



The future is geoscience

Geoscientists will be vital to major infrastructure delivery, particularly in a post-Covid world, says **Jonathan Turner**

The geoscience community looks like it may be getting sucked into the proverbial perfect storm: the demise of oil and gas exploration and production activities, at least on the UK continental shelf, a general decline in young people's perception of geoscience careers, and a Covid-19-induced financial crisis affecting universities and learned societies among others. Major infrastructure programmes and geo-energy projects should be critical to revitalising the economy, and geoscientists will be central to their successful delivery.

UK infrastructure projects

Major infrastructure programmes are something the UK is good at. Queensferry Bridge, CrossRail, and further back, the Olympics and Channel Tunnel are all examples of projects in which geoscience talent has been fundamental to delivery. Looking forward, projects such as HS2, Heathrow Third Runway, Lower Thames Crossing, geo-energy and deep geological disposal of radioactive waste will be similarly reliant on a steady supply of appropriately skilled geoscientists. Furthermore, it is likely that delivery bodies will increasingly specify Chartership as a basic requirement. It is easy to argue therefore that, through its degree accreditation and professional Chartership programmes, The Geological Society will continue to play a key role.

Where are we going with big projects?

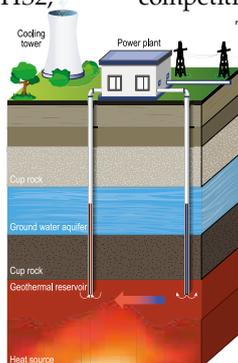
There are a range of views on the post-Covid-19 fate of some of the major infrastructure programmes currently on the government's books. To take polar opposites – i) they are very expensive thus unaffordable; conversely ii) their potentially transformational effect on communities, through long-term

investment in jobs and infrastructure, means that the imperative to deliver them may actually increase.

However, major infrastructure programme lifecycles can be very long indeed. Should the second of the above options transpire it is likely that, as well as an intense focus on cost, there may be a strong push to deliver them more quickly. Moreover, in the event that their delivery timelines are significantly foreshortened, geoscientists will be critical for evaluating subsurface uncertainties and refreshing strategic programme risks.

Future-proofing professional geoscience

Given that oil and gas on the UK continental shelf is entering its end game, university programmes and the professional ecosystem supporting applied geoscience must ensure that geoscientists possess the skills they will need to succeed in a shifting and increasingly competitive job market.



These skills include site investigation, shallow boreholes, geotechnics, hydrogeology, GIS, environmental geophysics and environmental geochemistry, to name but a few. Some of them require only a relatively light touch adaptation from the knowledge of basins and deeper crustal processes that are the prerequisite for oil and gas specialisms. Others will need to be actively managed in order to deliver the required change of emphasis in taught programmes.

There will always be steady demand for good basic geoscience skills – rock properties, structure, stratigraphy, Earth processes and that unique 3D perspective instilled by weeks of geological fieldwork. This next phase is about future-proofing the geoscience community such that it is suitably equipped to contribute to the needs of major infrastructure delivery for decades to come.

Jonathan P Turner is Chief Geologist at Radioactive Waste Management Limited

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Pictures should be of print quality – please take photographs on the largest setting on your camera, with a plain background.

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