The Darebin Climate Emergency Plan

How 140,000 people can drive the change needed to restore a safe climate at emergency speed.

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The project is a collaboration of RSTI, Save the Planet and other organisations and individuals that join the project as it progresses.

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This is a work-in-progress. The document will be revised frequently.

Download the latest version from: http://www.voteplanet.net/campaigns.html

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The project invites contributions from people and organisations in the Darebin municipality (Melbourne, Australia) and elsewhere in Australia and globally.

We are seeking assistance with research, writing, editing, layout, graphics, financing, promotion, implementation and anything else you can think of that might be helpful!

The plan is based on the framework available at:
http://www.green-innovations.asn.au/RSTI/Emergency-Plans.htm

This project encourages others to create climate emergency plans for other localities around the world.

RSTI

SAVE the PLANET

10 PROJECT

Transition Decade Alliance

Contents

<div style="border:1px solid black; background:yellow;">
This draft still needs some editing.
Feedback or assistance is welcome.
</div>

Introduction

> *"It is no use saying 'we are doing our best'. You have got to succeed in doing what is necessary"*
> Winston Churchill

People who are concerned about climate change know that it is a global issue. And they know that to solve the problem requires a substantial redevelopment of the whole physical economy. And they also know that the politics of climate change action has been going backwards in Australia since late 2009, despite the successful introduction of a price on greenhouse gas emissions. These three factors make effective action on climate very challenging.

So how should we respond? Should we lower our expectations or delay action until things get a bit better? Or should we stay active but just 'go through the motions', having no real hope for success? Or should we take on the task of developing new strategies designed to tackle the problems as they actually exist, in terms of their scale, scope, urgency and difficulty?

The community organisations and individuals who are working on this plan have decided to take the latter approach – because we feel that climate change is far too threatening for any other approach to be acceptable ethically.

> *"We must quickly mobilize our civilization with the urgency and resolve that has previously been seen only when nations mobilized for war."*
> Al Gore 2007, in his acceptance speech for the Nobel Peace Prize

There was a time, not so many years ago when people were certain that a zero emissions economy could not be create quickly and many people were unsure whether it could be created at all.

But, in Australia, since Beyond Zero Emissions has released its Stationary Energy and Buildings Plans many people can see that this goal is achievable technically and indeed economically. What they are unsure of now is whether we can create the social and political conditions in which the physical solutions can be put in place – in time to prevent climate catastrophe. This is a challenge of community mobilisation.

The purpose of this plan

The purpose of this plan is to build on the work of others who have defined the climate problem and have shown what the physical solutions are. Our aim is to catalyse a process of social mobilisation that will ensure that climate solutions are put in place at emergency speed in the Darebin municipal area and to identify how Darebin's 140,000 people can help catalyse the necessary wider change in Melbourne and Australia and the world.

To speed the process of social change, we will release improved versions of this plan as they become available. We know enough already to chart a new course. But as we pursue this new approach our insights will improve greatly and our plans for change can be upgraded.

The plan therefore identifies proposals for both implementation and further research. These proposals are flagged using a "to do list" clipboard logo.

This plan is based on the framework available at:
http://www.green-innovations.asn.au/RSTI/Emergency-Plans.htm

Part A: The big picture

Project: *The big picture –development*
Task: Further development of the ideas in whole of Part A of this plan
Organisation: RSTI
Contact: Philip.Sutton@green-innovations.asn.au
(03) 9078 9746
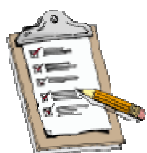
Project: *A video on mobilising to restore a safe climate*
Task: The creation of a YouTube video about the ideas in Part A of this plan
Organisation: RSTI
Contact: Darebin@green-innovations.asn.au

Choosing our climate goal

Since the adoption of the Framework Convention on Climate Change in 1992, the international negotiations and most official climate action has been focused on preventing dangerous human-caused climate change. This made sense two decades ago when dangerous climate change was thought to be something that would be triggered many decades into the future.

But 20 years on, we now know that with a global average warming of 0.8ºC and 400 parts per million (ppm) of carbon dioxide in the air, we are already committed to highly dangerous climate change **unless** the global temperature and atmospheric carbon dioxide (CO_2) levels are reduced to safe level with great urgency (David Spratt, forthcoming).

> *"We are experiencing dangerous anthropogenic interference [in the climate system] by any reasonable definition today."*
> John Holdren, 2008, senior advisor to US President Barack Obama on science and technology.

At the present time most climate activists and official negotiators (ranging from the World Bank to 350.org) are working to prevent a future plunge into climate cataclysm. It is, of course, essential to prevent such an outcome – that could destroy civilization, the lives of billions of people and a majority of species on the planet (see papers from the 2009 UK and 2011 Australian 4 degrees conferences).

But most of these climate activists and official negotiators are pursuing goals (eg. 80% emissions cuts by 2050, 450 ppm carbon dioxide, and a cap of 2ºC) that are now known to be dangerous and even these insufficient goals are not achievable in time if we use the normal processes of reform (Anderson & Bows, 2011).

If it were not that the climate-aware are more terrified about even worse climate conditions in the deeper future, people might recognise that the deterioration in the climate that we have already experienced is already unacceptable – in terms of the impacts of climate change-intensified extreme weather events, the incidence of droughts and the clear signs that critical earth system tipping points are being passed, for example, in the Arctic (with huge implications for the whole planet).

So it is clear that we not only need to prevent a future plunge into climate cataclysm but we need to back out of the *current* dangerous climate system conditions at emergency speed.

However, these two goals, "avoiding a further plunge into climate cataclysm" and "backing out of the current dangerous conditions", define what we *don't* want. But what *do* we want? What should our desired destination be? (Sutton, 2013a & 2013b)

For the last 10,000 years of the Holocene epoch[1] the climate has been relatively stable and it was during this period that civilization evolved, enabled by the climate stability. Prior to the explosive spread of human activity across the globe, species were able to live through the wild climate fluctuations that have characterised the last 2 to 3 million years – because the earth was a vast continuous 'wilderness area'. However natural habitats have now been so drastically reduced, fragmented and impacted globally that there would be massive species loss if the world were to return to the highly volatile conditions that prevailed prior to the Holocene.

To take a precautionary approach in the current circumstances, the climate needs to be returned to the pre-industrial conditions of the late Holocene.

Specifically, three key driver parameters need to be return to their pre-industrial level:
- global average surface temperature
- ocean heat content
- ocean acidity.

How can this be done?

Restoring a safe climate at emergency speed

Climate solutions

There are two high-level strategies for restoring a natural safe climate and one potential supplementary strategy for artificially restoring a safe climate faster than would occur otherwise (Spratt & Sutton, 2008; Safe Climate Australia, 2009; Sutton, 2013b)

Net zero emissions

The first strategy is to stop adding to atmospheric greenhouse gas levels that will make an already dangerous climate situation worse and worse. This means we need a zero net emissions[2] economy now, not at some distant future time.

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[1] The Holocene epoch is considered to be 11,700 years long.
[2] Zero net emissions mean that either technologies produce zero greenhouse gas emissions (eg. wind turbines or solar collectors, or if greenhouse gases are released (eg. burning bio fuels) that the same amount of greenhouse gas is removed from the air through the normal operations of the technology (ie. CO_2 is absorbed from the air when growing bio fuels). Net zero in this case doesn't mean the impacts of greenhouse gas releases from fossil fuel burning are offset by unrelated emissions reduction or draw down projects.

CO2 drawdown from the atmosphere

But we need to remember that the 400 ppm of CO_2 and the other excess greenhouse gas that we have in the air now will keep warming the earth as long as they remain.

Once we stop putting excess methane in the air it will largely be removed by natural processes in about 12 years. However, about 20% of emitted CO_2 remains in the atmosphere for thousands of years before natural processes can remove it.

A number of climate science research teams have found that dropping CO_2 emissions to zero stops the warming trend but does not lead to a significant fall in the temperature in less than several thousand years.[3] The global temperature occurring at the time the zero emissions policy is applied is approximately the temperature that is maintained over the long term (if zero emissions is the only climate measure adopted).

For this reason, if we are to restore a safe climate in less than thousands of years time, the excess CO_2 in the air must be deliberately removed through human action[4].
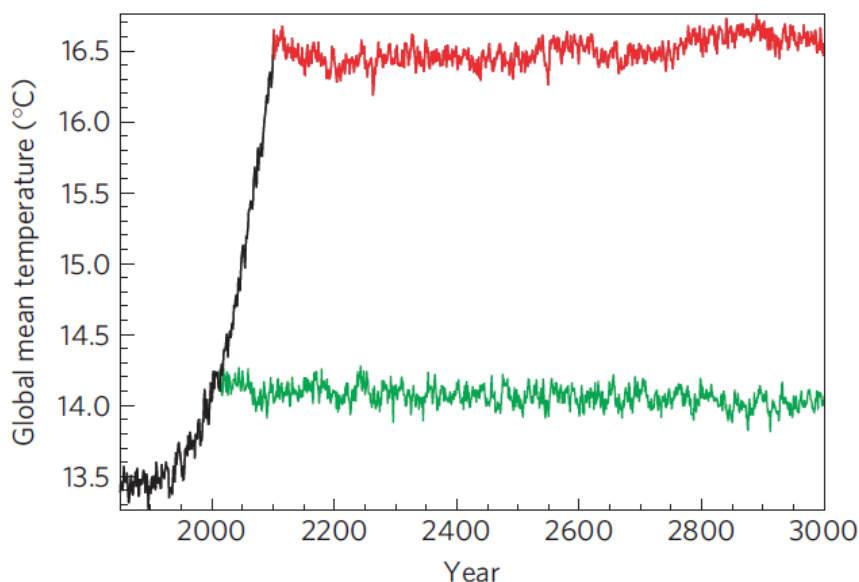
(from Gillett et al., 2011)

It is therefore necessary to run a very large drawdown program that that can remove most or all of the excess CO_2 emitted to the atmosphere – already a quantity in excess of 450 billion tonnes of carbon (Mathew & Caldeira (2008).

The physical scale of the drawdown program must be large – after all, it has to physically reverse most of the action of the coal and oil and gas industries over the last hundred years of so. It has been estimated (J. Herbertson, pers. comm.[5]) that if Australia built a drawdown system scaled to remove the country's past CO_2 emissions and the biochar method was used that the energy value of the renewable crude oil and gas created as a byproduct of the char production would be about 1/3 of all the energy used by the Australian economy in 2009.

It will probably take of the order of one or more hundred years to draw down all the excess CO_2. This means that the earth could be too hot for many years, possibly for numbers of decades

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[3] Meehl et al. (2007), Mathew & Caldeira (2008), Lowe. et al. (2009), Solomon et al. (2009), Gillett et al. (2011)
[4] For example, excess CO_2 could be removed from the air by growing plant material which could then be pyrolysed 9heated in the absence of oxygen) to produce char that could be ploughed into the soil.
[5] http://www.thecrucible.com.au/

Creating a net zero emission economy and drawing down all the excess CO_2 from the atmosphere are the two high-level strategies for restoring a natural safe climate. But they may not be enough to avoid dangerous impacts on humans and other species over the next few decades.

Temporary direct cooling through solar radiation management

It is possible to cool the earth by copying the effect of water clouds and natural aerosols (eg. particle clouds formed by volcanic sulphur dioxide releases[6]) by using methods that reflect a small percentage of sunlight back to space before it can heat the earth. Human-caused pollution clouds can also cause cooling through sunlight reflection.

A limited amount of work has been done by scientists and technologists to develop and environmentally assess deliberate solar radiation management methods, for example the injection of sulphur dioxide into the upper atmosphere and sea water particles into cloud layers to boost their reflective capacity (Launder & Thompson, 2010).

Solar radiation management can cancel out average global warming but it doesn't cancel out warming precisely, area by area, around the globe, plus it has other non-temperature side-effects on atmosphere so it should never be considered lightly.

If extreme weather events amplified by human-caused climate change look as if they will reach a point of causing global famine and mass species extinction, it may turn out that solar radiation management can lessen the net impact on people and the rest of nature while we work flat out to implement the zero emissions strategy and CO_2 drawdown enabling the restoration of a naturally safe climate.

Solar radiation management could also be applied temporarily to send the positive feedbacks, that are currently accelerating the melting of the ice and the liberation of carbon dioxide and methane from the Arctic and from soils and forests around the world, back in the opposite direction leading to the restoration of a safe temperature.

Solar radiation management should never be used to try to mask the impact of continuing fossil fuel burning. And it should only ever been considered as a temporary measure to reverse positive feedbacks in the earth system and to provide some protection while fundamental solutions are implemented. The relative environmental impact of not using solar radiation management versus using it temporarily needs to be assessed very carefully and objectively.

Summary tables

Table 1 – Strategic imperatives and key response mechanisms

Strategic imperative	Mechanisms
Creating safe economy – Don't make the problem worse	Zero emissions
Dealing with the unsafe legacy – Restore safe conditions (eg. remove excess CO_2)	CO_2 drawdown
Ensuring safe passage – Prevent unacceptable impacts during the transition to a safe condition	Solar radiation management[7] & adaptation measures

[6] When Mt Pinatubo in the Philippines erupted in 1991 it caused a global cooling of around 0.4°C (about half of the current excess global warning), with some cooling impact noticeable for about 2 to 3 years. http://en.wikipedia.org/wiki/Pinatubo#Global_environmental_effects

[7] Solar radiation management should not be used unless it actually protects more people and more species than would occur if it was not used.

Table 2 – The match between mechanisms and safe climate parameters

Mechanisms ➜ ⬇ Parameter	Zero emissions	CO_2 drawdown	Solar radiation management
Global average surface temperature	✔	✔	✔
Ocean heat content	✔	✔	✔
Ocean acidity	✔	✔	✘[8]

Table 3 – How long will the mechanisms take to achieve their goals?

Mechanisms	How fast can this be done responsibly under emergency action conditions
Zero emissions	**10 years** (from the start of the emergency effort)
CO_2 drawdown	**One or more hundred years**
Solar radiation management	**< 5 years to deploy, may be needed for several decades** (from the time of approval)

A safe climate is still possible

Even at this late stage it is still possible to restore a safe climate in the near term if the three major mechanisms are used (Sutton, 2013b). It is likely that we can prevent the vast majority of dystopian outcomes that people fear climate change will cause. But such a positive outcome requires action on a huge scale and at great speed. Such an outcome is beyond the reach of reform as usual, but it not beyond the reach of an emergency response.

The transition from a dangerous-climate economy to a safe-climate economy

Moving from a dangerous-climate economy to a safe-climate economy at emergency speed can be thought of as a three stage process.

1 **Muddling, struggling and gearing up to commitment** stage
2 **High speed transition** to an initial safe-climate economy
3 **Ongoing evolution** as a sustainable safe-climate economy (the new normal).

Stage one is a mixed bag of preparing, innovating, and advancing and regressing in response to struggles over the appropriate development paradigm, prior to a firm social consensus emerging. It is impossible to predict the duration of stage 1 with any likelihood of accuracy.

The purpose of the initial safe-climate economy is to take the world out of the dangerous climate zone and put us on the path back to a preindustrial era safe climate. There is no room for compromise on the goal of backing out of dangerous climate change at emergency speed. Where the compromises can apply in how economically efficient the solutions are in the short term. In this instance effectiveness has to be given higher priority that efficiency. Once the world is out of the dangerous climate zone and is structurally on the path back to a pre-industrial safe climate, then the normal mode of pursuing economic efficiency can be resumed.

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[8] Solar radiation management cannot stop or prevent ocean acidification from CO_2 in the air.

This approach does not mean, however, that we should ignore economic efficiency during the transition. It is just a matter of how priorities are set. We should be as economically efficient as possible during the transition but *without compromising our ability to make the full transformation at emergency speed*.

Other sustainability issues (including closed-cycle production)

Climate change is not the only sustainability problem that the world faces, but along with peak resources (eg. peak oil) it is the biggest and most pressing. To solve it will require a very large-scale renovation of the whole physical economy to be completed at emergency speed. To be able to devote enough concentrated time and effort to successfully put the full suite of solutions in place will require that climate change action is given a high priority. However it is also true that the opportunity to comprehensively renovate economies does not come around very often so it is going to be critical to build in the solutions to other vital and urgent if less prominent sustainability issues at the same time.

Given the amount of rebuilding of the physical economy required during the high speed transition stage, it is important that a commitment to a closed-cycle material economy is built in from the start – as this approach will be needed for the ongoing safe climate economy[9].

The technical solutions needed to restore a safe climate

The Darebin Climate Emergency Plan will draw heavily on the work done by research and policy bodies like Beyond Zero Emissions (BZE) to identify the broad technology change strategies that need to be implemented generally and specifically within the Darebin municipal area.

The work of BZE is particularly relevant because it is premised on achieving zero net emissions with a 10 year implementation (transition) period which are the same goals we are working to achieve.

Because of the emergency implementation timeline (10 years) BZE plans don't include 'low' emissions transitional technology stages. Their strategies show how to jump in one step to zero emissions. Also because of the tight delivery timeline the BZE strategies use only technologies that have already been demonstrated at full scale in a commercial setting.

The BZE plans are very credible because they are built from the bottom up with proven technologies in mind so they are fully specified from an engineering point of view. This means that the BZE strategies are one specific solution scenario. It is conceivable that another research group could come up with other solution mixes that might work as well or better.

Until improved solution packages are developed the Darebin Climate Emergency Plan will rely on the BZE strategies. New strategies might emerge if superior technologies are proven during the pre-transition period.

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[9] In natural ecosystems recycling rates are exceptionally high – over 98%. Ecosystems 'pay' for the recycling with energy from photosynthesis (eg. as part of a symbiotic relationship plants feed energy rich molecules to the mycorrhiza that in turn break down the lowest quality biological wastes). So the exceptionally high rates of recycling in nature ecosystems do not violate the laws of thermodynamics. It is likely that extremely high recycling rates evolved in natural ecosystems because this maximised the amount of material that was available to support living biomass and because it prevented the build up of toxic substances.

Zero emissions sectoral solutions
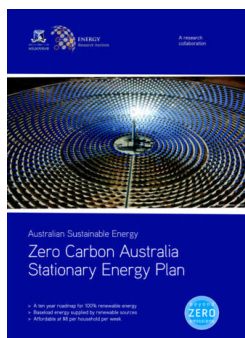
At the time that this version of the Darebin Climate Emergency Plan was written BZE had released two sectoral plans – stationary energy (2010) & buildings (2013).

The two further sectoral plans for transport & land use are anticipated over the next 12 months.

Drawdown and solar radiation management

Currently there are no known solutions reports that describe what needs to be done in relation to draw down and solar radiation management.

Innovation for sustaining technology

During the three stages of the transition from a dangerous to a safe-climate economy, radical solutions innovation needs to be promoted. The best methodology for this to date was developed by a Dutch team led by Leo Jansen (Weaver, 2000).

100% decoupling

Based on the experience of World War 2, it is likely that the high speed transition to a safe climate economy would do no harm at all to the economy as a whole and in fact might push it higher than average aggregate output. So while the high speed transition is occurring there would be no conflict between economic growth and environmental protection (at least in terms of climate impact).

Once the high speed transition is over economic growth might or might not intensify environmental unsustainability, depending on how it is managed.

To ensure that the newly created economy doesn't in fact become unsustainable for reasons other than climate change an economic management regime needs to be put in place that 100% decouples economic growth from environmental unsustainability. How this might be done is explored in Sutton (2013c).

Emergency mode

When you collect into one place all the plans and initiatives that need to be implemented to create a safe-climate economy it becomes clear that there are dozens, in fact scores of major changes that need to be made in a relatively short time.

Traditionally, change processes work most successfully as incremental endeavours – either as commercial ventures or as community single-issue campaigns. But the high-speed transition to a

safe-climate economy requires too many complementary large-scale changes that must be implemented in a short period of time for this to be accomplished in an incremental / single-issue campaigning mode.

We have an historical precedent for the successful execution of change with a comparable level of complexity, scale and speed and that is the economic transformation and mobilisation carried out during World War 2[10].

The experience of World War 2 makes it clear that human societies are capable of delivering the scale and complexity of change required to create a safe-climate economy, in the required short time – if there is a sufficiently widespread and intense social consensus.

This being the case, it is clear that the **greatest strategic imperative** that we currently face is to develop and implement a program that can **create the needed, sufficiently powerful social consensus**.

This is the challenge that is at the core of this emergency plan process.

What would it look like if society went into emergency mode to build a safe climate economy? (Spratt & Sutton, 2008).

Emergency mode	Non-emergency mode
Goals are set for what is actually ***needed***, and are pursued energetically with the clear intent of ***fully achieving them***.	Goals provide orientation but don't really define outcomes that will be achieved.
No compromise of core goals (no major trade-offs) is expected.	Everyone expects trade-off and compromise to dominate.
Strong & widespread consensus is crucial on core goals (a super-majority).	Society is divided on many issues, goals are often pushed in bursts despite opposition.
Full scale of change is crucial.	Solutions are often never fully scaled up.
Speed is crucial.	Public benefit initiative generally move slowly.
Collaboration, cooperation and coordination across the whole society is crucial – even across conflict divides.	In the main, people pursue their own interests/projects with relatively little reference to others.
Resources are garnered to enable the goals to be achieved, and low priority actions are put on the back burner 'for the duration' of the emergency.	Resources are spread over a large number of commitments and progress on each issue is slowed down.
Assessments are carried out with brutal honesty, because it is essential to know the truth so that effective action can be framed.	Assessments are often shaped to please/reassure or advance interests.

Government emergency action

When large-scale change is needed in the economy it is most easily accomplished if governments play a driving role[11] in partnership with other elements of society. How might this emergency mindset translate into a government program?

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[10] The emergence of the tiger economies in Asia and elsewhere involves a similar complexity and scale of change, but it normally took place over 20 to 30 years rather than the 6$^+$ years of World War 2.

[11] This is because governments traditionally have that role and they have powers to make laws and raise finance through taxation.

If a climate-emergency government was in power it would invest heavily in 'deliberative democracy' programs to develop a widely-based and strongly held consensus to demand full strength, urgent action to restore a preindustrial safe climate. Once the consensus was in place, the Government would legislate to stop further investment in climate-wrecking technology (eg. fossil fuels production and use). This would provide the certainty that businesses and the community need to commit to safe-climate investments and lifestyle changes. This would be supplemented by a legislated schedule for decommissioning (or fully renovating) the elements of the economy that are causing damaging climate change. The government would also put in place the regulations, research, regulation and implementation organisations and investments needed to drive the CO_2 drawdown program and a program to assess the usefulness of solar radiation management.

Community campaigning for the emergency package

If this (in general terms) is what a climate emergency action program might look like from a government action perspective, what might climate emergency campaigning by the community look like?

The big difference from conventional community campaigning is that the **core demand** would be for the government to **put in place the whole safe-climate economy program as a package, implemented at emergency speed.**

For such a demand to get traction with the government it would also have to also get traction with the community and with people in business. And for that to happen expectations and the community's action culture need to change.

This means that a very large scale engagement and mobilisation of society is needed.

Ensuring that we have the emergency response that we want

Many people on the anarchist left and libertarian right fear that going into emergency mode will empower excessive government control or even totalitarianism. And for good reasons they are not the only people with these concerns.

There is a risk of over-reach that must be managed and there must be a social contract that is honoured to return society to the non-emergency state after the emergency is over. During the Second World War people spoke of taking extraordinary measures "for the duration" of the war (the emergency period). There was a widespread understanding that the extraordinary measures would not be maintained after the crisis was over.

One way to make sure that we get the type of emergency we want as a community, and not the sort that might damage democracy, is to build up the emergency mode first from the grass roots – starting from our own lives, our families and our local communities. Then the emergency commitment can supported by local, then state/territory then national governments.

If we have built the emergency ourselves from the ground up then we will be much more sensitive to over-reach by governments or other powerful bodies such as corporations and we will be better prepared and empowered to challenge and prevent abuse.

Making the change – social mobilisation

Building up the social change strategy

The need for a super majority of strong support

An emergency-speed program to create a safe climate economy will substantially challenge the status quo. If there are many people who are not committed to the change they will constitute a large pool of people who could potentially be recruited to oppose the safe climate program. And it should be assumed that every effort will be made to galvanise opposition.

The only way to provide some protection from this dynamic is to set out to build a super majority[12] of strong support at the outset for the safe climate program.

Building strong support across the political spectrum

If we are to generate a super majority of strong support for the emergency speed restoration of a safe climate, this can only be accomplished if a sizable percentage of people on both the right and left of politics[13] are committed.

In Australia, USA and Canada, and to a lesser extent in many other countries, there has been a cultural shift in expectations over the last number of decades so that it is now assumed that concern for the environment is associated with having left wing views and being unconcerned about or anti-environmental is associated with having right wing views.

It is important to realise that this is not the innate way of things. Forty years ago it was not the case in Australia, the US or Canada. What has happened over the years is that environmental campaigners have come to see themselves as leaning more to the left and so they are more active among the left-leaning members of the community and they are less active and less effective in their work amongst the right-wing members of the community. It is worth remembering that many right-wing leaders have been active on climate change eg. Margaret Thatcher, Arnold Schwarzenegger, Nicolas Sarkozy, Angela Merkel, Malcolm Turnbull.

This should not be surprising because objectively climate change will impact very negatively on the wellbeing and interests of most right-wing people by:
- causing military security threats
- limiting the growth of or even reducing economic output and discretionary income
- impacting on health
- damaging property
- increasing uninsurable risk
- threatening the wellbeing of descendent
- creating social instability.

People with a left-leaning mindset often assume that those who are left-leaning will support strong environmental policies while those on the right, assuming they are concerned about the environment at all, will only support weak environmental polices. This strong-weak bias is not a

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[12] 70% or more.

[13] The political concepts of 'left' and 'right' are quite fluid and are constantly evolving. The dynamic that is the most fundament to the left right definition is probably created by the need for governments to have 50%+ coalition of support in the parliament. There is usually some cultural continuity in what draws these coalitions of support together despite the fluidity around particular issues and policies.

reflection of the innate nature of left or right wing people. People on the right are perfectly capable of supporting strong policies whenever those policies relate to their strong areas of concern and where the way of acting on the issues makes sense from their perspective.

The weakness of support for strong policies on climate amongst right-wingers in countries like Australia, the US and Canada is the result of the absence or weakness of climate campaigns by people on the right side of politics. The most active campaigners who target the right in Australia are the Murdoch media, the Abbott Liberals, right wing think tanks (eg. IPA) and denialist groups. There are no pro-climate forces on the right with a similar level of activity and those that do lean rightward (WWF and perhaps the Climate Institute) campaign for weak climate goals.

Now that climate politics has become skewed so strongly on a left-right basis in Australia and some other places, it will take a special effort to undo the self-reinforcing cultural biases.

It is a well known psychological phenomenon that people trust information and ideas coming from people like themselves much more than they do those who are clearly different from themselves. This is not a sign of basic stupidity of humans, it is an evolved response to the human need for people to learn most new things from each other rather than working out everything from scratch for themselves. To learn from others with least risk you have to be able to trust those you learn from. People most like you are people you can trust the most.

This being so, it means that if views on climate change are to change on the right, it will have to be people from the right who lead the charge amongst their segments of the community.

To gain political support for the emergency speed creation of a safe climate economy across the political spectrum sufficient to achieve a super majority of strong support, it will be necessary to frame the reform of environment/economy relations in terms of 100% decoupling of economic growth from environmental impact rather than working for zero economic growth. This is because:
- if 100% decoupling is achieved, it doesn't matter environmentally if there is economic growth; and
- the commitment to economic growth among supporters of the ALP and the Liberals/Nationals is so strong, and is considered to be so fundamental, that an attempt to end economic growth would not only fail but the resulting social struggle would prevent the transition to a safe climate economy in any practical timetable.

Activate whole networks, but start with active individuals

The insights explored above in relation to engaging people on the left and the right of politics, can be extended to guide action to activate all cultural groupings and social networks. We need to work with rather than ignore the 'tribalism' in human societies.

People are influenced by others in the social networks that they associate with. Views and behaviours are often stabilised by the reinforcement that comes from social networks so it can be very hard to get a practical expression of new ideas from groups of people until their social networks endorse the change.

Bridge builders can take ideas from one social network to another, but those ideas will probably not be reliably established in a social network until opinion leaders within the network are able to build wider support (Lederach, 1997). Once there is wide support in the network the idea is likely to be stable for some time.

Activists are often attracted to either:
- spreading their message widely and thinly in society because this seems like the least work for the greatest engagement or
- working within a limited number of social networks that they feel familiar with.

But the 'wide & thin' strategy tends to engage only a few pre-disposed social networks and a scattering of people with outlier views in a larger number of social networks. But whole social networks are not engaged stably with the new ideas in this way. Until a heavy investment of effort is made to engage opinion leaders in a network and to support those leaders through the hard work of engaging a large number of other people in the network, the new ideas are not likely to 'stick'. As whole networks take on new ideas, this creates much more people-resources that can help to engage further social networks.

To engage a whole society it is necessary to try to engage all social networks. This is best done by engaging bridge-building individuals who in turn engage within-network opinion leaders.

It is often hard to know who the bridge builders will be for particular social networks, so some sort of wide-cast fishing expedition is needed first to try to find or flush out these people. This needs to be followed by intensive work with bridge builders and opinion leaders within the social networks.

Bridge builders and opinion leaders within social networks are more likely to succeed in engaging the whole network if they are able to communicate using the values and language frames that predominate within in each social network. These network-specific frames might need to be adapted to some extent, but they shouldn't be ignored.

Work at all levels of the social hierarchies – with the grassroots and the elites

A large-scale, near-term emergency response to climate change will not be possible unless a majority of the power elites and a super majority of the general population support the change. In democracies, a strong and stable democratic mandate is essential and in societies dominated by power elites the majority of that power needs to favour change.

Climate activists need to work on all levels in our social hierarchies to engage both democratic power[14] spread throughout society and elite power that is concentrated higher in hierarchies.

Controlling elite
• small in number

Managerial elite
• skills support controlling elite
• can translate grass roots demands

Grassroots

The white lines represent major divisions in society – not meant to be an accurate allocation

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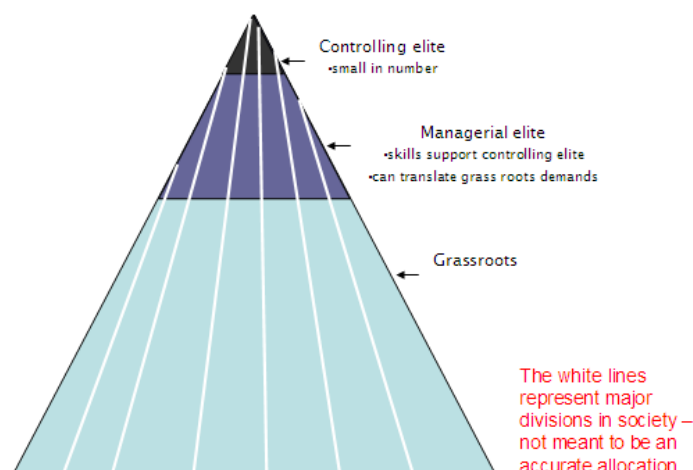
[14] Expressed at the ballot box and at other tomes though other forms of people power.

Resistance to action on climate change is concentrated in the fossil fuel production and use industries, and these businesses of course have large financial resources, but they still only command a modest minority of society's economic resources (less than 30%). If the rest of the economy recognises its objective interests and is organised to protect those interests, it has more than enough power to face down the fossil fuel industry.

But a lot of active work needs to be done to foster this realignment of forces, by engaging with:
- controlling elites (a relative handful of very powerful people)
- managerial elites (maybe 1/4 of the population)
- grass roots (most people)

It is essential to engage strongly with the managerial elites and the grassroots before expecting to have much access to or persuasive power or leverage with the controlling elites.

It's interesting to see that the Murdoch media empire plays a version of this "all levels" strategy to gain leverage on society. The Australian newspaper reaches and helps to shape the culture of key elements of the controlling and managerial elites and papers like the Herald Sun and the Telegraph shape the working class culture.

Figure 1 – Engaging with the grassroots and the elites
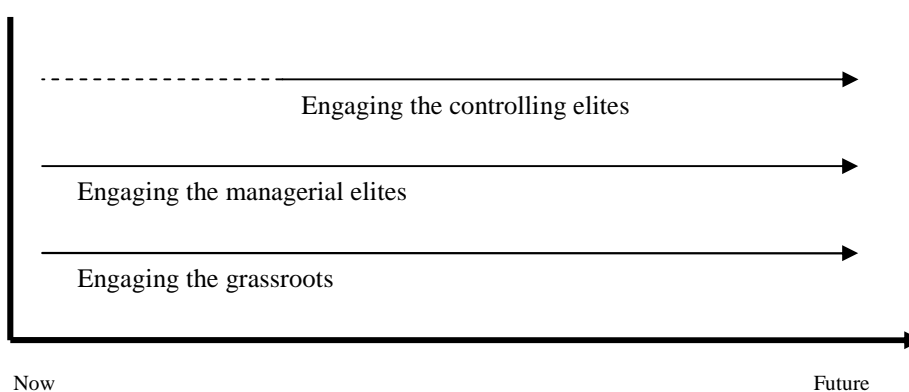
Both mobilising and demobilising

Getting a commitment by a super majority of people for the emergency-speed restoration of a safe climate clearly requires a major social mobilisation in favour. But as the experience in Australia since late 2009 has shown more than that is required.

The high point of concern about climate change was in 2006 (Lowy polls) when 68% of Australians supported the view that "Global warming is a serious and pressing problem. We should begin taking steps now even if this involves significant costs". Support steadily waned after that point, most sharply between 2006 and 2009, and has only in the last year started to turn around slightly.

Figure 12: Global warming

Now about global warming. There is a controversy over what the countries of the world, including Australia, should do about the problem of global warming. I'm going to read you three statements. Please tell me which statement comes closest to your own point of view.
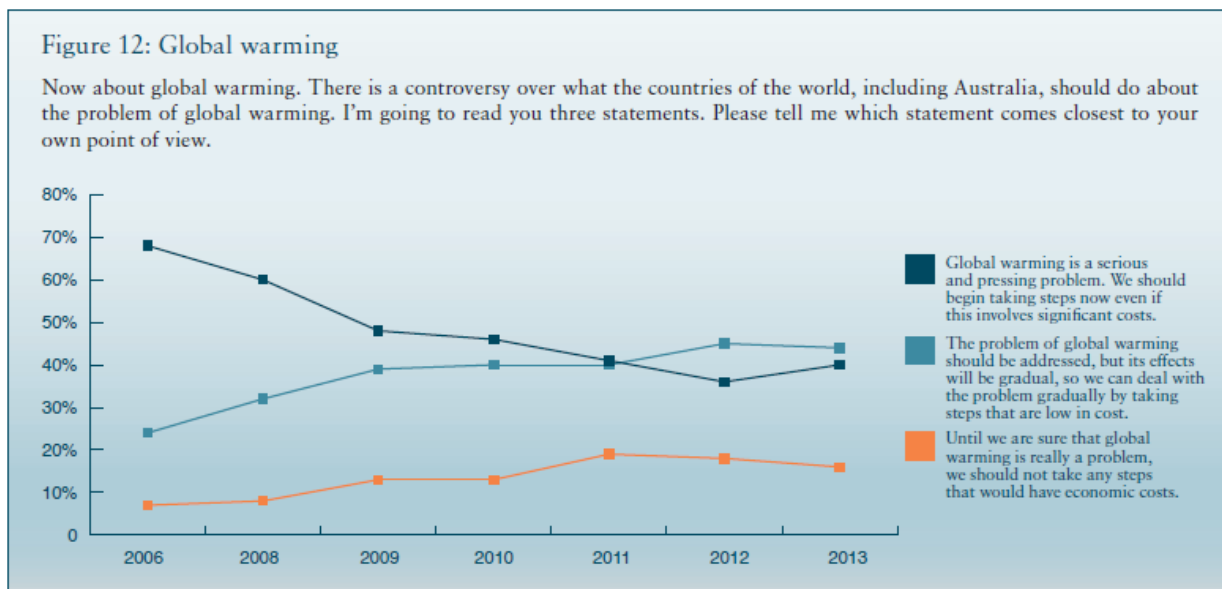
Lowy polls (2013)

In 2009, Tony Abbott deposed Malcolm Turnbull, the then Opposition leader, who was about to support the passage of emissions trading scheme legislation proposed by the Labor Government. Abbott then waged an unrelenting war on an effective climate response, in concert with the Murdoch media empire. This reinforced the shift from a large majority in favour a strong action on climate to a majority against putting a price penalty on climate pollution and a modest majority in favour of weak action on climate. The Abbott dynamic also entrenched the current conventional wisdom that the left (eg. ALP, Greens, socialists) favoured climate action and the right (eg. Liberals, Nationals, and sundry small hard right parties) were against.

While the climate movement was mobilising on the left and centre, the anti-climate action forces were mobilising on the right and centre and they overtook the climate movement mobilisation.

This suggests that the climate movement needs to not only mobilise active support on the right, but it also needs to campaign to slow then reverse the *anti*-climate action mobilisation.

Figure 2: Mobilising and demobilising
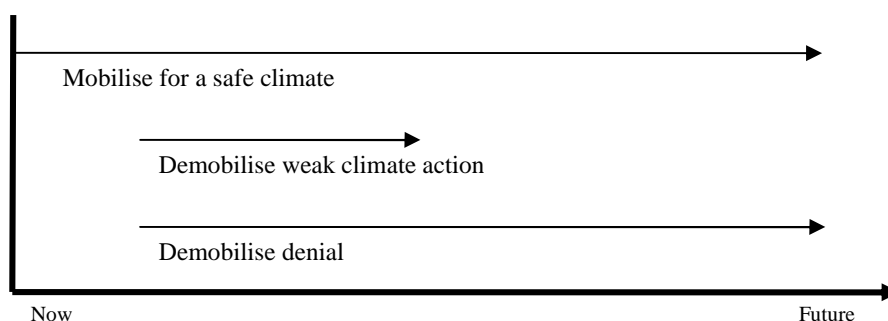
Also, on the pro-climate action side, a super majority for emergency speed creation of a safe climate economy can never emerge while the majority of the climate movement keeps campaigning for weak, slow goals. So the weak goals campaign needs to be demobilised and efforts swung into the safe climate emergency campaign.

See the diagram above for a schematic outline of how the safe climate mobilisation and the two demobilisation campaigns might be sequenced.

Trust, truth empathy and strength

If we are to galvanise to commitment to a safe climate emergency response that goes beyond reform as usual, people will need to be able to trust that it is necessary. This trust will have to be earned, not assumed or demanded.

It is essential that the safe climate movement builds a culture of truth – to fully say what is needed but also to not exaggerate or distort what needs to be done.

Because we do have to challenge the status quo, we will also have to develop empathy for other people, both for those who support what we are doing but especially for those who oppose it. Challenges to the status quo that are not empathetic are likely to strengthen the fear and countervailing resolve of those who oppose the climate goals we are pursuing (Cockett, 1994).

And we will need to have strength of purpose to be prepared to constructively challenge not only those who see no need to act on climate but, even more so, those who believe that the pragmatic way to act is to promote weak and slow goals and strategies.

In this strategy there are many references to the Second World War. This is not because this strategy is recommending waging war on anything – not even dangerous climate or climate denialists or climate criminals. The purpose of referencing World War 2 is that there is a great deal that can be learned from that time because people were highly motivated to solve an enormous problem with extreme urgency and they developed methods that enabled them to achieve extraordinary project outcomes in next to no time.

We need to learn from wartime, not create a war. The war analogy "as goal" contains a deep cultural poison that must be avoided at all costs. When we start to think of war we start to think of enemies who must be destroyed. Most people who are currently growing the dangerous climate change/fossil fuel economy are either disengaged from the effects of their actions or they are misguided. But in the right circumstances they could be an active part of the safe climate solution. It is our job to create those circumstances.

In some cases a handful of people driving the dangerous climate change/fossil fuel economy are knowingly and wilfully disregarding the welfare of others for personal gain. That small handful are acting with the moral equivalent of criminal intent and their crimes against humanity and nature should be handled by the criminal justice system.

Rather than creating a war analogy to drive us, we need to act in emergency mode. In emergencies people seek and give help. There is an expectation of mutual aid and mutual responsibility. That is a much more ennobling and productive metaphor to guide our actions than the metaphor of war.

Deliberative democracy[15]

The more that climate action has to go beyond business and reform as usual, the more successful implementation will depend on people not only understanding why the actions are needed but also on their endorsement of the broad approach.

If in 2007 the Rudd Government had first invested very heavily for at least 12 months in a program of community deliberation on the climate issue, exploring both the problem and

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[15] See references on deliberative democracy.

possible solutions, instead of jumping straight to trying to introduce an emissions trading scheme it is possible that the support for a strong climate response might not have collapsed, despite the financial crisis and the campaigning of climate denialists and the Murdoch press.

To have any real impact on public understanding and views that are able to stand the test of real world implementation, deliberative programs need to be both in-depth and very large-scale in their community reach. Probably 10%-20% of the population needs to be involved directly – so that everyone in the community knows a few people who have been involved and can learn from their experience.

For illustrative purposes, here's one possible model of a very large-scale government deliberative democracy program.

The government could legislate to give people the legal right to leave from their employer to participate in the deliberation program (in the same way that people have leave for jury duty). But for the climate program the government could reimburse employers or the self employed for the loss of labour time.

The government could invite people to participate in:
- an intense program of four weeks full time engagement over 12 months to involve, say, 1% of the total adult population. This program would be supported by access to a full suite of experts.
- a minimal program to involve, say, 20% of the adult population, in several workshops with online back up for preparation.

Both programs would engage people in working through the science of climate change, goals for the climate program and potential solutions, with all participants able to make recommendations to the Government.

These programs could be run in several times for different cohorts of people so that learning from the earlier rounds could feed into the design of the later rounds.

Before the government took on such a program, support for emergency action to create a safe climate economy would need to be built up, so the climate movement itself probably needs to engage with a less resource intensive but still large-scale version of a deliberative democracy program. The Victorian Women's Trust Purple Sage and Watermark programs illustrate the sort of thing that can be done with philanthropic funding support. (See the deliberative democracy references.)

Spreading the meme-suite

Some ideas pass intact[16] relatively easily from person-to-person when there are circumstances where those ideas are attractive or trusted and useful. Ideas that spread this way are called memes.

In a world of extreme weather events, the memes "dangerous climate change" and "safe climate" can pass easily from person-to-person in conversations and the written and spoken word. "Dangerous climate change" is what we don't want, and "safe climate" is what we do want.

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[16] Ideas passing from person are prone to degradation through inaccurate re-presentation. This why the game of 'Chinese whispers is so much fun.

But the potency of these ideas can be boosted if additional ideas are in circulation as well, for example: "the climate is dangerous now", "extreme weather events are being made worse by climate change" and "a safe climate is still possible". The immediacy of a threat increases the attention paid to it. The validity of a threat is increased if people can see tangible evidence of it. And people's responses can shift from depression and disempowerment to annoyance and action if they know that it is possible to avert the threat.

There is an interesting relationship between simple memes (short potent phrases) and detailed information. When some people in a social network have access to really good quality information on an issue they are more likely to pass on powerful memes that both the sender and the receiver can trust. For example, people who have read the BZE Stationary Energy Plan or the Buildings Plan usually feel confident to pass on the meme "a zero emissions economy is possible in 10 years". If other people have already spread the news that "we need zero emissions to restore a safe climate" then the news that a zero emissions economy is possible makes people feel more hopeful about the safe climate idea and more likely to take action.

So sets of memes create an 'idea-scaffolding' for a culturally shared understanding of an issue and a shared basis for action. A powerful meme-suite can help drive a self-generating effort if it contains memes about:
- a problem, including why it should be avoided
- the solution, including why it is feasible, and
- how the meme-suite-holder can act effectively on the solutions.

Complex meme-suites never travel complete via word-of-mouth. No one has the time nor the memory to impart a whole meme-suite in one go. But complete meme-suites can be deliberately spread via books, films, videos, longer talks, etc. People who are aware of full meme-suites will sometime be motivated to bolster meme elements that are lagging in transmission in particular social networks.

Meme-suites often partially or fully reassemble within social networks if the component memes are already circulating within the network, especially if that network is committed to achieving the core goal of the meme-suite.

So what is the minimum suite of safe climate memes that can help drive a self-generating effort to restore a safe climate? You will find a proposed minimum set at the end of Part A of this plan.

The safe climate movement can help to spread the needed memes by:
- identifying missing core ideas – where their absence makes the meme-suite less compelling;
- finding simple evocative phrases that express core truths that need to be conveyed (coining the memes); and
- putting together and publicising trustworthy and compelling information that validates each key meme.

These memes can also be thought of as heuristics or rules of thumb that provide high-level guidance for system architecting. See the discussion in the next sub-section handling complexity.

Empowering people to handle complexity

There is no doubt that the climate issue is complex, both on the problem and the solution side.

People often get over-whelmed, confused and disempowered by issue complexity. But it doesn't have to be that way. Everyday, around the world, immensely complex projects are brought to successful completion – whether it be complex buildings or software, electronics or medical products. If a random collection of intelligent people were taken off the street and offered all the money necessary to do the project they couldn't produce anything. But with the right project structure, management and especially the right system architecting it becomes possible. (See the references on Complex project management and large system architecting.)

The work of Beyond Zero Emissions exemplifies this beautifully. BZE has taken the enormously challenging question of "how can we create a zero emissions economy in 10 years" and has been able to structure a series of inter-related projects, delivered by teams of volunteer professionals, that have provided highly credible answers.

This was possible because BZE used project management methods and they had people with the needed system architecting skills.

System architecting is the process of taking a challenge or qualitative project goal and generating solution system requirements and then a project meta-design that can be broken into development cycles, layers or chunks that are tractable for developer or delivery teams with the outcome that when delivered the parts add up to a total system that works and that meets the system requirements.

Alarm, fear, denial, avoidance, leadership, fairness, commitment, passion, action

We know that people have psychological tendencies that can lead in some circumstances to denial or avoidance of critical issues. But it is also true that people can commit passionately to action in other circumstances.

Most animals, including humans, have three well known responses to sudden, fear-inducing threats: fight (proactive action), flight and freeze. Running away or keeping still to avoid detection are the most common and often most productive responses. And when a potential threat repeatedly doesn't have an impact on us we can learn to ignore it. But the key thing is that the actual response depends on the circumstances and the preparation for those circumstances.

So the fact that people are capable of engaging in denial and avoidance in relation to climate change is not, in itself, the most important thing to know. The critical issues are: Under what circumstances are people likely to choose denial or avoidance over engagement? And what role can we play in creating circumstances where effective engagement is the most probable response?

Humans are social beings. Whether we react with denial or avoidance or action depends greatly on how our peers and leaders and social networks respond. So we need to pay particular attention to the social context. Even contrarians are responding to their social context!

In Australia, Psychology for a Safe Climate is working on understanding the interplay between human psychology and the climate issue. (See: Key organisations: Australian in Appendix 4.)

Growing social change capacity fast

If a safe climate economy is to be built with emergency speed, then not only should the economic transition itself be fast, but the period during which the commitment to the transition is

established should also be as short as possible (the 'muddling, struggling and gearing up to commitment' stage).

This commitment-building stage can be speeded up by maximising the resources available to safe climate movement at the earliest possible stage. In general it is best to start from strength an maximally mobilise the available resources so that your capacity to take on harder tasks later is increased.

There are three useful strategies that could be used:

- to start work in the areas where there are the greatest number of strong supporters for the safe climate approach – the "**finding the mother lode**" strategy.

- to start where you have the most influence or connection (in a social network or in a locality) – the "**hotlink**" strategy.

- to link up with all the people who most strongly support the safe climate strategy across a local government area, or a state or a nation or the world – the "**gathering the needles in the haystack**" strategy.

You could begin with any one of these strategies, but all three should be activated as soon as possible because they enhance each other.

Building strength in difficult times

Considering the Australian situation specifically, the movement for a dangerous climate is in the ascendency at the moment. Most State and Territory governments are controlled by people who are working hard to defend and expand the fossil fuel economy and are actively white-anting the emerging safe climate economy. At the time of writing a national election is underway and the likely outcome is that an Abbott government will be elected with the same agenda.

When political changes like this occur the results tend to be:
- there is a growth in campaigns defending what is under attack and could be lost
- there are some campaigns to stand up against what mustn't happen
- and a lot of people are depressed and inactive for a while.

What is very hard to activate are positive campaigns to create the new world that is needed – because it seems so counter-intuitive to push for 'more' when what we are getting is 'less'.

But given that we are facing a climate emergency of extreme weather events and tipping points being crossed, we do have to campaign now for what is really needed, regardless. So how can this be done in difficult times?

If the state and national governments are going backwards, the place to press to go forwards is the local government area – because there will be many local government areas around the country that represent communities that still are strongly committed to strong action on climate – and people in these areas might even be proud to be bucking the backwards trend.

We need to campaign to get local governments to not just continue being active on climate change, we need them to commit to the full strength safe climate emergency program and we need then to take a leadership role in the wider community at the state and national level. These

local Governments can be champions for the safe climate emergency response beyond their borders and across the country, even internationally.

While this bottom-up strategy is being built up, and during the time when the challenge of turning the dangerous climate change forces around seems overwhelming, we need to remember that the climate issue won't go away just because the fossil fuel industry and its political allies want the community to ignore it. The extreme weather events will just keep happening and getting worse and they will undermine the certainty and strength of the dangerous climate change movement. So the political tide will turn.

Saturation mobilisation

Securing support for local governments to take on an emergency program to build a safe climate economy will depend on saturation mobilisation in the relevant local government area.

It is desirable to have a coordinating team to cover the whole local government area and to have local area teams that can sustain close, often face-to-face, contact. It might also be a good idea to have specialist teams that operate across the whole local government area. The specialist teams could focus on specific projects or roles or could focus on engaging people with different interests and affiliations eg. cultural, political, ethnic.

Through the combined efforts of the coordination, area and specialist teams, the aim would be to reach and engage every household and every person who lives or works in the local government area – hence the term 'saturation mobilisation'.
As soon as possible, there need to be enough local area teams to cover the whole local government area. Each local area team would go wide and deep to connect with all the people in its area.

At a minimum it would be good to have at least three specialist teams that can relate separately to people who lean towards the Coalition (Liberals or Nationals), Labor or the Greens.

Ripple mobilisation

If a safe climate is to be restored, a huge mobilisation is needed but where might it start and how might it spread and grow across the country and beyond?

Let's assume that we start by using the "mother lode" strategy. How might we find the areas with the greatest level of support? In Australia, we have a large database that can be used to find the areas near us that are likely to have the largest number of supporters. It's a pretty rough but nevertheless useful rule-of-thumb that the Greens party primary vote at elections gives us a guide to the areas that are more likely to support strong action on climate. The data for at least the last few elections is available from the national, state and territory electoral commissions. National and state seats can be compared and finer resolution data can be gained by looking at the results for the polling places within seats. (See Appendix 4 'Other information sources').

It's worth bearing in mind that not all Greens voters will (initially) support emergency action on climate change and not all voters from other parties will oppose it, but the aggregate Greens vote is not a bad comparative indicator for picking more or less prospective areas to start mobilising in.

The strongest application of the mother lode strategy would be to find the most prospective areas in the whole country (or if comparative public opinion data permitted such an analysis) in the world, and then make those areas the first target of our efforts.

A less-strong application of the mother lode strategy that is more practical for most people is to find the most prospective area(s) fairly close to where they live or work.

Another very different strategy for starting mobilisation is to use personal email, Facebook, LinkedIn and Twitter etc. networks to find the most interested people, who could then help with aspects of the mobilisation that don't require geographical collocation.

These strategies can be combined to produce a ripple mobilisation that can eventually reach and potentially engage everyone.

Let's say we start mobilising within our own local government area and we find a good place to commence using the electoral data. We could kick things off by distributing leaflets in letterboxes, or leafleting at train stations, shopping centres or big super markets, or by door knocking.

Once we have a few people involved, efforts could be divided between making in-depth connection within the initial area and reaching out to start activating the next most prospective area within our municipality or shire. This process could be continued until the whole local government area is covered.

Then three additional outreach efforts could be added once enough people are involved to manage the work:

- efforts could be made to activate people in the *most* prospective local government area within physical reach
- people in highly prospective areas elsewhere in the country or overseas could be activated, and
- once experience has been gained in how to successfully reach and engage people in the least prospective areas within the home-base local government area, outreach could be started in one or more nearby local government areas that are a bit less prospective than the home base.

The movement of engagement out from the areas with greatest support for strong climate action should probably be streamed following the three separate lines of highest support from Liberal voters, Labor voters and Greens voters. This maximises the learning experience relating to the people who cluster around each major political pole.

If people in every activated local government area follow this suite of strategies, a ripple of mobilisation would rapidly spread across the country and the world.

It is probably best to do at least two ripples or waves of mobilisation:
- the first, fast wave, to find people to take action in every local government area and every locality; and
- the second slower wave to support saturation mobilisation in every locality.

The "emergency plus" campaigning approach

A core strategy of this plan is to make it our central demand that governments should commitment to a comprehensive plan to build a safe climate at emergency speed.

While it is essential for success that this idea is on everyone's mind and everyone's to-do list, there are many reasons why people will want to also have other climate-related campaigns running concurrently. Many people will find:

- the "safe climate emergency plan" too abstract or its anticipated success too far off to engage them fully emotionally,
- it necessary to fight against roll-backs of valued climate measures by reactionary governments,
- it necessary to directly oppose fossil fuel exports.
- it inspiring to foster the uptake of solar panels by households
- etc.

The risk is though that there might be so many specialist campaigns that the demand for a safe climate emergency speed transition might get lost in the crowd.

One way to avoid this is to encourage everyone to adopt an "emergency plus" approach– this is, everyone supports the emergency transition plus whatever additional campaigns that move them. In this way a large number of campaigns can be run but the emergency speed safe climate transition stays central for everyone.

Being effective consistently – the "20 mile march" method

If you have read this far you will know that we have a huge task ahead of us and only a relatively small time to get the needed results. And if you have been keeping an eye on climate politics in Australia or many other parts of the world you will know that the external circumstances are turbulent and difficult. For example, the unexpected global financial crisis of 2007-2008 contributed significantly to derailing the 2009 Copenhagen climate conference that was meant to conclude a world agreement for strong action on climate change, and international climate negotiations have not been able to make up the lost ground ever since.

If safe climate activists are to make the urgent breakthroughs on action that are needed we will have to manage our climate change campaign efforts in such a way that we avoid being derailed and we will have to very substantially and reliably boost our performance. A methodology (the '20 mile march' approach) uncovered by management researchers Jim Collins and Morton Hansen and reported in their book Great by Choice (2011) could be what is needed.

The name derives from a method used by explorers and long distance travellers to enable them to cover large distances in the minimum time and with the greatest reliability (and safety). In a nutshell the method is to undertake to travel about the same distance per day come rain, hail or shine in a steady way rather than engaging in start/stop bursts. This method creates a very strong discipline to make progress each day and it protects against over-exertion and under-performance. This was the method learned by polar explorer Amundsen from the Inuit that enabled his team to beat Scott to the South Pole and also return safely (unlike Scott).

Applied generally to long duration challenges, the method involves setting challenging (but not impossible) minimum performance standards and also, perhaps surprisingly, **upper** limits on output.

Jim Collins and Morton Hansen argue, based on data from their research findings that this method very substantially boosts long term performance across a very wide range of human endeavours.

According to Collins and Hansen a good 20 Mile March strategy:

- uses *performance markers* that delineate a lower bound of acceptable achievement. These create productive discomfort, much like hard physical training or rigorous mental development, and must be challenging (but not impossible) to achieve in difficult times.

- has *self-imposed constraints*. This creates an upper bound for how far to 'march' in each measurement period when facing seemingly unlimited opportunity and exceptionally good conditions. These constraints should also produce discomfort in the face of pressures and fears that you should be going faster and doing more (over extend). The discipline of the internal constraints should provide protection against the external world's siren song that if heeded would result in the sacrifice of the organisation's success culture, structure and internal sources of resilience.

- has *a Goldilocks time frame for measuring achievement*, not too short and not too long but just right (for any particular 'march' type, should the achievement period be daily, or monthly or yearly or more?). If the 'march' measurement period is too short, then the marchers will be more exposed to uncontrollable variability with no time to learn and recover; make the timeline too long, and the necessity to meet the assessment period goals loses power to motivate.

- is *tailored to the organisation* and its circumstances/environment and is not blindly copied from others – this requires the building of strong strategic insight into the outcome goals for the 'march' and how these goals can be achieved[17].

- is self-imposed by the organisation, not imposed from the outside – it is intelligent internal discipline that is needed.

- is achieved through factors under the control of the organisation, despite the variability or chaos in the external environment. Failure is never blamed on circumstance or the external world.

- is required (through internal discipline) to be achieved with great consistency – failure in a time period might occur occasionally but it is never OK – and any failures must result in learning and rigorous corrective action.

Collins and Hansen argue that 20 Mile Marching helps turn the odds in your favour and boost overall performance in three ways because it:
1. builds confidence in your ability to perform well in adverse circumstances;
2. reduces the likelihood of catastrophe when you're hit by turbulent disruption; and
3. helps you exert self-control and build sources of resilience to succeed in an out-of-control environment.

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[17] Collins and Hansen don't discuss the idea that the '20 mile march' success assessment parameters might evolve over time, but it seems likely that it will take some time at the start of the process to generate deep enough strategic insight to frame robust measures and it is possible that over time if there is a **fundamental purpose** of the 'march' **changes** or the **deep** character of the external environment changes **stably** that the march success parameters might need to change too. However, extreme care and restraint needs to be exercised in relation to changing the 'march' success assessment parameter because one of the core features of the method is to have achievement parameters that must be achieved despite sometimes enormous volatility in the external environment.

How could we apply the 20 Mile March method? The ideas below are provisional, and deeper strategic insight and carefully assessed experience might indicate a need to modify them.

Measurement period	*Two monthly* (not counting the Christmas period) – eg. Feb-Mar, Apr-May, Jun-Jul, Aug-Sept, Oct-Nov.
Measurement 1	Have a consistently **high inspiration level** amongst people concerned about the climate, framed around getting local governments and then state and federal government's committed to a program of building a safe climate economy at emergency speed. (How can this be measured?)
Measurement 2	*Hours of volunteer work contributed*[18] in each local government area must grow in every accountability period for each key cohort separately assessed (people with Liberal / Labor / Green leanings) until the national government has committed to a full strength safe climate transition policy and has initiated full implementation – (What percent growth should be the minimum and maximum growth standard?? The figure should be set after some experience. This means that everyone has to measure contributed volunteer hours from the start.)
Measurement 3	*All areas* engaged in *saturation mobilisation* within *2 years*.
Measurement 4	*Strong support must grow* and *strong opposition shrink* in every measurement period, fast enough to achieve a strong super-majority of support within no more than 3 years (in the areas where saturation mobilisation is underway) strong enough to get real government commitment to an safe climate emergency-speed transition.
Measurement 5	The *country's global impact* (through direct involvement or through alliances) *grows consistently* until all key locomotive countries[19] (eg. Germany, China and the US) have committed to a full strength safe climate transition policy and have initiated full implementation.

Taking anticipatory action to avoid climate-change progress being reduced by major events

We need to prepare contingency plans to respond to major events that could slow climate-change progress eg. economic recessions, changes of government, wars, etc.

For example, massive investment in creating a safe climate economy could be a creative response to an economic recession.

Goals for local, state/territory and national communities and governments

The central goals for community action would be to:
- get a super majority of strong support for the emergency speed transition to a safe climate economy;
- to get commitment to implementation a full emergency speed transition from their local, state/territory and national governments; and
- to reach out to help engage other communities and governments around Australia and the world.

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[18] Contributed volunteer hours is a good measure because it reflects both capacity for action and degree of intrinsic community commitment.
[19] A locomotive country is one that, once it makes a commitment to a policy direction, tends to drag the rest of the world with it.

Central goals for governments would be to:
- take emergency speed action to build a safe climate economy; and
- to encourage other governments around the world (their peers and governments at higher levels) to build and support the building at emergency speed of a safe climate economy.

International goals and a 'safe climate alliance'

Action on the climate emergency must eventually be global in order to reach the scale needed to actually restore a safe climate. It doesn't follow from this that an all-in[20] global agreement between nations has to be the first major mechanism to drive strong change. In the period leading up to and since the 2009 Copenhagen agreement it has become clear that a great many nations are hesitant to commit to strong action on climate change because they don't have a strong domestic constituency driving the commitment and they lack experience in taking strong action so they are more fearful of it than they might otherwise be.

Arguably progress to take up an emergency speed safe climate economy transition would be faster if countries or sub-national governments with a high level of domestic support, adopted a cooperative unilateralism approach and just got on with the job of implementing the safe climate transition domestically. These fully committed governments could then link together in a global 'safe climate alliance' to amplify and spread their influence. Nationals and sub-national governments in areas most seriously affected by climate change could also join the alliance.

The global safe climate alliance could share their implementation experience with other countries and encourage them to take on the same safe climate commitment. The alliance could also adopt some locomotive countries to encourage them to take on a full emergency speed safe climate transition commitment. Once one or more locomotive countries adopts the safe climate goal it becomes much more likely that the UN all-in negotiations can be ramped up to full strength.

While the current UN negotiations are dominated by lowest common denominator horse trading, if a dual strategy was used that included building a global safe climate alliance, it might be possible to end up with the UN process eventually transitioning to a no-major trade-off multilateralism committed to the restoration of a safe climate.

Part B: Our community and what we will do

Part B sets out the actions we will take to mobilise the people of Darebin, based on Part A. As actions in Darebin progress we will upgrade the plan, to help drive the next stages of the mobilisation.

As more people and groups become involved in implementing this plan the identified projects will be organised as self-organised units with their own coordinators.

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[20] With all nations signed on or with the aim of having all nations signed on early in the piece.

Mobilising the people of Darebin

Our local goals are:
- everyone in Darebin to be on 100% green power within 3 years[21].
- within three years, there will be a super majority of strong support from Darebin people to build a safe climate economy locally, over a decade.
- within three years Darebin City Council will commit to a local program to build a safe climate economy over a decade, and the City Council will take on a national leadership role including encouraging other local councils and the State and Federal governments to take on the safe climate restoration goal as well.
- our community will contribute to activating surrounding communities and other communities in Australia and globally.

The core of our local activation process will be to:
- establish a Darebin coordination team;
- reach out rapidly within Darebin (following the lines of greatest support, and also taking advantage of chance connections) to find people who can form action nodes for each suburb;
- build the strength of the suburban action teams until they can undertake a saturation mobilisation in their area; and
- build teams for specialist projects that don't have a local geographic focus within Darebin.

We will probably need to form local teams in Northcote, Thornbury West, Thornbury East, Fairfield-Alphington, Preston West, Preston East, South West Reservoir, South East Reservoir, North West Reservoir, North East Reservoir, Kingsbury-Bundoora-Macleod. These areas will probably need to be modified, perhaps substantially, to create a more effective local fit.

At a minimum we will need to form the following specialist teams:
- a 100% green power campaign team;
- a visibility team to do postering and stickering;
- a team to specialise in relating to people who are inclined to vote Liberal and another two teams for the Labor-leaning and the Greens-leaning;
- an education team;
- a Council commitment team;
- an outreach beyond Darebin Team.

As soon as each local suburb team is established, Philip Sutton will be available to give a public talk about the Darebin Climate Emergency Plan.

Where things are at in Darebin
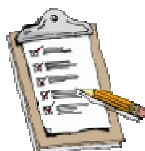
Project: *Darebin status report*
Task: Documenting where things are at on the mobilisation of the community and the creation of a safe climate economy locally
Organisation: Save the Planet
Contact: Darebin@green-innovations.asn.au

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[21] The benefits of pursuing this goal is that the achievement of the outcome is something the community can control itself, can be pursued incrementally so the feedback of success comes continually and the outcome exemplifies what needs to be done (ie. create s safe climate economy).

Mobilising the people of Darebin to catalyse change beyond Darebin
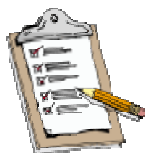
Project: *Darebin outreach strategy*
Task: To work with local people and organisations to work out how to mobilise the Darebin community and Council to trigger safe climate action elsewhere.
Organisation: Save the Planet
Contact: Darebin@green-innovations.asn.au

Mobilising the people of Darebin to strengthen the foundations of the safe climate restoration

Project: *Climate science group (review and education)*
Task: To identify climate science sources, work on critical gaps in science synthesis, support an educational program.
Organisation: (RSTI initially)
Contact: Darebin@green-innovations.asn.au

Project: *Fundraising for BZE's solutions research*
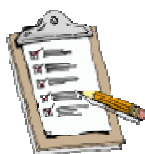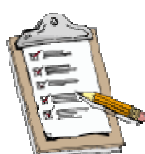Task: Raising money to support BZE's technical solutions research.
Organisation: (all cooperating groups in Darebin)
Contact: Darebin@green-innovations.asn.au

Where to from here?

Please get in touch if you or a group you are involved with would like to be involved with the plan implementation and development. If you have relevant projects that would help achieve the goals of the plan, we would love to include them in the plan.

Appendix 1: Definitions and abbreviations

Definitions

Definition	Meaning
biochar	Charcoal created by pyrolysis (heating in the absence of oxygen) of wood, straw, organic waste, etc. Often used to used to supplement soil.
drawdown	Removal of CO_2 from the atmosphere.
gathering the needles in the haystack strategy	Starting mobilisation work by linking up with all the people who most strongly support the safe climate strategy across a local government area, or a state or a nation or the world.
hotlink strategy	Starting mobilisation work where a person has the most influence or connection (in a social network or in a locality)
locomotive country	A country that, once it makes a commitment to a policy direction, tends to drag the rest of the world with it.
meme	A unit of cultural evolution (an idea, value or pattern of behaviour) that can be spread intact from one person to another by non-genetic means (as by repetition or imitation). (not limited to the internet-related meaning of the word)
meme-suite	A set of memes that together make up a complex meta-meme (sometimes called a memeplex by meme researchers and practitioners).

mother lode strategy	Starting mobilisation work by finding locations with the highest concentration of people supporting strong action on climate change
positive feedback	Where a change creates conditions where more of the same change will occur (eg. global warming melts Arctic ice and the loss of ice means less sunlight is reflected to space so the environment is heated up more, leading to more melting of ice).
pre-industrial	The period before about 1750 (ie. before the start of the industrial revolution). In relation to climate, pre-industrial implies the condition of the *climate* before 1750. It does not imply that economic or technological condition are returned to the pre-1750 state. Modern industrial society can create and maintain pre-1750 climate conditions.
super majority	In this plan a super majority is considered to be 70% or more.
system architecting	The process of taking a challenge or qualitative project goal and generating solution system requirements and then a project meta-design that can be broken into development cycles, layers or chunks that are tractable for developer or delivery teams with the outcome that, when delivered, the parts add up to a total system that works and that meets the system requirements.

Abbreviations

Abbreviation	Meaning
°C	degree Celsius (centigrade) -temperature
BZE	Beyond Zero Emissions (a research and education organisation)
CO_2	carbon dioxide
ppm	parts per million
RSTI	Research and Strategy for Transition Initiation

Appendix 2: The minimum comprehensive set of safe climate 'memes'

These memes have been selected to constitute an essential *minimum* underpinning for an effective program to rapidly restore a 'safe climate'. If these propositions are accepted and acted on energetically, an effective safe climate program should develop.

The relationship between the top level memes is mapped in the diagram below.

The memes will be powerful when they are supported by high quality validating proofs. Conversely in the absence of proofs and widespread knowledge of these proofs, success with a safe climate program will be very hard to achieve.

1. Dangerous climate change is now. (The validity of this proposition is on the way to being scientifically established.)
2. Climate catastrophe is coming unless…. (This is scientifically very well established.)
3. We need to restore a safe climate. (A skeleton ethical/safety case for this has been developed, but needs to be developed in depth.)
   3a. Safe climate is approximately the preindustrial temperature (and ocean acidity). (A skeleton scientific case for this has been made, but needs to be developed in depth.)
4. A safe climate is still possible (*technically*). (A skeleton scientific/technical case for this has been made, but needs to be developed in depth.)

5. We have very little time to act. (The validity of this proposition is on the way to being scientifically established.)

    5a. We have run out of time for half measures as movement goals. (A basic scientific/logistical case for this has been developed. This needs to be better articulated.)

6. We need to go onto an 'emergency footing'. (A skeleton case for this has been made, but needs to be developed in depth.)

    6a. Action need to be holistic because there are other major sustainability threats that must be solved in the same time as climate. (A basic scientific/technical case for this has been developed. This needs to be better articulated.)

    6b. Action can't be limited to tools 'allowed' by neo-liberalism or other ideologies "for the duration". (A skeleton case for this has been made, but needs to be developed in depth.)

    6c. The emergency footing strategy needs to also include solutions for any issues that might undermine effective action on climate. (The case for this has yet to be made in depth.)

7. We can't (only) single issue campaign our way to an emergency response. (Work has begun on developing a case.)

8. We need a super majority of strong support (from the forces that shape societies' actions)**.** (A skeleton case for this has been made, but needs to be developed in depth.)

    8a. We need to engage across the political/factional spectrum. (A skeleton case for this has been made, but needs to be developed in depth.)

    8b. Super majorities need to be built in the elites and in the population as a whole. (A skeleton case for this has been made, but needs to be developed in depth.)

    8c. Building up to "a super majority of strong support" starts from a weaker, most likely minority position. (This is self-evident, but needs to be well articulated.)

    8c. Opposition (to climate action) needs to demobilise as far as possible. (A skeleton case for this has been made, but needs to be developed in depth.)

9. Deliberative democracy is a better foundation than dictatorship. (The case for this has yet to be made.)

10. Scientific & technical solutions are possible. (The validity of this proposition is on the way to being technically established for the 'zero emissions' strategy, but only a skeleton case has been made for the 'drawdown' and 'solar radiation management' strategies.)

11. Political solutions are possible. (The case for this has yet to be made.)

12. Needed psychology is possible. (Work has begun on developing a case.)

13. Economic solutions are possible. (The case for this has yet to be made.)

    13a. The safe climate economic strategy needs to also include solutions for economic issues that might undermine effective action on climate. (The solutions to climate action in an economic crisis have yet to be developed.)

    13b. 100% decoupling of economic change from environmental impact is necessary. (A skeleton case for this has been made, but needs to be developed in depth.)

14. Governance/government administration solutions are possible. (The case for this has yet to be made.)

15. The safe climate mobilisation must (eventually) be global or it will fail. (This is self-evident, but needs to be well articulated.)

16. Complex fast large scale action can only be accomplished using 'complex project management' methods. (The case for this has yet to be made.)

Memes 1 to 3 combine to create a 3-part safe climate goal:

      Stop our plunge into catastrophic climate change, back out of the current dangerous climate change fast, and restore a safe climate – all at emergency speed.

Diagram of the principal (necessary) safe climate memes

1 Dangerous climate change is now

2 Climate catastrophe is coming unless….

3 We need to restore a safe climate

4 A safe climate is still possible

5 We have very little time to act

16 Complex fast action needs complex project management

3 part goal: Stop our plunge into catastrophic climate change, back out of dangerous climate change fast, and restore a safe climate – all at emergency speed.

6 We must go onto an 'emergency footing'

15 Safe climate mobilisation must end up global

7 Can't single issue campaign way to an emergency response

14 Governance/admin solutions are possible

Solutions are still possible

8 We need a super majority of strong support

13 Economic solutions are possible

12 Needed psychology is possible

11 Political solutions are possible

10 Scientific & technical solutions are possible

Deliberative democracy better than dictatorship

See the full safe climate meme list above. The list contains additional memes that relate closely to the 'top level' memes in the diagram.

Appendix 3: Potential local actions

Action	Detail
Surveys	To find out what people know about the safe climate meme suite.
	To find out what people think what would need to happen if the Council were to take on a safe climate program (give a list of options and ask for ranking.
Petitions	To call for the Council to commit to an emergency speed safe climate economy program.
Public lectures	About the Darebin plan, about the climate threat, about solutions, etc.
Workshops	
Working bees	
Leaflet production	Many topics needed. Some possibilities: "When to renovate?"[22]; "Should I pay for offsets or donate to activism?"
Leafleting	
Doorknocking	
Postering	
Stunts	
Research projects	

Appendix 4: Data sources

Contributing and networking organisations

RSTI (Research and Strategy for Transition Initiation)
  www.green-innovations.asn.au

Save the Planet
  www.voteplanet.net/

Transition Decade Alliance
  www.t10.net.au

The climate challenge – setting our climate goals

Is climate change already dangerous? David Spratt (forthcoming)
  dspratt@bigpond.net.au

The 2009 UK conference and the 2011 Australian conferences on the impacts of 4 degrees or more of warming
  http://en.wikipedia.org/wiki/4_Degrees_and_Beyond_International_Climate_Conference

Kevin Anderson & Alice Bows, (2011). *Beyond 'dangerous' climate change: emission scenarios for a new world*. Phil. Trans. R. Soc. A 2011 369, doi: 10.1098/rsta.2010.0290, published online 29 November 2010
  http://rsta.royalsocietypublishing.org/content/369/1934/20.full.pdf+html

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[22] Is it best to spend large amounts of money on renovating before or after society goes into emergency mode?

Sutton, P. (2013a). <u>A safe climate is still possible, but only if we change the way we campaign</u>. RSTI: Melbourne. http://www.green-innovations.asn.au/RSTI/Perspective-shifting-to-help-us-rethink-our-climate-goals.doc

The climate solutions (and related science)

Gillett, N., Arora, V., Zickfeld, K.., Marshall, S. & Merryfield, W. (2011). '*Ongoing climate change following a complete cessation of carbon dioxide emissions*' <u>Nature Geoscience</u>. pp. 83–87. doi:10.1038/ngeo1047

Lowe, J.A., Huntingford, C., Raper, S.C.B., Jones, C.D., Liddicoat, S.K. & Gohar, L.K. (2009). '*How difficult is it to recover from dangerous levels of global warming?*' <u>Environ. Res. Lett.</u> 4 014012 (9pp). doi:10.1088/1748-9326/4/1/014012

Launder, B. & Thompson, J. (2010). <u>Geo-engineering climate change: Environmental necessity or Pandora's Box</u>? Cambridge University Press: Cambridge.

Meehl, G. A. et al. (2007). in <u>IPCC Climate Change 2007: The Physical Science Basis</u> (eds Solomon, S. et al.) 747-845: Cambridge Univ. Press.

Matthews, D. & Caldeira, K. (2008). '*Stabilizing climate requires near-zero emissions*'. <u>Geophysical Research Letters</u> Volume 35, Issue 4. doi: 10.1029/2007GL032388

Safe Climate Australia. (2009). <u>The Australian Safe Climate Transition Plan - Strategic Framework</u>. SCA, Melbourne. http://www.safeclimateaustralia.org/wp-content/uploads/2009/05/Transition.Framework.01B.pdf

Solomon, S, Plattner, G., Knutti, R. and Friedlingstein, P. (2009). '*Irreversible climate change due to carbon dioxide emissions*'. <u>PNAS</u>. doi:10.1073/pnas.0812721106

Spratt, D. & Sutton, P. (2008). <u>Climate Code Red: The case for emergency action</u>. Scribe Publications: Melbourne.

Sutton, P. (2013b). <u>A safe climate is still possible, but only if we change the way we campaign</u>. RSTI: Melbourne. http://www.green-innovations.asn.au/RSTI/A-safe-climate-is-still-possible.doc

Solutions at the level of the physical economy

Beyond Zero Emissions – Stationary Energy Plan; Buildings Plan: http://bze.org.au/

Weaver, P., Jansen, L., van Grootveld, G., van Spiegel, E. & Vergragt, P. (2000). <u>Sustainable technology development</u>. Greenleaf Publishing: Sheffield, UK.

Sutton, P. (2013c). <u>100% decoupling of the economy</u>. RSTI: Melbourne. http://www.green-innovations.asn.au/RSTI/100-decoupling.doc

Community mobilisation

Cockett, R. (1994). Thinking the unthinkable: Think-tanks and the economic counter-revolution 1931-1983. Harper Collin Publishers: London.

Deliberative democracy
Wikipedia: en.wikipedia.org/wiki/Deliberative_democracy
Purple sage: www.vwt.org.au/initiatives-30-81.html
Watermark: www.watermark.org.au

Lederach, J. P. (1997). Building peace: Sustainable reconciliation in divided societies. United States Institute of Peace Press: Washington.

Lowy Polls
www.lowyinstitute.org/issues/public-opinion

Complex project management and large system architecting

Systems_architect: en.wikipedia.org/wiki/Systems_architect
Systems_architecture: en.wikipedia.org/wiki/Systems_architecture

Maier, M & Rechtin, E. (2009). The art of systems architecting (Third Edition). CRC Press: Boca Raton, USA.

Remington, K. & J. Pollack. (2007). Tools for complex projects. Gower: Aldershot, Hampshire, UK.

"20 mile march":
Collin. J. & Hansen, M. (2011) Great by choice: Uncertainty, chaos, and luck - why some thrive despite them all. Random House Business Books: London.
www.green-innovations.asn.au/Strategy/Great-by-Choice--Collins&Hansen-Chapter-3.pdf

Key organisations

Australian

ATA (Alternative Technology Association)
www.ata.org.au

Beyond Zero Emissions
bze.org.au/

Psychology for a Safe Climate
www.psychologyforasafeclimate.org/

In the region

CERES
www.ceres.org.au

DCAN (Darebin Climate Action Now)
www.darebincan.org.au

Moreland Energy Foundation
www.mefl.com.au

NAGA (Northern Alliance for Greenhouse Action
www.naga.org.au

Yarra Energy Foundation
yef.org.au

Darebin information

Darebin municipal profile
http://www.darebin.vic.gov.au/Page/Page.aspx?Page_Id=9032

Darebin population profile
http://www.darebin.vic.gov.au/Page/Download.aspx?link=../Files/City__of__Darebin__De
mographic__Profile__from__the__2011__Census.pdf&size=0&name=Snapshot%20of%20
2011%20Darebin%20Census%20Data

Darebin community directory
www.darebin.org

Other information sources

Australian Electoral Commission election results
results.aec.gov.au/

State & Territory Electoral Commissions election results
ACT: www.elections.act.gov.au/elections_and_voting/past_act_legislative_assembly_elections
New South Wales: www.elections.nsw.gov.au/past_results
Northern Territory: notes.nt.gov.au/nteo/Electorl.nsf?OpenDatabase
Queensland: www.ecq.qld.gov.au/elections/index.html
South Australia: www.ecsa.sa.gov.au/elections/state-elections/state-election-results
Tasmania: www.electoral.tas.gov.au/pages/HouseMain.html
            www.electoral.tas.gov.au/pages/LegislativeCouncilMain.html
Victoria: www.vec.vic.gov.au/Results/default.html
Western Australia: www.elections.wa.gov.au/elections/state/past-elections

Victorian Resources Online
an online database of natural resources information and associated maps
http://www.dpi.vic.gov.au/vro