Inaction over climate change is shameful

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We need to shift the world on to a different investment and growth path immediately

Martin Wolf

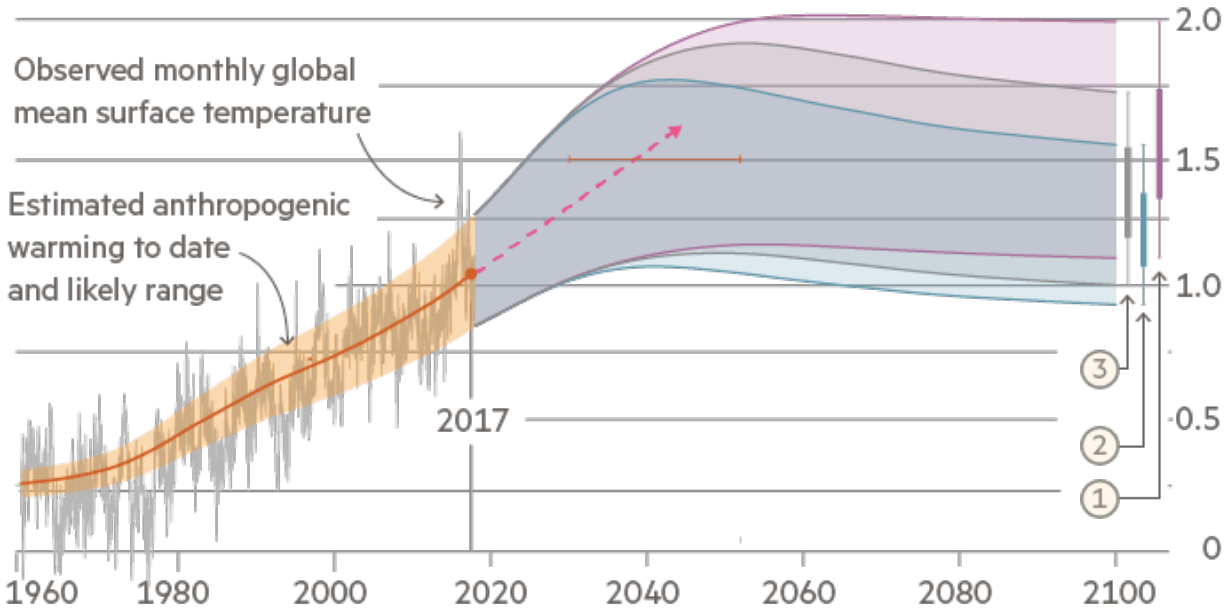
It is five minutes to midnight on climate change. We will have to alter our trajectory very quickly if we wish to have a good chance of limiting the global average temperature rise to less than 1.5C above pre-industrial levels. That was a goal of the Paris agreement of 2015. Achieving it means drastic reductions in emissions from now. This is very unlikely to happen. That is no longer because it is technically impossible. It is because it is politically painful. We are instead set on running an irreversible bet on our ability to manage the consequences of a far bigger rise even than 2C. Our progeny will see this as a crime.

The latest report from the Intergovernmental Panel on Climate Change is on the implications of warming of just 1.5C and also on the means by which that might be achieved. It reads like a *reductio ad absurdum* — a demonstration of the implausibility of its premise. But it makes plain, too, the risks the world runs if this limit is ignored: life will survive, but not life as we know it.

Possible journeys to 1.5C

Global warming relative to 1850-1900 (°C)

Observed global temperature change and modelled responses to stylised anthropogenic emission and radiative forcing*



Likely range of modelled responses to stylised pathways

① No reduction of net non-CO^2 radiative forcing results in a lower probability of limiting warming to 1.5C

② Faster CO^2 reductions result in a higher probability of limiting warming to 1.5C

③ Global CO^2 emissions reach net zero in 2055 while net non-CO^2 radiative forcing is reduced after 2030

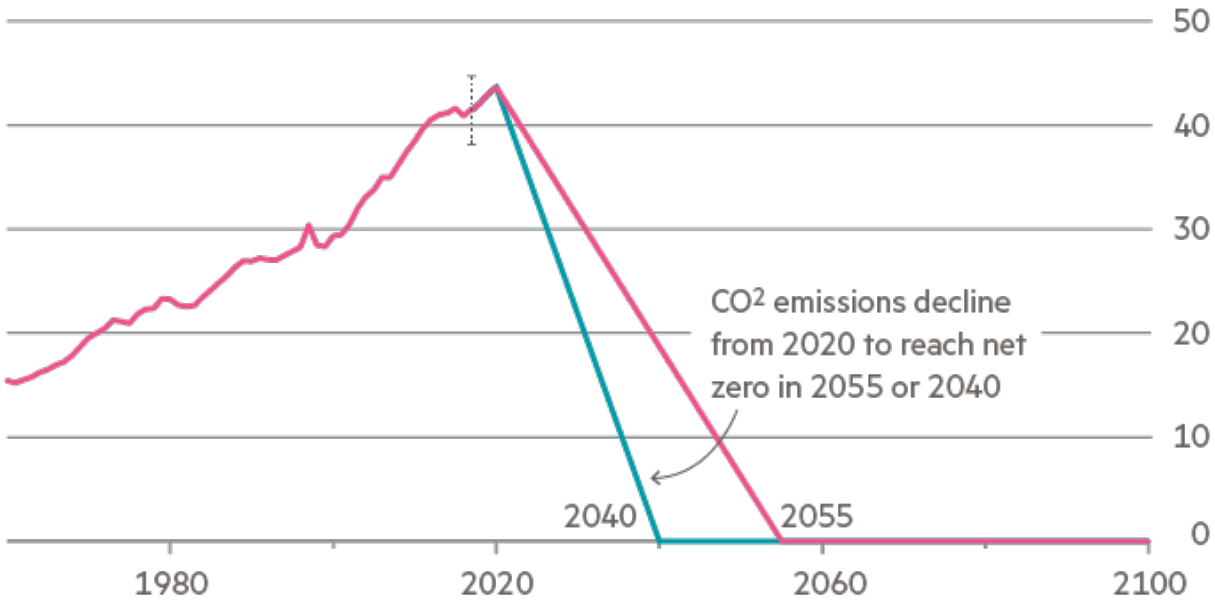
Source: IPCC * The difference between energy absorbed by the Earth and radiated back to space

Underlying this report is the idea of the Anthropocene — an era in which human activity has become a dominant influence on the planet. The report notes that the rise in global concentrations of carbon dioxide is 20 parts per million per decade. This is up to 10 times faster than any sustained rise in CO2 in the past 800,000 years. The previous epoch with similar CO2 concentrations to today's was the Pliocene, 3m-3.3m years ago. We are the shapers of the planet now. This ought to transform how we think. Unfortunately, it has not.

The starting point of any analysis has to be the overwhelming theoretical and empirical arguments for man-made climate change. Not so long ago, people talked about a "pause" in global warming. But that was an artefact of a comparison between an El Niño year (the warming of the eastern equatorial Pacific) in 1997-98 with the normal (albeit hot) years that followed. But the El Niño of 2014-16 far surpassed the previous record. The rise in average temperatures above the pre-industrial average is already about 1C. That shows how hard it will be to keep the final increase below 1.5C, or even 2C. Under the "nationally determined contributions", we are in fact on a track towards warming of 3-4C by 2100. Donald Trump has already repudiated the US pledge. Other countries may fail, too.

Hitting 1.5C needs immediate cuts in emissions

Billion tonnes CO^2 per year

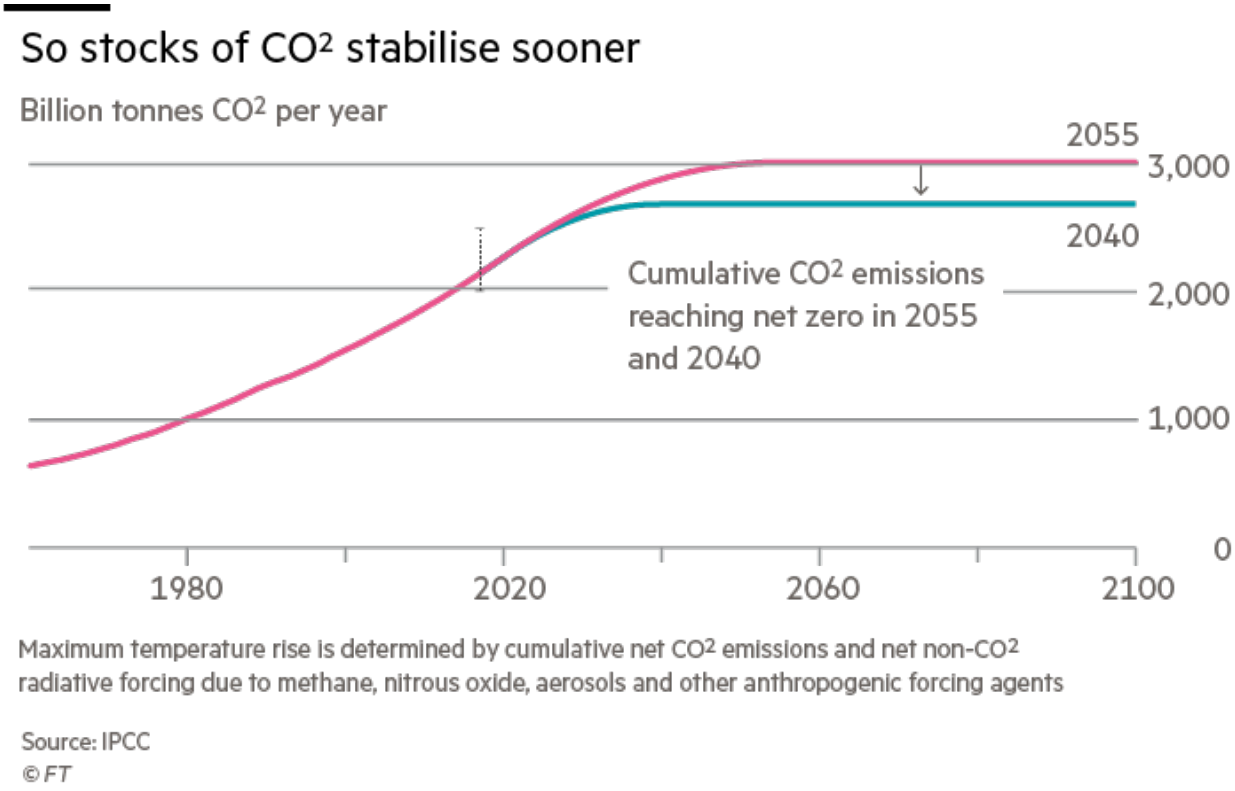


Faster immediate CO^2 emissions reductions limit cumulative CO^2 emissions

Source: IPCC

So what needs to change if we are to have a high chance of keeping the ultimate temperature rise to below 1.5C? Net global CO2 emissions would need to fall to zero not long after 2040, and other sources of climate change — emissions of methane and nitrous oxide, for example — would also need to fall from 2030. A fall in net CO2 emissions to zero by 2055 only makes it likely that the temperature rise will be below 2C. A difference of a half a degree is surprisingly important. The IPCC states that "limiting global warming to 1.5C is projected to reduce risks to marine biodiversity, fisheries, and ecosystems, and their functions and services to humans, as illustrated by recent changes to Arctic sea ice and warm water coral reef ecosystems". This matters.

The report discusses a number of different paths to the huge fall in emissions the 1.5C goal requires. Emissions from industry would need to fall by 75-90 per cent by 2050, relative to 2010. This would need a combination of electrification, hydrogen, sustainable bio-based feedstocks and product substitution.

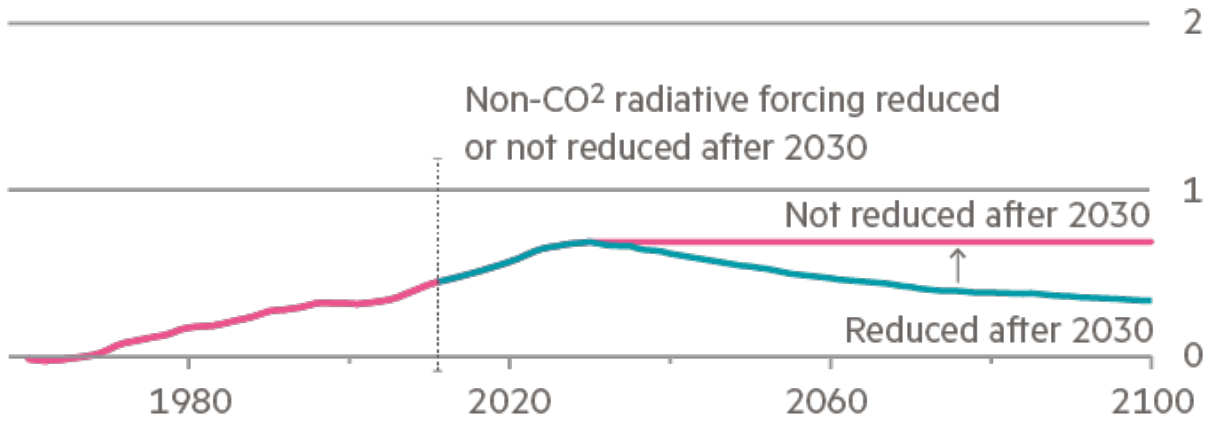


These options are technically proven, but their deployment on a planetary scale is another matter. Emissions reductions by efficiency improvement — vital though that is, as Amory Lovins of the Rocky Mountain Institute argues — will be inadequate. Also necessary will be big changes in urban infrastructure and planning. Agriculture will need to shift to production of energy crops on a huge scale. Also necessary will be carbon capture and storage on a large scale.

In all, we need to shift the world on to a different investment and growth path right now. This is more technically possible than we used to think. But it is politically highly challenging. Above all, climate change involves huge distributional issues — between rich countries and poor ones, between countries that caused the problem and those that did not, between countries that matter for the solution and those that do not and, not least, between people today, who make the decisions, and people tomorrow, who suffer the results. The natural tendencies are either to do nothing, while insisting there is no problem, or to agree there is a problem, while merely pretending to act. It is not clear which form of obfuscation is worse.

And other sources of climate change must fall

Non-CO2 radiative forcing pathways (watts per square metre)



Maximum temperature rise is determined by cumulative net CO_2 emissions and net non-CO_2 radiative forcing due to methane, nitrous oxide, aerosols and other anthropogenic forcing agents

Source: IPCC

One line of argument against action is that we do not know how costly climate change will prove to be. But this argument evidently cuts both ways. The scale of the uncertainty is an argument for action, not inaction. Nobody really knows what risks humanity will ultimately find it has run by continuing on its present course. But we do know that our descendants are quite likely to end up on a different planet, with no way back to our own. The bet that our descendants will then cope might be correct. But it might also be disastrously wrong. The sane choice must surely be to preserve the planet we have.

Yet doing that, as is by now quite clear, requires co-operative effort on a planetary scale. It will not be achieved by nibbling around the edges. This is a scale of challenge human beings have historically only met in times of war, and then only against one another. The chances of co-operative action seem near zero in today's nationalistic world. One need only consider the response to this report from the IPCC — essentially a collective yawn— to realise that. Yet let us not fool ourselves: we are risking a world of runaway — and unmanageable — climate chaos. We could do far better than that.

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