

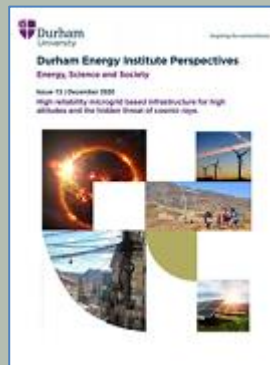
The impact of the Durham Energy Institute on me during my time studying at Durham University

By Dr. Matthew Littlefair

Whilst studying for an energy-focused PhD in Engineering at Durham University, I was fortunate to become associated with the Durham Energy Institute. On reflection of the past 5 years of my studies, there have been a number of highlights which I feel have helped my development as both a researcher and an early career professional.

In early 2019, shortly after the start of my studies, I was introduced to the DEI by my supervisors - Prof. Alton Horsfall and Prof. Chris Groves. I was interested to learn that the DEI was a group of specialists across a range of fields who all have the energy interests of the North East of England at heart. Having lived my entire life in County Durham, I was keen to contribute and share my perspective from a local person's point of view. After a successful application and interview to become a PhD Fellow, I was in!

Shortly after my introduction to the DEI, I was thrown in at the deep end and I was now part of the monthly Fellow's meetings. The personnel in these meetings would consist of senior staff and specialists from many Durham University departments, including Engineering, Physics, Chemistry, Business and Anthropology. We would discuss relevant global events and upcoming opportunities. This was beneficial to my studies as it helped my understanding of the real-world importance of my research - the impact on the people and the planet. These meetings were also an opportunity to congratulate members who had recently been broadcast, showcasing their



I had a fantastic time as a member of the Durham Energy Institute.

I would highly recommend any interested PhD or Masters students to seriously consider joining the Institute.

research and knowledge on the global stage. This was something which I found to be particularly exciting, as I have always had an interest in communicating technical information to the public - skills which I feel I am now particularly strong at, thanks to the support of the DEI. One such opportunity to hone my skills was provided at the annual DEI conference.

The DEI conference focuses on the transition to Net-Zero in the North of England, where the event is aimed at showing members of the public, policy makers and an academic audience what is on offer, what can be done and what is being done in the North. This event attracts a global audience. A feature of the conference is a three-minute thesis competition for students, with energy related PhD studies, to take part in. I competed in 2019 and was delighted to come second. There were many entrants covering a vast range of interesting topics from research relating to wind turbine efficiency improvements to solar panels. My entry was about the effect of cosmic rays on electronics at high altitudes. My DEI three minute thesis is available on YouTube, watch out for cosmic rays on your next flight!

I found that there were many opportunities to shine at the DEI - one of which was the chance to write an article for the DEI on a potential application of my research, known as a DEI Perspective. With support and encouragement from the group, I created a DEI perspective titled *High reliability microgrid based infrastructure for high altitudes and the hidden threat of cosmic rays*. This was a great experience as it allowed me to explore the impact that my research could have on communities in Bolivia in the future.

