of concerns about overseas students at 'bogus teaching colleges' and the body of students at UK universities. UK universities are awarded trusted-sponsor status to recruit from overseas on strict criteria and the government should make this distinction clear in its positions. UK residents benefit from international students. It is a £10.7bn export sector, beneifting local regions from additional domestic spend. International students also benefit existing UK residents as many courses at our universities would not be viable without international students. They therefore ensure that a wider range of courses are available for UK

¹⁷ "On the Robustness of R&D", Kul, Khan and Theodorodis, Journal of Productivity Analysis, vol. 42 (2014), 137-155 ¹⁸ http://www.sciencecampaign.org.uk/resource/whychampionscienceandengineering.html

¹⁶ http://www.migrationobservatory.ox.ac.uk/resources/briefings/the-fiscal-impact-of-immigration-in-the-uk/

¹⁹<u>https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/572290/ITT_Census_1617_SFR</u>_Final.pdf

²⁰ The determinants of international demand for UK higher education, HEPI Report 91, 2017

²¹ The economic impact of international students, Universities UK, March 2017

²² Rt Hon Amber Rudd, <u>Conservative Party Speech</u>, October 2016



residents to benefit from. This is particularly the case in some engineering courses, many post-graduate courses. This means that far from crowding out opportunities for UK residents, international students enrich and expand the education opportunities for UK residents.

A highly skilled EEA workforce has been vital in maintaining public services in the UK benefitting UK residents. Within the NHS, migrants are an important part of the workforce as doctors, nurses, technical staff, researchers and support staff. Their importance has increased as the proportion of EU nationals working within the NHS has increased from 2.9% in 2009 to 5.5% in 2016²³. The involvement of research scientists in the NHS is also vital to the development of medical treatments for patient benefit, of which non-UK nationals form an important part. Within medical professions, the UK has struggled to recruit the numbers of appropriately skilled staff. Medical practitioners, medical radiographers and many other medical roles have long been found on the Shortage Occupation List²⁴. UK residents would be the ones to lose out if existing EEA nationals chose to use their expertise elsewhere.

In a survey of scientists and engineers conducted by CaSE, the most highly cited benefit of immigration was supporting international collaboration, with almost a third (31%) of respondents stating this in a free-text answer²⁵. This collaboration yields better science: almost half of UK publications are co-authored with international collaborators and such papers are on average more scientifically significant, receiving a greater number of citations by other authors^{26,27,28}. Furthermore, UK papers with international co-authorship are associated with 61% greater citation impact when compared to institutional co-authorship²⁹. Other benefits of immigration include team diversity, which brings new approaches to problem solving, and increased exchange of ideas, both of which are essential to research and innovation^{30,31}.

²³ <u>http://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7783</u>

²⁴ https://www.gov.uk/guidance/immigration-rules/immigration-rules-appendix-k-shortage-occupation-list

²⁵ CaSE survey conducted between 14 July and 14 August, 2015. 96 responses were received, 86 were from individuals and 7 were official responses on behalf of companies or universities.

²⁶ <u>https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/310544/bis-performance-indicators-uk-share-highly-cited-academic-articles-april-2014.pdf</u>

²⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263729/bis-13-1297-international-comparativeperformance-of-the-UK-research-base-2013.pdf

²⁸ http://www.pnas.org/content/early/2015/08/05/1501444112

²⁹ <u>https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263729/bis-13-1297-international-comparative-performance-of-the-UK-research-base-2013.pdf</u>

³⁰ http://www.niesr.ac.uk/sites/default/files/publications/NATHAN%20-%20WIDER%20IMPACTS%20OF%20HIGH-SKILLED%20MIGRANTS%20-%20NIESR%20DP%20-%202013_0.pdf

³¹ <u>http://www.niesr.ac.uk/sites/default/files/publications/Migration%20productivity%20final.pdf</u>





The CaSE survey found overwhelming support for immigration within the science and engineering workforce, with only one respondent (out of 96) saying that immigration of scientists and engineers should be reduced. This is an indication, from an admittedly small sample, of the value that UK resident scientists and engineers place on migrants in their own places of work.

"The Government should encourage qualified, experienced foreign professionals to move to the UK, not restrict it. As a group, we make a major net contribution to the economy. That's how the US built its dynamic economy. Anything else is a recipe for stagnation."

Dr Alan Reid, Geophysical Consultant, private business owner, and immigrant since 1987

All these are direct benefits to UK residents within the research sector but also bring the wide reaching indirect benefits of a strong research and innovation base to all UK residents³².

There are already some concerning issues arising that could, if not addressed, affect the quality of the UK research base and the attractiveness of the UK as a place to do research for UK researchers. We already hear from some members of advertised research and training posts receiving far fewer, or no applications from researchers based in the rest of the EU. Quality EU candidates are choosing to apply elsewhere. We are yet to see significant numbers of EU researchers leaving the UK for work elsewhere, however our members have shared examples of senior postholders sitting on job offers from other countries waiting to see whether the situation improves in the UK before making a decision to leave. This is not simply a concern that relates to EU talent. Researchers want to work with leaders in their field. If they are no longer in the UK, it will become a less attractive place to do research and UK and non-EU researchers may also choose to follow. Such an event is not inevitable, but I state it to underline how policy decisions and messaging for our EEA colleagues could have knock on impacts on UK nationals

³² Why champion science and engineering, CaSE, 2015



too. It is also a demonstration of how UK nationals (and current UK residents) feel they benefit from immigrants working within science and engineering.

The importance of immigration to innovation and business growth has in part been evidenced by the higher involvement of migrants in patent applications and new products to market^{33,34,35}. Research conducted by Fragomen showed that 30% of London-based digital technology start-up founders were born overseas³⁶. Similar research from the University of Oxford showed that 45% of our spinout companies - companies with University intellectual property at their core - have foreign founders or co-founders³⁷. These entrepreneurial founders create jobs, products, services and economic returns that benefit UK residents. There would be a significant negative impact on the UK's digital technology sector performance, UK economy and UK job growth if these individuals instead set up in Berlin or Paris instead of London in future, or indeed if existing companies left. This must be reflected in migration systems and rhetoric.

The contribution of immigrant scientists and engineers more broadly to productivity and job creation has been more widely studied in America³⁸. According to a 2011 study by the American Enterprise Institute for Public Policy, every foreign-born student who graduates from a US university with an advanced degree and stays to work in a STEM career creates on average 2.62 jobs for American workers³⁹. Far from crowding out native workers, immigrants created more jobs not only for highly-skilled Americans but for lower-skilled ones too.

There is a historic trend of entrepreneurial migrants creating jobs. A 1998 study found that Chinese and Indian engineers were senior executives in one-quarter of Silicon Valley's technology businesses⁴⁰. These immigrant-run companies collectively accounted for more than \$26.8 billion in sales and 58,282 jobs. A more recent, but smaller, example in the UK analysed businesses established or taken over by immigrants using the entrepreneur visa route between 2008 and 2015⁴¹. Of the 1,580 businesses analysed, 380 (24%) were in the professional, scientific, and technical sector, which places it second only to the wholesale and retail trade. Each of these is creating high-skilled jobs in the UK.

In agreement with the published literature, our survey identified examples where foreign workers have opened up new markets for the companies they worked for, either through their links back home or language skills. Employers also believe that the different experiences and perspectives of migrants create teams with wider strengths and make workplaces more dynamic.

"Working for a Chinese customer is especially difficult when it comes to communication and communication is key when it comes to Mechanical Engineering. Our direct customers generally don't speak any English and most of the aircraft standards are written in Chinese. We recruited

³⁸ http://object.cato.org/sites/cato.org/files/serials/files/cato-papers-public-policy/2014/6/cppp-3-3.pdf

³³ http://eprints.lse.ac.uk/58329/

³⁴ http://eprints.lse.ac.uk/52363/

³⁵ <u>http://charlesleadbeater.net/wp-content/uploads/2008/01/The-Difference-Dividend.pdf</u>

³⁶<u>https://www.fragomen.com/sites/default/files/fragomen-immigrationandbrexit-atoolkitforrespondingtothemigrationadvisorycommittee-sep2017.pdf</u>

³⁷ https://medium.com/oxford-university/innovation-knows-no-borders-398de580aea9

³⁹ <u>http://www.renewoureconomy.org/sites/all/themes/pnae/stem-report.pdf</u>

⁴⁰ Anna Lee Saxenian, Silicon Valley's new immigrant high-growth entrepreneurs, 2002

⁴¹ Department for Business, Innovation, and Skills, Migrant entrepreneur visas: numbers of employees and turnover, 2015



five top quality Mechanical Engineering graduates from Sheffield University using Tier 2 visas who were all born, raised and educated in China to help us with this \$25 million Chinese contract. These graduates were integrated into our design teams and have been a key part of the project. I would go so far to say that it would have been impossible to complete the project to any high standard without their help... It also makes it more likely for us to get future work in China as we develop an important commercial relationship with a new Chinese customer and start an Electroimpact 'China Office'."

Barry Richards, Chief Engineer, Electroimpact

International migration is an integral part of science and engineering and benefits UK research, presents opportunities to businesses, and delivers direct and knock on benefits to UK residents in the form of jobs, growth, health, education, and other benefits.

The public support immigration of scientists, engineers and students

Considering such benefits, it is not surprising that the public support immigration of scientists, engineers and students. In fact, although immigration was a major feature of the referendum debate this should not be assumed to mean the public want to see a blanket reduction in migration. As outlined below, and in other similar polls, nearly half of those who voted leave in the referendum do support increases in skilled migration. The Home Secretary has said "it's only by reducing the numbers back down to sustainable [immigration] levels that we can change the tide of public opinion"⁴². We recognise the widespread concerns about immigration, however opinion polls attest that the public are much more nuanced in their views than this statement credits. The public is overwhelmingly in favour of immigration of highly skilled workers and students:

- 86% of the public support maintained (42%) or increased (44%) migration of scientists only 14% wanted a reduction⁴³
- These proportions are highly similar between those who voted leave and those who voted remain in the referendum.
- A majority of British adults would like to maintain (56%) or increase (20%) the number of international students in the UK
- 53% say that if the UK adopted a policy to help boost growth by increasing the number of international students coming to their country, they would support this policy
- 70% say it is better if international students use their skills here and work in the UK after graduation in order to contribute to the economy rather than returning immediately to their home country

⁴² https://blogs.spectator.co.uk/2016/10/full-text-amber-rudds-conference-speech/

⁴³ British Future, <u>Time to get it right</u> (2017)



A minority consider international students (24%) or EU students (23%) coming to study at a UK university as immigrants⁴⁴.



To build more of a consensus behind immigration policy there must be recognition by Government that concerns are nuanced and complex. Addressing valid concerns and building consensus will similarly require a nuanced approach by Government.

The Government should not develop immigration policy based on a flawed assumption of voter intent in the referendum. For instance, pursuing a policy of reducing the number of highly-skilled migrants coming to the UK would be contrary to the views of 86% of the public. Further, a top-level numbers-based approach from Government, such as an overarching policy driver of reducing migration to tens of thousands regardless of type of migrant, does not support or communicate a nuanced approach to migration. Such an approach is in conflict with public opinion and has the potential to be economically damaging to the UK and should not be pursued. Instead, Government should highlight the nuances of public opinion in its positions and include it in development of migration policy. For instance, introducing more temporary routes, and limiting routes with options for long term residency could seem on the surface like a way of limiting the impact of immigration on local communities. However, the reality is UK residents see integration and 'knowing your neighbour' as important so building churn into the system would run contrary to that. We hope the MAC commission will aid the Government in making evidence based decisions.

⁴⁴ Universities UK poll conducted by ComRes, October 2016



Mobility will be an essential feature for industrial strategy success

Recent polling shows a similar proportion of the population want to see business and the economy prioritized over immigration control (23%), as want to see the reverse (22%). The largest group (47%) want to see a balance between prioritising the economy and immigration controls⁴⁵. This suggests a policy of curbing immigration at the expense of the economy and business would be contrary to the majority view of the UK public in addition to being detrimental to the UK economy. An overwhelming majority would support a pragmatic position that as we leave the EU it is more important that future immigration policy and messaging supports rather than hinders business and the economy, while providing sufficient control and robust protection against misuse of the system. This supports the position that the Government should feel free to pursue immigration policies and positions that align with a modern industrial strategy, and to cease immigration policies or positions that are harmful to business and the economy in the UK.

Industrial strategy aims

Following the release of the Industrial Strategy green paper earlier this year, ten pillars underpinning the strategy were announced. Research and innovation are central to industrial strategy success, as demonstrated by the government proposing it as a core pillar in their green paper. Since then, the Business Secretary delivered a speech discussing streamlined priorities for the implementation of the Industrial Strategy, namely skills, innovation, place, physical and invisible infrastructure⁴⁶. We will briefly assess the role of migration in successfully meeting each of these priorities.

Skills

A skills shortage is a major impediment to economic growth and productivity. Failure to meet demand for engineering skills alone is estimated to cost the UK £27 billion a year from 2022⁴⁷. In its international benchmarking study, the Department for Business Innovation and Skills found that the UK's science and innovation system is hampered by weaknesses in its STEM talent base⁴⁸.

The first priority must be to ensure our education and skills system is effective in educating, training, and equipping people in the UK. Government, research funders and employers in our sector are committed to domestic skills development and will fully engage with the Government as the new Industrial Strategy seeks to address technical education in particular. Although progress is being made to fill the pipeline of new workers, including essential and widespread work on increasing the number of high-level, high quality apprenticeships, the shortage will take many years to be solved. Addressing the shortage begins at school and has a long time-lag: for those that do choose to continue in STEM, the training period for a PhD-qualified scientist or chartered engineer is around 10 years, and the acquisition of specialist and highly technical skills can take even longer. Migration in the short to medium term will be an essential part of meeting the STEM skill gap⁴⁹. And the two are linked; skilled immigrants will contribute to a longer-term up-skilling of the UK population as they pass on their skills and knowledge to school and university students, trainees, and other workers. Indeed, attracting teachers to the UK was

⁴⁵ British Future, <u>Time to get it right</u> (2017)

⁴⁶ <u>https://www.gov.uk/government/speeches/boosting-earning-power-everywhere</u>

⁴⁷ http://www.engineeringuk.com/Research/Engineering UK Report 2015/

⁴⁸ <u>https://www.gov.uk/government/publications/science-and-innovation-system-international-benchmarking</u>

⁴⁹ In the balance, the STEM human capital crunch, Social Market Foundation, 2013



one of the Department for Education's strategies for meeting teacher shortages in STEM subjects - and science teachers remain on the Shortage Occupation List.

Within the engineering sector in particular, businesses have continually struggled to recruit an appropriately skilled workforce from the UK. Reports have conservatively calculated that there will be a need for 186,000 engineers within the manufacturing industry before 2024⁵⁰. In addition, Engineering UK conducted a study that found the engineering graduate supply falls well short of demand: the publication reports a shortfall of at least 20,000 annually. The UK is highly dependent on attracting and retaining international talent from the EU and beyond to help meet this shortfall⁵¹. These shortfalls do not take into account the expected increases in demand for STEM skills that will arise from the Government's mission to promote science and engineering as a strategy to rebalance the economy. The Government also plans to invest £100 billion in infrastructure over the next five years. Projects like HS2 and Cross Rail will require specialist engineers and the world's best minds to be delivered efficiently.

Innovation

Researchers in the UK are highly mobile and the UK is a key partner for global research collaboration and as a destination for international researchers⁵². Although a direct causation cannot strictly be made, evidence shows that researchers who were internationally mobile produced higher quality research following the period of mobility⁵³. Therefore, regardless of skills shortages, immigration of skilled researchers to the UK is inheriantly necessary if the UK is to remain a world-leader in research and innovation. Inward and outward mobility support innovation and a thriving research environment.

Innovation is not only born in research institutions and companies, but is driven by SME's around the UK. A survey of small businesses has shown that companies employ EU nationals across skilled and unskilled roles, and cite that the main reason for employing EU nationals are because 'they are the best candidate for the job'. At present, 1 in 5 small businesses in the UK employ at least one EU national⁵⁴. Small business has been helped by the availability of a workforce that can be accessed without bureaucracy or vast expense. For small and fast growing organisations in particular, moving to a fully visa-based system could effectively reduce their talent pool as the costs and length of time needed to become a sponsor organisation would prevent participation. For a start up, months of delay to hiring talent could result in the business failing. And often, founders and early employees will not have a salary profile that matches current visa requirements for skilled workers. Further many would be unwilling to pay any additional one-off cost to recruit workers from the EU, such as an immigration skills charge.

For a new migration system to meet the needs of a modern Industrial Strategy, a test will be whether it works for small, fast growing innovative companies. Take for instance the tech sector where the UK is currently in a leading position. Businesses are very talent dependent and mobile, and our neighbour

⁵⁰ <u>https://www.eef.org.uk/resources-and-knowledge/research-and-intelligence/industry-reports/making-migration-work-for-manufacturers</u>

⁵¹ http://www.engineeringuk.com/media/1355/enguk-report-2017.pdf

⁵² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/651174/uk-research-base-internationalcomparison-2016.pdf

⁵³ <u>https://royalsociety.org/~/media/policy/projects/international-mobility/researcher-mobility-report-review-literature.pdf</u>

⁵⁴ <u>https://www.fsb.org.uk/docs/default-source/fsb-org-uk/a-skilful-exit---what-small-firms-want-from-brexit.pdf?sfvrsn=0</u>



countries are keen to attract businesses and founders. To maintain flexibility, visa-less options should be considered. Failing to address this could have knock on effects to the attractiveness of the UK as a place to start and grow a business. And without a thriving environment of small innovative businesses and talent it also becomes a less attractive place for larger companies to invest and locate.

Place

The UK's universities are a prominent example of how economic and social benefits can be spread across Britain by attracting investment and people. UK universities and their expenditure supported a £46.8 billion gross value added contribution to GDP. This equates to 2.6 percent of the economic activity that occurred in the UK in the same year (2014/15). They are often one of the largest employers in their town or region and attract significant inward investment to regions. The global reputation of universities in the UK continues to attract foreign students, academics and support staff, who in turn contribute to local economies.

Our universities are firmly geographically rooted and yet they operate in an international market for investment and talent, both staff and students. Ensuring the migration system works for our universities will be essential in ensuring the industrial strategy can effectively bring benefits across the UK. In 2014-15, on- and off-campus spending by international students and their visitors alone generated £25.8 billion in gross output for the UK economy. This activity contributed £13.8 billion gross value added (GVA) to UK GDP⁵⁵. Across the UK, EU students alone contribute £5.2bn through fees and wider spending while at UK universities each year and support/created around 40,700 jobs. This study also estimates the regional value of international students in terms of thousands of jobs created and millions in export earnings to the region.

There is a body of research that shows that higher concentrations of highly-skilled workers in an area is accompanied by growth in real wages for all in the local area, including in lower skilled jobs⁵⁶. The regional footprint of universities, and indeed other employers of highly skilled scientists and engineers, with their ability to attract highly skilled people into a region could be a powerful force for supporting growth in wages in the surrounding area. This should be considered as post-study options for remaining in the UK are considered in a new migration system.

Infrastructure

The complex and varied nature of infrastructure projects typify the benefits of a flexible and responsive migration system, and one that can enable companies to quickly access the skills they need. Around 265,000 skilled entrants will be required annually to meet demand for engineering enterprises through to 2024, with an annual shortfall of 20,000 engineering graduates⁵⁷. This reflects that the demand for highly skilled engineers is expected to rise in the years ahead with over 90% of businesses in engineering, science and hi-tech sectors expecting an increase in demand⁵⁸. We understand that this is particularly acute in infrastructure sectors, which are highly competitive and operate on low profit

⁵⁵ <u>http://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/briefing-economic-impact-of-international-</u> <u>students.aspx</u>

⁵⁶ Estimating the social return to higher education: evidence from longitudinal and repeated cross-sectional data. Enrico Moretti

⁵⁷ https://www.engineeringuk.com/media/1356/enguk_report_2017_synopsis.pdf

⁵⁸ The Right Combination, CBI, 2016



margins⁵⁹. While EU nationals currently account for 6% of the UK population⁶⁰, this figure is often higher amongst the engineering workforce and the challenge on leaving the EU will be to ensure our engineering capacity is not damaged. For instance, in the coming years the UK Government is making significant investment and is undertaking a number of ambitious infrastructure projects involving tunneling. However, the UK does not historically have significant engineering expertise in this area. Major projects must therefore bring in expertise from countries with world-leading experts in tunneling, such as Italy. Sometimes this will be for longer-term contracts but there is also the need for rapid, flexible access to individuals for shorter periods of time. If this is mde more difficult, productivity and project timelines will suffer. Such projects also require people who work in skilled trades. Alongside the major effort being put into developing talent within the UK, migration must continue to be a part of the solution. A similar story repeats itself for invisible infrastructure such as digital and data. The current migration system struggles to accommodate some of these types of people and types of movement.

Features of an immigration that meets the needs of science and engineering

As the UK prepares for leaving the EU we would like to ensure that the UK remains open and welcoming to researchers, innovators and specialist technicians. In the short-term, we support the recent call by the House of Commons Science and Technology Committee to exempt EU researchers already working in the UK from immigration controls⁶¹. In the long-term, companies, universities, charities and research institutes alike see the implementation of a fit for purpose immigration system as an essential pillar of securing a positive outcome for science. Along with others in the sector we have developed some broad, top-level principles and features that an immigration system would have to meet if it is to support science and innovation in the UK. We anticipate that some features are the same as those required by other major business sectors, but some are distinct because of the nature of how science and research is done.

The current system must not be extended to EEA migrants

Extending the current points-based non-EEA system would present some serious challenges to science and innovation and we hear a strong view across our membership that doing so would cause significant issues. For a future immigration system in the UK, it will be necessary to reduce bureaucracy of the system currently used to allow non-EU nationals to move to the UK. This is to ensure that EEA migrants, who can currently move freely, would not be discouraged from applying for work in the UK owing to an expensive, complex process. A less bureaucratic immigration system would also mean a future system can be effectively administered by the UK Government. Extending the current level of bureaucracy per application to include EEA nationals will not be feasible without significantly increasing the budget and workforce in the Home Office.

An immigration policy that recognises the specialist and economically-important skills of the science and engineering workforce is essential. The current system goes some way to achieving this, including through the Shortage Occupation List and the prioritisation of PhD-level roles. It is important that the

⁵⁹ National Infrastructure Delivery Plan 2016-2021, Infrastructure and Projects Authority (IPA), 2016 ⁶⁰<u>https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/data</u> <u>sets/populationoftheunitedkingdombycountryofbirthandnationality</u>

⁶¹ http://www.publications.parliament.uk/pa/cm201617/cmselect/cmsctech/502/502.pdf



principle of these concessions is upheld if the points based system is maintained. Efforts should also be taken to take a broader view of the occupations, skills and markers of demand that the system prioritises.

Salary is not always a good proxy for skill level in science and engineering, especially in the academic sectors, nor does it recognise skill specialisation, for instance of specialist technicians. We are working with others in the sector to get a clearer picture of salary and skill level across our sector to inform government policy making. However existing salary levels within Tier 2 pose serious challenges to the ability of science and engineering employers to recruit the staff that they need. Extending this across the EEA population would pose significant challenges. As highlighted by the MAC⁶², based on figures for the year ending March 2015, 30% of applicants in the Standard Occupation Code (SOC) 2119 natural and social sciences professionals n.e.c, one of the most utilised codes across the sector, would have been negatively impacted by an increase of salary levels to £30,000.

Alternative identifiers, other than salary, could include PhD level roles, Chartered Engineer status, peer review by trusted bodies. The SOC review in 2020 provides an opportunity to enable jobs or skills currently not reflected in the system to be more accurately classified in a way that would support their use for immigration purposes. This could include introducing codes that better reflect and more tightly define groups such as specialist technicians or different occupations within new and emerging industries which may currently be difficult to robustly take into account.

This would only impact the very top level of the workforce, and could easily become very complex, both for applicants and to administer. For a large portion of longer-term migration, perhaps a more simple and effective marker would be the applicant holding a job offer for a role that has, where applicable, gone through some form of resident labour market test. This is the most effective indicator of value and demand. A move towards movement of labour.

Types of people

There is broad agreement across the sector we represent that any future immigration system must support the retention, access and movement of those who lead, undertake and support research and innovation including:

- Highly skilled people e.g. researchers, engineers, academics, business founders (characteristics include PhD level roles, Chartered Engineer status)
- Specialist technicians e.g. data analysts, cell culture specialists, AI experts
- Students including undergraduate, postgraduate and PhD students
- Dependants of these individuals

Types of movement

The following types of movement are essential to research and innovation in the UK:

Long-term migration with routes to residency

• Recruitment to advertised posts - initiated by the employer *The strongest candidate is selected, irrespective of nationality*

⁶² MAC review of Tier 2 - Analysis of salary thresholds, July 2015



• Relocation of research and innovation talent to the UK - initiated by the individual e.g. named holders of research grants or recognised fellowships, investors, business founders, those with skills in short supply

Temporary migration after which the individual will leave the UK

- Short visits (up to 6 months) e.g. visit a collaborator, give a lecture, sit on an interview panel
- Temporary work (1-2 years) e.g. secondments, placements, training, co-location for collaboration, use of a UK-based facility, staff exchange, addressing an urgent research issue (e.g. disease outbreak)
- Intercompany transfers
- Formal study in approved education establishments with options for remaining in the UK

Features of the system

To support science and innovation in all its settings, a future immigration system must be fair, fast, transparent and flexible to meet the UK's skills needs and research priorities including:

- Simple and proportionate administrative principles and processes for individuals and employers
- Clear guidance on eligibility and use of the system
- Minimal bureaucracy and cost, with efficient and reliable processing of applications
- Reliable and transparent reporting of migrant numbers and characteristics
- Logical flexibility to switch between modes
- Visa-less options for shorter-term types of movement

Learning from the experience of the current non-EEA immigration

system

In 2016 CaSE published a report primarily considering the current system for non-EU migration and made recommendations for how it could be improved. Findings from this work are set out below, and the full report is found on our website⁶³ and has been submitted as additional evidence to the MAC on this inquiry.

There are elements in the current non-EEA system that are artefacts of Governments seeking to appear tough on migration that resulted in 'bearing down' on certain types of migration that most benefit the UK economy and society and that the UK population have positive views of, for instance skilled workers and their dependents, and students. For a future migration system to meet the needs of a modern industrial strategy, and indeed of the UK as a whole, it must be carefully designed in light of the evidence of what the UK economy, society and communities will most benefit from.

We recognise the willingness in recent years of the Home Office to work closely with the sector to refine and develop migration policy to ensure it is fit for purpose. This has been very welcome and resulted in tangible improvement to processes and policy. Our research published in January 2016 outlined some areas where the visa system for non-EU migration could be refined to support the academic and industry science and engineering sectors. Improvements include fast-tracking peer-reviewed applicants

⁶³ http://www.sciencecampaign.org.uk/resource/caseimmigrationreport2016.html



through Tier 1 (Exceptional Talent), abolishing the Tier 2 (General) cap, creating a new Tier 5 (Temporary Worker – Science, Research, and Academia) visa, allowing trusted sponsors to certify visitor visas for low-risk researchers, extending the international graduate job search period, improving online visa information to make it more user-friendly⁶⁴. Some of these are relevant as we look to create a new migration system that is fit for purpose.

Summary from CaSE's 2016 report:

The impact on science and engineering academia

Our call for evidence, answered by more than 80 practicing scientists and engineers in a personal capacity, plus responses from learned societies, charities, and universities, found overwhelming support for a positive view of immigration within the research community. There was no suggestion that academic scientists and engineers believe immigration is crowding out British academics.

We found widespread frustration with current policy, especially with the Government's perceived antiimmigration rhetoric. This appears to be damaging the UK's reputation and risking our status as a global hub. Inflexible visa rules, stringent requirements, and disproportionate risk-profiling were among the top complaints of restrictive policies we uncovered. While serious problems preventing academics from obtaining a visa are relatively rare, we uncovered many instances where researchers had suffered significant delays and disruptions to their work. Problems affected work, student, and visitor visas. Academic research, by its very nature, involves irregular and dynamic working arrangements. These are difficult to fit with a visa system that attempts a one-size-fits-all approach.

The impact on the science and engineering industries

Our research has found strong support within industry for immigration policies that allow science and engineering firms to recruit the skilled workers they need from outside of the UK and EEA. However, companies we spoke to emphasised that they do not recruit through the visa system if they can find the skills in the UK and EEA workforce, due to the cost and bureaucracy involved.

In contrast to academia, there appears to be a greater belief that immigration policy is already causing problems for the UK's science and engineering businesses that need to bring in workers from abroad. There was also an overwhelming belief that the Government's anti-immigration rhetoric is damaging British business. However, the experiences of individual firms using the visa system were mixed, with some reporting problems while others finding the process satisfactory.

As in academia, the science and engineering industries rely on a workforce with highly specialised skills, many of which are in short supply in the UK. But there is a much wider range of occupations required in industry than in academia, and the training routes and qualifications workers will have are much more varied. Some highly-skilled workers will not have a university degree, for example, and fewer still will have PhDs. This means they generally aren't prioritised. Many instead have vocational qualifications not so well recognised by the system. Salaries are also much more varied and not dictated by national pay scales, as is mostly the case in academia. This introduces some recruitment challenges not so prevalent in academia, but also greater flexibility to meet visa requirements.

This response from scientists and engineers, companies, charities and universities was recorded prior to the UK Government's decision to leave the EU. Since then, anti-immigration rhetoric is perceived to

⁶⁴ Immigration: keeping the UK at the heart of global science and engineering, CaSE 2016



have increased and ending free-movement will likely result in additional friction and burden on individuals and employers.

Use of the current visa system by scientists and engineers

To determine the extent to which scientists and engineers use the different visa tiers, we asked the Home Office Performance Reporting and Analysis Unit in 2015 to provide breakdowns by Standard Occupation Classification (SOC) codes⁶⁵ of all Certificates of Sponsorship used to obtain visas. These were then further analysed by CaSE. This was done as part of our 2016 report, Immigration: Keeping the UK at the heart of global science and engineering⁶⁶, which is attached alongside this submission as additional evidence. A similar analysis could be done by the MAC using updated figures, and potentially over a longer period of time to inform your work on the question of how a new migration system could support the needs of a modern industrial strategy.

For the tiers where the data is available, it is possible to say that more than 13,000 work visas were issued for scientists and engineers to come to the UK in total. Data is not collected for scientists and engineers coming from within the EU to work in the UK, as they do not require visas.

Tier 2

The majority of scientists and engineers entering the UK to work, and who require a visa, use the Tier 2 route. Scientists and engineers accounted for 11,625 (14% of the total) of all CoS used under the whole of Tier 2 in 2014/15⁶⁷. However, there is a significant difference in use of the General and the Inter-Company Transfer (ICT) routes. Scientists and engineers accounted for 8,598 General visas (21% of the total) and 3,072 ICT visas (7% of the total). There is also notable difference in use of visa routes between science and engineering, with the former accounting for 14% of General visas but only 1% of ICT visas. Conversely, engineering occupations accounted for 7% of General visas and 7% of ICT visas.

The natural and social science professionals SOC code 2119, which covers most academic research staff, was the most commonly used occupation code for the General visa route in 2014/15, with 3,557 CoS used. Higher education teaching professionals (SOC 2311) also used 1,235 CoS and was the tenth most commonly used. No other science or engineering occupations appeared in the top ten.

Looking specifically at the use of the SOL route within Tier 2 (General), four of the top ten user codes were science or engineering occupations. In total, science and engineering accounted for 1,407 visas obtained using the SOL route, 44% of the total.

The ICT route is heavily used by the information technology sectors but there is still significant use by the science and engineering sectors (figure 9). 1,510 engineers used short-term ICT visas in 2014/15 and 1,279 used long-term ICT visas. Science is a much lighter user of these visas, using only 98 short-term and 185 long-term ICT visas. This should not be taken as an indication that the route is not important to the science sectors, however, as these few users may be highly-skilled experts unable to be sourced any other way.

⁶⁵ For more information on these see: <u>http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/soc2010/index.html</u>

⁶⁶ http://www.sciencecampaign.org.uk/resource/caseimmigrationreport2016.html



Tier 5

After Tier 2, Tier 5 (Government Authorised Exchange) is the second most-used Tier route for scientists and engineers, although it is predominantly used by scientists. Scientists and engineers accounted for 1,626 (24% of the total) CoS used under Tier 5 (Government Authorised Exchange). The heaviest users of the route are Natural and social science professionals (SOC code 2119), with 1,057 CoS used with this code. This suggests that the route is very important to academics coming to work in the UK on a temporary basis. The second highest users are medical practitioners (SOC code 2211), with 507 CoS used.

Principles for a new system

Avoid arbitrary limits

The arbitrary Tier 2 (General) cap of 20,700 sends a strong negative message to global science and engineering talent and business. It also poses a direct threat to the recruitment of the skilled workers needed to support growth, with valuable workers already being turned away. For instance, in summer 2015 the Tier 2 cap was reached and 66 engineers, amongst others, were refused a Certificate of Sponsorship due to the monthly Tier 2 (General) limit⁶⁸. This figure may seem small, but it is more than double the 30 higher-level apprenticeships⁶⁹ that were completed in 2013/14⁷⁰. With such a short-supply of home-grown engineers, choking off international supply will have serious consequences. Further, as employers must demonstrate that they cannot find suitable workers in the EEA in order to use Tier 2, refusal of these visas due to the cap leaves employers with little option but to leave the position vacant or recruit someone with a skills mismatch, which harms productivity⁷¹. The wider impact of the cap existing is a communication issue even if it is not regularly being exceeded as it says to potential applicants the UK does not want highly-skilled workers to come here. It also introduces and additional layer of risk and uncertainty to applicants and employers, running contrary to the government's message that the UK is 'open for business'.

Therefore, to further Government policy of improving productivity and supporting businesses and science, the Government should reconsider the Tier 2 (General) cap. Bringing net migration down to the "tens of thousands" remains a promise in the Conservative manifesto, but in the most recent election (2017) the manifesto was silent on the Tier 2 cap⁷². However, leaving the EU presents the Government with an opportunity reassess the suitability of these and similar policies while the landscape for immigration is being considered in the round. As Government review immigration policy, across EEA and non-EEA routes, the logic, benefits and costs to the UK of arbitrarily limiting highly skilled workers should be assessed and the policy reconsidered, informed by the evidence and in line with the Government's economic policy to stimulate productivity, and indeed with public opinion which is supportive of highly skilled migrants, and scientists and engineers in particular. A new system should similarly avoid including arbitrary limits and caps that in large part are token gestures but contribute to the international perception that the UK is unwelcoming to international talent.

⁶⁸ <u>http://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2015-09-07/9220/</u>

⁶⁹ These are NQF level 4, equivalent to a Foundation Degree

⁷⁰ Social Market Foundation, Fixing a broken training system, 2015

⁷¹ http://www.oecd-ilibrary.org/economics/labour-market-mismatch-and-labour-productivity_5js1pzx1r2kb-en

⁷² The Conservative Party, Manifesto, 2015



Provide an attractive offer for dependents

Many organisations and individuals have told CaSE that restricting the right to work for dependents would be a serious obstacle in attracting top global talent, which would, in turn, affect the economy. The Permits Foundation recently surveyed Tier 2 work visa holders, including 222 working in universities and research institutes. Of the 222 academics, more than 40% said that they would definitely not have accepted their current role if their partner did not have the right to work in the UK, and a further 40% said that they would probably not⁷³. Respondents to the survey cited concern for their partners' careers and emotional wellbeing should they not be allowed to work, as well as the struggle to meet the UK's high living costs on one salary.

Highly-educated individuals tend to partner with other highly educated individuals. The Permits Foundation survey found that 37% of Tier 2 visa-holding academic's partners had a master's degree and 33% had a doctorate. As a result, almost 80% of employed partners were working in professional roles requiring a high degree of education and/or training. There is therefore a multiplier effect in attracting these couples, both of whom will be able to make a substantial contribution to the economy and knowledge-base through their skilled employment.

Targeting the dependents of workers and students is a harmful way of discouraging immigration. It would have significant personal and social impacts for the families affected, and would be a strong disincentive for scientists and engineers looking to work in the UK. This would be highly damaging to our scientific and economic success. Further, recent studies show that existing UK residents want to live in communities where they know their neighbours. Proper integration is not feasible if families are forced to separate and effectively commute between countries.

The current top-level numbers-based approach fuels and is combined with a persistent negative rhetoric in the UK towards immigrants. The Government must actively promote the UK as a place to learn, earn and contribute, and work to combat the current hostile climate towards migrants in the UK.

Conclusion

The UK's world-leading science and engineering base makes an irreplaceable contribution to our economic, social, and cultural well-being and our health. There is clear need for an immigration policy that ensures UK employers in all sectors have access to skilled STEM workers through the visa system. The knowledge, skills (including language skills), and different ways of thinking that they bring to the workplace are essential assets in academia and industry. Immigrants are also needed to fill skills shortages in the short-term, but they will contribute to a longer-term up-skilling of the UK population as they pass on their skills and knowledge to students, trainees, and other workers.

Restricting skilled migration will therefore severely impact on the academic and industry science and engineering sectors in the short, medium, and long-term. As these sectors are key components of the UK economy, central to the new industrial strategy's success and large contributors to GDP, the consequences for the UK could be significant and hugely damaging. Immigration policies that reduce these sectors' access to international talent, either intentionally or through negative international publicity, will be at odds with the Government's Industrial Strategy and wider economic policies, and will

⁷³ Permits Foundation, The impact of removing unrestricted right of dependants to work in the UK, 2015



ultimately make the Prime Minister's aim of securing a good outcome for science, and for the UK, from Brexit less likely.

We recognise that there are huge hurdles to overcome if the UK is to regain the reputation of being a welcoming and attractive destination for international talent, and significant technical challenges of creating a new immigration system that is fit for purpose and carries the confidence of the UK public. But there is an opportunity to put right those aspects of the system which are currently limiting, and to create a system that is fair, transparent, easy to operate. We will continue to work the with Government and to feed into the work of this Committee so that the is a welcoming 'go-to' destination for global talent, which will help ensure the UK can reap the benefits of a thriving science and innovation base in decades to come.