

Response summary for CAETS 2016 Council Discussion – Diversity and Inclusion

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The engineering profession worldwide faces a widely acknowledged skills shortage that presents a challenge to companies of all sizes and to academia. The shortage is evident at multiple levels within engineering, from students taking appropriate education pathways through recruitment and retention of suitably skilled staff to progression of staff to the highest levels of responsibility in the profession. In addition to challenges in attracting the required numbers to engineering as a career, there is justified pressure to broaden the appeal of the profession to those from more diverse backgrounds than engineering's traditional demographic profile.

Industry, professional bodies and governments are taking their own actions to address this challenge and the approaches are inevitably influenced by the particular nuances of population, societal attitudes and workforce profiles that exist in different geographic areas. For example, in the UK the engineering workforce is 92% male and 94% white. The Royal Academy of Engineering has led a government-funded programme since 2011 that works collaboratively with industry and with the professional engineering institutions in a leadership role to tackle underrepresentation across the profession. As part of delivering this programme we have also had to take a critical look at ourselves as an Academy, to see if we can improve the diversity within our fellowship.

Women form the most underrepresented group within engineering by sheer number in many regions and indeed initiatives to tackle gender equality in the profession have existed around the world for several decades. However, there is growing recognition that diversity characteristics beyond gender should be given comparable weight. This may include consideration of factors such as ethnicity, disability, socioeconomic disadvantage, age and sexual orientation, some of which present particular cultural challenges in parts of the world and some of which have widely differing societal norms from one country to another.

This paper provides a summary of the responses received from 8 Academies in answer to the questions posed about diversity action in their own geographic spheres.

CONTEXT

1. The term 'diversity' does not have a universal definition. It can have very different meanings dependent on geographical and societal context. What does the term 'diversity' mean to you:
  - a. As a country/geographic area?

Gender is the predominant characteristic that is universally associated with the term 'diversity' in most of the areas which responded. Beyond that, various consideration is also given to ethnicity, disability, social background, sexual orientation, cultural or geographic heritage and religion. In some geographic areas these characteristics are protected by

legislation whereas in others the social responsibility towards fairness, freedom and dignity have equal or greater bearing.

b. As an Academy?

For most respondents the term 'diversity' equates to gender, ethnicity, age and professional sector or background. For several Academies, the focus is limited to gender but there is also emerging indication that those Academies that have been engaged in diversity activities for a longer period have a broader definition of their professional remit. This is reflected in their active seeking of variety of participation to inject diversity of thought in panels, committees and membership.

2. What societal groups or characteristics are regarded as underrepresented in engineering for the country or geographic area that you represent?

Again, consensus emerges that women are underrepresented in virtually all geographic areas which responded. However, in over half of the returns there are other groups that are highlighted specifically: young people; those from non-native origins; LGBTQ; particular ethnic minorities that varying according to region; physically disabled people and those from lower socio-economic backgrounds.

This range of views perhaps gives a sense of societal perceptions that impact on numbers choosing paths into engineering, levels of skills shortage exhibited by engineering in different parts of the world and the extent to which diversity data collection enables underrepresented groups to be quantified in a reliable way.

#### DRIVERS FOR ACTION

3. What are the imperatives for action on diversity that exist in your geographic area:
  - a. Legislative drivers?

There is considerable variation in the response to this question. Legislation in some areas is either relatively recent or is limited to a very specific group of section of workforce. For example, equality of opportunity and discrimination prevention for women is common but less so for other societal groups. Legislative drivers can differ between public and private enterprises. Experience also shows that legislation that protects from discrimination does not necessarily or directly lead to greater diversity. In the UK, for example, the Equality Act 2010 provides legal protection against discrimination for multiple societal groups and permits, but does not require, positive action to encourage groups that can be shown to be persistently underrepresented.

- b. Corporate social responsibility drivers?

Two predominant areas emerge for CSR action: firstly, encouraging and

supporting women to reach executive levels and Boards within organisations; secondly, engagement with students (often female, ethnic minority and socially disadvantaged) whilst in education to encourage them to consider engineering and to provide support for them to access the profession. A disparity of effort is also clear, with CSR activity weighted towards companies that have the will and resources to invest, rather than being compelled to act by government in their area. This results in uneven investment in all its senses.

c. Societal drivers?

Changing societal demographics are one of the compelling drivers, where specific drivers were expressed. The other strong driver is the push, perhaps more from within the profession rather than outside, to break to mould of 'traditional, male-dominated club'. In terms of demographics, increasing ethnic diversity in the general population of some traditionally white areas is bringing sharp focus to the need to attract a wider demographic into engineering. Societal pressure to provide equality of opportunity, particularly to those from disadvantaged backgrounds, is also building in some areas.

4. Which of these would you say is the most important?

The majority view is that it is not possible to choose between these drivers, rather a multifaceted approach must be taken that combines them all and engenders collaborative working between primary/secondary/tertiary educators, parents, media, industry/employers and government. The importance of diversity in enabling greater innovation and creativity is also increasingly recognised within some Academies and within industry. Leveraging that benefit is seen as an increasingly important driver in its own right.

5. How important is taking action on diversity for your organisation?

For the vast majority of Academies that submitted a response, action on diversity is seen as having vital importance for the organisation. In many cases this is underpinned by the prevailing skills shortages faced by the engineering sector in various national economies. For some, the need to ensure a good balance between business and academic representation in their membership requires ongoing positive action. This is in addition to the more common action on encouraging and supporting female engineers and other underrepresented groups in the membership or Fellowship populations and wider profession. The positive action taken, such as proactive search to enrich the nomination pool for potential Fellows, is successfully leading to an increase in diversity in annual new Fellows whilst maintaining the selection standards that are required to achieve such accolades.

For some Academies, taking action on diversity is seen as a key strategic priority and is reflected in the organisational-level planning and reporting



as a result. This is in part because the Academies are seen as sources of expertise, guidance, role models and exemplars by the profession they serve.

6. What is your role as an organisation in action on diversity? Is this role formal or informal?

In the main the role taken by Academies is an informal one. Taking action on diversity, internally and externally, is seen as a key issue to maintaining credibility with the engineering profession in the sphere of operation of each organisation.

A small number of Academies have funded activities or programmes to stimulate diversity action in specific areas. Examples of these span the school education, university and employment phases.

The UK's Royal Academy of Engineering is unusual in that it has a formal role, funded by the UK Government, to take action on diversity across the engineering profession. This external-facing programme, now in its 6th year, engages with a wide number of employers and with all the professional engineering institutions and Engineering Council in the UK. For this reason, action on diversity and inclusion within the UK Academy and externally is vital for maintaining a credible leadership role in this space.

7. Do you think there is a case for greater diversity within your Academy?

In the main the answer is yes, although there are differences of opinion as to what constitutes greater diversity, largely reflecting the differences highlighted in questions 1 and 2. Gender, ethnicity and socio-economic background are the prevalent responses, with significant importance also placed on professional sector/domain/company size diversity too.

a. If so, have you carried out any activities to encourage a more diverse fellowship?

Examples of proactive search to enrich the Fellowship nomination pool were offered, along with regular reporting of Fellowship nomination and election representation measures to Academy Board level.

A small number of Academies have engaged in active discussion internally in order to promote awareness of the need to take action on diversity in relation to Fellowship. In addition, in Canada an initiative is being supported which commits to a goal of raising the percentage of newly licensed engineers who are female to 30% by 2030.

In the UK, a programme of training has just been delivered to all staff, to Fellows who serve on committees and to our Trustee Board, to raise awareness of unconscious bias in particular and to build confidence in considering how diversity and inclusion action can be built into the work of

the Academy across all areas of its operation.

b. Do you plan to carry out any activities in this area in the future? If so, please explain.

The examples raised in 7a) apply to this answer too.

#### STRATEGY AND SHARING

8. Are there any particular areas relating to action on diversity where you would benefit from knowledge sharing opportunities between academies:

- a. To help you with progressing on specific issues?
- b. To offer you a route to share learning and progress that you feel you have made?

Sharing learning is welcomed in the areas of:

- i. Proactive enrichment of membership/Fellowship pools
- ii. Data collection and data sharing on diversity within Academy populations
- iii. How to encourage participation by women and other underrepresented groups
- iv. Types of programmes employed to encourage diverse student populations at university and their effectiveness
- v. Policy design to support increased diversity

The Royal Academy of Engineering has also developed a diversity and inclusion progression framework for professional bodies, in conjunction with the UK's Science Council. The framework is being piloted during August and September 2016 and will be available for any professional body to use. It presents actions that could and should be considered to progress diversity and inclusion action in eight areas of activity relevant to professional bodies.

9. In your view, what collaborative role could the academies represented at CAETS take to make progress on diversity as an international community?

Suggestions include:

- i. Establishing a common balanced scorecard with key metrics for success to evaluate progress on diversity, with corresponding obligation to report by all members of CAETS
- ii. Strategic collaboration on diversification programmes
- iii. Facilitating working group/knowledge sharing opportunities with hands-on practitioners
- iv. Convening a women members of academies meeting at CAETS
- v. Sharing information and networking
- vi. Supporting the 2017 Gender Summit in Canada