UNIVERSITY OF LEEDS

UK WORKERS AND THE LOW-CARBON TRANSITION:

Worker perspectives on the climate crisis, the low-carbon transition and employment

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EXECUTIVE SUMMARY

The scale of the challenge to reduce carbon emissions is unprecedented and requires significant changes to the way economies and societies are organised. Workers need to be more directly engaged in discussions about decarbonization and the implications for jobs and skills.

Over 20 million workers in the United Kingdom (UK) workforce are aged 49 or under, meaning that a significant proportion of those currently in work will be part of the workforce that is needed to achieve net zero carbon targets in the crucial decade up to 2030. A key challenge for the UK is the creation of new green jobs alongside the 'greening' of existing jobs and the up-skilling of workers to help meet targets for decarbonisation. There is a range of initiatives already underway in key high carbon sectors to support the green transition across power, fuel supply, heat, buildings, transport and waste industries. It is likely that in most sectors and a wide range of occupations workers will be required to develop new knowledge and understanding of the climate challenge and new ways of working to help secure the green transition.

There is much debate around the preferred pathways and timescales of greening the economy. It is beyond the scope of this report to comment on those pathways. However, what is missing from much of the wider analysis on green jobs and skills is an understanding of how workers view the climate crisis, how they consider plans to 'green' the economy might affect their employment and training prospects and what appropriate policy responses are needed.

We fill this gap by drawing on the findings from a survey of 2,000 UK workers: we show how they view the climate crisis, if they feel ready to work in the green economy or develop new green skills and what they consider to be appropriate policy responses to enable a fair and just transition. We distinguish between workers in higher carbon emitting (HC) sectors[1] and those who are currently trade union members. The report provides headline data and a summary of key findings along with recommendations and key messages for different stakeholders.

[1] Higher carbon emitting (HC) sectors are defined here as: agriculture, forestry, fisheries; mining and quarrying; manufacture; electricity, gas, steam or air conditioning; construction; transport and logistics and warehousing.

Key findings

Climate awareness

UK workers have a high degree of concern about the climate crisis with eight in ten being very or fairly concerned. The high level of concern expressed by workers is very similar to that identified in surveys of the general adult population across the UK. Workers in HC sectors are no more or less concerned about climate change. A significantly higher proportion of union members compared to non-members are very concerned about climate change. In exploring emotional responses to the issue of climate change, it is notable that there is an equal split in terms of those who feel or do not feel hopeful around the issue of climate change. Just over one in seven feel no hope at all. With respect to other dimensions of emotional response, around a four in ten are fearful (very or quite strongly), feel anxious or feel outrage about climate issues. Workers in the HC sectors feel these emotions less strongly, and a smaller proportion than workers in other sectors report a sense of urgency with regard to climate action. Union members on the other hand feel the climate emotions much more strongly and have a greater sense of urgency with regard to the need for urgent climate action.

Eight in ten workers say that they feel at least fairly well informed about the causes and possible consequences of climate change, with around one in five stating that they feel very well informed. Of concern is the relative lack of awareness of climate solutions that pertain to industry or workplace: less than twenty percent of workers feel very well informed about climate solutions in their sector or place of work.

Climate action

Just under one third of workers indicate that they are involved in some form of action to reduce carbon emissions or protect the environment at work. Looking across other domains of action, almost six in ten are engaged in some form of environmental activity at the household level, 13% at a community level and at 5% through their trade union (rising to 11% of trade union members). Just over a quarter of all respondents note that they are not climate active in any domain. There was no difference in these responses from HC sector compared to other workers. A significantly higher share of union members were involved in climate action at work, in the community and perhaps not surprisingly in the trade union. Conversely 14.1% of union members said that they were not active in any domain compared to one third (32.0%) of all non-union member respondents.

We asked respondents to identify which stakeholders have the primary responsibility for climate leadership. Overwhelmingly, workers see central government as having the key role (through public investment, taxation and regulation). Although at a much lower level, workers also identify that businesses (through investment in green technologies and services) and local government (through support for green business, jobs and training) have a key role to play in taking action on climate change.

Views on climate policy

Almost six in ten respondents agree with the statement that a large amount of the UK's energy should be derived from the renewable sources of solar or wind power. In presenting a small range of policy solutions support for the use of public monies to subsidise renewables, and also more radical options that include bringing energy production and transport into public ownership and rethinking working time as a climate measure. It is notable that the only option that does not receive more than 50% of workers strongly or somewhat in favour is the measure to ban the use of gaspowered heating boilers for domestic use. A significantly higher share of union members favour more radical policy measures, especially bringing energy into public ownership. There were no significant differences of opinion relating to the climate policy mix amongst HC sector workers.

Climate change and the workplace

There is a considerable degree of informal dialogue, even if only occasionally, taking place on the issue of climate change at work. A significantly higher proportion of workers who already work in jobs considered to be in the 'green economy[2]' respond, not surprisingly, that they are frequently in discussion on climate topics with colleagues (47.8%) compared to other workers (15.2%), but half (50.1%) of workers not in green sectors indicate that they are at least occasionally in dialogue with co-workers around climate issues and 74.6% of this group are also discussing issues of climate change with family members. HC workers give similar responses to the survey average. Again, a significantly higher proportion of union members are engaged in dialogue at work and with family members.

One in five of all workers indicate that they work in an organisation that has taken significant action to try to reduce carbon emissions, with a further four in ten that some action on decarbonisation is taking place at work. Of those workers who reported that decarbonisation or net zero plans are underway in their organisation, only one quarter indicated that they had been significantly engaged in consultations around those plans, although two-thirds report some involvement. An even smaller proportion, just under one in five, had received training relevant to plans to decarbonise. These proportions are similar for workers in the HC and other sectors. A significantly higher proportion of union members report that they were consulted on those plans, feel they had some influence over them and that they had received relevant training: although only one-third of union members received training relevant to plans to decarbonise.

[2] In this study the 'green economy' is defined as the following activities; environmental protection or restoration; renewable/low-carbon electricity; recycling/waste management; alternative (non-fossil) fuel production; energy efficient construction; low emission transport and electric vehicles (EVs); low-carbon professional services.

Expectations of the low-carbon transition

We asked workers about their expectations of how the low-carbon transition would benefit society in general and their expectations of the impact of the transitions on work and employment for themselves, in their industry and in their local community.

- **Societal level impacts and co-benefits:** Workers expect improved air quality, enhanced energy security and increased health and well-being. At the same time they are afraid of the cost of living becoming more expensive and inequalities might increase.
- **Community, industry and personal level employment effects:** Half of UK workers expect that the transition to a greener economy will bring the potential for new job creation in their community. Four in ten, however, think there may also be job losses locally. In addition, only just over a third (38.1%) think that new green jobs would be better-quality jobs, raising the issue of decent work in the green jobs debate. At the personal level a quarter of workers feel they might need to change jobs as a result of the green transition and only one third consider that if they did, that this job would be better quality. A significantly higher proportion of workers in the HC sectors and those that are union members feel that they will need to change jobs in the green transition. In addition, a significantly higher share of union members compared to non-members feel that they will need to learn new skills or need to move locations as part of this change. Interestingly, a significantly higher proportion of union members than non-members feel that if they did need to change job that this might be a job with better pay and conditions.

We also looked at the expectations that workers have of the creation of green jobs in their sector and the extent to which they anticipate that existing jobs will require up-skilling. Workers in IT, electricity supply, construction and agriculture are those who are most optimistic that there will be new green jobs in their sector as a result of the low-carbon transition. Similarly, a higher proportion of workers in these sectors anticipate that there will be a need for existing jobs in the sector to be up-skilled. A lower proportion of workers in mining and quarrying, transport, health services and professional scientific and technical sectors think that new green jobs or better-quality jobs will be created. Given the expectation to increase professional and technical level jobs to support the transition to a greener economy, it is of concern that a significantly smaller proportion of workers in HC sectors anticipate that new green jobs would be jobs with better pay and conditions, again highlighting the issue of poor expectations of decent work in the green economy.

Working in the green economy

The majority of workers across all green sectors (54.4%) are motivated by the intrinsic value of their work. This is a higher proportion than those motivated by pay (41.4%). A third are also motivated by the fact that their work helps address climate change, although some do not recognise their work as being in the low-carbon economy as such.

Moving into work in the green economy

Over four in ten of those who do not currently work in the green economy (42.3%) indicate that they might be interested to switch into one of the green sectors. A significantly higher proportion of workers in HC sectors express an interest in making the switch. The most popular area to switch into is environmental protection or restoration, followed by alternative fuel production and renewable or low-carbon electricity production. The intrinsic value of working in the green economy is a key motivator for those interested to make the switch: three quarters of those expressing interest in making a switch consider that the work would be interesting. This is a much higher than the proportion who think that the move would enable them to get a job with good pay and conditions (34.9%). However, a large minority of those not working in the green economy feel that their current knowledge and skills are not particularly useful for working in a green (or greener) job. A significantly higher proportion of HC sector workers and union members are confident that their skills are relevant for working in the green economy.

In assessing the potential barriers to switching to work in the green economy, the costs of retraining and lack of clarity on whether existing qualifications would be valid were mentioned by over a quarter of all of those in the survey. However, the prospect of lower pay, the need to relocate and the time needed to retrain were much more significant barriers with over a third of respondents indicating these would be barriers to making the change. A similar proportion of HC workers as workers in other sectors identify these barriers. A higher share of union members identify that they would find the cost of retraining a barrier to making the switch to work in the green economy, and a much greater proportion than non-union members are concerned about poor working conditions or lower levels of pay. A significantly higher share of non-union members than those who are members say that they are not sure if their existing qualifications or certificates would be valid for working in the green economy.

Planning for a just transition

Workers were asked about the support necessary to enable the transition to working in the low-carbon economy. They strongly support the need for job guarantees with no forced redundancies, and the creation of decent jobs with similar pay and conditions. Other areas that were relatively highly rated were the need for careers guidance and professional support to find a new job.

Funding for local government to support green business development and training is perceived important. Workers also value the principle of focusing on reducing inequalities in communities badly affected by industrial change in the past, the involvement of communities affected by climate change policy and drawing on the expertise of workers in planning green economy transitions. Union members also stress the importance of developing just transition planning jointly between management and unions through local agreements.

INTRODUCTION

Across the current UK workforce over two thirds, 21.9 million, are aged 49 or under (Office for National Statistics, 2021a). This means that a significant proportion of those who will be in work in 2030 - a key milestone year for the UK to achieve net zero carbon targets - are already in the workforce. A critical key challenge will be the 'greening' of existing jobs and skills alongside the creation of new green jobs.

As sustainable production and consumption evolves, the knowledge and skills needed by workers will change, requiring reskilling or possibly leading to the disappearance of certain jobs and industries, as new approaches and technologies to address climate change develop (ILO, 2018). There is an emerging consensus that worker and community voices need to be heard for green economy transitions to be achievable and avoid the negative impact on communities witnessed in previous periods of industrial restructuring. Significantly, this was recognised in the Paris Agreement of 2015 citing the imperative of just transition for workers and communities affected and a focus on the creation of good quality green jobs (United Nations, 2015). Labour market and employment policy of the past 40 years has tended to rely on market signals that indicate to workers, providers and employers trends in production and employment that lead to businesses and individuals make investment decisions about employment and careers (Keep, 2015). However, the scale of change needed to address the climate crisis and the pace at which it needs to happen means that new approaches are needed in policy design and the engagement of a wide range of stakeholders, including workers, to achieve a step change.

This report aims to help inform policy-making in the area of green jobs and skills, and the 'greening' of jobs, through understanding worker positions on climate change and the ways they can be more effectively engaged in processes that support the green transition. This section continues by outlining the headline challenges and opportunities for employment in the green transition. Sections two to five present data from a survey undertaken with a nationally representative sample of 2,001 workers across the UK in 2022, with conclusions presented in section six. The survey sample is representative of the UK working age population (18-65) by age group, ethnic group and gender. Further detail on the design of the survey and profile of the participants is shown in **Annex A.**

1.1 Background

The UK's Climate Change Act (CCA) of 2008 was the first from a major economy to commit to a legally binding target of net zero emissions by 2050. The Committee on Climate Change (CCC) was established as the independent expert body to report to government on proposals for and achievements against decarbonization plans.

The CCC noted the significant scope for cutting emissions through advancing the use of low-carbon technologies in the power sectors, in buildings, industry and transport to deliver the emissions reduction required at an estimated cost of 1-2% of GDP (Committee on Climate Change, 2008). In 2019, the UK Government brought forward its emissions targets to 2030 to align with the longer-term target aiming to reduce emissions by 68% on 1990 levels by this new date and outlined its net zero strategy connecting a number of sectoral initiatives and cross-cutting themes (DBEIS, 2021). Sectoral initiatives cover power, fuel supply, industry, heat and buildings, transport, natural resources and waste, along with green house gas removal. Green jobs and skills form part of the cross-cutting themes. The UK Government's net zero plans commit to working with business to encourage investment in green skills and industries in the UK, including support for the development of 'a skilled, competitive supply chain for key green industries in the UK' (p. 229) and reform the UK skills system through legislation, re-directing training programmes to the needs of the green economy and helping individuals access relevant training and support for 'good green jobs' (p238).

Estimates of employment change in the green transition are generally (net) positive (ILO, 2018; Chateau et al., 2018). The CCC's economic impact assessment for the UK forecasts the creation of additional employment demand of a 1 per cent net increase in the period 2020-2050 (Committee on Climate Change, 2019). UK Government plans estimate that 480,000 jobs will be supported in the low-carbon transition (op cit). On a more expanded definition, Robins et al. (2019) estimate that over 6 million jobs in the UK will be affected by the green transition suggesting that one in five jobs in high demand and a similar proportion requiring up-skilling or being at risk. Kapetaniou and McIvor (2020) estimate that around half of UK workers in high carbon industries are likely to experience an elevated risk of displacement or job transformation during the green transition and that younger, male workers with less formal qualifications in communities already suffering high levels of inequality would be more likely to be affected (TUC and Greenpeace, 2015; Emden and Murphy, 2019; Diski et al., 2021; Green Alliance, 2022). More recently the CCC's report, A Net Zero Workforce (Committee on Climate Change, 2023a) estimated that a fifth of jobs in the current economy, will be those that the support the delivery of net zero the so-called net zero workforce: two thirds of the net zero workforce are employed in sectors that are forecast to grow, 1% in sectors that would 'phase down' (p.10) and 7% in sectors that would need to redefine their production systems.

While projections for jobs are net positive, the scale of gains is uncertain due to uncertain transition pathways. The CCC's report also stresses that net gain in jobs may mask losses in specific communities more vulnerable to change and that the transitions were also vulnerable due to shortages in relevant skills.

The UK government's Green Jobs Taskforce comprised of industry, skills providers and union officers, developed recommendations for a green jobs action plan (Green Jobs Taskforce, 2021). This plan emphasised the need for improved sectoral and local joint planning to develop anticipated demand for jobs and skills provision, particularly where local economies rely on high carbon sectors. The recommendations of the Taskforce are now being worked upon by the Green Jobs Delivery Group, which is committed to produce a Net Zero and Nature Workforce Action Plan (due 2024). Enhancing the co-ordination and focus on integrating skills within decarbonisation strategies at the national, sectoral and local levels form a core set of recommendations by the CCC in its 2023 report to Parliament, that identifies skills and supply chain issues as crucial to making more significant towards climate change targets (Committee on Climate Change, 2023b)

The focus on jobs and skills is a relatively new area of climate policy interest. Academic and public policy research has tended to focus on the degree of public concern over the climate crisis and how this might shape both support for climate policy and people's active engagement in climate actions. Studies find that the UK public are generally aware of the reality and urgency of climate change. Most people (67%) think we are already feeling the effects of climate change in contrast to 10-15 years ago when most people saw climate change mainly as a risk for future generations (Steentjes, 2021). The UK public also wants to see urgent action on climate, with over half (54%) agreeing that the UK needs to reduce its carbon emissions to net zero earlier than 2050. In the run-up to COP26, Ipsos polling (Ridout and Williams, 2021) found that a sizeable minority of the public (40%) were confident that the UK government would take the actions needed to help combat climate change within the next few years, three quarters (76%) thought the UK should do more to tackle it.

We contend that a dimension that is missing within much of the current analysis is how **work** (type and conditions) might also play a role in shaping the ways in which people **(workers)** understand and engage in climate actions including a desire for, and the barriers to, developing new skills that are relevant for the low-carbon transition and potentially working in 'green jobs.' In analyses of public perceptions, there is already considerable data on the demographics of the public's orientations to climate change, such as differences across age groups, by gender, race or socio-economic group. These are invaluable studies. **But in considering the potential for enhancing action on climate change and the jobs and skills needed, we add a unique perspective that explores these questions with workers.** In addition to reporting on the perspectives of workers as a whole, this report considers two key structural features of employment. Firstly, the sectors within which workers are currently employed and secondly, whether respondents are a member of a trade union.

Why these features? The green transition is likely to affect all areas of the economy and has key implications for work in those sectors that currently form the focus of climate mitigation action such as energy, manufacturing, construction and transport. The rapid decarbonisation of these sectors is central to the achievement of net zero targets. Dialogue with workers in sectors undergoing rapid change is critical. In this regard it is important to understand how workers in these and other sectors view the implications for jobs and skills: Do workers in these 'higher carbon' sectors view climate change and the challenges in relation to work and employment in the green transition differently to workers in other sectors? This is a theme explored in this report.

In relation to union membership, there are 6.44 million trade union members in the UK (DBEIS, 2022) or just under one quarter of all workers. As a voluntary activity, with an estimated 200,000 workplace representatives including 'green reps' (TUC, 2021) trade unions potentially provide a route through which climate awareness and engagement on climate mitigation issues, including the greening of work and skills, could be enhanced. Many trade unions already have policies and activities for members in this regard. However, existing studies indicate that trade union members tend to be more pro-environmental in their orientation (Ringqvist, 2022). As such, if unions are to enhance their role as climate actors through engaging with the wider workforce and across the different domains of work, community, industry sector and government, it is useful to understand if the broader working population has similar or different views on the climate agenda compared to the core constituency of members that they currently represent.

1.2 Methodology

The survey was undertaken with a nationally representative sample of 2,001 workers (employees in employment and self-employed) in the UK, representative of the UK population by those employed in different economic sectors, age, ethnic group, gender and region.

The research was conducted online in the late spring of 2022. The sample was collected using the Skopos propriety panel and the respondents were incentivised in the form of a small amount of high street voucher credits for their time. The data was run through quality analysis that checked indicators such as flatlining questions (responding the same answer to all questions) and the quality of open responses. Table A in the Annex shows the profile of survey respondents.

Differences between two core groups (i) union members and non-members and (ii) workers located in relatively high-emission sectors and those in relatively low-emission sectors were tested using a Chi Squared test for statistical differences in expected distributions. The sectors defined as relatively high carbon emitting sectors are: agriculture, forestry, fisheries; mining and quarrying; manufacturing; electricity, gas, steam or air conditioning; construction; transport and logistics; and warehousing. In the following analyses, employees in these sectors are referred to as those working in 'Higher Carbon' (HC) sectors. The analysis also considers those that already work in the so-called 'green economy' and the interest expressed by those not currently working in 'green' sectors to make a switch into them, and the barriers they would face in making this change. For the purposes of this study the 'green economy' is defined as the following activities; environmental protection or restoration; renewable/low-carbon electricity; recycling/waste management; alternative (non-fossil) fuel production; energy efficient construction; low-emission transport and electric vehicles (EVs); low-carbon professional services.

CLIMATE AWARENESS
2.1 Climate concern

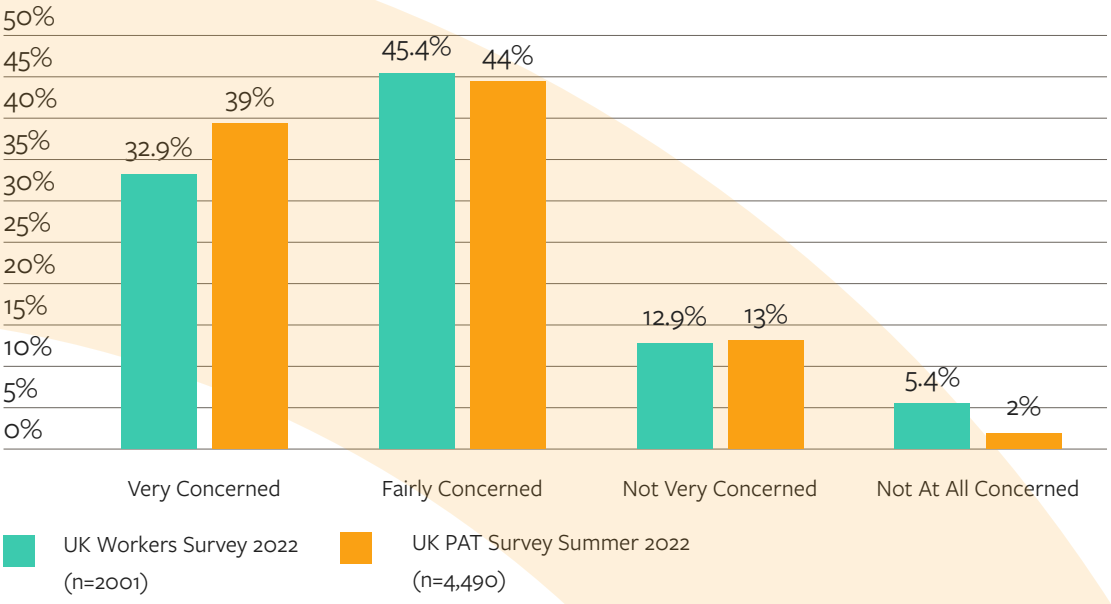
Concern about climate change is considered a key factor in determining the achievement of sustainability goals that require changes to production and consumption patterns (Baiardi, 2022).

Figure 1 shows the level of concern that UK workers express about climate change. 3.4% replied that they did not know what their level of concern was. Just under a third (32.9%) were very concerned 45.4% fairly concerned. Thus, almost 8 in 10 (78.3%) are either very or fairly concerned about climate change. A small proportion (5.4%) say that they are not concerned at all. This indicates that the vast majority of UK workers are concerned about climate change. There is a minority (18.3%) for whom climate change is of little or no concern.

When exploring the dimensions of climate concern by different categories of respondents it is notable that almost half (44.3%) of union members say that they are very concerned about climate change. This compares to 29.2% of non-unionised workers. 13.3% of union members are not very or not at all concerned by climate change, in contrast to 21.6% of non-union members. There was no difference in the levels of climate concern expressed by workers in the HC sectors compared to those working in the rest of the economy.

Figure 1: Climate Concern

How Concerned Are You About Climate Change?



Source: UK Workers Survey 2022; PAT Quarterly Survey Summer 2022 (ONS 2022a)

In comparing our worker survey results with similar UK national population studies, the BEIS Public Attitude Tracker (PAT) of Summer 2022 (also shown in Figure 1) which samples UK resident adults aged 16 and over, reported that 83% of people said that they were concerned about climate change, with 39% saying they were 'very' concerned and 44% saying they were 'fairly' concerned (Office for National Statistics, 2022a)[3,4]. In a slightly differently worded survey reported by in ONS Opinions and Lifestyle survey of October 2021, 75% of adults in Great Britain report that they are 'worried' about climate change (Office for National Statistics, 2021b) . These comparisons suggest that the overall level of concern amongst those who are in work is similar to the degree of concern expressed by the UK adult population as a whole, although the proportion of workers in our survey who were 'very' concerned about climate change was slightly below the national UK average, the proportion of workers who were fairly concerned was just above the national adult population average. In the BEIS PAT survey, 86% of women and 80% of men expressed concern for the climate. In our worker survey the gender difference in concern was similar with 84.9% of women and 77.5% of men indicated that they were very or fairly concerned about climate change.

There is some difference noted in climate concern expressed by those in different age groups across the two surveys. In the general population survey those in the 16-24 and 23- 34 age groups are, somewhat surprisingly, less likely than those in older age groups to express concern over climate change, with 86% of the general public in age groups 35-44 and 65+ respectively expressing concern compared to 79% of those aged 25-34 in the general population. In our worker survey, a greater share of those in younger age groups express climate concern compared to older workers, although the percentage point differences are generally small: 83% of workers aged 18-24[6], 86% of those aged 25-34 and 84% of those aged 35-44 express climate concern compared to 79% of those aged 45-54 and 76% of workers aged 55-64. In the worker survey there is no difference in levels of concern when contrasting white-British workers to those in other minority ethnic groups. Being a parent has no effect on overall concern although a much greater proportion of workers with children respond that they have very high levels of concern (36.3%).

In the UK adult population as a whole, there are marked differences in the levels of climate concern between those with different levels of formal qualification. 90% of the adult population with a degree or higher express concern compared to 73% of those with no formal qualification and 83% of those with some form of qualification (op cit). Amongst our survey of workers 84.8% of those with a degree or higher are concerned about climate change, 71.4 % of those with no qualifications are concerned as are 78.6% of those with other types of qualification. Thus, the pattern of dispersion is similar to the UK population and reported in the PAT survey, but the range (around the average) is not so marked amongst workers. Both surveys illustrate that even amongst those with no formal qualifications more than seven in ten express concern over climate change.

[3] Annex B shows further quarterly data from the BEIS Public Attitude Tracker data for climate concern Autumn 2021 to Autumn 2022 (ONS, 2022b).

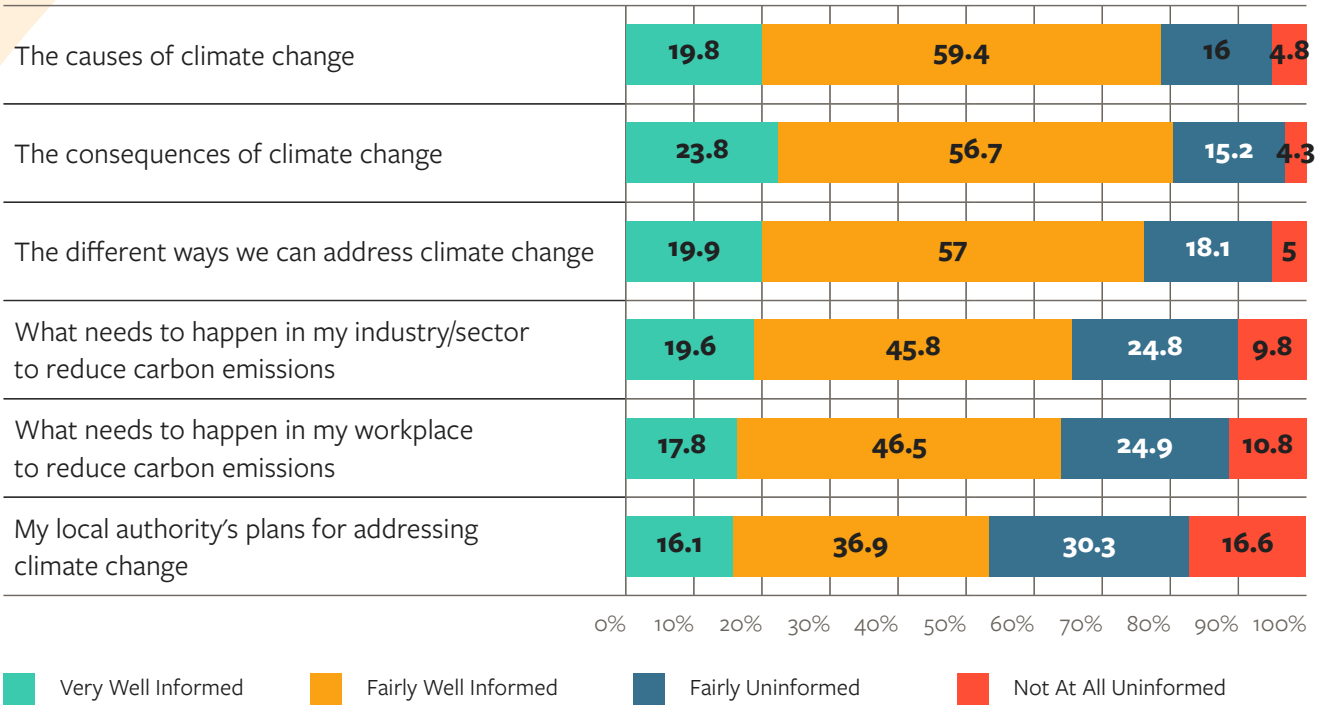
[4] In the PAST survey Don't knows are not reported, in our survey 3.4% replied don't know to this question.

[5] N.B. the category for the youngest age group in the PAT survey is 16-24. In our worker survey the youngestage groups is 18-24.

2.2 Knowledge of climate change and climate solutions

We asked workers how knowledgeable they felt about the topic of climate change. Figure 2 shows the response to asking workers how informed they felt about the climate change in relation to six elements: the causes and consequences of climate change, the possible actions to address climate change, the actions needed to decarbonise their industry and workplace and finally about plans for decarbonisation in their local area.

Figure 2: Climate Knowledge
How well informed are you about the following?
n=2001



Eight in ten workers (79.2%) felt that they were informed about climate change. This number comprises 19.8% stating that they are 'very well' informed and 59.4% are 'fairly well' informed about the causes of climate change. A similar proportion (80.5%) also respond that they have a very or fairly good understanding of the consequences of climate change. A slightly lower proportion, three-quarters (76.9%) respond that they are 'very' or 'fairly well' informed on the different ways that climate change can be addressed.

The proportion of workers who feel 'very' or 'fairly well' informed about what needs to happen in their industry or workplace to address decarbonisation declines to around two-thirds of workers (65.4% for industry and 64.3% for workplace). An even smaller proportion report that they have an understanding of the climate action plans at a local level: those stating that they feel 'very' or 'fairly' well informed about their local authority's plans for addressing climate change and moving to a greener economy falls to 53%.

Across all six measures, a higher proportion of union members say that they were very well informed compared to non-members.

There was no notable difference in response from workers in the HC sectors compared to workers in other areas of the economy. Although, looking at the responses of a detailed industry sector rather than grouping them by high and low-carbon emitting sectors generates some interesting results. A significantly higher proportion of workers in agriculture, forestry and fishing and in the electricity and gas and air-conditioning industries say that they were 'very well' informed about the causes and consequences of climate change. In contrast with this, a lower share of workers in other sub-sectors classified as 'higher carbon' - transport, mining and quarrying and construction sectors say that they were well informed on these issues. A significantly smaller proportion of workers in the manufacturing and water and sewerage sectors felt that they were very well informed on the causes and consequences of climate change.

Turning to the question of whether workers in different sectors felt that they were informed about solutions to address climate change in general, the solutions relevant to their industry and the solutions relevant to their workplace, similar patterns emerged although with some interesting points to note. A higher proportion of workers in the agriculture forestry and fishing sector and those in the electricity, gas and air-conditions sectors say that they were 'very well' informed about climate solutions in general and also about climate solutions affecting their industry than the average level reported across the UK. Although workers in the electricity and gas sectors felt no more informed than other workers about the changes needed to decarbonise their workplace. A much lower proportion of workers in the transport sector said that there were well informed about climate change solutions in general, in their industry or at their workplace when compared to the average response across the UK workforce. A significantly smaller proportion of workers in the mining and quarrying sectors felt that they were clear on the workplace and industry change needs although felt well informed about general climate solutions. Conversely, a much smaller proportion of construction workers compared to workers in other sectors felt informed about what needed to take place in their own workplace but felt relatively well informed about general climate solutions and the industry level changes needed to decarbonize the sector.

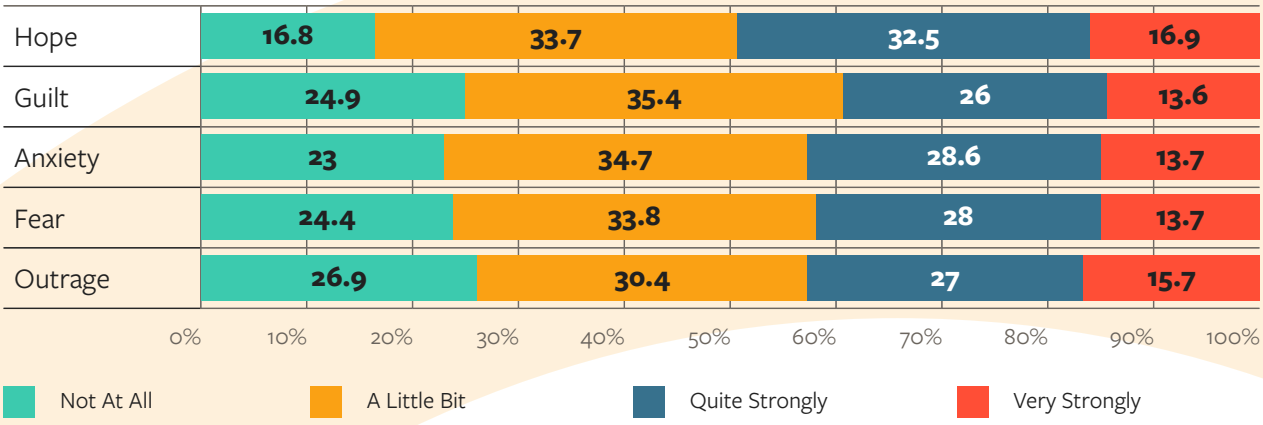
2.3 Climate emotions

A growing body of research stresses that how we feel about the climate crisis can affect how information about climate change is interpreted and the likelihood of action on climate and support for climate policy (Stanley, Hogg, & Walker, 2021). We asked workers how strongly they feel about climate change and their emotional response to the issue asking about hope, fear, anger, guilt, and outrage as measures of perceptions and emotions relating to climate change.

Figure 3 shows the range of responses from UK workers regarding a set of related questions about emotions towards the issue of climate change. An almost exact equal proportion of workers expressed that they have 'no' or 'a little bit' of hope around this issue (50.5%) compared to those who feel 'quite' or 'very strongly' hopeful regarding climate change (49.5%). This contrasts to the responses on the other four categories of emotion which are all similar at around four in ten feeling that they have 'quite' or 'very strong' sense of guilt, anxiety and fear in relation to the climate crisis, with a similar proportion indicating that they feel a sense of outrage (39.7%; 42.3%; 41.8% and 42.7% respectively on these measures). Conversely, around one quarter of respondents indicate that they do not feel these four emotions 'at all' when they think of climate change issues.

These responses show a slightly higher level of anxiety over climate change amongst the workers sampled in our worker survey compared to that reported in the UK Government's ONS Opinion survey where two-fifths (43%) of all adults in GB report feelings anxiety about the future of the environment (ONS op cit).

Figure 3: Climate Emotions
When You Think Of Climate Change, How Strongly, If At All, Do You Feel The Following Emotions?
n=2001



2.4 The urgency of climate actions

Time horizon of climatechange impacts

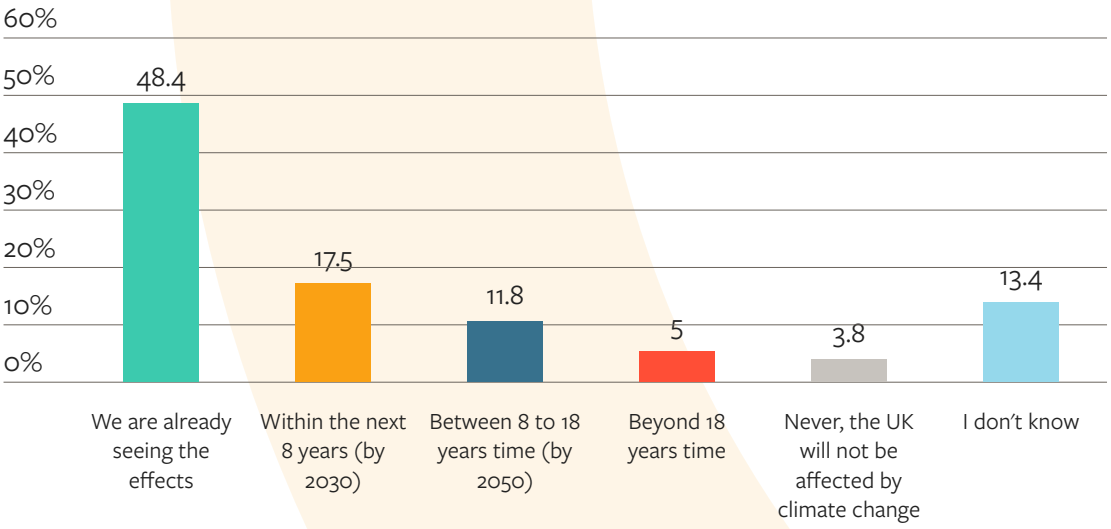
The possible impacts of climate change are often discussed in term of decades, with planning horizons extending to 2030, 2050 and beyond. Yet, concern for the climate can also be shaped by the extent to which we have direct experience or perception that the climate change is already having an effect through extreme weather events, flooding and droughts leading to consequent financial or social effects (Konisky et al., 2016; Baiardi and Morana, 2021). Conversely, some may accept that climate change is real and that it is caused by human activity but if expectations are that any negative impacts of climate change are in the distant future, then the compulsion to act (or urge others to) may be diminished.

Figure 4 shows the time horizons against which respondents consider that the effects of climate change are or will be felt. Almost one half of UK workers (48.4%) considers that the UK is already seeing the effects of climate change, a further 17.5% that effects will be felt in the medium term up to 2030. 11.8% consider that the effects will not be felt until some point between 2030 and 2050. A much smaller proportion, 5%, consider climate change will take a much longer period to take effect (beyond 2050). Only 3.8% consider that there will be no impact in the UK, but is it notable that 13.4% responded 'don't know' to this question. There is no significant difference in response between HC workers and other workers for this question.

Comparing the responses for those who did give an answer, a significantly greater proportion of non-members than union members consider that we are already seeing effects of climate change (58.9% and 50.1% respectively). A higher proportion of union members than non-members indicate that effects would be felt in the coming years up to 2030: 26.8% of members compared to 17.0% of non-members gave this answer. At the other end of the scale 5.5% of non-members versus 2.2% of union members respond that the UK would never be affected by climate change.

Figure 4: Climate Concern - time horizons

When, if at all, do you think the UK will start seeing major effects of climate change? (%)
n=2001

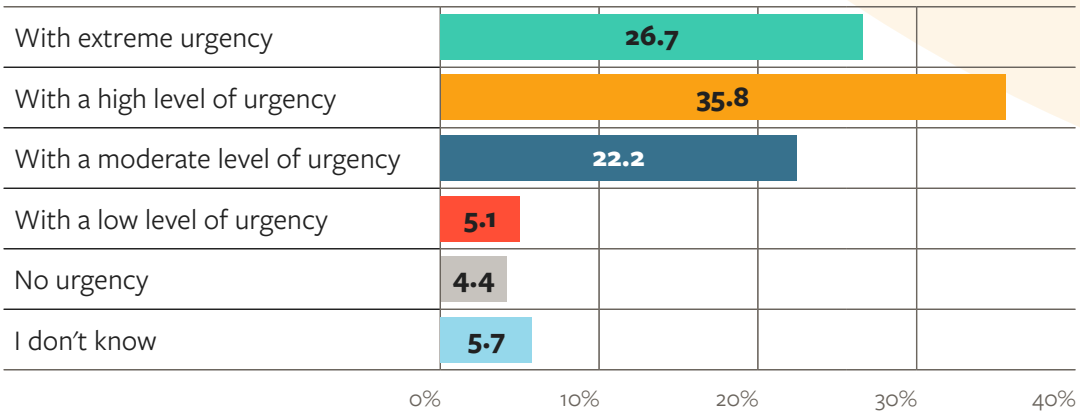


Urgency of Actions

Figure 5 shows that two-thirds of respondents (62.5%) feel that action should be taken on climate change with either 'extreme' urgency (26.7%) or with a 'high level' of urgency (35.8%). One fifth (22.2%) view that action should be taken with a 'moderate' degree of urgency and less than 10 percent with 'low' or 'no' urgency at all. Consistent perhaps with the findings on climate emotions, the level of urgency for action reported by workers in HC sectors is significantly less than for other workers. 57.7% of HC workers consider 'extreme' or 'highly' urgent action is needed compared to 65.0% of workers in other sectors. A significantly higher proportion of union members union members report the need for urgency: 68.5% of union members compared to 59.8% of other workers.

Figure 5: Climate Concern - Urgency of actions

Which of the following best describes your view on how we need to act to address climate change? (%)
n=2001



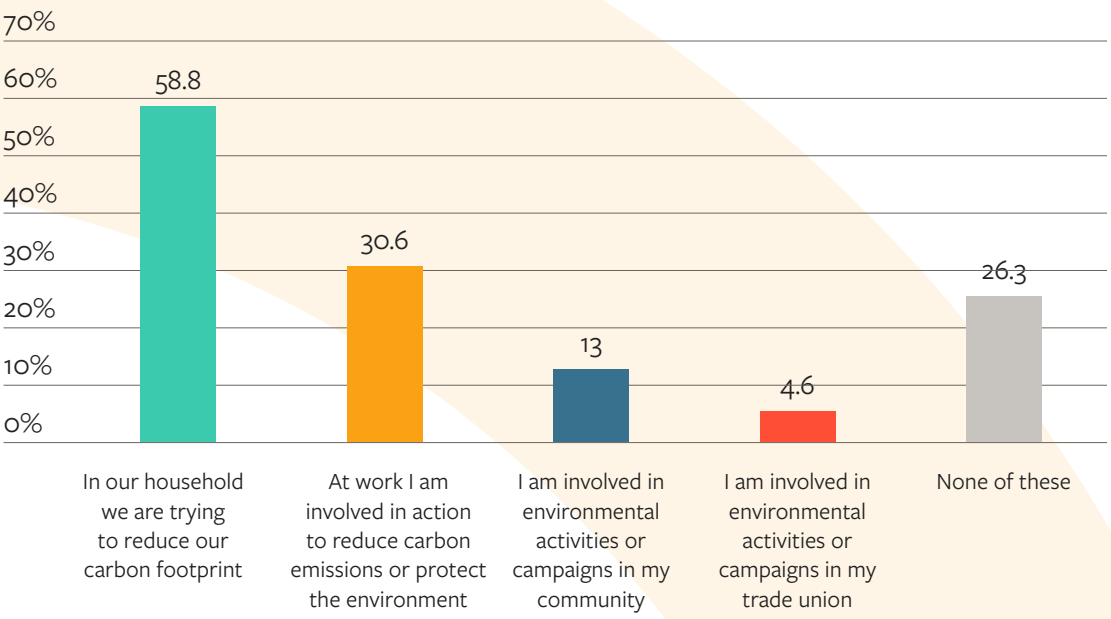
2.5 Climate Politics

Personal actions on climate change

Overall, just under a third of workers (30.6%) indicate that they are involved in action to reduce carbon emissions or protect the environment at work. Considering the range of other contexts within which workers might be active on climate issues, Figure 6 shows that well over half, almost six in ten (58.8%) are engaged in some form of activity at the household level in trying to reduce their carbon footprint. 13% report that they are involved in community level climate action or environmental campaigns with 4.6% involved in this kind of activity through their trade union. Overall, just over a quarter of respondents (26.3%) note that they are not 'climate active' in any of these domains. There was no difference in these responses from 'HC' compared to other workers. A significantly higher share of union members were involved in the climate action at work, in the community and perhaps not surprisingly in the trade union. Although this figure for trade union activity was only 11% of trade union members. Conversely 14.1% of union members said that they were not active in any domain compared to one third (32.0%) of all non-union member respondents.

Figure 6: Personal Action on Climate Change

Are you involved in activities to address climate change any of the following ways? n=2001



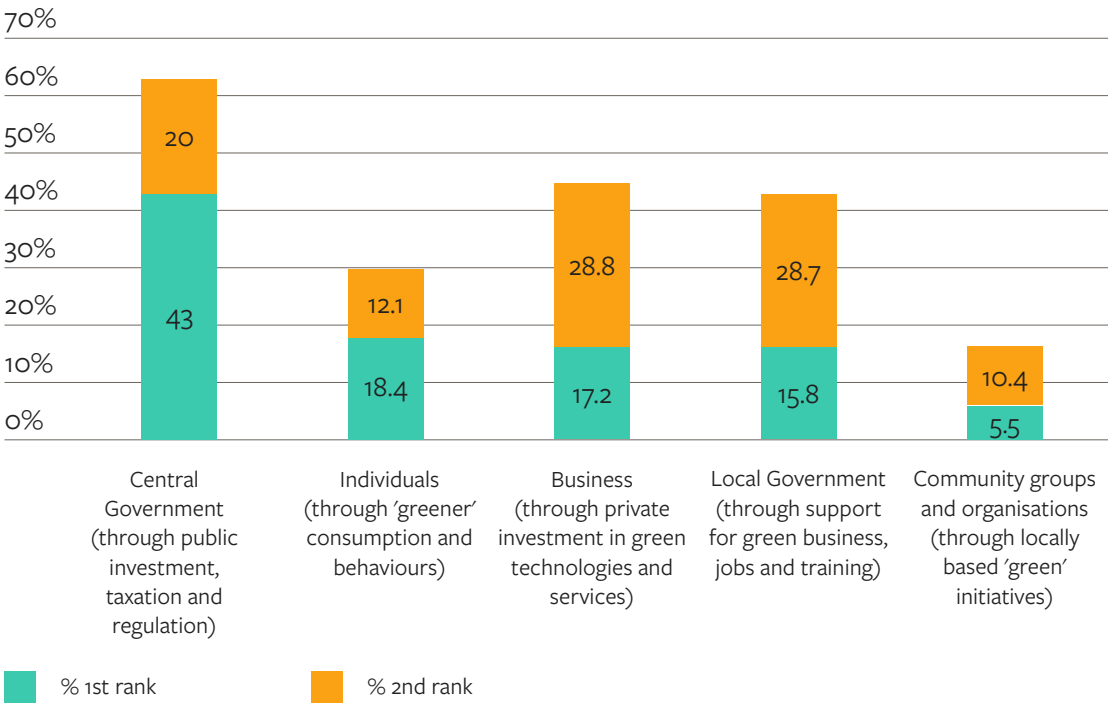
Responsibility for action on climate

Figure 7 shows that overwhelmingly respondents feel that it is the primary responsibility of central government to show climate leadership through public investment, taxation and regulation with 43% of respondents giving this response and a further 20% placing central government in second place.

A fairly equal proportion of respondents place the primary responsibility for action on individuals, businesses or local government (18.4%; 17.2% and 15.8% respectively). Interestingly, while a fifth of respondents placed the primary responsibility on individuals only a further 12.1% put individuals as their second-choice category. Looking at the first and second ordering together, respondents also expect climate leadership from businesses and local government. Only 15.8% of respondents feel that community groups and local organisations should be at the forefront of leading action on climate change. Those working in HC sectors were no different in their responses in relation to the apportioning of responsibility for climate leadership to different stakeholders. Yet, there was a significant difference between union members and non-members. 56.6% of members versus 65.9% of non-members think central government has the primary responsibility. In contrast, 22.1% of union members felt that it was local government who should have primary responsibility compared to only 13.8% of non-union members. A significantly lower share of unions members compared to non-union members place primary responsibility on employers and a significantly higher share of union members consider that community organisations also have key a role to play in climate leadership.

Figure 7: Responsibility for Action on Climate (Ranks 1 & 2)

Please rank from 1 (highest) to 5 (lowest), who you think has the greatest responsibility to address climate change
n=2001



Views on energy policy

While there are diverse views on the best pathways to achieve decarbonisation, there is agreement that a critical area for intervention is the redesign of energy systems to reduce the reliance on fossil fuels (Committee on Climate Change, 2023b). Level of support for different types of energy transition is of interest in terms of understanding worker positions on these issues. The survey asked respondents for their preferences for the energy mix that is derived in the UK from different sources ranging from coal, gas to newer forms of lower carbon energy production.

Figure 8: Preferences for UK Energy Mix

We can generate electricity using different energy sources. How much of the electricity used in the UK do you think should be generated from each of these energy sources?

n=2001

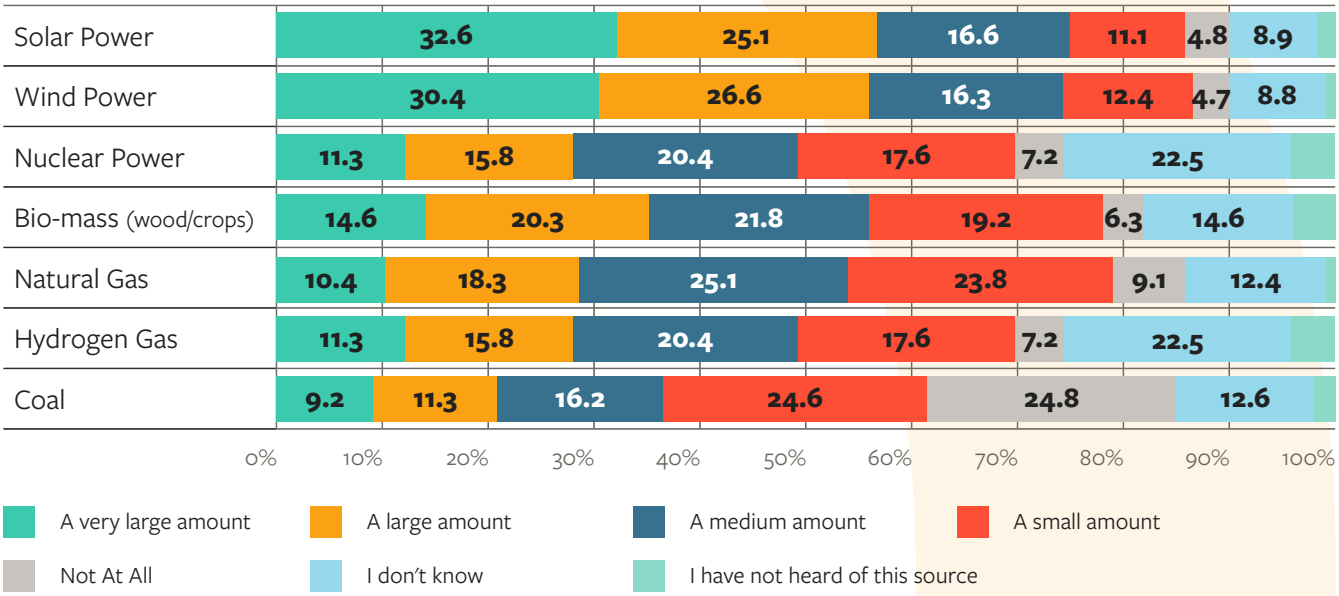


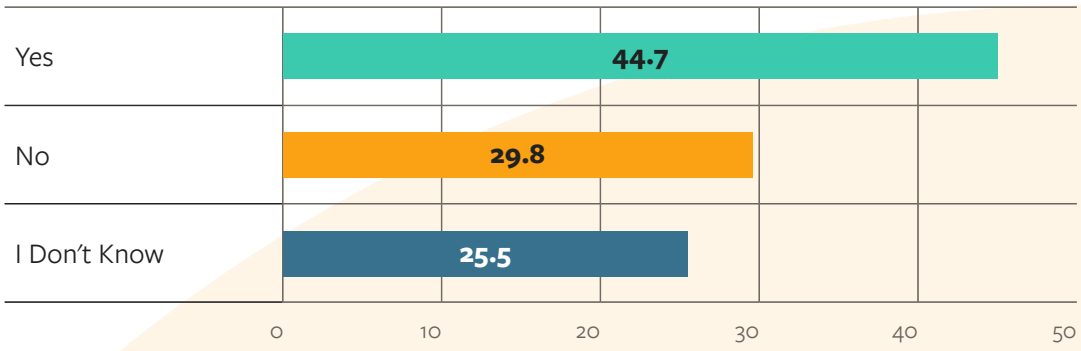
Figure 8 illustrates that renewable energy sources of solar and wind are the most popular sources for the energy mix, with well over half of all respondents indicating that the UK's energy mix should be made up of a large or very large amount of these two energy sources (57.6% and 57.0% respectively). Conversely respondents show least support for the use of fossil fuel power as a large source of energy generation. Interestingly, just over a quarter (28.7%) of respondents feel that natural gas should form a very large or large amount of the UK's energy mix. 9.1% feel that natural gas should not be used and a further 12.4% are not sure. A quarter of all respondents (24.8%) feel that coal should not be used at all in electricity generation, although 20.5% feel that it should form a large proportion of the energy mix. There are equal levels of support for the use of nuclear and biomass as options within the energy mix although it's also notable that there are around one in seven respondents who are not sure of the options of including these sources in the energy mix with a further 5 to 3% indicating that they are not aware of hydrogen gas or biomass as fuel options.

The sector in which workers are currently located makes little difference on these energy mix choices except for the results relating to natural gas where a smaller proportion of workers in the HC sectors compared to workers in other sectors say that natural gas should form a substantial part of the UK's energy mix (29.5% of HC workers compared to 33.2% of other workers). When looking at the responses from union members, they are much more supportive of the inclusion of coal within the UK's energy mix with 39.5% supporting its inclusion to significant degree: 35.5% support the inclusion of natural gas as a major part of the energy mix versus 25.2% of non-union members. UK union members are also much more supportive of the use of nuclear power (46.5% compared to 34.7%), the use of bio-mass (46.7% and 34.9% respectively) and hydrogen (44.2% versus 23.5%), although with the last two options, and a significantly higher share of non-union members compared to union members indicate that they either had not heard of these sources of energy or did not know how to respond.

A specific question was asked of respondents as to whether nuclear power should be considered as a source of green, renewable energy. While the level of carbon emissions generated from nuclear energy generation is low, there are other potentially environmentally harmful consequences associated with nuclear power. Figure 9 illustrates that the use of nuclear power is still highly contested with just under half (44.7%) thinking that it should be considered as a green source of energy. Three in ten respondents (29.8%) replied no and a further quarter (25.5%) are unsure. A higher share of HC workers and union members, compared to non-HC workers and non-union members, respectively support the notion of nuclear power being considered green energy source (51.3% and 56.0% respectively agreeing with this statement).

Figure 9: Climate Politics - nuclear power

Do you think that nuclear power should be considered as a green source of energy? n=2001



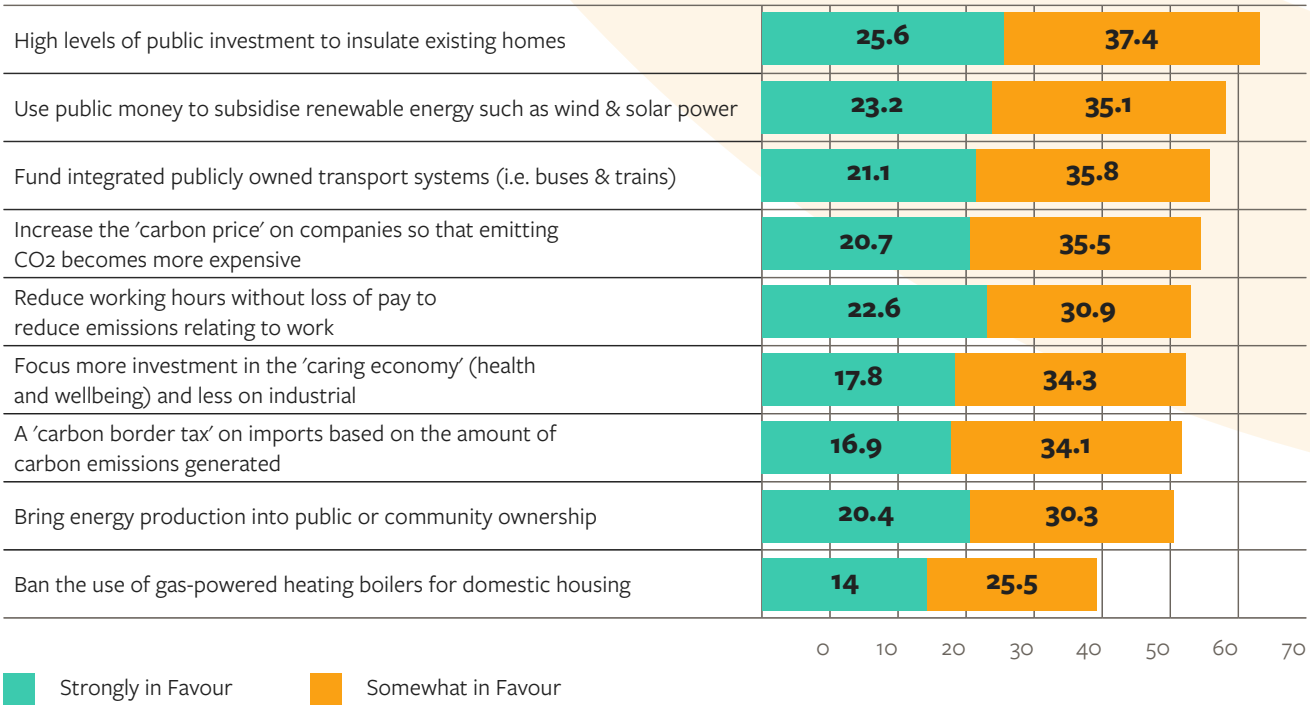
Views on climate policy

In addition to discussing energy sources, the survey also asked respondents for their views and support for a range of climate policies. Only a small selection of policy options were presented which broadly represent three different approaches to climate policy-making: the first is focused on more market-oriented change such as the use of carbon taxes; the second broader policy area focuses on public investment and regulation; the third around more progressive or radical proposals such as public ownership that signify a shift away from dominant economic models.

Figure 10 shows the results with the policy options ordered in terms of the highest ranking of those strongly in favour of each option. There are high levels of support for a mix of policy types with those centred on public investment and more radical proposals given the highest level of support. Although market options also feature strongly. There is greatest level of support for significant levels of public investment to insulate homes. It is interesting to note the level of support for this policy, given that the survey was undertaken before the winter 2022 in which heating bills and energy conversation were major issues for many people. There is also considerable support for the use of public money to subsidise renewable energy such as wind and solar and also for bringing transport into public ownership and to reduce working hours as a climate measure. It is notable that the only response that does not receive more than 50% of workers strongly or somewhat in favour is the measure to ban the use of gas-powered heating boilers for domestic use in new homes. Given that a phase out of gas boilers in new builds is a current policy (Committee on Climate Change, 2019b), the survey responses suggest that wider communication is needed on the benefits of this approach.

Figure 10a: Preferences for UK Climate Policy Options

The following is a list of 'greener economy' policy ideas. These are different ways to reduce carbon emissions. Are you in favour or against these ideas?
n=2001

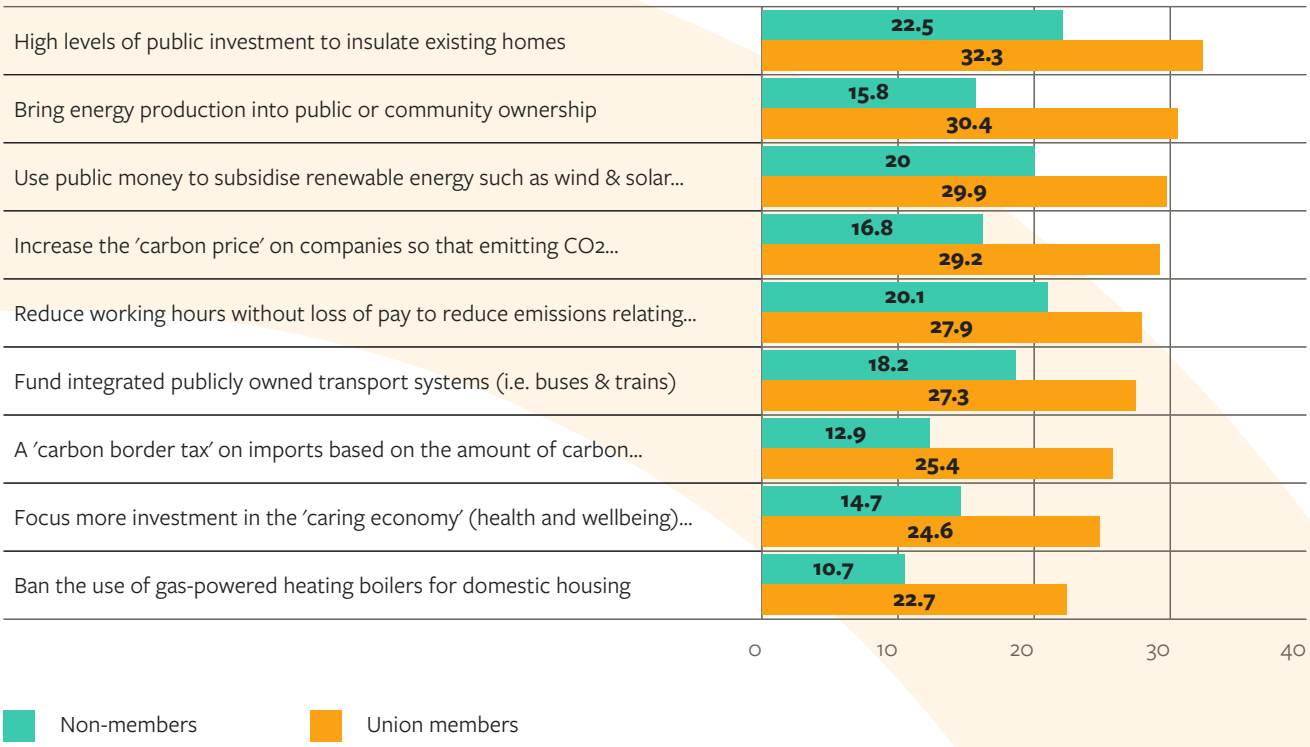


There were no significant differences of opinion relating to the climate policy mix between HC sector workers and workers in other sectors the proportions strongly in favour or somewhat in favour of the policy options presented have the same order of preference as those presented in Figure 10. There was a significantly higher proportion of union members that were strongly in favour all of the climate policy measures proposed compared to non-members. Another notable feature of the responses to this question is the ranking of policy options, taking the proportion of those that gave the response 'strongly in favour' Figure 10b shows that the responses from union members suggest a different ranking of support for policy options compared to non-union members.

A significantly higher proportion of union members support high levels of public investment to insulate existing homes and bringing energy into public or community ownership.

Figure 10b: Preferences for UK Climate Policy Options

% strongly in favour, trade union members and non-members
n=2001



CLIMATE CHANGE AND THE WORKPLACE

The study set out to establish how workers view the challenge of climate change and actions to address it. In addition, we explored questions of action on climate change at work, and the extent to which dialogue and action to address emissions and the transitions to net zero were happening at the workplace. This helps to open up exploration of not only how workers view the effects of low-carbonisation for themselves and their communities (see the next section) but how the workplace can be a site where the issue of climate change is socialised and acts as a space for dialogue on where and how the 'greening' of jobs can take place.

3.1 Talking about climate change

We asked whether respondents discuss issues around climate change and action on climate with work colleagues. Table 1 contrasts this response with a similar question about the extent to which respondents engage with family members on the issue of climate change and action to address it. There is a slightly lower portion of workers who frequently engage on this topic with colleagues at work in contrast to similar conversations with family members. Overall results indicate that there is a considerable degree of dialogue even if only occasionally on the issue of climate change both at home and at work. HC workers gave similar responses to non-HC workers A significantly higher share of union workers compared to non-union workers report that they are engaged in dialogue at work and with family members: 45.3% of union members, compared to 20.8% of non-members indicated that they frequently talk about climate issues with their family. 38.2% of union members frequently talk to co-workers about climate issues compared to 14.5% of other workers.

A significantly higher proportion of those workers already in jobs considered to be in the 'green economy' (see section 5.2 below) respond that they are frequently in discussion on climate topics with colleagues (47.8%) compared to other workers (15.2%), but half (50.1%) of workers not in 'green jobs' indicate that they are occasionally in dialogue with co-workers around climate issues and 74.6% of this group are also discussing issues of climate change with family members.

Table 1:
Do you discuss issues around climate change and action on climate with (a) your family (b) colleagues at work?
n=2001

	% with family	% with colleagues at work
Yes, frequently	28.6	22.1
Yes, occasionally	50.0	48.4
No, never	21.4	29.5

These responses indicate that the issue of climate change is a subject which is discussed, albeit occasionally by some groups of workers. The themes highlighted in the survey illustrate that the workplace is a site for informal dialogue on climate issues, but also that workers are not just workers. They are also family and community members. The data in Table 1, along with the responses above which noted the degree of climate activities taking place at home and in the community stress the need to connect up these dialogues and the activities on climate that are taking place across different domains.

3.2 Net zero plans at work

To understand the employment context in which respondents work, the survey asked workers if they considered that they worked for an organisation that produces a low or high level of carbon emissions: 29.4% respond that they work in an organisation where emissions are low, 31.7% consider they work in a location where emissions are fairly high and 8.7% where emissions are very high. 30.2% of respondents did not know the carbon profile of their organisation. Not surprisingly, a significantly higher proportion of HC workers state that they do work in a high emitting organisation, as do union members.

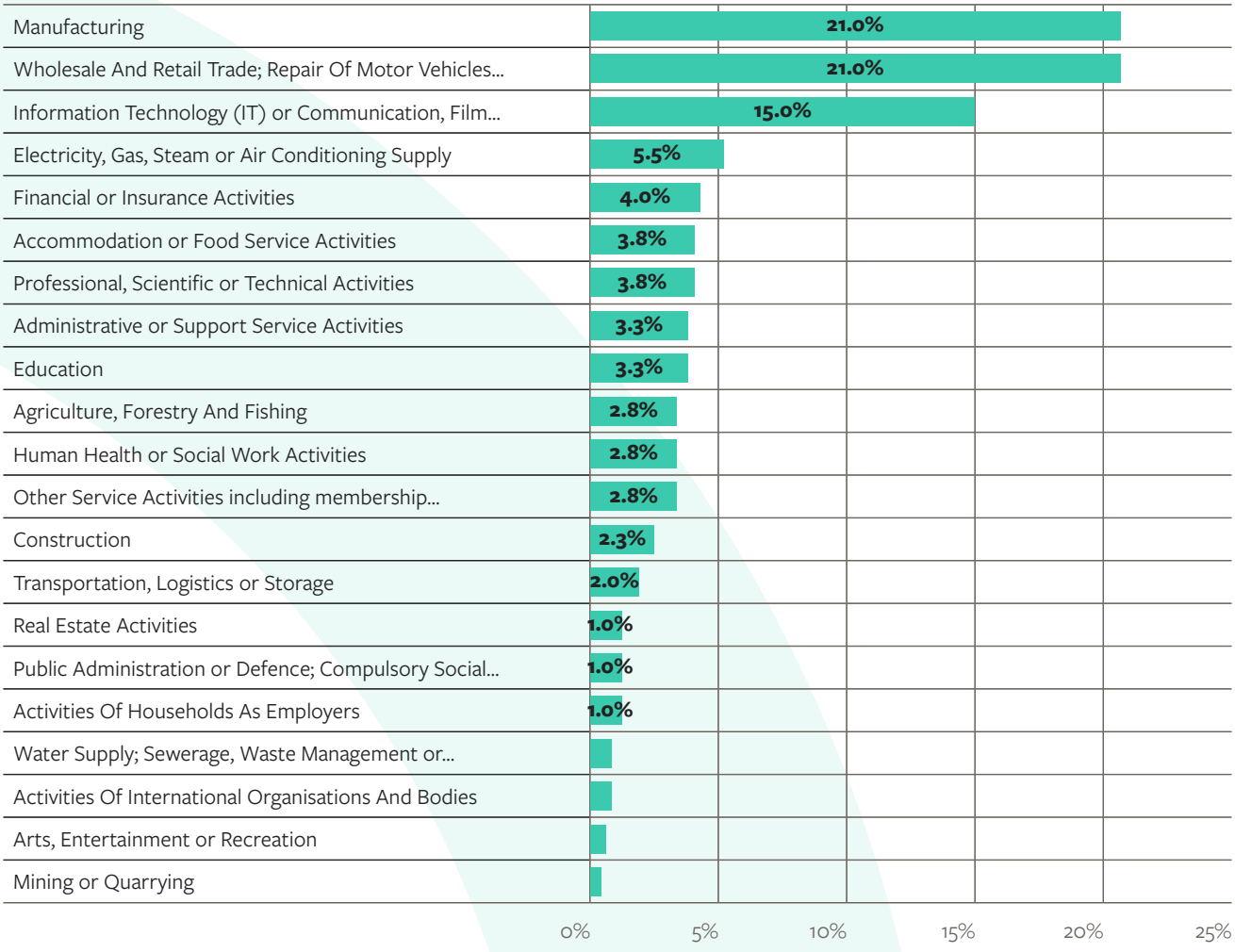
In terms of formal workplace plans to address climate change, 20.0% of all workers indicate that they work in an organisation that has taken significant action to try to reduce carbon emissions. A further 42.2% reply that there is some action on decarbonisation at work and 15.1% say that nothing is happening in their organisation. A further 15.1%, of respondents reply that they do not know if their management has taken specific action to decarbonise work activities.

A third of union members (33.7%) work in organisations that have made significant efforts to decarbonise and a further 45.9% in organisations that have taken some actin to decarbonise. This reflects in part the concentration of workers in both HC sectors and also in public sector employment where for example, local authorities and government departments have made clear public statements of plans and action to address climate change.

Figure 11a shows the proportion of workers in each industrial sector that report that 'significant' efforts have been made in their organisation to decarbonise. The only sectors above the survey average response are manufacturing and wholesale and retail trade and automotive repair. Other sectors within the HC category fall below this average with mining and quarrying and construction at very low levels.

Figure 11a: Has your organisation made any changes to try and reduce carbon emmissions?

'yes', significantly % of workers by industry sector
n=2001

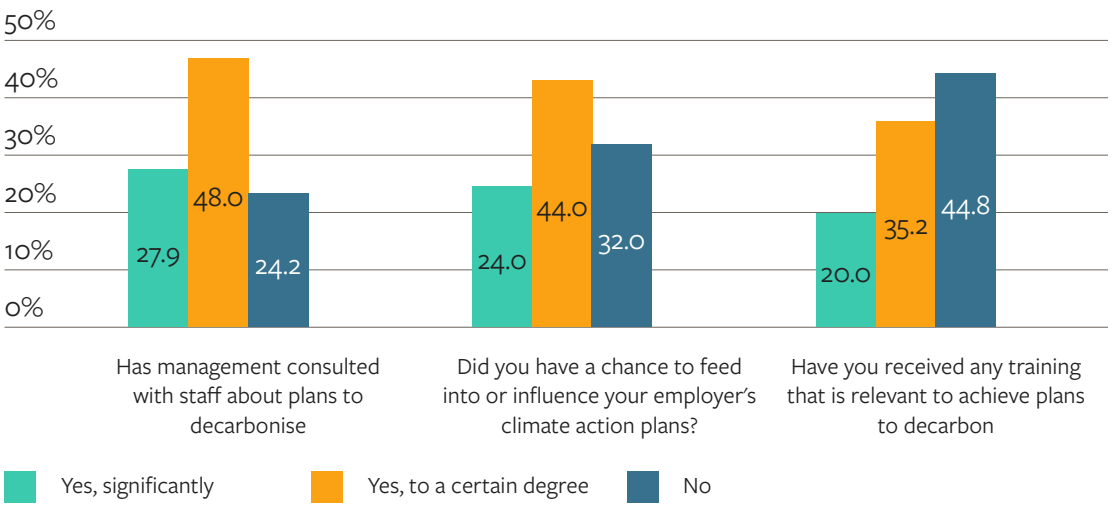


3.3 Worker engagement in workplace decarbonisation

Following on from questions regarding formal plans for decarbonisation, the survey asked workers if they were engaged in consultation by their employer around those plans.

As noted above, a considerable minority were not aware of any formal plans, the carbon footprint of their organisation or even had any form of informal discussion about climate issues at work. Looking at those who report that their employer has taken some action ('significantly' or 'to a certain degree') to decarbonise, Figure 11b shows the proportion of workers who state that they have (a) been consulted by their employer around these plans, (b) had any influence on the plans, or (c) if they have received any relevant training to help bring implement decarbonisation.

Figure 11b: Engagement in Decarbonisation Plans
(% of workers that report that plans are evident)
n=1244



Where formal plans are in place, just over seven in ten (70.9%) have had some form of consultation on this topic, with 26% indicating that this engagement was significant. A slightly smaller proportion indicate that their views on the topic helped to influence climate action plans (65.3%). This suggests a reasonable degree of engagement. Although perhaps of concern is that a much smaller proportion (53.9%) have received relevant training that would support the implementation of decarbonisation plans. It might be expected that workers in the HC sectors might have been more engaged in consultation and training on decarbonisation compared to workers in others sectors, but the survey suggests hat this is not the case.

In workplaces where workers are aware of decarbonisation plans, a significantly higher proportion of trade union members say that they had a degree of significant consultation on climate plans with 38.3% giving this response compared to only 17.3% of non-unionised workers. In addition, a significantly higher proportion of union members compared to non-union members say they felt they had influence over those plans and that they had received relevant training (35.5% and 33.5% respectively). More generally, only 26% of all workers (in any type of workplace) indicate that they have taken part in any education or training courses that are relevant with respect to understanding the causes, consequences or actions to address climate change.

EXPECTATIONS OF THE LOW-CARBON TRANSITION

This section focuses on the expectations that respondents have regarding the transition to a more sustainable, low-carbon economy: in the survey we referred both to a 'greener' and 'net zero' economy. The section concludes with workers' views on the policy options for supporting a just transition.

We explored these expectations at a number of different levels starting with broader societal benefits of moving towards a low-carbon economy often referred to in the climate change literature as the co-benefits of mitigating climate change (Stern, 2006; IPSOS, 2022). We then asked workers about their expectations of employment-related changes in their communities, and then the expected impacts of the green transition on their own work and in their current sector of employment. This section then turns to respondents' views on working in so-called green jobs: who is working in these jobs and amongst those who are not, their interest in switching into 'green' work (broadly defined), their motivation for this, and whether they considered that the knowledge and skills that they currently have would be relevant for working in the green economy. The section concludes with workers views on the policy options for supporting a just transition.

4.1 Expected impact of the low-carbon transition

Societal level impacts or co-benefits

We asked workers how more generally they viewed the green transition in terms of societal level impacts. Figure 12 shows that of the possible co-benefits listed, seven in ten (70.2%) of respondents consider it likely that improved air quality will be a benefit of addressing climate change and moving towards a greener economy. Over two-thirds (64%) respondents feel that improved energy security is likely along with improved soil and water quality equally. Close to two-thirds of respondents (62.6%) also feel that increased health and wellbeing would be a co-benefit.

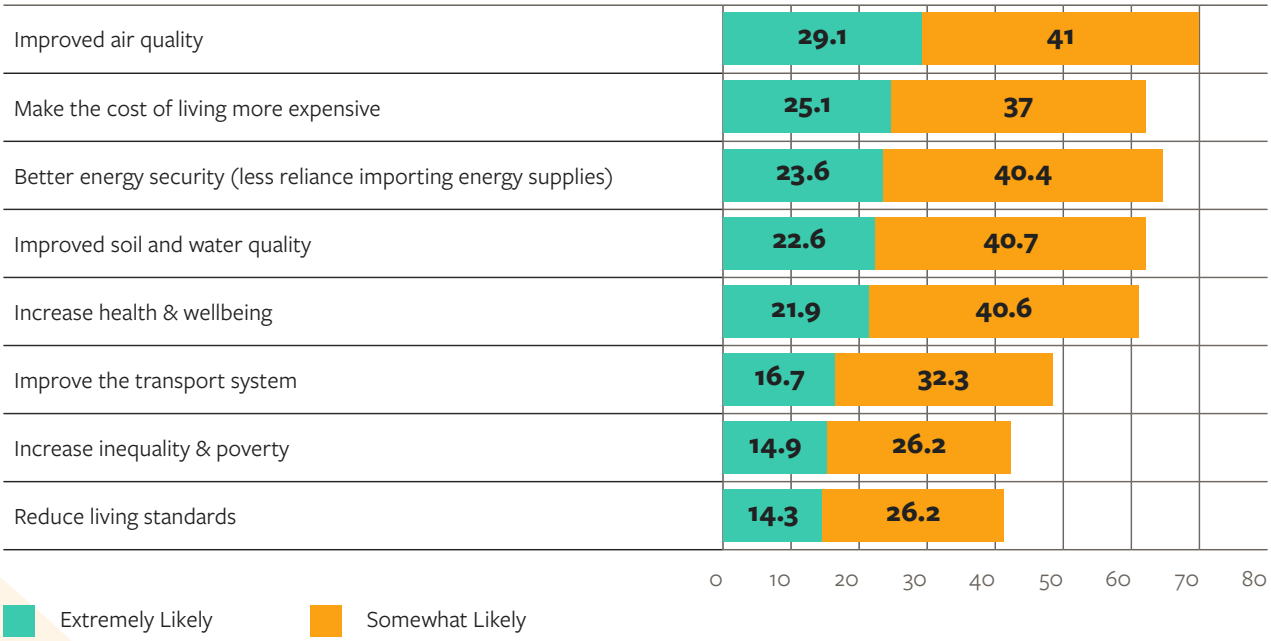
At the same time, there are concerns that the move towards a greener economy would result in increased cost of living with 62.2% agreeing that a rise in cost of living would be somewhat or very likely be a consequence of greening the economy. It is notable from Figure 12 that over a quarter of respondents (25.1%) feel that this is extremely likely. The responses in relation to some of the potential dis-benefits of moving to a greener economy such as rising inequality and poverty (41.2%) or the reduction in living standards (40.5%) are not seen as likely as of some of the positive co-benefits noted above, yet it is important to note that just over four in ten respondents feel that these negative outcomes are likely.

Workers in high carbon sectors ranked the co-benefits in the same order as workers in the other sectors. Union members also had a very similar order of ranking although they place increased health and well-being second after improved air quality when measured by those who considered that this outcome would be somewhat or extremely likely.

These results suggest that overall respondents have a generally positive outlook of the likely benefits from the green transition that appear on balance to be stronger than some of the potential dis-benefits. However there is a significant minority that considers the potential for the transition to impact on inequalities and cost of living, issues that need to be recognised and acknowledged as legitimate concerns.

Figure 12: Societal Co-benefits of Climate Mitigation

In principle, how likely do you think that changes towards a 'greener' economy will affect society in the following ways?
n=2001



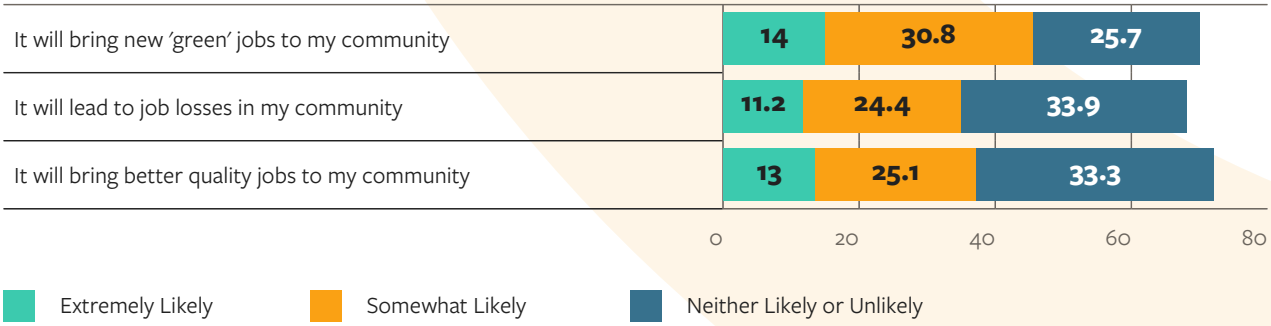
Community level impacts

In addition to the broader level societal co-benefits of addressing climate change, respondents were also asked whether they felt that the green transition would result in changes for their local community in relation to employment. Figure 13 shows that almost half of UK workers (44.8%) expect the potential for new job creation in their locality. Over a third also think that job losses locally (35.6%) are extremely or somewhat likely. A slightly higher percentage, although only just over a third of workers (38.1%) think that locally new green jobs would be better quality jobs: this raises the issues of concern around the extent to which green job creation might impact on initiatives to improve levels of decent work.

A significantly higher proportion of workers in the HC sectors consider that there will be new jobs and job losses in their community as a result of transition to a green economy. However, HC workers are slightly more positive than other workers in that they anticipate that the green jobs created in their community will be better quality jobs (39.1% think this is likely, compared to 37.6% of workers in other sectors). Trade union members are more positive about the community effects of greening the economy, with 61.9% thinking new jobs will be created locally and that locally new green jobs will be better quality (54.7%) but they are also more likely to think that there will be job losses locally (52.3%).

Figure 13: Community Level Employment Impacts:

How likely do you think that any changes towards a 'greener' economy will affect YOUR LOCAL COMMUNITY in the following ways?
n=2001

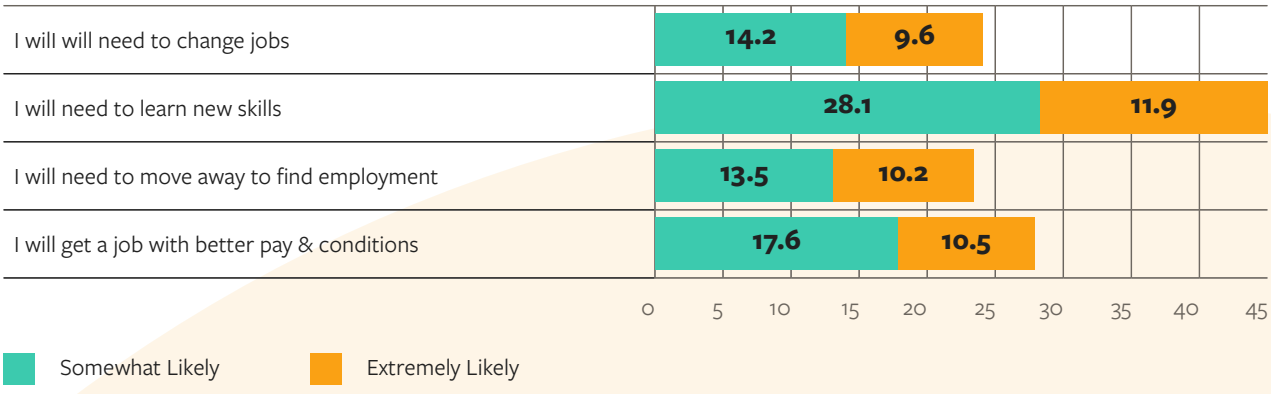


Employment effects for individual workers

Figure 14 shows the responses from workers in relation to similar questions regarding anticipated employment effects of the green transition in terms of their own employment. Within the sample between 6.4% and 8.7% of respondents replied that they did not know what the effects would be on their employment. Just under a quarter of UK workers (23.8%) feel that they would need to change jobs as the economy makes the low-carbon transition. A significant minority, over four in ten (40.1%) feel that they would need to learn new skills in order to work a lower-carbon economy. Almost a quarter feel that potentially they would need to move away to find employment (23.7%). Just over a quarter (28.1%) feel that it would be likely that they could access a better-quality job in the green economy. This is interesting in comparison to the response above where respondents were more optimistic about the possibility of decent work being created in their community as a result of the green transition, but a much lower proportion think that this would happen to them personally.

A significantly higher proportion of workers in the HC sectors say that they feel that they will need to change jobs (28.3%) compared to workers in other sectors. Equal proportions of HC sector and other workers say that they will need to learn new skills and possibly to move to find work and consider that they would get a job with better pay and conditions in the sector. A significantly higher proportion of union members consider that they would need to change jobs, to learn new skills or need to move locations and a significantly greater proportion of union members than workers who were not unionists consider that they would get a job in the green sector with better pay and conditions (58.7%).

Figure 14: Individual Level Employment Impacts:
How likely do you think that any changes towards a 'greener' economy will affect YOU in the following ways?
n=2001



Industry level impacts [6]

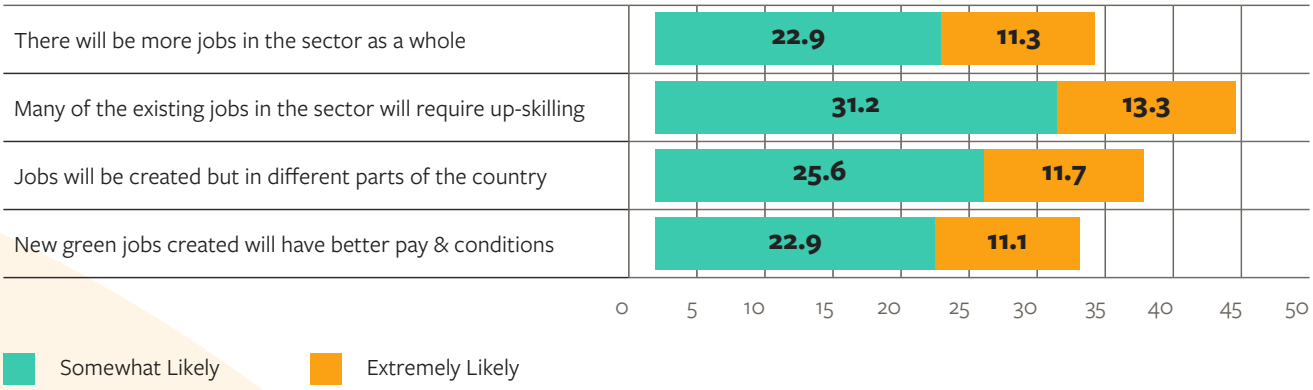
The final set of questions on anticipated employment effects focused on asking workers how they felt the employment issues discussed above would affect the industry that they currently work in. Once again, around 7% to 8% of the workers did not know what the likely effect would be. Figure 15 shows that almost one third (34.1%) felt that there would be more jobs in the sector as a whole in their sector as it transitioned. Conversely, just under a third felt that job creation was unlikely (29.3%).

Just under half (44.5%) felt that many of the existing jobs in the sector would require some degree of up-skilling, slightly fewer (37.4%) considered that new jobs created would not be in their locality but would be created in other parts of the country. Just over one third (34.0%) agreed that it was likely that the green jobs created in the sector would have better pay and conditions. Again, whilst the overall expectation of job creation is positive and that at a community level, only a minority felt that decent jobs would be created in the transition.

A significantly higher proportion of HC sector workers than workers in other sectors think that new jobs would be created in their sector as a result of the green transition, and that existing jobs would require up-skilling. There was no difference in response over the anticipated increase in job quality across sectors. Similarly, a significantly higher proportion of union members consider that more jobs would be created in their sector during the green transition, and union members are more optimistic that green jobs will have better pay and conditions with 52.3% stating that this was extremely or somewhat likely compared to only 29.0% of non-members.

Figure 15a: Industry Level Employment Impacts:

How likely do you think that changes to a 'greener' economy will affect THE SECTOR that you curently work in the following ways?
n=2001



[6] These results are contrasted with worker views on the general prospects for employment in their sector in the next 5 years with respect to overall jobs, decent work, up-skilling requirements and job losses due to automation, shown in Annex C.

Figure 15b shows in more detail the proportion of workers in each industry sector that consider that it is extremely or somewhat likely there will be firstly, new jobs in their sector and secondly, that existing jobs will require up-skilling as a result of the green transition. The table is displayed showing in ranked order the proportion of sector workers who consider that there will be more jobs in the sector as a whole by industry. The sectors of employment where workers are most optimistic that there will be new jobs as a result of the green transition include those working in international bodies and in the ICT, electricity supply, construction and agriculture sectors. Workers in these sectors also have a similarly high expectation of the need for existing jobs in the sector to require a degree of up-skilling.

It is interesting to note that a significantly higher proportion of workers in manufacturing, transportation and professional services identify the possibility of new job creation as a result of the transition, despite current projections suggesting the potential for employment growth in these sectors in the transition to net zero (Committee on Climate Change, 2023a).

Figure 15b: Industry Level Impacts

% of workers in each sector stating that it is likely that as a result of the green transition (a) there will be more jobs in the sector and (b) existing jobs will need (ranked high to low of the proportion by sector stating 'more jobs')
n=2001

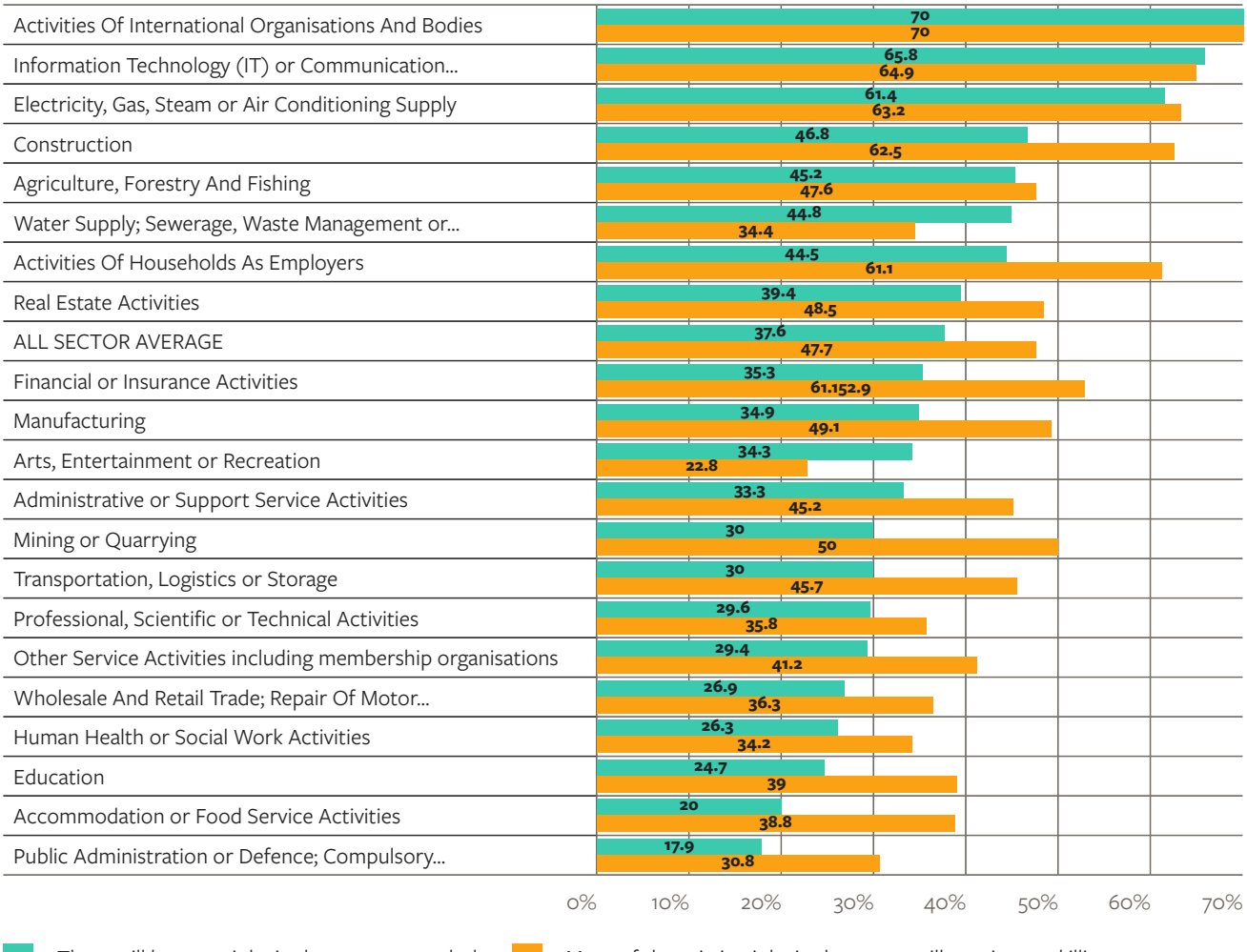
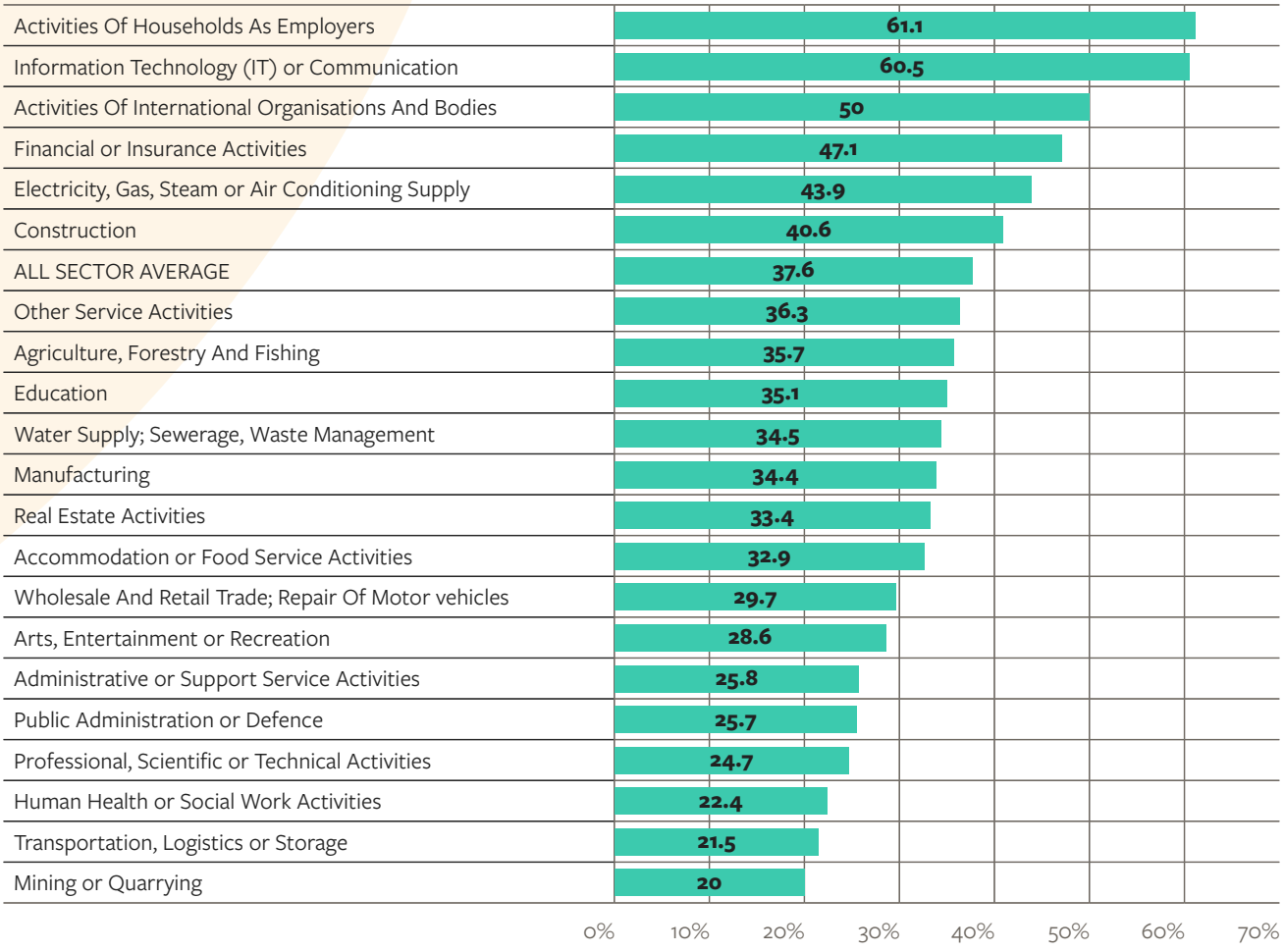


Figure 15c shows a similar table with the proportion of workers who agree with the statement that new green jobs in their sector would have better pay and conditions. The figure is showing, from the highest to the lowest, the proportion of workers per sector who agree with the statement that new green jobs will be better quality jobs.

Whilst only a small proportion of the workforce, it is notable that a significantly smaller proportion of workers in the mining and quarrying sectors think that new green jobs will be better jobs (20.0%). Similarly, a significantly smaller proportion of workers in transport, health services and professional scientific or technical activities think that new green jobs will be better jobs.

Figure 15c: Industry Level Impacts

As a result of the green transition, new green jobs will have better pay and conditions, extremely or somewhat likely - % of respondents in each sector n=2001



These results are of concern given that there is considerable demand for particularly technical skills in the forecast for a greener economy. If there is concern that those jobs will not offer progression into relatively good, well-paid, jobs this creates potential challenges for the projected expansion of these areas of the labour market.

4.2 Working in the green economy

Whereas the previous section focused on workers' perceptions of the general employment effects of the transition to the low-carbon economy, the following section focuses on work in the green economy: who is currently working in the jobs and sectors currently defined as 'green'. We then asked those workers who do not currently work in these areas if they would consider the move to work in green sectors and occupations. While, this is a hypothetical question in terms of a possible move into these areas of work, the responses illustrate the extent to which, if workers were to move, the degree of sector and occupational switching this might imply, the extent to which workers anticipate they would require new skills to be able to work effectively in the green economy. This section also considers motivations for and barriers to making this switch.

Green Economy Workers

Green jobs can be defined in different ways. One approach is a relatively narrow definition of jobs in newly emerging 'green economy' sectors such as renewable energy and low-carbon heating and related services (Local Government Association, 2020; Office for National Statistics, 2022c) A second, broader definition includes nature restoration, low-carbon transport, health and social care as well as emergent sectors such as second-hand retail, and the repair of electronic goods that have a neutral or positive impact on nature (ILO, 2018; WBG, 2020). In exploring green employment, the UK worker survey included the broader range of definition. Overall, 21% of workers surveyed in the UK worked in one of these sectors. Excluding education and health and social care workers, this falls to 16%. The distribution across sub-sectors is shown in Table 2 as follows:

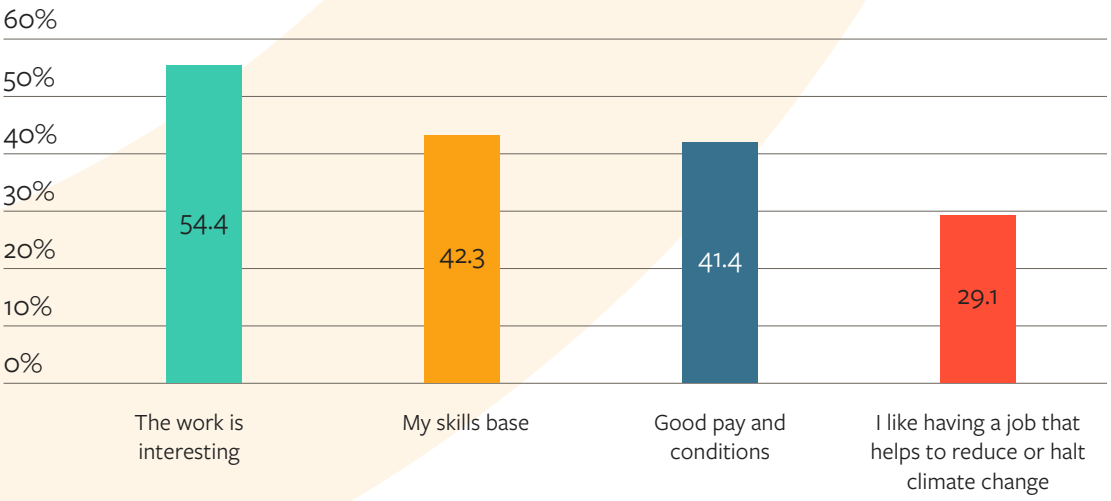
Table 2:
Green Economy Sector Employment

Green Economy Sector	% of All workers n=2001	% of green economy workers n=423
Renewable/low-carbon electricity	3.4	16.3
Environmental protection or restoration	3.3	15.6
Alternative fuel production	3.3	15.6
Energy efficient construction	2.1	9.9
Low-emission transport and electric vehicles (EVs)	1.8	8.5
Recycling/waste management	1.3	6.4
Low-carbon professional services	0.8	4.0
Education, health and social care	5.0	23.8

Motivations to work in the green economy

Current green economy workers were asked what motivated them to work in green sectors. Figure 16 shows the results. The main motivation is an intrinsic interest in the work (54.4%), followed by the relevance of their skills (42.3%) and then the pay and conditions of work (41.1%). Three in ten (29.1%) also report that having a job that helps address climate change is a key motivator.

Figure 16: What attracts you to working in the green economy? (n=423)



4.3 Interest in working in the green economy

The majority of respondents do not currently work in the green economy (79%), see Table 2. The survey asked these workers if they would be interested to work in any one of these sectors in the future. In total, 42.3% of those not currently working in the green economy express interest in doing so. Table 3 shows which of the green sectors outlined above this group expressed an interest in. The green sectors that attract most interest are jobs in environmental protection or restoration, renewable energy and recycling and waste sectors.

Table 3:
Interest in moving to green economy sectors (n=1580)

Green economy sector	% of workers not currently in green sectors interested in moving into green economy
Environmental protection or restoration	44.8
Renewable/low-carbon electricity	38.6
Recycling/waste management	36.8
Alternative fuel production	29.6
Energy efficient construction	29.6
Low-emission transport and electric vehicles (EVs)	29
Education, health and social care	32.4
Low-carbon professional services	25.9

A significantly higher proportion of HC sector workers than workers in other sectors indicate that they would be interested to switch into a green economy job (48.4% compared to 39.2%). Similarly, 48.3% of union members compared to 40.4% of non-union members express this interest.

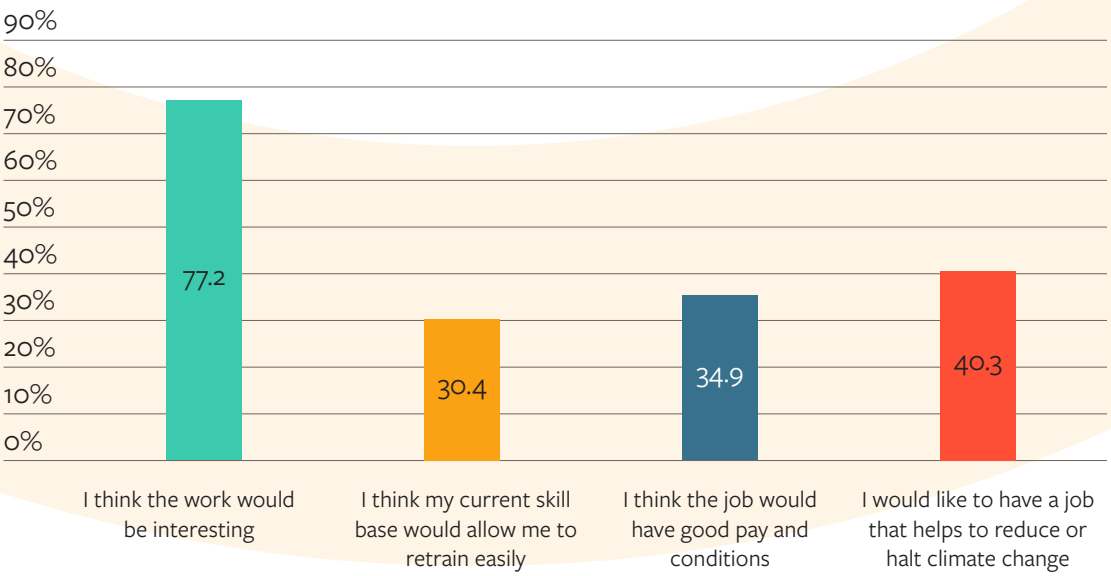
But, nevertheless, these results show a high level of potential interest in working in the green economy across the working population of the UK.

Motivations to switch into green economy work

The topic of motivation was asked of workers who expressed an interest in switching into green sectors. Figure 17 shows that over three quarters felt that the work would be interesting, although only a minority (30.4%) felt that their current skills base would enable them to easily retrain. Slightly more (34.9%) were motivated by the prospect of better terms and conditions in green economy sectors and four in ten (40.3%) were motivated by the prospect of working in a field that would address climate change.

Figure 17:

You said you are interested in move into one of sectors listed above, what attracts you to this type of work?
n=1580



The examples of written comments from respondents below illustrate that there is a mix of intrinsic, personal and structural motivations for workers in considering a switch to working in the green economy:

- "To help improve the climate."
- "To make a difference to others"
- "It would be a service to the earth and where I live"
- "Health - to help people"
- "Give myself self-pride in doing my bit"
- "I worked for 20 years in Education, I'd like to go back"
- "To be in nature"
- "To get away from my current employer."
- "It would be a job that I will need when the push for green takes away my current job."

4.4 Skills and training for transition to working in the green economy

In following up on the questions of the relevance of skills for working in the green economy, respondents were asked if they felt that their current knowledge and skills are (or would be) useful for working in the green economy. Table 4 shows the responses broken down for those currently working in green sectors and those that are not.

Table 4:
Do you think that your current knowledge and skills are (or would be) useful for working in the green economy?

	% of green economy workers (n=423)	% of non-green economy workers (n=1580)
Extremely useful	30.5	11.6
Very useful	31.3	21.4
Moderately useful	23.2	28.4
Slightly useful	6.9	12.4
Not at all useful	3.7	13.5
I don't know	4.4	12.6

As might be expected, the vast majority of workers that are currently working in the green economy consider that their skills are relevant and useful for working in the sectors. Although it's notable that there is a minority of green economy sector workers who are either not sure or consider that their skills base is only slightly useful or indeed not at all useful for working in the green economy (4.4%, 3.7% and 6.9% - 14% in total).

Comparing this to the response from workers who are not currently working in the green economy, only a small proportion think that their current skills base would be extremely useful for working in green sectors (11.6) although a further 49.8% of workers considered that their existing skills base would be either very (21.4%) or moderately useful (28.4%) for working in green economy sectors. High carbon sector workers and union members are significantly more confident that their skills are relevant for working in the green economy: 36.9% and 51.9% respectively think their skills are very or extremely useful for working in the green economy.

This suggests that the up-skilling workers consider necessary for making a switch into the green economy may not be significant. Yet these findings illustrate that UK workers understand that there would be a degree of up-skilling and re-training necessary in order to move into these areas of work. This accords with recent findings from the New Economics Foundation (NEF) in a recent report on the skills needed for the green transition. The authors estimate that the average worker is currently qualified at a level below that needed to access green jobs and estimates workers would need between six and 18 months of additional work-related training to access existing green jobs (Balata et al., 2023). The NEF report highlights the challenge facing workers in accessing work-related training either at work or independently (op cit). Our survey also identifies the barriers that workers face in making the switch.

Barriers to switching into the green economy

When asked about specific barriers to a possible move into a job in the green economy, workers gave the following responses:

- The need to relocate 35.1%
- Lower levels of pay than my current salary 33.4%
- The time needed to retrain 31.4%
- Not sure if I am my existing qualifications/certificates will be valid 29.9%
- The cost of retraining 27.1%
- Lack of careers advice on my options to switch into a green job 18.5%
- Poor working conditions 14.9%

The responses indicate the range of barriers that workers anticipate that might prevent them from switching into the green economy, with the need for relocation being a key concern (35.1%) along with levels of pay (33.4%). Elements relating to training and qualifications are also key with time to retrain being significant. Although a lack of access to careers advice on options for switching into a green job are not rated as highly as other barriers (18.5%), many workers (29.9%) are not sure if their existing qualifications are valid for working in these new sectors. Similar proportions of HC sector workers and workers in other sectors identify these barriers. A significantly higher proportion of union members identify that they would find the cost of retraining a barrier to making the switch into the green economy (32.9%), and a much greater proportion of union members are concerned that poor working conditions or lower levels of pay (23.5.% and 38.4% respectively) would be a barrier. Union members are no more concerned than other workers around issues of time for training or the need for careers advice. What is notable is that a significantly higher proportion of workers who are not union members say that they are not sure if their existing qualifications or certificates would be valid for working in the green economy: 34.6% of non-union members gave this response compared to 19.7% of union members.

An open question asked respondents whether they faced any other barriers. The dominant additional issue was age, with some expressing concern that there was a degree of ageism which would make it difficult for them to switch into green sector, others felt that it would take too long to retrain all that as they were nearing retirement. A small number of additional comments pointed to the need to ensure that jobs would be flexible enough to work around caring commitments. One respondent with a disability was not sure how open the sector might be to making reasonable adjustments.

4.5 Planning for a Just Transition

Just transition support policies

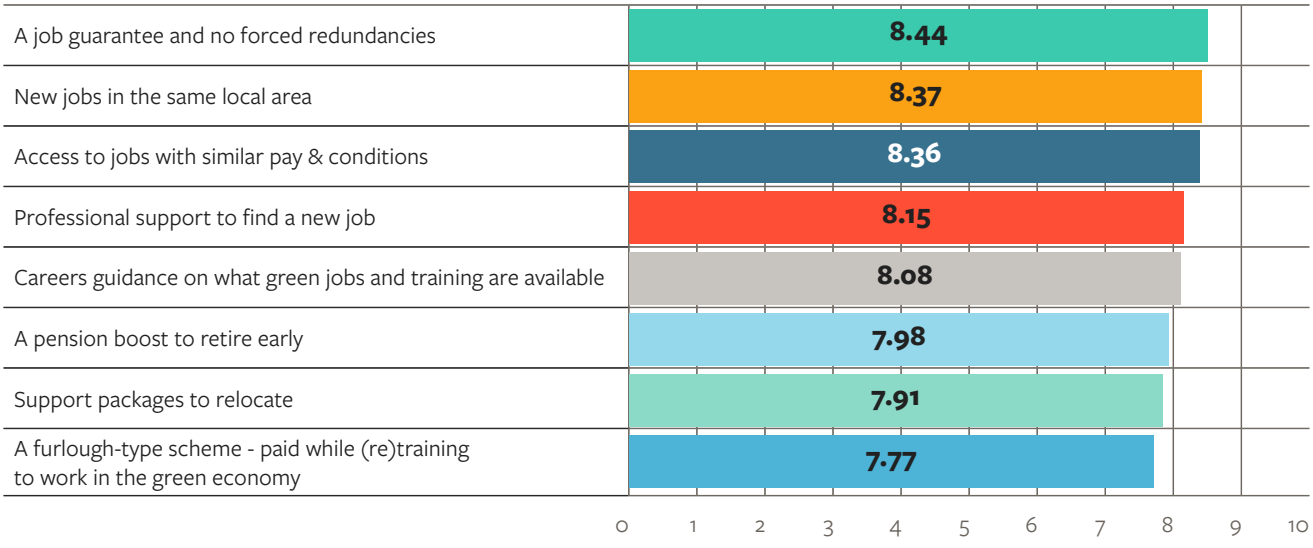
The barriers noted above are reflected in some of the policy suggestions that have been under debate regarding support for workers affected by the transition to a green economy.

Examples of the policy proposals that have emerged were included within our UK worker survey to ask them, if jobs are at risk, which types of just transition policies they would favour. Figure 18 shows the results with respondents asked to rank the importance of different measures on a scale from 1 (low) to 10 (high). Key areas of support identified are some form of job guarantee with no forced redundancies (8.44) along with a policy to support the creation of decent jobs within similar pay and conditions (8.36) and the creation of jobs in the local area (8.37). These measures were the most popular with HC workers and union members too.

Measures that relate to careers guidance (8.08) and professional support (8.15) were rated relatively highly compared to measures such as pension boost for retiring early (7.98), support packages to relocate (7.91) or a furlough-type scheme that would include paid time for re-training (7.77). HC workers placed a slightly higher premium on careers guidance on green jobs. Although measures on an absolute scale are hard to evaluate, what is notable is that all of these measures are given a relatively high score across-the-board. As might be expected, older workers score the option for a pension boost more highly.

Figure 18: Just Transition Policy

If jobs are at risk because of efforts to reduce climate change, how important are the following to ensure changes are fair and effective? Scale 1-10 (low to high) n=2001



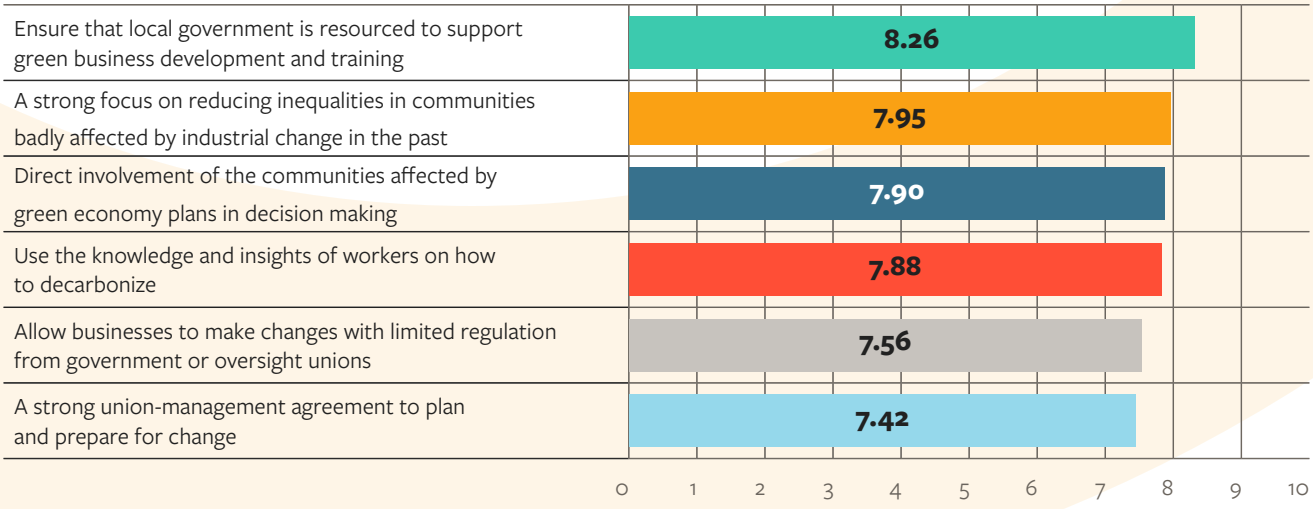
Just transition planning principles

In addition to asking workers about specific policies that they consider would be useful for workers who are facing uncertainty regarding the green transition, the final bank of questions asked about the principles upon which planning for such a transition should be based. These options ranged from a laissez-faire approach allowing businesses to plan for changes necessary through to the involvement of workers and communities in decision making processes along with a question about resourcing for local councils. Figure 19 shows the ranking of responses.

In response to the question 'How important are the following in helping to ensure that the transition to a green economy is fair and effective?' respondents rank highest the option regarding the adequate resourcing of local authorities (an average score of 8.26 out of ten). Engagement of the communities affected (7.90), especially with a focus on those already affected by de-industrialisation (7.95) along with the engagement of workers (7.88) all score relatively highly. The principle of letting employers plan for the transition is given a relatively low score (7.56) with little deviation from this average. The principle of the joint planning of green transitions with trade unions scores 7.42, but, as might be expected, there is considerable deviation around this average (2.6) with a significantly higher proportion of union members support this as a planning principle. For HC sector workers, developing a strong-union management agreement also scored highly, and is the second highest rated planning principle by this group of workers.

Figure 19: Just Transition Planning Principles

How important are the following in helping to ensure that the transition to a green economy is fair and effective? Scale 1-10 (low to high)
n=2001



SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

All workers

- Workers have the same high level of concern over the climate as the broader population in the UK. There are mixed emotions, half of all workers feel hopeful that something will be done to address the climate crises. A large number of workers (around 40%) also experience fear, anxiety and rage over climate issues.
- While the vast majority of workers feel fairly well informed about the causes and consequences of climate change, only one in five feel very well informed.
- Levels of knowledge about broad climate solutions is relatively high. Workers have much lower levels of knowledge of sector and work-based climate solutions and actions.
- Although a high proportion of workers are actively engaged in climate actions outside of work and have regular informal dialogue with both family members and co-workers, formal workplace dialogue and significant consultation between management and staff on climate issues and decarbonisation is much less common.
- Workers see a role for business and local authorities in climate leadership but overwhelmingly look to government to lead on climate action. Very few see that the primary responsibility for climate action lies with the individual.
- Views over energy policy are mixed. There is a high degree of support for renewables, including solar and wind, although a large minority is still in favour of large amounts of gas. The use of nuclear is still a highly contested area.
- There are high levels of worker support for the use of public monies to subsidise renewables and home heating, and for more radical options around public ownership of transport and rethinking working time as climate measures.

All workers (Cont.)

- One and five workers state that they are in an organisation that has already taken significant action to try and reduce carbon emissions. Of these workers, only a quarter indicate that they have been significantly engaged in consultations around those plans and an even smaller proportion have received relevant training.
- The potential benefits of the low-carbon transition are expected at the societal level: air quality, health and well-being and enhanced energy security. However, concern is strong over the potential rise in the costs of living, the potential for increasing inequalities or reducing living standards.
- Workers see the potential for job creation and also for job losses: however, a clear theme that emerges through the study is the level of concern that workers have that green jobs might not be better quality jobs.
- There is also a degree of disruption expected: around a quarter of workers expect the need to change jobs as a result of the green transition, and only a minority considers that if they did that this job would be of better quality.
- Of concern, however, is that workers in key sectors of extraction, transport, health and professional and scientific sectors are pessimistic about the prospect of (good) new green jobs.
- Taking a broad definition, around one in six workers already work in a green job. Of those who do not there is a high degree of interest (around 40%) in switching to working in one of the green sectors. Yet, there are a range of barriers. The prospect of lower pay, the time needed to retrain, and the cost of retraining are all seen as significant barriers for workers considering a move into green jobs.
- The most popular area of employment policy to help address the green transition includes action to create decent jobs with similar pay and conditions to those that workers already enjoy, and schemes that provide a job guarantee or no redundancy to help smooth the transition process.
- Whilst government are seen as the most significant actor in relation to climate leadership, workers also place significant importance on the role of local government to be resourced to support green business development and training. Workers feel that just transition should also be supported through the involvement of communities affected by climate change policy and the inclusion of workers to draw upon their expertise in green economy transitions.

Higher carbon (HC) emitting sector workers

- Workers in the HC emitting sectors are at the forefront of those industries facing rapid change as they decarbonise their operations. How this group of workers view the climate challenge and its implications for work and employment is clearly important as they are at the vanguard of change. These workers may be better informed about climate issues by being closer to the issue or potentially more ambivalent about the possible 'job versus the environment' threat to current livelihoods.
- There are also some interesting differences in the extent to which workers in different sectors classed as HC emitting indicate that they are well informed about the causes and consequences of climate change and the actions needed to address this at a broad societal level within their industry or at their workplace. Notably, workers in agriculture forestry and fishing and in the electricity and gas sectors indicate that they are relatively well informed, but a significantly lower proportion of workers in mining and quarrying, transport and construction sectors, felt 'very well informed' on these issues.
- HC sector workers express similar levels of concern, although a less high sense of urgency for climate action, and report lower levels of negative emotional response to climate as an issue. Being relatively less anxious about the climate crisis could derive from the fact that workers in these sectors are already working in contexts where action on climate change is discussed and work in organisations that have started to put strategies in place to decarbonise. However, whilst we might expect that the green transition is underway in the HC sector, the survey does not indicate that workers in that sector are being more actively engaged by their employers in consultation and training on decarbonisation plans than workers in other sectors.
- Similar proportions of workers in HC and other sectors are climate active in other domains and have very similar views on climate policy options. Yet a significantly higher proportion of HC sector workers consider that they will be impacted by the need to change jobs or to retrain. They are generally positive that green jobs will be created in their communities and indicate an interest in making the switch to working in a green job. They are relatively confident that their current skills would be relevant for working in the green economy, but like other groups of workers identify barriers to making this transition in terms of the costs and time for training and concern that new green jobs might not be as well-paid as those which they currently work in. Similarly, they support the same policies for a just transition as other workers, focused on the creation of decent jobs and the provision of professional support and careers guidance to find a new job.

Union members

- A significantly higher proportion of union members compared to non-members are concerned about climate change, to feel strong climate emotions and feel the greater sense of urgency with regard to the need for climate action.
- Union members are also more involved in climate action at work, in the community, and perhaps not surprisingly through their trade union. Conversely, the proportion of union members that are not active in any domain in relation to climate action is half that of all non-union member respondents.
- Similarly, union members have slightly different opinions around climate leadership and climate policy, placing more importance on the role of local government whilst all workers see an overwhelming priority for central government in taking climate leadership.
- In terms of energy policy, whilst union workers have a high level of concern, they also indicate that fossil fuels and nuclear have a role to play in the UK's energy mix.
- Union members also favour more radical policy options, including bringing energy into public ownership.
- A greater proportion of union members are working in organisations that already are taking action on climate change. This includes those workers concentrated in larger businesses and HC emitting and public sector organisations.
- The so-called union effect on training is also evident where members have both greater levels of consultation and have received more training in relation to decarbonisation.
- A greater proportion of union members consider that the local carbon transition will cause disruption for them in relation to the need to find a new job or reskill. Yet, they feel more positive that they are they could get a great job with a better pay and conditions, presumably with support of the union in negotiating relatively good terms.
- They are also more positive that the skills that they currently have would be relevant for working in the green economy.
- Yet, union members face the same barriers to switching to work in the green economy as non-members, including concerns around time for training, and the costs of training are a barrier. Conversely non-members are much more concerned about the prospect of poor working conditions if they were to make the switch to working in the green economy.
- All workers identified that planning for a just transition needs to address the decent work agenda and that support for transition would require support such as job guarantees and careers guidance. Not surprisingly union members also stressed the importance of joint planning between management and unions through local, just transition agreements.

5.2 Conclusions

Results from the survey highlight that a large proportion of workers are actively engaged in issues of climate change and the environment, but not necessarily at work. There is a mix of informal and organizational level dialogue taking place on climate issues with and between workers and some knowledge of action taking place locally (such as local authority climate emergency plans). These findings, coupled with the responses noting the degree of climate action taking place at home and in the community, stress the need to connect up dialogues and activities on climate that are taking place across different domains. This enhanced connection would help draw on the insight and enthusiasm of workers already knowledgeable about climate change issues and or active on climate and decarbonization in other spheres of their home and community life into workplace decarbonisation efforts, and vice-versa.

Workers observe that decarbonisation is not happening in a high proportion of workplaces in the UK. We cannot confirm if this signifies a lack of strategy or if decarbonisation plans are in place but workers are not aware of them. This suggests, on the one hand, the need to encourage more businesses to take bolder steps in their plans to decarbonize and enhance their environmental and social governance (ESG) responsibilities and assistance for businesses to connect to relevant areas to support to help them decarbonize. On the other hand, there is a need for greater transparency and awareness around reporting on decarbonisation at company level. In the UK, large organisations are required to submit data on energy use, carbon footprint and emissions in annual financial reports. New requirements for retailers are developing such as climate data in labelling (see for example FCA 2022), but there needs to be more widespread reporting requirements on a broader base of businesses that engages not only investors and consumers but also workers to engage them more effectively around climate risks, organisational climate strategies and the implications for jobs and skills.

There is considerable interest amongst UK workers of the possibility of working in a 'green job'. The degree of willingness to switch sectors and the importance of the intrinsic value of green jobs as work with societal value is a positive message for those recruiting into those sectors. Yet, the potential barriers to retraining and the perception of poor job quality in green sectors need to be recognised and addressed. It is beyond the scope of this report to comment on the specific nature of job quality in green sectors; it may be that poor job quality is perceived rather than actual. If it is the former, then recruiters in green sectors need to improve the way in which green jobs are promoted. Where job quality (defined as pay, conditions, voice and autonomy) is relatively poor, those employers in green sectors that face difficulty in recruiting need to reflect on these aspects of the employment offer. A number of initiatives are underway across the UK focused on improving job quality and decent work (Welsh Government 2019, Hughes 2022, Johnson et al 2023). Stronger connection is needed between decent work initiatives and green jobs initiatives in key UK sectors and green sector employers facing difficulties in recruitment to consider the options for enhancing job quality.

There are certain sectors that generate considerably more interest, such as environmental protection or working in renewable energy. Yet government plans for net zero indicate a significant need for workers in other areas of the green economy notably for engineers and construction workers in key developments such as the low-carbon cluster projects proposed in the North West, North East and Yorkshire and Humber. This highlights that localities matter and clearer connections are needed between workers, employers, local government, training providers and sector skills dialogues to ensure that the facilitators and barriers to green employment and training can be communicated quickly and clearly to relevant stakeholders. The Local Skills Improvement Planning (LSIP) process provides a useful tool here, but broader dialogues are needed. Local, Green Jobs and Just Transition bodies (network hubs) are needed that engage employers, unions and workers help to take the LSIP analysis, alongside clearer communication of how (national, sectoral, local, workplace) net zero and related initiatives will provide local opportunities and risks for workers and as a channel through which workers can inform local plans and action on green jobs. A number of Green Jobs and Just Transition bodies are emerging across the UK. Learning needs to be shared on what works and how.

The HC sectors are those that will see the largest impacts in terms of job losses and changing job requirements. It is notable that within certain sub-sectors of those classed as HC, many workers are very well informed about climate change and the actions needed to address climate in their industry and workplace (notably agriculture and electricity and gas sectors). Of concern, is the extent to which workers in other parts of the HC sector (notably transport, construction and mining and quarrying) are less well informed around the causes and consequences of climate change and the actions needed in the industry or workplace to address them. HC workers, while equally concerned about the issue of climate change as anyone else, are more relaxed about the need for urgency in addressing climate change. This attitude could be due to this group of workers being in a workplace setting where action on decarbonising is already happening and so they are less prone to a sense of despair about climate action. However, the relative ambivalence of some workers in the HC sectors is also a concern. While these workers sense that they will need to change jobs or need new 'green' skills, they anticipate disruption to their own work and within their sector. We recommend that businesses and unions that organise in these sectors ensure they are building clearer campaigns around climate awareness, decarbonization pathways and the jobs and skills issues associated with them to ensure that sector workers feel empowered to engage in transition planning the next 2-5 years. Tailored carbon literacy or carbon action training should be particularly targeted to those HC sectors where workers indicate that they feel well informed on climate issues and decabonisation pathways (transport, construction and mining and quarrying).

The transition away from HC to greener jobs (whether sector or job switching or up/reskilling in an existing role) needs to be more effectively supported. In order to make the concept of a just transition a reality, workers need to be more directly engaged in discussion of decarbonization plans, the implications for jobs and skills, the potential for them to switch or to re/up-skill within their existing job. Businesses need to look to embed key principles of green HRM in order to understand the employment and skills implications of their decarbonization strategies. There also needs to be improved dialogue between workplace unions, green and staff reps and management to develop green transition plans and agreements that build a shared analysis of the implications of decarbonisation on jobs and skills and the implications for workforce planning and training over the short, medium and longer term.

Yet as noted above, the green transition will not happen at the workplace level alone. Action on climate change is taking place at the international, sectoral and community and regional levels also. There needs to be new and strengthened forms of dialogue between these different levels and domains of action on green jobs and skills. There needs to be improved channels of communication and clearer spaces for dialogue and articulation of issues between local government, business, sector-bodies and workers' and community organisations to enhance processes of knowledge exchange and in building shared agendas for action on the green transition and employment and training. Successful initiatives should include features that include opportunities for dialogue, jointly produced newsletters, awards that raise the profile of and incentivize activities and the allocation of dedicated resource and roles to help facilitate this multi-way exchange.

5.3 Recommendations for key stakeholders

Central Government

- More campaigns to increase public awareness for the severity of climate change and the benefits of transitioning to a green economy.
- Enhance assistance for businesses to connect to relevant support and tools to aid emissions analysis and focused decarbonisation plans (including circular economy principles where relevant).
- Broaden the duty on employers to share sustainability data with workers.
- Promote dialogue between peak bodies driving low-carbon transitions at national, sectoral and local levels.
- Support rapid action learning across the nascent Green Jobs and Just Transition bodies emerging across the UK and shared intelligence on what works and why.
- Support the development of local Green Jobs and Just Transition hubs that draw upon LSIP analysis and embed just transition principles into local transition planning based on good practice– prioritising communities already adversely affected by affected by economic restructuring (connecting to Levelling-up agendas).
- Sufficient financial support of local communities to implement Green Jobs and Just Transition initiatives.

Local government and related regional stakeholders

- Promote the assistance and tools available for businesses to aid emissions analysis and develop focused decarbonisation plans (including circular economy principles where relevant).
- Engage in dialogue with relevant bodies driving low-carbon transitions (and circular economy principles) at local/community, sectoral and workplace levels to understand transition priorities, plans and scope for synergies this is particularly important to engage workers around key developments such as the low-carbon cluster projects. Localities matter and clearer connections are needed between workers, employers, local government, training providers and sector skills dialogues to ensure that the facilitators and barriers to green employment and training can be communicated quickly and clearly to all relevant stakeholders.
- Support the development of local Green Jobs and Just Transition hubs that draw upon LSIP analysis and embed just transition principles into local and workplace transition planning – engaging communities and worker representatives to draw on and develop local expertise.

Businesses

- Work with unions and employee reps to understand the level of climate awareness and work jointly to improve where needed.
- Work jointly to build two-way communications to build understanding of and the implementation requirements of decarbonisations plans (including circular economy principles where relevant) and related jobs and skills issues.
- Embed the principles of green HRM.
- Improve workplace dialogue with workplace unions and staff reps to develop and action green jobs and skills action plans and agreements.

High Carbon sector employers, unions, professional bodies, training and education providers

- Build understanding and dialogue around specific sectoral decarbonisation initiatives (including circular economy principles where relevant), and related jobs and skills issues especially in the transport, construction and mining and quarrying sectors.

Green Sector employers, unions, professional bodies, training and education providers

- Work with unions, employee reps and job seekers to understand perceptions of job quality. Where job quality is objectively good, but perceived as poor, work jointly to promote good sector employment opportunities.
- Where job quality is objectively poor, work to connect with local/sectoral decent work initiatives.

Unions

- Work with members and the wider workforce to understand levels of climate awareness, engagement in climate action, climate policy preferences and awareness, concerns and expectations of the green transition, especially for jobs and training needs.
- Engage a wider range of members in existing union climate and environmental policy and just transition activities (greening the workplace, retrofit campaigns etc.)
- Union communications need to recognise that non-members are less likely to feel as strongly about climate change as their existing membership and so need to consider how they communicate with those who feel less strongly about the climate agenda.
- Develop green transition agreements with employers including support for green reps and bargaining for relevant jobs and skills development.
- Engage with knowledge exchange in local Green Jobs and Just Transition hubs.
- Continue to advocate for decent work and skills to be central to Just Transition policy and practice.

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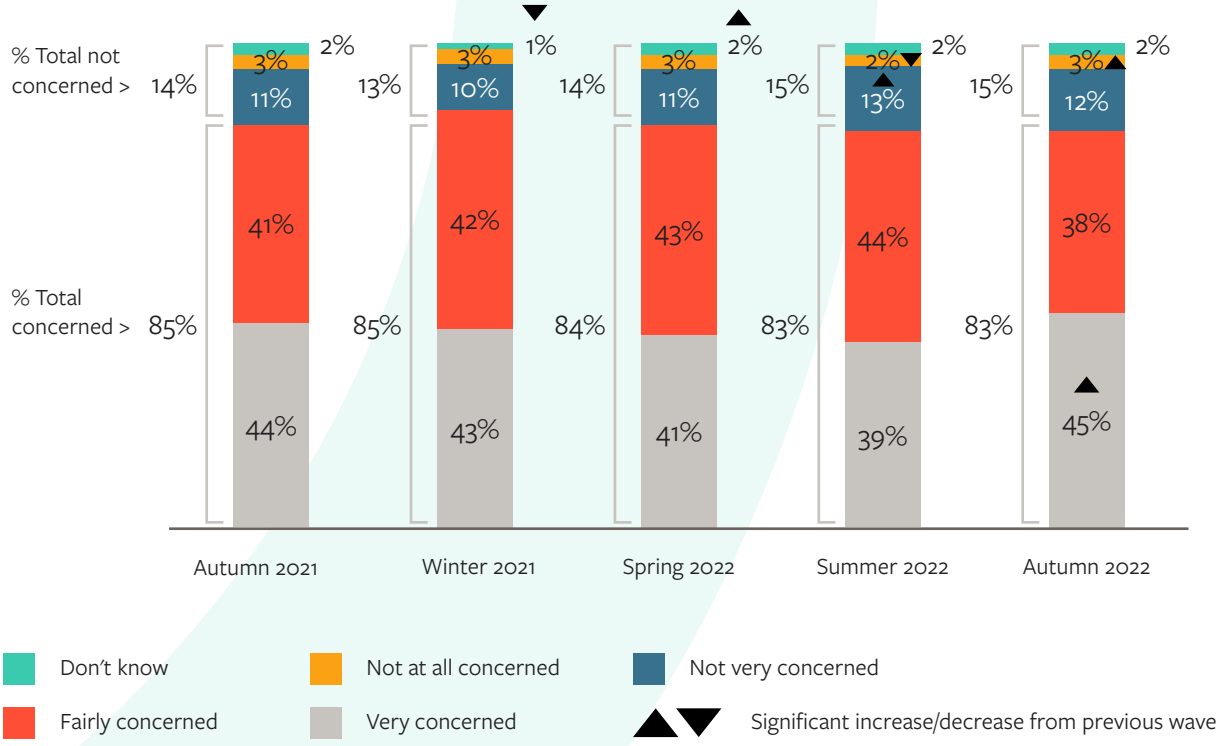
ANNEX

A Respondent Profile

		N	%
Gender	Female		51.8
	Male		47.9
	Non-Binary		0.2
Age	18-34		22
	35-54		48.1
	55+		29.7
Highest Qualification	None or L1		14.4
	L2-L3		42.2
	L4+		43.3
Ethnicity	Black and Minority Ethnic		7.6
Employment Status	Working – permanent		94.5
	Working – temporary		3.8
	Self Employed		1.6
Working	Full time		75
	Part time		25
Parent	Yes		68.2
Company Size	500 or more		42
	250-499		11.5
	50-249		20.2
	1-49		18.9
Sector	Higher Carbon		33.6
	Other Sectors		66.4
Union Member	Yes		31.9
Nations & Regions	Scotland		7.7
	Northern Ireland		1.8
	North East		4.7
	North West		10.3
	Yorkshire and Humberside		8.2
	East Midlands		7.6
	West Midlands		7.7
	Wales		4.4
	East of England		8.9
	London		17.5
	South East		13.6
	South West		7.4
	ALL	**2001**	

Annex B: Public Attitude Tracker 2021-2022, Climate Concern UK

Figure 2.1:
Concern about climate change (based on all people), Autumn 2021 to Autumn 2022



Source: quarterly data from the BEIS Public Attitude Tracker data for climate concern Autumn 2021 to Autumn 2022 (ONS, 2022b).

Annex C: Worker views on general employment prospects in their sector

In addition to asking workers specific questions about their views on the green transition the survey also asked of contextual questions regarding workers views on the general prospects for employment in their sector over the next five years in terms of jobs, pay and conditions, the need for skilling and the potential for job loss due to automation. Figures C1 and C2 show the responses.

Figure C1: Prospect for employment in your sector over the next 5 years: more jobs, better conditions

Extremely or somewhat likely - by sector of respondent (ranked by 'more jobs; highest to lowest)
n=2001

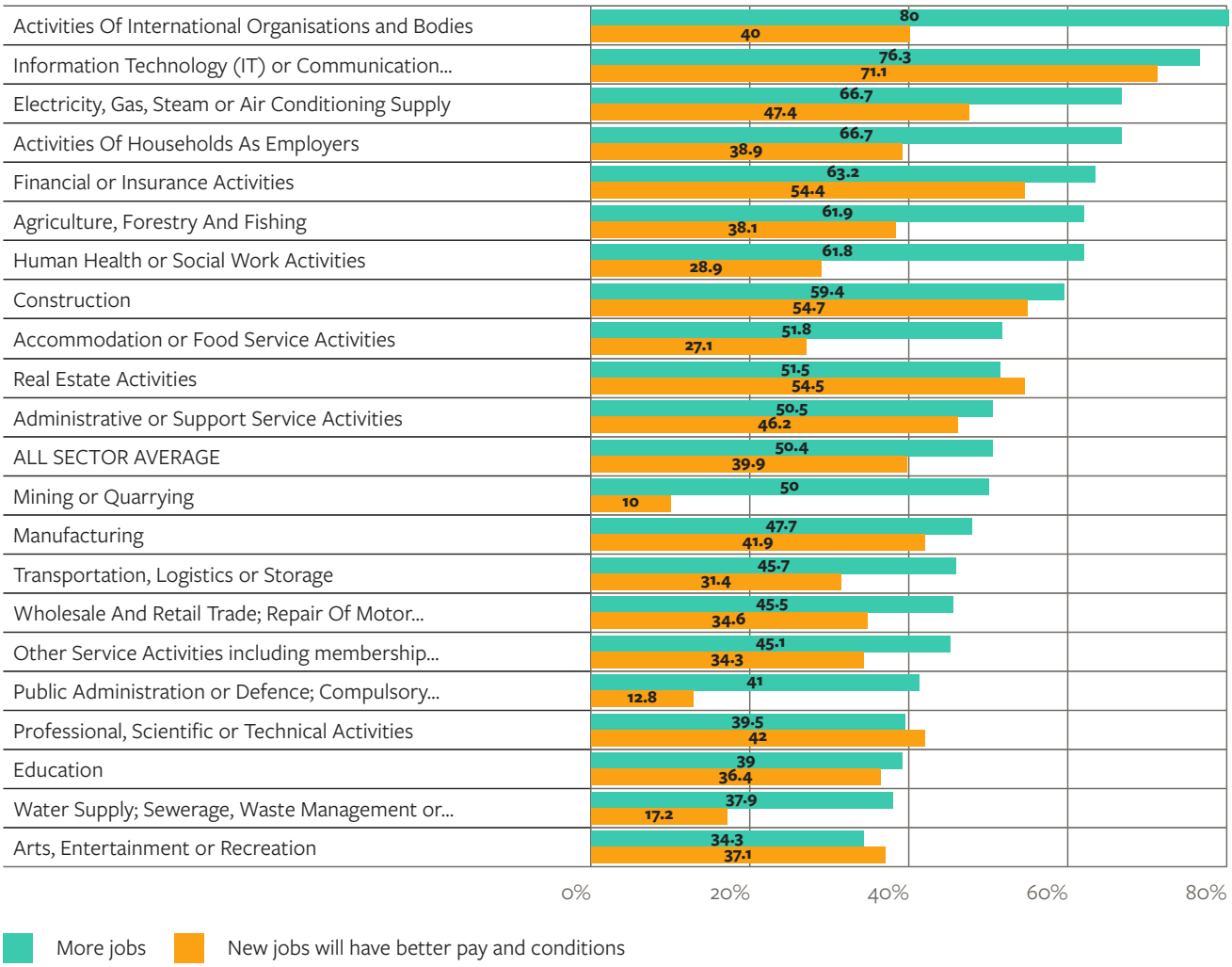
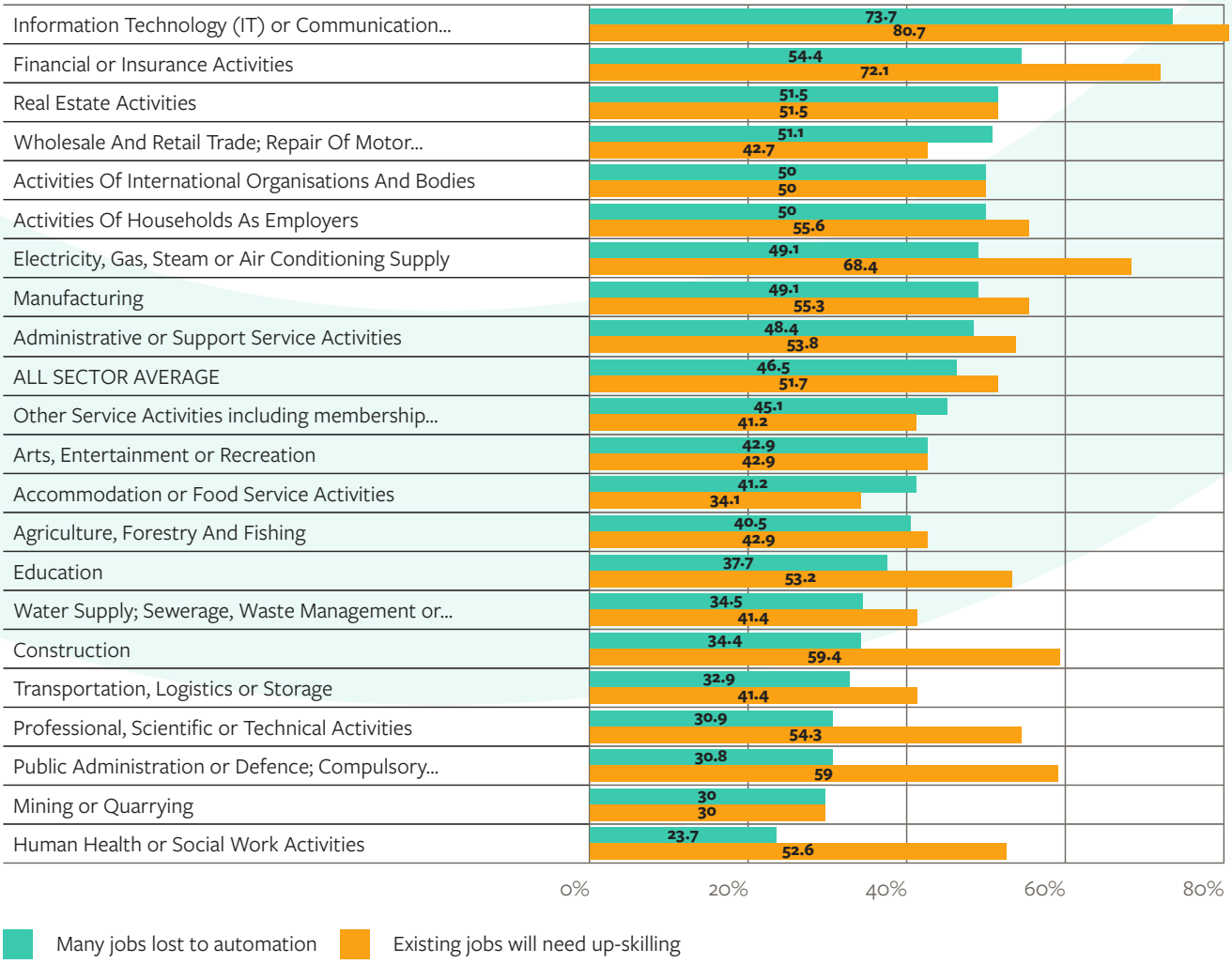


Figure C2: Prospects for employment in your sector over the next 5 years: automation, up-skilling

Extremely or somewhat likely - by sector of respondent (ranked by jobs lost to automation, highest to lowest)
n=2001



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