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Update for paragraph 12.4.2

GEO-ENGINEERING SUGGESTED AS AN INTEGRAL PART OF THE SOLUTION TO GLOBAL WARMING

While there is much evidence that the impacts of global warming will require internationally-agreed strategies to reduce emissions of green house gases, a 12-month study by the Institute of Mechanical Engineers (IME) in the UK suggests that geo-engineering could play a major role in tackling climate change. The research also found that painting city roofs white could prove to be a simple but effective way to curb excessive global warming.

Geo-engineering is a set of technologies that could prevent or slow global warming. It includes everything from sending mirrors into space to reflect away sunlight - to dumping iron into the oceans to encourage the growth of algae, so removing atmospheric CO₂. For their study, the IME searched for ideas that were most practical and could have impacts on CO₂ or global energy use levels in the short term. Tim Fox, who led the IME study, stressed that geo-engineering is no silver bullet, but just buys time. He said 'We're not proposing that geo-engineering should be a substitute for mitigation [but] should be implemented alongside mitigation and adaptation.'

A priority in IME's list of practical solutions that would be low-carbon to build and require only existing technologies, was 'artificial trees.' These units would be the size of a standard shipping container and could remove CO₂ directly from the atmosphere. Fox claimed that 100,000 of such 'trees' would take up an area less than 10% of the surface area of the Firth of Forth, and 'that would be able to absorb the CO₂ emissions of the UK's non-power sector annually.' Another geo-engineering solution highlighted by the engineers was attaching tubes filled with algae to the sides of buildings. Algae form a naturally-occurring eco-friendly biomass that tends to have a high level of CO₂ use in photosynthesis. But some have expressed concerns that if such technological fixes are seen as adequate to deal with the threats posed by global climate change, it may lead to a complacent attitude, which might undermine the whole project.

While the urgency of addressing the problems of climate change is unquestionable, ethical concerns have been raised about seeking to 'engineer' climate, both because they may induce undesirable irreversible change and because future generations may be unwillingly exposed to a global climate that limits their choices or wellbeing. Supporters of geo-engineering might reply that the precautionary principle needs to be applied prudently when the survival of life itself is at stake.

Website reference:

<http://www.guardian.co.uk/environment/2009/aug/27/geo-engineering-ime-report>