

Raising the profile of today's atmospheric greenhouse gas pollution and committed future global climate disruption emergency

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As of December 2017 atmospheric carbon dioxide is at a 3-5 million year high (>407 ppm), at a rate of increase without known past precedent, according to the WMO. Atmospheric methane is increasing fast and nitrous oxide is steadily increasing. This paper makes the case for extraordinary warning statements and recommendations from scientists, to prevent global climate and oceans calamity. It proposes that leading science conferences host an annual atmospheric greenhouse gas pollution state of the climate and oceans, with conclusions and mitigation recommendations made, as a parallel subconference. Also needed is for all national science organizations to publish the same in national climate change annual assessments. The several reasons for this, which contribute to present policy failure, are explained. Combined national policy on emissions targets (UN filed INDCs) result in global emissions substantially higher than today by 2030, and increasing. Fossil fuel CO₂ emissions increased again in 2017. Greenhouse gas emissions and atmospheric concentrations are increasing close to the worst-case scenario, with atmospheric CO₂ at an unprecedented rate. Extreme weather events are increasing, with attribution to global warming. The rate of Greenland and Antarctic ice sheet destabilization may be faster than projected. West Antarctic ice sheet destabilization may not be preventable, nor the amplifying feedback of a sea ice free Arctic summer. There are already negative climate change effects on crop yields according to the IPCC. Ocean heat content and ocean acidification are accelerating, and deep open ocean deoxygenation is on-going. There are several sources of greater global climate commitment to consider driving up the degree of global climate change higher than today's, which are addressed and are most policy relevant. The urgency and strategies of mitigation measures flow from these commitments. These include socio-economic and policy inertias, and of converting the world to clean renewable energy. The ocean thermal inertia and long atmospheric lifetime of CO₂ is a commitment to a much higher degree of warming lasting over a thousand years. Under committed climate change this is exacerbated by weakening of carbon sinks, and greenhouse gas feedback (to global surface warming) emissions. Unavoidable climate system commitment results in committed impacts. On impacts the paper focuses on crop yields and tipping points. The Intergovernmental Panel on Climate Change assessments are a comprehensive source of the science, but does not make conclusions on dangerous climate interference system and does not make specific recommendations. The same applies for scientific organizations. The paper argues there is no justifiable science based rationale for assuming that global cooling or carbon capture sequestration will mitigate committed impacts. This assessment involves historic trends and most up to date of atmospheric greenhouse pollution levels, with trends of a wide range of GHG pollution indicators and direct effects, which are recorded. Key policy recommendations that flow from the science are several and known for many years. The causes and corrections for policy failure to recommend are addressed.