

## **Geoscientists and Net Zero by 2050**

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### **Abstract**

While the need for Petroleum Geoscientists will certainly continue well into the future – even with a rapid transition to net zero carbon emissions - this talk identifies the skill sets and scope the demand for qualified Geoscientists assuming that there is a very rapid energy transition. There are important technical, economic, and political questions yet to be addressed to accomplish net zero carbon emissions by 2050. This talk doesn't address those open questions but attempts to answer the question: What Geoscience skillsets will the world need IF it is to accomplish net zero by 2050?

This talk 'quantities' of geoscience skills to support net zero by 2050 by comparing the skills needed for petroleum development with those that will be needed for the energy transition – primarily for CO<sub>2</sub> Sequestration and Geothermal energy. Importantly, this talk also scopes the types of skills those sequestration geoscientists will need. important capabilities that will be different including: CO<sub>2</sub> Geochemistry, Rock Physics and Seal Integrity under cooling, Solubility, Monitoring & Assurance. This analysis helps define specific skills those geoscientists will need in a net zero by 2050 world.

Finally, this talk identifies a number of the challenges with developing these skills fast enough – and presents a number of ways to build the needed geoscience skills in a world where there may be less interest in undergraduate geoscience education.

Net zero by 2050 is not likely (probably not even possible) without significant capture and sequestration. Geoscience education – very similar, but not exactly the same as those for petroleum production – will be an important part of any energy transition.