Campaign for Science & Engineering (CaSE) response to the Home Office Consultation on the Limits on non-EU economic migration

Please contact Imran Khan on imran@sciencecampaign.org.uk or 020 7679 4995 for more information.

1. The Campaign for Science & Engineering (CaSE) is a membership organisation aiming to improve the scientific and engineering health of the UK. CaSE works to ensure that science and engineering are high on the political agenda and that through the implementation of appropriate evidence-based policies and adequate funding the UK has world-leading research and education, skilled and responsible scientists and engineers, and successful innovative business. It is funded by around 750 individual members and 80 organisations including from industries, universities, learned and professional organizations, and research charities.

2. We would like to start by making some over-arching points.

The importance of science and engineering, and therefore of scientists and engineers

3. Over 30% of the UK's GDP is produced by sectors intensive in science and engineering[1], and the sector employs over 180,000 people[2]. Many studies have shown the direct economic benefits of research and development (R&D)[3], and the UK is set to become more reliant in the knowledge economy in the future, as it continues to lose competitiveness in low- and medium-skilled industries. In 2007, foreign businesses invested £1.7bn more in R&D in the UK than UK companies spent on R&D abroad[4]. The UK has a strong background in science and engineering, being the best in the world or second only to the USA in many areas[5]. In particular, the quality of the UK's universities is seen as an important factor in attracting investment and intellect[6,7], and any reduction in the quality of those institutions could lead to the economy suffering as a result.

4. Financial entrepreneurs, investors, and elite sports people, are set to be excluded from the cap. Skilled scientists and engineers are intellectual investors and entrepreneurs – investing their knowledge and skills creatively to advance the UK. They have a vital role to play in future economic growth and in solving some of the UK's most urgent challenges, from security threats to meeting energy demands. Research in the UK depends heavily on the global marketplace to advance, in the same way as elite sport does. For instance, out of the 13 Nobel Prizes awarded to scientists from the Medical Research Council's Laboratory of Molecular Biology (MRC LMB), only five went to British researchers. Attracting and welcoming world-class researchers to the UK is essential to achieve the best possible R&D.

5. CaSE recommends that qualified and competent scientists and engineers are excluded from the cap. There are many ways in which a workable definition of those that would qualify for the

1 *Engineering: Turning ideas into reality*. IUSS Select Committee, 2009.
2 *SET Statistics*, Department for Business, Innovation, and Skills. November 2009.
3 e.g., see *R&D and Productivity Growth: Panel Data Analysis of 16 OECD Countries*, OECD Science, Technology and Industry Working Papers, 2001, and *Medical Research: What's it worth? Estimating the economic benefits from medical research in the UK*. MRC, Welcome Trust & the Academy of Medical Sciences, November 2008, and other work summarised in *Securing our Economic Future with Science & Engineering, CaSE, June 2010.*
4 ibid.
5 *How the G7 nations compare in research performance*, Times Higher Education, 10 June 2010.
6 *Government strategies to attract R&D-intensive FDI*, José Guiding, March 2008.
7 *University cuts will jeopardise Britain's economic future*. The Times (Letter signed by Dr Mike Bushnell et. al), 14th June 2010.

exemption could be achieved, for example, it could apply to researchers: on the basis of their scientific publication and citation record; if they have have achieved chartered status of the relevant professional organisation; if they have post-doctorate or equivalent educational qualifications; or if they have won competitive international funding awards and prizes. The research community is well versed in peer review for the purposes of funding and publication and a number of organisations, such as the national academies for science and engineering and various professional organisations, could work together to develop an appropriate and workable set of criteria.

6. If such an exemption is not possible, we recommend that the number of scientists and engineers required by the UK be determined separately from the total number of migrants.

Government Goals

7. The Government has asked the Home Office to achieve a decrease in net migration while continuing to attract the brightest and the best people who can help economic growth to the UK. Any limit on the immigration of non-EU scientists, technologists, engineers, and mathematicians will damage economic growth while having little impact on net migration, unless enforced at the extreme.

8. The stated reason for decreasing net migration is to reduce the unacceptable strain on public services in certain local communities. Current proposals are to limit skilled and highly-skilled non-EU migrants that would be coming to the UK with a job already, or looking for work. are not aware of any data looking at which groups of migrant (by entry category) tend to localise and put pressure on public services. Given the lack of data and the apparent unlikeliness that highly-skilled migrants would localise in communities under pressure, we question the whole rationale of the cap.

9. The Government intends to build a rebalanced economy with economic growth through developing its exports, innovative manufacturing, and making better use of its scientific excellence. It also plans to invest in key infrastructure such as transport, information communication technologies, and green energy.[8] All of these goals will be advanced through attracting and welcoming overseas scientists and engineers. Other countries have recognised the case for promoting the immigration of scientists and engineers, for example, with the EU scientific visa.[9]

10. Both the consultation and the impact assessment consider the costs to industry in terms of added bureaucracy, delays in filling positions, and the need to invest more in training. They fail to consider that industry may simply relocate overseas. The UK attracts an unusually high proportion of its investment in R&D from companies that are located overseas - 17%, or £4.4 billion, in 2007. This investment is highly mobile and likely to leave the UK if it is not straightforward for industries to employ the skilled workers they need. A key determining factor for where to site R&D infrastructure is access to skilled workers, including being able to employ talent from across the globe.[10] A CBI survey found that larger UK firms look abroad to fill their vacancies in science, technology, engineering, and mathematics.[11] Similarly, the Institute of Directors found that, in 2006, 65% of its members wanted to encourage migration for skills shortages and to widen the labour pool.[12] When an overseas company is seeking to open up new business in the UK, it will typically bring a core staff to be supplemented with local labour. If there is any question over their ability to bring workers from overseas, this could seriously limit their desire to invest in the UK.

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8 *A Strategy for Sustainable Growth, Department for Business, Innovation, and Skills.* July 2010.

9 e.g., see The impact of the points-based immigration system on researcher mobility. A joint statement prepared by the Royal Society, British Academy, Royal Academy of Engineering, Welcome Trust & Universities UK.

10 *Towards a Global Lab our Market? Globalization and the Knowledge Economy,* The Work Foundation, June 2008

11 *Education & Skills Survey,* Confederation of British Industry/Ed excel 2008

12 *Immigration - the business perspective,* Institute of Directors, January 2007.

11. There are clear relationships between migrants and bilateral trade and investment.[13] At a time when our export markets are going to be essential to economic growth, it is vital that trade is promoted. China, India and the US provide the highest number of academic immigrants to the UK and are in the top four for non-EU migrants; these countries provide vital trading partners for the UK. Indeed, in July 2010, the UK Government sent what Downing Street described as the largest UK trade delegation in living memory to India, including the Prime Minister, six cabinet ministers and business and university leaders. It would be contrary indeed to put a cap on this relationship.

The Desirability of International Partners, Employees & Experience

12. The consultation makes no recognition of the myriad of benefits that the UK gains from its international workforce.[14] With sufficient funding and will, it may be possible, over many years, to train up the UK workforce and eliminate the skills shortages currently alleviated by immigrant workers. However, it will never be possible to train up British workers to bring the benefits inherent to international immigrants: a diverse range of perspectives, access to and knowledge of different markets, and a network of connections for international collaboration.[15,16] Such collaborations underlie the success of the UK research base from 2002-07, nearly 40% of the UK's scientific output involved such international collaborations and such publications have a higher citation rate than papers by only UK authors.[17]

13. Various US research demonstrates the important contribution that immigrants have made, evident in their receipt of Nobel prizes, election to the National Academy of Sciences and patent citations. More than half of the high-tech firms founded in Silicon Valley had at least one immigrant founder.[18] Recent estimates suggest that a 10% increase in the number of foreign graduate students in the US (holding the total number constant) would raise patent applications by 4.5%, university patent grants by 6.8% and non-university patent grants by 5.0%.[19]

14. Fortunately, the UK has a good reputation and is a desirable destination enabling us to gain from the best of world-class researchers and as a collaborator of choice. This reputation may be damaged if the UK does not welcome international scientists and engineers or appear to value their skills and expertise. Even a very liberal cap could have such an impact on our reputation and affect the quality of applicants.

15. Appendix C notes the importance of allowing Intra Company Transfers so that the UK is able to gain from reciprocal arrangements when negotiating agreements for such access for UK businesses overseas. Exactly the same argument applies to internationally collaborative research projects - it will become increasingly difficult for UK researchers to collaborate overseas and gain skills and experience if their overseas counterparts are not welcomed in the UK.

Number Crunching

16. Net migration was 163,000 in 2008 and the Government's goal is to reduce this to tens of thousands – presumably no more than 90,000, thus seeing at least 73,000 applicants refused entry to the UK (assuming applications stay constant). The Home Office impact assessment

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13 E.g., see Jansen, P, & Martinique, R. (2009). *Temporary Migration and Bilateral Trade Flows.* The World Economy Volume 32, Issue 5, p 735–753.

14 I*nternational Excellence: Valuing International Scientists and Engineers*, CaSE Opinion Forum: November 2008

15 *The Difference Dividend. Why immigration is vital to innovation.* NESTA, January 2008

16 *Knowledge Nomads, Memos*, 2008.

17 *Performance of the UK Research Base, Evidence Ltd* for BIS, 2009.

18 Discussed in *The Difference Dividend: Why immigration is vital to innovation*, Provocation, NESTA, 2008.

19 *Contribution of International Graduate Students to US Innovation*, Fisichella, G., Masks, K. E., & Tattoo, A. (2008). Review of International Economics 16, no. 3

estimates that 39,000 visas eligible for the cap were issued in 2009-2010 in Tier 1 and 57,000 in Tier 2 (or 24,000 if ICTs are excluded). The actual numbers denied access will vary depending on the level of the limit – with the impact assessment looking at 10%, 50%, and 90%. Even a 90% cap on Tiers 1 and 2 would generate a fall of only 57,800 applicants (including ICT), but would undoubtedly have devastating consequences on UK universities, the research base, industry and other sectors.

17. In fact, in 2008, an estimated 66,000 non-EU migrants entered the UK for work-related reasons, while 74,000 left, so there is already an outflow in this group.[20] If there is a significant decline in the number of visas issued to incoming workers, but no decline in the number of workers leaving, the UK will start to experience a serious brain drain.

18. Furthermore, there has already been a decline in migration of skilled and highly skilled workers. This is likely to be partly due to the recession, as well as the introduction of the points based visa system in not only turning down applications but discouraging applicants in the first place. 6,685 Tier 1 highly skilled workers visas were issued in the first quarter of 2010, down 44% (or 5,179) compared to the equivalent visas and period in 2009. The number of Tier 2 Skilled Workers visas issued was 16,915, in the first quarter of 2010, up 6% (or 995) from the equivalent visas and period in 2009.[21]

19. Given declining numbers of migrants over Tiers 1 & 2 and that there is actually a net outflow of non-EU economic migrants, it is odd to target these areas to counter-act net inflows in other areas. This is particularly true given that they will include the brightest and the best skilled workers – those that the Government has said it wants to attract. If the inflow of skilled workers is limited, this will shift the balance of skilled to general migrants – meaning that the pressure on public services that concerns the Government will be less compensated for by the beneficial economic activity of skilled migrants.

Question 1
Do respondents agree that operating a pool for highly skilled migrants will be the fairest and most effective approach?

20. As stated in paragraph 5, we recommend that a method is found to exclude qualified and competent scientists and engineers from the cap of highly skilled migrants because of the particular role they play in economic growth and advancing the prosperity of the UK.

21. In general terms, pool system seems to be favourable for Tier 1 to secure the most excellent candidates, but would be worryingly slow, with applicants having to wait for up to six months before even knowing if they can formally apply. We strongly recommend that shorter cycles are used.

22. It is not clear what the fee for entering the pool would be and how it is costed or justified. The pool would not be fair or effective if you are only allowed to enter into it for six months; we would suggest at least 15 months to allow for variation in the nature and number of applicants over the course of a year, and particularly so that academics can apply for positions at the same point in two successive academic years.

Question 2
Do respondents agree that operating a first come first served system for skilled migrants available to individual sponsor employers will be the fairest and most effective approach?

23. As stated in paragraph 5, we recommend that an exemption is applied for qualified and competent scientists and engineers. For others, a first come first served system seems more

20 *Hansard*, HC Deb, 28 June 2010, c450W
21 Migration Statistics 2008, Annual Report, Office of National Statistics

favourable, leading to fewer delays.

Question 3
Do respondents believe that where a quarterly quota is filled applications that have not yet been considered should be rolled over to the following release or not?

24. Yes, absolutely, and if a quota has not been filled then that should automatically lead to a lowering of the level of points required for entry to make sure that the entry requirements are not too stringent and that the UK is able to welcome enough migrants in any given period.

Question 4
Should we consider raising the minimum criteria for qualification under Tier 1 of the points–based system?

25. The points system is already problematic for scientists and engineers in academia or the public sector who do not always secure a salary reflective of their skills and specialism, or of their economic and social gain to the country. If the exemption recommended in paragraph 5 is not introduced, then the points required should be lowered or readjusted to reward the knowledge and experience these skilled workers can bring.

26. The points system recently lowered the amount awarded for a PhD. This is illogical and should be reversed. Post-docs are highly-skilled and often at a level of specialisation that it is hard for employers to find without drawing upon the global talent pool.

27. Similarly, the rapid decline in points awarded with age creates difficulties for highly-skilled migrants. For example, a graduate engineer usually requires some five years' experience post-graduation before achieving full Chartered registration.

Question 5
Should we provide for additional points to be scored for: higher level English language ability; skilled dependants; UK experience; shortage skills; health insurance?
Are there any other factors that should be recognised through the points system?

28. The Government has asked that the UK immigration system continue to attract the brightest and the best people who can help economic growth. It is on this merit that they should be judged. An employer hiring an individual from abroad may have already decided that the technical skills are more important than language skills.

29. Because of their recipient's role in driving economic growth, additional points should be awarded for science, engineering, mathematics and technology qualifications (and any others in key strategic sectors). The need to improve skills in these areas has been recognised in higher education through their status as strategic subjects and their prioritisation in the allocation of student places. It makes sense for them to be reflected here.

Question 6
Do respondents agree that Tier 1 (Investors) and Tier 1 (Entrepreneurs) should not be included within the annual limit?

30. Yes, and scientists, technologists, engineers and mathematicians should also not be included given their provision of the intellectual capital and creativity that can drive economic growth (see paragraphs 4 and 5). This could be done in a number of ways; for instance, using recognised 'chartered' status, or consulting with national academies of science and engineering to establish a reliable benchmark for respected researchers.

Question 7
How do respondents believe that the UK could make itself more attractive to

investors and entrepreneurs who have the most to offer in terms of driving economic growth?

31. By easing the restrictions on immigration so that those who wish to invest in new or growing sectors, or to start up new businesses, are not restricted in who they can employ. Access to skilled workers is cited by industry as an important factor when deciding where to invest[22].

Question 8
Do respondents agree that the Intra–Company Transfer route should be included within annual limits?

32. Appendix C notes the argument that the UK has a strong interest in ensuring that other countries provide access to the personnel of UK businesses in branches overseas. It is stated that the UK's ability to negotiate agreements for such access would be undermined if ICT numbers are limited – we agree with this analysis. Any limits on ICT would also be likely to drive down foreign direct investment in the UK.

We therefore suggest that ICT should be excluded from the cap but also that any limits to Tier 2 applications are set at a high level to ensure that employers who operate solely in the UK, including SMEs and universities, are not at a disadvantage.

Question 9
Do respondents agree that dependants should be accounted towards the limit?

33. No. Because applicants bring a variable number of dependants and this number is documented to fluctuate over time, the ability to admit a defined number of skilled workers into the country will only be possible if dependants are not included. It is extremely hard to see how caps could operate independently on applicants and dependants It is particularly worth noting that if a quota system were to operate with employers given a certain amount of visas to cover employees and their dependants, this would be likely to bias them against employing candidates with families. The Government has asked that the UK immigration system continue to attract the brightest and the best people who can help economic growth. It is on this merit that applicants should be judged.

Question 10
Do respondents believe that the Shortage Occupation and Resident Labour Market Test routes should be merged in this way? What would be the advantages and disadvantages of doing so? Over what timescale might this change be implemented? What consideration should be given to advertising requirements?

34. These routes fill different needs and should not be merged. Indeed, the need to advertise in Job Centre plus as part of the Resident Labour Market Test is an expensive and bureaucratic waste of time for recruiting in many highly-specialised areas of science and engineering and should be eliminated.

Question 11
Do respondents believe that there is merit in extending sponsor responsibilities in these ways?

35. It is appropriate for all businesses and sponsors to play their part to improve training and skills, however, their ability to do so is often limited by their size, resources and location, and of course economic pressures, and should not determine their ability to employ overseas workers.

36. The suggestion that employers could provide health insurance does not make sense if workers are contributing to national insurance, and it also raises complicated questions about whether

22 *Education & Skills Survey,* Confederation of British Industry/Ed excel 2008

employers would or should provide such advantages to all employees.

Question 12
Do respondents believe that there is merit in raising the English language requirement for Tier 2? If so to what level?

37. No. English language levels are already sufficient and raising this demand could mean that much more skilled candidates are turned away as well as affecting foreign investment in the UK. example, high-tech Japanese companies will often bring a core staff to the UK. As the Manager of Epson Telford stated; "It is almost impossible for us to find a staff who has both the rare skills and language capability." Imposing additional language demands upon those already in place could severely compromise continued investment in the UK by current and prospective inward investors.[23]

Question 13
If a supply of migrant workers is no longer readily available, what action will you take to train and source labour from the domestic market?

38. Case is a small campaign organisation so this question is not applicable. However, CaSE represents many industrial members and there is a real risk that rather than train or source local labour, companies will relocate the specialised areas of their work, often R&D and high-tech manufacturing, overseas.

39. We recognise that at the same time as welcoming all that immigrants can offer, the UK must improve its own training of scientists and engineers. As mentioned earlier, this training is advanced by UK nationals spending time abroad, participating in international "brain circulation" to the benefit of all involved. If the UK does not have an open policy welcoming overseas scientists and engineers, this will likely diminish the welcome that our own nationals receive when trying to improve their skills and networking by working overseas.

40. CaSE also represents many universities and they depend on international recruitment to employ the best researchers and lecturers. In 2007/08, non-EU nationals made up 10.5% of all academic staff, including 22% of engineering staff, 15% of mathematics and computer science staff, and 13% of physical scientists.[24] If universities cannot recruit the necessarily skilled lecturers, this will affect the teaching quality for undergraduates, and thus the ability of UK employers to recruit well trained graduates. It is also likely that a higher proportion of graduates in the UK may be from overseas as universities seek to supplement falling public sector investment with foreign fee income.

41. However committed an employer may be to improve training in response to shortages there is an inevitable time lag before the right skills are available. In many cases research and technical skills are so specialised that it is literally impossible to employ someone from the UK with the right skill set so there is no-one available to train-up other workers without looking overseas. For instance, an automotive manufacturer notes that they bring in their Japanese staff to teach skills to UK-based staff, because "Japanese expatriates bring critical expertise, particularly in relation to Japanese machinery and tools... The technical staff have the knowledge to support tool localisation programmes which would be almost impossible to achieve without this valued support. Their skills are so rare, for example, the mould technicians are able to detect 1 micron difference in accuracy on surface of the mould and judge if the mould is good enough."[25]

23 Source: the Institute of Chemical Engineers
24 Data from Universities UK
25 DENSO Manufacturing UK Limited, Source: the Institute of Chemical Engineers