

Climate emergency explored



What the science says

Introduction

Since mid-2018, understanding of the climate emergency has exploded globally.

UN Secretary General António Guterres says that "we face a direct existential threat" for "the emergency we face".1 The Oxford Dictionary named "climate emergency" as its Word of the Year for 2019.2

More than 1100 national, regional and local governments in 25 countries have declared a climate emergency.3

Understanding of the climate emergency and the existential risk have been driven by the rapidly growing climate emergency local government campaigns, its propagation by student strikers around the world, Greta Thunberg's brutally direct language, the advocacy of The Climate Mobilisation and Extinction Rebellion, and campaigns for a Green New Deal.

Research in late 2019 by The Australia Institute found a clear majority of Australians agree the nation "is facing a climate emergency" requiring emergency action and that, in response, governments should "mobilise all of society" like they did during the world wars.4

The need for a climate emergency response is globally recognised.

Turning those words into a genuine climate emergency plan and mobilisation around the world is now a big task, but the only strategy that matches ambition to the scale of the problem.

An emergency situation is a threat to people, property and/or society that has the potential to overwhelm them. So why has climate warming now reached this emergency condition?

With the present level of warming -1.1°C higher than the late-nineteenth century — the Earth is already too hot and unsafe: we are in danger now, not just in the future. Catastrophic heatwaves and bushfires, droughts and crop failures, and cyclones and coastal flooding are reaching around the globe.

The Great Barrier Reef and other coral systems are dying, and the world is now facing the sixth mass extinction in history. The world's insects are hurtling down a path to extinction, threatening a "catastrophic collapse of nature's

ecosystems", according to a recent global scientific review which found that the total mass of insects is falling by a precipitous 2.5% a year.5

As well, we are greatly exceeding Earth's limits. The growth in physical resource use is unsustainable, and will lead to resource and economic overshoot and collapse unless we change path.

Climate change is contributing to food and water shortages and declining crop yields. Rising food prices driven by drought, wildfire and harvest failures have already become catalysts for social breakdown and conflict across the Middle East, the Maghreb and the Sahel. Climate change has become an accelerant to social instability.

Tipping points

Of particular concern are climate tipping points, the passing of critical thresholds which result in step changes in the climate system that are irreversible on human timescales without herculean human interventions. Recently, leading scientists concluded that tipping points are "more likely than was thought, have high impacts and are interconnected across different biophysical systems, potentially committing the world to long-term irreversible changes". These include:

- "Several cryosphere tipping points are dangerously close"... "West Antarctica might have passed a tipping point"... "part of the East Antarctic ice sheet the Wilkes Basin - might be similarly unstable."
- "Models suggest that the Greenland ice sheet could be doomed at 1.5°C of warming, which could happen as soon as 2030."
- "Other tipping points could be triggered at low levels of global warming... a cluster of abrupt shifts between 1.5 °C and 2 °C..."
- · "Biosphere tipping points can trigger abrupt carbon release back to the atmosphere.. Permafrost across the Arctic is beginning to irreversibly thaw and release carbon dioxide and methane... the boreal forest in the subarctic is increasingly vulnerable."
- "Estimates of... an Amazon tipping point... range from 40% deforestation to just 20% forest-cover loss. About 17% has been lost since 1970."6

Scientists also describe a "hothouse Earth", in which system feedbacks and their mutual interaction drive the Earth System climate to a "point of no return", so that further warming becomes self-sustaining. This "hothouse Earth" planetary threshold could exist at a temperature rise as low as 2°C, possibly even lower.7

How fast to below zero?

A safe climate is the relatively stable climate of the Holocene, the period of the last 11,700 years in which human civilisation (fixed settlement and urban society) developed.

The last time atmospheric carbon dioxide (CO₂) emissions were at the current level, of 400 parts per million CO₂, was during the early-tomid Pliocene 3-4 million years ago, when temperatures were around 3°C warmer than the late 19th century, and sea levels were around 25 metres higher.8

If just the current level of atmospheric CO, was maintained over a longer period, the planet would likely warm around 3°C once all the positive feedbacks worked their way through the system.

Clearly, the global greenhouse gas levels need to be much lower than today, so there is no "safe" amount of new emissions, nor any "safe" period of time for further emissions. So how soon do we have to get to below-zero emissions and start moving the temperature back down?

The evidence-based answer is "yesterday or before". The practical answer is as fast as socially, economically and technically possible. Long-term targets produce complacency, and a strong, practical short-term target is dependent on the capacity to get to an emergency level of mobilisation.

We have the economic capacity to address the climate crisis. We have many of the solutions already and we are good at research that can solve outstanding issues. This is not primarily an economic or technological issue, but a political, social and cultural one.

Drought, desertification and high food prices were drivers of the Syrian civil war and the displacement of 11 million people, which led to the European refugee crisis. This in turn created political difficulties within the European Union and for many of its members.

National security analysts say that if warming reaches 3°C — which the world may exceed in three to four decades on current policies - the international order between nations will break down and the world might move into a state of "outright chaos".9

International failure

If the current commitments by nations under the Paris Agreement to reduce their emissions are not greatly improved, we face catastrophic warming of 3°C within a lifetime and possibly 5°C by century's end.10 This threatens to make large parts of the world and food-growing lands uninhabitable. This includes regions ruined by drought and desertification (for example, Australia's Murray-Darling Basin, sub-Saharan Africa, southern Mediterranean, south-western USA), areas too hot to live in year-round (parts of South Asia and the Middle East) or rising seas (for example, the foodgrowing river deltas in India, Vietnam, Bangladesh and Egypt).

We have learned from studies of past climates that the current level of greenhouse gases produced conditions that would be catastrophic for today's human society.

Risk to civilisation

Climate warming is an existential risk to human civilisation. Scientists warn that warming of 4°C is incompatible with an organised global community, is devastating to the majority of ecosystems, and has a high probability of not being stable. The World Bank warns it may be "beyond adaptation". But an existential threat may also exist for many peoples and regions at a significantly lower level of warming.11

The Emeritus Director of the Potsdam Institute, Prof. Hans Joachim Schellnhuber, warns that "climate change is now reaching the endgame, where very soon humanity must choose between taking unprecedented action, or accepting that it has been left too late and bear the consequences". Schellnhuber says that if we continue down the present path "there is a very big risk that we will just end our civilisation. The human species will survive somehow but we will destroy almost everything we have built up over the last two thousand vears".12

1.5°C of warming is not safe

For the maximum protection of peoples, societies and nature, we cannot adopt goals which mean large-scale extinctions, ecosytem destruction and loss of human life.

The period of human fixed settlement, known as the Holocene, has coincided with or been made possible by the fact that temperatures and sea levels have been relatively stable over that time.

We are now moving into a new period, the Anthropocene. Today's climate is hotter than modern humans have previously experienced, and is already dangerous because we have already passed important tipping points, and others are not far away.

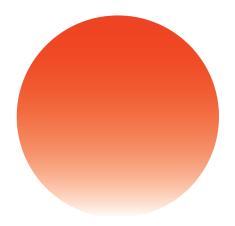
History shows that, in the long run, sea levels on average change by 10-20 metres for every 1°C change in the global average temperature.13 So even a rise of 1.5°C in the global temperature compared to the latenineteenth century would eventually inundate cities and nations.

And at just 1.1°C of warming, threequarters of the Great Barrier Reef has been lost. It is in a "death spiral" where projected bleaching intervals (every 3-4 years)¹⁴ are much shorter than the recovery period (10+ years). So 1.5°C is dangerous!

During the Holocene, temperatures have varied by about 0.5°C, with conditions a little warmer in the early Holocene than in the more recent centuries, up to 1900.

When human-caused warming passed 0.5°C in the 1980s, we departed Holocene conditions and started on a reckless experiment: to see if human societies could exist in climate conditions modern humans have never before experienced.

So warming of up to 0.5°C compared to the late nineteenth century is within the Holocene range, and this range of 0-0.5°C helps us define what is a safe climate for contemporary human society.



Climate mobilisation

Solutions

For emergency action, the responsibility is to match actions to the size and urgency of the problem. in order to protect who and what we care about. We have four levers at our disposal and deployment of the first three is essential:

- · The carbon neutral lever: zero emissions of carbon dioxide by ending the use of the fossil fuels oil, gas and coal. Building a new clean industrial and transport system with renewable energy and battery storage, electric vehicles, buses and trains, and changes to industrial processes, such as cement and steel production.
- · The super pollutant lever: cutting short-lived climate pollutants such as methane to the maximum extent possible by ending emissions from fossil fuel extraction, changes to farming and land-management processes, ending deforestation and reducing black carbon.
- · Atmospheric carbon extraction **lever**: thinning the warming blanket in the atmosphere by drawing down all the excess carbon dioxide, including by restorative farming, improving the carbon capacity of degraded forests, and reforestation.
- Policy options to cool the planet if there is a demonstrable, clear, net environmental and social benefit. The world is likely to reach 1.5°C of warming around 2030, regardless of the emissions path in the short-term because it is already "in the system". And 2°C is likely between 2045 and 2060 without a crash emissions reduction programme. We have to make difficult choices about what are the "least worst" options to avoid the Hothouse Earth scenario.

Emergency threats

An emergency threat can be a natural disaster, a pandemic, a food-water crisis, or a more human-made disaster such as a nuclear meltdown, war, or climate damage.

The challenge is to stop the problem from escalating out of control, and then return to safety. In responding, failure and major tradeoffs are not an option, because the consequences are grave. Action is time sensitive: delay leads to escalation and increased damage.

Emergencies may be of short, medium or long duration, and geographical impact may be local/regional, national or global. And they can be orientated to recovery or prevention.

Bushfire: local emergency

For natural emergencies, such as bushfires, emphasis is placed on anticipating how bad the disaster could be, not just on middle-of-the road projections. People are educated about these high-end risks, and the appropriate responses needed, such as making property ready and chalking out evacuation plans. Governments are expected to be honest about what needs to be done.

The response is coordinated by government. Where emergency situations are of a familiar type, plans are made well in advance for adequate labour, equipment and logistical capacity. The affected population is mobilised for firefighting, support services, and care of the vulnerable. Communities are informed and consulted. As the disaster unfolds, some "business-as-usual" functioning may be suspended: schools and other facilities closed, transport rerouted, dangerous activities prohibited, and emergency volunteers are granted

leave from their work.

Mostly, there is political bipartisanship to do "whatever it takes" and no effort or resources are (or should be!) spared.

War: long emergency

Many of the same approaches apply to mobilisation at times of conflict. Whilst wars are terrible events, they give us insights into how nations mobilise while responding to these grave threats. As with natural disasters, plans are made for the worst that could happen, the population is mobilised in an all-out effort, and generally there is political bipartisanship.

A "whatever it takes" attitude means that government plans and directs the nation's resources and capacity towards building up the war effort. This can be done at amazing speed. After the surprise Japanese attack on the US Pacific fleet at Pearl Harbour in 1941, the US economy was transformed from the world's largest producer of consumer goods to the world's largest producer of military goods in a year. The US government directed the whole war effort, but business boomed as the national economy grew quickly. The proportions of national economies dedicated to the effort in World War II were staggering. Military outlays in 1943 as proportion of total economy were: USA 42%; UK 55%; Germany 70%; and Japan 43%. Japan's percentage reached about 70% in 1945.

War mobilisations are characterised by crash programs to rapidly scale up capacity and innovation. Non-essential consumption is curtailed (for example, through increased taxation on certain items and sale of savings instruments such as "war bonds"), whilst the basics for everyone are guaranteed.

mergency mode

An emergency declaration shows that the government rates the problem as very serious, that priority will be given to resolving the crisis, that we are all in the crisis together and that, officially, "business as usual" and "reform as usual" don't apply for the duration of the crisis. Here are some characteristics of emergency mode:

Clarity of purpose In a bushfire, one clear goal is to save all human life. With climate warming, the purpose of emergency action is to protect all people, societies and ecosystems. This is not the case with the present climate policymaking.

lisk management An emergency response starts by fully assessing all the risks and potential damage, especially the "high-end" and existential risks which would be devastating for human societies. Special precautions are required if the increased likelihood of dire climate impacts are to be adequately dealt with.

Full & frank communication mode is a whole-of-society effort which requires an aware and motivated population. In most cases it also requires political bipartisanship. A frank discussion of the threat, the response and what that means for the society is critical for building and maintaining active commitment across the community.

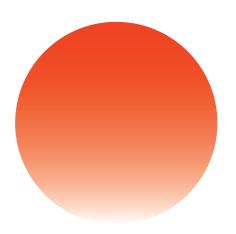
Highest priority During an emergency, the highest priority of the society is to deal with the crisis in hand, and sufficient resources will be applied in order to succeed. Climate Councillor Prof. Will Steffen says that getting greenhouse gas emissions down fast has to be the primary target of policy and economics with something "more like wartime footing" to roll out renewable energy and dramatically reimagine sectors like transportation and agriculture "at very fast rates". 15

Government leadership All rapid, largescale transformations have strong government leadership in planning, coordinating and allocating resources. Only the national government has the society-wide responsibility and capacity to plan, direct resources, develop labour skills, provide funding from taxation, manage savings and investments, coordinate innovation efforts, and set a regulatory framework for effective emergency action. To do this, the prevailing neoliberal ideology (privatisation, deregulation, lowering of taxes, reduced government spending, and so on) must be put aside.

Physical transformation More than anything else, climate emergency mobilisation is about the transformation of the physical economy at great speed, delivering an integrated package of solutions for a safe-climate economy, zero emissions and large-scale carbon dioxide drawdown, plus critical research and development of solutions to close the knowledge gaps.

Fairness We now face large-scale climate disruption: either planned by way of an emergency transition to restore a safe climate, or much worse unplanned chaos because social and physical system failure will inevitably occur as warming intensifies. This dislocation requires a focus on fairness — both internationally and within the nation — and that the burden of transformation is fairly shared. Without a sense that the emergency and the changes are both fair and necessary, the public mandate for such change is unlikely to be built or maintained

Normal mode Crises are constrained within business-as-	Society engages productively with crises,
usual mode	but not in panic mode
Political media management and 'politics as usual'	The situation is assessed with brutal honesty
No urgent threat is perceived	Immediate, or looming, threat to life, health, property, or environment is perceived
Problem is not yet serious	High probability of escalation beyond control if immediate action is not taken
Time of response is not important	Speed of response is crucial
The crisis is one of many issues	The crisis is of the highest priority for the duration
A labour market is in place	Emergency project teams are developed, and labour planning is instituted
Budgetary 'restraint' is shown	All available/necessary resources are devoted to the emergency and, if necessary, governments borrow heavily
Community and markets function as usual	Non-essential functions and consumption may be curtailed or rationed
A slow rate of change occurs because of systemic inertia	Rapid transition and scaling up occurs
Market needs dominate response choices and thinking	Planning, fostering innovation and research take place
Targets and goals are determined by political tradeoffs in a culture of compromise	Critical targets and goals are not compromised because failure is not an option
There is a lack of national leadership, and politics is adversarial and incremental	Bipartisanship and effective leadership are the norm



How can the world respond

to the climate emergency in time with concrete, achievable plans of action? The answer is not straightforward; the recent history of still-increasing emissions is the opposite of what is necessary.

Communities around the world are campaigning passionately. They are demanding that government and business respond to the threat to human civilisation and to nature. They are challenging bad investments, the finance sector and the fossil fuel industry. And they are building local change.

Some governments are showing leadership. The European Union has now allocated one-quarter of its entire budget to the climate emergency.

But too many governments refuse to see the problem as it really exists, are wedded to the old, fossil fuel economy, to incremental change, and to failure.

How can peoples' concern be expressed in authoritarian states, some of which are home to the world's largest fossil fuel facilities?

Some entrepreneurs understand the value of investing in the "new economy" and central banks warn of the risks of climate-induced financial crashes. But overall, the business sector is sitting on its hands, denying the severity of the problem. Business has considerable power to change how governments act, but has so far chosen not to exercise it.

So how do we get to a real climate emergency level of social mobilisation?

How will we get there?

Non-incremental change

International climate policy-making is governed by one concern above all others: that change should be gradual and not disrupt the global or national economies in the short term. But incrementalism is no longer an option, because we face two discrete choices:

- · First option: Keep on the path of exceeding planetaryt limits, in which growth in physical resource use is unsustainable, leading to overshoot and collapse, as documented by the Club of Rome's Limits to Growth report in 1972. Further socioeconomic disruption and chaos will be driven by climate warming and extreme events which can become an accelerant to instability and conflict, as we have seen in Syria and in the Arab Spring, for example. Other biophysical and social system vulnerabilities will add to the disruption, including ecological collapse, global financial system instability, anger at growing inequality, hyperpartisan politics, and climatedriven population displacement.
- Second option: Emergency action to stop warming taking us past points-of-no-return in the climate

system, and to return to a safe climate. This means, amongst other things, a rapid transition away from the fossil fuel extraction industry and from production which fails to end dependence on fossil fuels. Paul Gilding, in The Great Disruption, says that systems change in a complex manner, with vulnerabilities and discontinuities occuring in unpredictable ways. He says there will be a growing global divide between the old and new economy elites, because the sustainability frame is bad news for some corporates as the market itself wages a war on fossil fuel risks, and there is disruption caused by the "creative destruction" of capital and the stranding of assets.17

So we now face a large-scale disjuncture: either planned by way of an emergency transition, or unplanned because of social and physical system breakdown as warming intensifies. Time has run out for slow change and "winning" slowly is now the same as losing. There is no longer an incremental path to success.

Fair and necessary action

The great injustice of the climate crisis is that those impacted most severely are those who have contributed least to the problem, including indigenous Australians.

The tropical and sub-tropical zones are more vulnerable than the temperate and cooler zones to some impacts such as lethal heat, more intense cyclones, shifting monsoon patterns, loss of coral reefs and the increasing risks of disease. Countries in the Middle East and North Africa, as well as India, China and Pakistan already face chronic water shortages.

The ability of people and societies to adapt to climate impacts, as well as to decrease emissions, is related to their socio-economic capacity. The developed nations, who have emitted a disproportionate share of the carbon pollution so far, also have the greatest capacity to support less-developed and more vulnerable nations and peoples, through finance and the sharing of research, technology and

If such support is not provided, a global consensus on the climate emergency is unlikely.

But there is another side to fairness, or climate justice. Fifty percent of the world's emissions come from the richest 10% of the world's population, much of it devoted to conspicuous, nonessential consumption. If the per capita emissions of that 10% were reduced to the average of per capita emissions across the European Union, then the world's total emissions would be reduced by one-third. This is fair and necessary.

This is likely to be necessary because much of the productive capacity devoted to conspicuous, non-essential consumption will need to be re-directed to the key task of the climate emergency: building the productive capacity of a zeroemissions society.

During the Second World War, with so much production directed toward the military effort, non-essential consumption was curtailed - for example, by administrative, taxation and savings measures - whilst the basics for everyone were guaranteed, although rationed so that their distribution was fair. Social research shows that rationing of essentials was accepted by the population at that time because such action or sacrifice was understood as fair and necessary.

The same issues arise today. Social researcher Rebecca Huntley says that as a community we are moving towards the recognition of the scale of the threat climate change poses to our safety and security, and what we desperately need are extraordinary and consistent displays of leadership. Huntley says we need to paint a picture for citizens of what addressing it might involve: "A mixture of sacrifice, selflessness, courage and adaptation."

But she warns that this is a message that many will resist "unless they are assured that the most fortunate - particularly those in corporate Australia - are prepared to do as much as the rest of us, if not more".18

Public wants emergency action

The Australia Institute

Research from The Australia Institute has found that a clear majority of Australians agree the nation is facing a climate emergency requiring emergency action and that, in response, governments should mobilise all of society like they did during the world wars.19

The polling was conducted in November 2019, during the 2019-2020 bushfire season but before the devastating fires in December 2019 and January 2020.

In particular it found that:

 Two in three Australians (63%) agree that governments should mobilise all of society to tackle climate change,

declare a climate change emergency were Green Party supporters, Pacific peoples, people aged 18-34, Labour Party supporters and Māori. Those who were more likely to be against were National Party supporters, men aged 55 and over and New Zealand Europeans.20

City Of Darebin

In December 2016, the City of Darebin in Melbourne's inner north became the first council to recognise the climate emergency. Subsequently, it contracted an agency to advise on communicating the council's stance.

The agency carried out quantitative testing of five different, short messages of less than a hundred

Sample: 1424 Australians Polled 1-15 November 2019	Coalition Agree (disagree)	Labor Agree (disagree)	Ind/Other Agree (disagree)	Greens Agree (disagree)
Australia is facing a climate change emergency and should take emergency action	54% (37%)	79% (12%)	55% (22%)	86% (7%)
Governments should mobilise all of society to tackle climate change, like they mobilised everyone during the world wars	56% (32%)	74% (13%)	48% (25%)	80% (7%)

The Australia Institute poll November 2019

like they mobilised everyone during the world wars, including 25% who strongly agree. A majority of Coalition (56%), Labor (74%) and Greens voters (80%) agree. Only one in five Australians (22%) disagree.

· Two in three Australians (66%) agree that Australia is facing a climate change emergency and should take emergency action. A majority of Coalition (54%), Labor (79%), Greens (86%) and Independent/ Other voters (56%) agreed. Only one in four Australians (23%) disagree.

New Zealand poll

A June 2019 poll by 1 News Colmar Brunton in New Zealand asked "Do you think the New Zealand Government should declare a climate change emergency?" Of those who were polled, 53% answered yes, 39% said no, and eight per cent did not know. Those who were more likely to agree that the Government should

words each with a representative sample of 900 Melbourne residents.

The testing allowed the audience to be segmented into three groups:

- Opposition, comprising 26.9%: strongly-held views unlikely to change their view just because of a different narrative;
- Persuadable, comprising 46.6%;
- Supporters, comprising 26.5%: strongly-held views unlikely to change their view just because of a different narrative

The principal result was that: "There is support for declaring a climate emergency, taking action. It is seen as serious and urgent by a majority of people." The message that we need to declare a climate emergency and take serious action was supported by 96% of supporters, 74% of persuadables, and even 19% of opposition. That is two-thirds across the whole sample.21

"Winning slowly is now the same as losing. There is no longer an incremental path to success."

Community mobilisation

In a recent discussion Prof Hans Joachim Schellnhuber, of the Potsdam Institute, observed that European politicians have lost belief and power to solve the climate problem, so civil society needs to empower our politicians. He said we have the Titantic problem: we are facing a climate change iceberg, but no one in the political elite wants to be captain.¹⁶

Community organising is crucial in driving the political system and politicians — and in reinvigorating democracy - to act on the climate emergency. For a government to act in emergency mode, it also has to be transformed.

Emergency mode is a whole-ofsociety effort which requires an aware, motivated and actively committed population. A full and frank discussion of the threat, the response and what that means for society is critical to building active commitment across the community.

Where there is sufficient democratic space, civil society has been leading campaigns for climate action for decades. Every year, the commitment grows, north and south, east and west. Courageous campaigns have prevented fracking, closed coal mines, delayed and prevented new pipelines, new fossil fuel infrastructure and deforestation. Community campaigns, initiated in Australia, have catalysed local councils and other governments around the world to declare a climate emergency.

Civil society voices have shamed governments engaged in predatory delay and called them to account. They have prompted government initiatives that have scaled-up the renewable energy revolution.

Now there is a new climate activism, brutally naming the climate crisis as a threat to humanity and nature, and calling out public and business

leaders for their failure. This includes Greta Thunberg and the global StudentStrike4Climate movement in the west and the global south, Extinction Rebellion, The Climate Mobilisation in the USA and likeminded communities everywhere.

This new realism is changing the story. "Existential risk", "extinction crisis" and "climate emergency" language have become normalised. The old, incrementalist advocacy and language is waning, and the UN processes are slowly dying through failure. It really is now or never.

New tactics are pressuring governments. The sustained nonviolent sit-in strategy of activists encouraged governments around the UK to act, though sometimes more in word that deed. As part of climate emergency campaigning, ways of working that are more inclusive and democratic are being championed, to bring public wisdom to the business of government in the era of the climate emergency, and to challenge the failing status quo. There is new energy, and new hope, of forcing government to respond or fracture, from the local council to the national level.

The campaigns for local government to recognise/declare a climate emergency has been successful in over 1100 council areas, and at some regional and even national levels. So far many of these actions use "emergency" as a problem statement, and not yet as a fully-developed emergency action

But they are changing perceptions, becoming an expression of higher ambition and new local climate goals, normalising new language and finding expression in new community action tactics.

"This is above all an emergency, and not just any emergency. This is the biggest crisis humanity has ever faced. This is not something you can like on Facebook." Greta Thunberg²² 28 May 2019

"In a nutshell, this emergency means putting climate at the centre of politics and economics."

What about democracy?

The war-time experience is often used an example of emergency mobilisation because it shows that societies can devote enormous portions of their production to a single, big threat (see table below).

But, in other ways, it is a poor metaphor: whilst war is about winning a battle by killing and inflicting huge material damage, the climate emergency is about rebuilding and saving lives and livelihoods.

All emergencies have specific characteristics, and this emergency will be unlike any other: the threat is larger, the time involved longer, and the cooperation required unprecedented.

In a nutshell, this emergency means putting climate at the centre of politics and economics. It is about reshaping production and consumption, and capital and labour markets, in order to build a sustainable society with a safe climate.

This is about fixing an unprecedented market-failure problem. Governments and statutory bodies have most of the powers they need to do this: to regulate production, price externalities, ban or limit products that are dangerous (including in a climatewarming sense), shape financial markets, drive innovation, and develop the labour skills required.

The problem now is that those powers are not exercised adequately, so the same patterns recur of financial malpractice, dangerous products, lax workplace safety, toxic dumping, illegal land-clearing, use of under-skilled

labour, and so on.

Additional specific powers to regulate production and consumption including the energy market can be sought as required, but they should not need to be qualitatively different.

As already discussed, some portion of productive capacity devoted to conspicuous, non-essential consumption will likely need to be re-directed to the key task of the climate emergency: rebuilding the productive capacity of society in a zero-emissions framework. This may be done in a number of ways, including more progressive taxation, luxury consumption taxes, enticing savings through "climate bonds", or not allowing the sale of some goods.

This is not a curtailment of personal liberty, because there is no abstract right to unlimited and unnecessary consumption; rather there is a duty of government to protect the people, to ensure the basics in housing, health, education and work are made fairly available.

The expansion of economic regulatory powers should not extend to the sphere of civil rights. If anything, the opposite.

It has already been argued in this guide that emergency mode is a whole-ofsociety effort which requires an aware, motivated and actively committed population. A full and frank discussion of the threat, the response and what that means for society is critical in building active commitment across the community.

States will have to be transformed if they are to rise to the challenge of the climate emergency, triggered by people demanding better from a decayed political system that has for three decades shown itself not to be fit-for-purpose on climate policy. Government and industry are unlikely to act decisively, unless forced to do so by the community.

This means we need a better democracy. And new ways are needed to engage people in these processes. Some of the more encouraging signs are at the local government level.

Rebecca Willis of Lancaster University savs her research shows that "to tackle the climate crisis, we need more, and better, democracy, not less". We need more conversations about climate change, not less, between the community, politicians and policymakers.

In the UK, for example, six UK parliamentary committees are holding citizens' assembly on the climate emergency.

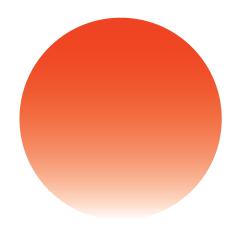
Willis says that processes such as a citizens' assembly, or other deliberative processes such as citizens' juries or deliberative workshops, can help: "These processes allow a representative group of citizens to meet with experts on equal terms, assess evidence, debate and suggest solutions. They are not a substitute for electoral politics, but they provide a more nuanced and detailed understanding of voters' viewpoints than traditional political polling or focus groups."23

She points to Ireland where, in a Citizens' Assembly on climate, people offered up "a surprisingly radical and confident set of suggestions, most of which the government is now taking forward". Similar processes are under way in many local areas in the UK.

In many ways, politics in the developed world is broken. Reforms are necessary, including against corruption and big-money politics, and the proper regulation of big data. Perhaps, ironically, in the shadow of the greatest challenge human civilisation has ever faced, we may find ways not only to overcome the existential climate threat, but also to learn how a cooperative, caring, democratic society could work.

Military spending 1934-44 (military outlays as % of national income)

	1939	1940	1941	1942	1943	1944
USA	1%	2%	11%	31%	42%	42%
UK	15%	44%	53%	52%	55%	53%
Germany	23%	40%	52%	64%	70%	
Japan	2%	22%	27%	33%	43%	76%



Non-partisan narrative

Fear & hope

The only rational response to a crisis is one that matches the scale of the problem. If we can't name a problem as it really is, we can't get to a solution that will work.

Ignoring high-end risks leads to an underestimation of the task and failure to solve the problem. This is what policy-makers are doing.

David Wallace-Wells, author of the best-seller, The Uninhabitable Earth, says that "fear is what animated me." He explains: "to go back to the Second World War analogy, we did not mobilise in that way because we were optimistic about the future. We mobilised in that way out of fear, because we thought Nazism was an existential threat. And climate change is obviously an existential threat and it is naive to imagine we could respond to it without some people being scared".24

Counterposing "fear" and "hope" narratives is a false dichotomy, because both are needed. Public health promotion campaigns such as "quit smoking" show that the messages that work best combine a personally relevant description of the threat (fear), and a clear exposition of the solution with a clear path of achievable actions to address it (hope).25

Research also shows that increased commitment to taking action can be achieved by just reading a climate message that forthrightly describes the seriousness of our situation. Strong fear messages have been found to be more effective than weak fear messages; when fear is combined with hope, this can create an emotional drive that motivates a change of habit.26

It is crucial to construct a narrative that works across the political divide, given the hyper-partisan character of the climate issue in Australia.

There are many possible narrative framings, including the environment, the economy, jobs, healthy and clean, safety and protection, justice and moral responsibility.

Climate action advocacy was historically, and significantly still is, driven by environmental not-forprofit organisations, who as their core business continue to emphasise climate as an environmental/ green issue. The organisations' brands (conservation, wilderness, environment) signify "green", no matter what they say. The question is whether this is the most useful framing.

The basis of democracy, according to the cognitive linguist George Lakoff, is "empathy - citizens caring for each other, both social and personal responsibility—acting on that care, and an ethic of excellence".27 From these, our freedoms and our way of life follow, as does the role of government: to protect and empower a nation's citizens. Empowerment starts with education and infrastructure. No one can be free without these, and without a commitment by one's fellow citizens to care and to act on that care.

The first responsibility of a government is to safeguard the people and protect their way of life. Safety and wellbeing is valued in all aspects of our lives: at home and at the beach, in the workplace, on the road, and in our schools. In business, engineering and government, this is practised as risk management. We value keeping people well and safe from harm with our health system, insurance, social security, and emergency services, and we value protecting nature.

The "health, wellbeing and livelihood" frame, rather that the "environment" frame, presents the relevance of

climate change in ways that connect to core values and familiar issues across society and political divides.

Large portions of the populace hold both conservative and progressive values, and the "health, wellbeing and livelihood" frame offers considerable opportunity for activating and reinforcing values commonly held across diverse worldviews of empathy, responsibility, protection, community, fairness and opportunity.

This frame is an opportunity to spell out not just the centrality of the climate change threat and more extreme climate events, but how it impacts and threatens each and every sub-category of harm, including how and where we live and work, the energy system, and even where we holiday and play.

Climate denial-or-delay governments are vulnerable to the charge that they are failing to protect their citizens from climate disruption, understood not only as personal and community wellbeing and human security, but as a wider challenge. This requires climate change to be seen not as a green issue but as an escalating and potentially existential risk to human security in Australia and globally, and to orderly relations between nations.

This approach was taken in September 2018, when all members of the Pacific Islands Forum (including Australia) supported the Boe Declaration that all Forum leaders "reaffirm that climate change remains the single greatest threat to the livelihoods, security and well-being of the peoples of the Pacific and our commitment to progress the implementation of the Paris Agreement".28

This exposes a political vulnerability for both major parties, because professed concern for human security in the Pacific is dramatically undercut by continuing support and advocacy for the expansion of Australian coal and gas mining.

"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."

If we continue down the present path "there is a very big risk that we will just end our civilisation. The human species will survive somehow but we will destroy almost everything we have built up over the last two thousand years."

Prof. Hans Joachim Schellnhuber²⁹

Professor of theoretical physics specialising in complex systems and nonlinearity, founding director of the Potsdam Institute for Climate Impact Research and a senior climate advisor to the European Union, the German Chancellor, and Pope Francis.



Footnotes

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