## My story...

# Robyn Lucas

Head of data science
Open Energi

A remarkable woman who is passionate about building a smart, flexible energy system for the future as well as encouraging more women into science, technology, engineering and mathematics (STEM) roles.

With a physics degree from Oxford, a PhD in high energy physics from Imperial College and also time at CERN – the European Organisation for Nuclear Research – under her belt, Robyn is both fascinating and inspirational to speak with. From her ardent advocacy of women in STEM roles, to her self-confessed 'ballsy' approach to dealing with challenges such as gender bias, Robyn's enthusiasm for the energy sector is second to none.

Having started her post-academic career as a data analyst with BAE Systems, Robyn joined demand side response (DSR) aggregator Open Energi in 2016. She now works with industrial and commercial clients to flex their high energy use to help balance the UK electricity system. "It's a really green, low carbon way of managing the system," she explains. "Instead of ramping up and down gas stations, which is really inefficient, what we do is take control on the demand side rather than on the generation side, to balance how much electricity is on the system."

> "Getting into the energy industry was a natural progression for me. Having done a PhD in particle physics, which couldn't be less 'real world' if it tried, to come and do something that's very tangible and has a real impact on people's lives is very rewarding."

As Head of data science, Robyn's role focuses on writing and using algorithms to forecast and optimise the various client loads which Open Energi is connected to and manages. Another aspect of Robyn's role is to look at the bigger picture of the company's whole portfolio and apply machine learning techniques and real-time analysis to distributed energy assets - from industrial equipment and battery storage through to local generation - so that Open Energi can intelligently optimise their response and maximise value for end users. As the company prepares to release its next generation platform, Dynamic Demand 2.0, this has included some innovative projects, such as flexing assets in response to energy market price signals to help renewable energy suppliers balance their supply and demand positions. This flexible DSR approach is designed to help build the smart, flexible energy system of the future.

> "It's about getting the most out of our energy system because the way we use electricity at the moment is so archaic. There's so much we can do to be smarter and to optimise our energy use and that's how I want to spend my career."

# Robyn Lucas continued

Coming into the energy sector from a physics background, Robyn is no stranger to being surrounded by male colleagues – especially looking back at her time at CERN, where she worked on one of the large hadron collider experiments and was regularly the only woman in a room full of hundreds of men. Asked whether she feels this gender imbalance has been a challenge or an opportunity, Robyn describes how it can often be both: "It's not necessarily the case that you're discriminated against; it's sometimes quite the opposite, which I find equally as offensive. Sometimes you get offered opportunities simply because you're a woman but I don't want to be doing things on that basis – I want to be doing it because I'm the best candidate."

Although she is inspired to see females leading their field in senior roles at organisations such as National Grid, Robyn says she hardly ever meets any other women from the industry who are doing a role as highly technical as hers: "There's such a lack of women in STEM roles like mine," she explains, "because careers in banking, consulting or finance are seen as the more natural course of progression for female graduates." The roots of the problem stretch much further down the academic ladder, however, and Robyn feels that more should be done to encourage girls to study STEM subjects at A Level: "We need to get more role models into schools to demonstrate to girls that they're perfectly capable of studying and working in fields like maths, science and engineering, rather than habitually encouraging them to study arts-based subjects."

> "I had to fight quite hard to get where I wanted to go, because teachers would always say things like 'you're really good at English, why don't you do that?'. But I was determined to study physics, even though I was told I couldn't or that I'd have to work harder. I wanted to prove them wrong and also to prove myself; I guess I'm just stubborn!"

Robyn's self-confidence and assertive approach hasn't always come naturally to her, however, and she admits that it's been a challenge to overcome her instinctive reticence. "I guess it's a female trait to self-doubt," she muses, "but reading Sheryl Sandberg's book 'Lean In' made a lot of sense to me and was very helpful in overcoming my insecurity. I've had to fight my way through lots of quite stressful, masculine, high-pressured environments – particularly when I was at CERN – but I learned how to cope and turned it into a positive opportunity. I forced myself to develop a thick skin, to stand by my convictions and to be noticed."

Robyn certainly seems to be challenging the traditional preconceptions about the 'type' of person someone in her field might be: "As a physicist, you're typecast to be socially awkward and socially inept," she says. On the contrary, Robyn is extremely warm, humourful and engaging to speak with, but it's her innate enthusiasm for the complexities of the changing energy system that resound most strongly.

> "People do assume that you're a certain kind of person when you've had the career that I've had to date, and I quite enjoy challenging those perceptions."

When asked about her advice for anyone considering a career in the energy sector, Robyn's fervour for her work says it all. Discussing the many different factors that drive the industry, such as market dynamics, regulatory issues, managing system constraints and government policy, Robyn clearly takes great satisfaction and pride from her work and its very real, tangible, applications.

"As we move from a centralised, traditional electricity system," she explains, "to a much greener, low carbon, renewable system with numerous decentralised electricity generators, there are many challenges for system stability and the core issue of actually keeping the lights on. It's such a dynamic, interesting, ever-changing field to work in and it will change increasingly as time goes on. I'm relatively new to the energy industry but it's a really exciting career and I love it!"