

Face facts on fossil fuels

Inadequate science communication risks enabling failure to limit climate change, writes **Hugh Richards**



Is the UK geoscientific community about to miss a unique opportunity to make a substantive contribution to securing a stabilised Earth system with well below 2 °C of global heating? I refer to the hosting in Glasgow in November 2020 of COP26 (arguably the most crucial UN climate summit thus far) and to the short time available for the UK to bring fresh thinking into what is currently a failing process. The Paris Agreement reached at COP21 willed ends, but not sufficient means; COP26 must rectify this.

Inaccessible answers

The geoscientific community (working with other disciplines) should be able to give influencers and policymakers clear answers to several key questions. For example, how credible is it that once past about 2°C warming, the Earth system will transition to a highly inhospitable 'Hothouse Earth' state within a century or two (as postulated by Steffen et al., PNAS 2018)? In that context, how risky is it to allow global warming to exceed 1.5°C? How much fossil carbon can be extracted without putting the COP21 target out of reach? What is an equitable apportionment between countries of such a global fossil carbon extraction budget? What is the feasible global capacity for carbon capture and storage (CCS)? Could a 'leave it in the ground' (LINGO) treaty to control the extraction of fossil carbon be readily monitored?

As we approach the end of the Society's 'Year of Carbon', useable answers to these questions seem largely inaccessible. In the absence of such information, the field remains clear for narratives that lack meaningful quantitative constraints. Once such example is John Warburton's Soapbox article (*Geoscientist* 29 (8), 9; <https://doi.org/10.1144/geosci2019-043>), which combines acceptance of the need for a 'transition from our fossil-fuel addicted lifestyle' with examples of only marginal reductions in CO₂ emissions, and

envisaging no prospect of an end to 'the world's insatiable thirst for a petroleum-based economy'. At least this does implicitly recognise that demand reduction will not deliver global decarbonisation; hence the need for control of supply and extraction.

Leadership

At the other extreme are the supporters of Extinction Rebellion (XR), demanding UK net zero emissions by 2025. Although it pains me to say so, if humanity wants to limit global heating to 1.5°C, with the UK playing an equitable role, the XR demand may not be so wide of the mark, and the UK should perhaps already have its fossil carbon extraction industries substantially offset by CCS. To commit to the latter course of action really would represent leadership on the international stage, and demonstrate what a 'LINGO treaty' might involve.

Do I think that such an outcome is likely? No, but if humanity is going to fail to avert 'Hothouse Earth', let it be primarily a failure of politics, not enabled in part by a failure of science communication.



Hugh Richards works in the UK civil nuclear decommissioning sector, but is here writing in a personal capacity.

(The full version of this article and an accompanying graphic appear online. *Editor*.)

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