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EMPLOYMENT LAWYERS

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#### ELA L&P Committee: Equity in the STEM workforce: Call for Evidence

**Response from the Employment Lawyers Association** 

29 January 2021



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#### INTRODUCTION

- 1. The Employment Lawyers Association (ELA) is an unaffiliated and non-political group of specialists in the field of employment law. We are made up of approximately 6,000 lawyers who practice in the field of employment law. We include those who represent claimants and respondents/defendants in the Courts and Employment Tribunals and who advise both employees and employers. ELA's role is not to comment on the political merits or otherwise of proposed legislation or calls for evidence. We make observations from a legal standpoint. ELA's Legislative and Policy Committee is made up of both Barristers and Solicitors who meet regularly for a number of purposes, including to consider and respond to proposed new legislation and regulation or calls for evidence.
- 2. A Working Party, co-chaired by Catrina Smith and Louise Skinner was set up by the Legislative and Policy Committee of ELA to respond to "Equity in the STEM Workforce: Call for Evidence". Members of the Working Party are listed at the end of this paper.
- 3. References in this paper to the views of ELA are intended to be inclusive of the views of the minority as well as the majority of ELA members. Whilst not exhaustive of every possible viewpoint of every ELA member on the matters dealt with in this paper, the members of the Working Party have striven to reflect in a proportionate manner the diverse views of the ELA membership.

#### **EXECUTIVE SUMMARY**

4. This consultation response responds to questions 1,3,4 and 5 only, focussing on the observations of ELA members working in, or with clients in, STEM fields. It details our observations based on the latest statistics available regarding the demographics in STEM workplaces; how recruitment and retention rates vary between demographics by reference to real business examples; the interaction between law, policy and equity; and the disparate impact that COVID-19 has had upon different minority groups.



- 5. Whilst we have sought to cover a broad range of demographics in this response, there is a focus on minority ethnic groups as well as female demographics in STEM workplaces. The Working Party has identified these groups as a current social and political focus for change in light of recent pay gap initiatives and the black lives matter movement. There is also more commentary on these groups in STEM fields, making it easier to respond to this call for evidence. When discussing the issue of female representation in STEM workplaces, the Working Party has relied on the terms used in the underlying evidence. We recognise that the terms 'gender' and 'sex' should not be used interchangeably but the evidence gathered does not address this distinction. Though we have not commented on this issue in our response, we note that the failure to have regard to the distinction between 'gender' and 'sex' is problematic for the collection and analysis of demographic data.
- 6. We note throughout this response that our observations are limited to the evidence and statistical data that is available to us, which has significant limitations. In particular, we have found there to be limited ethnicity data in the public domain and where ethnicity data has been collected, employers do not always adopt a standardised approach to categorisation, making comparisons and commentary difficult. We discuss the impact of this in greater detail in our response to question 1 below.
- 7. ELA has previously responded to calls for evidence regarding diversity and equality issues, including the ethnicity pay gap reporting call for evidence. ELA members are pleased to have another opportunity to address diversity issues through this response regarding equity within the STEM workforce.



#### **QUESTION 1**

#### What are the demographics of STEM workers in your organisation or sector? Are there gaps in the quality of evidence, monitoring or reporting?

#### STEM WORKER DEMOGRAPHICS

- 8. The Working Party has consulted with various respondents across STEM sectors to understand the demographics in their organisations and sectors more generally. The respondents' experiences varied depending on the geographic area that they operate in. For example, respondents in Scotland perceived the demographic of STEM workers to be predominantly white male, whilst respondents in London and the South East acknowledged greater diversity, in particular within the technology sector, albeit mostly of the Indian / Pakistani / Bangladeshi ethnicities as opposed to other minority ethnicities. These are observations from the respondents but we note that there is limited statistical evidence available to support these observations. We discuss the issues with evidence at paragraphs 20 to 29 below.
- 9. ELA has identified two primary minority demographics that are underrepresented in the UK STEM workforce: women and BAME. However, the quality of evidence regarding the under-representation of women in STEM is superior to the evidence available on the under-representation of BAME workers in STEM. We have set out some observations below based on the information available to us, which is somewhat limited with regard to BAME workers in STEM fields, given the poor quality of evidence available. ELA also refers to its response to the Call for Evidence by the Commission on Race and Ethnic Disparities on Race and Ethnic Disparities and Inequality in the UK which can be found <u>here</u>.

#### WOMEN IN STEM

10. Women have traditionally been under-represented in STEM sectors. However, efforts have been made in recent years to improve access into STEM careers for women with a focus on GCSE, A-Level and university students (as discussed in the APPG on Diversity and Inclusion in STEM's 2020 inquiry into Equity in STEM Education).<sup>1</sup> Such efforts, along with the recent implementation of mandatory gender pay gap reporting have improved the quality of evidence available. ELA has predominantly relied on statistics produced by the WISE campaign as to the participation of women in the UK, using 2019 workforce data from the Office for National Statistics Labour Force Survey.<sup>2</sup>

<sup>&</sup>lt;sup>1</sup> <u>APPG on Diversity and Inclusion – Equity in STEM Education</u>

<sup>&</sup>lt;sup>2</sup> WISE: 2019 Workforce Statistics - One Million Women in STEM in the UK



Year	No. of women	% of workforce	
2016	802,848 21		
2017	864,278 23		
2018	908,318	22	
2019	1,019,400	24	

#### 11. Women in STEM workforce:<sup>3</sup>

- 11.1. The WISE campaign found that the number of women working in core-STEM fields had increased by 111,082 between 2018 and 2019 and reached the **1 million mark**. The percentage of women working in core-STEM fields also increased by 2%, following a decrease in 2018.
- 11.2. The data is positive and the WISE campaign states that, with further action, women might make up 30% of the STEM workforce by 2030; according to WISE, 30% is the point at which a 'critical mass' will be employed in core-STEM, the figure needed to effect real change. However, the pace of change will need to increase if we want to reach that figure by 2030.
- 12. Female representation varies greatly within the individual STEM sectors. In order to achieve equity in the STEM workforce, each STEM sector must be considered separately. For example, women make up approximately 45.7% of the workforce in the science sector but only 10.3% of the engineering workforce. Understanding which areas need the most support will be crucial for developing strategies that improve equity. ELA also observed that, despite recent efforts to encourage women in education to study STEM subjects, not all STEM sectors are responding positively. For example, the technology sector has demonstrated the least progress for women, with female representation only increasing by 0.7% in the last 10 years. This is a stark difference when compared to the engineering sector, where the percentage of women increased by 4.5 percentage points in the last 10 years.

#### 13. Women in science:<sup>4</sup>

Year	No. of women	% of workforce
2018	58,725	42.4
2019	62,675	45.7

<sup>&</sup>lt;sup>3</sup> WISE: 2019 Workforce Statistics – One Million Women in STEM in the UK

<sup>&</sup>lt;sup>4</sup> WISE: 2019 Workforce Statistics – One Million Women in STEM in the UK



- 13.1. The science sector demonstrates the highest female representation out of all STEM sectors and the total number and percentage of women in the science sector increased by 3.3 percentage points between 2018 and 2019. This was, in part, due to the number of male science professionals dropping by 5,600 between 2018 and 2019.
- 13.2. ELA observes that the science sector has had a higher proportion of women for many years. The percentage of female science professionals has risen by 3 percentage points in the last 10 years; the recent increase in female science professionals followed a significant dip in 2018.

#### 14. Women in engineering:<sup>5</sup>

Year	No. of women	% of workforce	
2018	49,250	10.3	
2019	50,475	10.3	

The total number of women in the engineering sector slightly increased between 2018 and 2019, however, the percentage figure has stayed the same. While the percentage of women working in engineering roles is the lowest of the four STEM sectors, we note that the number of women in engineering roles has almost doubled in the last 10 years.

#### 15. Women in technology:<sup>6</sup>

Year	No. of women	% of workforce
2018	181,575	17.4
2019	180,600	16.4

The total number and percentage of women in the technology sector decreased between 2018 and 2019. This is partly due to the rise in the number of men in technology roles, which increased by 60,000 in the past year. While the technology sector has a higher percentage of women than the engineering sector, the percentage has remained at around 16% for the past 10 years. This suggests that changes will need to be made in order to increase representation.

<sup>&</sup>lt;sup>5</sup> WISE: 2019 Workforce Statistics – One Million Women in STEM in the UK

<sup>&</sup>lt;sup>6</sup> WISE: 2019 Workforce Statistics - One Million Women in STEM in the UK



#### **BAME REPRESENTATION IN STEM**

- 16. As set out in paragraphs 20 to 26 below, ELA believes that there is insufficient data available to comment on the true representation of BAME individuals in the STEM workforce. Nevertheless, we understand from our respondents that BAME representation remains disproportionately small as opposed to the general population across all four STEM sectors. This observation is supported by the limited data that is publicly available. For example, the latest data from Engineering UK found that only 6% of construction apprentices and 8% of engineering apprentices belonged to BAME groups;<sup>7</sup> both figures are disproportionally low when compared to the percentage of BAME individuals in the UK as a whole, which was between 12-13% of the UK population in the 2011 census.<sup>8</sup> Furthermore, while the exact percentage of BAME employees in the British technology sector is not known, the BCS Chartered Institute for IT recently calculated (using recent ONS data, albeit not as in-depth as the 2011 census) that individuals from BAME groups accounted for 14% of the total working age population in 2019 but only 12% of the total number of people employed in the UK and 22% of the total number of people unemployed.<sup>9</sup> On the other hand, BCS calculated that BAME representation amongst IT specialists was at 18%. While this is a very positive statistic, it is important to note that the exact percentages varied significantly across the UK: from just 4% in the South West of England to 33% in London. Furthermore, 8% of the BAME IT specialists belonged to the Indian ethnicity, which means the other minority ethnic groups remain underrepresented.
- 17. ELA has also relied on the Inclusive Tech Alliance Report to discuss BAME representation in STEM fields.<sup>10</sup> We understand the following from the Inclusive Tech Alliance Report:
  - 17.1. Senior leaders from BAME backgrounds account for 9.6% of senior leaders in the top 10 largest technology firms (as at Nov 2018). 74.5% of technology boards and 70.6% of senior executive teams in the top technology firms have no BAME members.
  - 17.2. Approximately **11%** of senior leaders in the top tech firms are from BAME backgrounds (**7.7%** of senior executives and **12.9%** of directors are from minority ethnic backgrounds).

<sup>&</sup>lt;sup>7</sup> Engineering UK Report 2020: Educational pathways into engineering

<sup>&</sup>lt;sup>8</sup> The 2011 census found that 7.5% of the total population were from Asian ethnic groups, 3.3% were from Black ethnic groups, 2.2% had mixed ethnicity and 1% belonged to other ethnic groups. The next census is due to take place as planned in 2021.

<sup>&</sup>lt;sup>9</sup> BCS Diversity Report 2020: ONS Analysis

<sup>&</sup>lt;sup>10</sup> Inclusive Tech Alliance Report November 2018 based on a review of reviewed 500 top tech firms, including 1,882 senior executives and 1,696 board members



- 17.3. Inclusive Boards reported that "there is a culture of 'elitism' within the UK's largest tech firms" because the proportion of directors and executives attending Oxbridge Universities and private schools is significantly above the UK average. The Inclusive Tech Alliance Report states that there "must be commitment from the top to make sure change is accelerated". Recommendations for the UK technology sector include:
  - 17.3.1. Board-ready development programmes that provide support and training to 'board ready' candidates from diverse backgrounds to feed into the senior leadership pipeline.
  - 17.3.2. Widen talent pools across non-technical sectors such as finance and the public sector.
  - 17.3.3. Board approved diversity action plans outlining the necessary actions to improve diversity at board and senior executive levels.
  - 17.3.4. Diversity targets embedded into business plans and long-term corporate strategies. Targets should be monitored and reported.
  - 17.3.5. Implement diverse shortlists for board and senior leadership roles.
- 18. Efforts are being made by independent associations to support BAME members wishing to advance their careers in STEM fields. Organisations such as Black British Professionals In STEM (BBSTEM) and Association For Black and Minority Ethnic Engineers (AFBE-UK) are gaining prominence. For example, BBSTEM offers a Bridge Mentoring Scheme for BAME students and post-graduates with over 300 industry professionals currently signed up to act as mentors.
- 19. Despite what the statistics may show currently, efforts to promote diversity are also being made by many STEM organisations in recognition that ethnic groups remain a minority in the field. The Working Party spoke to a number of STEM organisations who shared their experiences of good practice and successful strategies to promote diversity and inclusion in the workplace. We set these out in detail in our response to question 3 below.



#### QUALITY OF EVIDENCE

- 20. ELA has identified gaps in the quality of demographic data available to employers regarding BAME workers in STEM fields. This lack of data means that employers cannot accurately assess the demographics of their workers, which undermines any monitoring and/or reporting activities. ELA notes that compulsory gender pay gap reporting has improved the quality of demographic data based on gender; we do not propose to discuss gender data in any more detail in this section.
- 21. The lack of data with respect to BAME workers in STEM fields is a structural issue. It is a fundamental barrier which hinders employers' efforts to improve equity and representation of minority groups. This presents challenges in the context of the #MeToo and Black Lives Matter movements; ELA found that many respondents want to improve equity in the workplace but lack the tools and knowledge to do so. Obtaining more widespread demographic data of workers in STEM fields would be useful to gauge how far UK employers should go to support workers in such under-represented groups.

#### CHALLENGES TO DATA COLLECTION

- 22. In the UK, there is no statutory obligation on employers to collect and/or report demographic data for their workers. It is therefore unsurprising that we have a lack of useful data in this field. Currently, employers are permitted to collect demographic data about their employees/contractors but the collection of individual demographic data (on the part of the employer and the workers) is completely voluntary; inevitably, the data that is available is almost always incomplete. It is difficult for employers to take actions (for example) to increase worker representation in under-represented groups if the data identifying under-representation is poor.
- 23. There is an argument for mandating the collection of demographic data in law, as organisations currently lack the incentive or obligation to do so. It should be noted that organisations in the public sector have a greater incentive to collect demographic data as they are bound by the public sector equality duty.<sup>11</sup> While collection of demographic data is not mandated, public authorities are under a duty to consider whether they should take action to meet the needs of disadvantaged groups or reduce the inequalities. In doing so, public authorities are permitted to treat some groups more favourably than others. The statutory duty also requires public authorities to publish information demonstrating compliance with this duty, in addition to publishing equality objectives every four years. Given that demographic data will underpin proposed equality objectives

<sup>&</sup>lt;sup>11</sup> Section 149 of the Equality Act 2010.



and considerations regarding disadvantaged groups, it is possible that the public sector equality duty encourages (albeit does not mandate) demographic data collection in the public sector. The contrary argument as to the mandatory provision of data are the costs and administrative burdens that organisations may face in collecting the data.

- 24. There are also significant legal considerations that organisations must consider before collecting demographic data, which may deter organisations from doing so voluntarily.
  - 24.1. Race and ethnicity are protected characteristics under the Equality Act 2010. Demographic data related to a protected characteristic should be treated with caution and cannot be used in decision-making processes; this could give rise to claims relating to unlawful discrimination. Risk of legal action (even if very unlikely or unfounded) is taken very seriously and could deter employers that are not familiar with UK employment laws.
  - 24.2. The collection of demographic data is subject to the Data Protection Act 2018 (DPA 2018) unless the data is truly anonymized. Non-anonymized demographic data is considered personal data under the DPA 2018 and will be subject to strict processing conditions. For example, demographic data collected for the sole purpose of equal opportunities monitoring should not be used for any other purpose and should be stored in compliance with the DPA 2018 (i.e. access should be limited to only those that strictly require access, the data should be stored securely and should be retained for no longer than necessary). These necessary safeguards require time and consideration to put in place and may deter some employers from collecting demographic data in the first place.
  - 24.3. Although the DPA 2018 provides specific exemptions from the prohibition on processing sensitive personal data (such as ethnicity information):
    - 24.3.1. where it is necessary for the purposes of performing or exercising rights/obligations imposed or conferred by law in connection with employment; or
    - 24.3.2. where there is a substantial public interest (such as to ensure equality of opportunity or to monitor racial & ethnic diversity at senior levels of organisations),



an employer would still need to show that they had a lawful basis for processing that data. As there is no strict legal obligation to collect diversity data, an employer is left relying on candidate/employee consent, which is difficult to rely on in the employment context because consent can be withdrawn. Practically, an employer can only ask employees to provide the data on a voluntary basis and should always provide a "prefer not to say" option, meaning it is virtually impossible to obtain reliable data for the whole workforce. This will be a significant barrier to meaningful ethnicity pay gap reporting. It also renders the exemptions in the DPA relatively ineffective.

- 25. Between October 2018 and January 2019, the Department for Business, Energy & Industrial Strategy (BEIS) and the Race Disparity Unit carried out a consultation on the proposal to introduce ethnicity pay gap reporting (the "Consultation"), comparable to the current gender pay gap reporting procedures. The Consultation closed on 11 January 2019 and it has not yet been confirmed if and when mandatory ethnicity pay gap reporting will be introduced. Respondents ELA consulted with considered that mandatory ethnicity pay gap reporting would not only address issues regarding pay equity and representation in the workforce but would assist with data collection more generally. Improving the quality of demographic data helps to improve employer knowledge and accountability. ELA notes that without sound data, any proposed steps to take positive action under s.159 of the Equality Act 2010 may present significant risks to employers. ELA responded to the Consultation in 2018 and maintains the views expressed in its response.<sup>12</sup>
- 26. In the United States, certain organisations are required to provide employees with the opportunity to self-identify their membership in certain demographic categories. Federal contractors and subcontractors are required to develop and implement equity strategies, which may be subject to review by statutory enforcement authorities. Such requirements make it possible for many employers to mandate the collection of diversity data and enables employers to take proactive and remedial steps based on firm evidence. As a result of these initiatives, there was a 243% increase in 2020 of S&P 100 companies that agreed to release their EEO-1 reports (publicly disclosing the composition of their workforce by race, ethnicity, and gender) in response to a request to do so by the New York City Comptroller, Scott M. Stringer.<sup>13</sup>

#### CATEGORISATION OF DEMOGRAPHIC DATA

27. Even where data is available to employers in the UK, there is no statutory or commonly agreed classification of racial and ethnic groups. The Government

<sup>&</sup>lt;sup>12</sup> ELA response to the BEIS consultation: Ethnicity Pay Reporting dated 11 January 2019

<sup>&</sup>lt;sup>13</sup> Office of the New York City Comptroller - Press Releases & Statements



has produced a list of 18 suggested ethnic group classifications that were used in the 2011 census,<sup>14</sup> but this lengthy list of classifications has resulted in some employers collectively referring to minority groups as Black, Asian and minority ethnic (BAME). As a result, public and private employers often gather data based on varied taxonomies, making it more difficult to compare demographic data across employers or industries.

- 28. For example, it is ELA's view that the term "BAME" does not present a complete picture of ethnic disparities and can be misleading when considering equity in UK workplaces. The use of this term can be unhelpful as it includes employees from a broad group whose challenges (both at work and in wider society) are significantly different. Furthermore, the impact of factors such as youth unemployment, economic inactivity, and labour force exit and entry are not reflected in more generalised findings. By way of example
  - 28.1. BAME includes (among other minority groups) Black employees, Asian employees and Jewish employees. If an employer has good representation of Black and Jewish employees at senior management but an under-representation of Asian employees, it is not likely to be effective to take steps targeted at all BAME employees.
  - 28.2. The APPG Data Analysis (as defined at paragraph 68 of question 5 below) reveals that the overall number of BAME workers in the maths and science workforce masks imbalances for particular ethnicities as the share of people of Indian and 'other' ethnicities is significantly higher than that in the non-STEM workforce, whereas the share of people of Bangladeshi and Pakistani and Black ethnicities is significantly lower.
  - 28.3. The levels of economic inactivity remain highest amongst Pakistani/Bangladeshi groups. The Cabinet Office's Race Disparity Audit of 2017 also recognised this distinction stating that Pakistani and Bangladeshi populations remain more likely to work in low skilled, low paying occupations than other ethnic groups.<sup>15</sup>
  - 28.4. Research has found that labour force exit and entry probabilities do not differ between Indian, Caribbean and White women. However, Pakistani and Bangladeshi women are less likely to enter and more likely to exit the labour market. In contrast, Black African women have comparatively high re-entry rates.<sup>16</sup>

<sup>&</sup>lt;sup>14</sup> List of ethnic groups

<sup>&</sup>lt;sup>15</sup> <u>Race Disparity Audit October 2017 (revised March 2018)</u>

<sup>&</sup>lt;sup>16</sup> Race in the workplace - The McGregor-Smith Review



- 28.5. Many white employees also fall into the "minority ethnic" group under the BAME umbrella. However, much discourse on challenges facing BAME employees assumes they are all people of colour.
- 28.6. As set out in ELA's response to the BEIS consultation on ethnicity pay reporting, we think a standardised approach to classifications of ethnicity across companies is essential to ensure that data collected can be meaningfully compared. Without the ability to compare data collected by different companies, the information will be less useful and will not be able to show trends across the UK workforce on ethnicity. ELA considered two approaches to categorising ethnicity data:
- 28.7. Despite the 2011 census classifications being one of the most in-depth set of categories available, ELA notes that there is a risk that an overly lengthy list of classifications could cause administrative issues for employers. This could make it much harder to comply as employers may have to change their ethnicity data collection systems if they do not use the 2011 census categories.
- 28.8. In our response to the BEIS consultation on ethnicity pay reporting, we suggested that employers could use a binary or simplified approach consisting of only five to six categories in the first instance, particularly if they do not currently collect any ethnicity data. This will make ethnicity data easy to digest and seem less burdensome to employers. Following an initial period, a more detailed approach is preferred to obtain clear and meaningful data.
- 29. Whilst it is important to collect demographic data, ELA wishes to make clear that the statistics cannot be considered in isolation from other key barriers faced by ethnic minority groups in the workplace.

#### **QUESTION 2**

Where is there inequity across the different protected characteristics and how are different communities impacted across different:

- STEM disciplines or sector/subsectors
- types of organisation (e.g. private, public, non-profit)
- type of STEM activity (e.g. academic research, education, engagement, commercial, funding)
- job levels and/or qualification.



[ELA considers this question to be outside the scope of its expertise and as such is not submitting a response.]

#### **QUESTION 3**

Where are there evidenced inclusive behaviours and policies within different organisations, subsectors, sectors and countries on:

- Recruitment; and/or
- Retention
- 30. As highlighted in our response to question 8, there is a general lack of comparable data on diversity in STEM. The Working Party was, however, able to draw upon its own observed experience and that of its clients who were generous enough to share their views. While some of the observations are, by their very nature, anecdotal, we hope that they contribute to an overall picture and point out examples of good practice and successful strategies. The comments, however, inevitably reflect personal and regional experience (for example, the feedback the Working Party received from Scotland was different to that in the South East of England). We have included in our submission observations and ideas from the engineering, IT and bio-tech/pharma sectors.

#### WOMEN IN STEM

- 31. In the Working Party's experience, the HR teams within STEM businesses are aware of the lack of diversity and keen to address it, particularly with regard to sex imbalance. Members of the Working Party have discussed examples of steps individual businesses have taken and are taking to improve diversity. Those businesses seem keen to understand from others what does/does not work so that they can benefit from the experience of others.
- 32. A big issue identified by those who spoke to our Working Party members is in recruitment, due to a lack of female applicants. Anecdotal evidence from organisations who provided feedback suggests that less than 20% of all STEM job applicants are female. Businesses have taken steps to try to improve the number of diverse applicants. Examples include carrying out an audit on the language used in adverts and looking at a broader range of experience and skills in order to widen the potential pool of applicants.
- 33. There is also evidence to suggest that a company's parental leave policies (and attitudes towards the same) can impact the retention of women in the workplace. In April 2015, the Government introduced the shared parental leave scheme in order to allow parents to share up to 50 weeks of leave and up to 37



weeks of pay between them in their first year after having a child.<sup>17</sup> It is hoped that shared parental leave will promote female equality by encouraging men to have a more active role in parenting. However, research has shown that only 2% of eligible couples made use of the scheme in 2019.<sup>18</sup> It appears that employers need to do more to promote and encourage the use of shared parental leave in the workplace if they want to see the benefits of the scheme. This is an important issue for women in STEM workplaces given that, according to Ford Motor Company's 2019 gender pay report, two-thirds of female engineers do not resume their engineering career after taking maternity leave.<sup>19</sup> Irrespective of this fact, Ford Motor Company successfully achieved an average retention rate of 90% for all employees taking maternity and adoption leave after two years of returning. The company's success follows the implementation of a series of diversity and inclusion initiatives to promote female engineers in the automotive industry. Initiatives include: flexible/agile working policy; enhanced maternity pay and dedicated maternity advisors; enhanced paternity pay to enable fathers to be more actively involved in all aspects of parenting; and piloting a parenting buddy scheme. There is a strong suggestion that these policies are working and Ford Motor Company even reported a negative gender pay gap in 2019.

#### **NEURODIVERSITY IN STEM**

In addition to promoting the interests of minority ethnic groups, the Working 34. Group observed that STEM businesses are also considering ways to improve neurodiversity - improving representation of individuals with neuro-differences such as ADHD, Autism, Dyspraxia, and Dyslexia. Research suggests that approximately 700,000 people (1% of the population) have been diagnosed with autism yet only 16% of these are in full-time employment, compared with 78 per cent of neurotypical individuals.<sup>20</sup> Indications are that STEM businesses believe neurodiversity is important because neurodiversity can be accompanied by particular talents, including creativity and disruptor abilities. Some companies in STEM fields already actively promote neurodiversity at their recruitment stage. For example, SAP (a German IT and software company) launched a programme called Autism at Work in 2013, which provides support to candidates with autism during the hiring process and offers resources to facilitate the success of employees with autism.<sup>21</sup> The programme boasts a 90% retention rate due to the support system available to autistic employees.

<sup>&</sup>lt;sup>17</sup> Children and Families Act 2014

<sup>&</sup>lt;sup>18</sup> HMRC figures for 2019/2020 by EMW LLP

 <sup>&</sup>lt;sup>19</sup> Ford Motor Company Limited – Gender Pay Report 2019
<sup>20</sup> National Autistic Society – What is Autism

<sup>&</sup>lt;sup>21</sup> SAP – Autism at Work Programme



We note that neurodiversity should be considered alongside the promotion of 35. other minority demographic groups. For example, various studies suggest that only one in four people diagnosed with autism are women.<sup>22</sup> The National Autistic Society comments that there is a lack of research about the experience of people with autism from BAME groups, however, whatever the percentage of BAME people with autism may be, the National Autistic Society's research has highlighted that these individuals face barriers to accessing support services and ultimately obtaining a diagnosis.23

#### **BARRIERS TO STEM**

- 36. In ELA's submission to the Review into Ethnic Disparities and Inequality in the UK, we identified a number of barriers faced by minority ethnic groups in the labour market.<sup>24</sup> These barriers in our view, affect not just minority ethnic groups but also women and people with a disability. The barriers we identified as relevant to this call for evidence were as follows:
  - 36.1. the culture of an organisation;
  - 36.2. the lack of executive team engagement and senior diversity champions;
  - 36.3 shortcomings in executive search, selection and shortlisting processes;
  - 36.4. the lack of career development courses and support, role models and mentoring;
  - 36.5. the lack of diversity mentoring data;
  - the lack of accessible and effective equality policies or impactful 36.6. diversity and inclusion policies and toolkits;
  - 36.7. the lack of effective training including the need for unconscious bias training;
  - the lack of understanding of and use of the positive action provisions in 36.8. the Equality Act 2010; and
  - 36.9. "Self-fulfilling" bias.

<sup>&</sup>lt;sup>22</sup> National Autistic Society - Autistic women and girls

 <sup>&</sup>lt;sup>23</sup> National Autistic Society – Autism and BAME people
<sup>24</sup> ELA response to the Review into Ethnic Disparities and Inequality in the UK



- 37. Many of these barriers were recognised by Baroness McGregor-Smith in her report into barriers facing minority ethnic groups in the labour market.<sup>25</sup> She also highlighted the following additional factors, all of which could, again, apply to all under-represented groups:
  - 37.1. the need to use diversity monitoring data to identify particular areas of under-representation (as to which, please see our response to question 1);
  - 37.2. the need to set aspirational targets within an organisation in order to ameliorate that under-representation;
  - 37.3. the use of reverse mentoring by which senior leaders in an organisation could learn more from representatives of under-represented groups at first hand of how the various barriers acted as an impediment to their progression in the workplace;
  - 37.4. unpaid internships should end as should unadvertised ones to ensure that valuable work experience is made available to the widest possible pool of candidates; and
  - 37.5. career pathways within organisations should be made more transparent.
- 38. Good practice in helping to achieve equity in the STEM workforce should therefore address all of these barriers.
- 39. Despite the continued existence of barriers facing minority ethnic groups, the Working Party noted some very positive initiatives in the technology sector, such as those advocated by the technology trade association, Tech UK, in their 2020 report "Delivering Diversity"<sup>26</sup> and by the British Interactive Media Association (BIMA) in its Tech Inclusion and Diversity Report 2019<sup>27</sup> as well as initiatives being driven by larger technology companies. However, these tend to be at a very early stage, where it is difficult to measure real achievement and effectiveness, either because the stated goals are longer-term (e.g. reaching a certain sex/ethnicity target in five to ten years) or due to the difficulties gathering ethnicity data in the first place. Therefore, it is difficult to put forward evidence of inclusive behaviours that are not simply anecdotal and to demonstrate a proven track record of what works/does not work in the STEM sector.

<sup>&</sup>lt;sup>25</sup> <u>Race in the workplace - The McGregor-Smith Review</u>

<sup>&</sup>lt;sup>26</sup> Tech UK 2020 Report "Delivering Diversity"

<sup>&</sup>lt;sup>27</sup> British Interactive Media Association - Tech Inclusion and Diversity Report 2019



- 40. That said, we have set out below some of the common initiatives we are seeing technology businesses adopting.
  - 40.1. Since its 2019 report, BIMA's Inclusion & Diversity Council has been working to create a practical and actionable series of toolkits, broken down by area mental wellbeing, race and ethnicity, inclusive design and more to help employers and individuals understand the issues, spot the signs of concern, and implement actions to improve diversity in the workplace.
  - 40.2. Actions taken across these organisations and larger technology employers tend to fall into four key areas (as identified in the Tech UK 2020 report):
    - 40.2.1. Action in the community (inspiring the next generation)
    - 40.2.2. Attraction and recruitment (fishing in diverse ponds)
    - 40.2.3. Retention (getting workplace culture right)
    - 40.2.4. Development (developing diversity/climbing the ladder)

#### Action in the community

40.3. This action seeks to drive ethnic minorities to consider a career in the technology sector in the first place, whether that is through education and work with schools or highlighting the flexibility of roles and demonstrating clear career progression possibilities. Many larger employers in the technology sector already have a variety of programmes working with schools to encourage and inspire participation in technology, including diversity targets for their work experience and (paid) internship programmes.

#### Attracting the best talent

40.4. Many companies utilise job boards targeted at under-represented groups when advertising roles in order to attract a broader range of candidates. They also consider the wording of those adverts, to ensure talented individuals from minority ethnic backgrounds are not discouraged from applying at that initial stage. Others work with specialist recruitment agencies/search firms focussed on driving diversity. Technology firms with large graduate programmes have a



range of online tests and other assessment programmes, which aim to eliminate bias from the selection process, as well as using blind CVs and diverse interview panels. Larger technology firms are also building alternative career paths (i.e. non-traditional routes, which don't require a degree) into technology and the associated professions, including apprenticeships. Most larger technology firms have set targets for the improvement of representation of women and ethnic minorities in their workforce over the next five to ten years.

#### **Retention**

40.5. Many larger technology firms are required to publish their gender pay gap but have also voluntarily published their ethnicity pay gap and are using the findings to drive inclusion strategies. Other large technology firms have focussed on creating an environment where employees feel safe to raise concerns and share their experiences with colleagues, with a focus on wellbeing as well as inclusion initiatives.

#### **Development**

- 40.6. Most technology firms have talent development programmes to assist with retention of staff and promotion to senior management, including mentoring, coaching, career counselling and soft skills training in leadership and management. Sometimes these are focussed on particular under-represented groups. Reverse mentoring is another popular way of helping senior staff develop an understanding of ethnic minorities and their experiences in the workplace. Finally, many technology firms are also signatories to the Tech Talent Charter.<sup>28</sup> In time, the combination of these activities is likely to drive significant improvement in diversity and inclusion in the technology sector but as many of these initiatives are at a formative stage, it is difficult to present evidence of such improvements in this response.
- 41. In the field of engineering we have considered actions taken by organisations seeking to provide assistance and support in effecting positive change to diversity and inclusion in the engineering profession as a whole, and also by individual businesses employing a significant number of engineers. There is some evidence that attempts are being made to address the effects of the barriers set out at paragraph 0 above, by laying down some foundations on which to develop best practice but it is difficult to assess the extent to which this applies throughout the profession and how much progress has actually been made. The two examples we provide below of leaders in the profession each

<sup>&</sup>lt;sup>28</sup> <u>Tech Talent Charter</u>



suggest that this is a recent phenomenon, which will take time to permeate the profession. One overriding factor, however, that could present an opportunity for increasing diversity and inclusion within engineering is that it is commonly recognised that the UK needs more engineers and so, perhaps unlike certain sectors where there is arguably a surplus of candidates, employers really do have every incentive to ensure that the talent pool from which they recruit, and subsequently seek to nurture within their organisation, is the widest available.

#### SPECIFIC EVIDENCE

#### The Royal Academy of Engineering

- 42. This is a long-established charity dedicated to providing progressive leadership for engineering and technology. It recently published a five-year Diversity and Inclusion Action Plan for 2020-2025.<sup>29</sup> This identifies four goals:
  - 42.1. The Academy's progressive leadership must drive positive change towards diverse and inclusive cultures, and diversity and inclusion must be embedded through all of the Academy's programmes and activities;
  - 42.2. Employers must be supported and challenged to increase and cultivate inclusive cultures, specifically as follows:
    - 42.2.1. Improved employee engagement and commitment to accountability on diversity and inclusion through an Academy Employer's Charter for Diversity and Inclusion.
    - 42.2.2. Improved benchmarking and progression against key Diversity and Inclusion indicators in engineering by employers of all sizes, for example pay gaps and progression to leadership roles.
    - 42.2.3. Increased flow of diverse talent entering engineering careers through Academy programmes and engagement (for example, school based education programmes).
    - 42.2.4. Increased capacity among start-ups and SMEs to embed a diversity and inclusion culture from the outset.
  - 42.3. An informed engineering profession with the confidence and capacity to increase diversity and inclusion. Ways of achieving this would include the following:

<sup>&</sup>lt;sup>29</sup> <u>Royal Academy of Engineering - STRATEGY 2020–2025</u>



- 42.3.1. Provision of rigorous Academy research to identify barriers to achieving the goals and which informs the actions and recommendations on diversity and inclusion.
- 42.3.2. Improved availability and use of diversity and inclusion resources, guidance and practical and technical advice to inform the profession via a one-stop shop at the Academy.
- 42.3.3. Clear articulation of the importance of an inclusive engineering workforce in building a sustainable society and an inclusive economy.
- 42.4. A network of champions advocating for improved diversity and inclusion across engineering as evidenced by:
  - 42.4.1. More leaders across every part of engineering and technology publicly committing to champion diversity and inclusion.
  - 42.4.2. Increased interaction between diversity and inclusion champions and the wider profession through training and events to share knowledge and best practice on diversity and inclusion.
- 42.5. The Plan also states the Academy's aim to draw on best practice from other sectors.

#### Engineering UK

43. This is a not for profit organisation which works in partnership with the engineering community to inspire tomorrow's engineers and increase the number and diversity of young people choosing academic and vocational pathways into engineering. This organisation is currently driving an initiative to help the engineering community in its work to engage with young people, "The Tomorrow's Engineers Code".<sup>30</sup> This is a framework firstly for organisations hoping to increase the number and diversity of young people pursuing engineering careers, and secondly for young people pursuing engineering careers. The Code asks signatories to commit to improving the quality, inclusivity, targeting and reach of their actions designed to inspire young people and to build and share an understanding of how to do so. Some 80 organisations have so far signed up including 26 businesses. The Code boasts four partners including Anglo-American, the Department for Education and Shell.

<sup>&</sup>lt;sup>30</sup> Engineering UK - The Tomorrow's Engineers Code



- 44. Engineering UK has also recently produced an Equality, Diversity and Inclusion Strategy for 2019-2022 pursuant to which it seeks to collate, produce and share evidence-based resources on good practice in engineering engagement; and to support external stakeholders to develop inclusive practices.<sup>31</sup>
- 45. Turning to business organisations, we identify below evidence of best practice within two businesses employing large numbers of engineers, BAE Systems and the Weir Group.

#### BAE Systems

- 46. BAE Systems views the problems of under-representation in the STEM workforce as part of a wider skills problem in the UK. They see the UK as requiring some 690,000 technicians and engineers by 2022, needing to double the number of engineering apprenticeships and graduates; and needing to address serious diversity and inclusion issues in that sector, in particular among women. A key goal for the business is therefore to create a more diverse and inclusive pipeline and one that takes due account of social mobility issues.
- 47. Because BAE Systems views the key issue as a skills shortage, they see education and training as the principal way of addressing it. By ensuring that its education and training efforts are directed widely, BAE Systems considers that this gives it a good opportunity to reach out to under-represented groups and to seek to show them that engineering can be a great career for those who would not otherwise have considered it. Similarly, BAE Systems employs a large number of apprentices; because this provides paid training it enables them to attract a wider pool of applicants including those with a passion for the job who may not have particularly high academic achievements. The apprenticeship programme has been particularly successful in improving diversity – the number of female apprentices in its intake has increased from 5% to 26.5% over the past ten years to 2020.
- 48. As regards graduates, BAE Systems has some 24% of female graduates and some 29% of BAME graduates in its 2019 intake and 20% and 24% respectively in 2020.
- 49. Examples of best practice in recruitment and retention include the following:
  - 49.1. A school roadshow, delivered in partnership with the Royal Air Force and the Royal Navy, which takes the form of a theatre programme in which the principal actors are female and pose as BAE Systems

<sup>&</sup>lt;sup>31</sup> Engineering UK - Equality, Diversity and Inclusion Strategy 2019-2022



employees talking positively about STEM subjects as a career and designed to persuade those who would not otherwise consider engineering to find out more. The programme is delivered to over 100,000 pupils annually although it has had to be suspended next year due to COVID-19 and a virtual programme is planned to reach 600 schools next year with the Royal Air Force and Royal Navy using Lego robots to excite school pupils.

- 49.2. BAE Systems operates a list of partner schools where there is a focus on those with a high number of BAME pupils and those with social mobility issues. This has had notable success; around 28% of apprentices in England in 2019 came from deprived schools.
- 49.3. A partnership scheme with the Royal Academy of Engineering to produce school STEM resources to educate people as to the broad range of skills involved in engineering.
- 49.4. Initiatives have focussed on the local areas where BAE Systems has its principal sites, in particular Preston. These have included an Asian focus owing to the high proportion of Asians in that area. One such initiative involved a series of radio programmes where the company used a young Asian female role model who talked frankly about the cultural barriers they faced in going into engineering (for example their parents might want them to choose a different career path such as medicine) and into studying engineering at university (their parents might be concerned that the vast majority of those studying engineering would be male), whereas the BAE Systems apprenticeship programme would entail more pastoral care.
- 49.5. As regards disabled applicants, BAE Systems' education programme includes features on the various ways in which disabled people can enjoy an engineering career, either via bespoke reasonable adjustments or via a position away from the "shop-floor". Particular roles have sometimes been created in line with the greater freedom under the Equality Act to do so. BAE Systems' experience is that comparatively few disabled people declare their conditions when they apply for apprenticeships but that this percentage rises substantially once BAE Systems works with them to develop their individual learning plans. They have found that those with neurological conditions e.g. autism, often have skills which are ideal for engineering. Recruiters are specifically informed of the role disabled people and those with different characteristics can play in BAE Systems.



- 49.6. Role models across under-represented groups are used extensively by BAE Systems, as is unconscious bias training which (contrary to recent Government thinking) they consider is very effective at helping to challenge unwarranted assumptions that could be made in the business about those in under-represented groups.
- 49.7. Apprenticeship retention rates are very high: for apprentices well over 90% of apprentices were still employed after 5 years and around 90% after 10 years. One reason for this is the success BAE Systems has had in targeting its education programmes in the local communities. The education programmes help apprentices to feel comfortable in remaining within those communities. For graduates it's nearer 60% BAE Systems attributes this to advice given by university career services that students shouldn't stay too long in a particular job or with a particular company. While BAE Systems analyses these figures for evidence of disproportionate impact on under-represented groups, this does not currently appear to be an issue.

#### The Weir Group

- 50. The Weir Group, headquartered in Glasgow, also sees education as key to addressing areas of under-representation among its workforce. It has directed a number of initiatives on increasing a proper understanding in schools of what being an engineer actually involves including the following:
  - 50.1. Working with Primary Engineer to reach primary school pupils this is an award winning not for profit organisation with bases in England and Scotland, which seeks to promote engineering careers for pupils and students through inspiring programmes and competitions and the development of engineering skills for teachers and practitioners. A notable programme they have developed is STEM by Stealth, whereby children engage with practical maths and science alongside creative problem solving and literacy.
  - 50.2. Weir Wise, a partnership with Strathclyde University the partnership is aimed at girls around age 13 in Scottish schools who have the opportunity to learn from the University about what engineering actually involves and its various disciplines. While the group is aware that this initiative is a good example of positive action within the provisions of section 158 of the Equality Act 2010, this was not the conscious driver of the initiative; it simply "made sense" to the company to seek to address the shortage of women engineers.



- 51. The Weir Group currently focusses on inclusion and equity. Its thinking is that if the necessary ground-work is done to establish trust among its staff that everyone truly belongs within the organisation and will be treated fairly, it will be easier to take the necessary steps to address areas of under-representation in the business. Two key foundations for this are data gathering and employee engagement surveys.
- 52. The group recently introduced a new global HR system which has made the gathering of data regarding the make-up of its staff much easier. However, in order to encourage staff to provide the necessary data and to ascertain where the biggest challenges lie, the group has worked with Peakon, the engagement survey specialists, to design appropriate questions in employee engagement surveys to enable staff to feel they can really speak their minds. These questions do not focus solely on the wider areas of employee engagement but also cover topics relating to equity and fairness which enable visibility of matters such as whether favouritism exists. As part of increasing employee engagement, employee-led affinity groups have been established under the aegis of a steering committee led by the Executive Sponsor (John Heasley, the Finance Director) and populated by employees from across the group, and which takes a lead from their input. These currently cover gender, sexual orientation and people feeling alone (an issue highlighted by recent discussions with employees around the impact of remote working during the COVID-19 pandemic). Groups to cover ethnicity and disability are in the process of being formed.
- 53. While the group considers it very important that the affinity groups are employee-led it also rightly understands that the board has a role to lead by example as a key part of building trust among its staff. Its main board currently includes three women and two members from an ethnic minority, who were recently appointed from a very strong shortlist. Not only has this strengthened the board via the improved cognitive diversity that will result from these appointments, but they have also been well received within the group. Similarly, the group's diversity champion is John Heasley its Finance Director, as the group feels that the lead must come from the top of the organisation. The group plans to address under-representation of minority groups among its senior executives.
- 54. Further specific examples of best practice in recruitment and retention include the following:
  - 54.1. bias training for all those involved in recruitment;



- 54.2. diversity and inclusion training for all staff via two compulsory modules (virtually all staff have indeed completed these);
- 54.3. the introduction of internal aspirational diversity and inclusion targets designed to make each business unit accountable as to how it has achieved greater diversity and inclusion;
- 54.4. in their Australian business, a partnership with a Danish company to help target candidates with neurological conditions and which is being considered for use elsewhere within the group.

#### **QUESTION 4**

## Are there policies or activities undertaken by the UK Government, or its agencies, that advance or inhibit equity and inclusive cultures within the STEM workforce? Where could policy change or sector action lead to addressing the equity of opportunity within the UK's STEM workforce?

- 55. The provisions of the Equality Act 2010 allow employers to take "positive action" to recruit or promote individuals from under-represented groups. However, to take advantage of the positive action provisions in accordance with the Equality Act 2010,<sup>32</sup> employers must demonstrate that they reasonably think that:
  - 55.1. certain groups suffer a disadvantage connected to their protected characteristic; or
  - 55.2. participation in an activity by persons who share a protected characteristic is disproportionately low.
- 56. In order to avail themselves of the positive action framework, the first hurdle for employers to overcome is to ensure that they have adequate data about their workforce and representation of under-represented groups within the company. Yet, as is acknowledged in question 8 of this response, collection of demographic data is difficult and uncertain. Even where the data is collected on a voluntary basis, the absence of generally applicable taxonomy creates inconsistency and may lead to statistical anomalies. This means that it may be difficult for an employer to rely on that data.
- 57. In the Working Party's experience, the lack of guidance as to the quality and nature of the data required means that employers are wary of using the positive action framework, undermining its effectiveness. The ability to collect reliable

<sup>&</sup>lt;sup>32</sup> Ss158 and 159 Equality Act 2010



demographic data would enable employers to take advantage of pre-existing mechanisms such as the positive action framework, which is not currently being used to its full potential. Before positive action can be implemented robust data must exist to show that it is required.

- 58. Secondly, employers also appear to be discouraged from implementing diversity initiatives because of the associated risks that arise from positive discrimination. Sections 158 and 159 of the Equality Act 2010 are far from straight forward in their application. Executives often don't fully understand the distinction between positive action and positive discrimination and are reluctant to take unnecessary risks.
- 59. The law is difficult. One of the first Employment Tribunal decisions on positive action was a white hetero-sexual police officer successfully claiming that he was discriminated against because of his employer's actions to encourage promotion from under-represented groups<sup>33</sup>. Positive action in the UK is limited to favouring a candidate from an disproportionately under-represented group over the majority only where they are equal. The promotion "test" used in the police case was pass or fail: those with the under-represented characteristic were then considered for promotion. However, that pass/ fail approach did not properly distinguish between equal candidates as one could have passed with much higher marks.
- 60. The Working Party considers that further clarity regarding what constitutes positive action would be extremely useful for employers who are unsure about whether their proposals fall within the boundaries of the positive action framework. Guidance could take the form of code of practice that provides practical examples of which circumstances would constitute positive action and which would constitute positive discrimination.
- 61. The Working Party spoke to a number of businesses that emphasised the importance of the way in which STEM subjects are being taught in schools. Educational establishments should be wary of unconscious bias when discussing possible career options with students who show an aptitude for STEM subjects.
- 62. The respondents also suggested that educational establishments should review the way in which STEM subjects are described and marketed to prospective students. One respondent gave the example of a degree that was offered by Robert Gordon University, which was described using the word "offshore". The uptake of this course from female students increased when the name of the

<sup>&</sup>lt;sup>33</sup> <u>Furlong v Chief Constable of Cheshire 2018</u>



course was changed and the word "biomedical" was inserted in the description, even though there was little change to the actual course content.

#### UK RESEARCH AND DEVELOPMENT ROADMAP

- 63. BEIS published a policy paper on 1 July 2020 called the UK Research and Development Roadmap (the "R&D Roadmap") setting out the UK's vision and ambition for science, research and innovation.<sup>34</sup> Whilst equity in the STEM workforce is not the policy paper's primary focus, it touches on some of these issues. If implemented as described, the Working Party considers the R&D Roadmap could advance equity and promote a more inclusive culture within STEM workforces.
- 64. The R&D Roadmap asks (among other things): "how can we attract, retain and develop talented and diverse people to R&D roles? How can we make R&D for everyone?" The R&D Roadmap explains that cultivating talented and diverse people and teams is essential to delivering its vision. BEIS provides the example that there are approximately 7% Black, Asian and minority ethnic managers, directors and senior officials in academic and non-academic higher education positions and that the Government "must remove any barriers and dismantle any inequalities in the system that limit the ambitions, inclusion and participation of people from any background".
- 65. The R&D Roadmap states that the UK Research and Innovation department (UKRI) will develop and launch bold initiatives to increase the participation, retention and promotion of a diversity of talent into research and development. Initiatives should "drive transparency and accountability through working with the sector to establish targets and standards aimed at reducing ineffective practices, ensuring that research and innovation benefits from the full creative reach of all parts of the population". BEIS recognises the present issues around the collection of demographic data, noting that "we cannot and absolutely will not wait until we have perfect data or conclusive evidence before taking action, and will continually pilot, intervene, assess and evaluate."
- 66. The R&D Roadmap adds that BEIS will work towards achieving greater diversity by developing a comprehensive new R&D People and Culture strategy. There is currently limited information on this strategy but the Working Party welcomes this initiative and hopes it will be implemented following the conclusion of this consultation.

<sup>&</sup>lt;sup>34</sup> Policy paper: UK Research and Development Roadmap



#### **QUESTION 5**

What are the impacts of COVID-19 on equity for STEM workers (including job and income security, contract type etc) in the short- and medium-term? Which communities, groups, organisations or sectors are being most impacted?

- 67. In summary, the Working Party's view is that the COVID-19 pandemic has impacted equity for workers in a number of different ways, and in many respects this disparity has been experienced across the UK workforce generally. However, given the particular make-up of the STEM workforce, we consider that there are particular pockets where the pandemic has had a more severe impact.
- 68. As was noted in the APPG data analysis on Diversity and representation in STEM industries in the UK<sup>35</sup> published in November 2020 (APPG Data Analysis), "Women make up less than a quarter of the core STEM workforce in the UK (WISE, 2019), Black and minority ethnic men are 28% less likely to work in STEM than White men (CaSE, 2014), 29% of LGBTQ+ people surveyed would not consider a career in STEM due to fear of discrimination (IET, 2018), and disabled people represent only 5% of the engineering workforce (CaSE, 2018)". For certain of these identified STEM workforce groups, we consider that a higher disparate COVID-19 impact will arise for STEM workers because of the greater impact that the pandemic has had on such groups when compared to the UK workforce generally. Health impact is one example of this, however, there are also less obvious impacts too, that may not be health-related.
- 69. Our view is that, particularly where there are existing issues with diversity and representation in STEM industries, failing to address any disparate impact in the pandemic response may further heighten those inequalities.

#### DISPARATE IMPACT ON EQUITY BY REASON OF ETHNICITY

70. As is set out elsewhere in this response, our experience is that the STEM workforce has historically had a higher representation of workers from certain ethnic groups. This is supported by the AAPG Data Analysis, which notes "*The share of ethnic minority workers in STEM is on a par with the rest of the economy, as a result of workers with Indian ethnicity being more likely to work in STEM than elsewhere. People of other ethnic minorities tend to be under-represented in STEM."* 

<sup>&</sup>lt;sup>35</sup> All-Party Parliamentary Group - The State of the Sector: Diversity and representation in STEM industries in the UK: Data Analysis Brief, Inquiry into the STEM Workforce, November 2020



#### Health impact

- 71. Evidence started to appear during 2020 that those from BAME backgrounds may be disproportionately affected by COVID-19. In a report published by Public Health England<sup>36</sup> (the First PHE Report), it was highlighted that after accounting for the effect of sex, age, deprivation and region, people of Bangladeshi ethnicity had around twice the risk of death when compared to people of white British ethnicity, with other ethnic groups having between 10% and 50% higher risk.
- 72. A further Public Health England report<sup>37</sup> (the Second PHE Report) followed, summarising a rapid literature review and feedback from external stakeholder engagement. That report noted a number of factors that could be driving the association between COVID-19 health outcomes and ethnicity, including social and economic inequalities (including in population density, housing and household composition, and income), occupational risk, use of public transport, discrimination and stigma, and prevalence of conditions that increase the severity of disease.
- 73. Given the higher representation of workers of certain ethnicities in the STEM workforce, we consider that health risk disparity is one of the ways in which the impact of COVID-19 could have a disproportionately higher impact on STEM workers. Where it arises, that impact is likely to be felt in the short and medium term, as workers recover from the effects. However, with an increasing body of evidence supporting extended effects in some patients, it is possible that long-term impact could be realised too. A report<sup>38</sup> by NHS England in June 2020 estimated that 45% of those admitted to hospitals in England with COVID-19 would "need ongoing support". Further, a report<sup>39</sup> by the National Institute for Health Research in October 2020 found that "*it is becoming clear that, for some people, COVID-19 infection is a long-term illness*".

#### Wider impact

74. As the Second PHE Report demonstrated, health disparities between different groups can offer a window into the existence of wider disparities, including employment inequalities. Identifying groups within the workforce whose health has been disproportionately impacted by the pandemic may therefore offer a catalyst for employers to review diversity and inclusion initiatives more widely. With economic disadvantage considered to be linked to poor COVID-19

<sup>&</sup>lt;sup>36</sup> Public Health England - Disparities in the risk and outcomes of COVID-19, June 2020

<sup>&</sup>lt;sup>37</sup> Public Health England - Beyond the data: Understanding the impact of COVID-19 on BAME groups, June 2020

<sup>&</sup>lt;sup>38</sup> NHS England (2020) After-care needs of inpatients recovering from COVID-19

<sup>&</sup>lt;sup>39</sup> NIHR - Living with Covid-19, published on 15 October 2020



outcomes in some respects, possibly because individuals may be less financially able to take early protective measures such as remaining absent from work, tackling ethnicity pay inequalities is even more important now.

- 75. The Second PHE Report also highlighted the link between ethnicity and the reluctance of individuals to raise concerns (including about PPE or risk) and the issue of stigma connected to ethnicity and COVID-19. The report sets out one example of a group that is disproportionally impacted in this respect, where it states, "There is a widespread stigma and fear associated with contracting COVID-19 for the individual involved, their family, and their community. Chinese communities reported experiencing racism and being subjected to violent crimes because of COVID-19".
- 76. In our experience, employers are starting to recognise the importance of looking at the wider impact and ensuring effective mechanisms are in place for raising concerns as part of an approach that seeks to avoid inequalities within the workforce.

#### DISPARATE IMPACT ON EQUITY BY REASON OF AGE

- 77. Our experience is that STEM industry workforces, particularly within the technology sector, often include a number of younger workers. The APPG Data Analysis notes that STEM workers "are less likely to be aged 50 or older, with one-third of non-STEM workers aged 50 plus, compared to 28% of STEM workers." However, in the Working Party's own experiences and that of its clients, the engineering sector tends to have a higher proportion of older workers.
- 78. Further, job and income security inequity can often occur in the younger workforce groups, a fact that is supported by recent analysis by the ONS<sup>40</sup>, that found "for young people aged 16-24 there has been a shift from employment to unemployment and inactivity since the start of the pandemic".

#### Health impact

79. The latest data<sup>41</sup> from the Office for National Statistics (ONS) shows that COVID-19-related deaths increase almost ten-fold for those in the 45 to 64 age range when compared to those aged between 15 to 44.

<sup>&</sup>lt;sup>40</sup> ONS - Employment in the UK: November 2020, Estimates of employment, unemployment and economic inactivity for the UK

<sup>&</sup>lt;sup>41</sup> ONS - Deaths registered weekly in England and Wales, provisional: week ending 13 November 2020



80. While the combination of the younger age demographics of the STEM workforce and the government data may not place the STEM workforce when considered as a whole into a higher health risk category by reason of age, we consider that there are other age-related factors that could impact on equity.

#### Wider impact

- 81. With learning from peers and on-the-job learning often being a critical part of development for STEM workers, particularly for younger workers at the start of their careers, we consider that the time out of the workplace for any STEM workers who have been furloughed could have a significant impact on long-term development and job progression.
- 82. In our experience, however, it is not just those that have been furloughed that have felt the impact. Younger workers who have continued to work remotely have also been impacted. For example, remote working conditions and the absence of training or "osmosis" learning through face to face contact with peers has made working more difficult.
- 83. The Eversheds Sutherland Reinventing the Workplace survey<sup>42</sup> published in December 2020 that was conducted across a number of global employers, including STEM employers, found that 40% of respondents had seen patterns emerging in the demographics of those returning to work on a voluntary basis. It was reported that generally younger and older workers had been the groups choosing to return. Further, it was reported that sub-optimal home working arrangements were reasons often cited by younger employees as the reason for wanting to return. Those findings echo the findings from an ONS study,<sup>43</sup> which found that for workers aged 16 to 29 years who reported that the pandemic was affecting their work, being asked to work from home was one of the most commonly reported impacts. In addition, it was found that their wellbeing was impacted, with loneliness and mental health issues being cited as significant causes.

#### DISPARATE IMPACT ON EQUITY BY REASON OF DISABILITY

84. The APPG Data Analysis notes "Disabled people of all ethnicities are underrepresented in the STEM workforce. The gap in representation between STEM workers and others, is larger for disabled women than disabled men. While a majority of non-STEM disabled workers are female (59%), only onethird (33%) of STEM disabled workers are female."

<sup>&</sup>lt;sup>42</sup> Eversheds Sutherland Reinventing the Workplace survey

<sup>&</sup>lt;sup>43</sup> ONS - Coronavirus and the social impacts on young people in Great Britain: 3 April to 10 May 2020



#### Health impact

85. While proportionately less than the UK workforce as a whole, there remain a significant number of disabled individuals in STEM industries. With analysis from the ONS<sup>44</sup> estimating that disabled people "*made up almost 6 in 10 (59%) of all deaths involving COVID-19*" in the period 2 March 2020 to 14 July 2020, disability is an area where the evidence indicates a clear disparate health impact.

#### Wider impact

- 86. In our experience, addressing health-related risk is just one of the ways in which employers are addressing equity for disabled workers. We note that although working from home has enabled many disabled workers to thrive, it also has the potential to create additional challenges and barriers. However, we are aware that some employers have been taking steps to address physical challenges arising from a remote working set-up. Employers are also facing less obvious challenges, for example for workers with autism and dyslexia, who may be challenged by the increased use of communication tools such as emails and messaging.
- 87. Our view is that, whether adjusting duties, location of work or putting in place additional protections to manage health-related risk, such as additional personal protective equipment, a flexible approach tailored to the particular needs of employees is key. To be effective, that approach should also be intersectionality-informed, thereby taking into account multiple factors that may result in a worker being disadvantaged in the workplace, often demanding a wider approach than limited to a particular health condition alone.

#### DISPARATE IMPACT ON EQUITY BY REASON OF SEX

88. In our experience, while few impacts of the pandemic are exclusive to one sex, a number of effects impact males and females in different ways and, with the STEM workforce historically having a lower proportion of female workers, those effects are often highlighted.

#### Health impact

89. The APPG Data Analysis notes that "the STEM workforce has a lower share of female workers (27% vs. 52%)". As was noted in the First PHE Report, "diagnosis rates are higher among females under 60, and higher among males over 60" and "working age males diagnosed with COVID-19 were

<sup>&</sup>lt;sup>44</sup> ONS - Coronavirus (COVID-19) related deaths by disability status, England and Wales: 2 March to 14 July 2020



*twice as likely to die as females*". Analysis<sup>45</sup> of occupational impact by the ONS noted that men working in certain industries had significantly higher rates of death from COVID-19. For example, among healthcare professions as a whole, including those with jobs such as doctors and nurses, men had higher rates of death involving COVID-19 when compared with the rate among those whose death involved COVID-19 of the same age and sex in the general population.

#### **Wider impact**

- 90. In our experience, those STEM businesses where workers have been able to work flexibly during the height of the pandemic, including from home, have often avoided the more significant negative commercial effects of the pandemic. However, with data indicating that the bulk of the burden of childcare often falls to women, that shift can often have a disproportionate impact on women. For example, a report<sup>46</sup> published by the ILO in May 2020 noted that "16.4 billion hours were spent in unpaid care work every day across the world, with over two-thirds performed by women".
- 91. We consider that, for those working remotely, managing work duties and childcare responsibilities and the blurring of the lines between work and home life can increase pressure. This is often compounded by job security concerns, isolation, loss of career traction and the uncertainty of the unfolding pandemic. Such factors all have the capacity to create additional stresses for workers, impacting mental health and potentially resulting in decisions to leave employment.

#### **QUESTION 6**

### What are the implications and opportunities of new policies and employer action in the next 5-10 years following COVID-19 and Brexit? What will the future impacts be for communities, groups, organisations or sectors?

[ELA considers this question to be outside the scope of its expertise and as such is not submitting a response.]

<sup>&</sup>lt;sup>45</sup> ONS - Coronavirus (COVID-19) related deaths by occupation, England and Wales: deaths registered between 9 March and 25 May 2020

<sup>&</sup>lt;sup>46</sup> ILO report on Care work and care jobs for the future of decent work



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