

# Net Zero: Regional Outlook

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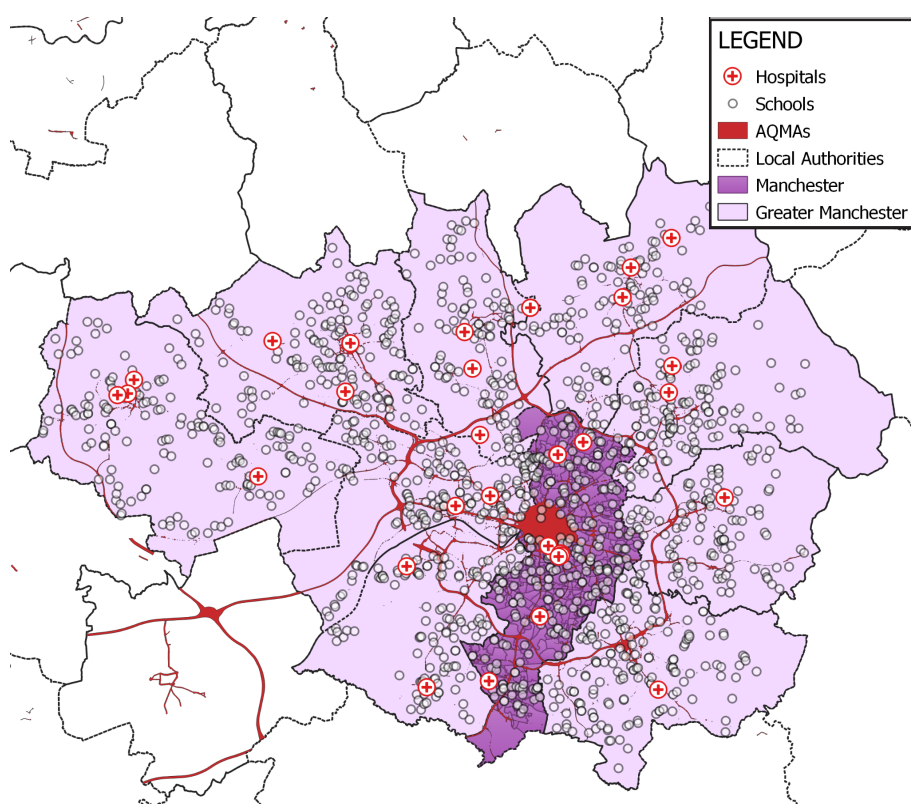
## Overview of the Data Fellowship

I spent my 8-week Q-Step internship with Policy@Manchester, the University's sector-leading policy engagement institute. Most of my work consisted of data visualisation - I made a few static and interactive charts on topics the institute was already working with, one having already been featured in a blogpost and the rest having the potential to help in future work.

Apart from this, I worked on 2 projects for which I wrote policy briefings including extensive data analysis and visualisation. My individual project, titled 'Building back better: where will the skills come from?' focused on the shortage of skilled workers in the UK energy sector and its implications for UK's net-zero ambition. In our joint project, 'Poverty, Pollution, and (In)Security', my co-intern Amel and I explored elements of neighbourhood disadvantage such as fuel and food poverty and exposure to air pollution.

## Data Analysis

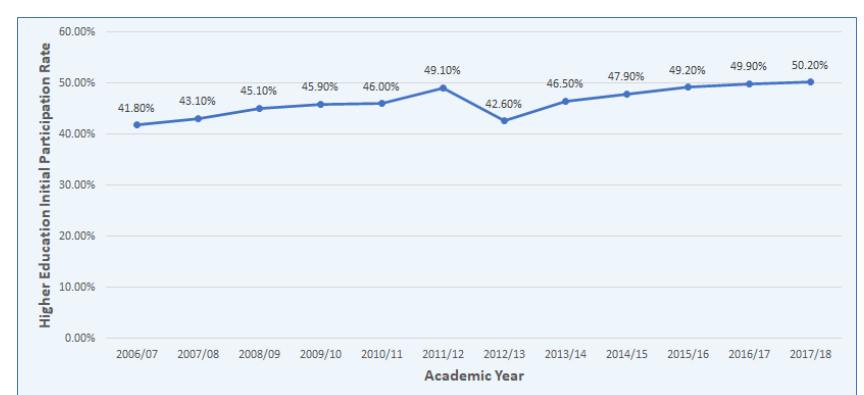
I used a wide range of datasets, most of them provided by UK Government departments, but also by private entities such as Google and Citymapper. For the analysis of the data, I used a combination of Excel (for data cleaning and sorting, and a few static graphs), R Studio (for static and interactive graphs and forecasting), and QGIS (for mapping).



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## Findings

- As depicted in the map in the first column, many Greater Manchester schools and hospitals are placed in or very close to Air Quality Management Areas, which puts already vulnerable groups such as children and the elderly at a particularly high risk of cardiovascular, respiratory, and neurological disease. Consequently, it is crucial that measures be urgently taken for the mitigation of this effect.
- Fuel poverty is a widespread phenomenon in Greater Manchester, with 15.3% of households in the region being fuel poor. In Manchester, this figure reaches 19.8%. Going forward, policies tackling residential CO2 emissions will need to be designed with this issue in mind, to avoid pushing even more residents into fuel poverty.
- Both nationally and regionally, a skilled workforce is urgently needed to support the transformations that the UK wishes to make in the near future to support net-zero ambitions. Nationally, the installed offshore wind capacity needs to increase fourfold until 2030, whereas in Greater Manchester, over the next 5 years, over 60.000 residential buildings will have to be retrofitted per year. With a significant segment of the population not participating in university education (as depicted below), the UK would highly benefit from considering alternative paths to qualification-gaining, such as apprenticeships and vocational training.



Data source: Department for Education - Tables: participation rates in higher education 2006 to 2018

## Key Skills Learnt

In terms of hard skills, I developed my knowledge of Excel and R Studio software, both of which I had already used as part of my university course. I also learned to use QGIS, which I had never worked with before the internship, and some good practices for working with data, such as referencing data visualisations properly and staying organised when working with many types of files and software.

Last but not least, the internship meant working in a professional environment for two months, which helped me develop skills such as communication, time management, and networking. I am sure everything I have learned working at Policy@Manchester will prove invaluable in my development going further.