



# Policy Brief

## Labour market shortages and displacement: drivers, solutions and trade-offs

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### Introduction

Labour market conditions are a key but, as yet, insufficiently researched determinant and driver of the outcomes of a wide range of net zero actions (just as they are for any substantive change playing out in a dynamic economy environment). In this briefing we summarise some key and quite generic issues associated with labour market conditions, and labour supply constraints in particular, and describe how this might impact on both project delivery and wider economy outcomes associated with net zero activity. Our insights described here are gained through wider economy modelling undertaken across a range of policy domains such as CCS, energy efficiency and electric vehicles.<sup>1</sup>

It is already recognised that transitioning the UK economy to meet net zero emission targets could deliver substantial wider economy benefits but will pose risks for some high emission and trade exposed sectors.<sup>2</sup> However, the challenge areas may be more nuanced, given that the transition will require significant changes in and demands on many sectors and markets, including, crucially, the UK labour market. UK Government publications, such as the Prime Ministers Ten Point Plan for a Green Industrial Revolution,<sup>3</sup> highlight the potential to create jobs in new or growing sectors such as offshore wind, nuclear and Carbon Capture and Storage (CCS). Growth in these emerging sectors will provide opportunities for transitory employment gains at infrastructure development stages across the broad and ongoing net zero transition space.

However, the impacts of recent labour shortages in the UK<sup>4</sup> bring into sharp focus crucial questions around whether workers, with appropriate skills and expertise will be available in sufficient numbers to service both net zero needs and the economic opportunities the transition offers and, if not, what type of specific project delivery and wider wage pressures may result. Here, implications could spread to resource and cost pressures in other sectors of the economy, ultimately feeding through to competitiveness and consumer price pressures affecting almost all businesses and households.<sup>5</sup>

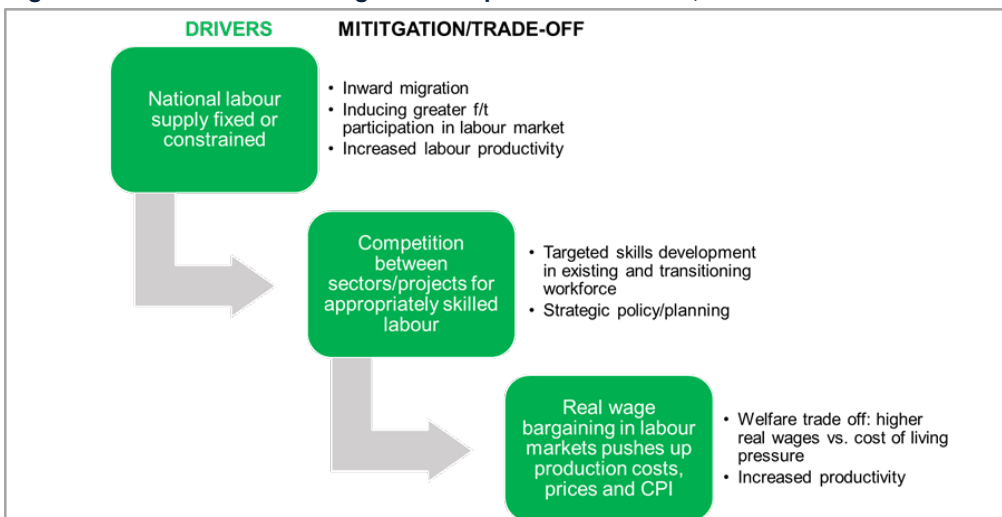
### Labour market shortages and displacement: drivers, solutions and trade-offs

As shown in Figure 1 below we identify three labour market key drivers that control how the wider economy impacts associated with net zero investment and activity will materialise. These are: the extent to which the national labour supply is fixed or constrained; competition between sectors and projects for appropriately skilled labour; whether real wage bargaining triggers wider economy ripple effects raising labour costs and prices across the economy. Overleaf we discuss these in more detail and provide high level thoughts on solutions and associated trade-offs to each.



The three key labour market drivers of outcomes include: the extent to which the national labour supply is fixed or constrained; competition between sectors and projects for appropriately skilled labour; whether real wage bargaining triggers wider economy ripple effects raising labour costs and prices across the economy”

Figure 1: Labour market shortages and displacement: drivers, solutions and trade-offs





## Driver 1: National labour supply

Our applied research, involving economy-wide scenario simulation analysis across a range of actual and potential net zero policy actions and areas, has begun to evidence the significant impacts that labour market conditions can have on how, and to what extent, the UK economy will adjust to and absorb new, greener ways of producing and consuming.<sup>6</sup> When we assume that workers bargain with employers over their real take-home wage rates in the context of the type of lasting labour supply constraint that prevails in the UK, we see that wider economy impacts (both positive and negative) associated with investment activity are limited/cushioned compared to cases where we assume an unlimited supply of labour and/or no required adjustment in real wage rates.

Often we see that varying our assumptions in these regards can have a controlling influence on the wider economy impacts that emerge. For example, in our work<sup>7</sup> to understand the economy wide impacts of investing in and deploying the transport and storage element of carbon capture and storage (CCS) – via a new emerging economic sector - our results indicate the potential for economy wide expansion (under certain funding assumptions), where up to 53,873 FTE jobs and an additional 0.21% of GDP per annum may be generated by 2040 if real wage rates do not adjust as labour demand rises. However, in practice, we would expect real wage demands to adjust so that cost and price adjustments in a labour supply constrained economy will ultimately act to limit the extent of expansion. Here, allowing for real wage bargaining, our results suggest that sustained gains could be eroded to 17,037 FTE jobs and an additional 0.1% in annual GDP by 2040. Although this is only an illustrative example, it highlights that the conditions and responses in the UK labour market can have a significant impact on how the economy responds to new activity and the potential for associated expansion. In our work on carbon pricing,<sup>8</sup> we have found that wage-setting behaviour associated with constrained labour supply can also have crucial impacts on the extent of contraction that bearing additional decarbonisation costs may bring about. We return to this point below.

To combat the issues associated with labour supply constraints we highlight three solutions:

- Increase the **inward migration** of workers with the appropriate skills.
- Increase the level of **full(er) time participation** in the labour market.
- Increase **labour productivity** (the output produced per unit of labour and associated costs) to increase the effective labour supply.

## Driver 2: Competition between sectors

With ambitious net zero targets set for sectors across the economy, it is clear that there is likely to be competition for labour between sectors and projects within sectors, and this competition will drive increases in wage rates required and attainable by (scarce) workers. This issue has also been raised at a roundtable event held with industry stakeholders involved with the BEIS CCUS Cluster sequencing competition, where issues around how the impacts of even marginal per hour wage rates required increases on project costs and/or deliverability were raised. Discussion on this issue has been informed and reinforced by our research, where for example, our modelling shows the potential for CCUS to create an additional 60,000 FTE jobs in the construction sector in order to deliver the infrastructure requirements needed for the phase 1 CCUS clusters.<sup>9</sup> However, it is also clear that other growing sectors, like nuclear, might create additional demand for construction sector workers over similar timeframes, thus extending competition for skilled labour across a wide range of net zero and other infrastructure projects. This could create a significant challenge to project delivery and could build on the overall labour supply challenge which, as described above, could constrain the economic benefits associated with enabling (and realising) net zero activities.

To combat the issues associated with competition for labour between sectors we highlight a key solution as:

- Targeted **skill development and training** in existing and transitioning workforce.
- **Strategic planning around timing of large infrastructure projects** and overlapping labour demand

## Driver 3: Real wage bargaining

As described in our discussion paper 'Green growth, prices and productivity',<sup>10</sup> it is clear that all forms of economic expansion, whether associated with 'green growth' or not, can create cost and price pressures across the economy, which can have ripple effects and may lead to a number of distributional impacts. As described above, if labour supply is constrained and workers have the ability to bargain up wages (and/or resistance to bargaining them down when labour demand falls), this can lead to increased labour costs associated with delivering different net zero activities. Higher labour costs will ultimately feed through to higher production costs which for core activities and services will in turn feed into higher prices across the economy. Given the current cost of living crisis, where unprecedented rises in gas prices have led to double digit inflation rates not seen for 40 years, any activity that further impacts the CPI must be carefully considered, with the need to understand the trade-offs involved in delivering both higher real wage rates and employment levels.

Here, the solutions need to focus on welfare and distributional issues, and link closely to the challenges associated with a constrained national labour supply, with the main source of 'win-win' outcomes being delivered by labour productivity gains. That is, if our 'head count' labour supply continues to be constrained, focus must be on increasing the effective labour supply, i.e., the value added (including growth in income from employment) generated by the workforce must increase.



## References

- 1 See Centre for Energy Policy Publications. <https://www.strath.ac.uk/humanities/centreforeenergypolicy/ourpublications/>
- 2 Net Zero Review, HM Treasury, 2021. <https://www.gov.uk/government/publications/net-zero-review-final-report>
- 3 The Ten Point Plan for a Green Industrial Revolution. HM Government. 2020. <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>
- 4 Changing trends and recent shortages in the labour market, UK: 2016 to 2021. ONS, 2021. <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/changingtrendsandrecentshortagesinthelabourmarketuk/2016to2021>
- 5 Green growth, price pressures and productivity. Discussion Paper. K Turner. 2021. <https://strathprints.strath.ac.uk/78418/>
- 6 For example see fixed vs bargained real wage rate results in the publication. 'Could a new Scottish CO2 transport and storage industry deliver employment multiplier and other wider economy benefits to the UK economy?' Local Economy Journal. 2021. <https://doi.org/10.1177%2F02690942211055687>
- 7 Turner et al. 2022. Policy trade-offs in introducing a CO2 transport and storage industry to service the UK's regional manufacturing clusters. Volume 201, 2022, 107547, ISSN 0921-8009, <https://doi.org/10.1016/j.ecolecon.2022.107547>.
- 8 See CEP Carbon Pricing Policy Briefs 'Carbon Tax Impacts on Producer Costs and Competitiveness as the Main Determinant of Macroeconomic Outcomes' and 'What are the macroeconomic and household welfare trade-offs of introducing broad carbon taxation?' available to download at: <https://www.strath.ac.uk/humanities/centreforeenergypolicy/ourpublications/policybriefs/>. Similar wider economy drivers were also found in our work on deploying CCUS in the UK economy- see policy brief: <https://strathprints.strath.ac.uk/80868/>.
- 9 Phase 1 CCUS cluster rollout - potential wider economy impacts, responses and trade-offs, Karen Turner, Oluwafisayo Alabi, Antonios Katris, Christian Calvillo Munoz, Jamie Stewart, Hannah Corbett and Julia Race, February 2022. Available at: <https://strathprints.strath.ac.uk/79477/>
- 10 Green growth, price pressures and productivity. Discussion Paper. K Turner. 2021. <https://strathprints.strathac.uk/78418/>

