

# ANNA CLEMENTS

## DPhil candidate



DEPARTMENT OF  
**ENGINEERING  
SCIENCE**

### What inspired you to become an engineer?

As a teenager, I was really concerned about climate change and how it was affecting people and the environment globally. It felt like a hopeless situation, and it never occurred to me I might be able to do something about it. Then a family friend made me realise that studying engineering would give me the opportunity to work on climate change mitigation and associated problems – so not knowing what else to do, I applied for engineering for undergrad.

### How did you get started in engineering?

I did an undergrad and combined Masters degree in a general engineering course, specialising in Energy, Sustainability and the Environment. I picked things to study that I thought were most pertinent to understanding energy and how we could transition to a sustainable way of doing things – so I did water engineering, solar PV, nuclear materials, combustion, thermodynamics of power generation. I really liked the variety.



### What is an average day on the job like?

At the moment, an average day is trying to finish off the data analysis so I can start writing my thesis – so lots of python programming and interpreting results from clustering analysis which I'm using to identify different energy use patterns.

2 years ago – we were about to install the solar nano-grids in Kenya and I was helping to project manage that – making sure we had the correct tools, were going to be collecting the right data, building electricity distribution boards in the lab to be taken to Kenya.

### What is your research area?

These days I would call myself a development engineer because I work in rural electrification in international development.

I'm a 4th year DPhil student working on sustainable energy systems for rural, off-grid communities in developing countries – my research has focused on Kenya.

We built two 'solar nano-grids' in two rural communities in Nakuru County, and my research is about how we designed them collaboratively with the communities, and investigating the diversity in energy use in the communities from data we collected.



***"I sought out strong female role models, in work and in my personal life."***

### What is the best thing about your job?

I worked with communities out in Kenya and made lasting relationships with them, and we have worked together to make a lasting difference to the energy access in their villages – it feels like it was worthwhile.

### What has been your highest achievement to date?

I built two solar nano-grids and I didn't quit the DPhil.

### What is your top tip for girls considering Engineering?

See past the stereo-types. You don't have to have built your own car at age 14 to be a good engineer (It's great if you did though!).

Don't be put off by thinking you're not 'technical' enough. We need engineers who are good team players, have great interpersonal skills, as well as having good problem solving and analytical skills.

### What key attributes and skills help you in your role?

I am a quick learner and good at project management – managing time, planning, and working in teams.

I am good at thinking holistically, which in international development is very important – you can't just consider the tech aspect of a challenge, you need think about social, cultural, financial and political context.

I think being determined is also very helpful in both my field and in general doing a DPhil.

### Have you faced any gender-related challenges and how did you overcome them?

I think just being in a system which is designed (consciously or unconsciously) by men for men is tiring. I sought out strong female role models, in work and in my personal life.

I recommend Caitlin Moran's book 'How to be a Woman' for a laugh and lots of good advice.

### Why should young women choose engineering as a career?

Because you get to work on real-world problems that are really important to humanity.

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