

SOS - SURVIVAL ACTION

LAST CALL TO AVOID ENVIRONMENTAL CATASTROPHE AND THE MASS EXTINCTION OF FLORA, FAUNA AND MANKIND IN LESS THAN 2000 YEARS

The carbon crisis is the greatest, most urgent challenge humanity has ever faced. Yet instead of negotiating to share a finite, science-based carbon budget low enough to keep us within 2°C of the pre-industrial average, the Paris Agreement allowed each nation to set their own dangerously inadequate carbon reduction targets.

If met, scientists say the Paris targets will lead to higher temperatures of around 3-4°C by 2100. However, global carbon emissions continue to increase, putting us on track for an even greater rise in average temperature by the end of this century.

In short, our current behaviour is destroying the environment on which we depend. If such rapid and irreversible environmental change continues, the entire human race, flora and fauna will most likely become extinct within 2,000 years.

Nevertheless, scientists say we can still avoid the tipping point to irreversible, exponential changes to our environment and climate, but the window of opportunity for action is closing fast.

In October 2018, the IPCC published a report about the carbon targets required to keep average temperature in 2100 within 1.5°C of pre-industrial levels (i.e. 0.5°C above today's average).

Its key message is that carbon emissions from human activity must be almost halved over the next twelve years, become net carbon neutral by 2050 and increasingly net carbon negative thereafter.

This is a massive challenge. Depending how the biosphere reacts to rising temperature and the release of methane through melting permafrost in Arctic regions, the IPCC calculates we will need to remove between 100 - 1000 GtCO₂ from the atmosphere between 2050 and 2100.

So great a range underlines uncertainties about the way the biosphere will react to rising temperatures, how soon we cut carbon emissions, the preservation of natural carbon sinks and success in developing technology to scrub billions of tons of CO₂ from the atmosphere.

For these reasons, even if its recommendations can be implemented, the IPCC gives no more than a 66% chance of keeping temperature within 1.5°C from those in the preindustrial era. It follows that the odds of success will be far less if we fail to meet the IPCC carbon targets.

These factors have persuaded some leading scientists that 1.5°C is not a safe target. Instead, they say we must take urgent action to reduce the concentration of CO₂ in the atmosphere from the current 410ppm to 300ppm, its level in 1939.

The delay in creating a low carbon infrastructure means the only immediate option is profound behaviour change by organisations, businesses and individuals to make urgent and drastic cuts in carbon emissions. Failure will condemn humanity and countless other species to the risk of EXTINCTION.

The harsh reality is that our future depends on urgent, unprecedented and coordinated global collaboration to cut carbon emissions. We can no longer afford to wait to hear what governments say is feasible. From this moment, we are all morally obliged to make the avoidance of fossil fuels our most urgent and absolute priority.

Scientific data shows that the longterm future of humanity depends on our ability to make deep cuts in fossil fuels over each of the next ten/twelve years. This makes the next decade the **THE MOST CRITICAL MOMENT IN HISTORY!**

Our survival depends on resolving six key factors without delay:

1. Public understanding of the threats that will be triggered by inaction.
2. A sense of responsibility towards future generations.
3. Belief in our ability to make a difference as individuals.
4. As a consequence of the above... political will.
5. The development of Hydrogen technology to make ships and airplanes carbon neutral.
6. The development of the technology to clear billions of tons of CO₂ from the atmosphere.
7. The acknowledgement that, as no countries so far committed to reduce by 45% their emissions of GHG within 2030 (as suggested by the IPCC) and realistically more than half of them won't reduce their emissions in the next 11 years, in order not to overcome by more than 0.5 ° C from now the average temperature in 2100, the nations more responsible should be in number and size enough to fill the gap!

Our action plan must be linked to an urgent and global communications strategy as a catalyst for a seachange in public opinion. This will help governments introduce effective - but potentially unpopular - measures, including carbon taxes and a ban on using fossil fuels for land transport, heating and energy production.

OUR REQUESTS / ACTION PLAN

A: WE ASK ALL INDIVIDUALS & ORGANISATIONS TO IMMEDIATELY:

1. Consider our carbon footprint and stop wasting energy. Buy renewable electricity, off-set emissions through trustworthy schemes, improve insulation of existing buildings, replace old boilers with solar heating and electric heat pump systems. Make new buildings CO2 neutral.
2. Minimise car use and air travel. Walk, cycle or use public transport. Buy zero emission vehicles and replace fossil fuelled vehicles by 1/1/30.
3. Reduce as much as possible the consumption of meat, fish, eggs and dairy products.
4. Divest from companies that have any involvement with fossil fuels.

B: WE ASK ALL NATIONS TO:

1. By 1/1/20: A) End all subsidies to fossil fuel producers/products. B) Introduce carbon taxes/fee to discourage fossil fuel use. C) Introduce incentives to install solar panels on roofs. D) Lower the price of electricity produced from renewable sources. E) Introduce a binding global agreement to end deforestation and plant new forests (one tree on 20m² of land per person per year). F) Encourage plant-based diet. G) Improve soil management to protect and increase natural carbon sinks. H) Increase public investment in research into zero carbon and Hydrogen based technologies. I) Impose tariffs on imports from countries that do not behave as above and use the revenues to fund programmes under the above C), D), E) and H).
2. By 1/1/24: A) Ban the sale of all coal and oil powered electricity and the construction of new fossil fuelled energy power plants. B) Ban the sale of fossil-fuelled vehicles including leisure boats and recreational aircraft.
3. By 1/1/30: A) Ban use of fossil fuels for land transport, heating and energy production (all electricity to be generated from renewable energies).
4. By 1/1/35: Require all new ships and aircraft to have zero CO2 emissions.
5. By 1/1/45: Ban ships and aircraft which do not have zero CO2 emissions.

C WE ASK THE UNFCCC TO: either to renegotiate to share a finite, science-based carbon budget low enough to keep us within 1.5°C of the pre-industrial average (that up to now failed) or to adapt realistically the Paris agreement to that target.

NOTES. (DRAFT CONTENT TO BE REPORTED ON THE WEBSITE LINKED TO THIS MANIFESTO / ACTION PLAN):

Since 1750, human activity has added around 1468 billion tons of heat trapping CO₂ to the atmosphere, mostly from burning fossil fuels. This has raised the concentration of CO₂ in the atmosphere from 280ppm (a level never exceeded over the previous 800,000 years), to 410 ppm.

It is three millions years since Earth's atmosphere contained this much CO₂. Back then, average temperature was 2-3°C above the pre-industrial average and sea level 15-25m higher. Today, global average surface temperature is 1°C above pre-industrial levels, but the Arctic is warming three times faster.

The unprecedented speed of these changes is destabilising our climate.

In 1939 the concentration of atmospheric CO₂ was 300ppm, an increase of 20ppm during 189 years since 1750. Over the 80 years since 1939, its concentration has increased by 110ppm. Global carbon emissions continue to rise and the International Energy Agency predicts global energy demand will increase 30% by 2040 (IEA 2017). An increasing proportion will come from wind and solar power, but global fossil fuel use remains high and is rising. Assuming human-related emissions continue at current (2018) rates for the next 20 years, we will add approximately 800Gt CO₂ to the atmosphere. By 2039, this will have raised the concentration of CO₂ by some 50ppm to around 460ppm (*Assumptions: 1ppm CO₂ = 7.81 GtCO₂; 50% of new emissions retained by forests and oceans. Any decrease in the proportion of CO₂ retained in the atmosphere will further raise the concentration of CO₂ in the atmosphere and temperature*).

If global emissions remain at today's levels over the next fifty years, we will have added 2000 GtCO₂ to the atmosphere by 2068 and most likely raised the concentration of CO₂ in the atmosphere to 538ppm. The geological record shows it is more than ten million years since Earth's atmosphere contained that much CO₂, a period when temperature was 4-5°C above the pre-industrial average. Ice core samples show the concentration of CO₂ in the atmosphere 3 millions years ago was 400ppm, a time when sea level was 10m - 40m above current levels. <https://www.e-education.psu.edu/earth107/node/1496>.

The 2015 Paris Agreement commits all nations to keep temperature within 2°C of the pre-industrial average, with the ambition to stay within 1.5°C. But most nations are not on track to meet even their inadequate self-determined carbon targets, which, if met, scientists calculate will allow temperature to rise 3-4°C by 2100. But instead of falling, global emissions during 2018 rose 2.7%. Without drastic action, we are heading for catastrophic, worst-case temperature increase by 2100.

The recent IPCC report makes it clear that the risks associated with keeping temperature within 1.5°C of the pre-industrial average are far less than 2°C. It says global CO₂ emissions from human activity must fall 45% from 2010 levels by 2030 and reach net zero around 2050. The report acknowledges the scale of the challenge: "*Limiting global warming to 1.5°C ... would require rapid and far-reaching transitions in energy, land, urban and infrastructure ... (which) are unprecedented in terms of scale ... and imply deep emissions reductions in all sectors, a wide portfolio of mitigation options and a significant upscaling of investments in those options.*"

As temperature rises, other parts of the world will become uninhabitable due to drought, water shortage, floods, crop failure and life-threatening heat stress. Sudden environmental change has caused civilisations to collapse in the past. Given the changes fossil fuel emissions have triggered, we have no grounds to think this will not happen again. If emissions continue at current rates for over the next 100 years, the energy added to the biosphere will raise sea level 15m over 500 years (<https://e360.yale.edu/features/taking-the-long-view-the-forever-legacy-of-climate-change>) and continue for millennia as the Antarctic ice cap melts, raising sea level 60m.

We have reached the moment of truth. Despite the increase in renewable energy, the amount of oil used for road and air transport is rising and more coal is being burned to generate electricity.

The failure of governments, institutions and others to act is no excuse for inaction. Those of us who are aware of the implications of the carbon crisis for future generations will understand the need to do everything possible to cut emissions without delay. Until government regulations enforce action, this implies a moral obligation to take extra measures to mitigate the inaction of people and organisations that fail to reduce carbon emissions.

We must understand that Earth's environment is now changing faster than any time in the past. This includes the Permian Event 250 million years ago, when super-volcano eruptions and/or methane clathrate release raised concentrations of CO₂, causing an 8°C increase in average temperature and the extinction of the vast majority of species. Without immediate global action to avoid fossil fuels, the man-made carbon crisis may provoke another 'Great Dying'...

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