

Submission to the East Gippsland Catchment Management Authority Climate Change Mitigation and Adaption Plan (4.5.15)

By Peter Gardner

Introduction

A word of thanks for your study and in particular your choice of the words “climate change” in the title rather than weasel words like “climate variability” still so prevalent in state instrumentalities. Perhaps the most important thing to note about climate change in East Gippsland is that farmers have the most to gain and the most to lose. It is therefore important that a continuous effort be made for to both mitigate the effects of climate change and adapt where possible to the changes.

Climate Calculations

The calculations so far by the Intergovernmental Panel on Climate Change (IPCC) have over the years been a series of underestimates. In many ways this is a very conservative document representing 140 countries. Even on the last IPCC report calculations made in 2011 are proving to be too low with current measurements of the main indicators already tracking at worst case levels. The planet has been slowly but unevenly warming for the last 100 years – in other words it has been warming all through our lifetimes. The conclusion to be drawn from this is that action on as many fronts as possible is needed now.

Some Suggested Aims

1. That the best science at the time is the guide to be acted upon. This may involve changes in emphasis and even radical changes to plans.
2. That worst-case scenarios be carefully considered. This will almost certainly affect the ordering of priorities.
3. That mitigation activities be emphasised

Adaption

As I have stressed above a large amount of adaption will required. It should be noted that adaption is almost impossible if the worst case scenarios eventuate. Care should be taken in this case not to “bright side” the changes (that is cherry picking possible advantages in the changes) as they almost certainly be overwhelmed by worst case outcomes.

Mitigation

1. The proposed strategy for mitigation has concentrated on geo-sequestration by revegetation of certain areas. It has not considered that the organisation itself should aim for carbon neutrality as quickly as possible and have a long term aim of carbon negativity. The following may assist in this process
 - a. For the EGMCA to develop a carbon budget
 - b. That 'low hanging fruit' opportunities in energy conservation and efficiency be identified and readily adopted.
 - c. That renewable energy(mainly solar) be adopted where possible
 - d. The EGCMA might consider locally pioneering a pilot pyrolysis generator using waste from projects like willow removal. (This process is currently a lose/lose situation with vegetation that sequesters carbon being removed and then burned releasing the carbon that the trees had stored) A suitable partner in such a project would be the East Gippsland Shire. An eventual advantage would be the provision of liquid fuel for vehicles and machinery with the bi-product of 'agrichar' (also called 'biochar')

2. Because of uncertainties – especially worst case scenarios – it is essential that the EGCMA co-operates and co-ordinates their plans and activities with other local organisations including the East Gippsland Shire, Landcare, Greening Australia and others. Some projects like the pyrolysis bio-generators above could be done jointly with two or more partners. An overseeing and co-ordinating role is possible for a "climate committee" of some sort.

GIPPSLAND REGIONAL COASTAL PLAN 2015-2020 SUBMISSION 9.3.15

By Peter Gardner

If you don't have a plan for climate change, you don't have a plan for the future. John Connor

The greatest threat to the coast and the lakes system is climate change (ie global warming) and associated factors. These threats are sea-level rise caused by warming and storm surges, increased wave heights, more intense rainfall events, coastal erosion and other natural occurrences directly or indirectly affected by the warming. These threats should be combined with the possibility of land subsidence caused by the depletion of aquifers by offshore and onshore mineral extraction and indirectly affected by prolonged droughts and other unknown factors. I have written about most of this in a paper called the *Gippsland Coast 2100* where I examine possible, but plausible, worst case scenarios as the result of a warming climate. Most of the sources I use for these comments can be found in the notes to this paper. This can be viewed here <http://petergardner.info/publications/gippsland-coast-2100-4th-ed-pdf/>

Generally your Draft downplays the above threats. The section on climate change is small – less than 5% of a Draft which considers this an 'overriding problem'.

p.10

Under the page 'The Dynamics of the Coast' it should be emphasized that the effects of a warming climate will be additional to the normal natural processes. In many, or most, instances that makes them much worse. The threats are better understood if the changes wrought by warming are added to those of the natural processes. Expensive coastal works such as in the illustration at San Remo should not be pursued as in the long term they will be a waste of money.

Recommended Actions

1. The heading of the section 3.2 "A Changing Climate" be changed to "A Warming Climate" or at worst "Climate Change". The heading used implies that the changes are natural and not man-made and that there is nothing we can do about them.
2. Expensive coastal works should be abandoned except in rare circumstances. Fixtures and works within the 2m above high tide level should be low cost, temporary or relocatable.
3. Planning should concentrate on a long term retreat from the coast
4. Change the wording of the first sentence of 3.2 to "Climate change will increase..."

p.11

Subsidence gets a single mention in this report in the title of the 2008 GCB Report otherwise is not dealt with. The threat of subsidence and the lack of information on, or appreciation of, this possible problem is appalling. An examination of the Southern Rural Water measurements of the top level of four Giffard bores indicates that two of the bores showed no discernible level loss over the last 10 years and we must assume have been replenished naturally and two show a slight downward trend. Surely there must be more information available than this? Also many questions remain unanswered. Which aquifer or aquifers are affected by the offshore rigs drawing their oil and gas? Are they being monitored? If so are these records available to the public? Are any of the offshore rigs reinjecting water removed during the oil and gas extraction process? What is the experience of areas that have experienced substantial subsidence? Whilst I realise the region is being monitored by satellite for any significant subsidence the fact remains that this is of no use to us once it has occurred. This draft is merely a continuation of the Victorian Coastal Hazards paper where the threat is mentioned but there is no action.

Recommendations

1. This page of the draft be re-edited to publicise the latest information on subsidence, especially in relation to information of the depletion or otherwise of aquifers in the Gippsland basin.
2. Increase the monitoring of aquifers, quantify the levels of water removed from them by industrial, agricultural and extractive operations and make this information readily available to the public.

3. Plan for worst case scenarios of subsidence and sea level rise at specific places on the Ninety Mile as indicated by the 2007 CSIRO report

p.12

Some of the emerging markets identified on this page are part of the problem. The region's 'oil, coal and gas' has to be phased out as quickly as possible. Of the emerging energy industries identified on this page Coal Seam Gas is also part of the problem. See <https://www.youtube.com/watch?v=o78j7717XUw&noredirect=1>

The conundrum is the more these industries are promoted, even business as usual, the more likely the coast will be completely destroyed. All the bodies participating in the management of the coast will eventually be forced to recognise this. The sooner this is recognised the better.

p.13

Maximising access should be done on a low cost basis only in line with long term planning for a retreat from the coast.

p.15

The Gippsland Lakes are "one of Victoria's most important environmental assets" and may be gone in as little as 100 years.

p.16

Both climate change and subsidence are missing from key challenges and actions.

p.17

Some of the Traditional Owner's cultural assets are under threat. Both climate change (and possibly subsidence) with currently slow but inexorably rising sea levels threatens many archaeological sites. The midden immediately east of the Red Bluff (near Lake Tyers) is one site already experiencing severe erosion.

Recommendation

Mapping and monitoring of the most threatened cultural sites and plan for possible excavation of those identified as the most important and or most endangered. (I am aware some work has been done on this)

p.21

Planning for coastal flooding and erosion should also consider the salinity and other environmental problems of the Gippsland Lakes. Salinity can only make the problem of erosion with sea level rise worse

Recommendations

1. In 6.3 first sentence substitute “warming” for “changing”.
2. In box first column 1st point substitute “warming climate” for “climate variations”.
3. More information be made available on salinity in the Lakes.
4. The monitoring of the salinity in the Lakes system.

p.23

The illustrations on this page are misleading and the schematic interpretation is incorrect. Presumably these diagrams are based on Bruun’s Law. This is a general rule that states the coast will retreat 50 to 100 times for each unit rise in sea level. Since this rule encompasses all types of shores it seems logical that that the retreat of vulnerable sandy shores will be at the top end of Bruun’s spectrum or possibly even greater. The second diagram in the right hand column of this page illustrates a coastal retreat of 2 units per 1 rise whereas in fact it may be 100 times or more.

Recommendation

That the page states Bruun’s Law clearly and indicates that the diagrams are schematic only and that the coastal retreat per unit rise can be quite extensive and severely damaging.

p.24/25

Adaption is not enough. If the whole Lakes and coastal system is threatened with destruction within one hundred to one hundred and fifty years why bother with any draft? Why bother with sometimes expensive coastal works which may be doomed in the medium to long term? The GCB must convince all levels of government that serious and substantial action is required to mitigate climate change. It may be a battle already lost but it is still one worth fighting.

Recommendations

1. That the GCB urge all participatory bodies to work urgently on various ways of mitigating climate change as well as adaption.
2. That the energy future work of the GCB be directed to and focused on this purpose.

Victorian Renewable Energy Plan Submission (22.9.15)

Some Points for a Just Transition from Coal to Renewables

This submission is very similar to one I recently did in July on the Victorian Climate Change Act. See below. The following letter published in Latrobe Valley Express this winter explains my position – what I believe should be done – on renewable energy in Victoria.

Dear Sir,

In the 2010 state election I stood as an Independent Candidate in the seat of Morwell as a “climate emergency” candidate with a platform of rapid transition from coal powered generation to renewable energy. This valid call is still ignored and to a great extent – aside from the Hazelwood open cut fire – little has changed.

But it is becoming obvious to everyone except our policy makers and powerful vested interests (and perhaps the drover’s dog) that the end of brown coal generation is approaching fast. This is primarily because of carbon emissions and climate change but there are also a host of other problems associated with brown coal power generation including air pollution, asbestos, mercury contamination in the Gippsland Lakes, subsidence and vulnerability to fire and flood.

The greens and some environment groups have recently renewed their calls for the closure of Hazelwood arguing that mine and power station rehabilitation will provide a boost for employment. The problem is that for any just transition, unlike the disaster of privatisation, the jobs must come first.

What is required now is some forward planning so the transition from coal to renewable energy is done as seamlessly and quickly (10 to 15 years) as possible. Employment in the Valley can be boosted by starting the transition to renewable energy now and by beginning an ongoing process of negotiating with all interested parties for an orderly and just transition. It goes without saying that any contracting should be sourced as locally as possible.

A good example for starting the transition would be an order from the state government to start replacing every hot water service in state owned buildings with heat pumps from the Earthworker Co-operative in Morwell, conditional on factors like boosted apprentice intake, and increasing local manufacturing.

Another example is geothermal. It has been calculated by the Melbourne Energy Institute at Melbourne University that current generator’s carbon emissions could be reduced by 20% by using geothermal energy just below the coal to assist in the heating process. Why haven’t the power generators done this? Tighter emissions controls may be an incentive for generators to adopt this process.

There are number of examples of opportunities like this. The transition from coal to renewable energy is inevitable and the question now is how to do this as rapidly and fairly as possible.

1. Aside from the usual solar and wind proposals the state should consider in the immediate and short term pumped hydro, heat pumps, pyrolysis generators for disposal of shire and farm waste and in the longer term geothermal beneath the coal.

2. Pumped hydro may be the win /win situation that governments and brown coal generators are searching for. This especially applies to Hazelwood where most of the infrastructure, the top pond and the pit are already in place. The generators may turn from coal to hydro (albeit smaller?) and save some or most of their bonds for mine site recovery. Substantial work has I believe been done on this by the Melbourne University Energy Institute.

3. A timetable for the closure of all the Brown coal generators should be announced at the same time as these measures and funding are announced to boost Employment in the valley. The transition from coal to renewables should preferably be done as quickly as possible hopefully under 10 years but with a maximum on 15. I have a general, broad but somewhat dated, timetable here <http://petergardner.info/publications/latrobe-valley-plan-2013/>

4. Earthworker Heat Pump adoption on a large scale – as per above and my previous submission below.

5. Need for a Co-ordinating Body for transition as per earlier submission below.

Submission on the Victorian Climate Change Act (19.7.15)

With various measurements of global warming not improving over the last decade we should be preparing for a worst-case scenario. Urgent or emergency action is required. A major part of this action will be changing completely from brown coal electricity production to renewable energy in a very short period of time – preferably 10 years or less. It should be noted that the privatisation policy in the Latrobe Valley was badly implemented and many residents there still have little trust in government policy. Thus this is an opportunity for the state to lead the community and the nation in the change to renewable energy and at the same time make a just and fair transition for all. Below are some brief suggestions on practical aspects of a 'just transition'.

Latrobe Valley Plan to change to renewable energy in 10 years

1. It is essential that a full employment in the Valley is restored before any plant closures. Employment programs could include tree planting, restoration of some parts of the open cuts, local heat pump manufacture (see 4)

2. Have a timetable for the closure of all plants over 10 years starting with closing Hazelwood 12 months after the program's commencement. The planned closure should be announced at the commencement.

3. Some energy sources should be looked at a) pumped hydro and b) geothermal under the coal as the best local options for renewables.* Either or both of these options may be relatively attractive to the current electricity providers as well as taking advantage of current infrastructure including the open-cuts.

4. For the government to place an immediate order for the installation of heat pumps in all state owned buildings purchased from the Earthworker co-operative in Morwell and beginning installation locally in the Valley. This purchase order should carry certain provisions including increasing the numbers of locally manufactured components and increasing local employment including apprentices. **

5. Some extra incentive could be applied for local solar rooftop installations or community renewable energy projects including windfarms.

6. Disincentives should be gradually imposed on the power generators. A number of these exist including a coal production levy, a pollution tax, a mercury pollution tax, a special fire levy.

7. The best option is probably to encourage the power generators to adopt renewable energy most likely in the form of pumped hydro at least for Hazelwood and Yallourn.

8. An organizing body (the old SEC?) is required to oversee the process with powers to override bureaucratic and other retarding/resisting influences so that the transition can be done as smoothly as possible. Local input should be emphasized to overcome problems, bottlenecks etc. quickly.

9. The scheme should be promoted and supported in education bodies and by the local media.

*See <http://www.energy.unimelb.edu.au/>

** See <http://earthworkercooperative.com.au/>

Submission to the Victorian Parliament Unconventional Gas Inquiry. (28.6.15)

My firm opposition to any mining of coal, shale or tight gas is based on two uncomfortable facts – that with Climate Change we should be preparing for worst case scenarios and working on a tight 'Carbon Budget' (the amount of carbon dioxide – and thus the amount of fossil fuel that can be burned – that can be added to the atmosphere without the average temperature rising above the debatable 'safe' upper limit of 2 degrees). This means that we should be limiting the burning of fossil fuels rather than expanding them and changing over to renewable energy as quickly as possible.

As well the suggestion that unconventional gas is environmentally friendly is a myth. At best it is another fossil fuel. At worst it may have more greenhouse gas emissions than coal. This is because a considerable amount of methane – a greenhouse gas many times more powerful than CO₂ – escapes to the atmosphere during the mining and transportation process. These escapes are known as 'fugitive emissions'. This has been elaborated on previously by Prof. Tony Ingrafea of Cornell University – one of the discoverers of the 'fracking' process. (Note that his sea level rise predictions in this video are 'worst case')

<https://www.youtube.com/watch?v=o78j7717XUw&noredirect=1>

A recent article in the Guardian looks at more recent studies and confirms Ingrafea's conclusions. See here at <http://www.theguardian.com/environment/2015/jun/24/natural-gas-leaks-methane-environment>

Consequently because of the dire threat of global warming the mining of this gas should not be allowed. Government should not be wasting time on this (we had a major survey last year – albeit quite biased in favour of the industry) and dealing with the overriding problem.