



THE CLUB OF ROME CLIMATE EMERGENCY PLAN A COLLABORATIVE CALL FOR CLIMATE ACTION

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“Climate change is now reaching the end-game, where very soon humanity must choose between taking unprecedented action, or accepting that it has been left too late, and bear the consequences”.

Leading climate scientist Prof. Hans Joachim Schellnhuber, Director Emeritus Potsdam Institute for Climate Impact Research (Club of Rome Member)ⁱ

CHALLENGE AND OPPORTUNITY

The recent Intergovernmental Panel on Climate Change (IPCC) report on the impact of 1.5°C and 2°C warming above pre-industrial levelsⁱⁱ sent a stark reminder to humanity about the existential threat posed by climate change. To avoid worst outcomes, global emissions must be cut by half by 2030, and to zero by 2050. This is an unprecedented task, requiring a reduction rate of at least 7% annually; no country has achieved more than 1.5% previously. The only possible response is emergency action to transform our social, economic and financial systems.

To put this in perspective, fifty years ago the Club of Rome alerted the world to the environmental and demographic challenges ahead. The central message of *The Limits to Growth - A Report to the Club of Rome*ⁱⁱⁱ was that the quest for unlimited growth in population, material goods and resources on a finite planet would eventually result in collapse of both economic and environmental systems. Unfortunately, it seems this will now eventuate, unless humanity radically changes course.

Together with the mass extinction of species and the rise of inequality within and between nations, climate change is the most pressing global challenge. Until recently, it was seen as a future threat. Today, it is a reality affecting the lives of millions. In the 21st Century, more than any other issue, it will dictate the long-term prosperity and security of nations, and of the planet. We cannot turn our back on the direct call from citizens to nations across the globe to ensure climate security and meet ambitious national emission reduction targets.^{iv}

Acceptance of this reality will create the basis for a societal renaissance of unprecedented proportions. This is the vision the Club of Rome and partners offer - a vision of the future, providing well-being for the many and harmony between humans and nature.

Recognition of the existential nature of this threat, the need for an emergency response and the opportunity it presents, is the unique contribution which the Club of Rome brings to this debate. We are calling on governments, business leaders, the science community, NGO's and citizens to rise to the challenge of climate action so that we can survive and emerge stronger as a thriving civilization in balance with our planetary boundaries.

OUR CALL TO ACTION

The Club of Rome and its Partners call on all stakeholders - governments, civil society, business - to adopt the following emergency action plan, in line with the approach of the Carbon Law Initiative to halve global GHG emissions by 2030 and reach net zero by 2050^v, and the industrialized countries Paris commitment to provide a minimum of US\$100 billion dollars annually to low-income countries in support of low-carbon technology development and adaptation.^{vi}

Transform Energy System

1. Halt fossil fuel expansion and fossil fuel subsidies by 2020:

- No new investments in coal, oil and gas exploration and development after 2020
- Total phase-out of the existing fossil fuel industry by 2050
- Minimise fugitive emissions from fossil fuel operations
- Phase out indirect and direct fossil fuel subsidies by 2020 - 2025 in low-income countries and redirect funds to support investments in renewables and energy efficiency

2. Continue the doubling of wind and solar capacity every four years, and triple annual investments in renewable energy, energy efficiency and low carbon technologies for high emitting sectors before 2025.

- Prioritise developing countries to avoid lock-into the carbon economy
- Adopt sustainable finance taxonomies, finance sector and corporate disclosure, and transformational benchmark requirements for public and private finance
- Shift public funding and public procurement programmes to cost-efficient low carbon energy infrastructure and products
- For the developed world:
 - end internal combustion engine sales in 2030
 - achieve zero carbon in new buildings by 2030 and in building retrofits by 2050
 - achieve zero carbon grids in 2040 and zero carbon steel, cement, chemicals latest by 2050
 - with developing world targets structured to local priorities.
- Call on development banks, development cooperation agencies and the Green Fund to give priority to de-risking clean energy investments in developing countries

Rethink Pricing & Growth Indication

- 3. Introduce realistic pricing and taxation to reflect the true cost of fossil fuel use and embedded carbon by 2020:**
 - Introduce carbon floor prices
 - Tax embedded carbon through targeted consumption taxes. Direct tax revenues to research, development and innovation for low-carbon solutions, cutting taxes or propping up the welfare state
 - Converge carbon markets and instruments into a worldwide structure, particularly covering energy and energy intensive sectors

- 4. Replace GDP growth as the main objective for societal progress:**
 - Adopt new indicators - such as the Genuine Progress Indicator - that accurately measures human progress, welfare and wellbeing rather than production growth
 - Properly cost social and environmental externalities from growth

Scale up Transformational Technologies

- 5. Improve refrigerant management by 2020**
 - Adopt ambitious standards and policy to control leakages of refrigerants from existing appliances through better management practices and recovery, recycling, and destruction of refrigerants at the end of life.

- 6. Encourage exponential technology development by 2020**
 - Create an International Task Force to explore alignment of digitalisation, exponential technologies and business models with Agenda 2030 and each country's Nationally Determined Contributions (NDC's) to the UNFCCC process to promote technology disruption in sectors where carbon emissions have been difficult to eliminate, such as agriculture, aviation, transport, shipping and production of carbon-intensive materials such as aluminum, steel and cement.

- 7. Ensure greater materials efficiency and circularity by 2025**
 - Severely reduce the impact of basic materials e.g. steel, cement, aluminum and plastics from almost 20% of carbon emissions globally today to close to net zero. The early introduction of innovation, materials substitution, energy efficiency, renewable energy supply and circular material flows can rapidly halve these emissions. Otherwise they could be closer to 40% of the global total by 2040.

Accelerate Low Carbon Land Use, Mitigation & Adaptation tools:

8. Accelerate regenerative land use policies

- Adopt the FAO's (Food and Agriculture Organization of the United Nations) recommendations for 100% climate smart agriculture (CSA)^{vii}
- Protect and maintain healthy forests to minimise dangerous climate change, provide resilience against climate related disasters and ensure their essential contribution to the well-being of the planet and humanity.
- Triple annual investments in large-scale REDD+ reforestation initiatives in developing countries.
- Scale up soil carbon and forestry sequestration, incentivising farmers as proposed in the "4 par mille" initiative of the French Government.
- Strongly support efforts to restore degraded lands through Ecosystem Restoration Camps

Guarantee the Human Dimension

9. Ensure we keep population growth under control by giving priority to education and health services for girls and women to promote reproductive health and rights, including family planning programmes:

- Scale up all commitments to achieve the ambitions set by Family Planning 2020^{viii} in order to enable 120 million more women and girls to use contraceptives by 2020.
- Ensure the roll out by 2025 of UNESCO's International Technical Guidance on Sexuality Education^{ix} in all countries, to ensure that girls and boys have access to the highest quality, evidence-based, education packages that enable them to make healthy choices about all aspects of their reproductive and sexual lives.
- Ensure the right to gender transformative education-giving every girl the right to a safe, formal, quality education and access to lifelong learning.
- Transform the relationship between men and women to empower women to make choices about re production, family size and timing.

10. Provide for a just transition in all affected communities:

- Recognise that the degree of social change needed to make a successful transformation to a sustainable future will extend throughout society, requiring fundamental shifts in behavior and rethinking of national and community support and care systems.
- Recognise citizen action and litigation against countries not fulfilling their climate targets.^x
- Establish clear funding and re-training programmes for displaced workers and communities.
- Government assistance in the diversification of higher carbon industries to lower carbon production through tax breaks or incentives and other economic measures
- Reframing of business models and roles for declining high-carbon industries such as oil, gas and coal.
- Support the Citizens Climate Pledge^{xi}, calling for the world's wealthiest citizens to reduce their emissions by half by 2030, particularly the top 10% of earners who make up 50% of all GHG emissions.

The manner and priority in which these issues are addressed will obviously vary from country to country, but the overall objective of rapid carbon emission reduction is common.

Clearly there are many other issues which need attention if humanity is to live in harmony with the planet, and with itself, not least the preferred longer-term social and economic frameworks. However, unless climate change is addressed as an emergency, those debates become academic as the opportunity for constructive human development will not exist. Once that threshold is crossed, these frameworks become critically important to the emergence of our sustainable future and a societal renaissance.

The Club of Rome is seeking further partners to support this Action Plan, ensure implementation and accountability.

THE RATIONALE FOR EMERGENCY ACTION

- **Dangerous climate change is occurring at the 1 °C temperature increase already experienced.** 2 °C now represents the boundary of extremely dangerous climate change.
- **To stay well below the 2 °C warming limit mentioned in the Paris Agreement, global emissions would have to peak no later than 2020 and be reduced by more than 7% annually thereafter.** To meet the lower 1.5 °C target requires even more rapid reduction. By contrast, emissions continue to rise in line with worst case scenarios.
- **Probabilities used to define the carbon budget to stay below the Paris objectives are unrealistic.** The IPCC uses 50 to 66% chance as the norm. Not good odds for the future of humanity. Carbon budgets, and emissions reductions, should be based upon a realistic chance, at least 90%, of reaching the goals. On that basis, there is practically no carbon budget left today to stay below 2 °C, let alone 1.5 °C.
- **Climate inertia means that allowing continued fossil fuel investment today, with associated emission increases, risks locking-in irreversible, existential climatic outcomes.** By the time the climatic impact of these investments becomes clear, it will be too late to take action and avoid extensive stranded assets.
- **Atmospheric aerosols produced by burning coal and oil are cooling the planet by around 0.3 °C to 0.50 °C.** As these concentrations reduce with the phase-out of fossil fuels, a commensurate one-off increase in temperature is likely, further compounding the problem of staying below warming limits.
- **IPCC scenarios still rely heavily on carbon removal from the atmosphere as a prerequisite for meeting the 1.5 °C target.** The degree of dependence on such negative emissions technologies, none of which exist at scale today, is extremely dangerous, creating a false sense of security that there are easy solutions when none exist.

- **The recent IPCC summary report understates key risks in moving from 1.5 °C to 2 °C warming.** For example, a likely rise in climate-driven refugees, the danger of exceeding tipping points that could push the world on to an irreversible path to a “Hothouse Earth”^{xii}, cryosphere risks such as Antarctic ice sheet instability and loss of the Greenland ice sheet being triggered, leading over time to multi-metre sea level increase. Exceeding 1.5°C poses huge risks both for humans and natural systems.
- **Despite three decades of intense activity by NGOs, progressive business, governments, official bodies and international organisations,** it is virtually impossible to now limit temperature increases to the lower 1.5 °C limit of the Paris climate agreement, and probably to the 2 °C upper limit, unless state and non-state actors across the globe unite in support of fundamental change

As leaders, we have a moral obligation to current and future generations to ensure that they are secure in the short term and can continue to live within current planetary boundaries, thriving in a balanced eco system.

BACKGROUND:

Today, humanity is facing systemic collapse on many fronts, including threats to the philosophical underpinnings of modern society in the form of democracy, respect for human rights, the rule of law, science and enlightened leadership.

Decades of exponential growth in both population and consumption is now hitting the limits of the Earth's biosphere. The climate system is destabilizing, half of the topsoil on Earth has been depleted in the last 150 years, nearly 90% of fish stocks are either overfished or fully fished and the sixth mass extinction event is well underway. About half of the world's tropical forests have already been cleared.

The situation is exacerbated by a global leadership that has abrogated its moral responsibility to provide security for the world's people, and the planet, as the risks of irreversible climate change escalate.

The inability within our existing economic and finance systems to provide real quality of life and ensure decent standards of living across the globe has created social breaking points. Our neo-classical economic model was designed in an empty world, with a global population around 2 billion people, where the bounty of natural resources seemed endless. Today we live in a full world of almost 8 billion people. Conventional economic growth is no longer sustainable, despite desperate efforts to keep it afloat with massive financial interventions such as "quantitative easing". The prevailing mantra that all economic growth is good defies reality. There is an urgent need for new economic thinking and new indicators that value quality as well as quantity in our economic metrics.

Countries around the world are seeing the effects first hand - from dangerous wildfires to extreme weather events such as flooding, droughts and record-breaking heat waves. Global disasters in 2017 cost US\$340 billion - double the cost in 2016. The predicted cost for 2018 is even higher. These costs do not include the loss of human life or displacement of peoples, predominantly in the most vulnerable countries.

The global climate is a complex, non-linear system characterized by inertia, fast and slow feedbacks. Inertia means changes in the climate system will continue even if emissions come to an abrupt halt. With increasing warming, carbon sinks, such as forests, plants and the oceans, may become carbon sources, further accelerating warming. The threat is not new, having been well-documented over many years^{xiii}, but ignored by incumbent leaders.

As a result of inaction, it now represents an existential risk to humanity. That is a risk posing permanent, large, negative consequences which can never be undone. An adverse outcome that would either annihilate intelligent life or permanently and drastically curtail its potential.

Recognition of these implications creates the basis for a societal renaissance of unprecedented proportions. But realizing this vision requires swift action and the collective implementation of one of the most comprehensive emergency plans ever contemplated. The Club of Rome believes that such action, difficult as it may be, will create a much healthier, happier and more innovative global society.

IMPLEMENTING THE PLAN

Humanity has the necessary technological, political and economic solutions at hand to address climate change and seize the opportunities which transformation to a low carbon society presents, but the political will to do so has been lacking.

Excellent work has been undertaken by prestigious academic institutions, progressive governments, cutting edge corporations and civil society leaders to develop realistic transition strategies. There is a great deal of commonality around possible solutions, but thus far discussions remain fragmented and no critical mass has emerged to force the pace of change around clear priorities.

The Climate Emergency Plan sets out such priorities, but it cannot remain just a desirable wishlist. The Club of Rome will act as a catalyst to develop momentum, with partners across the spectrum of concerned organisations, to give political, community and business leadership the confidence and legitimacy to implement emergency action.

Legal action against companies, governments and individuals will undoubtedly become an increasing leverage opportunity in support of the emergency approach.

Further, the Club of Rome proposes not just to address the immediate need for such action, but to devote its expertise to contribute to a comprehensive redesign of the social and economic systems which would create a sustainable future, in the spirit of "*The Limits to Growth*".

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