The Engineer within: Embracing my Career in Energy Management

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An interview with Roederer Rose Lyne, the recipient of the 2018 Young Energy Management Professional of the Year award in the Energy Management Awards.

What inspired you to pursue a career in energy management and sustainability?

I come from a family of engineers and grew up playing with all sorts of technical toys. I was fortunate enough to have access to lots of engaging STEM summer courses, so I always knew I wanted to do something engineering focused, and that is why I picked Aberdeen to study mechanical engineering. At that time, Aberdeen was known as the oil capital and a lot of technology, engineering and energy was focused there. I thought it would be a great place to learn and gain some hands-on experience in the world of technology and engineering.

During my studies, Aberdeen experienced a major oil downturn which led to a reduction in the number of oil linked internships and graduate opportunities. However, it led to an increase in opportunities in renewable alternatives and I was fortunate enough to secure a short internship with a start-up renewable company. This was my first exposure to renewables and looking at energy systems, and unique ways of generating energy. It was a really fantastic experience to see how we can harness offshore wind and solar energy rather than traditional land based options. I thoroughly enjoyed the experience.

When the University started looking for an Energy and Carbon Management summer intern to work within the Energy Management Team that same year, I did not hesitate to apply. The internship focused on assisting the University's new Energy Manager to develop a carbon management plan and explore ways to improve energy efficiency across the estate. Under the guidance of my line manager, I was exposed to various aspects of energy and carbon management through participation in meetings, analysis and project development. I found great satisfaction in the problem-solving challenges presented by the role, leading me to compile a project register of over 100 initiatives for the carbon management plan within a few months. The dynamic nature of the position, where each day brought new challenges, piqued my interest and broadened my perspective on energy management. I found joy in the technical and mathematical components of the job, as well as in engaging with colleagues and stakeholders. When I was offered a part-time position to continue working with the team while completing my master's degree, I was thrilled to accept.

After I graduated, the internship became my very first job. My line manager went above and beyond to create a 2-year custom graduate programme just for me, so I could keep working there and learn even more. I got to work on some really high-level projects, which was challenging but also a great way for me to learn and grow.

You won the EMA's Young Energy Management Professional award in 2018 when working as a Graduate Energy Engineer at the University of Aberdeen. What did it mean for you and how did your career evolve after that?

That was a fantastic year because not only did my line manager nominate me for the Young Energy Management Professional of the Year award, but he also nominated the whole team for the Energy Management Team of the Year award. I won and the team received

a highly commended award, both of which raised our profiles at the University and led to the wider Sustainability Team winning a principal's award for excellence internally.

Having that recognition outside of the University really showcased our work, and highlighted the fact that we were doing something so good and important that it enabled us to win sector awards. It elevated our standing, our profile as a whole team but also as individuals, and it helped to give a bit more weight behind any proposals we put forward.

On a personal level, winning the award was a big confidence boost for me and it showed me that I was having a positive impact. When I started looking for a job in the private sector, the fact that I won Young Energy Management Professional 2018 and was also part of a highly commended team helped me stand out during my interview. This led to the next chapter in my career, working for clients across the world and looking at ways to improve energy efficiency of their operations.

The consultancy work broadened my horizons in new ways again as I did a lot of decommissioning work, design for future proofing, and proposals' development. Then in 2022, I returned to the University of Aberdeen as their Net Zero and Emissions Manager.

Can you identify a particular influence that shaped your career in the industry?

My internship and graduate line manager and the University's Energy Manager, Tristan Wolfe, who shaped my technical mind, challenged me and guided me through the intricacies of energy management during my studies, and ever since. He inspired and supported me from the first day, but he also encouraged me to lead on key aspects independently to ensure my professional growth. Today, Tristan is not only my colleague at the University, but someone I still turn to for guidance and sounding board. I consider myself extremely fortunate to have had him as a mentor from the outset. I probably wouldn't have pursued this career path without his willingness to share his knowledge and answer all my questions.

How would you explain your role in energy management to a Martian?

Explaining the intricacies of energy management is no simple task due to the multitude of factors at play. Many mistakenly believe that the industry solely involves managing bills and ensuring the lights stay on, but this oversimplification fails to acknowledge the depth of knowledge and skills required for success in this field. I think the most straightforward explanation would be having a comprehensive understanding of the complexities of how energy is interlinked and consumed within a given estate, as well as the ability to analyse it and collaborate with others to identify opportunities for enhancing efficiency.

It is what makes the role so rewarding, complex and exciting. Each day presents new challenges and opportunities for learning and exploration. As the individuals working behind the scenes, our primary focus is on ensuring the seamless operation of systems and constantly seeking innovative solutions to alleviate any concerns for end users. We serve as advocates for future-proofing our estates.

In your experience, what are the three most important skills energy management professionals need for their day-to-day job?

Effective energy monitoring, validation and targeting is key. It is imperative to have confidence in the accuracy of the data before presenting it to stakeholders. Presenting data incorrectly can deter individuals, so it is crucial to have faith in the information being shared to support your ideas. This principle has proven true for me throughout my career, from my time as a graduate to my current role. Data serves as the cornerstone of our industry.

Carbon management was a significant aspect of my responsibilities as an intern and continues to be a crucial core component of my current role. Regardless of one's specific role within energy management, it is imperative to acknowledge the

importance of achieving net zero emissions as a fundamental aspect of any organisation's sustainability journey. Whether the focus is on reducing energy consumption, optimising baseloads, minimising peaks or simply lowering energy costs, it is essential to remain conscious of the other side of that which is carbon. This awareness becomes even more critical when considering long-term planning with regards to net zero and the potential requirement for offsets, and their associated annual cost.

Behaviour change, motivation and communication are very important. While these elements may not have been a primary focus during my consultancy work on large engineering projects, they were essential during my internship and remain significant in my current role.

Behaviour change needs to be demystified because many people do not realise how much energy they use at home. Just like people think about how much food they eat, they should also think about how much energy they use as it can make a big difference in the long run. Demystifying this aspect is something we tackle on almost daily basis at the University. By explaining the intricacies of how the University's system works and being approachable, we are able to build up the rapport that we need to communicate the realities of how energy works. I think it is a really key thing because often we have people who just expect that we can "buy from renewables" and that's it, but there is so much more to it than that.

If you could gain a new skill instantly what would you choose?
For me, the clear choice would be energy procurement. At the University, our energy purchasing is secured centrally on our behalf through APUC, so it is not something that I got to fully experience. I would like to know more about it, especially because power purchase agreements are being increasingly discussed as a way to decarbonise energy for the public bodies. If I had more exposure and more knowledge about energy procurement, I'd probably feel more confident talking about it and being involved in making decisions about what's best for us.

"We serve as advocates for future-proofing our estates."

What energy management principles do you use in your personal life?
I like to keep track of how much energy we use at home. I pay close attention to our energy usage and look out for any changes. I am very energy conscious, so for example if it's a sunny day, I won't use the dryer. Since our house is quite old, we've done a lot of work to make it more energy efficient, like adding insulation and reducing the overall demand before we start looking at installing renewables.

I also like to practice the circular economy by trying not to buy new things. We have some fantastic charities across Aberdeen and we were able to buy a lot of solid oak furniture for a fraction of the cost by shopping second hand. It only took us 2 weeks to find everything we needed when we bought our house. The University has an email based buy and sell marketplace where I found a free mahogany bookcase so there are some amazing finds out there, if you know where to look. In return, I do several clear outs each year and donate things to charity I no longer need instead of throwing them away.

The other thing I try to be really conscious about is travel. Aberdeen is a great city for walking, so I do not drive but walk or take public transport to get around. I try to avoid flying unless it's necessary, and I prefer taking trains whenever possible.

I am often asked why bother "restricting" parts of my life when large corporations are responsible for huge volumes of emissions but my stance is that we have the power to encourage change through how and where we spend our money and time. By making smart choices about how we use energy, what we buy and how we travel, we can help reduce carbon emissions and encourage companies to be more eco-friendly by showing that it is something important to us. It's all about making small changes that can have a big impact on the environment.

If you have suddenly been given a £1 billion budget to spend on any projects of your choice, what would be your plan?
I would start with the decarbonisation of our heat network. We have three campuses which contain the vast majority of our sites, Old Aberdeen which is our main campus, our Student Village and then our Medical Campus that we share with NHS. The majority of the budget would probably go towards the complete refit and targeting ultra low temperature district heating across the three sites which would involve ripping out the

existing district heating, putting in better insulated pipes, and would go hand in hand with improving our building stock as much as possible. We have some historic, listed buildings in our portfolio so going into every single plant room, insulating pipework and PIC valves, just to name a few, and generally improving the overall controls of our buildings.

Once we improved our district heating network, I would connect with the civic network. Aberdeen City is a fantastic city for council district heating schemes, where large areas of sheltered and council housing, schools, sports centres, community buildings, etc., are provided with district heating. It would be fantastic to be able to connect into that and provide heat, or potentially become an anchor load.

Another project that I would really like to get to try are PV carports. They are still relatively unique here, but I saw them when I went to COP28 in Dubai last year. Especially in the height of summer but even in the winter, carports that have PVs mounted on them would be a great addition to our estate, and the energy goes to electric car charging or provides electricity for your site. An alternative would be to cover the carport with green roofs to reduce the heat island effect and reduce the overall temperature of our estate. I think that would be a unique addition to our estate.

As a final project, I would love to create a renewables and sustainability showcase building. A building that would be specifically designed to allow staff and students to test out new technology or environmental processes. We have research covering areas like carbon capture and energy generation being done at the University. I would love to fund a building that could have all these innovative ideas and people could plug their technology in as a proof of concept. I think it would be fantastic to let our students and researchers use our estate more.

Those would be my main three projects and at the end of them, I would probably be out of money!

What is it like to be a woman working in engineering and energy management?

There are many women in the sustainability, but not that many in energy management, however we are breaking through. In my own experience, all of my mentors have been men, and they have been absolutely fantastic and supportive. Interestingly, it's been clients that have been not derogatory exactly, but dismissive. On one of the first projects I worked on as a consultant, we had a client who was really dismissive and not respecting my experience and the research we put into the work. It was only when a male colleague came in and repeated what I said, it was accepted. My boss at the time highlighted this as an issue and this person was removed from the project because it was causing delays.

I am very fortunate to have been raised to speak my thoughts, not be afraid and be confident. I am comfortable standing my ground, which really helped me. However, I have also been very fortunate to have line managers who support me and would never let anything like that remain unresolved, which is key in situations like this.

What are your aspirations for the future?

Short-term, my focus is on my current role and the task of decarbonisation of our estate. I would like to play a role in overseeing the implementation of a new large scale decarbonisation source, whether it's a heat pump, PV or hydrogen, and seeing it to reduce the University's carbon emissions. It would make a fantastic career milestone for myself to see that happen.

Long-term aspiration is to keep pushing the sustainability agenda and keep moving up towards head of sustainability and estates roles. Though a period back into consultancy is never out of the question as I found that thoroughly engaging.