

## **Immigration and its impact on UK science and engineering**

The Campaign for Science and Engineering (CaSE) is investigating the impact of immigration on UK science and engineering, and the effect of current Government policy on the UK's ability to attract the best scientists and engineers from around the world. Our findings and policy recommendations will be published in a report by the end of the year.

This survey contains four questions to help us gather the views of the science and engineering community to inform our work. Your answers can be short or long, but the more information you provide the better. We would also be very grateful for any reports and policy calls you have already developed related to immigration, please send these to [martin@sciencecampaign.org.uk](mailto:martin@sciencecampaign.org.uk).

This project is looking at the following immigration routes; you may find it helpful to have these in mind whilst answering the questions:

- Tier 1 (Exceptional talent and entrepreneur/graduate entrepreneur routes)
- Tier 2 (Skilled workers, including Intra Company Transfers)
- Tier 4 (Students)
- Tier 5 (Temporary workers)
- EU citizens (who are allowed to travel between countries freely for work)

The deadline for responses is Friday 14th of August.

The project will culminate in a report with policy recommendations, published by the end of the year. We will also use the findings to feed into the current [Migration Advisory Committee's review of the Tier 2 visa system.](#)

More about CaSE and our immigration project: <http://bit.ly/1Mah9AH>

## SURVEY

### Page 1

#### About You

**1. Your full name (not essential)**

**2. Your email address (not essential)**

**3. Are you responding on behalf of an organisation?**

Yes

No

**4. Which sector do you/does your organisation work in?**

Academia

Industry

Professional or trade body

Government body

Other:

**5. May we contact you for further information if we need to?**

(If yes, please ensure you have provided us with your contact details above.)

Yes

No

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### Page 2

**1. What is your job title?**

Policy Assistant at the Geological Society

**2. What are the benefits and/or harms of allowing scientists and engineers from outside the UK to come here to work, collaborate, or study?**

Geology is a global profession that has created and continues to create immense wealth for the UK. The symbiosis between academia and industry is particularly effective, and involves travel and work in all countries. In addition to oil & gas and mining, the UK is the base for major international consultancy companies that employ geologists, and a very wide range of SMEs export their geological skills in the context of site investigations, engineering design, water supply and natural resources, etc. Our ability to generate the associated wealth depends on the free movement of skilled personal, whether recruited to the UK from outside or sent from the UK. Our universities

have a global reputation for postgraduate education due in part to the extensive international networks fostered here. To sustain this business requires continued freedom to recruit students without regard to immigration targets.

The skills and ideas that fuel science and engineering research and development are not restricted to national boundaries and maintaining a successful research infrastructure is a truly plural and international enterprise. There are few scientific breakthroughs or landmark engineering projects to point to that do not require extensive cross-border collaboration, working, data sharing and partnership.

Geoscience in particular is distinctive in being characterised by a high degree of idiographic research (that is, research which is specific to a particular time or place – focusing on a geological region or site or a period in Earth history, for example). As such, work across national boundaries as well as collaboration with international institutions is imperative. Geoscience-based industries, in which many geoscientists are employed, such as extraction of mineral resources and the oil and gas sector, also depend upon the free movement of skills and talent across national borders in order to understand and develop the materials and energy sources that society needs.

Science research and careers both in academia and the private sector are underpinned by the free movement of ideas, research and people. A restriction in ability to work across national boundaries will significantly impact the quality of research in the UK but also diminish the international prestige associated with science and research in the UK. The UK University and Higher Education sector is highly respected around the world and has become an attractive destination for foreign undergraduate and postgraduate students to come and carry out their studies. Many of these students and the fees they pay to study here have improved the strength and depth of the subjects available to study in the UK and underwrite many of the other activities that academic institutions can then carry out.

Additionally, as detailed in 2014's report on 'The Economic Significance of the UK Science Base', an independent report published by CaSE and funded by its members (including the Geological Society), the quality of a nation's science base is an attractor for investment by multinational R&D businesses. The UK is falling behind its international competitors in R&D intensity. International economic activity is supported by the calibre of the UK's science and research in the context of a global scientific and business environment.

Intra-company transfers are also of vital importance in geoscience-based industries. International oil companies, many of which are major employers in the UK, rely on the mobility of skilled and senior personnel, according to the needs of current projects worldwide. Anecdotal evidence indicates that current UK immigration regulations are impeding this mobility. This will make global companies more likely to move existing operations outside the UK, and to invest in new projects overseas rather than in the UK, in turn reducing employment opportunities for UK citizens, as well as harming economic competitiveness.

**3. In your experience, to what extent does current Government policy and the visa system, including how they are perceived, act as a barrier for foreign scientists and engineers wishing to work, collaborate, or study in the UK?**

## **Working in the UK**

The Society has written several submissions and responses on the impacts of current and past Government policy on migration and visa issues in our sector. Current policy affects different sectors of the workforce and student population differently.

There are many areas of the geoscience workforce where a documented skills shortage exists in the UK. These include, but are not restricted to, experienced geophysicists, hydrogeologists, engineering geologists and geochemists in the oil and gas sector as well as a more general shortage of individuals with more than 10 years experience in many work sectors. These areas were highlighted in a report commissioned by the Geological Society in 2012 to assess the 'Geoscience Skills needs of the UK Industry'. This report was used in part to inform our response to the Migration Advisory Committee Call for Evidence on the Shortage Occupation List in 2012. In the absence of suitably skilled personnel, individuals to occupy roles such as those set out above must come from beyond our national borders. Where this is the case the immigration process needs to be sufficiently simple for the free movement of important and in-demand skills to be facilitated.

However the pattern of shortages is not straightforward and the current system of holding these occupations on the shortage list for 2 years requires review. Many such occupations will need to continue to be listed on the shortage list for considerably longer than this, not least because the skills shortages experienced by industry are of those with a number of years of postgraduate experience, which cannot quickly be acquired. Some of the mitigating actions required to fill this gap with UK talent can be taken by employers but others depend on government policy. The particular need for MSc graduates in many geoscience sectors, and the length of time taken to gain fully qualified professional status, makes a cut-off period of two years especially problematic. Even if government takes action now to ensure sustained or increased supply of MSc graduates, it will take several years for the benefit to be felt in the labour market. In the absence of joined-up skills planning across government – through the DfE, BIS and delivery departments such as DECC, whose future work programmes will require many highly trained science and engineering specialists – the arbitrary removal from the SOL of occupations in which there are demonstrable shortages is a short-sighted approach which is likely to be deleterious to national economic and societal needs.

## **Studying in the UK**

### **MSc programmes**

Restrictions applying to international students in STEM can cause many problems for both MSc and PhD students as well as the universities that seek to enrol them.

Across the geosciences many of the employment opportunities are high-value jobs requiring expertise in geoscientific, engineering and other disciplines. Increasingly, a taught applied MSc is a de facto prerequisite for entry to many of these careers. These individuals are in competition for opportunities in the UK and elsewhere with their peers from around the world, and the trained workforce in many geo-industries is highly mobile. The UK has a reputation for producing world-leading geoscientists trained to postgraduate level. However, as we have noted elsewhere (including in our response to the BIS Committee's 2011 inquiry into the Future of Higher Education), the supply of graduates to UK geoscience masters programmes is under threat. A number of MSc

programmes in disciplines needed in the geoscience industries have already closed, and more may yet do so unless this asset is nurtured, jeopardising the supply of trained scientists on which UK industry depends. Global demand for such qualified personnel is high, so we cannot depend on substituting home-grown talent by importing the expertise required to sustain and grow UK industry. Furthermore, geoscientists trained to masters level in the UK, for example in mining geology, are in great demand internationally – an opportunity which will be lost if this training provision is allowed to dwindle. One of the pressures on MSc programmes – affordability to UK students – has been partially addressed by the government’s recent decision to make student loans available to those aged under 30 undertaking taught Masters degrees. This goes some way to redressing the earlier withdrawal of publicly funded MSc studentships, and is a welcome first step. However, other challenges remain, including those relating to overseas students’ access to UK Masters programmes.

Over the past few years we have heard anecdotal evidence to suggest that the pressures on student visas for international students and the increasing complexity of immigration policy is impacting on student numbers for valuable MSc programmes. This evidence is necessarily anecdotal due to the relatively small numbers of students involved, the intermittent nature of some specialist MSc programmes and other factors which affect enrolment numbers on a year-by-year basis. It can be difficult to pinpoint the reasons behind changes in course enrolment figures and what data there are may not be gathered in a uniform way. It is too soon to say what the longer term impacts of recent changes in immigration policy (and of the political messaging of that policy) on UK MSc programmes will be. But there is great concern in the university geoscience sector that real or perceived changes in immigration policy may lead to reduced numbers of overseas students, who play an important part in making MSc programmes economically sustainable, as well as constituting a valuable UK export.

Delays in visa processing may lead to students missing the start of their course. This is particularly problematic for students joining MSc programmes, where it is very difficult to catch up if the first 2-3 weeks are missed. One of our contributors noted that visa obstacles had caused two international students to arrive late, and resulted in the students ultimately never being able to catch up, and ultimately fail the course. At best, late arrivals due to visa complications lead to decrease in degree performance.

Applications from overseas students for university geoscience degree programmes, including Masters and PhD programmes, have broadly held up during a period of significant change to UKBA entry requirements. Data from some departments, however, suggest that ‘conversion rates’ from application to enrolment and through to graduation from among this pool of students have declined on many programmes over the same period. This may reflect growing concerns and uncertainty on the part of individual applicants and their agents over UKBA processes and timescales for entry. Many departments report a real drop in overseas applications from traditional markets such as Nigeria which have been hit the hardest in terms of funding and the length of time required to get a visa. It is also likely that the drop in conversion rates is caused in part by the late arrival of many overseas students because of visa issues. The quality of the programmes on offer is not in question. Indeed, the evidence points to the UK HE market being as attractive as ever but failing to capitalise on a world-leading reputation.

Many STEM subjects, and especially geosciences, involve extensive study outside the UK as part of degree programmes (e.g. fieldwork, international conferences) and also collaborative work with industry (e.g. placements). Delays and/or concerns over visas arrangements can, at best, complicate matters and, at worse, prevent participation by overseas students, especially Masters students where the study period is more limited. In the case of working in industry, especially during PhD research, students suspend registration for the duration of their work with the industrial partner. Overseas students are essentially excluded from these opportunities because if they suspend their registration they lose their visa status.

The cancellation of the Post-Study Work (PSW) visa has been highlighted by some geoscience departments as having a negative effect on students coming to UK. Those who reported such problems recognised that this is not a straightforward issue in the context of wider immigration policy, but they noted that students often undertake higher studies in order to obtain better employment, possibly in the country where they pursue higher education. Universities provide graduate schemes, but these are effective only if PSW is permitted. In the absence of PSW, students are forced to leave the country within 4 months of their completion of course, and this is not sufficient for students to find work placements or internships. As a consequence, students may choose to study in other countries where work placement opportunities are better (and where course fees may also be cheaper).

### **PhD students**

A particular problem affecting overseas PhD students is the requirement to leave the country within three months of the end of their funding period, unless they pay more fees, even if (as is common among UK/EU students) they have not finished writing up their PhD. Additionally, many students support themselves by taking part-time work often in the university. Many non-EU students' visas restrict the amount of paid work they can do, limiting their scope to support themselves. This can make living and studying in UK very hard. It is also important to recognise that being trained to teach is a crucial part of doctoral training/education, and that this may be adversely affected by visa work restrictions.

As for MSc students, there are also issues regarding placements, work experience and exchange visit opportunities. Schemes are often available for students to take time out of their PhD project to work on a related topic at overseas institutions or to undertake industry placements, which are very beneficial for subsequent employment. Students suspend their registration for these periods. Overseas students are essentially excluded from these opportunities because if they suspend their registration they lose their visa status.

### **4. What impact have the issues you have identified in questions 2 and 3 had on you and your work? If you are aware of any examples of when a scientist or engineer has been prevented or put off from coming to the UK please provide details (these can be anonymous if preferred).**

For the purpose of this survey this example has been anonymised. If CaSE wishes to follow up on the example included below then we would be happy to put you in touch with the contributor.

The example detailed below comes from a former President of the Petroleum Exploration Society of Great Britain (PESGB). This is a personal story which demonstrates how difficult it can be for non-

European students to come to the UK to learn and this is on top of our high fees (many countries do not charge course fees).

‘When I was President of PESGB we awarded a Ghanaian student 50% of the fees required to come and study at a leading University in the UK. He could not match it so I won the remainder from an oil company. Their funding was paid directly to the University. The prospective student resigned from his job and with all funding in place applied to the UK. The border agency refused a visa on the basis that although the University had funding for him the company sponsoring had not provided a specific letter saying what the money was for. We sorted this but it took a month during which time the student studied via correspondence. He reapplied and was refused again on the basis that the course had already started and he would arrive late, drop out and become an illegal immigrant! I believe this was actually written in the letter. He eventually arrived 12 months later. What a poor introduction to Britain. He was an outstanding student on the course and is now an ambassador for PESGB – but I suspect not for Britain.’

**5. What changes to immigration policy or the visa system would you like the Government to implement? Please be as specific as possible.**

The suggestions outlined below were recommended to us when we canvassed the views on this area of policy from our sector.

- Re-introduce the Post-Study Work Visa.
- Re-think travel restrictions for foreign students studying in the UK during their study period (so they can participate in placements and field trips outside the UK, an integral part of undergraduate and postgraduate courses).
- Change the sunset clause to take into consideration the time it takes to develop this skill base in the UK and the policy interventions required to effect this change.