

Environmentally harmful technologies – Should they be banned? Can they be banned? Part 1

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Key points:

- There is no such thing as sustainable technology, as technological development excludes sustainability. It does not mean that all technology efforts directed at improving the ecological *status quo* are void and created to appease the conscience of some of the more aware scientists.
- One of the paramount roles of law is to regulate behaviour. Hand in hand with ethics and other fundamental principles, the law ought to restrain and permit. In the face of the upcoming climate catastrophe, lawyers and regulators must ask themselves which technologies aid the development of society at a price we still can afford and which must be banned, for the sheer sake of the general present and future well-being.
- The selected technologies can be drawn under bans under similar legislative acts. It shows that despite large differences, the main link they share, that is the fact that they might be unsustainable, is what could make an action against them rather uniform.

Introduction

There is no such thing as sustainable technology, as technological development excludes sustainability. No technology has a negligible impact on the environment and society. It does not mean that all technical efforts, directed at improving the ecological status quo, are void and created to appease the conscience of some of the more aware scientists. Nevertheless, as has been expressed, ‘innovation for sustainable development’ is a complex idea and endeavour¹.

One of the paramount roles of law is to regulate behaviour. Hand in hand with ethics as well as other fundamental principles, law ought to restrain and permit, regulate how and in what manner we act upon in our everyday lives. **In the face of the upcoming climate catastrophe, lawyers and regulators must ask themselves which technologies aid the development of society at a price we still can afford and which must be suppressed for the sheer sake of the general present and future well-being.** The fact that we need to be thinking of sustainability at this scale, is because the previous generations happily embraced different technologies without remarking what effect they may have on the planet.

¹ Kemp. R. 2010. “Sustainable technologies do not exist!”. EKONOMIAZ. Revista vasca de Economía, Gobierno Vasco / Eusko Jaurlaritza / Basque Government, vol. 75(04), pages 22-39.

The selection procedure of discussed technologies for this article was made based on the amount of damage, as it can only be somewhat measured, of technologies that are only now introduced in most countries. These are: geoengineering, non-fungible tokens (and, by extension, cryptocurrencies), and the controversial 5G. It is, by all means, a free selection, serving as an introduction to the deeper discussion on how the law should approach swiftly and effectively the developments that might bring more harm than good. The article will focus primarily on international laws, providing insight into notable national legislation.

Geoengineering

Geoengineering is an umbrella term that encompasses a plethora of large-scale proposals, interventions to mitigate or even reverse temperature rise. Geoengineering techniques can be divided into two categories: techniques which are to remove the surplus of carbon dioxide from the atmosphere and the ones, at this stage mostly mere proposals, which would permit reflecting sunlight away from Earth². To provide a clearer picture, the technologies that fall under the title ‘geoengineering’ are BECCS (Bioenergy with Carbon Capture and Storage), DAC (Direct Air Capture), Solar radiation management, cloud brightening and thinning, ocean fertilisation, Ambient Air Capture, and more. Interestingly, also less technical solutions or proposals have been made – for example, covering deserts in plastic sheeting or protecting Arctic ice using hollow reflective glass beads. The latter is even being tested on a smaller scale³.

Since geoengineering has many faces, it is hard to investigate it systematically. Moreover, some scientists and experts have raised concerns over the whole idea behind geoengineering. It is because there is a risk that the popularisation of such methods, ‘technical fixes’, will divert attention from the preventive efforts, such as cuts in emission⁴. Some go so far as to claim that

² Timperley J. 2020. “How to stop global warming? The most controversial solutions explained”. China Dialogue. <https://chinadialogue.net/en/climate/geoengineering-how-to-stop-global-warming-most-controversial-solutions-explained/> accessed 7 October 2021.

³ Timperley J. 2020. “How to stop global warming? The most controversial solutions explained”. China Dialogue. <https://chinadialogue.net/en/climate/geoengineering-how-to-stop-global-warming-most-controversial-solutions-explained/> accessed 7 October 2021.

⁴ Timperley J. 2020. “How to stop global warming? The most controversial solutions explained”. China Dialogue. <https://chinadialogue.net/en/climate/geoengineering-how-to-stop-global-warming-most-controversial-solutions-explained/> accessed 7 October 2021; Pearce F. 2010. “What the UN ban on geoengineering really means”. News Scientist. <https://www.newscientist.com/article/dn19660-what-the-un-ban-on-geoengineering-really-means/> accessed 10 October 2021.

such techniques could turn the dial on the Earth's climate and worsen the situation in ways that might be irreplaceable⁵. Environmental ethics does not look favourably at geoengineering⁶. Research on the techniques is limited, which is troubling since some manifold questions and concerns remain unresolved. The willingness to launch trials is, nonetheless, also limited, exactly because of the given uncertainty of what could unfold⁷.

When it comes to the law, it is interesting that the climate scientists from Harvard University, admittedly, were not waiting for a green light from the regulators and moved forward with their long-prepared experiment, which was met with some criticism also in the scientific circles. The works were being finalised in 2019 and evaluated by a committee established by the institution to ensure transparency and appropriateness of the procedure. Nonetheless, this was still preceding the development of advanced talks between the regulators⁸. The team was to use a technique falling under solar geoengineering, releasing a balloon which was to discharge calcium carbonate into the atmosphere in hopes of lowering the temperature. Opponents of the method voiced their concerns, pointing out that this could harm the ozone layer and disrupt ecosystems until food supplies are threatened. They also noted that if this practice, even if successfully implemented, was eventually stopped, global temperatures would quickly go back to what they were, if not become higher, due to chemical reactions, which would pose a threat of bigger, sudden catastrophe⁹. It is not far-fetched to see that geoengineering in such a form could be easily weaponised. The Harvard scientists insist the experiment itself is not solar geoengineering but a less invasive, safer procedure¹⁰. So far, due to the pandemic and some of the procedural issues that needed to be resolved beforehand as well as because of the backlash

⁵ Temple J. 2019. "Geoengineering is very controversial. How can you do experiments? Harvard has some ideas". MIT Technology Review.

⁶ Scott D. 2012. "Geoengineering and Environmental Ethics". Nature Education. <https://www.nature.com/scitable/knowledge/library/geoengineering-and-environmental-ethics-80061230/> accessed 7 October 2021.

⁷ Secretariat of the Convention on Biological Diversity. 2012. "66 geoengineering in relation to the convention on biological diversity: technical and regulatory matters". CBD Technical Series No. 66, 13-14; 2019. "Geoengineering-Governance". Umwelt Bundesamt. <https://www.umweltbundesamt.de/en/topics/sustainability-strategies-international/environmental-law/international-environmental-law/geoengineering-governance#what-is-geoengineering> accessed 10 October 2021.

⁸ Temple J. 2019. "Geoengineering is very controversial. How can you do experiments? Harvard has some ideas". MIT Technology Review.

⁹ Kotecki P. 2018. "Harvard scientists will soon send chemicals into the atmosphere to test whether a last-ditch planet-hacking plan could keep Earth habitable". Insider. <https://www.businessinsider.com/harvard-scientists-to-release-chemicals-into-sky-in-2019-to-cool-earth-2018-12> accessed 7 October 2021.

¹⁰ Mullins L. 2020. "Harvard Scientists Plan First-Ever Field Experiment Related To Solar Geoengineering". Wbur. <https://www.wbur.org/news/2020/07/22/harvard-solar-geoengineering-climate-change> accessed 7 October 2021.

faced by the scientists and the committee, the experiment has been postponed, most likely, to 2022¹¹.

Looking at this example, there is no comprehensive, unified international law regulating solar geoengineering or geoengineering in general. Such devices may be reviewed under environmental policies and weather modification regulations. For example, in the USA these could be the National Environmental Policy Act¹² or National Weather Modification Policy Act of 1976¹³. The first of the acts sets out a general protective framework. The latter, more directly applicable to researchers, contains provision §330a that requires submission of a report for review if any test has, is, or will be taking place. One might remark on the flexibility of the obligation which might bring detrimental consequences if a possible danger of the experiments is overseen in time.

Returning to international laws — even though the issue was raised already before 2010, with the first regulatory measure at this level being the decision of the Conference of the Parties to the Biodiversity Convention (CBD) in October 2010, there is still no international infrastructure in place. It is particularly troublesome, as it has been recognised that geoengineering, if implemented, might quickly create cross-jurisdictional problems. So far, the existing legal response has been contained in multilateral environmental agreements. These, however, have been deemed insufficient, as leaving some gaps and undesirable leeways. Nevertheless, some commentators have assessed them as the most feasible option, despite the blemishes, because of the political environment and general attitudes towards the technology¹⁴. Lastly, it cannot be omitted that some geoengineering techniques meet more support than others¹⁵, which might create another regulatory hurdle for the potential drafters of an international act on the matter.

¹¹ Doyle A. 2020. “Planned Harvard balloon test in Sweden stirs solar geoengineering unease”. Reuters. <https://www.reuters.com/article/us-climate-change-geoengineering-trfn-idUSKBN28S232> accessed 7 October 2021.

¹² National Environmental Policy Act of 1969 Pub.L. 91–190, 83 Stat. 852.

¹³ National Weather Modification Policy Act of 1976 10/13/76 S3383.

¹⁴ Kuokkanen T and Yamineva Y. 2013. “Regulating Geoengineering in International Environmental Law”. Carbon & Climate Law Review Volume 7(3). <https://cclr.lexxion.eu/article/CCLR/2013/3/261> accessed 10 October 2021.

¹⁵ Proells A. 2012. “Geoengineering and International Law”. Sicherheit und Frieden (S+F) / Security and Peace Vol. 30, No. 4, 205.

Geoengineering has been temporarily banned in 2010, and then in 2016, under the UN Convention on Biodiversity¹⁶. **One could argue against the technology based on the precautionary principle; nonetheless, this has little merit as the necessity of research, and hence, waiving the rule, can be justified¹⁷.** It was done for marine geoengineering and regulated by an amendment to the London Convention¹⁸, serving as a great example of permission for research activities. A similar provision, yet here this link is a tad far-fetched, can be found in the EU's Habitat Directive¹⁹.

No matter how one perceives it, the current situation of no clear, uniform regulations creates harm, as little research is done to see what the extent of profitability, or its contrary, is offered by the geoengineering techniques. This leads to stagnation or to conducting rogue, unregulated experiments, which create more harm to the environment²⁰. Whether the technology should be banned or not is still unclear, but the problem here seems to be a chicken-egg one. As of now, there is a limited interest of many regulators in the matter which does not forecast a big legislative conflict between those caring for the planet and the potential interest groups in case the technology is deemed too hazardous. More challenging might be the selection of approved techniques, those, which pose less harm than the others; nevertheless, the existing systems and *ad hoc* reviewing groups can slowly permit a bigger number of experiments and hence increase the state of general knowledge.

Conclusion for part 1

The technologies that fall under the umbrella of geoengineering are ambiguous — they may happen to be solutions to the problem of climate change or its accelerators. **Examining them**

¹⁶ 2019. “Geoengineering-Governance”. Umwelt Bundesamt.
<https://www.umweltbundesamt.de/en/topics/sustainability-strategies-international/environmental-law/international-environmental-law/geoengineering-governance#what-is-geoengineering> accessed 10 October 2021.

¹⁷ 2019. “Geoengineering-Governance”. Umwelt Bundesamt.
<https://www.umweltbundesamt.de/en/topics/sustainability-strategies-international/environmental-law/international-environmental-law/geoengineering-governance#what-is-geoengineering> accessed 10 October 2021.

¹⁸ 2013 Amendment to the 1996 protocol to the convention on the prevention of marine pollution by dumping of wastes and other matter, to regulate marine geoengineering, 1972 Adopted in London, United Kingdom on 18 October 2013.

¹⁹ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, Official Journal L 206 , 22/07/1992 P. 0007 - 0050, Article 18.

²⁰ Fecht S. 2018. “We Need Laws on Geoengineering, ASAP”. Columbia Climate School.
<https://news.climate.columbia.edu/2018/03/20/geoengineering-climate-law-book/> accessed 10 October 2021.

in the first place allows for unveiling the complexity of the problem of balancing the developmental arguments with the duty to consider environmental protection. Other technologies are less equivocal on this plane, yet as, if not more, troublesome, taking their general perception. The next part of the article will focus on non-fungible tokens and 5G.

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