

Fantasy climate control? – Why not control extraction and supply of fossil fuels?

- some ideas for others to shoot down or pick up and run with

Hugh Richards¹

Version 8², 6 April 2020

This note was prompted by frustration at the lack of visible vigorous debate about alternatives or additions to the current 'voluntarist' UN approach to climate change mitigation, which seems to me highly unlikely to result in a substantive effect on the state of the global climate system towards the end of this century. Key missing elements seem to me to be:

- a robust, enforceable mechanism to secure a cap on the cumulative stock of anthropogenic carbon in the atmosphere, and
- a framework that could result in rapid implementation of carbon capture and geo-sequestration/storage (CCS) at the necessary scale.

I am aware that the ideas below have a lot in common with the "Cap and Share" (C&S) concept (www.capandshare.org) advocated by www.CapGlobalCarbon.org (CGC) who also call it "Cap and Dividend". However, C&S as presented by CGC seems to frame climate change as primarily a humanitarian issue, whereas the ideas below seek to frame future unregulated fossil carbon extraction as a global security threat akin to unregulated production of fissile nuclear material; perhaps "Cap and Regulate" or "Cap and Control"? Since October 2018, a more serious effort than mine has emerged that also draws parallels between potential control of fossil carbon extraction and control of nuclear technology (under the 1968 Non-Proliferation Treaty) (www.fossilfueltreaty.org).

The approach suggested here is to tackle the fossil carbon issue as directly as possible while retaining a role for national governments, and not attempting directly to solve other issues such as funding for climate adaptation or compensation for foregone fossil fuel revenues.

I am a practising scientist (geologist) but not a climate scientist; I am just a concerned UK citizen who has read some books and articles on the subject.

My current thinking is as follows:

- There are clear non-climate-related benefits in addressing at least some climate forcing agents other than fossil carbon (e.g. deforestation, black carbon) and those are not my concern here. Separate international agreements could help realise goals relating to these forcing agents.
- Fossil carbon³ accounts for the majority of current and projected climate forcing.
- "Well below 2°C" (here abbreviated to "<2°C") is now the international political consensus on what is a tolerable rise in global average temperature since pre-industrial levels⁴.
- Estimates of the remaining global fossil carbon budget that can be released depend on an as yet undefined consensus on the global appetite for risk in not meeting the <2°C objective. Current discourse seems to be framed around 1 in 3. Is this the best we can do?⁵

¹ I am a Supporter of Gloucestershire Climate Action Network, contactable via info@gloscan.org.

² Version 1 was written in February 2015 at the request of my then former MP David Drew and forwarded via him to Lord (John) Prescott (climate change policy adviser to Ed Miliband). Version 7 was published in March 2018 at www.GlosCAN.org. Version 8 is substantively unchanged from Version 7, but includes some updates.

³ Mainly from burning fossil fuels, but also carbon released from limestone in cement manufacture.

⁴ The 2015 Paris accord commits governments to "pursue efforts" to limit global warming to 1.5°C. However, the IPCC's 2018 report on 1.5°C of global warming has merely been "noted" by governments.

⁵ A fossil carbon budget with relatively low risk of not meeting the "well below 2°C" objective (e.g. if interpreted as 1.7°C) might be little different from one consistent with a 1 in 2 risk of exceeding 1.5°C.

- The signing of the UNFCCC in 1992 could be taken as a date after which fossil fuel combustion was recognised globally as having significant associated risks. Fossil fuel use prior to 1992 could be written off as “guilt-free” for humanity as a whole.
- A post-1992 “fossil carbon budget” could be scientifically defined to be compatible with the <2°C objective and the risk factor.
- The post-1992 fossil carbon budget could be divided by the global population to give an all-time per-capita fossil carbon extraction allowance.
- The per-capita carbon extraction allowance would then be allocated to each country on a population basis, in the form of carbon extraction permits. This could be done in tranches, say every 10 years, to allow for future science-informed changes to the fossil carbon budget.
- Countries which have extracted fossil fuels⁶ from their territories since 1992 would have their permit allocations reduced accordingly.
- The permits could be administered by a new International Carbon Extraction Agency (ICEA) with some resemblance to the International Atomic Energy Agency (IAEA), with accountability to the UN, and in particular the UN Security Council⁷.
- The permits would be tradable between nations and corporations⁸.
- The ICEA would have intrusive audit and inspection powers akin to the IAEA.
- Responsibility for compliance would rest with the governments of the countries within whose territories the permitted extractions are implemented. Non-compliance by corporations would lead to permits being revoked by the relevant government, which could then re-allocate/sell the revoked permits as it saw fit.
- The ICEA would have the power to issue additional permits only upon verified delivery of CCS schemes. There would be no such arrangements available in relation to other types of carbon emissions mitigations, including so-called “geo-engineering” schemes.
- Any countries which opted out of this process would be subject to appropriate sanctions.
- The ICEA would be responsible for reporting serious violations to the UN Security Council.

No doubt there would be huge resistance from many quarters to consider seriously such a different approach from the “voluntarist” approach embodied in the 2015 Paris accord. However, it does seem to me to have a chance of delivering the <2°C objective of the Paris accord in a way that could accommodate a number of highly desirable attributes, including:

- Demonstrable global equity
- Harnessing market forces effectively
- Relative simplicity (e.g. in comparison to emissions-based carbon taxation or cap & trade schemes)
- Practicable verification and policing
- Predictable long term market conditions for energy companies and states holding fossil fuel reserves and/or CCS capability.

As such, it could represent the best option for fossil fuel extraction companies and producer states to plan and manage an orderly transition to a sustainable future. I recognise that this may make it unattractive to some climate change campaigners.

⁶ I doubt if it would be worth attempting the equivalent accounting for post-1992 extraction of limestone for cement production.

⁷ This suggestion pursues the analogy with control of nuclear technology. Other means of oversight and policing could be envisaged, but I lack the knowledge needed to suggest a specific alternative.

⁸ I imagine the permit trading system should create a functioning market that would drive up the value of “burnable” reserves, provide a real economic basis for CCS and create a level playing field for renewables and nuclear without the need for subsidies.