



ROYAL
ACADEMY OF
ENGINEERING



Diversity and Inclusion Progression Framework

Professional Engineering Institutions

Benchmarking Report 2017



Report authors

Edited by the Royal Academy of Engineering.

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Foreword

I am delighted that the Royal Academy of Engineering has partnered with the Science Council to develop a unique Progression Framework to increase diversity and inclusion across engineering and science. The framework has subsequently been used to deliver a benchmarking exercise, the results of which are presented in this report.

We have been working to increase diversity and inclusion across our profession for several years – initially with a focus on increasing the representation of women. However, as evidence of the importance of inclusion increases, we need to extend this focus to the inclusion of all groups for the benefit of both individual engineers and the profession as a whole. There is now irrefutable evidence that diversity and inclusion support productivity, motivation, company bottom line, innovation and creativity. Our own research, informed by feedback from 7,000 engineers, reinforces this. Launched in September 2017, *Creating cultures where all engineers thrive* found that inclusion benefits the performance of individual engineers with 80% reporting increased motivation, 68% increased performance and 52% increased commitment to their organisation.

It also enhances organisational performance in that the more included engineers feel, the more likely they are to understand business priorities, be confident about speaking up on improvements, mistakes or safety concerns, and see a future for themselves in engineering.

This report highlights that the professional engineering community is making good progress in several areas including setting goals, building strategy and plans, integrating diversity and inclusion into communications and raising awareness of unconscious bias. However, there is more we can do to identify and formalise success measures, integrate diversity and inclusion into our core functions and activities, and extend the scope of our work beyond gender.

The professional engineering community has a key role to play in ensuring that the UK can benefit from what many are hailing as the Fourth Industrial Revolution.

It is in all our interests that we continue to drive progress on diversity and inclusion to support UK productivity, innovation and creativity, and I look forward to working with colleagues across the engineering and science communities to deliver further positive change in the years ahead.

Dr Hayaatun Sillem

Chief Executive, Royal Academy of Engineering



Section 1: Executive summary

This report presents the key findings of the 2017 *Diversity and Inclusion Progression Framework* benchmarking exercise for professional engineering institutions (PEIs). It provides a baseline against which to measure future progress and gives insight into current good practice, challenges to progress, priorities and recommendations to drive change.

The framework was launched in late 2016 by the Royal Academy of Engineering and the Science Council. It assesses progress on diversity and inclusion (D&I) in eight areas of work against four progressive levels of good practice outlined in Appendix 2.

Further details, including descriptions and examples of each of the good practice levels, can be found at www.raeng.org.uk/publications/other/diversity-progression-framework

Twenty PEIs and 21 scientific bodies participated in this benchmarking exercise. Six of the PEIs are also scientific bodies.

1 PEI membership and workforce

- ▶ The PEIs that participated have over 600,000 members between them.
- ▶ On average, women make up 13% of PEI membership.
- ▶ Just over one-third of PEIs could provide data on the ethnicity of their membership.
- ▶ 43% of PEIs that provided data on the ethnicity of membership have less than 10% black, Asian and minority ethnic (BAME) members.
- ▶ Nine PEIs have more than 30% women on their boards. Four have no ethnic diversity on their boards.
- ▶ There is considerable variation in the size of the PEI workforce: six PEIs employ fewer than 10 people, and five employ more than 500 people.

2 Self-assessment overview

The table below presents the median self-assessment scores for all organisations that participated in the 2017 benchmarking exercise and for PEIs and scientific bodies separately.

Participants were asked to self-assess their performance across the eight areas in the table below using the following four levels of good practice.

The four levels of good practice are:

- ▶ **Level 1:** Initiating
- ▶ **Level 2:** Developing
- ▶ **Level 3:** Engaging
- ▶ **Level 4:** Evolving

	Median self-assessment level for all participating organisations	Median self-assessment level for PEIs ¹	Median self-assessment level for scientific bodies ²
1.1 Governance and leadership	2	2	2
1.2 Membership and professional registration	2	2	2
1.3 Meetings, conferences and events	2	2	2
1.4 Education and training, accreditation and examinations	1	1	1
1.5 Prizes, awards and grants	1	1	1
1.6 Communications, marketing, outreach and engagement	2	2	2
1.7 Employment	2	2	2
1.8 Monitoring and measuring	2	2	2

FIGURE 1: Median self-assessment scores across engineering and science professional bodies

- ▶ PEIs self-assessed their performance to be strongest in governance and leadership (section 1.1), with 16 organisations assessing themselves at **levels 2** and **3**. Fifteen organisations self-assessed at **levels 2** and **3** in communications, marketing, outreach and engagement (section 1.6) and 14 in employment (section 1.7)
- ▶ PEIs assessed their performance to be weakest in education and training, accreditation and examinations (section 1.4) with 14 assessing themselves at **level 1** in this section. Ten assessed themselves to be at **level 1** on prizes, awards and grants (section 1.5). However, this is also the one category in which one PEI self-assessed at **level 4**.

3 Good practice, areas for development and challenges

Eight broad areas of good practice were highlighted in the reporting to PEIs that participated in the benchmarking exercise. These good practices were demonstrated by some but not all participating PEIs:



FIGURE 2: Good practices demonstrated across participating PEIs

1 All PEI participants including those in joint Academy/Science Council membership
2 All scientific body participants including those in joint Academy/Science Council membership

The feedback also identified five areas for development. Some of these are also areas of good practice. For example, several PEIs shared examples of good practice in leading from the top (see **Figure 3**), but there is more that many PEIs want and need to do to increase the diversity of PEI leadership and leadership engagement on D&I.



FIGURE 3: Areas for development across PEIs

The PEIs reported five main challenges ahead. These challenges represent risks to progress on D&I in the future:



FIGURE 4: Challenges to PEI progress on D&I

4 Recommendations

The 2017 Progression Framework benchmarking exercise resulted in seven recommendations: six of these are targeted at PEIs and one is a recommendation specifically for the Royal Academy of Engineering.

To make progress on D&I, PEIs are recommended to:

1. PEIs should act to address D&I in Education and training, accreditation and exams; and in Prizes awards and grants because both (particularly the former) are fundamental professional body activities.
2. make it a priority to gather and track monitoring data on D&I
3. clarify the bigger picture (overall objectives and purpose of the work on D&I) to facilitate prioritisation, action planning and efficient use of limited resources
4. take an inclusive approach to developing action plans on D&I, engaging stakeholders from PEI leadership, workforce and membership
5. prioritise action on D&I at board level, focusing on increasing demographic diversity and building the leadership behaviours necessary to lead on D&I.
6. Broaden the scope of work to include action on aspects of diversity other than gender (particularly ethnicity) and inclusion more generally.

It is recommended that the Royal Academy of Engineering:

7. considers how it can offer support for PEIs to move forward on D&I, starting with the areas for development, priorities and challenges that many PEIs have in common, which are identified in this report.



Section 2: Introduction

This report presents the key findings of the 2017 *Diversity and Inclusion Progression Framework* benchmarking exercise for PEIs.

The Progression Framework was launched in late 2016 by the Royal Academy of Engineering and the Science Council. Further information about the development of the Progression Framework and the background to the benchmarking exercise is provided in **Appendix 1**.

Participants in the 2017 benchmark have already received a confidential report containing specific feedback on the performance of their own organisation.

This report presents the key findings from the benchmarking exercise for all participating PEIs, including those that are also members of the Science Council. The report includes sector-specific benchmarking results, good practices, areas for development, priorities, challenges and recommendations for future action. It also includes early feedback from 2017 participants on their experience of completing the framework and the report.

Two other reports provide additional information on engineering and scientific body findings. One compares key findings from the benchmarking exercise for PEIs with those for scientific bodies, and another provides findings from the benchmarking exercise for scientific bodies. The report on scientific body findings can be obtained from the Science Council and the report that compares PEIs findings with those from scientific bodies can be obtained from the Royal Academy of Engineering and Science Council webpages.

Section 3: Diversity in PEI leadership and employment

3.1 Overview of participants by sector

Thirty-five organisations took part in the 2017 Progression Framework benchmarking exercise.

By sector, participating organisations comprised:

- ▶ Twenty PEIs from a possible 35, including joint members (57% of eligible organisations).
- ▶ Twenty-one scientific bodies (Science Council members) from a possible 41, including joint members (51% of eligible organisations).

Six organisations are a PEI and a Science Council member (joint members).

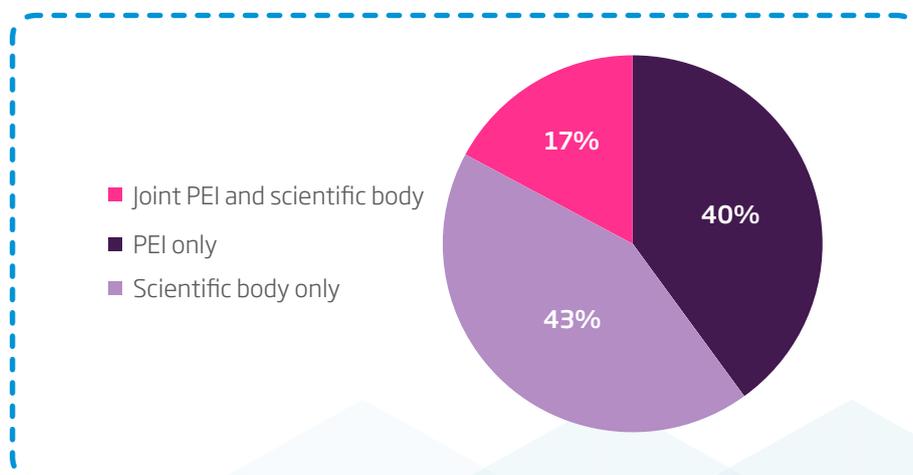


FIGURE 5: Participants in the 2017 benchmarking exercise by sector

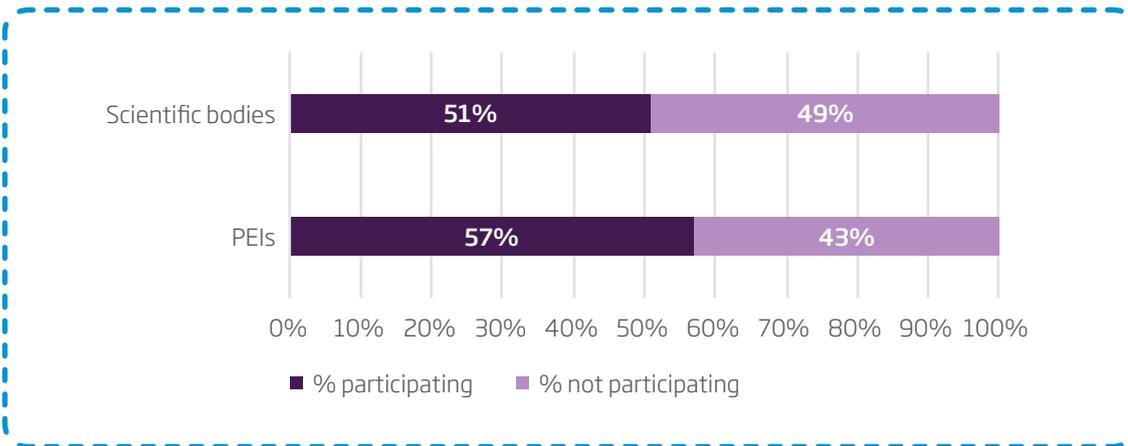


FIGURE 6: Participation rates in the 2017 benchmarking exercise by sector

3.2 PEI board diversity

Gender on PEI boards

All but one PEI provided data on the representation of women on their boards. Nine PEIs have more than 30% women on their boards.

All but two PEIs provided data on the percentage of board committees chaired by women. Women chair more than 30% of board committees in six PEIs.

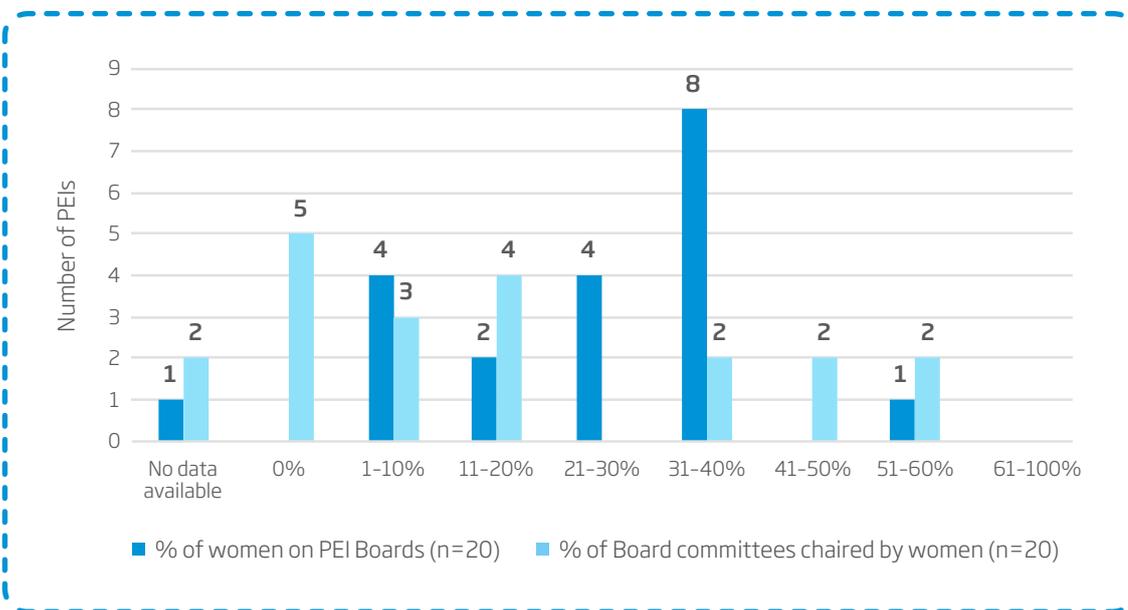


FIGURE 7: Women on PEI boards

Ethnicity on PEI Boards

Fewer PEIs provided data on ethnicity at board level than on gender. Fifteen PEIs provided data on the representation of BAME people on their boards. Four PEIs have no BAME people at board level, and five have 11% or more BAME board members.

However, only two PEIs have 11% or more of their board committees chaired by BAME people.

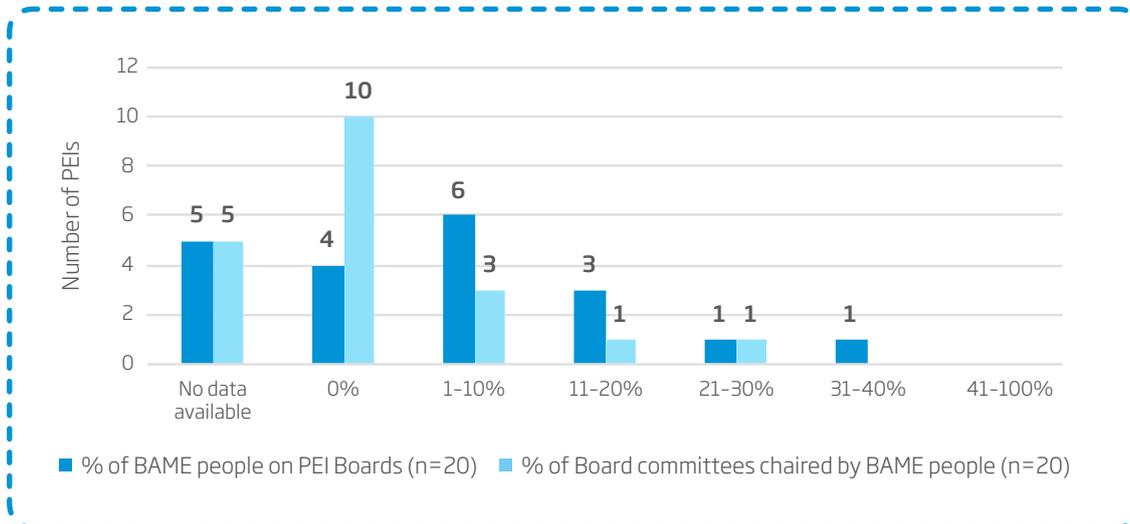


FIGURE 8: BAME people on PEI boards

3.3 Diversity in employment

Overview

All PEIs provided data on the number of employees. There is considerable variation in the size of the PEI workforce: six PEIs employ fewer than 10 people and five employ more than 500 people.

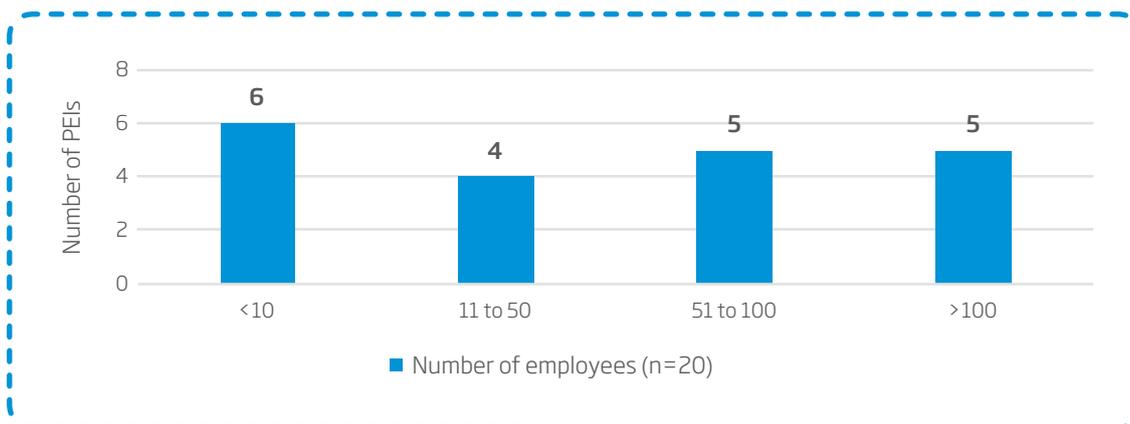


FIGURE 9: Number of people employed in PEIs

Note: UK data only is shown where UK and international staffing data was provided

Gender diversity in employment

All PEIs provided data on the representation of women in the workforce. Eighteen PEIs have a workforce that is more than 50% female.

However, the representation of women decreases with seniority. Only five PEIs have a senior leadership that is more than 50% female.

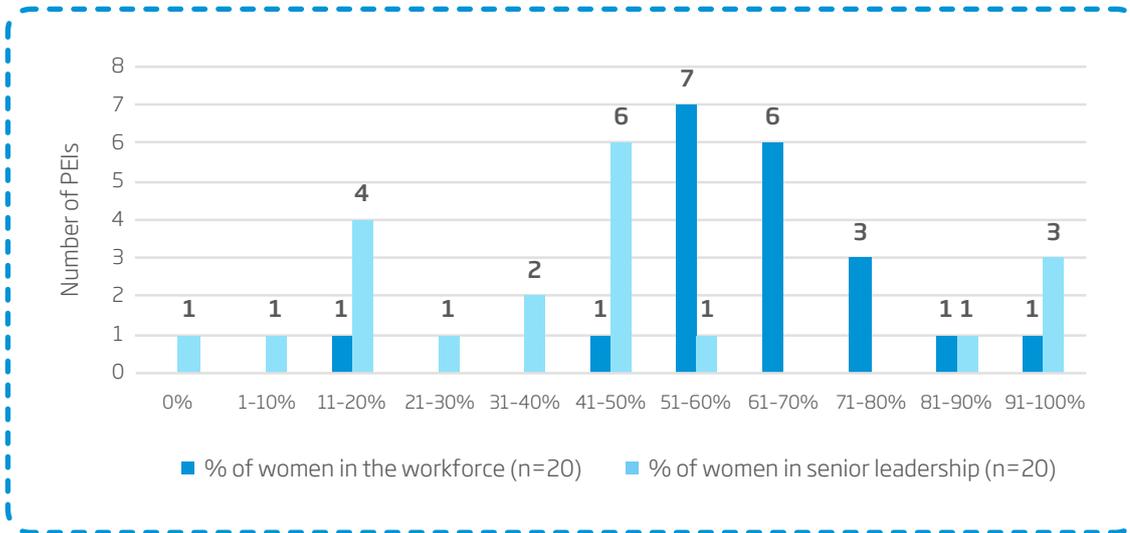


FIGURE 10: Women in PEI workforce

Ethnic diversity in employment

PEIs were less likely to provide data on ethnicity than on gender in employment. Seventeen PEIs provided data on BAME people in the workforce. However, more PEIs provided data on ethnicity in senior leadership than in the workforce overall.

Four PEIs have no BAME employees, and 11 PEIs have more than 11% BAME people in the workforce. However, 12 PEIs have no BAME people in senior leadership.

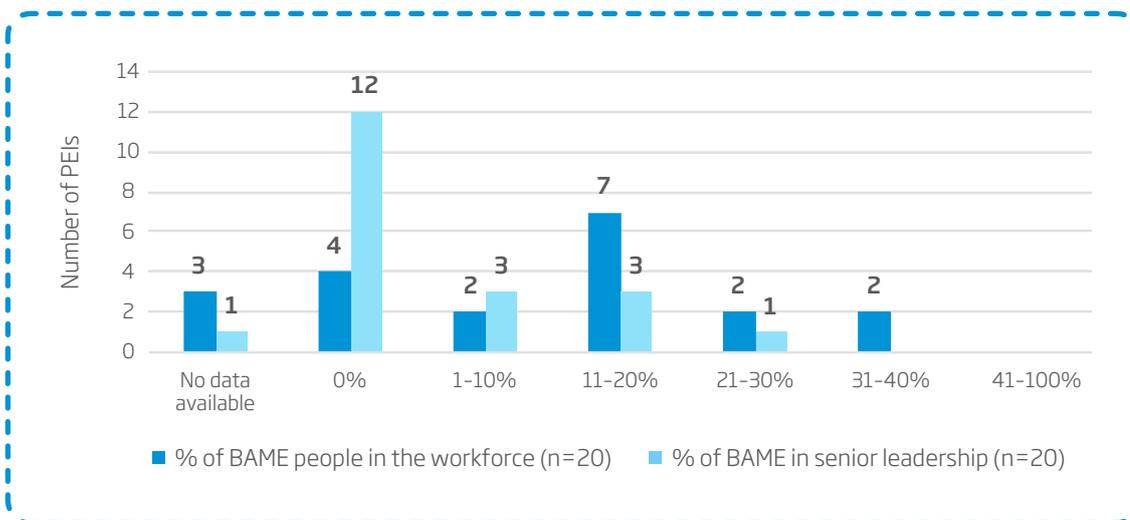


FIGURE 11: BAME people in PEI workforce

Disability in employment

Sixteen PEIs provided data on disability in the workforce; six of these reported no employees with disabilities. Only four PEIs have any senior leaders with disabilities. Ten PEIs provided some information on reasonable adjustments, with the number of reasonable adjustments in the past year ranging from 0 to 25. Examples included adjustments relating to flexible working, deafness, mobility access and dietary requirements.

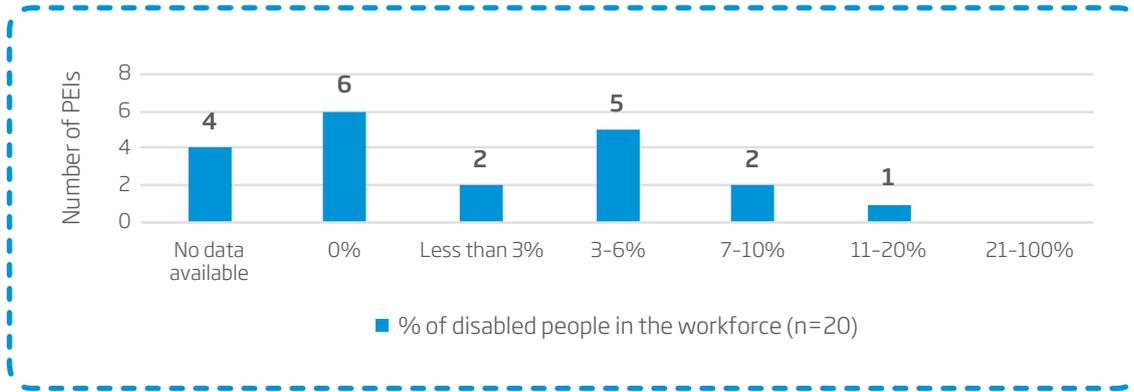


FIGURE 12: Disabled people in PEI workforce

Section 4: Diversity in PEI membership

The PEIs that took part in the benchmarking exercise have over 600,000 members between, giving them significant influence over the careers of hundreds of thousands of engineers in the UK.

Nineteen PEIs provided data on the size of their membership, or equivalent. Seven PEIs have fewer than 5,000 members, and five have more than 25,000 members.

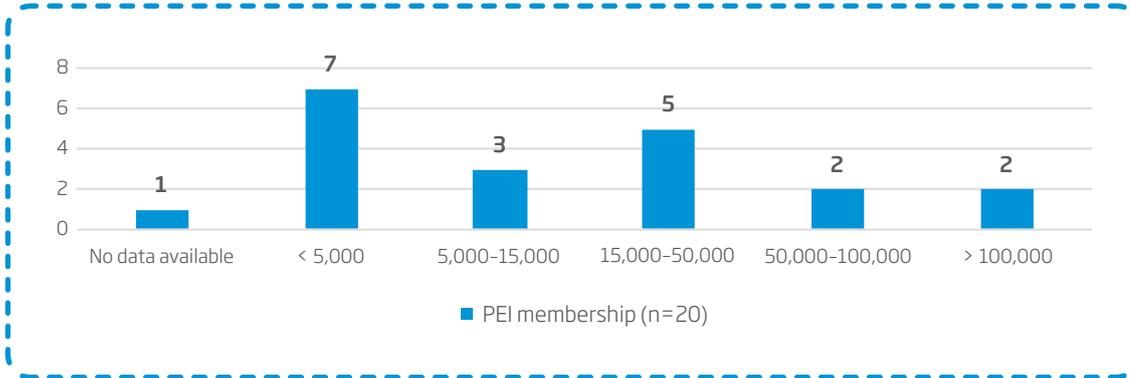


FIGURE 13: PEI membership numbers

Gender diversity in PEI membership

Nineteen PEIs provided data on gender in membership: eight have less than 10% women in membership and 11 have 11% or more. As a comparison, on average, women comprise 13% of PEI membership compared with 5.2% of the professional engineering register. However, women have made up an average 10.4% of new registrants between 2015-2017 indicating an upward trend. In addition, according to Women in Science and Engineering (WISE), in 2017, women made up 11% of those in engineering professional occupations.³

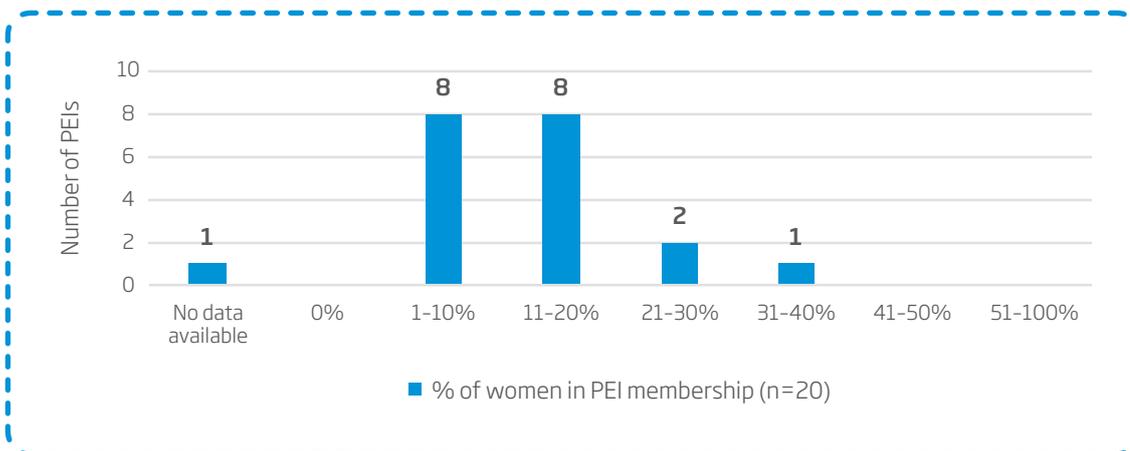


FIGURE 14: Women in PEI membership

³ <https://www.wisecampaign.org.uk/resources/2017/10/women-in-stem-workforce-2017>

Ethnic diversity in PEI membership

PEIs are less likely to provide data on ethnicity in membership than on gender. Only seven PEIs could provide this data. Of these, almost half (three PEIs) have less than 10% BAME members. According to the Association for Black and Minority Ethnic Engineers (AfBE-UK), 7% of UK engineers are from a black or minority ethnic background.⁴ Data on BAME people in professional registration is not gathered at present.

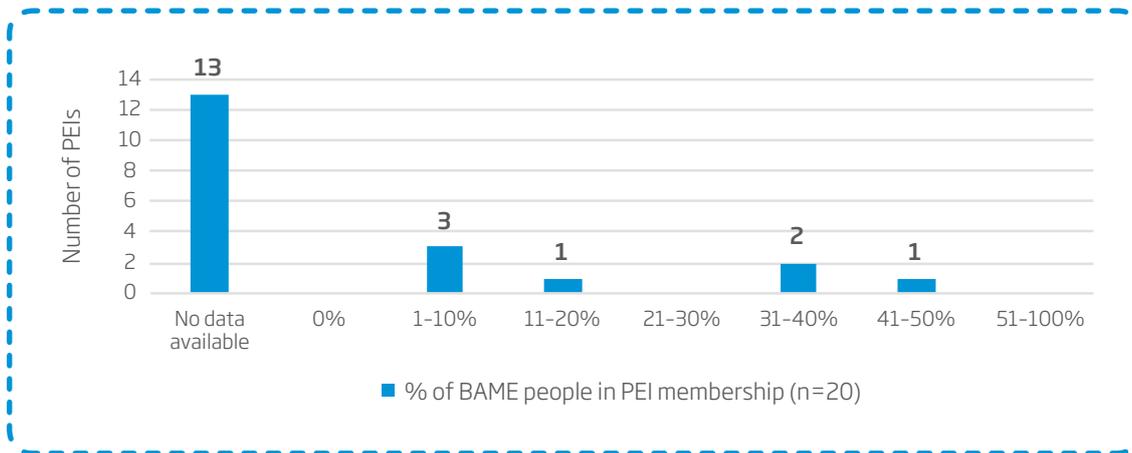


FIGURE 15: BAME people in PEI membership

Disability in PEI membership

Many PEIs have no data on the representation of disabled people in membership. Only six PEIs provided any data on disability.

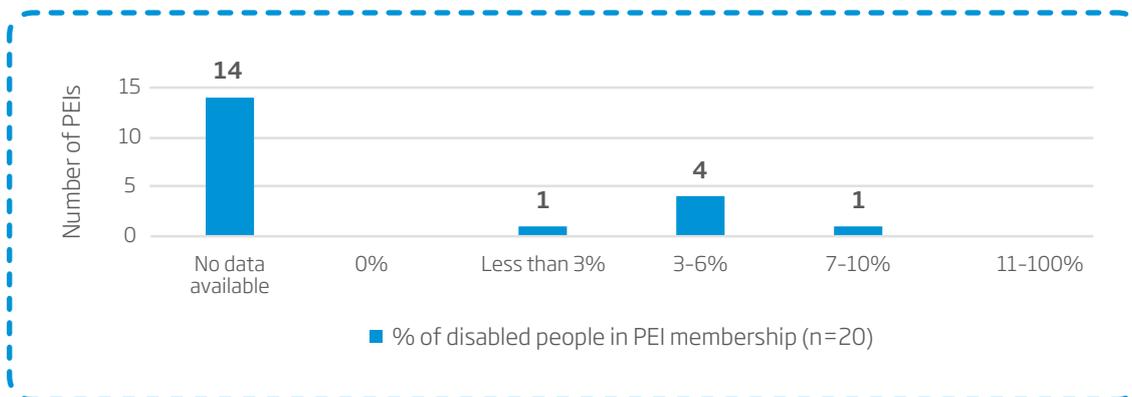


FIGURE 16: Disabled people in PEI membership

Age and PEI membership

Fourteen PEIs provided data on the age of their members, which ranged from teenagers to over 90 years for both women and men.

Diversity in prizes, awards and grants

Between them, PEIs awarded over 600 prizes, awards and grants in the past 12 months. Thirteen PEIs keep data by gender and only seven keep data on ethnicity. Nine PEIs gave more than 11% of prizes, awards and grants to women. Only four PEIs recorded that they gave prizes, awards or grants to BAME people, of which two gave more than 30% of prizes, awards and grants to BAME people.

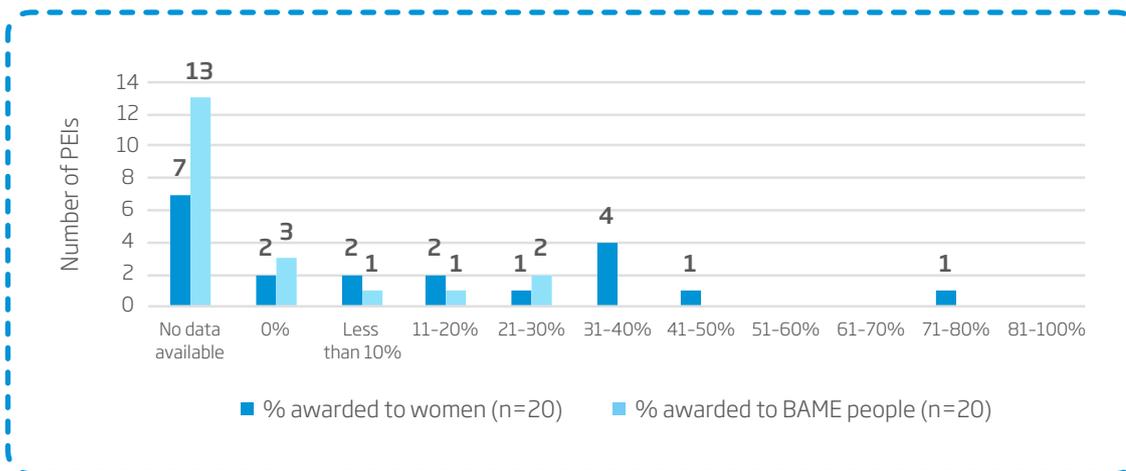


FIGURE 17: Prizes, awards and grants by gender and ethnicity

Section 5: Progression Framework results for PEIs, by section

5.1 Overview

When completing the framework for the 2017 benchmarking exercise, participants were asked to self-assess their progress in each of the eight categories, by allocating a score on a simple Excel spreadsheet as follows: score one where progress is self-assessed to be at level 1; score two where progress is self-assessed to be at level 2 and so on. The highest score is four, where progress is self-assessed to be at level 4. Participants were invited to score zero if they were unable to record any activity at levels 1 to 4.

Participating PEIs were asked to assess themselves against eight areas of work in the table below using the following four levels of good practice:

- ▶ **Level 1:** Initiating
- ▶ **Level 2:** Developing
- ▶ **Level 3:** Engaging
- ▶ **Level 4:** Evolving

Further detail including descriptions and examples of each of the good practice levels can be found at www.raeng.org.uk/publications/other/diversity-progression-framework

	Median self-assessment level for all participating organisations	Median self-assessment level for PEIs ⁵	Median self-assessment level for scientific bodies ⁶
1.1 Governance and leadership	2	2	2
1.2 Membership and professional registration	2	2	2
1.3 Meetings, conferences and events	2	2	2
1.4 Education and training, accreditation and examinations	1	1	1
1.5 Prizes, awards and grants	1	1	1
1.6 Communications, marketing, outreach and engagement	2	2	2
1.7 Employment	2	2	2
1.8 Monitoring and measuring	2	2	2

Overall there is no difference in the self-assessment of PEIs and scientific bodies in terms of progression on D&I. In six of the framework's eight categories, participants across both sectors assessed their progress as **level 2 (developing)**. In two of the eight categories, participants assessed their progress as **level 1 (initiating)**.

⁵ All PEI participants including those in joint Academy/Science Council membership

⁶ All scientific body participants including those in joint Academy/Science Council membership

5.2 Section results for PEIs

Figures 17 to 24 present more detailed findings on the self-assessment of PEIs, for each of the eight sections of the framework. Each graph shows the distribution of self-assessment scores by participating PEIs. See the separate report that can be obtained from the Royal Academy of Engineering website for a comparison of key findings for PEIs with those for scientific bodies.

The key messages from the self-assessment are:

- ▶ PEIs self-assessed their performance to be strongest in governance and leadership (section 1.1), with 16 organisations assessing themselves at levels 2 and 3. Fifteen organisations self-assessed at levels 2 and 3 in communications, marketing, outreach and engagement (section 1.6) and 14 in employment (section 1.7)
- ▶ PEIs assessed their performance to be weakest in education and training, accreditation and examinations (section 1.4), with 14 assessing themselves at level 1 in this section. Ten assessed themselves to be at level 1 on prizes, awards and grants (section 1.5). However, this is also the one category in which a PEI self-assessed at level 4.

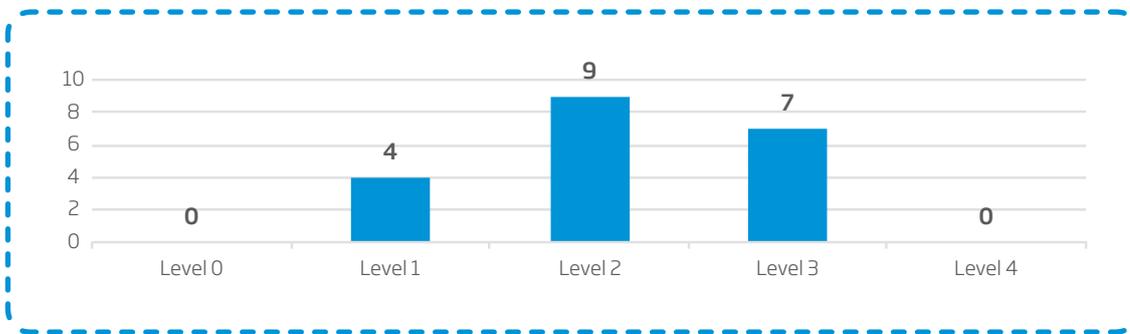


FIGURE 18: PEI self-assessment on section 1.1: governance and leadership

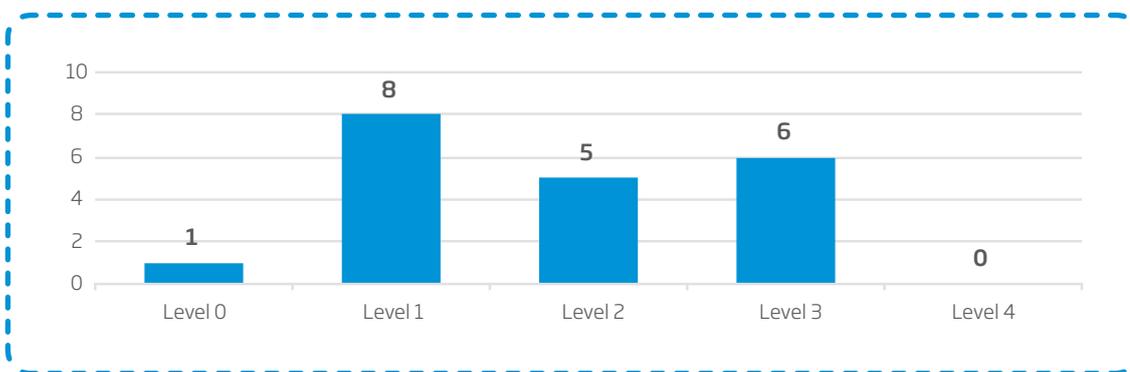


FIGURE 19: PEI self-assessment on section 1.2: membership and professional registration

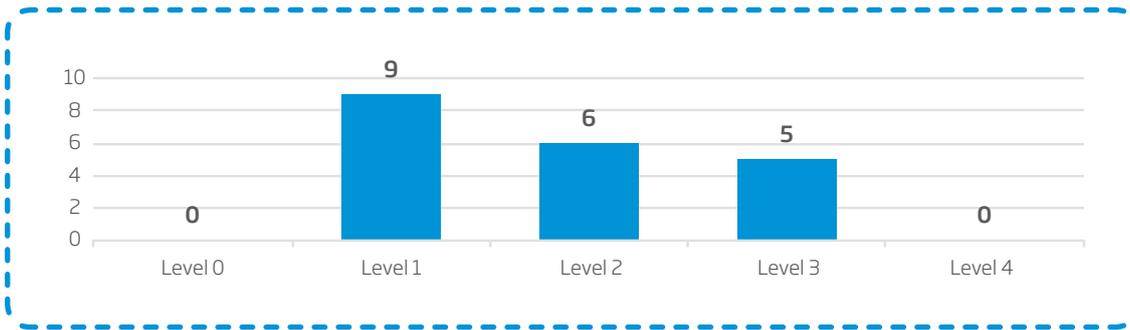


FIGURE 20: PEI self-assessment on section 1.3: meetings, conferences and events

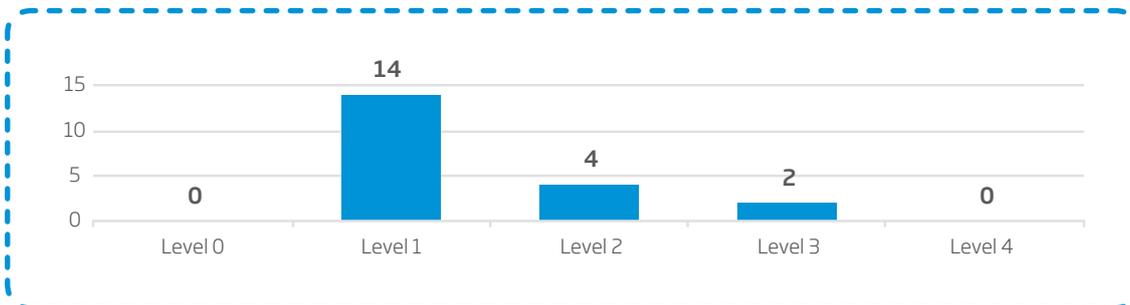


FIGURE 21: PEI self-assessment on section 1.4: education and training, accreditation and examinations

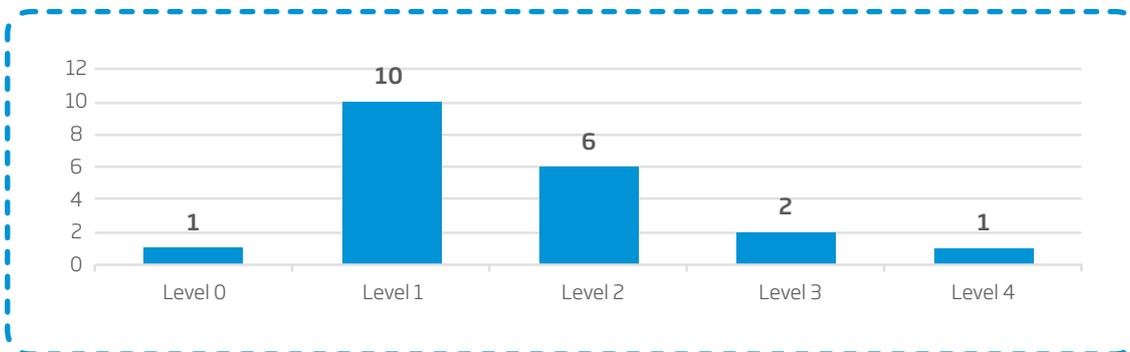


FIGURE 22: PEI self-assessment on section 1.5: prizes, awards and grants

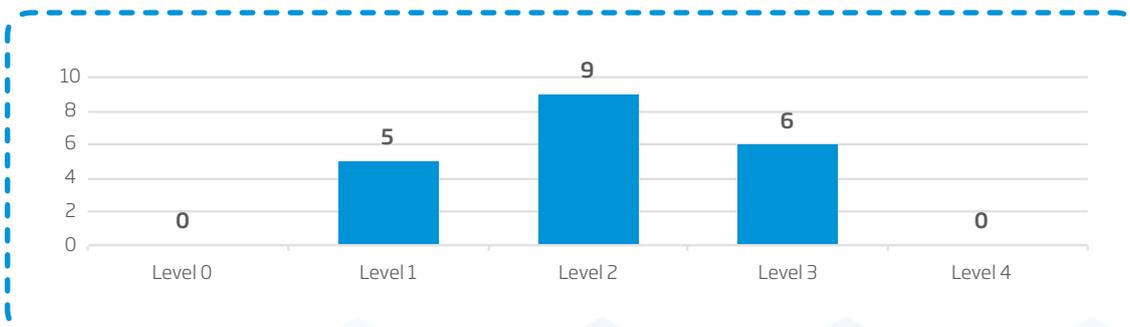


FIGURE 23: PEI self-assessment on section 1.6: communications, marketing, outreach and engagement

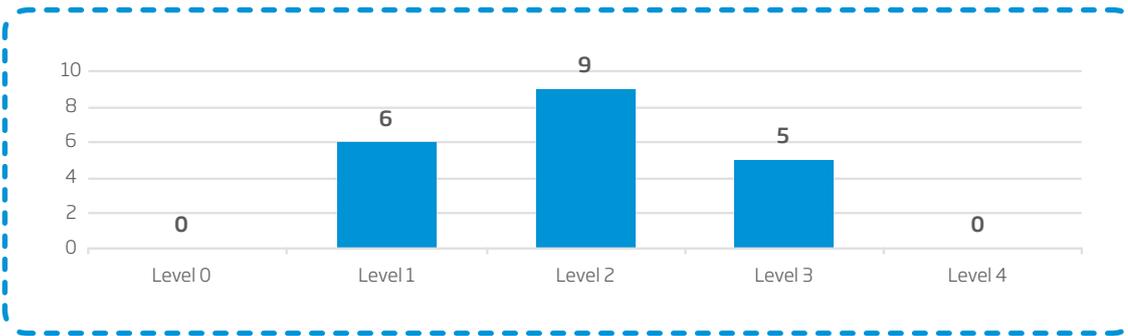


FIGURE 24: PEI self-assessment on section 1.7: employment

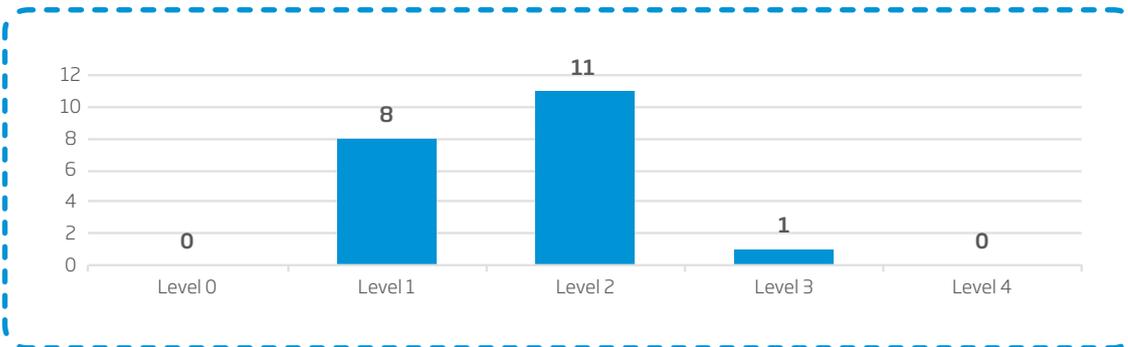


FIGURE 25: PEI self-assessment on section 1.8: monitoring and measuring

Section 6: Good practices and areas for development

6.1 Good practices

In addition to their self-assessment in the eight sections of the framework, most PEIs shared written feedback on the actions they are taking to progress D&I in employment and membership. Eight areas of good practice from the benchmarking submissions were identified as strengths in the feedback to individual organisations.



FIGURE 26: Areas of good practice

Good practice 1: Leading D&I from the top

Example:

- ▶ Clear senior level engagement on D&I, with a D&I working group that has an advisory reporting line direct into the [Science] Council, a strategic plan that contains explicit aims and deliverables on D&I, and visibly engaged board members and trustees including the president.
- ▶ An 'inclusivity panel' to advise and support the board in the development of the organisation's approach on D&I. The panel includes two board members (a former president and a current vice-president) to give it real senior level endorsement.
- ▶ Acting to increase transparency in board election and appointments processes.

Good practice 2: Setting goals and building a strategy and action plan

Example:

- ▶ The integration of D&I into the organisation's strategic plan, and its core values and behaviours.
- ▶ A clear infrastructure for making progress on D&I, with an action plan, senior level oversight, clear responsibility and reporting lines, targets, data gathering and assessment, and integration into the day-to-day roles and responsibilities of a range of stakeholders.

Good practice 3: Increasing diversity in membership

Example:

- ▶ Integrating D&I targets into the workplan for the membership and skills strategy board, and taking practical steps to increase access, such as reviewing membership criteria.
- ▶ A survey by the equality, diversity and inclusion (EDI) working group of the UK membership body has benchmarked the membership against other sectors in terms of social mobility, and started a conversation on access to work experience placements.

Good practice 4: Engaging with members and other stakeholders to inform approach on D&I

Example:

- ▶ Developing mechanisms for engaging with/consulting key stakeholders on D&I. These include a diversity champion, an internal EDI working group and an EDI working group for members.
- ▶ Conducting a membership diversity survey to canvas members for their views.

Good practice 5: Integrating D&I into communications

Example:

- ▶ Providing unconscious bias training for staff who are responsible for communications. Working to increase the awareness of regional volunteers, for example, by providing regular webinars for regional communications officers.
- ▶ High-profile and impactful communications and marketing campaigns to both raise awareness of the low numbers of women in the profession and inspire action to address this.

Good practice 6: Raising decision-makers' awareness about the impact of unconscious bias

Example:

- ▶ Unconscious bias training for accreditation assessors.
- ▶ Providing D&I training for all those involved in the assessment process (advisors, assessors, interviewers) on all aspects of D&I.

Good practice 7: Integrating D&I into how prizes are awarded

Example:

- ▶ Comprehensive review of awards and prizes led to the introduction of new medals recognising women, and a review of processes to seek out nominations from underrepresented groups.

Good practice 8: Creating a more inclusive working culture

Example:

- ▶ Visible evidence of flexible working in practice among staff, including at the most senior levels.

6.2 What are PEIs proud of?

PEIs were also asked to record the D&I actions that they were most proud of. Examples were recorded across most aspects of the framework, including:

- ▶ “Our D&I policy was authorised and published in 2017.”
- ▶ “We have a very active young engineers’ network that does a lot to ensure that younger engineers are included and involved in the wider activities of the institution.”
- ▶ “The area that we have made good progress on is governance, where the board of trustees and council now strongly support the D&I agenda and consider diversity as part of succession planning.”
- ▶ “Currently, we have a female president - the first female president. The senior management team (staff executive) is the most diverse in our history. Greater D&I is explicitly embedded in our vision and strategic plan for the first time.”
- ▶ “[We have received] positive feedback on unconscious bias training and requests from members to use the training with their companies including overseas.”
- ▶ “Our gender diversity campaigns use real members to represent diversity in our marketing campaigns.”
- ▶ “[We have] explicit reference to D&I in overall strategic aims. [We are] putting in place D&I training. All committees are tasked with reporting on D&I annually to the trustee board.”
- ▶ “Our efforts to be 100% flexible working are rewarded with hardworking staff and very few examples of similar working practices among our peers.”
- ▶ “Much of our diversity work has been driven by our members who volunteer their time to host events and conduct research in the EDI space. Having this grassroots group gives us a natural line of communication into the membership body and is an important means of understanding the state of EDI in the sector.”
- ▶ “The visible engagement we now have with diversity issues, [such as] external body reports and campaigns via our website, has raised the profile of these to members and enabled some members to feel able to come to us for the first time and feel supported.”

6.3 Areas for development

The individual feedback from each organisation identified several 'areas for development', where individual performance could be improved for the future. Five key areas for development emerge from the frameworks completed by the 20 participating PEIs:



FIGURE 27: Areas for development

1 Increasing leadership diversity and engagement

PEIs self-assessed their performance most positively on leadership and governance. However, as the data in this report indicates, there is a need for action to increase the gender and ethnic diversity of PEI boards. Many PEIs need to do more to secure the support and active engagement of people in leadership and management roles, including 'persuading all stakeholders that this is an area of activity that it is worth committing time and resources to'.

2 Identifying and formalising objectives, success measures and action plans

Many PEIs that are taking action on D&I describe their approach as 'informal', ad-hoc or reactive, lacking explicit objectives, commitments or action plans.

3 Integrating D&I into core PEI functions and activities

Most PEIs could do more to embed D&I into their day-to-day functions and activities, such as those relating to communications, marketing, education, training, accreditation, examinations, meetings and events. Integrating D&I means making it a core component of all activities, not only where the subject matter relates to D&I. Where D&I are not integrated, there is a much greater risk of being overlooked in day-to-day work.

4 Monitoring and measuring

Monitoring and measuring commonly appeared as an area for development in benchmarking reports back to PEIs. While most PEIs monitor data on gender, far fewer monitor ethnicity, particularly in membership, which makes it difficult to properly understand the current position, identify barriers or take targeted action in response. The development areas here include: how to create a compelling case for gathering data; what data to gather (a number had questions about international members, and the impact of General Data Protection Regulation (GDPR)); and in practical terms, how to go about measurement and monitoring (what tools or approaches to use).

5 Extending the scope of work beyond gender, to other aspects of D&I

Gender is currently the focus of PEI diversity work. Several PEIs identified themselves that extending the scope of diversity work beyond gender is one of the areas in which they now need to act. Ethnicity is a clear priority here, as are other aspects of diversity and the creation of inclusive cultures more generally.



Section 7: Next steps: priorities and challenges ahead

7.1 Priorities and plans on D&I

In completing the Progression Framework, PEIs were asked about their plans and priorities on D&I for the coming 12 months. There were many common responses, with six clear priorities shared across the membership:

1. Data gathering and reporting
2. Leadership and governance
3. Action planning and formalisation of approach
4. D&I in membership
5. Awareness raising and behaviour change
6. Extending the scope of diversity work

The following show how respondents described these priorities for the coming 12 months.

Priority 1: Data gathering and reporting

- ▶ “Developing GDPR – compliant processes and surveys.”
- ▶ “To start to collect statistics ... include diversity in our KPIs and set targets for change, to think more about the socioeconomic [factor] and disability in relation to our KPIs as well.”

Priority 2: Leadership and governance

- ▶ “A rise in the number of female and BAME panel/committee chairs and members.”
- ▶ “Making a lot of very small changes in the behaviour and mindset of people in the governance, leadership and management structure.”

Priority 3: Action planning and formalisation of the approach

- ▶ “The new inclusivity panel aim to use the benchmarking exercise to develop a plan for inclusion later this year. The plan will be implemented in 2018 and monitored regularly to measure progress.”
- ▶ “Start to write the ambitions and guidance documents that will formalise what we already do. We will also start our action plan.”

Priority 4: D&I in membership

- ▶ “We are aiming to embed existing and new policies and checklists across our volunteer members in local sections.”
- ▶ “Evaluate the full membership survey including all diversity characteristics, so we have a fuller picture of [areas, such as] ethnicity, sexuality and socioeconomic background of our members. Assessing the potential to support role model networks [such as] LGBT+ members or ethnic minority members.”

Priority 5: Awareness raising and behaviour change

- ▶ “Changing the internal culture of the organisation, raising awareness of EDI and building broad support.”
- ▶ “Roll out unconscious bias training to reviewers and regions.”

Priority 6: Extending the scope of D&I work

- ▶ “Create and launch a ‘returners programme’.”
- ▶ “Conduct a comprehensive accessibility assessment of our building.”

Other priorities for PEIs include: events (“we are aiming to check that all our events are available to all”); education, training and examinations (“focus on improving our education, training, accreditation and examinations level of the framework”); awards (“review of guidance and assessment panels for awards”); and communications and marketing (“collection of new data and improving communications around positive stories”).

7.2 Challenges ahead

PEIs were also asked about what they see as their biggest challenges on D&I. These represent major risks to PEIs being able to successfully implement the priorities described above. Some of the challenges are internal to PEIs, relating to them as employers and institutions, while others are challenges based in the organisations and individuals that PEIs seek to influence. Five major challenges were identified:



FIGURE 28: Challenges to progress

Risk 1: Lack of data

Half of PEIs identified challenges relating to data gathering as one of the main barriers to progress. The challenges include:

- ▶ Securing the senior level support and practical resources needed for data gathering.
- ▶ Concerns about how to request and record data.
- ▶ Incomplete/poor quality data on aspects of diversity other than gender.
- ▶ Concerns over the interpretation and use of data.

Risk 2: Internal resourcing

Eleven PEIs mentioned that allocating time and resources to D&I was a major barrier to progress. Many PEIs have small staff numbers so the challenge of resourcing is a real one – and likely to be more so where D&I are approached as an ‘add on’ to existing work.

Risk 3: Current demographics

Participants identified the current demographics of the engineering profession as a major risk to future progress. With white male engineers dominating the profession and the pipeline into the industry, PEIs do not see demographic change happening any time soon. Eight PEIs included this among their main challenges, with comments such as, “... because the industry is predominantly male/white/British ... change will take a long time to filter through because of the starting demographic in our industry”.

Risk 4: Organisational and professional culture

A fourth challenge identified by PEIs is the culture and values of the profession and its members, which can sometimes act as barrier to progress on D&I. Unconscious bias, sexism, homophobia and the ‘myth of meritocracy’ were all identified as challenges. In addition, the capacity that PEIs have to change professional culture and individual behaviour is considered to be limited. As one PEI wrote: “we are an institute that depends on its membership, it can be difficult for us to ensure that our members’ employers are dedicated to the fundamental ethos of equality, D&I.”

Risk 5: D&I poorly understood

Several PEIs mentioned that D&I continue to be poorly understood by PEIs themselves, and by the individuals and employers with whom they work. Thus it’s often difficult to develop and maintain the momentum needed to progress, as the following quotes illustrate:

- ▶ “Some employers seem to think that the fact that they employ women (for example) means that they are demonstrating good D&I practice.”
- ▶ “Moving from the impression of D&I as a ‘campaign’, ‘agenda’ or ‘issue’ to it being viewed as a culture change programme.”
- ▶ “In some cases, overcoming the attitude among senior members that it is a niche, ‘pc’ activity that organisations ‘just have to tick off’ rather than something meaningful.”

Section 8: Conclusions and recommendations

8.1 Conclusions

One of the main findings from the benchmarking is that PEIs share common experiences, in terms of areas for development, priorities and plans for the future, and challenges. PEIs have a lot in common, and need support on similar areas, in terms of enablers and barriers to progress. This is true whatever level PEIs self-assess at (so monitoring may be a priority for the next 12 months whether PEIs self-assess at level 1 or at level 3 in this section). At the same time, PEIs do self-assess at different levels, which suggests that they are at different stages in their progress and have much to learn from and share with each other.

Another important finding is about leadership engagement and commitment on D&I. With more PEIs self-assessing at the higher levels of performance on leadership and governance than in any other section, this is an area of strength and progress for PEIs. At the same time, there's a continuing need to increase both the diversity of PEI leadership and leadership behaviours supporting greater D&I for the future.

When it comes areas of professional body work that would benefit most from a thorough D&I review, it is the two areas where self-assessment scores are lowest. These are education and training, accreditation and exams; and prizes, awards and grants - the former is core to professional body activity and the latter of relevance to many PEIs. PEIs should work together to address both areas by sharing good practice and if necessary, looking beyond the sector to find out what others are doing to ensure practice in both areas supports diversity and inclusion.

Two further findings that emerge throughout this report relate to monitoring and measuring, and the scope of action on D&I. Monitoring and measuring is a clear development area for many PEIs, particularly on aspects of diversity other than gender. More generally, there is a need for PEIs both to consolidate progress on gender and to extend the scope of their work on D&I beyond gender, to ethnicity in particular, but also to other aspects of D&I.

Finally, the examples of good practice clearly demonstrate that many PEIs are very active on D&I; at the same time, planning, prioritising and integrating D&I into day-to-day work emerged as areas for development. For some PEIs, the 'bigger picture' is not always in place - there is a lot of activity, but clarity about objectives or vision for the future is sometimes missing.

The recommendations below build on these concluding themes.

8.2 Recommendations

There are seven recommendations resulting from the 2017 Progression Framework benchmarking exercise. Six of these are for PEIs, and one is for the Royal Academy of Engineering.

Recommendations for PEIs:

Recommendation 1:

Act to address D&I in Education and training, accreditation and examinations; and in Prizes awards and grants.

With 70% and 50% of PEI self-assessing at level 1 for educations and training, accreditation and examinations; and Prizes awards and grants respectively, it is essential PEIs act to integrate D&I into these areas. Delivering continuous professional development to aid successful accreditation is a core activity for the vast majority of professional bodies. With this, and the ambition to increase the number and diversity of registrants in mind, it is essential institutions ensure equal access for those seeking education and training, and ensure they have processes in place to support fair accreditation and examinations.

Many PEIs distribute prizes, awards and grants that have potential to enhance careers and stimulate innovation and creativity. It is essential that selection processes for these are reviewed, if not already, to ensure fair and equitable distribution that supports diversity and inclusion.

**Recommendation 2:
Make it a priority to gather and track monitoring data on D&I.**

Several PEIs have mechanisms in place to gather data on the age and gender of members. Far fewer monitor data on any other aspect of diversity. The lack of data on ethnicity makes it a challenge to properly identify barriers, assess progress or target action to increase BAME participation in engineering, in the leadership and staffing of PEIs, and in membership.

Several PEIs expressed uncertainty about how to make the case for diversity monitoring, and in practical terms, how to gather and track data on ethnicity or other aspects of diversity, particularly in relation to members. We would recommend that PEIs work together to develop a compelling case for monitoring, sharing experiences and developing a collective approach to data gathering in the profession.

**Recommendation 3:
Clarify the bigger picture (overall objectives and purpose of the work on D&I) to facilitate prioritisation, action planning and efficient use of limited resources.**

A number of PEIs are working on D&I but would benefit from greater clarity on overall objectives and purpose. Others have an overall sense of direction and purpose that has not yet been made explicit. Developing a vision and purpose on D&I, and making these explicit (“what does good look like to us?”) will help with prioritisation, action planning, tracking and efficient use of limited implementation resources.

Where PEIs don’t have an explicit vision and purpose for their D&I work, it is recommend that they are developed: one approach is for each PEI to bring together a small group of stakeholders (for example, representatives from the board, membership and staff) to answer the question “what does good D&I look like for us?”

**Recommendation 4:
Take an inclusive approach to developing D&I action plans, engaging stakeholders from PEI leadership, workforce and members.**

Several PEIs have D&I action plans in place but not all. The recommendation for those PEIs who don’t have an action plan is to gather a group of stakeholders together to help identify and prioritise a realistic number of actions, based on the feedback from the Progression Framework. It is recommended that PEIs engage members in developing D&I plans and priorities, where these relate to the future of the profession rather than to the employment practices of the PEI.

Taking an inclusive approach to action planning – rather than making it the responsibility of just one person – will result in a better plan and help build engagement and ownership. Committing to a small number of priorities and having a plan to achieve these will help PEIs target limited resources more effectively. Combining a small number of changes that PEIs can directly influence, and where they will be able to see visible results in the short term with longer-term aims such as demographic change, will help sustain the effort of implementation.

**Recommendation 5:
Prioritise action on D&I at board level, focusing both on increasing demographic diversity and building the leadership behaviours necessary to lead on D&I.**

This includes taking action to:

- ▶ increase the diversity of PEI boards, which may require review of processes for appointment to the board, targeted outreach, succession planning or other positive action interventions
- ▶ address the underrepresentation of women in leadership roles, such as board committee chairs, and the underrepresentation of BAME people in senior leadership positions in PEIs
- ▶ secure board sponsorship and engagement on D&I, including active engagement in vision setting and action planning.
- ▶ Develop inclusive leadership skills and behaviours for all those in leadership positions, targeting the changes in leadership behaviour necessary to role model D&I at the most senior levels.

Recommendation 6:

Broaden the scope of work to include action on aspects of diversity other than gender (particularly ethnicity) and inclusion more generally.

Only a small number of PEIs seem to be taking much action on aspects of diversity beyond gender, or on inclusion more generally. There is some mention of action related to LGBT members and to members with disabilities, but there is little mention of ethnicity in either PEI employment or membership. Increasing engagement and action on ethnicity is a clear priority if the ethnic diversity of the profession is to be increased.

Recommendation for the Royal Academy of Engineering:**Recommendation 7:**

Consider how to offer PEIs support to move forward on D&I, taking development, priorities and challenges that many PEIs have in common as a starting point.

Three areas in which the submissions suggest support might be most welcome are: monitoring and measuring, action on ethnicity, and D&I in leadership.

Section 9: Completing the framework: commentary and evaluation

This section includes commentary on the completion of the framework, from the perspective of for business sake (fbs) consulting (www.forbusinesssake.com). The Royal Academy of Engineering and the Science Council commissioned fbs consulting to conduct the 2017 benchmarking exercise. It also includes evaluation feedback from PEIs on the experience of participating in the benchmarking.

9.1 Commentary

This commentary relates to two aspects of the completion of the framework: self-assessment scoring and data quality.

The Progression Framework is a self-assessed benchmark. One risk associated with self-assessed benchmarking is that of over- or under-inflation of scores. This risk was considered during the development of the Progression Framework, so to mitigate the risk of over-inflation, participants were asked to:

- ▶ highlight the components of the framework that they considered when deciding on their self-assessment score
- ▶ provide an accompanying narrative for each self-assessment score, summarising the evidence the score was based on.

In reviewing the self-assessment scoring, the following observations were made:

- ▶ There was quite a lot of variation in the extent to which participants highlighted elements of the framework and/or provided an accompanying narrative to explain their self-assessment. Ten PEIs highlighted elements of the framework to indicate the basis for their self-assessment, in some cases using a red-amber-green system, or similar, to indicate the extent of progress. Eighteen provided written evidence in the open text boxes, varying from minimal to very detailed content. A small number of submissions referred to external sources such as websites, which were not reviewed in detail. Two PEIs didn't provide any evidence or highlight any elements of the framework to support their self-assessment.
- ▶ In general, over- and under-inflation of scoring was not considered to be a major concern in reviewing the submissions. Based on the evidence submitted, two PEIs submitted self-assessment scores that could be considered an over-inflation, and one submitted scores that seemed like an under-inflation, in relation to the framework.
- ▶ Nineteen PEIs completed section two on progress, challenges and priorities for the future.

One of the report's recurrent themes is the challenge that PEIs face on monitoring and measuring D&I. Where PEIs provided data with their submissions, there were a few instances where its reliability and accuracy could be questioned. For instance, some of the data on ethnicity was clearly observational ("we have not collected data so it is an assumption") and some data entries appeared to lack accuracy (for example, providing actual number of women on boards rather than %). The data that was provided is a great starting point, but encouraging more accurate completion is a definite priority for future benchmarking exercises.

9.2 Participant feedback

Participants were asked to provide feedback on all aspects of their experience of participating in the 2017 Progression Framework benchmarking exercise, from the guidance accompanying the framework to the usefulness of individual feedback reports. Ten participants responded.

- ▶ 100% of respondents found the purpose of the framework to be clear.
- ▶ 100% found the guidance notes to be clearly written.
- ▶ 100% found the framework content easy to understand.
- ▶ 50% completed the framework over a period of days, 40% over a period of weeks, and 10% over a period of hours.
- ▶ 100% found the meaning of each level to be clear.
- ▶ 70% found it 'appropriately challenging' to assign a level to each category of activity; 10% found it 'difficult' and 10% found it 'easy'.
- ▶ 100% found the questions in section two of the Framework (asking about strengths, development areas, priorities and plans) easy to understand.
- ▶ 100% found the individual feedback reports either 'useful' or 'very useful'.
- ▶ 100% found the framework useful in helping them prioritise and plan future work on D&I.
- ▶ 100% would recommend the Progression Framework and benchmarking exercise to other PEIs.
- ▶ 100% are using the Progression Framework to inform their work on D&I.

Appendix 1: Background to the Progression Framework

Over the last six years, the Royal Academy of Engineering (the Academy) has been leading a programme that envisages an inclusive profession that inspires, attracts, recruits and retains people from all backgrounds. The programme is focused internally and externally, and partners and collaborates with stakeholders in engineering employment, professional bodies and third-sector organisations to challenge the status quo and drive change through visible and innovative interventions.

In 2012, the Academy worked with representatives from a number of PEIs to develop an Engineering Diversity Concordat (available at www.raeng.org.uk/policy/diversity-in-engineering/professional-engineering-institutions). This is a voluntary agreement to support joint working on D&I.

All 35 PEIs were invited to sign up to the concordat and 30 became signatories, including the Engineering Council and the Academy. The concordat commits signatories to work together to communicate commitment to D&I, take action to promote and increase it, and monitor and measure progress.

Although PEIs subsequently reported progress against these objectives, there was appetite for increased rigour in planning, measuring progress and benchmarking. In addition, independent evaluation of the concordat's effectiveness highlighted that there was some ambiguity around what 'success' looks like and that a standardised tracking tool or dashboard should be shared with institutions to monitor plans and encourage increased commitment and progress. This resulted in the birth of the *Diversity and Inclusion Progression Framework* – developed for professional bodies by professional bodies in collaboration with the Science Council.

In 2014, the Science Council developed the *Declaration on Diversity, Equality and Inclusion* to encourage its membership of professional bodies to promote EDI. The aim is to create greater opportunity for all individuals to fulfil their scientific potential, irrespective of background or circumstances.

The Science Council sets standards for professional scientists through registration. It also helps science to better serve society by attracting the widest possible talent to the science workforce and fostering a greater diversity of scientific ideas, research and technology.

The Science Council is committed to widening participation in science education and the workplace. To this end, the Science Council and its member bodies have declared a commitment to promote EDI throughout their communities and challenge prejudice and discrimination.

As a leading voice in science and the application of science, the Science Council seeks every opportunity to be proactive in promoting and communicating this vision to educators, employers, policymakers, opinion formers and other professional bodies.

Appendix 2: Progression Framework overview

The *Progression Framework* was developed in collaboration between the Academy and the Science Council with the aim of helping professional bodies track and plan progress on D&I.

The framework asks professional bodies about progress on D&I in eight areas of their work, by setting out four levels of good practice on each.

The eight areas are:

- 1 Governance and leadership
- 2 Membership and professional registration
- 3 Meetings, conferences and events
- 4 Education and training, accreditation and examinations
- 5 Prizes, awards and grants
- 6 Communications, marketing, outreach and engagement
- 7 Employment
- 8 Monitoring and measuring

The four levels of good practice are:

- ▶ **Level 1:** Initiating
- ▶ **Level 2:** Developing
- ▶ **Level 3:** Engaging
- ▶ **Level 4:** Evolving

Further detail of the *Progression Framework*, including descriptions and examples of each good practice level, can be found at www.raeng.org.uk/publications/other/diversity-progression-framework

Appendix 3: Benchmarking methodology

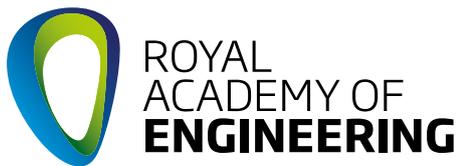
When completing the 2017 *Progression Framework* benchmarking exercise, participants were asked to self-assess their progress in each of the eight categories, by allocating a score on a simple Excel spreadsheet as follows: score one where progress is self-assessed to be at level 1, score two where progress is self-assessed to be at level 2, and so on. They were also asked to respond to a number of qualitative and measurement questions regarding progress on D&I in their organisations.

Completed frameworks were returned to fbs consulting limited (www.forbusinessake.com), an independent consultant on diversity, inclusion and organisational change. The consultant was commissioned by the Academy and the Science Council to conduct the benchmarking analysis and signed a non-disclosure agreement, which meant that only the participating organisation and the consultant saw each submission.

Once received, the submissions for all participating organisations were combined by the consultant in a single Excel spreadsheet, including both self-assessment and text evidence. This allowed the consultants to calculate numerical benchmarks and to compare self-assessment levels and qualitative evidence from participating organisations, overall and by sector (PEI and scientific body).

For this report, **benchmarks 1 and 2** have been simply calculated using a median rather than a mean average. The median calculation generates a benchmark at levels 1 to 4, compared to a mean calculation that generates a benchmark at one or two decimal points.

Benchmark 3 has been calculated using a mean average of organisations providing data on gender and ethnicity in membership and at board level.



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