

Ellen has six years' experience working as a geoscientist with ERCE including project management within the audit group, guiding multi-disciplinary teams including facilities and economics. Ellen joined ERC Evolution as she is passionate about the energy transition and working towards a low carbon future. Ellen holds an Masters in Earth Science from the University of Oxford and is a CSA certified GHG emissions verifier and validator. She is an active participant in the wider geoscience community as a Fellow of the Geological Society of London and has been a visiting lecturer at Imperial College London.

Why did you choose to do the ISO 14064 courses? Tell us a bit about the courses.

When someone says ISO 14064, it's not something you immediately jump at! However the topics covered are both interesting and relevant. The aim of the course is to teach anyone who is interested, across any industry, all about greenhouse gas emissions and how to quantify them. Prior to taking the courses, I worked exclusively as a geoscientist on oil and gas projects. In my university days my area of study was in climate science, so greenhouse gases and their effect on the climate has always been an interest of mine. The ISO courses took me back to my early specialisation and allowed me to apply it in a practical sense which I've loved.

The course is split into three parts. Part one explains the quantification and reporting of greenhouse gas emissions and removals, and introduces the concept of 'Scope 1, 2 and 3' emissions. The scopes categorise the emissions into three different buckets to determine whether they are a companies' 'direct' or 'indirect' emissions. For example, direct emissions are those which a company physically generates (e.g. combustion of gas), and indirect are those which are the responsibility of someone in the greater supply chain of that company (e.g. air travel).

The next course teaches you how to quantify, monitor and report emissions for reduction or removal projects. The focus is on learning about developments which generate carbon credits, like planting trees or building a renewable energy facility as opposed to a new coal plant. The media have brought topics like emissions and renewables much more clearly into the public consciousness in recent years, and terms like 'greenwashing' have prompted examination of whether certain initiatives actually help. I really enjoyed learning about how these things should be done, and done correctly.

The third part of the course taught us about verification and validation of greenhouse gas statements. Translated, this is the process for how third-party auditors can check if companies' emissions statements are correct, and whether the reduction claimed by a project developer is feasible. It is through these audits that any erroneous or optimistic calculations by companies can be wheedled out. Without this independent check, the industry would certainly suffer escalations in accusations of greenwashing and the public would likely lose faith in emissions reporting and reduction projects.

What were the biggest takeaways from the courses and has it influenced the direction of your career? Did your decision to focus on decarbonisation work come before or after the course and what was the primary driver for your change in direction?

The main takeaway I'd say was how different carbon accounting is from a science. With geoscience, most of the governing principals are set in stone (oops!). However the rulebook for emissions is open to change. On top of that, local regulation may mean there are deviations from the ISO guidance. The 'right' way of doing things is very fluid and dependent on the thinking at the time, so there is a requirement for constant learning and keeping on top of the latest developments in the area.

It has definitely influenced the direction of my career. I have had the opportunity to work on a number of projects centred around quantification, forecasting and verification of greenhouse gas emissions and have a skill set which is quite a large deviation from my original area. I'd decided I wanted to work on decarbonisation prior to taking the courses as I realised the need for the phase down of fossil fuels and wanted to help with that transition. I was previously researching carbon capture and storage (CCS) as I saw that as the clearest way to apply my geoscience skills in the decarbonisation space. However, I didn't anticipate the skills overlap and opportunity to move into emissions accounting.

What is your current role? What is similar in your current work to your previous roles in O&G and what is different? What are the most challenging and most interesting aspects of it?

My current role as a Managing Consultant splits my time about 50/50 between CCS and greenhouse gas

accounting projects. The day-to-day format of my current to past role in O&G is very similar - I am still working on energy projects for clients and so there is a lot of overlap with the structure. The most challenging, as well as interesting, part of my new role is that I now need to invest extra time in learning new concepts in order to complete the projects in CCS and emissions. Previously I could easily pick up and finish a project without doing any reading outside the content provided by the client, but now I almost always need to review the newest guidelines or published papers on the subject.

[Any advice for those in O&G who want to contribute to decarbonisation, either specifically in greenhouse gas accounting or more generally? Any other courses you might recommend?](#)

I think there will be lots of opportunity, as decarbonisation will need to be integrated into every project going forward. You don't have to have a role specifically in sustainability to contribute. Ensuring the project you are working on selects the lowest emission pathway for development and, going further, whether it may be a suitable candidate for carbon storage at end of life are a couple of ways. Having project teams understand greenhouse gas accounting will allow them to be better informed when making these choices. For those in O&G who wish to pivot to working solely on decarbonisation, it is easier than you may think. The skill sets have a lot of overlap and don't let a lack of qualifications in that area put you off. To be an engineer takes a whole degree worth of studying, but you can get to grips with the basis of a lot of roles in greenhouse gas accounting within a few weeks.

There are a lot of courses out there which can help with a general understanding for those who are curious, or act as qualifications for those wanting to change role. For those who want to broaden their knowledge, a lot is freely available and accessible. EdX has some fantastic courses for free, so I'd say if you are thinking about making a change then that is an excellent first step. Then if you are serious about changing your role and moving into greenhouse gas accounting the ISO courses are very good, as are those given by the Greenhouse Gas Protocol.