Benalla Sustainable Future Group

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Benalla Sustainable
Future Group Inc.
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President's Message

As we approach the end of another calendar year, the evidence grows ever so much stronger that the Earth faces a climate crisis due to human induced activity, and yet, our political leaders still refuse to acknowledge that strong action must be taken to arrest the escalation of the problem.

This year, we have seen fires in the Arctic, the continued melting of the ice caps and glaciers, including the Earth's thickest glacier, sea levels continue to rise, record temperatures around the globe, catastrophic fires in California, and over the past few weeks at home in NSW and Queensland, with the real fire season yet to commence! For the first time, NSW was faced with a catastrophic weather forecast day on the 12th November - a combination of high temperatures, no humidity and high winds, with around 40 fires already burning out of control. Coincidentally, in the same week, the whole of Australia recorded its first ever rain free day!

I am not going to be restrained in what I write about the pathetic and disgraceful lack of leadership we have in this country.

For starters, Deputy Prime Minister McCormack, and his National Party cohort, Barnaby Joyce, should both be expelled from Parliament for their senseless and outrageous comments in the midst of the bushfire crisis in NSW. Prime Minister Morrison refused to be engaged on whether the early onset of the fires and their intensity could in some way be attributed to climate change. "Now is not the time to talk about climate change", he opined!

But Prime Minister, you never want to talk about climate change, unlike your counterpart across the Tasman! You don't want to upset your mates in the fossil fuel industries. You are more concerned with pretending to keep electricity prices down by a few dollars by propping up coal power, than by supporting renewable energy, which will make the planet safer and ultimately, the cost of living cheaper, because renewable energy will be cheaper, and our insurance premiums won't skyrocket, as they will under your disaster laden policies (that's something politicians haven't been talking about).

Why also, is the Labor Party even talking about emulating the Liberal Party's policies, on exporting coal (Albanese's reasoning that, "if we don't do it then another country will, and Australia will miss out", beggars belief), and on renewable energy and emissions reduction, when climate scientists universally are saying this is not within a bull's roar of being enough?

The time for political argy-bargy is over. All parties must come to their senses and show some statesmanship on this crisis. Isn't that what they called it during the World Wars when the world was in the grips of a different crisis?

In the coming weeks, BSFG will be seeking agreement from Benalla City councillors to pass a motion, declaring that we have a Climate Emergency, as over 75 local government areas around Australia have already done. This will mean that all management and planning decisions made by Council need to consider the impact on greenhouse emissions, with the aim of reducing and even eliminating them. I ask all members and supporters to be encouraging of this action. Please take whatever opportunity you may have to talk to Councillors and communicate the urgency of the situation.

Finally, I acknowledge that all of us have been contributing our own personal efforts over many years to reduce the levels of greenhouse emissions, and to live a more sustainable lifestyle, but we have now reached the point where micro efforts are no longer enough. Only the macro changes that can be enforced by government legislation and political common sense will now turn the tide.

Peter Holmes

"Earth provides enough to satisfy every man's need, but not every man's greed." - Mahatma Gandhi

Some Good News for Christmas

The following article was first published in the December 2019 edition of Swanpool Snippets:

The fantastic news this month is the visit by the Minister for Energy, Environment and Climate Change, Lily D'Ambrosio who chose to come up to the Strathbogie Forest on Thursday 7th November to make a major announcement about all Victoria's forests:

Protecting Victoria's Forests and Threatened Species

The Andrews Labor Government has announced the largest environmental protection policy in the state's history, with immediate protections for the iconic Greater Glider species, native fauna and Victoria's remaining old-growth forest.

This historic decision, which includes a gradual phaseout of all logging in native forests by 2030, will reduce the amount of carbon in the atmosphere by 1.71 million tonnes of carbon-dioxide-equivalent each year for 25 years - the equivalent of taking 730,000 cars off the road annually.

Under the plan, 90,000 hectares of Victoria's remaining rare and precious old growth forest - aged up to 600 years old - will be protected immediately.

The announcement also includes the release of the Greater Glider Action Statement, an important roadmap to protect this iconic species, which was first listed as threatened in 2017.

To protect the future of the Greater Glider – alongside the Leadbeater's Possum and more than 35 other threatened species – the Action Statement maps out more than 96,000 hectares of forest across Victoria immediately exempt from logging.

This habitat has been identified by experts as being critical to the survival of the Greater Glider and a range of other precious flora and fauna – many of which are not found anywhere else on earth.

These additional protections will provide over 186,000 hectares of area now protected from logging – equivalent to more than 100,000 MCGs and the biggest addition to our reserve system over 20 years.

By 2030, Victoria will be home to an area of native forest protected from logging that is larger than the entire land mass of Tasmania. By acting now, we're ensuring our precious old growth forest and the habitat of our rarest native species exists for future generations.

As Lily told our friends, gathered in the forest that Thursday, "We're taking this step to protect our precious natural gifts for generations to come, while striking the right balance between the environment and jobs."

What does it mean for the Strathbogie Forest?

Our forest is a part of the 90,000 hectares included in the announcement which will come under immediate protection.

The fine detail is yet to be announced but all 24,000 hectares of the forest is to be included in some form of conservation reserve. We had a hint about this last May when all the logging coupes, except the two recently logged, were removed from the timber release plan. Obviously a lot of consultation has been ongoing over the past year with the main players in the hardwood timber industry since that time.

For any readers thinking this is a retrograde step or who are concerned about the future of timber related jobs, I ask you to please go to the website

strathbogiesustainableforests.wordpress.com

where many facts about the timber industry are available. The transition to a plantation based industry is well underway.

Most of our Swanpool Landcare members have been active members of the Save Our Strathbogie Forest (SOSF) campaign. This group has been active for years and is now celebrating this result with a range of community activities. Our thanks and congratulations to all supporters.

Bertram Lobert, spokesperson for SOSF, said "By taking this step the Andrews Government is showing far-sighted leadership with regards to Victoria's natural environment and climate-change action – recognizing the over-arching value of these forests for biodiversity, carbon sequestration, water yields, recreation and ecotourism, over and above their short-term value for low-grade timber products. This is a great day for our forest, and for many other significant areas of native forest to be protected forever as a part of this package announced by the Government last week. What we now need to ensure is that these commitments are followed through, and that the Government keeps working to protect other, irreplaceable native forests in Victoria."

Bertram played a huge part in the campaign and I remember well a night spent with him scientifically logging greater glider sightings. A meeting was held with the Minister in Melbourne, documents prepared and last year we met with Lily D'Ambrosio and Jaclyn Symes in the forest. That coincided with logging taking place at the Barjarg Flat coupe. They witnessed a truck departing the coupe laden with logs heading to Geelong Port for export as woodchips. Since that visit State elections have been held and Jaclyn Symes became Minister for Agriculture, with responsibility for the state-owned VicForests. Jaclyn completed her VCE in 1996 at Benalla College and was elected MLC for Northern Victoria in 2014. She played a substantial role in the negotiations and also deserves our thanks.

I encourage all readers to go up into the forest and enjoy its beauty. New walks are being planned and you can join in many of the citizen-science activities and information days.

Ian Herbert
on behalf of Swanpool Landcare

The Difference Between Large Numbers

This article is about the effects of Climate Change but let's start off with a problem that is often too familiar.

About 25% of Australia's 25 million people are employed full time and their average wage is about $80,000 per year. That sounds a big number! But that's income and out of that you need to take expenses – tax, food, a mortgage, services, kids' education etc. Even after a few nights out and holidays you may be able to save a little. Lucky you! Income minus expenses and you came out positive!

But for some people it doesn't work out that way. Each month they go a little more into debt and that can be a vicious downwards spiral. The small difference between two large numbers (income and expense in this case) can have a profound effect on your well-being.

Let's talk about temperature rather than dollars. First though, I need you to understand that zero on the Centigrade scale is not really zero. You can go much lower than that. Zero Centigrade is just the quite warm temperature at which ice melts – pure H_2O that is. Sea water with dissolved salt in it melts at about minus 18 °C (0 degrees on the Fahrenheit scale). Here are some even colder temperatures:

Dry ice (frozen CO_2) sublimates (turns to gas) at minus 78 °C
Nitrogen gas turns to liquid at minus 196 °C
Helium gas turns to liquid at minus 269 °C

Everything stops at minus 273.4 °C. Scientists prefer to use the Kelvin scale where zero is truly absolute zero i.e. as low as you can go. The graduations are the same so helium boils at just 4 °K, pure ice melts at 273.4 °K and 300 °K is a warm 26.6 °C day.

If the earth had no atmosphere the sun's rays would still keep it warm (in Kelvin terms). It would average out at about 254 °K which is well above absolute zero. It's a balance between two large numbers. On average about 1361 watts hit every square metre of sun exposed surface. The earth itself radiates this heat back into space.

Adding an atmosphere made up of 80% nitrogen and 20% oxygen makes little difference as heat entering from the sun and heat leaving the earth is not absorbed by nitrogen or oxygen molecules. These molecules are transparent at the incoming (short) and outgoing (long) wavelengths.

Now let's add a very small amount of CO_2 - just 280 parts per million (ppm). Suddenly you have created an imbalance between two large numbers. The CO_2, a more complex molecule made up of three atoms, absorbs some of the outgoing long wavelength radiation then emits it again in all directions. Some of it goes back in the earth's direction.

So, in dollar terms we've added some extra income - bank interest you could call it.

The result is that the earth slowly heats up from 253 ° K. Some of the earth's water melts and water vapour enters the atmosphere. H_2O is another complex molecule and it acts the same as CO_2 (but at slightly different wavelengths). More outgoing radiation is absorbed, we've upped the interest rate and the earth continues to heat up.

The human equivalent is that you've got a pay rise so now you spend more. A new balance is achieved and for the earth that balance is an average temperature of about 293 °K. That's a comfortable 20 °C but averages don't really apply. It's much hotter at the tropics and still very chilly at the poles.

Now we're going to carry out a scientific experiment. We suddenly add an extra 280 parts per million of CO_2 i.e. double the original amount. How much more will the earth warm up? The incoming solar radiation hasn't changed. It really is quite hard to calculate an answer because there are lots of variables involved. It helps too to have a super-computer at your disposal. The general answer arrived at is an extra four degrees. Thank goodness it is not linear. The first 280 ppm caused a 39 degrees increase!

280 ppm of CO_2 was the level before we started burning fossil fuels in earnest. We've now raised that to 410 ppm and, at current rates, will have doubled CO_2 by 2075.

A better way to think about adding extra CO_2 is to work out the difference between the big numbers. We still have the same amount of incoming radiation (1361 watts per square metre) but we're sending less back into space. The result is a deficit of 2 watts per square metre. The climate scientists call this the 'net forcing'. It doesn't sound much but the earth has a big area and in total we're accumulating the energy of four Hiroshima bombs every four seconds, day in, day out and increasing every day as we add more CO_2.

Most of that heat goes into the oceans. Let's think about what a degree or two of extra temperature can do. First off there is a lot of the ocean surrounding the poles that freezes every winter. Just a little higher temperature means a much larger area that doesn't freeze. That winter ice was reflecting the sun's rays back into space but now more heat is absorbed into the ocean waters. That's called positive feedback and it just exacerbates the problem. Less ice is formed each year.

Down in the tropical waters a degree or two makes all the difference in other ways.

Cyclones can form when the water temperature rises above about 27 °C. Increase the average temperature of the oceans by just a degree and you vastly increase the area where cyclones can form. Increase the temperature more than that and the potential size of the cyclone increases. The stored heat is released as kinetic energy in the form of damaging winds.

Coral growth is affected by a relatively small change in ocean temperatures. The shallow continental shelves heat faster than the deeper oceans.

A small amount of extra heat around the planet can cause immense damage, particularly as 'tipping points' are reached. In day to day living terms it's that point in time when the bank says you can't borrow any more money; you've gone over your limit.

There are many other environmental tipping points that we could talk about and all have bad consequences. Frozen tundra melts and releases methane, an even more virulent greenhouse gas. Glaciers melt depriving communities and countries of permanent stream flows. Ice on land melts raising sea levels. The living zones for many animal species contract away from the equator or up mountains – if migration is indeed possible. Humans turn on their air-conditioners to

combat the heat and burn even more fossil fuels.

In conclusion, small differences in numbers can make a big difference to your livelihood – and that of the planet. The only way to act is to cut the spending and, in the case of our planet, that means seriously cutting fossil fuel usage right now. We need to cut up the credit card and start paying back the debt.

It's our own grandchildren who will be writing the history books, casting blame on our inaction and reporting on the tipping points which we have probably failed to avoid.

Ian Herbert

P.S. I wrote this article a year ago. Now, as we go to press, we are witnessing another 'positive feedback'. Droughts and higher temperatures create a more fire-prone environment. The resultant huge fires put even more CO_2 into the atmosphere. IH

Letter published in The Age

Congratulations to Peter for having the following letter published in 'The Age' on 19/12/2019:

Burning Questions

The current bushfire crisis in Australia has directly cost six lives (and an unknown number through smoke related health issues), scorched millions of hectares of forest and farmland, and destroyed over 700 dwellings in NSW alone. All this in addition to loss of productivity of land, loss of wages for volunteer emergency service personnel, and the severe emotional trauma suffered by the victims of this disaster.

The government doesn't want to talk about whether climate change has anything to do with all of this. For them, religious freedom bills, repeal of Medevac, incarceration of refugees, fiddling the budget to obtain a surplus (at what cost to the hard up sector of our society?), are all more important issues than addressing climate change and promoting the development of renewable energy.

And then I read in The Age (17/12) there has been a blowout in the cost of 26 of Australia's biggest Defence projects by $24.4 billion!

What more can I say?

Peter Holmes, Lima East

Limits to Growth

There appears to be something unusual happening in the economy as we reach extraordinary low interest rates and fail to increase economic growth. How much lower can we go?

I also wonder if in fact increasing interest rates would stimulate growth as savers would have more disposable income. I know this won't be good for people with mortgages who generally have been able to borrow much larger amounts, pushing property costs higher than they would if interest rates were higher. And negative geared investors must also push property costs higher to get sufficient interest deduction's to offset their tax liabilities.

For some time I have wondered if people might, like me, be avoiding expenditure on items that might affect the environment. Such as on unnecessary goods, reduced travel and looking for more locally produced goods and trying to make do with existing things or repairing. So is there an element of environmental altruism behind a sluggish economy which is not responding to traditional growth stimulus measures?

Do we sense there are limits to growth? I wonder if there are limits to growth and if we are starting to approach these limits. If you would like to read Limits to Growth the book is available to read in a number of formats on the Donella Meadows website: http://donellameadows.org/the-limits-to-growth-now-available-to-read-online/.

> "Anyone who believes in indefinite growth in anything physical, on a physically finite planet, is either mad or an economist."
>
> Kenneth E. Boulding

Kenneth Boulding was an English-born American economist, educator, peace activist, and interdisciplinary philosopher.

Recently on the ABC Ockham's Razor program, 'Life after Earth ... for capitalists', Astrophysicist Natasha Hurley-Walker proposes a hypothetical solution to our insatiable desire for energy to drive economic growth. We could live in a series of Dyson spheres. It's pure science-fiction - but so is the notion of unlimited economic growth that's driving our energy appetite: https://www.abc.net.au/radionational/programs/ockhamsrazor/life-after-earth-with-capitalism-natasha-hurley-walker/11628632.

The program shows the absolute absurdity of using energy to drive economic growth.

This video interview with Naomi Klein about her book On Fire, A Green New Deal to Save the Planet, https://www.youtube.com/watch?v=9PXkkYOgUko also talks about how our need for more growth is causing us to run up against environmental limits.

Peter Maddock

Editor's Note:

There has been a significant downturn in new car sales which the industry puts down to tight lending practices and a faltering economy. They seem reluctant to admit that people like me are making do with our existing vehicles and, when we purchase again, our choice will be an electric vehicle. As well as low emissions they have the added bonus of less servicing. Read more at The Driven.

Carbon Footprint

I have been encouraged by an increased discussion of climate change in the media following the unfortunate incidence of drought and now fire in large parts of Australia.

It is however unfortunate that there is a tendency of politicians and commentators to mention that Australia is only a small contributor to global greenhouse gas emissions and climate change. They ignore the fact that Australians have one of the highest per capita emissions in the world.

Its time all reporting of emissions refers to per capita emissions. I'm sure when people hear that Australia is a small emitter they feel they don't need to do anything about reducing there carbon footprint. However our very high per capita emissions means that for ethical and equity reasons we need to pursue ways to promptly and dramatically reduce our greenhouse gas emissions to ensure we meet the Paris Agreement.

Will Renewable Energy Solve the Climate Problem?

I recently came across a very interesting article in The Conversation called:
'A globalised solar-powered future is wholly unrealistic – and our economy is the reason why'.

The author Professor Alf Hornborg of Lund University proposes that because global transport demands such high energy use, its emissions are not going to be replaced with renewable resources in the time required by the Paris Agreement. His solution to this is to encourage a dramatic localisation of our economies even suggesting that we use a Complimentary Currency which could only be used to purchase locally produced goods. This is his proposal for a Complimentary Currency.

The Professor has a number of interesting contribution's and thoughtful ideas to address climate change in The Conversation including one tiled "Game of Thrones was about the horror of fossil fuels all along". His articles can be found at:
https://theconversation.com/profiles/alf-hornborg-349026/articles.

2040 and Mini Grids

In the September 2019 Newsletter I had an article '2040, Mini-Grids and RedGrid'. This article came from seeing the film 2040 after it screened at the 2019 Swanpool Environmental Film Festival.

With support from DELWP and Benalla Rural City BSFG hosted another successful screening of 2040 at BPACC Cinema on Wednesday December 11 with over 150 attending. In the Q&A after 2040 there were a number of questions about mini grids which arose after 2040 producer Damon Gameau took us to Bangladesh to see mini grid technology enabling people to buy and sell power using a local grid to connect solar panels and batteries to provide power to the community.

Mini Grid technology based on renewable solar power systems seems to offer communities an opportunity to localise electricity generation, much like the Food Co-op and the Benalla Local Food Network are trying to reduce food miles and encourage local food production. The development of mini grids may also reduce the expense required to update the poles and wires of our existing network and also reduce the transmission losses incurred in distributing power across the larger network.

In my Book Reading article in this newsletter I mention the book by Hayden Washington and quoted his suggestion about What Can I Do? Two of his suggestions were:

- Champion appropriate technologies such as renewable energy, energy efficiency and energy conservation.
- If you are in a position to put renewable energy on your dwelling, then install this. Aim also for a low energy, carbon neutral home. Improve your homes energy efficiency (get an energy audit to assist you).

So perhaps I need to consider going from purchasing 100% Green Power to installing rooftop solar!

Some Links sent in by Members

Five Climate Change Myths You Need to Stop Believing

This link from Life Hacker on Sep 17, 2019, presents information on the following myths about climate change:

Climate change is just part of the natural cycle
Changes are due to sunspots/galactic cosmic rays
CO_2 is a small part of the atmosphere - it can't have a large heating affect
Scientists manipulate all data sets to show a warming trend
Climate models are unreliable and too sensitive to carbon dioxide

I'm a Critical Thinking Expert. This is How You Win Any Climate Change Debate Like Greta Thunberg

As bushfires rage and our cities lie shrouded in smoke, climate change is shaping as a likely topic of conversation at the family dinner table this Christmas. https://www.abc.net.au/news/2019-12-11/how-to-win-a-climate-change-debate/11787486.

Australia's Lungs Have Collapsed and Generation X Needs to Take Part of the Blame

https://www.theguardian.com/commentisfree/2019/dec/11/australias-lungs-have-collapsed-and-generation-x-needs-to-take-part-of-the-blame?CMP=Share_AndroidApp_Gmail

Wed 11 Dec 2019

All the Energy Storage the Grid Needs will Soon be Under Our Noses

https://www.forbes.com/sites/jeffmcmahon/2019/11/12/all-the-grid-batteries-we-need-and-more-will-soon-be-under-our-noses/

Forbes Nov 12, 2019

Mountain Gravity Energy Storage - Environmental Long-term Energy Storage

Mhttps://scitechdaily.com/mountain-gravity-energy-storage-environmental-long-term-energy-storage/

SciTechDaily November 11, 2019

Peter Maddock

My Book Reading 2019

I seem to be constantly reading books about environmental issues. This year I have read a number of books each of which has influenced my thoughts on environmental sustainability.

In the September 2019 newsletter I mentioned reading ***Low Carbon and Loving It*** by Mark and Tom Delaney who have pursued a low carbon lifestyle in India: https://lowcarbonandlovingit.wordpress.com/.

Mark and Tom have put together a book which describes the science of climate change, how emissions of greenhouse gases from the combustion of fossil fuels are increasing global temperatures which if not mitigated will lead to severe consequences for all of us. Free book download here.

On Fire, the Burning Case for a Green New Deal by Naomi Klein. "The Climate Crisis has moved from a future threat to a burning emergency. So why are we failing to act as if our house is on fire? What can we do to put it out? https://naomiklein.org/on-fire/.

The Case for the Green New Deal by Ann Pettifor; On Fire by Naomi Klein: Guardian Review.

This interview with Naomi, https://www.youtube.com/watch?v=9PXkkYOgUko also talks about how our need for more growth is causing us to run up against environmental limits. This book is a collection of essays by Naomi on the climate crisis over the last ten years.

What Can I Do to Help Heal the Environmental Crisis? by Haden Washington
https://www.crcpress.com/What-Can-I-Do-to-Help-Heal-the-Environmental-Crisis/Washington/p/book/9780367342531

There are many ideas and insights in this book. I am reading chapter 6 at the moment which is Appropriate Technology, Tempered by Humility. Under What Can I Do? Hayden suggests we "speak out against the glibness of techno-centrism, techno-optimism, which deny ecological limits and promise a rosy technological future without addressing the key drivers of unsustainability (overpopulation, overconsumption, and the endless growth economy)".

This latter book refers to ***Human Overpopulation Atlas***: https://www.overpopulationatlas.com/

"Of all the interconnected problems we face, perhaps the most serious is the proliferation of our own species." - Sir Crispin Tickell. This book, which is free to download is the book I will read next as it seems to me until we curb population growth we have no chance of developing an ecocentric environmentally sustainable world, which also allows for the needs of other species on the planet. Free download here.

Peter Maddock

Next Meeting

The next General Meeting of Benalla Sustainable Future Group will be held at the Benalla Uniting Church on

Thursday the 26th of March from 7.30 pm

Peter Maddock, Secretary

Moves to Raise Standards of Existing Homes

I recently noticed some articles on the RENEW website about the efficiency standards of existing homes, https://renew.org.au/news/category/advocacy/.

On 14 Nov 2019 Renew, consumer coalition calls on COAG for more efficient existing homes: https://renew.org.au/advocacy/letter-to-coag-calls-for-more-efficient-existing-homes/.

25 Nov 2019 COAG approves recommendations to raise standards for existing homes: https://renew.org.au/advocacy/coag-passes-housing-recommendations-to-raise-standards-for-existing-homes/.

COAG has integrated many of the Renew and consumer coalition suggestions into their updated Trajectory for Low Energy Existing Buildings.

This may include a home energy rating framework for existing homes, which leverages the Nationwide House Energy Rating Scheme (NatHERS) framework and accommodates rating tools. This can simplify complex energy efficiency information for households and provide useful information on opportunities for improvement.

I have improved the roof insulation in my own home this year and have noticed an improvement in comfort levels as we head into summer. I don't have air conditioning but will look at further passive improvements I can make to my home.

Peter Maddock

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