PART 2: 20 SUBMISSIONS

TO:
Director General
NSW Department of Planning
GPO Box 39
SYDNEY NSW 2001

SUBJECT:
Submission on South East Fibre Exports 5 MW Biomass-Fired Power Station – Eden (Ref: S08/01909)

FROM:
Gulaga (Mt. Dromedary) Protection Group
PO Box 2105
CENTRAL TILBA NSW 2546

REPRESENTATIVE:
Seán Burke
Phone: 0411 779 571 (02) 4473 7470 (a/h)
Email: sean.burke@wesleymission.org.au

SUMMARY:
This submission offers comment on the matters covered in the Environmental Assessment submitted in conjunction with the above proposal and recommends that the proposal be rejected on the following grounds:

1. the assessment is totally inadequate in that it fails to address many of the issues that the Director General stipulated as requirements under Sec 75F EP&A Act 1979,
2. the assessment fails to provide a complete and holistic analysis of the full environmental impacts of the implementation of the proposal,
3. the assessment fails to demonstrate adequate fuel supply,
4. the assessment fails to address the ecological and economic sustainability of the fuel supply including impact on threatened species,
5. the assessment fails to assess emissions accurately and fully, in particular carbon dioxide emissions,
6. the assessment fails to consider health impacts, especially for the residents of Eden
7. the assessment fails to assess fully the impact of water discharge into Twofold Bay
8. the assessment fails to consider impacts on Aboriginal cultural heritage
9. the assessment fails to consider alternative uses of the site as an energy supplier, and
10. the assessment fails to consider the project being an on-going drain on NSW Government budgets.

Submission on South East Fibre Exports 5 MW Biomass-Fired Power Station – Eden

1. ADEQUACY OF THE ASSESSMENT IN TERMS OF THE LEGAL REQUIREMENTS UNDER SEC 75F NSW *ENVIRONMENT PLANNING AND ASSESSMENT ACT 1979*

1.1 The Environment Assessment (EA) does not discuss native forest wood supplies but refers only to hardwood. In fact the most common reference to "native" in the assessment is in the term "alternative". This is contrary to the Director-General's requirement for 'identification of all fuel sources, including the relationship to native forest harvesting'.

1.2 Our greatest fear is that approval of this proposal would lead to an increased intensity of harvesting of our local natural native forests, contrary to what is claimed in the EA, given that the Director General requirement that the EA demonstrate, and provide a guarantee, that no native or plantation forests will be felled for the particular purpose of fuelling the proposed power station is not adequately addressed in the EA.

1.3 The Air Quality section of the EA fails to adequately address the full impact of the identified emissions generated from the proposal as required by the Director General, particularly the requirement that it must include an assessment of the effects of adverse meteorological conditions and dispersion monitoring.

1.4 The EA arrogantly ignores the serious ecological implications of producing around one million tonnes of woodchips a year, from logging 19,500 hectares annually (NSW and Victoria) of native forest needed to supply the fuel.

1.5 SEFE says that "no native or plantation forest would be felled for the purpose of fuelling the plant" (19-3), the critical words being "for the purpose of". However Forests NSW expects that some timbers which are not currently used for woodchipping because they are either too red or too hard, and are not of sawlog quality, will be used for power generation.

2. FAILURE TO PROVIDE A COMPLETE AND HOLISTIC ANALYSIS OF THE FULL ENVIRONMENTAL IMPACTS OF THE IMPLEMENTATION OF THE PROPOSAL

2.1 The SEFE case is summed up in the assessment introduction as:

> *"With the rising cost of energy and the rapid growth in the technology of biomass fuel systems, SEFE has identified an opportunity to become self sufficient in its energy needs, to be a net generator of electricity and to add value to a renewable biomass material that is currently burnt for no energy recovery or commercial return.*
>
> *" … SEFE would use wood waste generated from its operations together with a further 22,600t of wood waste available from local timber processing operations."*

2.2 We note that there has been a recent push in Europe and America for more biomass fuel systems, but they are based on different inputs from what SEFE proposes, most notably plantation wood, not native forest wood, and different climatic conditions. They cannot appropriately be used as justification for what SEFE proposes.

2.3 The native forests on which SEFE depends for its operations are not renewable in any reasonable time-frame, a matter raised by the Secretary of the Commonwealth Treasury, Ken Henry. It takes at least 180 years to regrow hollow–bearing trees that are essential

for survival of many forest species, and for them to approach their full carbon carrying capacity and for the water from catchments to recover to their pre-logging volumes.

2.4 SEFE has other options if it wishes to generate genuinely renewable electricity, viz solar, wind and wave power. The chipmill is located on one of the best sites in the State for wind energy. There is no discussion of the relative merits of these power sources on the site.

2.5 SEFE claims that its power plant would contribute to the identified need for additional baseload generation capacity and would have the least possible environmental impacts. Both statements can be refuted.

3 FAILURE TO DEMONSTRATE ADEQUATE FUEL SUPPLY

3.1 No information is provided about the expected life of the proposed biomass burner, and the expected pay-back period. However it is likely that the economics of the proposal mean that to approve this proposal is to approve extension of woodchipping native forests well beyond the life of the RFAs.

3.2 However, there has apparently been no NSW Government decision to do so, and no evidence tendered of timber availability adequate to support the woodchipping operations at the SEFE chipmill for the next ten years and beyond. Without those woodchipping operations maintained at least at the current rate there will be inadequate fuel for the proposed biomass burner. Unless SEFE has an unstated intention to burn the native forest hardwood chips directly (currently to do so would be illegal), the mill will be unviable, for there is not much plantation hardwood in the region, and over 70% of current "wastes" come from chipping native forest logs. This figure depends on the throughput of the mill at any given time. Currently it would be much higher. Private forest owners are constrained by regulations restricting land clearing.

3.3 Forests NSW's own statistics point to increasing difficulties in supplying contracted minimum volumes for the chipmill. Yields per hectare in the three areas that supply the mill (Eden, South Coast/Southern and Tumut) declined substantially during the last decade (overall by around 30%), and in consequence areas logged to supply those volumes increased by over 70%. In addition Forests NSW acknowledges there is serious, wide-spread dieback in the forests, exacerbated by the long drought in the 1990s, and arguably by industrialised, alternative coupe logging that has encouraged bell-miner incursions.

4. FAILURE TO ADDRESS THE ECOLOGICAL AND ECONOMIC SUSTAINABILITY OF THE FUEL SUPPLY INCLUDING IMPACT ON THREATENED SPECIES

4.1 If pre-GFC crisis logging rates continue in the period ahead, the logging rotations in the South East Forests of NSW will be under 20 years. This would mean that half of all the currently available forest would be logged over the remaining ten years of the RFA agreements, largely clear-felled. If the life of the burner is 20 years, all the available forest will be logged. This is totally unsustainable. The logging already makes a mockery of ecologically sustainable forest management principles.

4.2 Forests NSW is legally required to meet the ecologically sustainable forestry management requirements of Commonwealth and State legislation. Logging rates over the last decade suggest that it is currently not doing so, and is unlikely to be able to do so in continuing to supply pulp-logs for the chipmill.

4.3 Forty years of woodchipping has done dreadful damage to the integrity of the South East Forests. Forests NSW has told community groups that there will be no sawlog quality trees left within two to three years, only young regrowth. The structure of the forests has been changed. Wet forest species have been replaced by drier forest species. We now have more fire-prone tree and understorey species, with large areas of regrowth, drier and depleted soils, and loss of water quality and quantity.

4.4 No evidence is provided to show the capacity of the soils to support such heavy logging, especially given post-logging run off into the waterways after heavy rain events. Nor is there evidence that water for human and agricultural consumption will be adequate after the water-hungry regrowth areas deplete supplies from the catchments. Nor is there any consideration of the predicted population increase in the region which will put heavier demands on decreasing water supplies and agricultural production.

4.5 To put this logging record into an international perspective, the Swedish coniferous forest plantations (not their native forest areas) that support biomass energy generation in that country have rotation periods of 80 years in the south of Sweden, and up to 130 years in the north. And they have the benefit of far better soils than Australia's, and heavier, more reliable rainfall. They are forests largely devoid of wildlife, as the South East Forests will be if the proposal goes ahead.

4.6 Threatened species

4.6.1 Ecologically sustainable forest management requires survival of ecosystems and species, not least threatened species. It is now clear that the National Park system is not sufficient to ensure their survival.

4.6.2 Most logging compartments are home to some threatened species, some as many as 12 or more.

4.6.3 When logging is carried out, certain prescriptions are followed which are meant to protect them. However, the efficacy of these provisions has never been tested. No follow up research is ever done to determine whether they work or not.

4.6.4 We do, however, know that there are more threatened species now than there were 10 years ago, when Regional Forest Agreements (RFA) were signed.

4.6.5 It is inevitable that this number will increase since so many forest dwelling creatures, more than 80 in the south east forests, depend on hollows for shelter and survival.

4.6.6 The lack of hollow bearing trees has been declared a "key threatening process" in NSW in recognition of the importance of hollows. In most eucalypts, hollows take at least 150 years to form, so with logging rotations as low as 30 years, possibly below 20 years, after the second round of logging there will be no tree hollows at all and no prospect of survival for hollow dependent creatures.

4.6.7 The lack of evidence on effectiveness of threatened species prescriptions has been reinforced by the recent review of the Environment Protection and Biodiversity Conservation Act, Australia's principal environment protection legislation, from which areas covered by an RFA are exempt.

4.6.8 That review expressed doubts about whether the continued exemption from the EPBC Act was justified, especially in the light of the failure of Forests NSW to produce any 5 yearly reviews after more than 10 years.

4.6.9 Any fuel source which depends on the continued intensive logging for woodchips of native forests will inevitably kill more threatened species and reduce the numbers in species which are currently relatively common. It cannot therefore be considered "sustainable."

4.7 The chipmill may seek to distance itself from the logging operations on which it depends for its inputs, but the NSW Government cannot give guarantees of supplies that are provided through ecologically unsustainable forestry practices under its control and contrary to its own legal requirements.

4.8 While the planning processes for this proposal relate only to NSW forest inputs, there may well be parallel uncertainties about the sustainability and supply of logs from Victoria.

5 FAILURE TO ASSESS EMISSIONS ACCURATELY AND FULLY, IN PARTICULAR CARBON DIOXIDE EMISSIONS

5.1 The EA does not look at the full life cycle of the fuel (i.e. it ignores the greenhouse impacts of native forest logging. It simply asserts this is "sustainable because it has Australian Forestry Standard (AFS) certification). It fails to examine the consequences of the one million tonnes of woodchipping each year, without which there would be no fuel for the proposed furnace.

5.2 It claims "improved environmental outcomes due to lower greenhouse gas emissions per unit of output compared to conventional coal-fired power generation technologies. The proposed plant would potentially avoid the emission of 23,800 t Of C02-e from fossil-fuel based power generation per year."

5.3 Logging of native forests to supply the Eden chipmill has been conservatively estimated at over 18 million tonnes per year with one estimate as high as 61 million and another as low as 9 million tonnes. Logging emissions must be counted in assessing the GHG implications of burning native forest wood for electricity. It is not valid to start counting at the furnace door; the whole life cycle of the fuel must be taken into account in measuring greenhouse impacts.

5.4 When power generated from native forest is compared with coal fired power, if the full life cycle of the fuel is assessed, wood fired power is as much as 6.4 times more greenhouse intensive than coal fired power[1].

5.5 Because of pricing distortions for the native forest logs, it will compete with and potentially displace genuine renewables permitted under the Mandatory Renewable Energy Target MRET scheme. It will not be competing with coal.

5.6 Biomass materials

5.6.1 The global trend is for paper makers increasingly to demand plantation chips and recycled paper as inputs to their processes. Where they are willing to use native forest chips they are increasingly insisting on Forest Stewardship Council certification rather than the lower Australian Forestry Standard certification that SEFE relies on. Japanese paper manufacturers are increasingly reluctant to accept AFS as an adequate label of sustainability and the biggest paper manufacturing company in Japan, Oji, does not accept it.

5.6.2 It is not clear how long Nippon Paper, the major shareholder of SEFE, will be able to hold out against this trend in the face of its own consumers' resistance to its products.

5.6.3 Nippon Paper has a deal of flexibility to move out of native forest chips. It has investments in plantations in Australia and overseas and in pulp production, and it has its own shipping line. It is far less dependent on SEFE supplies than SEFE is on Nippon Paper.

5.6.4 Australia has a large and growing surplus of plantation wood that is preferred for technical reasons for chips for paper making. It is underpricing of native forest logs by the State forestry agencies of NSW and Victoria that is propping up native forest based operations like SEFE. The real price of NSW pulp-logs to SEFE is half what it was a decade ago. The NSW Auditor-General has confirmed that Forests NSW's losses on sales of native forest wood is around $14.4 million a year and rising. If the Ken Henry review of taxation tackles these pricing distortions and leads to the Governments of NSW and Victoria introducing genuinely market based pricing of native forest wood the future of SEFE will be uncertain indeed.

5.6.5 All these factors make it a dubious proposition to rely on SEFE for secure baseload power into the regional grid over the life of the proposed power plant.

5.6.6 NSW Regulations currently do not allow the use of native forest logging waste for power generation. The Commonwealth's Renewable Energy Target Regulations allow only limited use under arguably ambiguous conditions, but it is doubtful that it would be legal to use woodchips directly for power generation. The National Association of Forest Industries is arguing for wider use of native forest based power generation. Several other proposals for native forest based electricity generation are in the public arena or being developed. The SEFE proposal is seen as a test case.

5.6.7 While SEFE is currently proposing only to use the 'wastes' from its woodchipping operations, and denies any intention to use woodchips rather than woodchip waste as the fuel for its proposed plant, there is no doubt that the capacity to earn Renewable Energy Credits from biomass burning creates a powerful financial incentive to maximise the use of native forest inputs by seeking to broaden the scope of the Regulations. We note that changes to the Regulations do not require Parliamentary approval.

5.6.8 We strongly oppose the current Regulations allowing use of native forest inputs for significant electricity generation, and are totally opposed to expanding the current Regulations.

6. FAILURE TO CONSIDER HEALTH IMPACTS

6.1 While acknowledging that deadly dioxins, furans and HAPs will be emitted, the EA does not examine the human health implications of the emissions at all. Studies of occupational exposure to wood dust suggest that woodchip mill workers suffer serious lung detriment, and research on mycotoxins indicates that exposure leads to a range of diseases, including cancer. There needs to be an evaluation of health impacts for chipmill workers and the residents of Eden and the region surrounding the mill and the town, and taking account of prevailing winds.

6.2 Emissions estimates, especially in relation to particulates and heavy metals assume that the wood will be clean and uncontaminated and no allowance is made for its exposure to salt.

6.3 However, we note that:

(i) SEFE CEO Peter Mitchell explicitly told the Bega Valley Shire council on 26 August 2008 that "municipal waste" was a potential fuel.

(ii) The stockpile of fuel will be stored a few meters from the ocean and will be contaminated by salt, increasing dioxin levels.

6.4 The emissions inventory states that "most of the particulate matter will be controlled," especially particulates of greater size. There is no examination of the nature, volume and consequences of particulates bigger than 10 microns. There is no justification provided for ignoring them. The EA leaves open the possibility that some of these bigger particulates will be emitted, but fails to provide any detail of the nature, volume and consequences of those emissions.

6.5 There is no consideration of odour as an issue to be addressed, despite acknowledging emissions of hydrogen sulphide, rotten egg gas. Neither are the acid rain consequences of sulphur dioxide emissions addressed.

7. FAILURE TO ASSESS FULLY THE IMPACT OF WATER DISCHARGE INTO TWOFOLD BAY

7.1 Very hot water will be discharged into Twofold Bay. The temperature of cooling water discharged into Twofold Bay will be more than 21 degrees above the ambient water temperature in the winter. The implications of this are dismissed, but there are some serious consequences:

(i) The Weedy Sea Dragon: this threatened species, can only survive in temperatures less than 22 degrees. The EA says that the sea dragons will go somewhere else: they "may avoid the area around the outlet." Too bad for them if they don't,

(ii) Green Sea Turtles: the presence of these creatures is noted but the report fails to mention that in other power stations in NSW, turtles are regularly trapped in cooling water pipes because they are attracted by the warmer temperature'

(iii) Whales: noise may interfere with whale migrations via Twofold Bay.

(iv) Anti-fouling treatments: toxic treatments may threaten marine life and mussel cultures.

8. FAILURE TO CONSIDER IMPACTS ON ABORIGINAL CULTURAL HERITAGE

8.1 Woodchipping the South East Forests of NSW to support SEFE's proposed burner will cause further injury to and desecration of Aboriginal cultural heritage, which both the Commonwealth and the NSW Government are legally required to protect. Given the availability of plantation hardwood for the Australian export woodchip industry overall, there is opportunity now for Governments to give much greater substantive protection for Aboriginal cultural traditions in the regions where logging for woodchipping now takes place.

8.2 There is plentiful evidence of the sacredness not just of the mountains but also of the forested areas between and around them. For example, the forested areas between and around the mountains of Gulaga and Mumbulla on the Far South Coast of NSW contain a wealth of cultural features that are important to the Yuin people who are traditional owners. Many words have been written concerning ancient pathways and song lines through these forests. For example, Egloff, 1979 comments on a local cultural being, the "Dulargal", who uses the tracks when travelling between the mountains. Blay 2005 writes of the "Mumbulla pathway" linking Gulaga to Mumbulla by the most direct route. He also describes a second pathway extending between Bunga Head, Mumbulla Mountain, Murrabrine and onto Gulaga. Egloff says that a number of ceremonial places have been identified between the two mountains and cultural association with these places continues to be an important part of Aboriginal identity. Not only the sites of initiation but the pathways between them were sacred.

8.4 Yuin elder Max Harrison in his book *My People's Dreaming* describes how "Just a year after the handback of Gulaga and Biamanga to the Yuin people, forestry went in and cut trees down and disrupted the sacred songlines. When I tried to tell them they shouldn't do that because it cut the direct line of teaching, it was disregarded. Forestry just overruled it and persuaded some Yuin people to give it the go-ahead.
I was disgusted to even think that some of our mob wouldn't listen; they know the story of the two sisters and our cultural ways and how it is told up on the mountain." "People can't understand about the sacredness and those songlines, those Dreaming lines. They say cutting trees down at the base of the mountain is not touching the sacred sites up the top, but they don't understand about the short circuiting of the spiritual connectedness from one place to the other. As you know, when you drive around the country with your talking sticks- your mobile phones- you can get into what you call dead spots, the spots where you are cut off. That is what these people have done in coercing my mob, who don't know the deeper part of the story where the Dreaming travels to. They have cut the songlines. People cannot understand Aboriginal spiritual connectedness and the lines of connectedness. We have heard the comment before of " we're not logging up on the mountain". I say "Yes, but the base is the strength, how do you think a mountain becomes a mountain? It comes from the bottom up and peaks at the top. If you haven't got a strong base then you can't stand up."

8.5 The well-known Aboriginal author Burnum Burnum, born on the shore of Wallaga Lake, says in his book *Burnam Burnam's Aboriginal Australia* : "The sacred mountains were the centre of a series of religious events staged throughout the area. Bora rings have been found in valleys nearby, which served as the sites for initiation ceremonies. The *dulagar* track, a route taken by one of the mythic beings from the mountains to the coast, is still known by some of the people at Wallaga Lake."

8.6 The importance of the forests between and surrounding Gulaga and Biamanga National Parks to the Yuin people cannot be denied. Other areas logged for the Eden chipmill would be of similar significance to Aboriginal people.

9. FAILURE TO CONSIDER ALTERNATIVE USES OF THE SITE AS AN ENERGY SUPPLIER

9.1 The chipmill site is prize real estate, sited on one of the most beautiful bays in the region. It would be excellent for generation of solar, wind and wave power. It is the best location for wind power in the region.

9.2 We recommend that no approval for the SEFE proposal be given, and that instead the Government should investigate the environmental and energy benefits to the region and the associated costs of these various genuinely clean, green and renewable energy options.

9.3 Alternatively there are many other options for the site, especially given the arrangements between the Defence Department and tourist operators to allow use of the naval wharf to allow passengers to disembark. Tourism has long since provided far more economic growth and employment options than the woodchipping operations.

10. FAILURE TO CONSIDER THE PROJECT BEING AN ON-GOING DRAIN ON NSW GOVERNMENT BUDGETS.

10.1 The context for the financial losses made on native forest operations is discussed above.

10.2 It is underpricing of native forest logs by the State forestry agencies of NSW and Victoria that is propping up native forest-based operations like the SEFE chipmill. The real price of NSW pulp-logs to SEFE is half what it was a decade ago. The NSW Auditor-General has confirmed that Forests NSW's losses on sales of native forest wood is around $14.4 million a year and rising. We understand that it was $15m last year.

10.3 The Auditor-General would be able to calculate the effective subsidies to the chipmill since the RFAs were put in place. On limited information we consider that it would be well over $60 million to date, and that if present logging and pricing regimes are continued it will be well over $140 million over the life of the RFAs in the South East.

10.4 Without these implicit subsidies it is doubtful that the chipmill would be viable. If market based pricing of native forest inputs were to be introduced there would be no economic future for the woodchipping or the proposed burner.

These comments on South East Fibre Exports proposed biomass power plant add to submissions in regard to the independent reviews of the Commonwealth's Environment Protection and Biodiversity Conservation Act and the NSW Regional Forest Agreements. According to the latter submissions to the review were passed onto the NSW Review, the Commonwealth Government to be taken into account during development of its response of the EPBC Review Act and the Executive Management of the NSW forest agencies.

The Director Generals requirements included –identification of all fuel sources including the relationship to native forest logging. However, as suggested in the RFA review:-

> **RECOMMENDATION 13**
> **The NSW Government should give the highest priority to the continuous improvement system for FRAMES as required under Milestone 48 and development of the inventory plot measurement systems required across the various regions as required under Milestone 49.**

The fact that Forests NSW have failed to achieve what many believe is the most fundamental aspect of professional forest management, namely to implement and maintain a forest inventory at an operational or 'coupe' level raises uncertainty about future timber availability. There is particular concern that the Regional Manager of Forests NSW Mr Ian Barnes has stated on ABC radio words to the effect that their management is about sustained timber supply as opposed to sustainable forest management.

Table 1 Proposed fuel types

Biomass	Volume	%
HWD chips	21,250	36.8
Pine bark	9,525	16.5
Pine chips	3,300	5.7
HWD fines	1,060	1.8
HWD sawmills	17,600	30.5
Pine sawmills	5,000	8.7
Total	57,735	100.0

Table 2 Log and waste volumes

Year	2005	2006	2007	2008
HWD pulp logs	917217	1002968	963211	954982
Pine pulp logs				161317
HWD chips	22201	24285	23320	23124
Pine bark				10243
HWD fines	1144	1250	1200	1190
Pine chips				3550
Totals	23345	25535	24520	38107
Burned	1144	1250	1200	1190
Sold	15819	20057	20138	23772

Carried forward	6382	4228	3182	13145

The volume of waste hardwood woodchips was 17,903, 19,094 and 19,942 tonnes in the years 2006, 2007 and 2008 respectively. Contrary to expectations these volumes represent 1.8%, 2% and 2.1% of total hardwood pulp-log volumes for those years indicating an increased proportion of waste chips from a decreased pulp-log volume.

With an annual requirement of 52,560 tonnes of biomass for the furnace, SEFE's ability to supply appears to be dependant on a non-declining yield and including waste from hardwood sawmills, even though sawlogs are almost totally depleted in Eden. In addition there is some concern that apart from logging areas that should never be logged, as per below, management options for Forests NSW would be further reduced in the event a wildfire destroyed the regrowth resource.

RECOMMENDATION 11
The NSW Government should continue to give high priority to the release of the NSW Forest Management System covering public and private land. It should be completed before the next review.

The proponents seek to use ash from the furnace to 'improve' soils on 200 hectares of SEFE's 300 ha plantation development at Rockton. While noting that " . . . Several drainage lines traverse the site with some of these having riparian vegetation buffers." the assessment of soils lacks methods employed, number and location of samples. Most of the plantation would appear to situated on Rockton Granodiorite with a smaller area in the east of Nalbaugh Granodiorite that as the Environmental Assessment indicates are part of the Bega Batholith.

Soils are described as consisting of coarse sand and dispersible clays although no particle size analysis is provided. Similarly information to calculate ESP {ie- ESP = 100 x Exch Na / (Exch Ca + Mg + K + Na + H + Al)} is not provided in the assessment.

Exchangeable Sodium Percent (ESP)
Sodosols are specified as soils with an abrupt texture change and greater than 6% ESP in the upper 0.2 m of the B2 horizon. While none of the sampled sites on the property meet this condition, two sites are close to the limit. Sodic soils are soils where the presence of Na is sufficient to produce adverse soil structural conditions and potential dispersion and erosion problems.

Having identified the lack of an O horizon, A1 and A2 horizons and a B horizon it is unclear whether the 'condition' is limited to a previously unidentified horizon. The notion that a 6% ESP is a prerequisite to determine whether soils are sodic and therefore subject to adverse soil structural conditions, dispersion and erosion problems is quite outdated and wrong.

Soil detachability associated with sodicity has been found [1] to increase with a 2% ESP. More recent research [2] has found sodicity is associated with the weather-

[1] Singer M., Janitzky P., Blackard J.,(1982) The influence of exchangeable sodium percentage on soil erodibility. Soil Science Society of America- Journal 46:117-121

> " . . . Even for the case that salinity is in a periodic steady state, where salt concentrations do not increase on the long term, sodicity may still grow as a function of time from year to year. For the longer term, sodicity, as quantified by Exchangeable Sodium Percentage (ESP), approaches a maximum value that depends on drought and inflowing water quality, but not on soil cation exchange capacity.'

Soil sodicity is also associated with reduced floral biodiversity and increasing that diversity has been found to have a positive influence by reducing sodicity and acidity[3].

While noting that it would take several years to produce the 2,000 tonnes of ash required to enable the spreading of 10 tonnes per hectare, any benefit would seem to flow exclusively to SEFE. At the same time the soil limitations identified in the assessment would appear to occur across the broader forested landscape and are implicated in Bell Miner Associated Dieback and the more recent and extensive dieback associated with dry weather and drought.

Apparently based on a desire to ignore these matters, the NSW Government has previously rejected community attempts, at a similar scale to the SEFE plantation, to address adverse soil structural problems in native forests that stem from unsustainable management.

'*Describe alternatives considered (location and/or design fuel source and provide justification for the preferred project demonstrating its benefits at a local and strategic scale and how it achieves its stated objectives'*.

> " . . . Grate-fired biomass combustion is mature technology, but other technologies are emerging, such as gasification and pyrolysis."

As part of community forest restoration proposals aimed at saving koalas from extinction, it has been proposed to employ low disturbance techniques to gather biomass, that would otherwise be burned, for use with slow pyrolysis technology. The resulting product 'biochar' has similar properties to ash but these are much longer lasting than ash and are to be returned from whence they came, to address the deforestation process associated with reduced biodiversity and soil degradation.

> **RECOMMENDATION 12**
> **The NSW Government should initiate immediate action to establish and deliver the regional ESFM performance reports as required under Milestone 41.**

---

[2] **S.E.A.T.M. van der Zee, S.H.H. Shah, C.G.R. van Uffelen, P.A.C. Raats and N. dal Ferro (2009)** Soil sodicity as a result of periodical drought *Agricultural Water Management*, 2010, vol. 97, issue 1, pages 41-49

[3] SINGH B., GARG V. K., (2007) PHYTOREMEDIATION OF A SODIC FOREST ECOSYSTEM: PLANT COMMUNITY RESPONSE TO RESTORATION PROCESS**,** Notulae Botanicae Horti Agrobotanici Cluj-Napoca, Vol 35, No 1

As indicated in the comments (below) on the Harvesting Plan for current contentious logging operations in Mumbulla State Forest, there are potential negative implications around maintaining a non declining yield in the face of declining resource. Unless the NSW Government intends to open up National Parks for logging, the ongoing supply of native forest timber and therefore any 'waste' cannot be guaranteed.

Robert Bertram
20 April 2010

Friends of the Five Forests
Comments on the adequacy of Harvesting Plan details for Compartments 2133 and 2135 in Mumbulla State Forest

On March 16 2010 Manager for Forests NSW Southern Region Mr Ian Barnes approved a Harvesting Plan for Compartments 2133 and 2135 in Mumbulla State Forest, providing the following description.

> Management Area: Eden.
> State Forest: Mumbulla No. 605.
> Management Section: Quaama.
> AFS Certification: AS 4708:2007. ISO 14001
> Compartment(s) Numbers: 2133 and 2135
> Cpt 2133 Event Id. 14168.
> Cpt 2135 Event Id. 14169

Extending for about 6.6 kilometers along a ridgeline joining Mumbulla Mountain with Dr George Mountain the compartments range in width from just over a kilometre down to 200 meters. The majority of the compartments are placed within a small sub catchment of the Brogo River catchment and coupe 1 of Cpt 2133 is with the Wapengo catchment.

As indicated in the table below, the compartments have not previously been subject to integrated logging.

Gross area and integrated logging history of Compartment 2133 & 2135

COMPNO	COUP_NO	LOG_YR	ROTATION	Area
2133	1	0	0	69.3
2133	2	0	0	162.4
				231.7
2135	1	0	0	26.4
2135	2	0	0	142.2
				168.6
Road	4000			10.9
				411.2

Geology

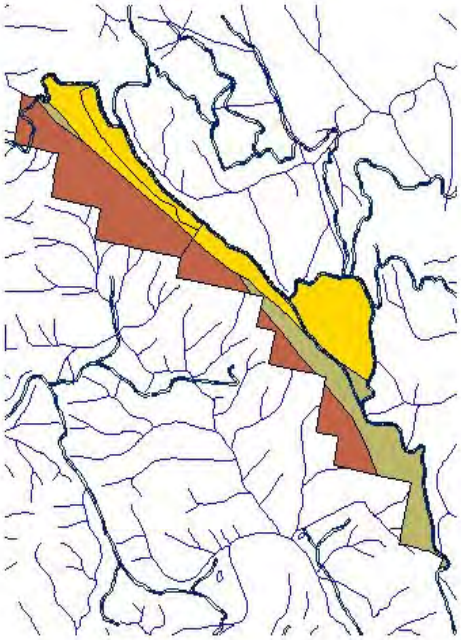
According to the Final Report on Progress with Implementation of NSW Regional Forest Agreements: Report of Independent Assessor (November 2009: Recommendation 18)

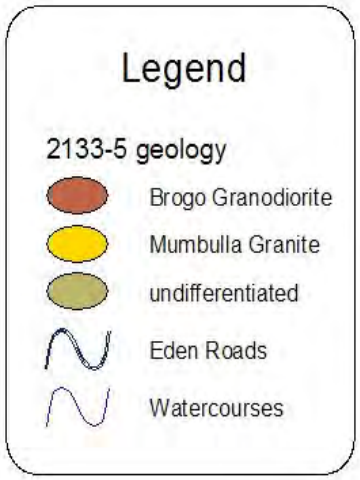
> ‘. . . The NSW Government should explore accessing data on soil and water quality from all relevant Commonwealth, State and Local government agencies including community natural resource management volunteer groups, with a view to developing a more systematic and comprehensive approach to monitoring of these attributes in forest areas.’

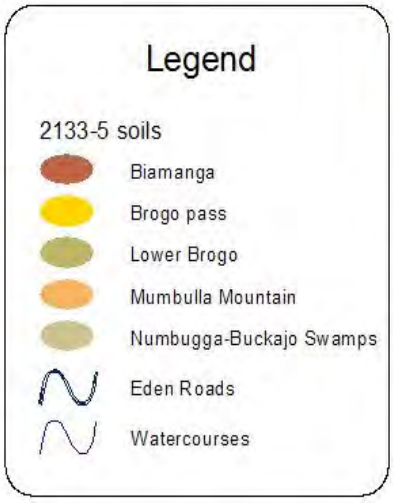
Forests NSW describe the geologies in the compartments stating: ‘. . . *Brogo Granodiorite. Majority of both cpts Mumbulla Granite Eastern half of Cpt 2135 & strip along the north-eastern edge of Cpt2133 Ordovician Metasediments Strip through the centre of both Cpts & south-eastern corner of Cpt 2133.’*

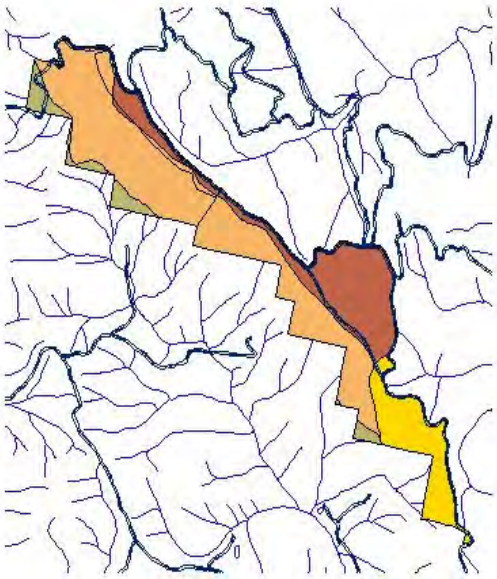
Although the description comes close to the map below of geologies in the compartments there appears to be no *“Ordovician Metasediments Strip through the centre of both Cpts”*.

Compartments 2133-2135
Geology and Soils









Soils

What does extend through the centre of both compartments is the Mumbulla Mountain and Brogo Pass soil landscapes. Lower Brogo and Biamanga soil landscapes also occur in the compartments but according to the plan none of the soils are dispersible.

Table 2. Area of soil landscapes Compartments 2133-2135 and road

	COMPNO			
Soil Landscape	2133	2135	4000	Total hectares
Biamanga	82.1	17.0	8.4	107.5
Brogo Pass	59.2			59.2
Lower Brogo	3.8	20.6		24.3
Mumbulla Mountain	86.7	131.0	2.5	220.2
Numbugga-Buckajo Swamps		0.003		0.003
Grand Total	231.7	168.6	10.9	411.2

Mumbulla Mountain and Brogo Pass landscapes cover 69% (279.4 ha) of the compartments and the generalized landscape limitations these soils share include steep slopes, mass movement hazard, water erosion hazard and a foundation hazard, in this case the latter applicable to road and log-dump construction.

An area of historic mass movement has been identified above the head of a drainage feature at GR 756844E/5947756N within Compartment 2135 as indicated on the Harvesting Plan Operational Map. The mass movement is approximately 40m X 40m and has now stabilised.

- The area of mass movement is to be excluded from forestry activities including hazard reduction.
- The SFO is to be shown the location of the mass movement. FNSW soil specialist is to conduct a refresher course with the SFO on the features to identify mass movement and where they are likely to occur in the compartment.

Forests NSW Environment protection license (Schedule 3, Module 2. 2.4) states:

Where State Forests has identified, using the procedures in section 2.3 of this module, that a potential or actual mass movement hazard exists, then expert advice must be sought. This advice must be provided by a person who is suitably qualified to assess and recommend mitigative measures for mass movement and slope instability. State Forests must obtain from the suitably qualified person detailed written advice about whether the operation should proceed, and if so, provide details about the site-specific conditions and mitigative techniques that must be applied.

According to the plan, management of the area of mass movement involves construction of three steam crossings and two log dumps below the area and either side of the mapped watercourse. Being below the 160 metre contour snig tracks will need to be constructed for 200 metres upslope and on either side of the mass movement area to access the area made available for logging and accommodate downhill snigging of logs.

> The FNSW internal slope restrictions (i.e. harvesting restricted to slopes ≤ 25°, snig track grade ≤ 20°) applies to those sections of the compartment that are classified as Regolith Class 2. This prescription only applies in those sections where the canopy remove is >50%. Where canopy removal is ≤ 50% then EPL slope restrictions apply.

Although many of the areas with slopes greater that 30° are indicated in the plan, areas indicating slopes greater than 20° or 25° and where they occur with soil regolith class 2 are not identified on the operations map. The boundary between soil regolith class one and two, apparently toward the southern end of Cpt 2133, is consistent with the boundary between the Mumbulla Mountain and Brogo Pass landscapes. While there is little difference in the limitations of these landscapes, the latter occupies 57 hectares of coupe 2 in Cpt 2133 inferring soil regolith 2 covers 354 hectares or 86% of the compartments.

FNSW's internal slope restrictions apparently don't apply to the 2133-1 road, that is proposed to be constructed on slopes greater than 20°. On the operational map for Cpt 2133 this road enters rainforest prior to crossing a creek and entering private property, although the stream crossing is not accounted for in the harvesting plan. Similarly the restriction does not to apply to areas of Coupe 2 above 160m altitude in Compartment 2135.

> A minimum 50% canopy retention must be achieved on slopes greater than 25 degrees within Coupe 2 of Compartments 2133 and 2135 (See Section 8 Soil Erosion and water Pollution Control). Where harvesting occurs on altitudes above 160m within Coupe 2 of Compartment 2133 no more than 50% of the canopy is to be removed and within Coupe 2 of Compartment 2135 no more than 60% of the canopy is to be removed whilst retaining a minimal basal area of 10m2 /ha within the net harvest area located above 160m in altitude.

As indicated in the following tables slopes of 20° or greater cover some 33% of Cpt. 2135 and 38% of Cpt. 2133. From a practical perspective the only locations where a road from the top to the bottom of the compartments does not traverse slopes of 20° or greater are already occupied by Clarkes Road and some 5.4 kilometres to the south a road defining the southern boundary of logging area in Cpt 2133 that enters private property.

2135	COUP_NO			
Slope (degrees)	1	2	Total ha	%
0-10	4.939	20.637	25.576	15.2
10-20	19.429	68.422	87.851	52.1
20-25	1.96	32.04	34	20.2
25-30	0.053	15.703	15.756	9.3
>30		5.401	5.401	3.2
Total hectares	26.381	142.203	168.584	100

2133	COUP_NO			
Slope (degrees)	1	2	Total ha	%
0-10	20.538	27.062	47.6	20.5
10-20	45.94	50.978	96.918	41.8
20-25	2.765	34.752	37.517	16.2
25-30	0.087	31.12	31.207	13.5
>30		18.589	18.589	8.0
Total hectares	69.33	162.501	231.831	100

Water

A total of 15 watercourses have been mapped in the compartments located in Brogo River catchment. These subcatchments have a total area of around 1,500 hectares or 3.7% of the Lower Brogo catchment. Abrahams Gully extends for some 900 metres through Compartment 2135 and previously joined another branch, emanating from the area of old growth forest, some 400 metres to the west on private land.

The Harvesting plan indicates that the convergence of these streams is now within the old growth, effectively moving the point of convergence some 300 metres north and 200 metres west.

This change to the LIC stream layer has, at least on paper, reduced the number of stream crossings by one. Information on stream crossings from the SRCMA (2001) provides for two steam crossings in Cpt 2135 although the plan proposes only six are to be constructed. Several of the 15 stream crossings (eg. C2, C3, C5, C8, C10) have no mapped watercourse, ephemeral or otherwise, associated with them.

Based on information from areas of sediment deposited in local catchments it seems reasonable to assume both the extent and number of 'drainage features' has greatly increased over recent decades. With the knowledge about the location of these streams Forests NSW should have indicated their presence in the Harvesting Plan and the relevant exclusions should have been applied.

Fauna

Koala:
Compartments 2133 and 2135 were surveyed for koalas in accordance with the Threatened Species Licence for Eden Management Area. No evidence of koalas was located in Compartment 2133 and 2135 during the survey.

In the first instance the necessary koala surveys were not undertaken because Forests NSW claimed there were no koala records within 2 kilometres of the compartments.

Unlike others, the koala records within 2 kilometres of the compartments consistently appear on the maps of regional koala records. These maps can be found in State Forests NSW's Eden region Koala recovery plan (Shields, 1997), the Koala management framework (Ecological 2007) and the more recent interim report on koala surveys.

Having been forced into undertaking transects as required under the TSL, the outcomes demonstrate the required methods were not adhered to. Coupled with a methodology that is yet to find any evidence of koalas, approval of the operations on this basis would seem to make a mockery of the TSL's requirements.

According to the NSW State government's koala recovery plan –

" *. . . The loss of population was caused by the loss of koala habitat on the flat, fertile soils of the district, but the data from koala fur records indicates that the farmed region is capable of sustaining a high koala population. This is encouragement for a replanting and restoration program such as on the fertile soils along the Bega River.*"
and

Action 1.24

DECC will approach Forests NSW (DPI) to collaborate in developing policy and practice consistent with the NSW Koala Recovery Plan; exchange information, given that koalas move across tenure boundaries; and work within the context of agreed regional forest agreements.

Like the proposed koala management framework the NSW government has apparently abandoned this approach. All of the locations found with koala fecal pellets during the RGB-SAT surveys were on the Murrah (mu &mub) soil landscape. If as suggested in the interim report on the surveys that koala numbers may have increased in recent times the more recent finding of koala pellets closer to the logging operation could reflect that increase.

Conclusion

One purpose of adaptive management is to provide greater confidence that the community's rightful expectation of professionalism in forest management can be met.

Forests NSW are licensed to kill native fauna, pollute water and are certified under the Australian Forestry Standard on the basis that their 'day to day' activities include compliance with the relevant legislation.

If Forests NSW were interested in a professional approach the utility of the RGB-SAT surveys would be embraced as both an inventory and fauna management tool. If this were the case the Harvesting Plan could have presented information that if nothing else would be based on a credible methodology.

After logging the compartments will be burned exposing any soils that escaped disturbance during the logging operations. Based on an average depth of 1 metre the 70 hectares of soil on slopes 20° or greater would amount to 700,000 cubic metres.

While it may be unlikely that such an event would occur even a small proportion of these materials would have a significant negative impact on downstream water quality. Areas of soil mass movement may take decades to naturally revegetate, providing a long term water pollution source.

Given this scenario it would seem reasonable that Forests NSW confirm they have ' . . . obtained from the suitably qualified person detailed written advice about whether

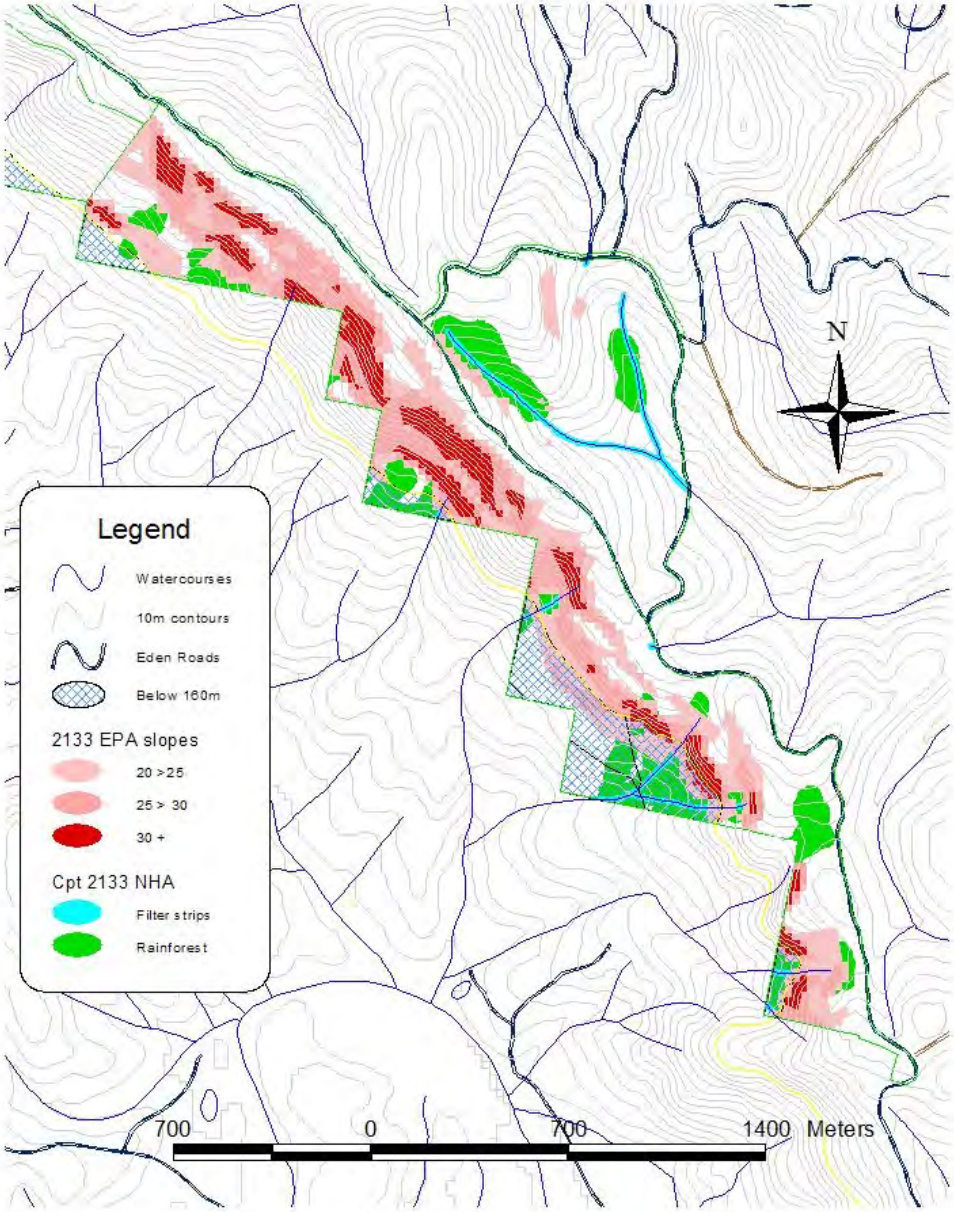
the operation should proceed, and if so, provide details about the site-specific conditions and mitigative techniques that must be applied.'

Should Forests NSW confirm they have received this advice it would also seem reasonable that the community also have access to the information.

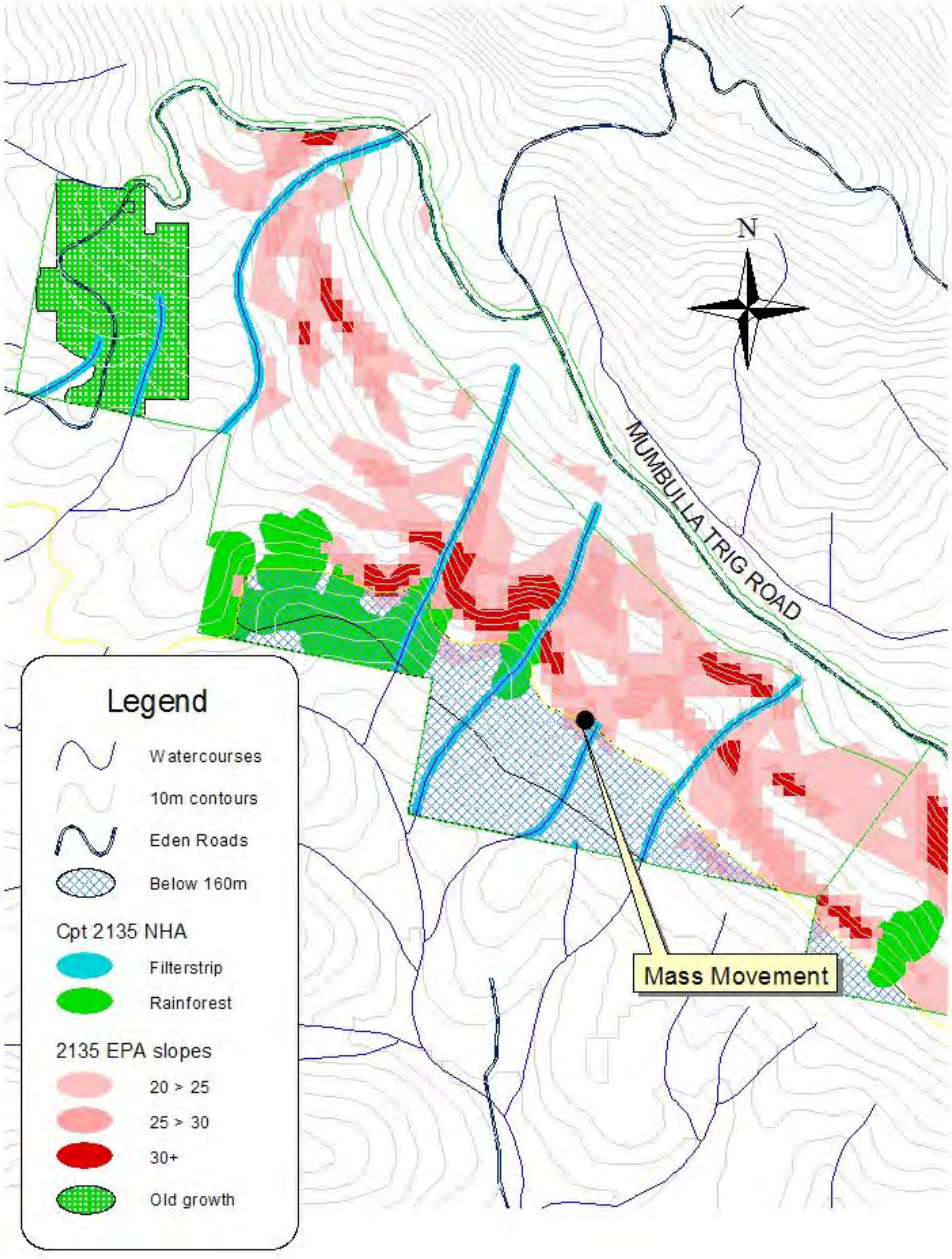
Robert Bertram

13 April 2010

Compartment 2133 Mumbulla State Forest



Compartment 2135 - Mumbulla Sate Forest



Stevia Ji Goldworthy
P O Box 369
EDEN NSW 2551

Director, Infrastructure Projects
Department of Planning
GPO Box 39
SYDNEY NSW 2001
Fax 02 9228 6355
Email; anna.timbrell@planning.nsw.au

19 April 2010

5.5 Megawatt Biomass-Fired Power Station
Application Number MP 09_0034

I am writing this submission to object to the E A application by SEFE to set up a Biomass Fired Power Station.

It seems very clear to me that SEFE do not have enough wood waste to operate the power plant. The most horrifying thought is that is may increase their negotiating power to log even more of our Australian Native Forrest. With all the global warming issues in this day an age why is the Australian Governments still allowing Native Forrest logging?
As a local resident I took the opportunity to attend a TAFE course for 'Understanding Sustainability and the Eco System, held in Eden last year. During this course we had a visit to the SEFE Chip Mill and to a logging site in the State Forrest of NSW. I was totally applauded by the state of our Forest. The regrowth areas only consist of minimum plant species, which of course included perfectly straight tree. When I asked why this was so, I was informed that management of the forest included weeding out any tree with a genetic line that created knots or bends in the tree trunks or branches. I also noticed that there were no shrubs or ground cover plants and no orchid flowers and these sites where between 15 and 20 years old. We saw no wild life on the day and there were no birds singing as the logging operations continued. It was a devastating day for me.
The course also included a field day to discover the Koala's habitat and with our own eyes saw what damage the native forest logging has done to environment and the danger it is doing for their survival. The eco system in our state forest where logging is operating or has been operating has broken completely down. The only sustainability I could see was financial sustainable for a 100% owned Japanese Company. On the SEFE website they boost that they exceed $100 million in export sales in 2008. That of course was from logging our Native Australian State Forrest. SEFE is now looking how they can further their profits from Australian resources.
In their E A application it states the need to burn 57 000 tons of wood to make (a minimum amount of) electricity, but I see it causing maximum damage to our Australian Native Forrest.
I pay an extra 10% on my electricity bill from Country Energy to source green energy. If SEFE succeed with the biomass fired power station I will go back to using coal. It horrifies me to think that when I switch on the light it could be using the Native Forest Trees for power, NO THANK YOU. If you want to burn to make energy use our landfill rubbish or better still human waste, plenty of it.
I say NO to the biomass-fired power station and save our Forest and its habitat.

Stevia Ji Goldworthy

From my reading of the Director General's guidelines for the EA I thought SEFE would have to provide a greenhouse gas audit for the full process of obtaining the fuel to feed the generator. This was not done and so I believe the EA is inadequate and the project not approved.
As a member of the local community I have been disgusted to see the cynical encouragement of the belief that Eden will have free power from this project. A real analysis of the cost or benefits to the local area would include the effects on water supply, air quality and health.

Name: Sue Norman
Organisation: local resident

Address:
Heartwood, Kiah NSW 2551

IP Address: - 116.250.91.25

Submission for Job: #2914 Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_job&id=2914

Site: #1828 South East Fibre Exports 5 MW Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_site&id=1828

Anna Timbrell

E: anna.timbrell@planning.nsw.gov.au

Tom McLoughlin
C/- SBA Lawyers
119 Evans St
Rozelle 2039
tel. 0410 558838

Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39,
Sydney NSW 2001

By email

Dear Ms Timbrell

Please accept my objection adopting the position of ChipStop NGO, of which I am a founding member aproximately 10 years ago, and donor, regarding your web advertised major project, as here

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=2914

I am an agent in the Land & Environment Court jurisdiction and recently returned to legal practise as a solicitor on more general commercial matters and am concerned to have legal objector rights under the Planning Act in case I decided to commence a litigation against this development. Please acknowledge receipt.

In addition to my submission below, please note my overall objection to lack of an EIS ever done for forestry in the Bateman's Bay region since the 1979 Act, over 30 years worth. No doubt leading to the koala logging furore currently, at Mumbulla with 95% of wood from koala habitat going to chip, and in future for a power furnace. No doubt similar concerns apply south of the NSW border to East Gippsland.

Further, Forestry have always cheated on the concept of sustainability conflating the notion of wood volume with ecological sustainability. This is intellectual corruption given Australia has only about 10% forest land cover down from 20% in 1788 and much of this is being degraded into wildfire prone dry schlerophyll regrowth in place of naturally wet forest fuel management. I make this last point as a zoology graduate (ANU).

The ChipStop advice is compelling, which I adopt, as follows:

South East Fibre Exports (SEFE), owners of the Eden chipmill wants to build a wood fired power station burning native forest wood.
The NSW Minister for Planning has received the final Environmental Assessment (EA) for the project and will soon decide whether to approve the power station. If SEFE gets the go ahead for its power station it will be the first of many around Australia.

Summary of points

1. general
2. natural environment
3. climate change
4. woodchipping
5. residents in or near Eden
6. more renewable energy generated and used.

1. General

1. The chipmill announced on 22 March 2010 that this project is "on hold," before it has even been approved. The Minister should therefore reject it or if he approves it, impose a condition that if no commencement has occurred within 6 months, the approval should lapse. Its status as "on hold" reflects the state of the international woodchip market and demonstrates how dependent it is on that market.
2. The fuel to be used is not "waste" and would not exist if one million tonnes of trees (almost 19,000 hectares of forest) were not logged each year to supply the chipmill.
3. The existing use of the proposed fuel generates substantially less greenhouse gas than the proposed power station because, as mulch, it decomposes slowly and transfers significant carbon to the soil.
4. The scope of this assessment is so narrowly defined as to make it almost meaningless. It examines in minute detail some aspects but ignores the bigger context. For example, it refers to the "terrestrial ecology" of the site as having "a disturbed under storey of exotic grasses", in other words, mown lawn, but totally ignores the immense ecological implications of intensive, industrial scale logging required to supply the fuel.
5. While acknowledging that deadly dioxins, furans and HAPs will be emitted, the EA does not examine the human health implications of the emissions at all.

2. natural environment

1. Very hot water will be discharged into Twofold Bay. The temperature of cooling water discharged into Twofold Bay will be more than 21 degrees above the ambient water temperature in the winter. The implications of this are dismissed, but there are some serious consequences:

    a. The Weedy Sea Dragon (8-21), a threatened species, can only survive in temperatures less than 22 degrees. The EA says that the sea dragons will go somewhere else: they "may avoid the area around the outlet." Too bad for them if they don't.
    b. Green Sea Turtles. The presence of these creatures is noted but the report fails to mention that in other power stations in NSW, turtles are regularly trapped in cooling water pipes because they are attracted by the warmer temperature.
    c. Whales. Noise may interfere with whale migrations via Twofold Bay (8-10)
    d. Anti-fouling treatments (8-17). Toxic treatments may threaten marine life and mussel culture.

1. Emissions estimates, especially in relation to particulates and heavy metals assume that the wood will be clean and uncontaminated and no consideration is made for its exposure to salt.

    a. SEFE CEO Peter Mitchell explicitly told the Bega Valley Shire council on 26 August 2008 that "municipal waste" was a potential fuel.

b. The stockpile of fuel will be stored a few meters from the ocean where it will be contaminated by salt, increasing dioxin levels.
c. Heavy metal content in ash will exceed allowable limits and additional approval from DECC will be required to use it on the SEFE Rockton plantation. Exposure to heavy metals has been linked to penis defects. http://www.smh.com.au/lifestyle/wellbeing/heavy-metals-raise-risk-of-penis-defects-20091202-k6es.html
d. A Canadian study commissioned the government of British Columbia (Canada) last year. "Emissions from Wood-Fired Combustion Equipment" http://www.env.gov.bc.ca/epd/industrial/pulp_paper_lumber/pdf/emissions_report_08.pdf found that basic emissions which could be expected include:

Acetaldehyde Alpha-pinene Beta-pinene Carbon monoxide (CO) Formaldehyde Methanol Naphthalene Toluene Total phenols Turpentine 2,3,7,8 Tetrachlorodibenzo-p-dioxin (TCDD) C/P 2,3,7,8-Tetrachlorodibenzo-p-furan C/ Hydrogen sulphide C/S Nitrogen oxides (NOx) Beryllium Cadmium and compounds Chromium (II) compounds, as Cr Chromium (III) compounds, Cr Chromium (metal) Chromium (total) Chromium, hexavalent metal and compounds Cobalt as Co metal Dust and fume Cobalt carbonyl as Co Copper, Dusts and mists, as Cu3 Copper, Fume Iron Lead arsenate, as Pb3 (A2O4) Lead chromate, as Cr Lead compounds Magnesium Manganese Molybdenum Nickel and compounds Particulate matter (PM) Phosphorus Selenium Silver Thallium Zinc Arsenic and inorganic arsenic compounds Mercury Hydrochloric acid Sulphuric acid Sulphur dioxide (SO2)

3. climate change

1. Electricity generated from native forest wood is more greenhouse intensive than coal fired power.
2. It will compete with and potentially displace genuine renewables permitted under the Mandatory Renewable Energy Target MRET scheme. It will not be competing with coal.
3. The project depends for its fuel on the continued existence of the native forest woodchipping industry, one of Australia's biggest greenhouse polluters.
4. The EA does not look at the full life cycle of the fuel (i.e. it ignores the greenhouse impacts of native forest logging; it simply asserts this is "sustainable because it has Australian Forestry Standard (AFS) certification). It fails to examine the consequences of the one million tonnes of woodchipping each year, without which there would be no fuel.
5. It claims: "Improved environmental outcomes due to lower greenhouse gas emissions per unit of output compared to conventional coal-fired power generation technologies. The proposed plant would potentially avoid the emission of 23,800 t Of C02-e from fossil-fuel based power generation per year."

Logging of native forests to supply the Eden chipmill has been conservatively estimated at over 18 million tonnes per year[1] with one estimate as high as 61 million and another as low as 9 million tonnes. Logging emissions must be counted in assessing the GHG implications of burning native forest wood for electricity. It is simply not valid to start counting at the furnace door; the whole life cycle of the fuel must be taken into account in measuring greenhouse impacts.

When power generated from native forest is compared with coal fired power, if the full life cycle of the fuel is assessed, wood fired power is as much as 6.4 times more greenhouse intensive than coal fired power[2].

4. woodchipping

1. Without ongoing woodchipping of a million tonnes of native forest a year, there would be no fuel available.
2. Sustainability of native forest logging. No serious attempt is made to assess this. It is simply deemed "sustainable" because most SEFE chips are certified under the highly controversial AFS. Japanese paper manufacturers are increasingly reluctant to accept AFS as an adequate label of sustainability and the biggest paper manufacturing company in Japan, Oji, does not accept it.
3. The EA claims "Improved environmental outcomes due to lower greenhouse gas emissions per unit of output compared to conventional coal-fired power generation technologies. The proposed plant would potentially avoid the emission of 23,800 t Of C02-e from fossil-fuel based power generation year." See point 4 under "If you are concerned about climate change."

All emissions from logging should be counted in assessing the GHG implications of burning native forest

wood for electricity. It is simply not valid to start counting at the furnace door; the whole life cycle of the fuel must be taken into account in measuring greenhouse impacts. GHG emissions from the proposed plant should be compared with those of other MRET approved technologies, not with coal fired power.

4. However, even if it is compared with coal fired power, if the full life cycle of the fuel is assessed, wood fired power is possibly 6.4 times more greenhouse intensive than coal fired power. It is claimed that "no native or plantation forest would be felled for the purpose of fuelling the plant" (19-3).Forests NSW expects that some timbers which are not currently used for woodchipping because they are either too red or too hard, and are not of sawlog quality will be used for power generation.

5. living in or near Eden

1. While acknowledging that deadly dioxins, furans and HAPs will be emitted, the EA does not examine the human health implications of the emissions at all.
2. Emissions estimates, especially in relation to particulates and heavy metals assume that the wood will be clean and uncontaminated and no allowance is made for its exposure to salt.

   (a). SEFE CEO Peter Mitchell explicitly told the Bega Valley Shire council on 26 August 2008 that "municipal waste" was a potential fuel.
   (b). The stockpile of fuel will be stored a few meters from the ocean and will be contaminated by salt, increasing dioxin levels.
3. It will not "improve the reliability of the local electricity supply." (19-2)

   In 2009, the Eden chipmill was closed for weeks at a time, for most of the year it was on a 4 day week. If Eden residents were counting on it to power their homes in 2009, they would have experienced many outages.
4. Emissions inventory states that "most of the particulate matter will be controlled," especially particulates of greater size. There is no examination of the nature, volume and consequences of particulates bigger than 10 microns. There is no justification provided for ignoring them. The EA leaves open the possibility that some of these bigger particulates will be emitted, but fails to provide any detail of the nature, volume and consequences of those emissions.
5. Odour. While it is acknowledged that hydrogen sulphide, rotten egg gas will be generated, there is no consideration of odour as an issue to be addressed. Neither are the acid rain consequences of sulphur dioxide emissions addressed.
6. Bega Valley Shire Council Zoning. The chipmill site is currently zoned 1(A) agricultural, arguably not appropriate for this type of development.
7. Recreational divers will have reduced access to the chipmill jetty (8-23)
8. Anti-fouling treatments (8-17). Toxic treatments may threaten marine life and mussel culture.

6. more renewable energy generated and used.

1. Electricity generated from native forest wood fired power is even more GHG intensive than coal.
2. In assessing greenhouse implications and calculating "avoided emissions" this power should be compared with wind or solar or other MRET approved technologies because it will be competing with and potentially displacing these technologies in the market place, not coal fired power.
3. The fuel for the power station is not "waste." It is material that already has an economic value and it is bought and sold in the market place. Only a tiny amount is currently incinerated. Burning it as electricity gives it a higher value because of implicit subsidies[3] available to it under the MRET scheme.
4. The greenhouse analysis highlights the arbitrariness of some current national and international conventions on measuring GHG emissions; e.g., deeming burning of biomass to be carbon neutral. The comparison

between GHGs generated by current ways of disposing of wood "waste" as mulch and by the power station creates a nonsensical result. Mulching and composting add carbon the soil but slowly decompose releasing some CO2 over time. In burning, the entire product instantly becomes CO2, and yet the (greater) emissions from the burning are not counted, while the (smaller) emissions from mulching are counted. Where is the logic in that?

5. The project is wasteful. 75% of the heat is "lost."
6. Abatement Certificate Provider scheme. Eligibility (3-6) of the plant is unclear, especially with uncertainty surrounding the future of the Carbon Pollution Reduction Scheme. This should be clarified.
7. One of the claimed benefits of the project is "the generation of electricity from renewable biomass material in contrast to current practice which under-utilises a valuable resource," Burning wood from native forest which has been industrially logged for woodchips is not a renewable technology. At least 180 years are needed for most of the forest to replace itself once it is logged intensively for woodchips.
8. "The supply of around 22 GWh of base load power annually to the electricity grid"; The Eden chipmill is an ideal site for alternative forms of renewable energy which could be generated more cheaply at this site using wind, solar or tidal technologies.

For more information see: http://www.chipstop.forests.org.au/forests%20in%20the%20furnace.htm

---

[1] **Carbon pollution generated by logging for the Eden chipmill**

According to Mackey et al "Green Carbon" 2008, the average carbon carrying capacity for all the SE Australia eucalypt forests is 640 tonnes per hectare. In those forests in SE NSW where the actual carbon stored is currently less than the carrying capacity, this is entirely due to the previous operations of the Eden chipmill over the past 40 years, so it is valid to use Mackey's figure of 640.

According to FOI information, in 2006-07 FNSW logged 14,388 hectares in the Eden, South Coast/Southern and Tumut areas.

The figures below do not include the emissions from running the mill, and transport associated with logging contractors or deliveries to the mill. The calculation is based on:

Area logged x Carbon stock per ha x 40% (loss from logging) x 3.666 (converting C to CO2

Thus, for NSW:

14,388 x 640 x .4 x 3.666 = 13,503,080 tonnes of CO2

For East Gippsland:

4,500 x 700 x .4 x 3.666 = 4,611,600 tonnes

Total: 18,114,680 tonnes.

40% of the carbon stored in a forest is lost to the atmosphere when it is logged, even after 150 years. The weight of a carbon dioxide molecule is 3.666 times the weight of a carbon atom. Approx hectares logged in East Gippsland in 2007.

[2] Dr John Kaye MLC. Adjournment Speech 2 December 2008 "Our very rough analysis, based on forestry industry and peer-reviewed data, suggests that for every megawatt hour of energy generated by south-east native forestry biomass, more than 6.4 tonnes of CO2 would be released instantaneously. This is more than **6.4 times the amount of CO2 released from burning coal to produce the same amount of energy**. Certainly regrowth would bio-sequester some of this carbon but at a very slow rate. It would take about 80 years of regrowth to capture 5.4 tonnes, thus returning the greenhouse gas emissions to the same level as coal."
http://www.john.greens.org.au/media/adjournment-speech-eden-chipmill-and-green-power

[3] According to a study by MBAC Consulting “Global and Australian initiatives and impediments to the production of renewable energy from wood in Australia” May 2003, commissioned by the National Association of Forest Industries (NAFI), the maximum price payable for wood fuel under MRET is $41.05/ t. Maximum price payable for wood fuel without MRET $7.71/t. Thus the effective subsidy value of MRET $33.33/t

.....

Yours truly

Tom McLoughlin, solicitor in NSW

Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39,
Sydney NSW 2001

Dear Ms Timbrell

Please add to my objection to the Eden biomass DA sent yesterday this information regarding the election promise of Minister Debus that native forest would not be burnt for charcoal. This is highly analogous to the proposal to burn native forest for energy production under the guise of biomass. Indeed the same 'waste' wood pretext was promoted in the original EIS for woodchipping in the 1970ies with devastating ecological consequences. Same with biomass, as for charcoal threat.

Yours truly

Tom McLoughlin, solicitor in NSW

Attached

----- Original Message -----
From: Tom McLoughlin
To: anna.timbrell@planning.nsw.gov.au
Cc: harriett swift
Sent: Wednesday, April 21, 2010 7:34 AM
Subject: submission as objector on Eden furnace DA

Tom McLoughlin
C/- SBA Lawyers
119 Evans St
Rozelle 2039
tel. 0410 558838

PART OF ORIGINAL SUBMISSION

Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39,
Sydney NSW 2001

By email

Dear Ms Timbrell

Please accept my objection adopting the position of ChipStop NGO, of which I am a founding member aproximately

attachment

NEW SOUTH WALES
ATTORNEY GENERAL
MINISTER FOR THE ENVIRONMENT
MINISTER FOR EMERGENCY SERVICES
MINISTER ASSISTING THE PREMIER ON THE ARTS

NATIVE TIMBER NOT TO BE USED IN CHARCOAL PLANTS IN NSW

The Minister for the Environment, Bob Debus, today announced that the NSW Government would not allow the use of any native timbers in any proposed charcoal plant.

That means any future proposal would depend on plantation timber only.

Mr Debus' announcement follows the statement last week by Australian Silicon Limited that "the Company has come to the conclusion that the establishment of a second silicon smelter in Australia at this time is not viable."

In the statement issued to the Australian Stock Exchange on 10 March, Australian Silicon also said it could not gain "long term, environmentally-sustainable access to a wood resource for wood flux and charcoal production".

"A re-elected Carr Government would rule out the use of native timber as a source for any proposed charcoal plant in NSW," Mr Debus said.

"This brings to an end a strongly contested public debate about the appropriateness of using our native forests for such purposes.

"If industry wishes to pursue a charcoal plant in the future the NSW Government will cooperate to make it a reality, but only with alternative sources of fuel such as clean coal or plantation timber," Mr Debus said.

Media Contact: Kate Meagher 9995 6500 or 0418 424 654
17 March, 2003

Level 25, 59-61 Goulburn St, Sydney NSW 2000
Telephone: (02) 9995 6500
Postal: PO Box A290, Sydney South 1232
Facsimile: (02) 9281 1115 or (02) 9212 1875

ccMy general concerns are that:
1. The chipmill announced on 22 March 2010 that this project is 'bn hold," before it has even been approved. The Minister should therefore reject it or if he approves it, impose a condition that if no commencement has occurred within 6 months, the approval should lapse. lts status as "on hold" reflects the state of the internationalwoodchip market and demonstrates how dependent it is on that market.
I have major concerns regarding the fact that this is not what we would classify as a renewable energy source
1. Energy generated from forest wood fired power is Green House Gas
2. The fuelto be used is not "waste" and would not exist if one million tonnes of trees (almost 19,000 hectares of forest) were not logged each year to supply the chipmill.
3. The existing use of the proposed fuel generates substantially less greenhouse gas than the proposed power station because, as mulch, it decomposes slowly and transfers significant
carbon to the soil.
4. The scope of this assessment is so narrowly defined as to make it almost meaningless. lt examines in minute detail some aspects but ignores the bigger context. For example, it refers to the 'tilrrestrial ecology" of the site as having "a disturbed under storey of exotic grasses", in other words, mown lawn, but totally ignores the immense ecological implications of intensive, industrial scale logging required to supply the fuel.
5. While acknowledging that deadly dioxins, furans and HAPs will be emitted, the EA does not examine the human health implications of the emissions at all.

My concerns about the environment are that:
1. Very hot water will be discharged into Twofold Bay. The temperature of cooling water discharged into Twofold Bay will be more than 21 degrees above the ambient water temperature in the winter. The implications of this are dismissed, but there are some serious
consequences:
a. The Weedy Sea Dragon (8-21), a threatened species, can only survive in temperatures less lhan 22 degrees. The EA says that the sea dragons will go somewhere else: they "may avoid the area around the outlet." Too bad for them if they don't.
b. Green Sea Turtles. The presence of these creatures is noted but the report fails to mention that in other power stations in NSW, turtles are regularly trapped in cooling water pipes because they are attracted by the warmer temperature.
c. Whales. Noise may interfere with whale migrations via Twofold Bay
d. Anti{ouling treatments . Toxic treatments may threaten marine life and mussel culture.
2. Emissions estimates, especially in relation to particulates and heavy metals assume that the wood will be-clean and uncontaminated and no consideration is made for its exposure to salt.

Please can we be looking into the future at more renewable enregy supplies. This power supply shoulkd be compared to wind and solar or other MRET approved technologies, it will be competing with and displacing these technologies, not coal fired power. Astonishingly electricity from native wood fired power is even more GHG intensive than coal, yet it is being considered as a power source in this magical environment.
I strongly protest the building of a wood fired power station burning native foest timber
REGARDS
RACHELLE STERN

Name: Rachelle Stern

Address:
591 devils hole road Wyndham 2550

Submission for Job: #2914 Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_job&id=2914

Site: #1828 South East Fibre Exports 5 MW Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_site&id=1828

see attached PDF -

SUBMISSION ? SEFE WOOD FURNACE

Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39,
Sydney NSW 2001

Environment East Gippsland Inc has been working to protect East Gippsland?s forests and environment for the past 28 years. Our membership and supporter base is around 800.

As so much of our region?s forests end up on the woodchip pile at Eden, we are fully opposed to this inadequately researched ?good idea? for a wood-fired power furnace. The 1 million tonnes of shredded SE forests that are ?mined? and exported from our shores each year is as much about waste as are the minerals that Australia mines and exports from the west. Any claims of this fuel simply ? mopping up the waste? will no longer wear with the public. Habitat, water catchments, cloud makers, rain producers, soil holders and oxygen purifiers are what would be seen to go into the furnace; hardly something that could be sold as ?green? or ?renewable?. The 600 year old trees that are destroyed by the logging industry in SE Australia?s forests are not replaceable in under 30 human generations. A common mature tree would take 6 generations to regrow. ?Renewable power? this certainly isn?t.

We see a great opportunity here for a public boycott campaign. More than ever in history, the Australian public is becoming very environmentally savvy and concerned. This concern is most acute over climate shift, forests and water. The planned forest-fuelled furnace would heighten the public?s concern in all three areas. The spin doctors of this proposal would have a very difficult time trying to convince any consumer that such power would be environmentally benign let alone friendly.

Forests are the most effective land based carbon storage devices on Earth. In the high quality forests of Gippsland, carbon is stored in phenomenal volumes of up to 1,600 tonnes/ha. These are the same forests being targeted by VicForests and the woodchip industry. Claims that such a forest incineration power plant will counter the carbon pollution of burning coal, is farcical.

Pulp and paper markets are becoming sensitive to consumer demands and requiring an honest certification system to cover the pulpwood they buy. As a result, the woodchip industry and the union are desperate for a new market for public forests. They are trying to convince your state government to roll out the red carpet for this whacky idea. It remains to be seen how compliant the NSW government is to these well-know political donors.

Currently our group is suing VicForests in the Victorian Supreme Court for what we believe is blatant disregard for the laws protecting endangered wildlife. The outcome of this case could have fairly serious implications for easy access to native forests in the future.

Sincerely

Jill Redwood
Coordinator

20th April 2010

Name: Jill Redwood
Organisation: Environemnt East Gippsland

Address:
private Bag 3, ORBOST 3888

Additional comment to submission sent in yesterday(21/4/10):

EEG has looked at the wording in the MRET scheme. As at least half of the wood to be used for burning is not technically ?waste?, this plan to use ?waste? wood is legally questionable.

If this is ignored now, SEFE, with or without government backing or subsidies, would then broaden its take of native forest wood as fuel wood. This must not become the driver for forest destruction - or use a 50:1 ration of waste to sawlog as a justification to define good healthy forest ecosystems as 'waste' that's only good for burning.

Name: Jill Redwood
Organisation: EEG Inc

Address:
Locked Bag 3
ORBOST Vic 3888

IP Address: - 203.213.254.249

Submission for Job: #2914 Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_job&id=2914

Site: #1828 South East Fibre Exports 5 MW Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_site&id=1828

Anna Timbrell

E: anna.timbrell@planning.nsw.gov.au

SOUTH EAST FOREST RESCUE

stoppin the choppin

www.myspace.com/southeastforestrescue

THE EDEN NATIVE FOREST FED WOODCHIP POWER STATION PROPOSAL

re•new•able /r{I}'nju:{shwa}bl; NAmE 'nu:/ adj.

1. capable of being renewed. 2. (of energy or its source) not depleted when used. 3. [usually before noun] (of energy and natural resources) that is replaced naturally and can therefore be used without the risk of finishing it all: renewable sources of energy such as wind and solar power.[1]

South East Forest Rescue takes a firm stand on environmental protection of the native forest estate and expresses deep alarm at the welfare of forest-dependent threatened species and the cumulative impacts of industrial degradation of native forests that are exacerbating extinction rates and destroying soil, water, and carbon capacity.

We state from the outset that the scope of the South East Fibre Export's woodchip-fed, native forest burning, power station URS desktop environmental assessment is so narrowly defined it is almost meaningless. The URS assessment could not meet even the basic requirements of the Director General.

Background

Approximately 35 per cent of greenhouse gases in the atmosphere are due to past deforestation, and an estimated 18 per cent of annual global emissions are the result of continuing deforestation.[2] In accordance with the *Rio Declaration,* the *Montreal Process* and the *Intergovernmental Agreement on the Environment 1992,* the *Heads of Agreement on Commonwealth and State Responsibilities for the Environment 1997* stated:[3]

> The Commonwealth has a responsibility and an interest in relation to meeting the obligations under the United Nations Framework Convention on Climate Change, in co-operation with the States, through specific programmes and the development and implementation of national strategies to reduce emissions of greenhouse gases, and to protect and enhance greenhouse sinks.[4]

Following this a nationally ratified policy on reducing GHGs was laid out in the National Greenhouse Strategy 1998 and yet, since these agreements, New South Wales has not furthered mechanisms to assess and arrest Forests NSW's forest degradation or to reduce greenhouse gas emissions of native forest logging.[5] Rather, the increase in hectares of native forest logged and burnt on the south coast over the last two years suggests a 'red-light' mentality, the fear that the woodchipping industry has come to the end of

---

[1] Oxford English Dictionary.

[2] Stern N., 'The Stern Review on the Economics of Climate Change: Emissions from the Land-use Change and Forestry Sector,' Cambridge University Press, 2006; Houghton J.T.,'Tropical deforestation as a source of greenhouse gas emissions', (2005) in *Tropical Deforestation and Climate Change*, Moutinho and Schwartzman [eds.]; see also Intergovernmental Panel on Climate Change, *Climate change 2001: the scientific basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change* Houghton JT, Ding Y, Griggs DJ, et al. [eds.], Cambridge University Press, [2001]; see also Food and Agriculture Organization of the United Nations (2005) *State of the World's Forests*, Washington, DC: United Nations.

[3] The Rio Declaration, *Convention on Biological Diversity,* Rio de Janeiro, 5 June 1992, entry into force for Australia: 29 December 1993, Australian Treaty Series 1993 No 32; the *Intergovernmental Working Group in Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests (Montreal Process).*

[4] Council of Australian Governments, November 1997, 'Matters of National Environmental Significance' Attachment 1 Part II (8) < http://www.environment.gov.au/epbc/publications/coag-agreement/index.html >.

[5] In fact, despite these agreements, the State and Federal governments introduced legislation in 1998, the *Forestry and National Park Estate Act 1998* (NSW) and the subordinate Regional Forest Agreements that made logging exempt from environmental impact statements and civil litigation and made no mention of climate change or greenhouse gases.

it's shelf life, driving the felling of forests at an ever increasing industrial rate.[6]

These industrial logging practices contribute significant and continuing emissions of carbon dioxide into the atmosphere which reduce the stock of carbon stored in the ecosystem.[7] On the south coast of New South Wales logging operations in mixed-age, mixed-species forest removes approximately 50% to 90% of existing crown cover.[8] In addition to this, road construction and post-logging burning is resulting in extensive accumulated damage to the environment and the atmosphere.[9] There is little evidence of regeneration after Forests NSW logging, or care of the health of residual trees. Trees are selected for removal based on wood supply agreements to Boral, Blue Ridge Sawmill and South East Fibre Exports woodchip mill.

Over eighty five percent of trees felled are turned into woodchips, either at the Eden chipmill or at the various saw mills on the South Coast and then trucked down to the chipmill. To meet wood supply commitments, the native forest managed by Forests NSW is being cut faster than it is growing back.[10] FNSW have continuously logged over quota since the implementation of the RFAs. Forests NSW and the woodchip mill call these whole logs 'waste'. We believe this to be immoral and uneconomic.

Key Assessment Requirements

The Director General's General Requirements call for a detailed description of the project including:

> indentification of all fuel sources, including the relationship to native forest harvesting.

The URS EA states:

> Only wood waste will be burnt in the Power Plant. No native or plantation forests will be felled for the particular purpose of fuelling the Power Plant.

This was the myth that was used to sell the Eden woodchip mill to the public in the late 1960s.

Pulp load driving straight past Blue Ridge sawmill to the chipmill.

These whole logs are called 'waste'. The erroneous argument is transparently obvious. Trees are felled for sawlogs - but they don't make the grade at the sawmill so are chipped, trees are felled for pulp but they don't make the grade as woodchip therefore they are 'waste'.
This put simply is unacceptable to anyone with a conscience. Luckily there is legal definition for what is deemed waste.

---

[6] In 2004/05 FNSW logged 7592ha, in 2005/06 10 709ha, in 2006/07 13 811ha and 2007/08 14 388: *NSW Forest Agreements Implementation Reports* 2005/2006, 2006/2007: Upper North East, Lower North East, Eden and Southern regions, Resource and Conservation Unit, NSW Department of Environment and Climate Change NSW, Sydney; see also Digwood FOI figures 4 Feb, 2008 p2.

[7] Mackey B., Keith H., Lindenmayer D., and Berry S., 'Green Carbon: The Role of Natural Forests in Carbon Storage, Part 1, A green Carbon Account of Australia's South-Eastern Eucalypt Forest, and Policy Implications' ANU E Press, [2008] available at < http://epress.anu.edu.au/green_carbon_citation.html >; *The Stern Review on the Economics of Climate Change*, Summary of Conclusions, <http://webarchive.nationalarchives.gov.uk/+/http:/www.hmtreasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm >.

[8] Often residual crown cover is approximately 10% or less, particularly in the Eden region; this is illegal under the Sthn Region IFOAs which state contractors must leave 55% of net basal area under Single Tree Selection; see FNSW Harvest Plan Compartment 186: Mogo, Batemans Bay.

[9] For photographic evidence see < www.myspace.com/southeastforestrescue >; < http://www.chipstop.forests.org.au/ >; < http://www.serca-online.org >; < http://www.acr.net.au/~coastwatchers/ >; < http://www.fiveforests.net >.

[10] Performance Audit "Sustaining Native Forest Operations," Auditor-General's Report, 2009; "reviews of yield estimates for the southern region, due in 2004 for Eden and 2006 for Tumut and the south coast, have not been completed."

Strategic Justification

There is no justificication in the URS EA for this power station. There is no comparison to other sites considered in the area for the power station, nor comparisons to real renewable technologies.

The town of Eden is favourably located for either wind or solar technologies and yet no mention is made of these alternatives.

The allegation that the woodchip power station will 'improve the reliability of the local electricity supply' is not accompanied by any scientifically driven data. The woodchip mill has been exposed as the sole producer of flicker in the area, therefore they are the cause of electricity problems.[11]

Biomass Materials

Sustainability of native forest logging

The definition of *ecologically sustainable development* had its origins in the report of the World Commission on Environment and Development, *Our Common Future.*[12] Development was defined as sustainable if:

> It meets the needs of the present without compromising the ability of future generations to meet their own needs.

In the international community the term is *sustainable development.* In Australia Bob Hawke had need to place the word *ecological* in front of the phrase as developers believed they now had carte blanche to demolish the environment.[13] Thus the term is now defined in Australia as development that is *ecologically* sustainable.

The RFAs state that their purpose is to:

> provide for the ecologically sustainable management and use of forested areas in the regions.[14]

The definition currently in place is contained within the *Protection of the Environment Administration Act* at s6(2):

> Ecologically sustainable development can be achieved through the implementation of the following principles and programs:
>
> (a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
>
> In the application of the precautionary principle, public and private decisions should be guided by:
>
> (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
>
> (ii) an assessment of the risk-weighted consequences of various options,
>
> (b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,
>
> (c) conservation of biological diversity and *ecological integrity*—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration.

There is an obvious definite disjunction between what the native forestry logging and woodchipping industry believe is ‘best practice’ and what independent scientists, academics and eighty percent of the community believe is sustainable.

---

[11] K.A.Walshe, 'Flicker Frequency Changing Effects with A TSC Applied To A Woodchip Mill' commissioned for SEFE, 1977.

[12] The World Commission on Environment and Development , 'Our Common Future' *The Bruntland Report*, 1987 p8.

[13] Harris and Throsby, 'The ESD Process: Background, Implementation and Aftermath' (1997) a paper presented at a workshop 'The ESD Process Evaluating a Policy Experiment' Hamilton and Crosby eds. Academy of Social Sciences in Australia. ISBN 0 646 365231Hawke, R.J., 'Our country our future' (1989) (Statement on the environment by the Prime Minister of Australia), Canberra: Australian Government Publishing Service.

[14] Regional Forest Agreement for Southern New South Wales between the Commonwealth of Australia and the State of New South Wales April 2001 Recital B (b).

No serious attempt has been made to assess the sustainability of native forest logging in the EA and there is no scientific data to validify their claims. Fuel for the power station will be from hardwood and softwood woodchips and most of these, the URS EA admits, are obtained from logging native forest.

> The majority of the wood received by SEFE is obtained from land managed by Vic Forests and Forests NSW. Both of these agencies achieved AFS certification in September 2006. As a result, over 90% of all wood received through SEFE's gate is certified.[15]

Of course this statement is erroneous. To claim Forests NSW and Vic Forests are sustainably logging because most SEFE chips are produced under the highly controversial Australian Forestry Standard is falsely misleading. Japanese paper manufacturers are increasingly reluctant to accept AFS as an adequate label of sustainability and the biggest company in Japan, Oji, does not accept it.

The native forest woodchipping industry currently uses the discredited AFS, it is a business-as-usual label devised by John Howard's one time Forestry Minister, Wilson Tuckey. It is not taken seriously by anyone who cares about conservation or by the international community, in fact the UK Government, (the CPET Review Committee) declared that the Australian Forestry Standard does not meet the criteria set for its endorsement of Forest Certification schemes, and the Belgium Government has placed the Australian Forest Standard on a B list of forest product providers eligible for Government contracts. Brazil is gearing up to meet the European woodchip demand, not by cutting down forests, but by expanding tree plantations by 27 million hectares, mostly of exotic species such as eucalyptus.

However, ongoing native forest destruction, out of control land clearing for plantation establishment, continued use of 1080 poison, climate-changing pre and post logging burns and inadequate community consultation are driving international condemnation of FNSW forestry practices.

The head-in-the-sand attitude of the Federal Government and industry leaders and their repeated denials of a problem is selling Australia short. These European governments are sending a clear message that our logging practices are unsustainable and that the AFS, far from being 'world's best practice' is in fact second-rate.

Worldwide there is an increasing demand for forest products that come from environmentally responsible suppliers. Australia has a golden economic opportunity to reform its forestry practices and tap into that global market. The native forest logging industry is currently being subsidised by taxpayer money to the value of $9 per person. [redacted] when he stated in 2003 that there was no cost to the taxpayer, coming from the native forest logging sector.[16]

The Scott Spencer report confirms observations by conservationists and the community that the Regional Forest Agreements have failed to meet their transparency and sustainability obligations.[17]

If the NSW Regional Forest Agreements were supposed to provide for the 'conservation of areas, for Ecologically Sustainable Forest Management and twenty year certainty for native forest industries', then the results of the Spencer report show clearly that the agreements have failed dismally on all accounts.

FNSW were legislatedly required to produce annual reports of progress on meeting regional ESFM targets in ESFM Plans, and this has not been delivered. This is central to accountability under the RFAs.

> 'The remaining multi-age forests resource is coming to an end in the next two to three years',
>
> Ian Barnes, FNSW Regional Manager, Batemans Bay.

Clause 95.6 requires NSW, in accordance with clause 46(f), to review sustainable yields, consistent with Attachment 11 and FRAMES, in time for the first 5 year review. Failure to comply with this a trigger for

---

[15] SEFE URS Environmental Assessment, Ch 2 p16.

[16] Legislative Council Questions and Answers No. 27, Tuesday 28 October 2003, [16 September 2003] (Paper No. 21), NSW Parliamentry Hansard, 435.

[17] *Final Report on Progress with Implementation of NSW Regional Forest Agreements: Report of Independent Assessor*, November 2009 < http://www.daffa.gov.au/__data/assets/pdf_file/0007/1546711/assessors-report.pdf >.

termination of the RFA (cl 99(iv)).

Because the forests have been so heavily overcut, the promised level of supply cannot be met. Forests NSW are logging these important forests and ignoring environment protection rules for the sake of only another two to three years worth of trees. This alone is grounds to terminate the RFAs.

The URS EA was required to report and identify all fuel sources, including the relationship to native forest harvesting and it has failed to do that. It was required to provide a detailed description of each type of biomass fuel, the source of that 'waste', and quantity to be used annually and demonstrate that no native or plantation forests will be felled for the particular purpose of fuelling the proposed power station. It has failed to do that also.

Given the amount of money and time spent on the EA, the failure of URS to provide any adequate information seems indicative of the overall native forest logging industry.

Air Quality

Particulates

A problem with the combustion of raw biomass is that it emits considerable amounts of pollutants such as particulates and PAHs (polycyclic aromatic hydrocarbons). Even modern pellet boilers generate much more pollutants than oil or natural gas boilers. The particulate matter produced in biomass burning may be transported over great distances.[18] Polycyclic aromatic hydrocarbons (PAHs) can be formed by anthropogenic processes or be derived from natural sources. The anthropogenic PAH sources, mainly from combustion processes, are by far the major contributors of hydrocarbons with known health hazards to the environment.[19]

The proposed power station will emit the products of combustion through an exhaust stack 35 metres high. The emissions will largely comprise carbon monoxide, carbon dioxide, nitrogen oxides, particulates and smoke.[20] The EA itself concedes that the heavy metal content of the ash produced will exceed allowable limits.

Wood smoke has caused severe concerns about health effects due to the high PAH content. The most significant health risks related to air quality posed by wood combustion are associated with fine particulates, in particular “inhalable” particulates <10 μm in diameter and “respirable” particulates < 2.5 μm in diameter.

Combustion particulates are very fine with mean particle sizes of less than 1 μm; consequently, mechanical collectors such as cyclones cannot normally achieve emission levels less than 120 mg/m3 for wood combustion (grate or suspension burners). Since the coarser particles are more easily collected, as the efficiency of air pollution collection (APC) equipment increases, the remaining (or penetrating) fraction becomes increasingly fine and even more difficult to collect.[21]

The limited data available indicate that dioxin concentrations in the emissions from smaller boilers

---

[18] See Ballentine D.C., Macko S.A. and Turekian V.C. 'Variability of Stable Carbon Isotopic Compositions in Individual Fatty Acids From Combustion of C and C Plants: Implications for Biomass Burning,' 152 *Chemical Geology* [1998] 151; see also Standley L.J., Simoneit B.R.T., 'Characterization of Extractable Plant Wax, Resin, and Thermally Matured Components in Smoke Particles from Prescribed Burns,' 21 *Environment Science and Technology* [1987] 163.

[19] See Bernd R.T. and Simoneit, 'Biomass Burning - a Review of Organic Tracers for Smoke from Incomplete Combustion,' 17 *Applied Geochemistry* [2002] 129.

[20] The pollutants known to be emitted from wood fired power stations are Acetaldehyde, Alpha-pinene, Beta-pinene, Carbon monoxide (CO), Formaldehyde, Methanol, Naphthalene, Toluene, Turpentine, 2,3,7,8 Tetrachlorodibenzo-p-dioxin (TCDD) C/P, 2,3,7,8-Tetrachlorodibenzo-p-furan C, Hydrogen sulphide C/S, Nitrogen oxides (NOx), Beryllium, Cadmium and compounds, Chromium, Cobalt, Copper, Iron, Lead arsenate, Lead chromate, Magnesium, Manganese, Molybdenum, Nickel and compounds, Particulate matter (PM): Phosphorus, Selenium, Silver, Thallium, Zinc, Arsenic and inorganic arsenic compounds, Mercury, Hydrochloric acid, Sulphuric acid, Sulphur dioxide (SO2); 3240 Legislative Council Questions and Answers No. 92, Thursday 26 March 2009.

[21] Technical Support Division, Office of Air Quality Planning and Standards, U. S. Environmental Protection Agency, Research Triangle Park, NC*: Emission Factor Documentation For AP-42 Section 1.6 — Wood Waste Combustion In Boilers*, April, 1993.

burning wood containing salt can be much higher than from large industrial boilers. If chlorine (sea salt or PVC) containing fuels are allowed to be burned in small boilers, more work needs to be done to measure dioxin emissions and determine appropriate control options. The URS EA fails to mention this.

The combustion of wood can result in number of potential pollutants depending on the contaminants in the fuel and the type and completeness of combustion process. The USEPA in AP-42 has identified 90 organic compounds (or groups of compounds), and 26 trace elements (metals) in the emissions from wood combustion. Washington State in 2005 developed emission factors for over ninety (90) chemicals.[22] Then it conducted a risk assessment, including air dispersion modelling, to determine Candidate Pollutants of Concern which, based on their analyses, represent the most significant emissions from wood-fired boilers.

For instance Ethylene is a plant hormone that can affect greenhouse crops, such as tomatoes, in very low concentrations. So although ethylene may not be considered an environmental concern in the ambient air outside of a greenhouse, it can be inside; consequently, if wood flue gas is to be circulated within a greenhouse, the system will have to deal with this gas.[23]

This is publicly available information on emissions and control options for wood combustion systems with a rated capacity greater than 0.1 MW.

The size of particles is directly linked to their potential for causing health problems. Particles of concern are small particles (known as PM2.5 or fine particulate matter), which are less than 2.5 micrometers in diameter. These probably pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream. Exposure to such particles can affect both your lungs and your heart.

Particle exposure can lead to a variety of health effects. For example, numerous studies link particle levels to increased hospital admissions and emergency room visits-and even to death from heart or lung diseases. Both long- and short-term particle exposures have been linked to health problems. Studies have shown that the effects of wood smoke and particulates are equal to those effects caused by vehicle and road emissions.[24]

Short-term exposure to particles (hours or days) can:

a.. Aggravate lung disease causing asthma attacks and acute bronchitis.
b.. Increase susceptibility to respiratory infections.
c.. Cause heart attacks and arrhythmias (abnormal heart rhythms) in people with heart disease.

Even healthy people may experience temporary symptoms such as:

a.. Irritation of the eyes, nose and throat.
b.. Coughing.
c.. Chest tightness.
d.. Shortness of breath.

The groups that are most sensitive to particles are children, older adults and people with heart or lung disease like asthma, COPD, angina, strokes or partially blocked arteries.[25]

During mechanical handling of forest residues, the mould dust concentration at the working area becomes high, which causes health risks. This holds true for the loading and the chipping of residues at different

---

[22] Washington State Dept of Ecology:, 'Hog Fuel Boiler RACT Determination' Publication 03-02-009, 2005.
[23] *'Emissions from Wood-Fired Combustion Equipment,'* Envirochem Services Inc. Emissions Report-July 3 2008, prepared for the Environmental Management Branch, Ministry of Environment, British Columbia.
[24] See Kocbach A., Namork E., Schwarze P.E., 'Pro-inflammatory Potential of Wood Smoke and Traffic-Derived Particles in a Monocytic Cell Line,' 247 *Toxicology* [2008] 123.
[25] See Department of Health < http://www.health.nsw.gov.au/publichealth/environment/air/air_pollution.asp > as at 27/03/2010.

stages in the production process, but also for manual work at the end-user. Drivers of trucks and chipmill workers are examples of groups with high risks of exposure. Microbial activity starts directly after logging. At the woodchip mill the predominant species are *Aspergillus fumigatus*, *Penicillium* spp., and *Paecilomyces* spp.[26]

Chip piles and wood dust provide an easily accessible food supply for wood attacking organisms since the wood is finely divided and the protective lignin shield around the cellulose may be broken.[27] The temperature in a chip pile can reach up to 700°C, and thus the growth of thermophilic and thermotolerant fungi occurs.[28] The most prevalent species are *Aspergillus fumigatus*, other *Aspergillus* species and *Penicillum* species.

The fungal spore concentration at chip piles varied between 104 to 105 spores/m3. Hardwood chips are more easily infected by fungi than chips of coniferous wood (Thörnqvist and Lundstrom, 1982).[29] A study of biohazards in composted wood chips found that the endotoxin levels of the bulk material ranged from 98.92 to 934.68 EU/mg, while the airborne levels of endotoxins were 636.52 EU/m3 in inspirable dust and 771.79 EU/m3 in respirable dust.[30] The concentration of Gram (-)ve bacteria in bulk were 7.9x109 CFU/g and in airborne dust 2.9x105 CFU/m3. Predominant fungi identified in the bulk material were *Aspergillus fumigatus*, *Aspergillus niger*, *Penicillium* spp., *Rhizopus microsporus*, and *Absidia* sp. The predominant fungi in the dust were *Aspergillus fumigatus*, *Aspergillus niger*, *Penicillum* spp., *Rhizopus stolonifer*, *Cladosporium* sp. and *Trichoderma* sp.

Insidious subacute development of allergic alveolitis can result from prolonged exposure to low concentrations of fungi. *Penicillium* has also been reported as the causative agent in fuel-chip induced hypersensitivity inhumanities. *Aspergillus fumigatus* and *Fusarium* spp. are known pathogens, which can cause infection or toxicosis in humans and animals. Multivariate analyses showed that the effect of all the personal exposures on cross-shift decrements in lung function was more prominent among sawmill and chip mill workers.

Mycotoxins can cause various toxic effects in humans. Acute and chronic respiratory diseases were reported after inhalation of organic dust containing toxigenic moulds and mycotoxins, respectively.[31] Prolonged exposure to organic dust and previous episodes of acute pulmonary reactions after mould dust exposure lead to chronic bronchitis and loss of lung function.[32] The activation of macrophages with consecutive inflammatory reaction plays a crucial role in these effects of bioaerosols (especially when the dust contains high amounts of endotoxins).[33] Toxigenic moulds of the genera *Aspergillus* and *Penicillium* are predominant in the dust therefore inhalation of mycotoxins contribute substantially to the observed adverse health effects.

Epidemiological studies have associated exposure to ambient particulate matter, in general, with cardiovascular and pulmonary morbidity and mortality. Recent studies suggest that exposure to wood

---

[26] Alwis K., 'Occupational Exposure to Wooddust' available online <http://ses.library.usyd.edu.au/bitstream/2123/392/2/adt-NU1999.0018whole.pdf> 9 April 2010; see also Alwis KU, Mandryk J, Hocking AD 'Exposure to Biohazards in Wood Dust – Bacteria, Fungi, Endotoxin and (1->3)-β-D-glucan,' *Applied Occupational Environmental Hygiene* [1999].

[27] Rossell S.E., Abbot E.G.M., Levy J.F., 'Bacteria and Wood - a Review of the Literature Relating to the Presence, Action and Interaction of Bacteria in Wood,' 6 *Journal Institute Wood Science* [1973] 28.

[28] Jappinen P., Pukkala E., Tola S., 'Cancer Incidence of Workers in a Finnish Sawmill,' 15 *Scandanavian Journal of Work Environmental Health* [1998] 18.

[29] Thörnqvist T. and Lundstrom H., 'Health Hazards Caused by Fungi in Stored Wood Chips' 32 *Forest Products Journal* [1982] 29.

[30] Olenchock S.A., Sorenson W.G., Kullman G.J., Jones W.G., 'Biohazards in Composted Wood Chips' 8 *Biodeterioration and Biodegradation.* [1991].

[31] See Bünger J., Westphal G., Mönnich A., Hinnendahl B., Hallier E., Muller M., 'Cytotoxicity of Occupationally and Environmentally Relevant Mycotoxins,' 202 *Toxicology* [2004] 199.

[32] See Dalphin, J.C.H., Pernet, D., Dubiez, A., Debieuvre, D., Allemand, H., Depierre, A., 'Etiologic Factors of Chronic Bronchitis in dairy farmers. Case control study in the Doubs region of France,' 103 *Chest* [1993] 417.

[33] See Christiani, D.C., 'Organic Dust Exposure and Chronic Airway Disease,' 154 *American Journal Respiritory Critical Care Medicine* [1996] 833.

smoke may affect both respiratory and cardiovascular health.[34] Inhaled particles deposited in the lung can interact with macrophages and epithelial cells to induce the release of a complex cascade of inflammatory signalling proteins like cytokines, chemokines and growth factors.[35] Proinflammatory cytokines such as tumour necrosis factor(TNF), interleukin (IL)-1 and IL-8 may initiate and exacerbate inflammation.[36]

The proposed site of the power station is less than three kilometres directly south of Eden in Twofold Bay.[37] On the South Coast the high wind season, which is in August through to October, is predominated by wind that blows in a southerly direction, making the township of Eden a direct target for emission fallout.

A recent report on the effects of heavy metals in pregnant women is of great concern. This report shows the link between heavy metals in-utero and hypospadias (penis defects) in babies. Hypospadias is a urogenital birth defect affecting infant boys. Periconceptual parental occupational exposure to endocrine disrupting chemicals (EDCs) with oestrogenic or anti-androgenic properties may adversely affect male genital development in-utero. Multivariable analysis showed a strong association with potential maternal occupational exposure to heavy metals with an over two-fold increased risk of hypospadias (Odds Ratio (OR) 2.6, 95%CI 1.3 to 5.2) and women exposed to phthalates were more likely to have an affected son (1.2, 0.8 to 1.7). Compared with mild or isolated cases, the risk of moderate-severe hypospadias or multiple defects were increased up to 2 and 5-fold, respectively with maternal exposure to most types of EDC. Paternal occupational exposure to polychlorinated organic (OR 1.3, 95%CI 1.0 to 1.8) and bi-phenolic (OR 1.6, 95%CI 1.0 to 2.6) compounds were also possible risk factors.[38]

Water Quality

Marine Water Quality and Ecosystems

The SEFE woodchip mill is situated in Eden at Twofold Bay. Twofold Bay provides important habitat for endangered and threatened marine life, cetaceans and migratory birds. Many bird species are listed under JAMBA or CAMBA and known to occur in the area.[39] The SEFE land is foreshore land that also adjoins the Ben Boyd National Park, Towamba River and Twofold Bay estuary. It is an iconic tourist destination for whale watching. Twofold Bay is the only ocean embayment in the Twofold Shelf bioregion and the

---

[34] See Boman, B.C., Forsberg, A.B., Jarvholm, B.G., 'Adverse Health Effects from Ambient Air Pollution in Relation to Residential Wood Combustion in Modern Society,' 29 *Scandanavian Journal of Work Environment and Health* [2003] 251; see also Naeher, L.P., Brauer, M., Lipsett, M., Zelikoff, J.T., Simpson, C.D., Koenig, J.Q., Smith, K.R., 'Woodsmoke Health Effects: a Review,' 19 *Inhalation Toxicology* 2007] 67; see also Barregard, L., Sallsten, G., Gustafson, P., Andersson, L., Johansson, L., Basu, S., Stigendal, L., 'Experimental Exposure to Wood-Smoke Particles in Healthy Humans: Effects on Markers of Inflammation, Coagulation, and Lipid Per Oxidation,' 18 *Inhalation Toxicology* [2006] 845.

[35] See Salvi, S., Holgate, S.T., 'Mechanisms of Particulate Matter Toxicity,' 29 *Clinical Exposure Allergy* [1999] 1187.

[36] See Kocbach A. et al, above n 24.

[37] SEFE originally stated the project was 35km from Eden, by road this is not an untruth.

[38] Nassar N., Abeywardana P., Barker A., Bower C., 'Parental Occupational Exposure to Potential Endocrine Disrupting Chemicals and Risk of Hypospadias in Infants,' *Occupational Environmental Medicine* doi:10.1136/oem.2009.048272.
< http://www.smh.com.au/lifestyle/wellbeing/heavy-metals-raise-risk-of-penis-defects-20091202-k6es.html >;
< http://oem.bmj.com/content/early/2009/11/25/oem.2009.048272.short?q=w_oem_ahead_tab >

[39] *Japanese Australian Migratory Bird Agreement* Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment (Tokyo, 6 February 1974) Entry into force: 30 April 1981 *Australia Treaty Series 1981* No 6*;Chinese Australian Migratory Bird Agreement* Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment (Canberra, 20 October 1986)Entry into force: 1 September 1988 *Australia Treaty Series 1988* No. 22; the hooded plover (*Thinornis rubricollis*) and the shy albatross (*Diomedea cauta*), black-browed albatross (*Diomedea melanophrys*), sooty albatross (*Phoebetria fusca*) and pied oystercatcher (*Haematopus longirostris*) beach stone curlew, bush stone curlew, humpback whales (*Megaptera novaeangliae*) southern right whales (*Eubalaena australis*) and blue whales (*Balaenoptera musculus*) as well as other cetaceans including dolphins and pilot whales, the shorttailed shearwater (*Puffinus tenuirostris*), australian reef egret (*Egretta sacra*), white-bellied sea-eagle (*Haliaeetus leucogaster*) and grey plover (*Pluvialis squatarola*) little tern (Sterna albatross), black bittern (Lybrychs flavicollis), sooty oystercatcher (Haematopus fuliginous), pied oystercatcher (H. longirostris), sanderling (Calidris alba) and lesser sand plover (Chardris mongolus). Fish such as black cod, seahorses, benthic organisms, poseidon seagrass populations and habitat; the power station will have two process water requirements. Boiler make-up water will be required to replace blow-down water at the rate of 1 – 1 ½ % of the steam flow rate, or about 275 litres per hour and sea water will be used to dissipate the heat and be pumped from a point on SEFE's wharf, through the heat exchanger and returned to the sea some 15 – 20 degrees warmer; "Giant Kelp has receded to Tathra because of warming ocean temperature levels," Dr Alan Millar, Royal Botanical Gardens, Sydney.

area has recently been declared a Marine Park.[40]

There are special and unique features about this region which includes the continental shelf and slopes, and the water which, because of it's different depths, creates an enormous amount of biological diversity. The marine park was established to help conserve marine biodiversity and maintain marine ecosystem processes.

The Broadscale Biodiversity Assessment of the Batemans and Twofold Shelfs identifies a number of other factors as to why this area was accepted as a marine park and why it is of important biodiversity value.

• Listed in the Directory of Important Wetlands.
• The sheltered rocky shores, beaches, reefs, deep-water areas, sand flats and wetlands around the bay provide important habitat for marine life, cetaceans and threatened and migratory birds (ANCA, 1996).
• The endangered hooded plover (*Thinornis rubricollis*) and the vulnerable shy albatross (*Diomedea cauta*), black-browed albatross (*Diomedea melanophrys*), sooty albatross (*Phoebetria fusca*) and pied oystercatcher (*Haematopus longirostris*) have been recorded from Twofold Bay (ANCA, 1996).
• Humpback whales (*Megaptera novaeangliae*) are regularly sighted here when migrating north and south.
• Southern right whales (*Eubalaena australis*) and blue whales (*Balaenoptera musculus*) also visit the bay occasionally as well as other cetaceans including dolphins and pilot whales.
• The bay is a known resting locality for cetacean migrants (ANCA, 1996).
• Species listed under JAMBA or CAMBA and known to occur in the area include the shorttailed shearwater (*Puffinus tenuirostris*), australian reef egret (*Egretta sacra*), white-bellied sea-eagle (*Haliaeetus leucogaster*) and grey plover (*Pluvialis squatarola*) (ANCA, 1996).

Giant Kelp is now only known to extend north to Bermagui as climate change and warming sea temperatures effect it's growth. Within the Kelp are hundreds of organisms that are part of the food chain and the Kelp also provides important habitat to many marine creatures.

> Algal turfs increased in abundance under elevated temperatures, suggesting that future increases in temperature could allow turfs to be increasingly abundant throughout periods of naturally low abundance (i.e. winter). Algal turfs can inhibit kelp recruitment. Any phenological shift that allows turfs to persist though periods of kelp recruitment is likely to reduce the resilience of kelp forests to disturbance.[41]

Posidonia australis is apparently relatively stenohaline and is restricted to areas where average salinities are about 30% or above.

The ocean coast between Twofold Bay and Wonboyn River has the largest area of mapped inshore reef in NSW south of Tuross Heads. There are also small areas of inshore islands and rocks. It also provides the largest area of intertidal rocky shore of all sections in the Batemans Shelf bioregion or the NSW section of the Twofold Shelf bioregion.

The EA states that hot water will be discharged into Twofold Bay and that the temperatures of the coolant will be very high, more than 21 degrees above the ambient water temperature. Temperature is a crucial environmental factor affecting marine organisms and ecosystems. Sea-surface temperature or SST effects every flora and fauna of the sea. Some organisms rely on temperature for breeding cycles, some rely on it for growth. It affects the distribution of populations on both small and large geographical scales, and determines the structure of communities and ecosystems by affecting the physiological processes and

---

[40] Breen D.A., Avery, R.P. and Otway N.M., *Broadscale Biodiversity Assessment of Marine Protected Areas in the Batemans Shelf andTwofold Shelf Marine Bioregions* (2005) Final Report, NSW Marine Parks Authority; an ocean embayment is a semi enclosed bay that is a transitional zone between estuaries and the oceans, which provides habitat for communities of both environments.

[41] S. D. Connell and B. D. Russell, 'The Direct Effects of Increasing CO2 and Temperature on Non-calcifying Organisms: Increasing the Potential for Phase Shifts in Kelp Forests' 277 *Proceedings of the Royal Society B* [2010] 1409.

behavior of fish species.[42]

Reefs and marine ecosystems around the world are exposed to the effects of thermal phenomena such as global warming, El Niño and localized thermal pollutants.[43] Heated effluents introduced on the marine environment may cause dramatic and unpredictable effects, depending on the amount and temperature of discharged material, as well as the climatic, hydrological and biological features of the local environment.[44] Fish are mobile, and most could possibly migrate to safe areas when chronic low levels of heat pollution occur. This would depend on the length of the event and the reach of the effluent. However, many of their food sources (i.e. corals, sponges, macroalgae, etc.) are sessile, and may be adversely affected.[45]

Studies show that thermal pollution alters benthic cover and influences fish assemblages by altering composition and decreasing richness. Thermally polluted rocky substrate may be unable to support sessile invertebrates or microalgae vegetation and will have a negative impact on fish using the habitat for shelter, food, nesting and juvenile settlement. Obviously a decrease in habitat complexity can also decrease species richness.[46]

Terrestrial Water Quality

Again the URS SEFE EA makes no mention of the indirect consequences on water supply and quality of the logging of native forest for woodchips.

Currently all unmapped, first and second order streams have less than thirty metre buffers, which suggests that current logging adjacent to these streams is having a significant impact. The CRA report "Water quality and quantity for the UNE, LNE and Southern RFA regions" (1998) Project NA61/ESFM, p 54. went on to say that the methodology used for the EPLs is not scientifically defendable. Even more recent research found in the State of the Forests Report 2008 suggests that twenty metre buffers need to be retained to generally reduce turbidity levels.[47]

Forestry machinery compacts soil, preventing absorption of rainwater. When it rains the run-off carries a lot more sediment into streams. Movement of this machinery and other vehicles along forest roads raises a large volume of dust (30 -90 tonnes per year for every hectare of unsealed road, compared to 0.3 tonnes for unsealed roads in undisturbed forests). Erosion is the largest contributor to turbid water in Australia. A study of the Eurobodalla catchments in NSW showed that approximately 905 tonnes of sediment were transported through the river in one four-day storm. This is compared with thirteen tonnes for the previous six-month period.[48] Significant sediment loads have also been identified as coming from the 50,000 kilometres of unsealed roads within state forests and reserves.[49] Suspended sediment loads in inland waters caused by gully erosion and degraded flow paths, can have significant impacts such as siltation of river channels, infilling of wetlands, reduced light penetration inhibiting photosynthesis, and loss of habitat and spawning sites for gravel-bed dependent fish.[50]

---

[42] Glynn P.W., 'El Niño–Southern Oscillation 1982–1983: Near-Shore Population, Community, and Ecosystem Responses' 19 *Annual Review of Ecological Systems* [1988] 309; Wilson J.G., 'Temperature Tolerance of Circatidal Bivalves in Relation to Their Distribution' 6 *Journal of Thermal Biology* [1981] 279; Suresh K., Ahamed M.S., Durairaj G., Nair K.V.K., 'Impact of Power Plant Heated Effluent on the Abundance of Sedentary Organisms, off Kalpakkam, East Coast of India' 268 *Hydrobiologia* [1993] 109.

[43] Forchhammer M.C., Pots E., Kozlov M.V., Hughes L., 'Climatic Signatures in Ecology' 15 *Trends in Ecology and Evolution* [2000] 286.

[44] Lardicci C., Rossi F., Maltagliati F., 'Detection of Thermal Pollution: Variability of Benthic Communities at Two Different Spatial Scales in an Area Influenced by a Coastal Power Station' 38 *Marine Pollution Bulletin* [1999] 296.

[45] T.P. Teixeira, L. M. Neves, F. G. Araújo, 'Effects of a Nuclear Power Plant Thermal Discharge on Habitat Complexity and Fish Community Structure in Ilha Grande Bay, Brazil' *Marine Environmental Research* 68 [2009] 188.

[46] T.P. Teixeira, et al, above n 3.

[47] See *State Of the Forests Report 2008* p109.

[48] Drewry, J. J., Newham, L. T. H., Greene, R. S. B., Jakeman, A. J. and Croke, B. F. W., 'An Approach to Assess and Manage Nutrient Loads in Coastal Catchments of the Eurobodalla Region, NSW, Australia,' (2005), MODSIM 2005 International Congress on Modelling and Simulation, pp. 2658-2664.

[49] Drewry J.J., Newham L.T.H, and Greene R.S.B., 'An Index-Based Modelling Approach to Evaluate Nutrient Loss Risk at Catchment-Scales,' (2008) Integrated Catchment Assessment and Management Centre, The Australian National University, Canberra < http://www.mssanz.org.au/modsim07/papers/43_s47/AnIndex-Baseds47_Drewry_.pdf >

[50] See Monitoring and Evaluation Trials, New South Wales Region, Southern Catchment, Phase 1 Report, (2004) National Land & Water

Water costs have soared since the CRA analysis was done. The price per kilolitre in the Eurobodalla in 2000 was $0.80.[51] It is currently $1.95 per kilolitre and $2.95 for consumption of over one hundred fifty kilolitres. When forests are logged, the amount of water flowing in creeks and rivers, after a short initial increase, can decrease by up to fifty percent. It may even cease to flow in dry periods. Also regrowth needs much more water to grow than mature trees.

In 1999 it was estimated that the cost of water lost by the logging of 2000 hectares of native forests in the Eurobodalla catchments in one year to be over ten million dollars. This amount is compounded each year that these catchment forests continue to be logged.[52] Therefore there is a need to independently reassess the economic costs of the RFAs as they apply to water quantity and security.

The severity of the prolonged drought and inclement climate change conditions is readily portrayed by the flow recordings of all the rivers in the Southern and Eden regions that are victims of the logging of their catchments; the Shoalhaven, Clyde, Tuross, Deua, and Buckenboura rivers in the Eurobodalla shire and Bega rivers. The community's water supply depends upon these rivers. Logging in these catchments is continuing to compound the negative effects of this form of land use on catchment hydrology.

Noise Impacts

Anyone spending time near the Eden chipmill or on Edrom Road knows the amount of noise generated from the mill and trucks. From the two to three bulldozers moving the chip piles, to the log loaders and the chipper, to the huge B-Doubles that come in, sometimes earlier than 5:30 am. The noise that's generated through each town and up and down the highway by the log trucks on the south coast is huge. This is definitely detrimental to tourism.

Flora and Fauna

In the URS SEFE EA there is no mention of effects of the logging of the native forest, that SEFE will use, on threatened and endangered species. This is an incredible oversight.

The numbers of threatened species, threatened populations and ecological communities has increased significantly in the last ten years. The number of threatened and endangered species has risen dramatically on the south coast since the RFAs were signed and many threatened and endangered flora and fauna species are at extreme risk from current logging operations. The Reserve system gazetted to date, along with the off-reserve protection measures of the IFOAs, are neither comprehensive, representative, or adequate to meet the needs of threatened species survival. The Scientific Committee's figure for NSW species, populations or ecological communities threatened with extinction in 2009 is 1035.[53] This figure, when compared to the 1998 figure of 868 is the most indicative of the RFAs effect on our environment.[54]

Resources Audit, < http://lwa.gov.au/files/products/national-land-and-water-resources-audit/er050846/er050846.pdf > and also NSW Diffuse Source Water Strategy, DECC 2009/085, ISBN 978174122 961 5 < http://www.environment.nsw.gov.au/resources/water/09085dswp.pdf >

[51] Water Use and Allocation in the Eurobodalla <http://www.esc.nsw.gov.au/site/plans/Documents/Archive/1999/SOE/SOERd/TheReport/Eurobodalla/IndicatorResults/WaterDemandManagement.htm >.

[52] Atech Group, 'Southern Forests Catchment Values and Threats' (1999) < http://www.atechgroup.com.au >.

[53] For 2008 figures see < http://www.threatenedspecies.environment.nsw.gov.au/index.aspx >.

[54] For 2000 and 2003 figures See < http://www.environment.nsw.gov.au/soe/soe2003/chapter6/chp_6.3.htm#6.3.69 > and for 2006 figures <http://www.environment.nsw.gov.au/soe/soe2006/chapter6/chp_6.3.htm#6.3.71 >; see <http://www.threatenedspecies.environment.nsw.gov.au/index.aspx >; two examples illustrate this point: firstly, in relation to the endangered Hasting River Mouse, the conditions contained in the Integrated Forestry Operations Approval for this species have recently been weakened for certain core areas for the Hasting River Mouse at the behest of the Forests NSW to increase access for logging; secondly, in relation to the endangered Spotted-tailed Quoll, FNSW were found illegally logging a Spotted-tailed Quoll exclusion zone in Forestland State Forest in Upper and Lower North East NSW; they admitted the fact, but claimed it was a 'mistake'; recently in Mumbulla cpt 2135 FNSW failed to notice a koala record and therefore started logging.

Status	2000	2003	2006
Extinct	77	79	75
Endangered	379	396	441
Vulnerable	367	386	392
Populations	17	28	36

A new report by Professor Richard Kingsford, Professor Brendan Mackey and a think tank of thirteen eminent scientists has stated:

> Loss and degradation of habitat is the largest single threat to land species, including 80 percent of threatened species.[55]

As we can see the greatest threats to Australia's biodiversity are caused by broad-scale land clearing and forestry operations including establishment of plantations and fire management practices.[56] The Expert Panel stressed that the persistence and perpetuation of hollow bearing trees is imperative for the survival of forest fauna.[57] A discussion of the conservation measures in place to maintain these hollow bearing trees highlighted the following points:

- Tree mortality is high; the ratio of one recruit tree to one hollow bearing tree is unlikely to maintain the targeted number of hollow bearing trees in Net Harvest Areas in the mid to long term. This is particularly the case in the regrowth zones. Modelling is required to define a more appropriate ratio of recruits to hollow bearing trees.
- The rotation time between harvesting events within a compartment requires revision. Current rotation intervals are too short to allow recruitment trees to form hollows. Additionally, hollow bearing trees retained from the previous harvesting event are not permanently marked therefore could be removed in the next rotation.
- Guidelines or criteria should be developed for the selection of recruitment and hollow bearing trees. Trees with the potential to develop a broad range of hollow types should be targeted for selection. Suppressed trees should not be selected as recruit trees.
- Prescriptions for the retention and recruitment of hollow bearing trees in the Net Harvest Area should be rewritten to emphasise not only maintaining these features during a single cutting cycle but managing them to persist in the landscape.
- Specific prescriptions should be developed for hotspots, defined as areas of high species richness. A sliding scale, where incremental increases in species diversity are matched by increases in prescription strength, was suggested.

SEFR's observations, from on-ground monitoring ten years later, see little change to the prescriptions; the habitat to recruitment ratio is still one to one; the regrowth zone is weaker, because only the hollow-bearing trees present (up to a maximum of ten per two hectares) are retained - if ten are not present then consequently less recruitment trees are retained; there are no stipulations in any harvest plans to retain previously retained trees and rotation times have shortened. For example compartment 62 of South Brooman State Forest has had 'Timber Stand Improvement' twice and been logged nine times since 1954, which is virtually every six years.[58]

Habitat and recruitment tree selection is getting more parlous by the year. Many suppressed recruitment and very small habitat trees (often with no visible hollows) are always found when auditing logged areas, though strangely the stumps are invariably of the largest size class. The sliding scale idea was put in place in Eden yet the solid data on exact amounts of each habitat class that has been logged since 1999 seems

---

[55] Kingsford R. T., Watson J. E. M., Lundquist C. J., Venter O., Hughes L., Johnston E.L., Therton J.A., Gawel M., Keith D.A., Mackey B.G., Morley C., Possingham H.P., Raynor B., Recher H.F., and Wilson K.A., 'Major Conservation Policy Issues for Biodiversity in Oceania (p 834-840) Published Online: Jul 13 2009 5:36PM .
< http://www3.interscience.wiley.com/journal/118487636/home?CRETRY=1&SRETRY=0 >.

[56] See The National Strategy for the Conservation of Australia's Biological Diversity (1996).

[57] See 'Review of Protective Measures and Protective Measures and Forest Practices - Biodiversity Workshop Southern Region' Ecologically Sustainable Forest Management Group, July 1999, Project No. NA45/ESFM p176-177.

[58] Southern Region – Compartment 62, South Brooman State Forest, Bateman's Bay Management Area, Harvest Plan approved 8/5/09.

non-existent and the volume of "high" class habitat is not reported on.

FNSW have been informed on the extent of threatened species in their region yet could only find fifteen percent of these species in the Eden region and thirteen percent in the Lower North East in the pre-harvest fauna surveys.[59]

To obtain data for surveys FNSW officers conduct 'nocturnal surveys.' SFOs have often been observed shining their torch on the ground. A case in point is three years prior to logging Compartment 3046 FNSW conducted a nocturnal call playback and spotlight survey and South East Forest Rescue observed the following breaches and inadequacies during this survey.

> 8.8.5 Nocturnal Call Playback
> Nocturnal call playback must target the following species: Masked Owl, Sooty Owl, Barking Owl, Powerful Owl, Squirrel Glider and Yellow-bellied Glider. Nocturnal call playback surveys must be conducted as follows:
> c) At each call playback site, an initial listening period of 10 minutes should be undertaken, then each target species call must be played for five minutes followed by at least a two minute listening period. After the last call at least 10 minutes must be spent listening. Calls must be played from a good quality portable tape cassette or CD player and amplified through a nine volt megaphone, or equivalent or better.[60]

> SEFR met the SFOs at 6.30pm on the Tilba-Punkalla Rd and after introductions drove a few hundred metres to the call playback site. There were to be calls from the following species: Koala, Masked Owl, Sooty Owl, Barking Owl, Powerful Owl and Yellow-bellied Glider. The time required for this at seven minutes per species (five minute playback and two minute listen) is forty two minutes. On top of this is the initial ten minute listening period and a final ten minute listening period. This makes the total time for the playback survey to be sixty two minutes. The time was 6.45 when the equipment was set up and SEFR were given instructions on what to do. It was 7.30pm when the parties got back into the cars to drive to the spotlight survey area.
> The total time for the call playback was forty five minutes, which is in breach of the above condition.
> Also of concern is the position and timing of the call playback. The Tilba-Punkalla Rd is a back road to Narooma and the access to many properties. A motorbike drove along the road about ten minutes before the start of the survey and a car came past during the second call. To do this survey at this time, at that position, with this level of disturbance seems that the survey was set up to fail from the start. This also needs investigation as it is not in the spirit of the IFOA.
> The sound from the amplification gear was very distorted and several of the calls were not representative of the species in question, whether that was from the bad sound quality or bad taping of the call is unclear.
> Condition g) states:
> Survey season:anytime of the year, preferably in Spring, Summer and Autumn.
> While this condition says "preferably" the SFOs told SEFR that they had to wait until spring to undertake some frog and bat surveys.
> These breaches undermine the limited scope for protection of threatened species by the IFOA.[61]

This survey stood as the data on threatened species for that compartment's logging operations three years later.

The lack of care for threatened and endangered species is nowhere more apparent than in the ESFM report which states:

> Any change to the number of species recorded on the estate are likely to reflect research and survey effort rather than true species richness of forest areas.[62]

Scientists advocate an approach based on maintaining ecosystem structure and function, and therefore ultimately protecting more species.[63] Protecting key functional species and diversity within functional

---

[59] NSW Government 2006 ESFM "Criteria and Indicators Monitoring Report- 2001/2002: Upper North East, Lower North East and Eden Regions." A Supplementary Report to the NSW Forest Agreements Implementation Report, Forestry and Rural industry Policy, NSW Dept of Natural Resources, Parramatta, p25.

[60] Southern Region IFOA Threatened Species Licence, Appendix B cl 8.8.5.

[61] Letter from SEFR to Doug Mills N.P.W.S. Southern Directorate, Threatened Species Unit, 23/8/04.

[62] NSW Government 2006, ESFM "Criteria and Indicators monitoring Report- 2001/2002: Upper North East, Lower North East and Eden Regions," A Supplementary Report to the NSW Forest Agreements Implementation Report, Forestry and Rural industry Policy, NSW Dept of Natural Resources, Parramatta, p37.

[63] McIntyre, S., Barrett, G., Kitching, R. and Recher, H. 1992, 'Species Triage – Seeing Beyond Wounded Rhinos' *Conservation Biology*

groups is a key way to do this thereby enhancing ecosystem resilience, so that they are able to maintain their functions and processes. It is not enough to merely record species, the impact of the logging must be recorded. We note with great concern that species such as Macrozamia communis (Burrawangs), Dicksonia youngiae, and D.antartica(Soft Tree Ferns), Cyathea australis and C.cunninghamii (Rough Tree fern) and Xanthorrhoea (Grass Trees) which are extremely slow growing, most of these plants have been alive long before white settlement. They grow up to one cm of trunk per year, and when young will take up to ten years to start forming a trunk. Research shows that only between two to thirteen percent of Tree Ferns regenerate after logging and never regrow on snig tracks or log dumps. Tree ferns, which play a vital role in maintaining the moisture of the forest floor and providing protection for the growth of other forest plants, are mostly eliminated by logging. [64]

There are no prescriptions for these flora even though they are protected under NSW legislation.

> Unless the probability of detecting a species when it is present is equal to 1, false negative observation errors will occur in species surveys. The probability of detecting the presence of the case study species in any single standard survey based on spot-lighting and call elicitation has been found to be very low (Pr[detection/ presence] □ 0.12–0.45; Wintle et al. in press), making the reliability of absence data a potentially serious form of uncertainty in our case study. Recent studies have demonstrated the negative impact that false-negative observation error may have on species habitat analyses (Tyre et al. 2003), meta-population models (Moilanen 2002) and monitoring studies (MacKenzie et al. 2002).[65]

Greenhouse Gas/Climate Change

Carbon Neutral?

Combustion of biomass results in atmospheric emissions of greenhouse gases and chemically active species in quantities that almost equal those produced by fossil fuel combustion.[66]

The accounting now used in Australia for assessing CO_2 emissions drawn from the *Kyoto Protocol* contains a flaw that severely weakens greenhouse gas reduction goals. CO_2 emissions from chimneys of biomass power stations when 'bioenergy' is used are discounted.[67] This accounting erroneously treats all bioenergy as carbon neutral regardless of the source of the biomass, which causes large differences in net emissions. The clearing of long established native forests to burn wood or to grow energy crops is counted as a 100% reduction in energy emissions, despite causing large releases of carbon and despite international protocols against logging of native forests.[68]

At issue is the methodology that CO_2 released during combustion of biomass equals that taken up during growth and the basing of all GHG calculations on this. Eucalypt forests recovery for removal of CO_2 from the atmosphere can take more than a 100 years.[69] On average the recovery rate is 53 years for 75% carrying capacity and 152 years for 90% carrying capacity.[70] Currently logging rotations are sometimes barely five years.[71] FNSW themselves state:

> Harvesting cycles vary between native forest types with a typical cycle of 5-30 years for native forest.[72]

6(4): 604-606; Walker, B. 1995, 'Conserving biodiversity through ecosystem resilience' 9 *Conservation Biology* (4): 747-752.

[64] Unwin, G.L., and Hunt, M.A., 'Conservation and Management of Soft Tree Fern Dicksonia antarctica in Relation to Commercial Forestry and Horticulture,' (1996) in *Pteridology in Perspective* (Eds J.M. Camus, M. Gibby and R.J. Johns), pp. 125-137, (Royal Botanic Gardens, Kew : London.)

[65] B.A. Wintle, J. Elith and J.M. Potts, 'Fauna Habitat Modelling and Mapping: A Review and Case Study in the Lower Hunter Central Coast Region of NSW' *Austral Ecology* 30 [2005] 719.

[66] Andreae, M.O., 'Biomass Burning: It's History, Use, and Distribution and It's Impact on Environmental Quality and Global Change,' in Levine, J.S. Ed.., *Global Biomass Burning*, (1991), MIT Press, Cambridge, MA, pp. 3–21.

[67] *Kyoto Protocol* Article 3 (7).

[68] Mackey et al, above n 7: 'For every hectare of natural forest that is logged or degraded, there is a net loss of carbon from the terrestrial carbon reservoir and a net increase of carbon in the atmospheric carbon reservoir, the resulting increase in atmospheric carbon dioxide exacerbates climate change.'

[69] Roxburgh S.H., Wood S.W., Mackey B.G., Woldendorp G., and Gibbons P., 'Assessing the Carbon Sequestration Potential of Managed Forests: a Case Study from Temperate Australia,' 43 *Journal of Applied Ecology* [2006] 1149.

[70] Dean C., Roxburgh S., Mackey B., 'Growth Modelling of Eucalyptus regnans for Carbon Accounting at Landscape Scale' in Amaro A., Reed D., and Soares P., (eds.) *Modelling Forest Systems*, CAB International 2003.

[71] For example Compartment 62 (Sth Brooman) logged in 1972, 1973, 1978, 1982, 1990, 2002, 2009.

[72] Forests NSW Consolidated Annual Financial Report, Year ended 30 June 2007, pp18-19.

As occular evidence suggests, currently on the ground, the native forests logged are not regrowing nor are they being replanted. If the forest regrew and was not logged with such frequency then this theory might hold, and perhaps holds in EU countries where this system was developed, and where the main source of wood is from plantations.[73] The data we have received was cursory to say the least, and even what little forest has been surveyed does not equal one hundred percent regenerated. From the period 2001 to 2006 the number of surveys for the Southern region was twenty one, covering a total of 2,176 hectares.[74] There is no information provided by FNSW or the RFA regime on the effectiveness of regeneration.

> The vascular floristics about a decade after harvesting operations differed significantly from the floristics of similarly aged forest regenerating after wildfire. In clear-felled areas, weed and sedge species occurred more frequently than on wildfire sites and Acacia dealbata was much more abundant, whereas resprouting shrubs, tree ferns and most ground-fern species were more abundant in wildfire regeneration sites.
> The low survival rate of resprouting species reported in an increasing number of studies suggests that soil disturbance is likely to be a major contributor to differences.[75]

Therefore the assumption that there are near-equilibrium conditions (synchrony) in native forest logged by Forests NSW on the south coast is erroneous.[76] Forests NSW do not replant after logging native forest, have only 23,000 hectares available for sequestration and rarely do regeneration surveys.[77]

> For Forest Land, synchrony is unlikely if significant woody biomass is killed (i.e., losses represent several years of growth and C accumulation), and the net emissions should be reported. Examples include: clearing of native forest.[78]

Also at issue is Forests NSW claim that emissions from actual logging operations is separate and the responsibility of the contractors and therefore FNSW have no liability to count them. South East Fibre Exports claim that the emissions from logging are indirect and they have no liability to count them. The definition of impact and direct and indirect effects of greenhouse gas emissions has been well defined in several jurisdictions of Australian Courts. In the *Nathan Dam* case Black CJ, Ryan and Finn JJ held that 'impact' is not confined to direct effects but includes effects that are or would be a consequence of the action.[79] In both the *Hazlewood* case and the *Anvil Hill* case it was held that the impacts of Scope 1, 2 and 3 emissions must be considered.[80] In *Gray v The Minister* it was held that environmental assessments must also consider the emissions from the use of the product.[81] Of course these findings were made in their particular statutory contexts but:

> Carbon accounts for industrialized forests must include the carbon emissions associated with land use and associated management, transportation and processing activities.[82]

Forests NSW also claim there is a lack of full scientific data on land use change and this makes it difficult to calculate GHG emissions. Although it seems widely acknowledged that Land Use Change and Forestry

---

[73] In Germany and throughout most of Europe Foresters are employed to count and measure at dboh every tree in the plot.

[74] Southern IFOA Clause 52 Assessment of Regeneration Report 20/6/07, FNSW Batemans Bay. This 'report' is a thin five line by five column table.

[75] Ough K., 'Regeneration of Wet Forest flora a Decade After Clear-Felling or Wildfire - Is There a Difference?" 49 *Australian Journal of Botany* (5) 645, Full text doi:10.1071/BT99053, < http://www.publish.csiro.au/paper/BT99053.htm

[76] Performance Audit 'Sustaining Native Forest Operations,' Auditor-General's Report, 2009: 'To meet wood supply commitments, the native forest managed by Forests NSW is being cut faster than it is growing back': this statement was made concerning the North Coast RFA areas, FNSW had not provided data on the Southern and Eden areas,"reviews of yield estimates for the southern region, due in 2004 for Eden and 2006 for Tumut and the south coast, have not been completed."

[77] SEFR requested these surveys from FNSW and received a five line five column table that stated there had been four surveys conducted but there was no documentation, pers com to author from Danial Tuan, FNSW Batemans Bay; see the aptly titled Sustain Greenhouse Gas Consultation Paper Submission, Forests NSW, Nick Cameron, 1/5/2008.

[78] 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol 4: Agriculture, Forestry and Other Land Use, Chapter 2: Generic Methodologies Applicable to Multiple Land-Use Categories, 2.4; the figures used for boreal forests in the IPCC document are from research published in 1998 which has now been superceded by more current data < www.ipcc-nggip.iges.or.jp.

[79] *Minister for the Environment and Heritage v Queensland Conservation Council Inc* (2004) 134 LGERA 272 at 288; see also *Re Australian Conservation Foundation* [2004] VCAT 2029.

[80] *Australian Conservation Foundation v Minister for Planning* above n32; *Gray v the Minister for Planning* [2006] NSWLEC 720.

[81] Rose A., '*Gray v Minister for Planning*: The Rising Tide of Climate Change Litigation in Australia' 29 *Sydney Law Review* [2007] 725; if calculations were made on the cardboard that is made, used, then thrown away, from the woodchips of native forests, then the totals of GHG calculations would a great deal higher.

[82] Mackey et al, above n7.

accounting is difficult and uncertain, given the great deal of data, including LandSat images and records kept in ArcView, GIS, ESRI and FNSW own office records on past compartments logged, it would seem this argument is alio intuitu.[83] Article 3 of the *Kyoto Protocol* states at (3) that 'The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner…'[84]

The total CO_2 emissions caused by native forest logging on the South Coast for 2006/07 have been computed to be over 30 million tonnes.[85] On these figures it is estimated that for every hour of energy generated more than 3570 tonnes of CO_2 would be released.[86] The governmental practice of decrying Indonesia's illegal logging while sanctioning illegal logging in Australia has not gone unnoticed by the rest of the world.[87] Thus it appears to the international community that the governmental sanctioning of native forest logging *endorses* the huge amounts of GHG emissions released.[88]

SEFE allege Biomass fired power systems are considered to be carbon-neutral technology when compared to other systems that burn fossil fuels and have minimal greenhouse gas emissions, but as the woodchipping industry has a high GHG emission output and this power station will emit more GHGs than a coal fired power station, neither the industry nor the power station can be classed as carbon neutral.[89]

Burning any carbon based fuel produces carbon dioxide. That's what burning is, carbon plus oxygen yields heat and CO_2 and pollutants. Woody biomass burning produces more carbon dioxide than burning fossil fuels. No matter how many laws are passed and treaties signed when wood is burned it releases carbon dioxide.

> Biomass burning produces fifty percent more carbon dioxide even than coal because it burns less efficiently.[90]

There is currently discussion amongst the national and international scientific communities that burning wood for biomass is equal to three times as much emissions than coal fired power, others argue that wood and coal are closer to equal in CO_2 production, but there is certainly no fuel worse than wood burning for producing carbon dioxide.

Power generation emits significant amounts of greenhouse gases, mainly CO_2. Sequestering CO_2 from the power plant flue gas can significantly reduce the GHGs from the power plant itself, but this is not the total picture. CO_2 capture and sequestration consumes additional energy, thus lowering the plant's fuel-to-electricity efficiency. To compensate for this, more fossil fuel must be procured and consumed to make up for lost capacity. Taking this into consideration, the global warming potential which is a combination of CO_2, methane (CH_4), and nitrous oxide (N_2O) emissions, and energy balance of the system need to be examined using a life cycle approach. This takes into account the upstream processes which remain

---

[83] For example FNSW has logged 182 528 hectares of native forests in the south east alone since 1990; it is possible to compare Google Earth images with past LandSat images.

[84] The introduction of the amendments to the *Lacey Act* in America has already had a significant impact on the import of woodchips in that country, importers are now required to declare species, country of origin, value and volume of the plant or plant products see *Amendments to the Lacey Act from H.R.2419 2008* (US), Sec. 8204, *The Lacey Act*, Chapter 53 of Title 16, United States Code, ss3371 - 3378.

[85] 30 860 523tCO2e; Data is from FNSW Implementation Report 2004/05 and 2006/07, 2006/07 FNSW Harvest Plans; ESRI data; Digwood FOI info 2009; if one was to believe the FNSW data it seems one vehicle uses 110L of fuel per year.

[86] This is more than 6.4 times the amount of CO_2 released from burning coal to produce the same amount of energy.

[87] In 2009 young people from four hundred and fifty nations gathered in Bonn for the UN Talks on Climate Change, their declaration called for an immediate end to deforestation, an end to industrial scale logging in primary forests, the conversion of forests to monoculture tree crops, plantations; and protection of the world's biodiverse forests including primary forests in developed countries (e.g. Australia, Canada and Russia) and tropical forests in developing countries; Australia won the Fossil Award in 2009; see also *Forestry Commission v Daines* 1/12/2009 Denniliquin Local Court where the Magistrate made a clear finding on the evidence that a Part 3A approval under the *Environmental Planning and Assessment Act 1979* (NSW) is required for the Barmah/Millewa logging operation and had not been obtained; he concluded, therefore, that the logging was unlawful, yet Marty Linehan, FNSW Eden office manager, stated that "it didn't matter, it was only local court"9/12/09.

[88] '…the laws of nature that account for the global carbon cycle operate irrespective of political boundaries. Therefore, a unit of carbon emitted due to deforestation and forest degradation in Australia, the United States, Canada or Russia has exactly the same impact on atmospheric greenhouse gas levels as a unit of carbon emitted from deforestation and degradation of forests in Indonesia, Papua New Guinea, the Congo Basin or Brazil,' Mackey et al, above n 7.

[89] In SEFE's original proposal to Bega Valley Shire Council they stated the project would not emit any GHGs.

[90] Dr. Rachel Smolker of U.K. based Biofuelwatch.

constant after CO_2 sequestration as well as the steps required for additional power generation. There is no mention of sequestration of the power stations emissions in the EA.

Biomass is not as homogeneous or as predictable as fossil fuels, and may vary, perhaps due to poor quality control by the fuel supplier, changes in fuel availability (e.g., as sawmills may close) or swapping of fuel sources in response to price variations. Such changes can have an impact on burner operation and the pollution control equipment and may lead to increased emissions.

The EA was required to report on upstream and downstream emissions, and emissions from biomass harvesting and it has not. In assessing greenhouse implications and calculating 'avoided emissions' it should have compared the power station proposal with wind or solar or other MRET approved technologies because it will be competing with these technologies in the market place, not coal fired power, but it did not.

Far from fighting climate change, logging and transporting large amounts of bulk logs across borders up and down the south east of Australia and then burning it will increase carbon discharges more than would have been caused by burning a fossil fuel like coal.

There is much uncertainty on the effects of climate change but one of the certainties is that deforestation is one of the biggest causes.

> The loss of natural forests around the world contributes more to global emissions each year than the transport sector. Curbing deforestation is a highly cost-effective way to reduce emissions; large scale international pilot programmes to explore the best ways to do this could get underway very quickly.[91]

The Stern Review goes on to state in Annex 7f:[92]

> Deforestation is the single largest source of land-use change emissions, responsible for over 8 GtCO2/yr in 2000. Deforestation leads to emissions through the following processes:
> The carbon stored within the trees or vegetation is released into the atmosphere as carbon dioxide, either directly if vegetation is burnt (i.e. slash and burn) or more slowly as the unburned organic matter decays. Between 1850 and 1990, live vegetation is estimated to have seen a net loss of 400 GtCO2 (almost 20% of the total stored in vegetation in 1850).[93] Around 20% of this remains stored in forest products (for example, wood) and slash, but 80% was released into the atmosphere. The removal of vegetation and subsequent change in land-use also disturbs the soil, causing it to release its stored carbon into the atmosphere.[94] Between 1850 and 1990, there was a net release of around 130 GtCO2 from soils.

Indigenous Heritage

The EA only considers the very limited and erroneous 0.9 hectares of area. The consequence of native forest logging for the woodchips which provide the fuel for this project are much more far reaching.

Current methodologies for the integration of cultural heritage values are to be inadequately defined and resourced, and the protection of cultural heritage values is directed primarily through the use of forest management zoning and management prescriptions.

The destruction and ignorance displayed by FNSW and their contractors for the protection of sites of significance during logging is nothing short of wanton. Forests NSW buffer zones on sites of significance are very small at ten metres only. If sites are damaged or destroyed there is no enforcement of s37

---

[91] See Stern N., 'The Stern Review on the Economics of Climate Change' < http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm >.

[92] Ibid; see also Emissions from the Land-use Change and Forestry Sector.

[93] Baumert, Herzog and Pershing, 'Navigating the Numbers: Greenhouse Gas Data and International Climate Policy' Washington, DC: World Resources Institute, 2005; see also Houghton, 'Revised Estimates of the Annual Flux of Carbon to the Atmosphere from Changes in Land Use and Land Management 1850-2000', *Tellus B*, 55 [2003] 378.

[94] Houghton J.T.,'Tropical Deforestation as a Source of Greenhouse Gas Emissions', (2005) in Tropical Deforestation and Climate Change, Moutinho and Schwartzman [eds.]; see also Intergovernmental Panel on Climate Change (2001), 'Climate change 2001: the Scientific Basis, Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change' [Houghton JT, Ding Y, Griggs DJ, et al. (eds.)], Cambridge: Cambridge University Press; see also Food and Agriculture Organization of the United Nations (2005): 'State of the World's Forests', Washington, DC: United Nations.

subsection (1) of the *Forestry and National Park Estate Act 1998* (NSW) that states stop work orders and interim protection orders of the *National Parks and Wildlife Act 1974* (NSW) can be applied.[95] Forests NSW state any destruction was an unfortunate accident.

An article by Ridge and Seiver concerning the Sandon Point Development sums up community feeling on the protection measures of the NPW Act:[96]

> The central fault with the NPWA cultural heritage provisions is that an Aboriginal community cannot prevent an activity that is likely to result in the destruction of their heritage. The agency responsible for administering the NPWA retains all ownership rights, including the right to consent to destruction of their property, Aboriginal heritage. The NPWA does not protect Aboriginal heritage, it merely regulates its destruction.

Therefore the legislation enables the listing of sites but does not protect them.[97] See the Gulaga Mountain blockade as an example.[98]

FNSW are about to log more culturally significant areas of Gulaga Mountain and have started logging Mumbulla Mountain. These mountains were identified as being sacred "From the mountain to the sea." There are dreaming tracks leading up to and away from these mountains. They have no protection.

Indigenous Aboriginal communities on the south coast have unanimously stated that they want to take control of the management of significant sites and places and the flora and fauna of significance to ensure they are protected. These significant things are crucial to the future of Indigenous Aboriginal culture and well-being.

The URS EA makes no mention of the areas of Aboriginal cultural significance.

Traffic and Transport

There are erroneous claims in the URS SEFE EA on truck movements. On occular evidence the first trucks start rolling in before 5:30 am. There have been numerous accidents involving log trucks transporting logs to the chipmill. Recently an accident involved a parked school bus and a rural firefighting ute on a clear stretch of highway. The log truck driver smashed into the ute, which then smashed into the school bus which had stopped tolet children off. This is not an isolated incident.[99] Recently a B-double clipped a 4WD sending the 4WD into another and killing a woman and baby.

General Environmental Risk Analysis

The URS EA makes no mention of cumulative impacts of industrial degradation of native forests for the woodchipping industry and South East Fibre Exports that are exacerbating extinction rates and destroying soil, water, and carbon capacity.

Many studies have shown that microbial biomass in the soil decreases following logging, and that these changes occurred before measurable changes in soil organic matter quantity were found. The decline of microbial C and N following tree removal ranged between twenty seven percent and sixty four percent. When bacterial and fungal biomass were determined separately, it was found that fungal biomass declined more sharply than bacteria. The often rapid decrease in fungal biomass may be explained by a reduction in ectomycorrhizal fungi, which decline sharply once the root system of cut stems can no longer support them.

---

[95] *Forestry and National Park Estate Act 1998* (NSW) s37 (2) states: However that does not prevent the making of an order for the purpose of protecting any Aboriginal relic or place.

[96] For an overview see *Minister for Planning v Walker* [2008] NSWCA 224; See Ridge, K. & Seiver, A., 'Carriage: An Elders Journey through the Courts', 10 *Indigenous Law Bulletin* [2005].

[97] For a very comprehensive overview of legislation effect on sites see Aliza Tubman 'Protecting Aboriginal Sacred Sites: the Aftermath of the Hindmarsh Island Dispute,' 19 EPLJ (2) [2002].

[98] Uncle Guboo Ted Thomas, (Aboriginal elder and traditional owner) "Mumbulla Mountain; an Anthropological and Archaeological Investigation" Brian J Egloff, Aboriginal & Historical Resources, NPWS, 1979.

[99] See < http://www.abc.net.au/news/stories/2007/08/15/2005643.htm >.

> Conventional practices in intensive forest use such as short rotations, use of heavy machinery, harrowing and high intensity burning of slash can be viewed as detrimental to soil health. After burning, the organic content of forest soils can be transformed into ash and mineralised nutrients. This may result in an intense pulse of nutrients that can change the soil pH and can easily be leached, leaving a nutrient and humus poor soil, with a significantly different structure from the original condition.[100]

Research by the CSIRO states:

> Timber harvesting and its associated activities cause drastic changes in soil physical structures and hydraulic properties. In situ changes of surface soil hydraulic properties using a newly developed disc permeameter are assessed. Five forest sites, two radiata pine forests near Oberon and three native eucalypt forests near Eden NSW, were investigated for the impact of timber harvesting on soil structure and hydraulic properties. On most sites, there was an increase in soil bulk density and a declining trend in sorptivity and hydraulic conductivity associated with logging. Changes in hydraulic properties suggest that the logging and associated activities had resulted in soil compaction, attributable mainly to redistribution of soil pore sizes and with a decrease mostly in pores greater than 3mm in diameter. This reduction in macroporosity suggests a reduction in aeration and a change of water retention characteristics.[101]

The environmental risks are enormous. The industrial logging practices in Australia's native forests by Forests NSW under the Regional Forest Agreements is unsustainable, economically, culturally and environmentally. Currently on the south coast thousands of hectares of native forests are being clearfelled every year. Forests NSW descriptions for these practices vary from 'Australian Group Selection' to 'Modified Shelter Wood' yet they all amount to clearfelling or patch clearfelling on the ground. Old-growth, rainforest, mature and mixed age forests are being logged at an unsustainable rate.

As was suggested in many projected risk analyses in 1997 the likelihood of native forest as a sustainable product was nil. This has in fact been born out in reality. The continuous over quota logging has resulted in only two to three years of saw logs remaining.

> The remaining multi-age forests resource is coming to an end in the next two to three years.

And:

> Following the next two to three year period where sawmill resource is limited, the plan is to move into 1952 and 1968 fire regrowth and to source sawlogs [from that]. That would get them [local sawmills] through to the end of the RFA period.[102]

In the areas covered by the Eden and Southern RFAs, the annual net areas logged have rapidly increased and yields have fallen. In other words, the industry is having to log ever greater areas to maintain the same levels of production. This is not sustainable. Demonstrably unsustainable timber volumes were committed for twenty years, and these even extend beyond the term of the RFAs. The 'FRAMES' industry modelling system used to derive these volumes substantially over-estimated available timber volumes. Consequently, after just a ten year period of the RFAs, there is a dramatic short-fall in timber.

We maintain that the pretence of implementing Ecologically Sustainable Forest Management has failed, is corrupt, and has not delivered on obligations. These unacceptable outcomes are at the expense of the current and future generations and are to the detriment of our unique flora and fauna.

We determine there is a dis-connect within the RFA regime such that the native forest woodchipping industry has exerted undue influence to ensure desirable outcomes for its shareholders at the expense of the current and future generations of the State. We believe this to be immoral.

The enabler of the woodchipping industry and South East Fibre Exports is Forests NSW. We believe that

---

[100] See Green D., McQuillan P., 'The Soil Mites of Warra and Their Recovery Under Modern Forestry Practices,' (2004) < http://www.warra.com/warra/research_projects/research_project_WRA103.html >.

[101] Hung J. (CSIRO, Division of Soils); Lacey S.T. (State Forests of New South Wales); Ryan P.J. (CSIRO, Division of Forestry) 'Impact of Forest Harvesting on the Hydraulic Properties of Surface Soil,' 161 *Soil Science* [1996] (2) 79.

[102] Ian Barnes, FNSW Batemans Bay Regional Manager, The Magnet, Thursday, March 11, 2010.

current Forests NSW management has gone beyond its scope as the public caretaker, has broken it's pact with it's citizens and is needing immediate reform.

Consultation

This of course is completely laughable. The amount of community consultation has been next to nothing. SEFE used the old TCA shopfront in Eden which has had no attendance that we are aware of. Some have tried to visit the shop but it seems not to be open in office hours.

Conclusion

[forests] reduce concentrations of greenhouse gases in the atmosphere…[103]

At the second reading of the Environmental Planning and Assessment Amendment (Infrastructure and Other Planning Reform) Bill when Part 3A of the EPA Act was introduced to parliament, the Minister stated that Part 3A would 'strengthen environmental outcomes' and would provide 'better outcomes for the community and the environment'.[104]

In *Gray v the Minister* it was held that under the *Constitution Act 1902* (NSW) the Minister must act 'for the good management of the public affairs of NSW'. Pain J held that under Part 3A the Minister and the DG must take the public interest into account.[105] This followed *Telstra v Hornsby Shire Council* where it was found that when taking public interest into account the principles of ESD must be considered.[106] The principles of ESD are part of the objects of the *Environment Planning and Assessment Act*.[107]

This ruling stemming from *Gray v the Minister* indicates that the DG's requirements should make mention of ESD principles. The evidence of the threat of serious or irreversible harm to the environment should trigger the precautionary principle. Once triggered the decision maker is required to assume those threats are present.

As there is no mention in the DG's requirements of the precautionary principle, or intergenerational equity, it would seem ESD principles have been given scant regard and, while the Minister does have broad discretionary powers under Part 3A, the legislation requires the decision maker to use their discretion in accordance with the Act.[108]

Climate change and pollution mitigation measures are currently great matters of public interest. Given the evidence on climate change, the adverse impacts of native forest logging's GHG emissions, the effect on water supply, the loss of biological diversity, the loss of ecological integrity and the pollutants wood-fired power stations emit, it would therefore be difficult to argue that this project will have positive environmental outcomes and certainly does not fit the definition of zero emission technologies.

The definition of renewable technologies are that they do not release greenhouse gases and utilise zero carbon resources. As the industrial patch clearfelling of the south east is the antithesis of renewable, to continue to class native forest logging as carbon neutral seems wilfully negligent and transparently disingenuous.[109]

If the alleged premise of the power station is to help the State government meet renewable energy targets

---

[103] Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests *The Montréal Process* Third Edition, December 2007 sII (1) < www.rinya.maff.go.jp/mpci/ >.

[104] Tony Kelly, NSW Minister for Rural Affairs, *Hansard, 9 June 2005,* p 16767.

[105] *Gray v the Minister for Planning* [2006] NSWLEC 720.

[106] *Telstra v Hornsby Shire Council* [2006] 146 LGERA 10.

[107] *Environment Planning and Assessment Act 1979* (NSW) s 5 (vii); the definitions are contained within the *Protection of the Environment Administration Act 1991* (NSW).

[108] See *Gray v the Minister* above n 105.

[109] Woolf T. and Biewald B., 'Efficiency Renewables and Gas: Restructuring as if Climate Mattered' 64 *Electricity Journal* January/February[1998].

at least-cost, then as there are only labour and transport costs, the least-cost philosophy has been superficially applied. With closer investigation it seems the subsidisation of the woodchipping industry is the hidden enabler. Without these subsidies electricity generation from biomass is not competitive with other fossil-based power stations because of high capital cost and large logging and transportation emissions.[110]

It appears the NSW government's use of Part 3A is often when there is revenue making opportunities for the government.[111] This then makes it hard to understand why the Minister called this project in considering Forests NSW native forest section lost $16 million dollars last year.[112] Royalties in South East NSW are now less, in real terms than they were fifteen years ago and Forests NSW is making less in royalty revenue than it expends in managing woodchipping operations.

> Given that native forest operations ran at loss of $14.4 million in 2007-08, this raises concerns about how much worse this financial burden may get.[113]

This loss must be compared to the tourism income figures which, on the South Coast in 2009, provided $1.9 billion dollars in revenue.[114]

Australia is only now, slowly, coming in from the cold. After eleven years of ridicule from international quarters the NSW Government has the chance to gain international respect if the right decisions are made. The residents of the South Coast and the environment are, by definition, stakeholders in Forests NSW and SEFE and have an interest in the results of forestry operations. The majority of residents on the South Coast are very concerned about climate change and deforestation.[115] Thus the Part 3A 'better outcome' for communities and the environment would be for the government to cease native forest logging and reject the SEFE woodchip-fed native forest burning power station proposal.

Nullica State Forest where they are required to leave 4 trees per hectare.

---

[110] See Santisirisomboon J., Limmeechokchai B., Chungpaibulpatana S., 'Impacts of Biomass Power Generation and CO_2 Taxation on Electricity Generation Expansion Planning and Environmental Emissions' 29 *Energy Policy* [2001] 975; Palmer K., and Burtraw D., Cost-effectiveness of renewable electricity policies' 27 *Energy Economics* [2005] 873; Spinellia R., Ward S. M., Owendec P., 'A Harvest and Transport Cost Model for Eucalyptus spp. Fast-growing Short Rotation Plantations' 33 *Biomass and Bioenergy* [2009] 1265; see also Commission of the European Communities, Brussels, 7.12.2005 COM(2005) 627 Final Communication from the Commission 'The Support of Electricity from Renewable Energy Sources' {SEC(2005) 1571}: this analysis sheds light on international effectiveness of biomass energy < http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=en&type_doc >; FNSW sell logs to SEFE a $6.90/tonne; the NSW and Victorian governments subsidised the Eden chip mill by approximately $8 million in 2006-2007; SEFE made a $9 million profit as declared on their 2006/07 ASIC disclosure.

[111] Farrier D., 'The Limits of Judicial Review: Anvil Hill in the Land and Environment Court' in Bonyhady and Christoff (eds), *Climate Law in Australia,* Federation Press, Sydney (2007).

[112] 'I can only see this loss increasing as Forests NSW continues to look for new sources of hardwood timber and the costs of harvest and haulage increase, this will be very difficult to manage': the Auditor-General, Mr Peter Achterstraat, Media Release: Auditor-General's Report, Sustaining Native Forest Operations, 29/4/2009, < http://www.audit.nsw.gov.au/publications/reports/performance/2009/forests/media_release.pdf >;he was right FNSW native forest section lost 16 million in 2009/2010.

[113] Auditor-General's Report Performance Audit, *Sustaining Native Forest Operations*, Forests NSW (2009).

[114] Employing 58 463 people, a higher than average proportion of the workforce; Tourism NSW, Travel to South Coast NSW region, Year ended March 2009, <http://corporate.tourism.nsw.gov.au/Sites/SiteID6/objLib18/South%20Coast%20NSW%20TOTAL%20REGION%20YE%20Mar%2009.pdf > ; O'Neill J., *Review Into Tourism in NSW: Final Report for the Premier of NSW 2008*, < http://www.atec.net.au/review_into_tourism_in_nsw___john_o_neill_ao.pdf >; this is compared to a total of 266 native forest industry employees (chipmill,sawmill,loggers,jinker drivers) and FNSW $16 million dollars in the red.

[115] Clean Energy for Eternity originated on the South Coast; there are eight active green NGOs and an umbrella NGO; the Green vote rose half a percent last federal election; Euroboalla Shire Council prided itself in the past that it was the last shire left in Australia with over 75% tree coverage; Tourism Australia ran a campaign to promote the Sth Coast as the Wilderness coast but had to pull it.

Submission on the proposed Biomass-fired power station for Edrom, Twofold Bay.
Mick Harewood, April 2010.

Upstream Emissions.

The Director General?s requirements for the power station Environmental Assessment include, under Greenhouse Gas/Climate change, the requirement to quantify ?upstream? emissions and emissions associated with biomass harvesting.

To date, the public has never seen a comprehensive greenhouse gas balance for the Eden woodchipping operation. Not in any State Forests or Harris-Daishowa EIS, nor the Comprehensive Regional Assessment of Forests, nor in any management plan have the greenhouse gas emissions associated with logging and regenerating native forests been comprehensively assessed.

There are serious knowledge gaps which could lead to perverse and unfortunate outcomes from what seems to be a ?sustainable? source of energy. The important knowledge gaps relate to changes in stored carbon in forests and plantations throughout the cycle of oldgrowth or multi-aged forest logging, burning (pre-logging, post logging and under regeneration), sawn timber and woodchip production and transport, thinning operations and the long-term fate of forest products.

Very little is known about changes in soil carbon stores in the Australian context, although soil organic matter has been listed as an important parameter for assessing changes in site quality that may be associated with logging and burning. (Montreal Implementation Group, 1998)

The official view from the public forest manager in NSW is outlined in brief in the ESFM Plan (Ecologically Sustainable Forest Management Plan, Eden NSW, Forests NSW 2005). Under ?Carbon Cycle? (page 13 of the ESFM Plan) the following statements are made:

?Decomposition of plant and animal matter in mature and over mature forests adds to the carbon dioxide produced in normal growth processes such that there is no net impact on oxygen and carbon dioxide levels in the atmosphere.
Decomposition in regrowth forests is relatively little resulting in a net accumulation of about 5 tonnes per hectare per annum of carbon in the tissues of the trees, and the actively growing forest becomes a sink for atmospheric carbon. The cycle is prolonged if the timber containing carbon and obtained from regrowth forests is then put into service.?

These paragraphs gloss over the release of GHG associated with process of converting oldgrowth or multi-aged forest to regrowth. The 1982 Eden Native Forest Management Plan (SF NSW 1983) contains estimates of 11 cubic meters of sawlogs, 100 tons of pulp-logs and 230 tons (range 200 to 300) per hectare of ?coarse fuels? left behind in a typical logging operation. The ?coarse fuels? and fine logging slash are substantially consumed in post-logging burns, the autumn or winter following logging, although some of the coarse fuel components may slowly decompose or be consumed by termites over many years.

The life of these forest products will vary according to use. Typically, about 60% of the sawlog mass will be converted into square sawn timber, which may have an average life of, say, 40 years or so. The remaining 40% is generally converted to woodchips, along with the 100 tph of pulpwood.
The main product from Eden woodchips is copy paper, which has an estimated life of 3 years on average. It may subsequently be recycled but this would require additional energy inputs.

In order to compile a rough balance, let us consider a regrowth stand at age 40, just prior to the first thinning operation (e.g. Compartment 9, East Boyd State Forest.) The initial logging operation would have released GHG associated with ~11 plus 100 plus 230 tons of forest soon after logging or gradually over the next 40 years. At best a small proportion of the 6 tons of sawn timber might still be intact in some higher value product. The rate of sequestration of carbon in the regenerating forest might be up to 5 tons per hectare per annum (as estimated from assessments of 1952 fire regeneration) although Bruskin and Horne measure growth rates of 1 to 3 cubic meters per hectare per annum in this type of coastal forest. Thus about 335 tons per hectare have gone and about 120 tons per hectare have accumulated by age 40.

This represents a massive net GHG emission associated with logging and regeneration of Eden native forests. It is difficult to see how converting a tiny proportion of the pulp-wood, which is the ?waste? from converting pulp-logs to woodchips into electricity, can do much to ameliorate this impact.

The situation with pine plantations is a bit complicated depending on the site condition before they were established. Much of the State Forests pine estate was established by clear-felling oldgrowth or multi-aged native forest with a Federal Government subsidy. Some of the State Forests estate was purchased from the Kapunda Development Corporation, who cleared native forest regrowth in

the upper Towamba and Wog Wog valleys to plant pines with a generous tax concession. Some of the private pines on the southern Monaro have been established on previously cleared grazing land, but it is not clear that any of the waste from this material will find its way to Edrom, since Wilmott Forests has been investigating the viability of producing ethanol from cellulose waste.

Overall, there is likely to be a massive net emission greenhouse gases associated with the production and transport to Edrom of the raw materials for the proposed biomass power station, be they woodchip fines or shards or pine bark. The failure of the Environmental Assessment to quantify these net emissions is contrary to the Director General?s requirements.

Air Quality.
The modelling in the EA seems to have been conducted in total ignorance of the behaviour of smoke from the sporadic waste burns conducted at the chip mill. Quite commonly, foul smelling smoke from these burns-offs travels up the Towamba Valley, with typical afternoon sea breezes. The basis of the modelling seems to be wind direction observations only, with little regard to the effects of local topography.

Project Justification.
This section of the EA notes that NSW peak summer demand for electricity has been increasing by 3.8% per annum ((Dec. 2004 green Paper) and that new base load power may be required from 2012/13 (my emphasis.)

The NEMMCO statement of Opportunities has projected 10 year summer peak load growth of 2.3%. However, for the next 3 to 4 years the Allocated Installed Capacity greatly exceeds the Capacity for Reliability. These facts give an insight into the temporal fluctuation in demand for electricity and the value of short and long-term storage.

Electrical energy in the form of alternating current cannot be stored. It has to be used immediately it is generated or converted to another form of energy for storage and later retrieval. Coal fired power plants are not good at rapid response to fluctuations in demand, and a biomass-fired plant would be no different. The challenge for electricity generation is to meet the short-term summer peak demands, which are growing as more people adopt air-conditioning, as well as the fluctuations in demand throughout the day. While ever baseload power is provided primarily from coal-fired power stations, there will be an excess capacity overnight which is reflected in very cheap ?off-peak? power prices that do not take into account the external costs of greenhouse gas emissions.

There is a natural fit between solar-thermal power generation and the summer peak demand, especially if a few hours storage can be incorporated into the system. The peak daily solar thermal energy availability is in the mid afternoon, while there are peak household consumption times in the evening and early morning. Industry demand is mainly during the typical working day for most enterprises.

Long-term storage of electrical energy can be achieved through hydro pump-back schemes, and several are in operation to provide for demand peaks in the eastern states grid. However, drought and competing demands for water resources place a limit on this option.

Solar-thermal power generation has been coupled with short-term heat storage to better-match peak energy availability with peak demand. Storing heat as steam seems to be the preferred option in California, but it requires a very large volume of storage for a relatively modest amount of electrical energy generating capacity. Molten salt has been used in Spain, but one wonders about the capital cost and maintenance cost of safely storing and exchanging heat with molten salt reservoirs. Lloyd energy of Cooma have used liquid graphite to store heat energy captured by a heliostat system. This offers the advantage of storing a very large amount of heat energy per unit volume. However, the fire risk of any breach in the system must be considerable.

There may be potential to store energy as compressed or liquefied air to balance demand within the daily cycle or longer. Compressed air has been investigated as a potential ?zero emissions? transport fuel, although the range of vehicles using such a fuel is limited. The possible economic driver for storing liquid air might come in part from the ability to fractionate-off liquid CO2 for use in algal ponds which grow hydrocarbon-producing algae as a potential source of transport fuels (RIRDC 2005).

Compressed or liquid air can store energy in a relatively dense form with relative safety and no restriction on the supply of raw material. There would need to be some heat storage and exchange, in order to balance the latent heat of vaporisation of air gases during the compression and decompression stages, if liquid air is the form chosen.

The CPRS strategy and timing outlined in the Federal Government?s White Paper are meaningless now that the Coalition Opposition has blocked the scheme in the Senate. Few Global Warming believers (?alarmists?) have any enthusiasm for the proposed CPRS because of its modest targets and the huge free permits given to large emitters, locked in as a compensable right into the future. The prospect for an international agreement is at least as dismal as the prospect for agreement on an effective scheme in the Australian Senate.

The best hope we have is to develop low-emission alternative technologies which are commercially competitive with polluting technologies. The critical edge to work on is short-term and long-term storage of energy in a form that is readily exchangeable with

alternating current electricity. If there is a potential to create transport fuels as well, the chance of commercial viability are greatly enhanced, since the ?peak oil? problem is looming as just as big a challenge to the sustainability of civilisation as global overheating.

The SEFE biomass power station has the same problems with coupling supply with demand that coal-fired power has. This is exacerbated by the very high temperature of discharge cooling water into the sea in summer, when peak demand for electricity is increasing.

A better use for waste such as pine bark might be to convert it into cellulotic ethanol for use as a transport fuel.

Overall, the project justification has not identified a definite need for increased base-load electricity generating capacity, just and increase in summer peak-load demand. A biomass fired power plant is no better at meeting this true increase in demand than a new coal-fired plant.

The amount of solar radiation reaching the earth has been estimated at 8000 to 10000 times the total human energy consumption for households and industry. If a small proportion can be captured as solar photovoltaic, solar thermal, wind or wave power, there is a prospect for ending the use of fossil fuels. However, the intermittent nature of the availability of these energy sources means that storage for short and long term periods is a crucial problem. The SEFE site has excellent prospects for capturing wind, solar and wave energy. I urge SEFE to look again at storage technologies and the looming shortage of transport fuels if it is serious about sustainability.

References:

Bruskin S and Horne R (1990) An analysis of growth data from eucalypt stands in the coastal forests of the Eden Region. Technical Paper No. 53. Wood technology and Research Division, Forestry Commission of NSW Sydney 1990

RIRDC (2005) Bio-hydrocarbons from Algae. Impact of temperature, light and salinity on algae growth. Jian Qin. Rural Industries Research and Development Corporation. RIRDC publication 05/025.

Name: Michael Harewood
Organisation: Bega Environment Network. Kiah River Care

Address:
"Heartwood" 297 Cochrane's Flat Road Kiah via Eden NSW 2551

Submission for Job: #2914 Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_job&id=2914

Site: #1828 South East Fibre Exports 5 MW Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_site&id=1828

Anna Timbrell

E: anna.timbrell@planning.nsw.gov.au

136 Annetts Pde
Mossy Pt NSW 2537

Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39, Sydney NSW 2001
Sydney NSW 2000

27 March 2010

My family is completely opposed to the establishment of a wood-burning power plant at the Eden woodchip mill and the inadequacies of the Environmental Assessment (EA) only confirm our concerns.

The whole purpose, though not stated, of the biomass plant is to prop up the uneconomic and unsustainable woodchip industry. If approved it will maintain and possibly increase the amount of forest reduced to woodchips each year – recently one million tonnes a year. Yet despite the enormous impacts that woodchipping has on terrestrial ecosystems the EA does not consider these impacts.

The greenhouse emissions from the whole woodchipping industry need to be taken into account when considering this plant. Logging and transport are only two factors. The woodchips are supplied as logs, most of the tree is left to rot or is burnt after logging. Burning woodchips to make electricity is much more emission intensive than even coal fired generation and will undermine true renewables like wind and solar.

Even the direct emissions from the plant have not been adequately examined. The impact on human health was ignored.

We are also very concerned about the impact on marine life in Twofold Bay. Already it is experiencing more marine pests that other parts of the south coast. What effect will high water temperature discharge have on encouraging these invasions and what damage will be done to the cool water species that are native to the area?

If SEFE is really interested in providing renewable energy it could set up a solar of wind farm on site.

Yours sincerely

Robert and Jennifer Edwards

The woodchipping of native forests is an extremely divisive issue in this area. The last thing we need is something that prolongs this pain. There is a huge hidden cost associated with woodchipping of native forests. The social fabric and integrity of a community is severely compromised by this issue. This should be an important consideration in a regional area like the Bega Valley.
This project cannot be called renewable when vast amounts of fossil fuel will be used to get the resource from standing in native forests to chips being burnt at Eden.
Native forests are worth more standing as carbon sinks than being burnt.

Name: Anthony Lord

Address:
Barrabooka Rd.
Tanja

IP Address: dsl148.210.14.102 - 210.14.102.148

Submission for Job: #2914 Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_job&id=2914

Site: #1828 South East Fibre Exports 5 MW Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_site&id=1828

Anna Timbrell

E: anna.timbrell@planning.nsw.gov.au

Attn: Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39
Sydney NSW 2001

21 April, 2010

RE: 5.5 Megawatt Biomass-Fired Power Station (MP 09_0034)

The Nature Conservation Council of NSW is the peak environment organization in NSW. We work closely with 120 member groups, local communities, government and business to ensure a positive future for our environment. The Nature Conservation Council welcomes the opportunity to comment on the 5.5 Megawatt Biomass-Fired Power Station near Twofold Bay in the Bega Valley NSW. NCC submits that this project should be rejected on the following grounds:

- This project has been represented as a bioenergy from waste project, but this is a distortion of the reality. The product to be burnt is currently composted and thus is partly a ***carbon-negative*** process, as some of this carbon enters and stays in soils. Burning of this organic material in any case is not even immediately 'carbon neutral' as it takes 60-100 years for the carbon released from burning wood biomass to be re-absorbed into growing trees. The net climate effect during that period is thus carbon-positive and contributes to global warming. The Director-General's requirements include:

  d) Clear demonstration of quantified and substantiated greenhouse gas benefits

  We submit that this has not been clearly demonstrated, and this alone is reason to reject this proposal.

- The approval of this biomass burning facility would thus appear to be incompatible with the Federal and State government's goal of mitigating climate change

- There has been no credible full life-cycle analysis of the project to demonstrate that it would produce *less* greenhouse gases than the equivalent production of the same coal-fired electricity. Some rough estimates have suggested that this proposal could produce several times *more* CO2 than the equivalent coal-fired electricity. This needs to be examined by an independent carbon auditor on a full life-cycle basis. This has not been done. The Environmental Assessment for the proposed biomass-fired power station does not look at the full life-cycle of the fuel source and ignores the greenhouse impacts of native forest logging by stealthily asserting that the woodchips sourced are 'sustainable' because they have Australian Forestry Standard Certification (AFS). This certification is misleading and even the largest paper manufacturing company in Japan,

Oji, does not accept the AFS Certification as an adequate measure of sustainability.

- There is no conclusive proof that this proposal will not result in the clearing and burning of *new* native forest. It may start with so-called 'waste', but then expand and require new forest clearance to supply the project or expand it. Studies by the Australian National University show that a large amount of carbon is stored in our native forests. Logging these native forests destroys biodiversity and releases large amounts of greenhouse gases into the atmosphere. Undisturbed, native forests successfully store 40-60% more carbon than those of commercially logged forests[1]. Environment groups are aware of a long history of the Eden woodchip mill supposedly using 'unmillable' timber - when in fact a large percentage of logs entering the mill were clearly millable. [redacted]. The current assurance that the project would not require new forest to be cleared thus rings hollow.

- The location proposed for the biomass-fired power station is ideally situated on a site that has the potential to provide renewable energy sources such as wind, solar and tidal. Rather than approving a biomass-fired power station at such a site the state government should be implementing a renewable energy installation.

The Nature Conservation Council submits that if the greenhouse consequences of the approval of 5.5 Megawatt Biomass-Fired Power Station in The Bega Valley were to be genuinely factored in to the decision making process, its suggested benefits would turn into overall negative impacts. We urge the Minister of Planning to include the associated greenhouse gas emissions of the proposed biomass-fired power station when considering the justification of this project. Further, the Nature Conservation Council is concerned that if this project is approved, it will compete with and have the potential to displace *genuine* renewable sources permitted under MRET.

The Nature Conservation Council also urges the State and Federal governments to stop logging native forests to supply the woodchip industry, as it is a major source of Australia's greenhouse gas emissions. As stated in the 2008 peer-reviewed Australian National University study 'Green Carbon: The Role of Natural Forests in Carbon Storage':

> *" ...in Australia and probably globally, the carbon carrying capacity of natural forests in underestimated and therefore misrepresented in economic valuations and policy options."*

The Nature Conservation Council is concerned that the bio-furnace will provide further justification for the continuation of logging of the South-East native forests, especially in the event of a depressed wood-chip market. The Nature Conservation Council is opposed to the logging of native forests for low value products such as paper pulp or electricity, and believes forestry operations for pulp should be limited to plantations.

[1] Mackey et al – Green Carbon – The Role of Natural Forests in Carbon Storage. ANU 2008.

The relevant section of the our Forest Policy is shown below:

> "Native forests, regardless of whether they are on public or private land, must be retained as a living entities which have the following values, in that forests:
>
> • are important sources of biodiversity (ecosystems, genetic and species diversity);
> • are important ecological systems which carry out essential biological functions such as seed dispersal, pollination and recycling of nutrients;
> • provide a large biomass to act as a carbon store and as a major source of climatic regulation;
> • protect the soil and water systems from degradation;
> • have aesthetic appeal for inspiration, recreation and tourism;
> • have been the major source of timber and wood as well as paper products.
>
> Timber extraction from native forests, where permitted, must be carried out on an ecologically sustainable basis. Low conservation value native forests should be logged on a long rotation selective regime (100 - 150 years) to supply specialty sawlogs. Selective logging should take into account the protection of wildlife, soil erosion and water catchment. Native timber which is harvested from low conservation areas, should still be considered as a high value resource, and, as such, should be used for high value products only and not for woodpulp or woodchip."
>
> (Nature Conservation Council of NSW Forest Policy 1991)

The logging practices of South East NSW and Victoria to provide logs for the Eden Chip Mill breach our forest policy. We therefore oppose the current logging practices and oppose the proposal for a forest furnace as it provides further justification for these environmentally unsustainable practices. The Nature Conservation Council is concerned that the fast rotation of logging practices that will fuel the furnace is detrimental to the ecological health and diversity of the forests, along with their complexity, which includes the need for larger trees and tree hollows. Further, we are concerned that fast rotation logging practices are detrimental to local hydrology and thus stream flow, which both natural and human communities rely on.

We also submit that the expulsion of hot water into Two-Fold Bay from the furnace will be highly detrimental to local sea life, including the threatened Weedy Sea Dragon and Sea Turtles. We hope you will consider these issues carefully, and look forward to a more-detailed assessment of both the greenhouse and other environmental impacts of this proposed project. Until this has been carried out we urge the Minister not to approve this project.

Yours faithfully

Haydn Washington

Dr Haydn Washington
Acting CEO

WWF for a living planet®

WWF-Australia
Level 13, 235 Jones St
Ultimo NSW 2007
GPO Box 528
SYDNEY NSW 2001

Tel: +61 2 9281 5515
Fax: +61 2 9281 1060

enquiries@wwf.org.au
wwf.org.au
ABN 57 001 594 074

Major Projects Assessments
NSW Department of Planning
Submission posted to Major Projects On-Exhibition webpage

22 April 2010

Dear Sir/Madam,

WWF Submission on the South East Fibre Exports (SEFE) 5MW Biomass fired power station

Thank you for the opportunity to make a submission in relation to the proposed SEFE 5MW biomass fired power station.

Summary

WWF does not support SEFE's proposed 5MW Biomass power station. WWF urges the Minister to reject the application until such time as:

1. Any biomass sourced from a native or natural forest be FSC-certified; and

2. A comprehensive full life-cycle analysis of the GHG emissions associated with the forest operations (providing the residue), the transport of biomass to the power station and of the power station operations has been completed and made available for public comment.

WWF Position on Bioenergy

Sustainable bioenergy forms part of the solution to climate change. WWF's Climate Solutions 2050 report found that 110 to 250 EJ of bioenergy could be produced globally each year by 2050 even while conserving the natural world and maintaining food security. This would represent between about one quarter and one half of all current global primary energy production and approximately 11 to 29 per cent of the projected final global demand in 2050[1].

[1] Approximately 1000 EJ according to the IPCC SRES A1B scenario or approximately 1/6 to 1/3 of all energy used in WWF's Climate Solutions for 2050, with ambitious energy conservation measures.

WWF for a living planet®

However great care must be taken to ensure that sources of bioenergy are environmentally, socially and economically sustainable, and effective measures must be place to address each of the following issues:

1. Bioenergy must deliver large positive energy and GHG balances over fossil fuel;

2. Bioenergy feedstocks must be selected on the basis of the most efficient GHG balance, from production through to processing and use;

3. Bioenergy policies and programmes must address displacement effects that influence GHG balance, poverty and the environment;

4. Bioenergy production areas must not be established through the conversion or degradation of natural ecosystems (natural and semi-natural forests, natural floodplains, peatlands) that have high conservation values and/or critical carbon storage functions;

5. Bioenergy feedstocks must be produced using better management practices (BMPs);

6. Implementation of bioenergy policies must take into account food security and must not threaten the realisation of the right to food;

7. Governments must take measures to ensure an equitable playing field for small producers; and

8. Social considerations and indigenous people's rights must be considered as a priority in bioenergy development.

In relation to bioenergy feedstock, standards of extraction or production of the feedstock need to ensure:

- High Conservation Value Areas and other habitats important for biodiversity conservation are maintained;

- Soil health is not adversely affected;

- No adverse impact on quantity and quality of freshwater resource;

- No release of toxic compounds into the environment; and

- A substantially positive life-cycle GHG balance (compared to fossil fuel equivalents) is delivered.

WWF for a living planet®

Bioenergy feedstock from natural and semi-natural forests

In this case, the bioenergy feedstock is proposed to be drawn from natural forests. WWF believes that the Forest Stewardship Council (FSC) provides the most reliable assurance that high conservation value areas, soil health and water quality are maintained. The present operations are not certified under the Forest Stewardship Council Principles and Criteria.

The supporting material also does not appear to provide a sufficiently comprehensive full life-cycle analysis of the GHG emissions associated with the forestry operations. While it is true that the biomass proposed to be fired is said to be residual waste, the scale of the operation cannot be said to be trivial and therefore it is appropriate that a full life-cycle GHG analysis should be undertaken by an independent third party. Furthermore, WWF does not support forest-based biomass which is not FSC certified being eligible for Renewable Energy Certificates (RECs).

Yours sincerely

Paul Toni
Program Leader – Development and Sustainability

Submisson to Department of Planning
Re- Proposed Biomass Fired Power Station, Eden NSW
Heather Stone 20.4.10

I am opposed to this proposal for the following reasons:

The proposal states that the power station will be fuelled with 'waste wood' from its mill. The mill sources its timber from native forest logging. There seems to be a misconception about what qualifies as waste. Woodchip exports account for 'between 80 to 90% of the log cut' in Australia's public native forest logging regions (Ajani 2007 p.278). Whole logs are transported to the chipmill straight from harvesting. These are deemed 'waste' by Forests NSW to enable their sale to South East Fibre Exports (SEFE)
http://www.youtube.com/user/motherofdetention#p/u/1/yQQkmaO3MnU

In economic downturns such as we have at present, pulp producers are forced to off load their surplus pulp at cost price. To make matters worse SEFE is a Japanese owned company and Japan's market is stagnant (Japan Paper Association; Japan Tariff Association). As a result chip exporters were forced to settle on an 18% fall in real chip prices over 4 years (Ajani 2008).

If this company is allowed to establish a power station relying on native forest 'waste' to fuel it, there will be nothing to prevent whole native forest logs from fuelling the furnaces when the woodchip industry is economically squeezed as at present. Our native forests should not be used to provide an economic safety net for a company trying to make a profit in an already unacceptable native forest woodchip industry.

Native forest logging is not a sustainable industry.
It has relied on logging of old growth forests to bolster supplies in order to meet quotas. Now these mature forests are all but depleted. The industry relies heavily on taxpayer subsidies to survive. South East Region forests grow on very poor soils that do not produce timber of good enough quality for saw logs to have any significant volume as a "product of harvest". Very little of the timber logged from them is used for sawn timber. This is exacerbated by the short 12 year logging cycle.

Australia has a large timber plantation estate, comprising 1.9 million hectares (53% soft wood, 47% hardwood ABARE 2008 p.18) which supplies two thirds of the forestry industry's wood, the rest comes from native forests. Most of the now maturing hardwood plantation resource competes against low priced native forest chiplogs (Ajani 2007 p.265) in the stagnant global hardwood chip market. It is madness to continue to log our native forests when we have hardwood plantation timber available to substitute for all but about 2% of need. Additionally, the Bureau of Rural Sciences projects a 60% increase in plantation supply over current production (Parsons et al. 2007). This would take plantation supply to 3.4 times the volume of wood currently logged from native forests (Ajani 2008).

The extent of plantation timber available to meet our needs will, in the relatively near future, lead to the complete phasing out of integrated native forest logging. When this occurs a power station situated in Eden that relies on so called waste from native forest logging in the area will not survive.

Native forest logging unacceptable
Even without competition from plantation timber supply, the logging of native forests is completely unacceptable. It destroys native animal habitat and seriously reduces biodiversity of native vegetation as well as damaging soils both from the loss of soil via erosion and destruction of

microfaunal habitat that includes bacterial and fungal associations which are essential to native plant and animal communities to derive enough nutrient from these otherwise poor soils.

Native forest logging
-Destroys the dwellings and food sources of all the native animals that live in or depend on those forests, for years, and sometimes forever. How can this be an acceptable practise? Australia has the worst record of mammal extinctions or near extinctions of any developed nation in the world due to deforestation (International Union for the Conservation of Nature 2008 report). The Australian government pays other countries tens of millions of dollars not to log their native forests, yet we still log our own.

-Changes the hydrology of logged areas such that regrowth forests use more water than mature forests and so deplete the already scarce water available to the catchments affected. The logging cycle of 12 years ensures that the previous hydrology is not restored as most of the forest is regrowth under this regime. This is not a sustainable practice, yet a power station relying on "waste" wood from existing logging operations requires a sustainable supply.

-Causes erosion into streams and gullies by leaving bare soil. It is not possible to log as intensively as the licences under the Regional Forest Agreement (RFA) allows without causing damage to soil microfauna communities and their associations with vegetation and fauna, and it causes significant soil loss through erosion. The RFA now allows logging on slopes up to 30 degrees. This is double previously allowed maximum slope limit of 15 degrees, a slope angle that is itself difficult to walk on. A 30 degree slope requires that a person hold onto something to stay upright. No amount of cross berms and erosion matting will prevent erosion on slopes let alone slopes of angles anything like these. This is not a sustainable practice, yet a power station relying on "waste" wood from existing logging operations requires a sustainable supply.

Carbon Emissions
Native forest logging destroys the carbon sink that *is* the forest and in the process releases enormous amounts of CO2 into the atmosphere. South East Fibre Exports native forest fed power station will never be accepted as a renewable energy source under any credible scheme. SEFE will not cut carbon emissions, but will increase them. 'Deforestation and native forest degradation account for an estimated 20% of Australia's annual greenhouse gas emissions. Most of the degradation occurs via chip exports' (Ajani 2008). Retaining native forests protects the stored carbon. Mackey et al (2008) estimated the carbon carrying capacity of south east Australian eucalypt native forest (about half of Australia's remaining eucalypt native forest) to be 640 tonnes of carbon per hectare. These forests should be allowed to mature, as large dense trees have a much greater carbon carrying capacity than young forest, this would be a far more efficient way to capture and retain carbon than via plantation timber (Roxborough et al. 2006).
The International Panel on Climate Change and WWF do not endorse the logging of native forest for power generation and in fact it is illegal under international legislation.

European model not applicable to Australia
There is an argument that the Europeans have been using waste wood from timber harvesting to fuel power generation for years and if it is successful for them it would be here. The European model is not applicable to Australia. The northern Europeans do not feed their old growth forests into the burners, most of their timber is sourced from plantations, and they have far stricter controls on the logging, and regeneration of their plantation forests that supply their power generation biomass. They also have much better soils, better and more reliable rainfall, and a high proportion of the landmass is forest. They have much longer logging rotation times than apply for the inputs to woodchipping at Eden. Their example is not appropriate to Australia.

Twofold Bay Ecology and Tourism
There is a threat to marine life in Twofold Bay from this proposal. The 21 degree (or higher) temperature of water to be used in the cooling process is much hotter than the ocean temperature for most of the year and will contain chemicals that may adversely affect marine life and the scenic beauty of the bay which is an important tourist destination. The threatened Weedy Sea Dragon cannot survive in temperatures higher than 22 degrees. The production of algae in the warmer temperatures will change the ecology of the affected area in unknown ways.

Better Alternatives
More efficient use of current energy sources and increasing renewable energy supply from wind and solar would be a far less destructive and more sustainable option for power generation. Tree regrowth takes decades and a lot of water, the sun and wind do not need to regenerate. They are readily accessible and do not destroy the habitat of our native flora and fauna.
The wood chip industry is currently struggling because foreign markets are flat. Now is our opportunity to look to cleaner power alternatives, not to bail out the owners of the chipmill by adding yet another unsustainable and destructive business in an attempt to diversify and remain economically viable by claiming to be setting up a business that is supposed to be climate change friendly.

References

ABARE (2008) *Australian Forest and Wood Products Statistics Sept. & Dec Quarters 2007*, ABARE

Ajani J. (2007) The Forest Wars, MUP.

Ajani J. (2008) *Agenda: A Journal of Policy Analysis and Reform*, 15(3), 2008

Mackey B G., Keith H., Berry S. & Lindenmayer D. B. (2008) *Green Carbon: The Role of Natural Forests in Carbon Storage*, ANU, E PRESS

Parsons M., Frakes I. & Gavran M. (2007) *Australia's Plantation Log Supply 2005-2049*, Bureau of Rural Sciences.

Roxborough S.H., Wood S. W., Mackey B. G., Woldendorp G. & Gibbons P. (2006) 'Assessing the carbon sequestration potential of managed forests: a case study from temperate Australia' *Journal of Applied Ecology*, 43, pp. 1149-59.

South East Region Conservation Alliance (SERCA) Submission

Biomass-Fired Power Station
Major Project Application 09_0034

---

22 April 2010

South East Region Conservation Alliance
www.serca.org.au
sercansw@gmail.com
PO Box 724 Narooma NSW 2546 AUSTRALIA

Table of Contents

1. Executive Summary and Recommendations

SERCA welcomes the opportunity to make a submission on the project application 09_0034, in which South East Fibre Exports Pty Ltd (SEFE) seeks approval for a Wood Waste to Energy (Biomass) facility (power station) as an adjunct to its existing woodchip mill and export facility at Eden. SEFE proposes to use the wood waste generated from its operations together with a further 22,600 tonnes of wood waste available from local timber processing operations.

The project is opposed by SERCA. We are concerned that the project will have a number of serious detrimental environmental, health and economic impacts, which are identified in this submission.

SERCA considers that the risks to the forest environment and the health of Eden residents outweigh any benefits that the power station may have and, therefore, submits that the application should be refused.

It should also be refused on the grounds that approval implicitly locks in a fuel source of native forest wood, which pre-empts any decision by future governments on whether or not to extend Regional Forest Agreements beyond the ten years they have yet to run.

There should be no decision to approve the proposal, which industry regards as a test case for further proposals, without full governmental and public reconsideration of the outdated forestry policies and unsustainable forestry practices that underpin the RFA regime, and of the missing link in Commonwealth and NSW Government climate change and water policies – the vital importance of conserving native forests.

Regarding consistency with the Environment Protection and Assessment Act, s.5 Objects, SERCA considers that the project does not encourage:

> (a)(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment;
>
> (a)(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats; or
>
> (a)(vii) ecologically sustainable development.

SERCA does not consider the project encourages the promotion and co-ordination of the orderly and economic use and development of land or the development of energy supplies appropriate to two of the big challenges of our times – climate change and scarce water resources.

SERCA considers that the following failings in the Environment Assessment justify immediate refusal of the project application:

1. failure to address relationship to native forest harvesting, as required by the Director-General
2. failure to demonstrate adequate fuel supply
3. failure to address the ecological and economic sustainability of the fuel supply
4. failure to assess emissions associated with the proposal accurately, especially carbon dioxide
5. failure to consider health impacts, especially for the residents of Eden
6. failure to assess fully the impact of water discharge into Twofold Bay
7. failure to consider impacts on Aboriginal cultural heritage
8. failure to consider alternative uses of the site as an energy supplier
9. it being an on-going drain on NSW Government budgets.

2. Comments on SEFE's Strategic Justification

The SEFE case is summed up in the EA introduction as follows:

> "With the rising cost of energy and the rapid growth in the technology of biomass fuel systems, SEFE has identified an opportunity to become self sufficient in its energy needs, to be a net generator of electricity and to add value to a renewable biomass material that is currently burnt for no energy recovery or commercial return.
> **" …** SEFE would use wood waste generated from its operations together with a further 22,600 t of wood waste available from local timber processing operations."

SERCA notes that there has been a recent push in Europe and America for more biomass fuel systems, but they are based on different inputs from what SEFE proposes, most notably plantation wood, not native forest wood, grown under different climatic conditions. They cannot appropriately be used as justification for what SEFE proposes.

The native forests on which SEFE depends for its operations are not renewable in any reasonable time-frame, a matter raised by the Secretary of the Commonwealth Treasury, Ken Henry. It takes at least 180 years to regrow hollow –bearing trees that are essential for survival of many forest species, and for the water from catchments to recover to their pre-logging volumes. It takes even longer to recover full carbon carrying capacity.

SEFE has other options if it wishes to generate genuinely renewable electricity, with zero on-going emissions, namely solar, wind and possibly wave power. The chipmill is located on one of the best sites in the State for wind energy. There is no discussion of the relative merits of these power sources on the site.

SEFE claims that its power plant would contribute to the identified need for additional base-load generation capacity and would have the least possible environmental impacts. SERCA disputes both claims.

SERCA notes that NSW Regulations currently do not allow the use of native forest inputs to power generation. The Commonwealth's Renewable Energy Target Regulations allow only limited use under arguably ambiguous conditions, but it is doubtful that it would be legal to use woodchips directly for power generation. The National Association of Forest Industries is arguing for wider use of native forest based power generation. Several other proposals for native forest based electricity generation are in the public arena or being developed. The SEFE proposal is seen as a test case.

While SEFE is currently proposing only to use the 'wastes' from its woodchipping operations, and denies any intention to use woodchips rather than woodchip waste as the fuel for its proposed plant, there is no doubt that the capacity to earn Renewable Energy Credits from biomass burning creates a powerful financial incentive to maximise the use of native forest inputs by seeking to broaden the scope of the Regulations.

SERCA is strongly opposed to the current Commonwealth Regulations allowing conditional use of native forest inputs for significant electricity generation, and totally opposed to lifting the NSW ban or expanding the current Commonwealth Regulations. It considers the present proposal to be illegal under NSW law and of doubtful legality under Commonwealth law.

3. Failures of the Environment Assessment to deal with significant environmental and social elements

3.1 Failure to address relationship to native forest harvesting

The Director-General's requirements require the proponent to address "identification of all fuel sources, including the relationship to native forest harvesting".

The Environment Assessment does not mention native forest wood supplies. It refers only to hardwood. Yet SEFE expects that at least 70% of the inputs will be from native forest. At present it is likely to be closer to 100%, because of the global wood market.

Without native forest logging there would be no woodchip mill, and no "wastes" from woodchipping. The scope of this Environmental Assessment is so narrowly defined as to make it almost meaningless.

The Environment Assessment examines in detail the "terrestrial ecology" of the site (for example, it tells us that the area has "a disturbed under storey of exotic grasses", in other words, mown lawn), but totally ignores the serious ecological implications of producing around one million tonnes of woodchips a year, from logging 19,500 hectares annually (NSW and Victoria) of native forest needed to supply the fuel.

The fuel for the power station is not "waste." It is material that already has an economic value and it is bought and sold in the market place.

Only a tiny amount is currently incinerated. Burning it as electricity gives it a higher value because of implicit subsidies available to it under the MRET scheme[1].

SEFE says that "no native or plantation forest would be felled for the purpose of fuelling the plant" (19-3), the critical words being "for the purpose of". However ForestsNSW expects that some timbers which are not currently used for woodchipping because they are either too red or too hard, and are not of sawlog quality, will be used for power generation.

[1] According to a study by MBAC Consulting "Global and Australian initiatives and impediments to the production of renewable energy from wood in Australia" May 2003, commissioned by the National Association of Forest Industries (NAFI), the maximum price payable for wood fuel under MRET is $41.05/ t. Maximum price payable for wood fuel without MRET $7.71/t. Thus the effective subsidy value of MRET $33.33/t

3.2 Failure to address adequacy of fuel supply

In SERCA's view the Environmental Assessment fails to demonstrate adequate fuel supply. No information is provided about the expected life of the proposed biomass burner, and the expected pay-back period. However it is likely that the economics of the proposal mean that to approve this proposal is to approve extension of woodchipping native forest well beyond the life of the RFAs.

But there has apparently been no NSW Government decision to do so, and no evidence tendered of timber availability adequate to support the woodchipping operations at the SEFE chipmill for the next ten years and beyond. Without those woodchipping operations maintained at least at the current rate there will be inadequate fuel for the proposed biomass burner. Unless SEFE has an unstated intention to burn the native forest hardwood chips directly (currently to do so would be illegal), the mill will be unviable, for there is not much plantation hardwood in the region, and over 70% of current "wastes" come from chipping native forest logs. Private forest owners are constrained by regulations restricting land clearing.

ForestsNSW's own statistics provided to SERCA from freedom of information requests point to difficulties in supplying contracted minimum volumes for the chipmill. Yields per hectare in the three areas that supply the mill (Eden, South Coast/Southern and Tumut) declined substantially during the last decade (overall by around 30%), and in consequence areas logged to supply those volumes increased by over 70%. In addition ForestsNSW acknowledges there is serious, wide-spread dieback in the forests. Dieback has been exacerbated by the recent long drought, and arguably by industrialised, alternative coupe logging that has encouraged bell-miner incursions.

Global market events and trends also cast doubts on SEFE's capacity to guarantee base-load power into the future.

In 2009 as a result of the economic downturn of the global financial crisis the Eden chipmill was closed for weeks at a time, for most of the year it was on a 4 day week. If Eden residents were counting on it to power their homes in 2009, they would have experienced many outages. It will not be a reliable source of base-load power. Its capacity to supply into the grid will depend on global conditions in the hardwood chip market.

The global trend is for paper makers increasingly to demand plantation chips and recycled paper as inputs to their processes. Where they are willing to use native forest chips they are increasingly insisting on Forest Stewardship Council certification rather than the discredited lower Australian Forestry Standard certification that SEFE relies on. Japanese paper manufacturers are increasingly reluctant to accept AFS as an adequate label of sustainability and the biggest paper manufacturing company in Japan, Oji, does not accept it.

It is not clear how long Nippon Paper, the major shareholder of SEFE, will be able to hold out against this trend in the face of its own consumers' resistance to its products.

Nippon Paper has a deal of flexibility to move out of native forest chips. It has investments in hardwood plantations in Australia and overseas and in pulp production, and it has its own shipping line. It is far less dependent on SEFE supplies than SEFE is on Nippon Paper.

Moreover paper makers prefer plantation chips for technical reasons. It is underpricing of native forest logs by the State forestry agencies of NSW and Victoria that is propping up native forest based operations like SEFE. The real price of NSW pulplogs to SEFE is half what it was a decade ago. In 2009 the NSW Auditor-General confirmed that ForestsNSW's losses on sales of native forest wood were around $14.4 million a year and rising. If the Ken Henry review of taxation tackles these pricing distortions and leads to the Governments of NSW and Victoria introducing genuinely market based pricing of native forest wood the future of SEFE will be uncertain indeed.

All these factors make it a dubious proposition to rely on SEFE for secure base-load power into the regional grid over the life of the proposed power plant.

3.3 Failure to address ecological and economic sustainability of the fuel supply

If pre-global financial crisis (GFC) logging rates continue in the period ahead, the logging rotations (calculated from percentage of available forest logged) in the South East Forests of NSW will be under 20 years. This would mean that half of all the currently available forest would be logged over the remaining ten years of the RFA agreements, largely clear-felled. If the life of the burner is 20 years, all the available forest will be logged.

SERCA considers that this is totally unsustainable. The logging already makes a mockery of ecologically sustainable forest management principles.

ForestsNSW is legally required to meet the ecologically sustainable forestry management requirements of Commonwealth and State legislation, extremely poor though they are. Logging rates over the last decade suggest that it is currently not doing so, and is unlikely to be able to do so in continuing to supply pulplogs for the chipmill.

Forty years of woodchipping has done dreadful damage to the integrity of the South East Forests. ForestsNSW has told community groups that there will be no sawlog quality trees left within two to three years, only young regrowth (Eden *Magnet* 11/3/10). The structure of the forests has been changed. Wet forest species have been replaced by drier forest species. We now have more fire-prone tree and understorey species, with large areas of regrowth, drier and depleted soils, and loss of water quality and quantity.

No evidence is provided to show the capacity of the soils to support such heavy logging, especially given post-logging run off into the waterways after heavy rain events. Nor is there evidence that water for human and agricultural consumption will be adequate after the water-hungry regrowth areas deplete supplies from the catchments. Nor is there any consideration of the predicted population increase in

the region which will put heavier demands on decreasing water supplies and agricultural production.

We also need to be concerned about the hydrological consequences of intensive logging of the regional forests, with aridification intensifying climate change – not just on the south coast but also on the hinterland - including consequences for urban water security.

To put this logging record into an international perspective, the Swedish coniferous forest plantations (not their native forest areas, which are in national parks) that support biomass energy generation/district heating in that country have rotation periods of 60-100 years in the south of Sweden, and 80-130 years in the north. And they have the benefit of far better soils than Australia's, and heavier, more reliable rainfall.

The managed forests are owned by private individuals and companies, who have to operate profitably, under strict rules, and with a strong, equal emphasis on protecting biodiversity. They are far more carefully and conservatively managed than ours, but are still in decline as a result of soil acidification.

Threatened species

Ecologically sustainable forest management requires survival of ecosystems and species, not least threatened species. It is now clear that the existing National Park system is not sufficient to ensure their survival.

Most regional logging compartments are home to some threatened species, some as many as 12 or more.

When logging is carried out, certain prescriptions are followed which are meant to protect them. However, the efficacy of these provisions has never been tested. No monitoring or follow up research is done to determine whether they work or not.

We do, however, know that there are more threatened species now than there were 10 years ago, when Regional Forest Agreements (RFA) were signed.
It is inevitable that this number will increase since so many forest dwelling creatures, more than 80 in the South East Forests, depend on hollows for shelter and survival.

The lack of hollowing bearing trees has been declared a "key threatening process" in NSW in recognition of the importance of hollows. In most eucalypts, hollows take at least 150 years to form, so with logging rotations as low as 30 years, possibly below 20 years, after the second round of logging there will be virtually no tree hollows at all and no prospect of survival for hollow dependent creatures[2].

Misgivings about the lack of evidence on effectiveness of threatened species prescriptions has been reinforced by the recent review of the Environment Protection and Biodiversity Conservation Act, which exempts areas covered by an RFA from Australia's principal environment protection legislation.

That review expressed doubts about whether the continued exemption from the EPBC Act was justified, especially in the light of the failure of ForestsNSW to produce any 5 yearly reviews after more than 10 years.

Any fuel source that depends on the continued intensive logging for woodchips of native forests will inevitably kill more threatened species and reduce the numbers in species which are currently relatively common. It cannot therefore be considered "sustainable."

The proponent may seek to distance itself from the logging operations on which it depends for its inputs, but the NSW Government cannot give guarantees of supplies that are provided through ecologically unsustainable forestry practices under its control and contrary to its own legal requirements.

While the Planning processes for this proposal relate only to NSW forest inputs, there may well be parallel uncertainties about the sustainability and supply of logs from Victoria.

---

[2] Intensive alternate coupe logging has an obvious impact on the populations of arboreal mammals through, in particular, the loss of hollow-bearing den trees. Some of these mammals, such a yellow bellied gliders, sugar gliders, feathertail gliders and the eastern pigmy possum are consumers of psillid insects.
Intensive alternate coupe logging has an obvious impact on the populations of arboreal mammals through, in particular, the loss of hollow-bearing den trees. Some of these mammals, such a yellow bellied gliders, sugar gliders, feathertail gliders and the eastern pigmy possum are consumers of psillid insects.
Loyn (1983) and others have shown that territorial bell minors actively spread psillids, then defend and area of forest against other birds and consume lerps without eating the psillid secretor. Nocturnal insectivores, such as gliders, play a critical role in maintaining tree health through the consumption of psillid insects at night.
There is anecdotal evidence to suggest that small arboreal mammals can reduce the severity and rate of spread of bell-minor/psillid mediated die-back. The extreme severity of the problem in parts of the Murrah-Mumbulla State Forests may be in part due to past practices such as "Timber Stand Improvement" (that is, the removal of all the "old stags", now more commonly regarded as likely den trees). The survival and recruitment of adequate numbers of habitat/den trees to maintain forest ecosystem health, through the cycle of oldgrowth logging, burning and regrowth thinning under the current intensive forest management regime, is open to question.
Ref: Loyn R., Runnalls, R, Forward, G and Tyers J (1983) Territorial Bell Miners and Other Birds Affecting Populations of Insect Prey. Science, Vol. 221, pp 1411-1413.

3.4 Failure to address emissions accurately and fully

SERCA considers that the EA fails to assess emissions accurately and fully, particularly in relation to carbon dioxide emissions.

The EA does not look at the full life cycle of the fuel (that is, it ignores the greenhouse impacts of native forest logging. It simply asserts this is "sustainable because it has Australian Forestry Standard (AFS) certification). It fails to examine the consequences of the one million tonnes of woodchipping each year, without which there would be no fuel for the proposed furnace.

It claims "improved environmental outcomes due to lower greenhouse gas emissions per unit of output compared to conventional coal-fired power generation technologies. The proposed plant would potentially avoid the emission of 23,800 t of C02-e from fossil-fuel based power generation per year."

In assessing greenhouse implications and calculating "avoided emissions" it should be comparing the power station with wind or solar or other MRET approved technologies because it will be competing with these technologies in the market place, not with coal fired power.

Logging of native forests to supply the Eden chipmill has been conservatively estimated at over 18 million tonnes per year[3] with one estimate as high as 61 million and another as low as 9 million tonnes. Logging emissions must be counted in assessing the greenhouse gas (GHG) implications of burning native forest wood for electricity. It is simply not valid to start counting at the furnace door; the whole life cycle of the fuel must be taken into account in measuring greenhouse impacts.

---

[33] **Carbon pollution generated by logging for the Eden chipmill**

According to Mackey et al "Green Carbon" 2008, the average carbon carrying capacity for all the SE Australia eucalypt forests is 640 tonnes per hectare. In those forests in SE NSW where the actual carbon stored is currently less than the carrying capacity, this is entirely due to the previous operations of the Eden chipmill over the past 40 years, so it is valid to use Mackey's figure of 640.

According to FOI information, in 2006-07 FNSW logged 14,388 hectares in the Eden, South Coast/Southern and Tumut areas.

The figures below do not include the emissions from running the mill, and transport associated with logging contractors or deliveries to the mill. The calculation is based on:

Area logged x Carbon stock per ha x 40% (loss from logging) x 3.666 (converting C to CO2

Thus, for NSW:

14,388 x 640 x .4 x 3.666 = 13,503,080 tonnes of CO2

For East Gippsland:

4,500 x 700 x .4 x 3.666 = 4,611,600 tonnes

Total: 18,114,680 tonnes.

40% of the carbon stored in a forest is lost to the atmosphere when it is logged, even after 150 years. The weight of a carbon dioxide molecule is 3.666 times the weight of a carbon atom. Approx hectares logged in East Gippsland in 2007.

When power generated from native forest is compared with coal fired power, if the full life cycle of the fuel is assessed, wood fired power is as much as 6.4 times more greenhouse intensive than coal fired power[4].

The greenhouse analysis puts into sharp focus the artificiality and absurdity of some current national and international conventions on measuring and deeming GHG emissions; e.g., ignoring emissions from logging in the greenhouse accounts, and deeming burning of biomass to be carbon neutral.

The comparison between greenhouse gases generated by current ways of disposing of wood "waste" as mulch and by the power station creates a nonsensical result. Mulching and composting add carbon the soil but slowly decompose releasing some carbon dioxide over time. In burning, the entire product instantly becomes carbon dioxide, and yet the (greater) emissions from the burning are not counted, while the (smaller) emissions from mulching are counted.

3.5 Failure to consider health impacts

While acknowledging that deadly dioxins, furans and hazardous air pollutants will be emitted, the EA does not examine the human health implications of the emissions at all. (1.5; 5.1) Studies of occupational exposure to wood dust suggest that over time woodchip mill workers suffer serious lung detriment[5], and research on mycotoxins indicates that exposure leads to a range of diseases, including cancer[6].

There needs to be an evaluation of the cumulative effect of all the emissions (rather than looking at single emissions in isolation from the others); and of the likely long-term health impacts for chipmill workers and the residents of Eden and the region surrounding the mill and the town, including taking account of prevailing winds.

Emissions estimates, especially in relation to particulates and heavy metals assume that the wood will be clean and uncontaminated and no allowance is made for its exposure to salt.

---

[4] Dr John Kaye MLC. Adjournment Speech 2 December 2008 "Our very rough analysis, based on forestry industry and peer-reviewed data, suggests that for every megawatt hour of energy generated by south-east native forestry biomass, more than 6.4 tonnes of CO2 would be released instantaneously. This is more than 6.4 times the amount of CO2 released from burning coal to produce the same amount of energy. Certainly regrowth would bio-sequester some of this carbon but at a very slow rate. It would take about 80 years of regrowth to capture 5.4 tonnes, thus returning the greenhouse gas emissions to the same level as coal." http://www.john.greens.org.au/media/adjournment-speech-eden-chipmill-and-green-power

[5] Kuruppuge Udeni Alwis, *Occupational exposure to wood dust,* thesis Dept of Public Health and Community Medicine, Faculty of Medicine, University of Sydney

[6] Jürgen Bünger*, Götz Westphal, Angelika Mönnich,
Britta Hinnendahl, Ernst Hallier, Michael Müller, *Cytotoxicity of occupationally and environmentally relevant mycotoxins*
Department of Occupational and Social Medicine, Georg-August-University of Göttingen, www.elsevier.com/locate toxicol

However, SERCA notes that SEFE CEO Peter Mitchell explicitly told the Bega Valley Shire council on 26 August 2008 that “municipal waste” was a potential fuel.

SERCA also notes that the stockpile of fuel will be stored a few meters from the ocean and will be contaminated by salt, increasing dioxin levels. (5.2)

The emissions inventory states that “most of the particulate matter will be controlled,” especially particulates of greater size. There is no examination of the nature, volume and consequences of particulates bigger than 10 microns. There is no justification provided for ignoring them. The EA leaves open the possibility that some of these bigger particulates will be emitted, but fails to provide any detail of the nature, volume and consequences of those emissions. (5.4)

Odour. While it is acknowledged that hydrogen sulphide, the rotten egg gas, will be generated, there is no consideration of odour as an issue to be addressed. Neither are the acid rain consequences of sulphur dioxide emissions addressed. (5.5)

3.6 Failure fully to assess the Impact of water discharge into Twofold Bay

SERCA considers that the EA fails fully to assess the impact of water discharge into Twofold Bay. Very hot water will be discharged into Twofold Bay. The temperature of cooling water discharged into Twofold Bay will be more than 21 degrees <u>above</u> the ambient water temperature in the winter. The implications of this are dismissed, but there are some serious consequences: (2.1)

a. The Weedy Sea Dragon (8-21), a threatened species, can only survive in temperatures less than 22 degrees. The EA says that the sea dragons will go somewhere else: they “may avoid the area around the outlet.” Too bad for them if they don’t.

b. Green Sea Turtles. The presence of these creatures is noted but the report fails to mention that in other power stations in NSW, turtles are regularly trapped in cooling water pipes because they are attracted by the warmer temperature.

c. Whales. Noise may interfere with whale migrations via Twofold Bay (8-10) (2.1)

d. Anti-fouling treatments (8-17). Toxic treatments may threaten marine life and mussel culture. (2.1; 5.8)

3.7 Failure to consider Impacts on Aboriginal cultural heritage

SERCA considers that the EA fails adequately to consider the down-stream impacts on Aboriginal cultural heritage. Woodchipping the South East Forests of NSW to support SEFE’s proposed burner will cause further injury to and

desecration of Aboriginal cultural heritage, which both the Commonwealth and the NSW Government are legally required to protect. Given the availability of plantation hardwood for the Australian export woodchip industry overall, there is opportunity now for Governments to give much greater substantive protection for Aboriginal cultural traditions in the regions where logging for woodchipping now takes place.

There is plentiful evidence of the sacredness not just of the mountains but also of the forested areas between and around them.

For example, the forested areas between and around the mountains of Gulaga and Mumbulla on the Far South Coast of NSW (currently on ForestsNSW schedule for logging this year) contain a wealth of cultural features that are important to the Yuin people who are traditional owners. Many words have been written concerning ancient pathways and song lines through these forests. For example, Egloff, 1979 comments on a local cultural being, the "Dulargal", who uses the tracks when travelling between the mountains. Blay 2005 writes of the "Mumbulla pathway" linking Gulaga to Mumbulla by the most direct route. He also describes a second pathway extending between Bunga Head, Mumbulla Mountain, Murrabrine and onto Gulaga. Egloff says that a number of ceremonial places have been identified between the two mountains and cultural association with these places continues to be an important part of Aboriginal identity. Not only the sites of initiation but the pathways between them were sacred.

Yuin elder Max Harrison in his book *My People's Dreaming* describes how

> "Just a year after the handback of Gulaga and Biamanga to the Yuin people, forestry went in and cut trees down and disrupted the sacred songlines. When I tried to tell them they shouldn't do that because it cut the direct line of teaching, it was disregarded. Forestry just overruled it and persuaded some Yuin people to give it the go-ahead. I was disgusted to even think that some of our mob wouldn't listen; they know the story of the two sisters and our cultural ways and how it is told up on the mountain.
>
> "People can't understand about the sacredness and those songlines, those Dreaming lines. They say cutting trees down at the base of the mountain is not touching the sacred sites up the top, but they don't understand about the short circuiting of the spiritual connectedness from one place to the other. As you know, when you drive around the country with your talking sticks- your mobile phones- you can get into what you call dead spots, the spots where you are cut off. That is what these people have done in coercing my mob, who don't know the deeper part of the story where the Dreaming travels to. They have cut the songlines. People cannot understand Aboriginal spiritual connectedness and the lines of connectedness. We have heard the comment before of "we're not logging up on the mountain". I say "Yes, but the base is the strength, how do you think a mountain becomes a mountain? It comes from the bottom up and peaks at the top. If you havn't got a strong base then you can't stand up."

The well-known Aboriginal author Burnum Burnam, born on the shore of Wallaga Lake, says in his book *Burnam Burnam's Aboriginal Australia*:

> "The sacred mountains were the centre of a series of religious events staged throughout the area. Bora rings have been found in valleys nearby,

> which served as the sites for initiation ceremonies. The *dulagar* track, a route taken by one of the mythic beings from the mountains to the coast, is still known by some of the people at Wallaga Lake."

The importance of the forests between and surrounding Gulaga and Biamanga National Parks to the Yuin people cannot be denied.

Other areas logged for the Eden chipmill would be of similar significance to Aboriginal people.

3.8 Alternative uses of the site as an energy supplier

The chipmill site is prime real estate, sited on one of the most beautiful bays in the region. It would be excellent for generation of solar, wind and possibly wave power that would produce zero emissions into the future. It is the best location for wind power in the region.

SERCA proposes that no approval for the SEFE proposal be given, and that instead the Government should investigate the environmental and energy benefits to the region and the associated costs of these various genuinely clean, green and renewable energy options.

Alternatively there are many other options for the site, especially given the arrangements between the Defence Department and tourist operators to allow use of the naval wharf to allow passengers to disembark. Tourism has long since provided far more economic growth and employment options than the woodchipping operations.

3.9 On-going drain on NSW Government budgets

The context for the financial losses made on native forest operations is discussed above. SERCA considers that this project will comprise an on-going drain on NSW Government budgets. It is underpricing of native forest logs by the State forestry agencies of NSW and Victoria that is propping up native forest-based operations like the SEFE chipmill. The real price of NSW pulplogs to SEFE is half what it was a decade ago. The NSW Auditor-General confirmed that ForestsNSW's loss on sales of native forest wood in 2008 was $14.4 million in 2008 and rising. We understand that it was $15m last year.

The Auditor-General would be able to calculate the effective subsidies to the chipmill since the RFAs were put in place. On limited information SERCA considers that it would be well over $60 million to date, and that if present logging and pricing regimes are continued it will be well over $140 million over the twenty year life of the RFAs in the South East.

Without these implicit subsidies it is doubtful that the chipmill would be viable. If market based pricing of native forest inputs were to be introduced there would be no economic future for the woodchipping or the proposed burner.

CHRIS
KOWAL

Councillor

Eurobodalla Shire
land of many waters

PO Box 208 Bodalla NSW 2545
0424 286 022
clrchriskowal@gmail.com

21 April, 2010

Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39, Sydney NSW 2001

SOUTH EAST FIBRE EXPORT 5.5 MW BIOMASS POWER PLANT – SUBMISSION ON ENVIRONMENTAL ASSESSMENT

Dear Ms Timbrell
I call for the immediate rejection of this proposal, on the grounds that approval implicitly locks in a fuel source of native forest wood supply, which is not sustainable and pre-empts any decision by future governments on whether or not to extend Regional Forest Agreements beyond the ten years they have yet to run.

There should be no decision to approve this proposal, which industry regards as a test case for further similar proposals.

I consider the following failings in the Environment Assessment justify immediate rejection:

1. failure to address relationship to native forest "harvesting"[1], as required by the Director-General
2. failure to demonstrate adequate fuel supply
3. failure to address the ecological and economic sustainability of the fuel supply
4. failure to assess emissions associated with the proposal comprehensively or accurately, especially CO2
5. failure to consider health impacts, especially for the residents of Eden
6. failure to assess fully the impact of hot water discharge into Twofold Bay
7. failure to consider impacts on Aboriginal cultural heritage
8. failure to consider alternative uses of the site as an energy supplier
9. exploiting native forests is an on-going drain on NSW Government budgets.

I do not support the proposal to include native forest biomass as an eligible renewable fuel in this scheme for the reasons set out below.

Fuel types and sources

- Energy production from biomass is only as sustainable as its feedstock. Without ongoing wood chipping of a million tonnes of native forest a year

[1] The word "harvesting" is routinely used by industry to refer to logging. Harvesting implies that it is a crop that is being gathered. In the case of native forests, the word is therefore inappropriate, so is used here in quotation marks.

(almost 19 000 hectares of forest) there would be no "waste" available to fuel this power plant.

- The Environment Assessment (EA) claims that the generation of electricity from renewable biomass under-utilises a valuable resource. Burning wood from native forest which has been heavily industrially logged (as is the current practise) for woodchips is **not** a renewable or sustainable. At least 180 years are needed for forests to replace themselves after being logged intensively for woodchips.
- There has been no serious attempt to assess the sustainability of the required native forest logging. The EA simply claims it is "sustainable" because most SEFE woodchips are certified under the highly controversial Australian Forestry Standard certification (AFS). However, it should be noted that Japanese and European paper manufacturers are increasingly reluctant to accept AFS as an adequate label of sustainability, instead opting for Forest Stewardship Council (FSC) certification. The biggest paper manufacturing company in Japan, Oji, does NOT accept it.
- The 2008 State of the Forests Report states that Australia has 10% less forest than previously thought for the past five years. This has raised concern that forest agreements and environmental policy may have been based on flawed figures.
- The major type of vegetation exploited by the forestry industry (tall open forest and open forest) covers only 4% of Australia today. There is mounting evidence that native forests are being depleted at a faster rate than they can replace themselves. This does not support the assertion in the Regional Forest Agreements that the native forest industry is sustainable.
- The fuel for the power station is **not** "waste." It is material that already has an economic value and is bought and sold in the market place. Only a tiny amount of "waste" is currently incinerated. Burning it as electricity under the MRET scheme gives it a higher value because of implicit subsidies.[2]
- Eligibility of the plant for the Abatement Certificate Provider scheme (EA 3-6) is unclear, especially with uncertainty surrounding the future of the Carbon Pollution Reduction Scheme. This should be clarified.

Greenhouse gases (GHG)

- The greenhouse gas analysis in the EA is based on the arbitrary decision of the Australian Government to deem the burning of biomass to be carbon neutral.
- Wood fired electricity production from native forest biomass is **NOT** carbon neutral if the whole life cycle of the fuel is taken into account. When regrowth native forests are logged the carbon they have stored for decades in their wood and in the soil is released. The shorter rotation periods of the logging cycle add further to the carbon cycle deficit.
- All emissions from logging should be counted in the assessment of burning native forest wood for electricity. It is simply not valid to start counting at the furnace door.
- The EA claims "Improved environmental outcomes due to lower greenhouse gas emissions per unit of output compared to conventional coal-fired power generation technologies. The proposed plant would potentially avoid the emission of 23,800 t of C02-e from fossil-fuel based power generation year."

[2] A study by MBAC Consulting "Global and Australian initiatives and impediments to the production of renewable energy from wood in Australia" May 2003, commissioned by the National Association of Forest Industries (NAFI).

- Logging of native forests to supply the Eden chipmill has been conservatively estimated at over 18 million tonnes CO_2-e per year[3]. This figure does not include the emissions from running the mill, and transport associated with logging contractors or deliveries to the mill.
- When power generated from native forest is compared with coal fired power and the full life cycle of the fuel is assessed, wood fired power is produces as much as six times the amount of carbon dioxide released from burning coal to produce the same amount of energy[4].
- Whilst forest regrowth would bio-sequester some of this carbon, it would be at a very slow rate. It would take about 80 years of regrowth to capture the five tonnes needed to bring greenhouse gas emissions down to the same level as that from coal. South east native forests are relogged in a much shorter cycle. After 20 years they would have captured only two tonnes of emissions, leaving more than four tonnes in the atmosphere.
- The existing use of the proposed fuel generates substantially less greenhouse gas than the power station because, as mulch, it decomposes slowly and transfers significant carbon to the soil. In contrast, burning the entire product instantly produces carbon dioxide. The greater emissions from the burning
  are **no**t counted, while the smaller emissions from mulching **are** counted. This is not logical

Water Quality

- Very hot water will be discharged into Twofold Bay. The temperature of cooling water discharged into Twofold Bay will be more than 21 degrees <u>above</u> the ambient water temperature in the winter. The implications of this are dismissed, but there are some serious consequences:
  a. The Weedy Sea Dragon (EA8-21), a threatened species, can only survive in temperatures **less than** 22 degrees. The EA says that the sea dragons "may avoid the area around the outlet" without providing any evidence that suitable habitat is available nearby.
  b. The presence of Green Sea Turtles is noted but the report fails to mention that in other power stations in NSW, turtles are regularly trapped in cooling water pipes because they are attracted by the warmer temperature.
  c. Noise may interfere with whale migrations via Twofold Bay (EA8-10)
  d. Toxic anti-fouling treatments (EA8-17) may threaten marine life and mussel culture.

Hazards and Risks

- Whilst the EA acknowledges that the plant will emit dioxins, furans and other chemicals it does not examine the human health implications of the emissions.
- Emissions estimates, especially in relation to particulates and heavy metals assume that the wood will be clean and uncontaminated.

[3] Data from : Mackey et al "Green Carbon" 2008 ; FOI from FNSW 2006-07 FNSW for the Eden, South Coast/Southern and Tumut areas.; and approx hectares logged in East Gippsland 2007.

[4] Dr John Kaye MLC. Adjournment Speech 2 December 2008 "http://www.john.greens.org.au/media/adjournment-speech-eden-chipmill-and-green-power

- No consideration is made for its exposure to salt yet the stockpile of fuel will be stored a few meters from the ocean where it will be contaminated by salt, increasing dioxin levels.
- While it is acknowledged that sulphur dioxide will be emitted, there is no consideration of possible acid rain consequences.
- Heavy metal content in ash will exceed allowable limits. Additional approval from DECC will be required to use it on the SEFE Rockton plantation.

Flora and Fauna

- Approval of the power plant will assure the regional extinction of koalas and other endangered forest species including owls, glider, possums, bats and Superb Parrots.

This woodchip fuelled power plant is not a genuine 'clean green energy source'. The site is ideal for alternative forms of renewable energy which could be generated more cheaply using wind, solar or tidal technologies. The proposal is **not** acceptable given the urgent need to stop logging, woodchipping and clearing of native forests around the world, including Australia, to reduce carbon dioxide emissions. Stopping the destruction of our native forests and woodlands would save up to 20% of Australia's carbon dioxide emissions.

On 22 March 2010 SEFE announced that the power plant project was "on hold". This statement reflects the state of the international woodchip market and demonstrates the dependency of the proposal on that market.

In conclusion the evidence is clear that the EA is inadequate and the Minister should reject the proposal.

Yours faithfully,

Clr Chris Kowal

This power plant will feed of our forests and this will in turn dirty up and dry up our south coast rivers. It is a dirty form of energy generation and it is not clean or green and when you consider and trucks driving on all the roads in the forests it is not a renewable or sustainable form of energy generation.

Where are the forest birds and wildlife going to go when the forest that live in are gone??

I don't want these power plants because that will destroy the south coast forests which I spend a lot of time in.

This is a really dumb project.

Jo Saunders

Name: Josef Saunders-Kowal

Address:
89 Hawdon Street
Moruya 2537

IP Address: cpe-139-168-120-238.lns16.cht.bigpond.net.au - 139.168.120.238

Submission for Job: #2914 Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_job&id=2914

Site: #1828 South East Fibre Exports 5 MW Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_site&id=1828

Anna Timbrell

E: anna.timbrell@planning.nsw.gov.au

South East Fibre Exports Wood Fired Power Station
Comments on Final Environmental Assessment

The scope of this assessment is so narrowly defined as to make it almost meaningless.
It does not look at the full life cycle of the fuel (i.e.; the greenhouse impacts of native forest logging; it simply asserts this is ?sustainable because it has Australian Forestry Standard (AFS) certification). It fails to examine the fact that without about one million tonnes of woodchipping each year, there would be no ?waste.?
While acknowledging that dioxins, furans and HAPs will be emitted, it does not examine the human health implications of the emissions at all.
In assessing greenhouse implications and calculating ?avoided emissions? it should be comparing the power station with wind or solar or other MRET approved technologies because it will be competing with these technologies in the market place, not coal fired power.
It examines in laughable detail the ?terrestrial ecology? of the site (for example, it tells us that the area has ?a disturbed under storey of exotic grasses?, in other words, mown lawn, but totally ignores the immense ecological implications of logging 19,500 hectares annually (NSW and Victoria) of native forest needed to supply the fuel.
The fuel for the power station is not ?waste.? It is material that already has an economic value and it is bought and sold in the market place. Only a tiny amount is currently incinerated. Burning it as electricity gives it a higher value because of implicit subsidies1 available to it under the MRET scheme.

Major Issues:
1. ?No native or plantation forest would be felled for the purpose of fuelling the plant? (19-3).
Forests NSW expects that some timbers which are not currently used for woodchipping because they are either too red or too hard, and are not of sawlog quality will be used for power generation.
2. Emissions estimates, especially in relation to particulates and heavy metals assume that the wood will be clean and uncontaminated and no consideration is made for its exposure to salt.
a. SEFE CEO Peter Mitchell explicitly told the Bega Valley Shire council on 26 August 2008 that ?municipal waste? was a potential fuel, although he did not specify a quantity.
b. The stockpile of fuel will be stored a few meters from the ocean and will be contaminated by salt, increasing dioxin production
4.The greenhouse analysis puts into sharp focus the artificiality and absurdity of some current national and international conventions on measuring GHG emissions; e.g., deeming burning of biomass to be carbon neutral. The comparison between GHGs generated by current ways of disposing of wood ?waste? as mulch and by the power station creates a nonsensical result. Mulching and composting add carbon the soil but slowly decompose releasing some CO2 over time. In burning, the entire product instantly becomes CO2, and yet the (greater) emissions from the burning are not counted, while the (smaller) emissions from mulching are counted. Where is the logic in that?
5.Sustainability of native forest logging. No serious attempt is made to assess this. It is simply deemed to be sustainable because most SEFE chips are produced under the highly controversial AFS. Japanese paper manufacturers are increasingly reluctant to accept AFS as an adequate label of sustainability and the biggest company in Japan, Oji, does not accept it.
6.It will not ?improve the reliability of the local electricity supply.? (19-2)
In 2009, the Eden chipmill was closed for weeks at a time, for most of the year it was on a 4 day week. If Eden residents were counting on it to power their homes in 2009, they would have experienced many outages.
7.Emissions inventory. The EA states that ?most of the particulate matter will be controlled,? especially those of greater size. Particulates bigger than 10 microns are thus disregarded altogether. There is no justification provided for this.
8.Odour. While it is acknowledged that sulphur dioxide, rotten egg gas will be generated, there is no consideration of odour as an issue to be addressed. Neither are the acid rain consequences of sulphur dioxide emissions addressed.
9.The project is wasteful. 75% of the heat is ?lost,? but some of it will pose a serious threat to marine life in Twofold Bay when it is discharged (see: point 2, below).

Other unresolved environmental issues
1.Heavy metal content in ash. The EA notes that the heavy metal content of the ash produced will exceed allowable limits and approval from DECC will be required to use it on the SEFE Rockton plantation.
2.Hot water discharge into Twofold Bay. The temperatures of cooling water discharged into Twofold Bay will be very high, more than 21 degrees above the ambient water temperature in the winter. The implications of this are dismissed, but there are some important consequences:
a.Weedy Sea Dragon (8-21). This threatened species can only survive in temperatures less than 22 degrees. The EA says that the sea dragons will go somewhere else: they ?may avoid the area around the outlet.? Too bad for them if they don?t.
b.Green sea turtles. The presence of these creatures is noted but the report fails to mention that in other power stations in NSW, turtles are regularly trapped in cooling water pipes because they are attracted by the warmer temperature.
c.Whales. Noise may interfere with whale migrations via Twofold Bay (8-10)
d.Anti-fouling treatments (8-17). Toxic treatments may threaten marine life and mussel culture.

Unresolved social/ economic issues
1.Abatement Certificate Provider scheme. Eligibility (3-6) of the plant is unclear, especially with uncertainty surrounding the future of the Carbon Pollution Reduction Scheme.
2.Bega Valley Shire Council Zoning. The chipmill site is currently zoned 1(A) agricultural, arguably not appropriate for this type of development.
3.Recreational divers will have reduced access to the chipmill jetty (8-23)

Claimed benefits of the project
The concluding chapter of the EA lists 6 benefits to come from the power station. Five of them are wrong, the other claim is misleading. It lists the most significant project benefits as;

1.Improved security of electricity supply. SEFE currently experiences outages and onsite generation will remove this risk;
This is wrong. The operation of the woodchipping industry is not stable enough to make electricity generation from a by-product reliable.

2.the generation of electricity from renewable biomass material in contrast to current practice which under-utilises a valuable resource;
Burning wood from native forest which has been industrially logged for woodchips is not a renewable technology. At least 180 years are needed for most of the forest to replace itself once it is logged intensively for woodchips.

3.the supply of around 22 GWh of base load power annually to the electricity grid;
Alternative forms of renewable energy could be generated more cheaply at this site using wind, solar or tidal technologies.

4. improved reliability of the local electricity supply through local generation;
See 1, above and point 1 under ?Major Issues? above.
5.contribution towards long term economic benefits in the Eden area through increased reliability of electricity supply during peak demand periods; and
See 1, above and point 1 under ?Major Issues? above.
6.Improved environmental outcomes due to lower greenhouse gas emissions per unit of output compared to conventional coal-fired power generation technologies. The proposed plant would potentially avoid the emission of 23,800 t Of C02-e from fossil-fuel based power generation year.
Logging of native forests to supply the Eden chipmill has been estimated at over 18 million tonnes per year2. This must be counted in assessing the GHG implications of burning native forest wood for electricity. It is simply not valid to start counting at the furnace door; the whole life cycle of the fuel must be taken into account in measuring greenhouse impacts. GHG emissions from the proposed plant should be compared with those from other MRET technologies, not with coal fired power.
However, even if it is compared with coal fired power, if the full life cycle of the fuel is assessed, wood fired power is many times more greenhouse intensive than coal fired power3.
Carbon pollution generated by logging for the Eden chipmill
According to Mackey et al ?Green Carbon? 2008, the average carbon carrying capacity for all the SE Australia eucalypt forests is 640 tonnes per hectare. In those forests in SE NSW where the actual carbon stored is currently less than the carrying capacity, this is entirely due to the previous operations of the Eden chipmill over the past 40 years, so it is valid to use Mackey?s figure of 640.
According to FOI information, in 2006-07 FNSW logged 14,388 hectares in the Eden, South Coast/Southern and Tumut areas.
The figures below do not include the emissions from running the mill, and transport associated with logging contractors or deliveries to the mill. The calculation is based on:
Area logged x Carbon stock per ha x 40% (loss from logging) x 3.666 (converting C to CO2
Thus, for NSW:
14,388 x 640 x .4 x 3.666 = 13,503,080 tonnes of CO2
For East Gippsland:
4,500 x 700 x .4 x 3.666 = 4,611,600 tonnes
Total: 18,114,680 tonnes.
40% of the carbon stored in a forest is lost to the atmosphere when it is logged, even after 150 years. The weight of a carbon dioxide molecule is 3.666 times the weight of a carbon atom. Approx hectares logged in East Gippsland in 2007.
Dr John Kaye MLC. Adjournment Speech 2 December 2008 ?Our very rough analysis, based on forestry industry and peer-reviewed data, suggests that for every megawatt hour of energy generated by south-east native forestry biomass, more than 6.4 tonnes of CO2 would be released instantaneously. This is more than 6.4 times the amount of CO2 released from burning coal to produce the same amount of energy. Certainly regrowth would bio-sequester some of this carbon but at a very slow rate. It would take about 80 years of regrowth to capture 5.4 tonnes, thus returning the greenhouse gas emissions to the same level as coal.?
http://www.john.greens.org.au/media/adjournment-speech-eden-chipmill-and-green-power

Name: Helen Saunders

Address:
89 Hawdon Street
Moruya NSW 2537

IP Address: cpe-139-168-120-238.lns16.cht.bigpond.net.au - 139.168.120.238

Submission for Job: #2914 Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_job&id=2914

Site: #1828 South East Fibre Exports 5 MW Biomass-Fired Power Station
https://majorprojects.onhiive.com/index.pl?action=view_site&id=1828

Anna Timbrell

E: anna.timbrell@planning.nsw.gov.au

CLARENCE VALLEY CONSERVATION COALITION Inc.
POST OFFICE BOX 1015, GRAFTON N.S.W. 2460.

21 April 2010

Anna Timbrell
Environmental Planning Officer
Infrastructure Projects
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Email: anna.timbrell@planning.nsw.gov.au

SUBMISSION ON
South East Fibre Exports 5 MW Biomass-Fired Power Station – Eden

The Clarence Valley Conservation Coalition (CVCC), a community group in the Clarence Valley on the NSW North Coast, has a good understanding of the issues relating to forestry and the impact of forestry operations on the natural environment.

The CVCC is strongly opposed to South East Fibre Exports' proposal to establish a biomass-fired power station at Eden. We believe that there are many reasons that this proposal should be rejected but in this brief submission we will focus on two major reasons.

The CVCC believes that the logging/ woodchipping undertaken in the SE forests around Eden is unsustainable and that the biodiversity of the area continues to suffer because of the short-sighted policy which permits this rapacious industry to continue. To allow so-called "waste" from the forest operations to be burnt to produce power further compounds the environmental destruction perpetrated by the industry. Any waste material should be left on the forest floor to provide habitat for native fauna as it breaks down and enriches the soil – soil which would certainly need enriching over time because of the clearing of so much biomass. A further concern is that if the so-called "waste" proves to be insufficient for continued operation of the power-station at any time, then trees will be cut down to supply its fuel.

Wood-fired power stations generate greenhouse emissions. Basic common sense should preclude any consideration being given to building a further polluting – and inefficient – powerstation. To even be considering such a project suggests that the State Government – and its agencies – do not have any serious commitment to tackling climate change.

We believe that the Government should be encouraging non-polluting renewable power generation and banning developments such as this one.

Leonie Blain
Hon Secretary

Director, Infrastructure Projects

Department of Planning

GPO Box 39

Sydney NSW 2001

22nd April 2010

Re: Application No MP 09_0034

Proposed 5.5 Megawatt Biomass-Fired Power Station

SUBMISSION from Amanda Midlam, P.O Box 630 Eden, NSW, 2551

No political donations made in the last two years.

To whom it may concern: I do not support this project. My reasons are as follows:

I believe the serious risk here is that there won't be enough waste and trees will be harvested and used to make electricity. In this proposal there is no guarantee of sources of material to use in the power station. Currently waste is sold as mulch which is an environmentally good use for it. Waste that can't be sold is incinerated on the site. However it is only on rare occasions that I have seen smoke coming from that incinerator and I have doubts about the current volume of waste.

I also believe it is putting the cart before the horse to propose adding such infrastructure when there are serious concerns about the viability and sustainability of the wood chip industry. These concerns are both environmental and financial. Environmental concerns have resulted in public protests about logging the water catchment and protests about logging forest adjacent to the habitat of some of the few koalas left on the far south

coast. Since the global financial crisis chip mill workers have had their hours reduced and ships that used to pick up the chips every two weeks are now more infrequent and the last one was a month ago.

The communication around this proposal is also of concern. A shop front opened up in Eden purporting to provide information but it literally was just a shop front. I wanted information and go into town daily but only saw it open once. That was late night shopping just before Christmas but I was headed somewhere else and by the time I returned it was locked up again.

I am also concerned about a community chest project run in conjunction with the local newspaper, the Magnet. Perhaps it was sheer altruism but for the chip mill to give away thousands of dollars to community organisations at a time when it knew it needed community support for the biomass project, [redacted] Also I am concerned that many people in Eden believe this project aims at providing free electricity for the town of Eden. In actual fact the submission shows that the plan is to sell surplus electricity. Local people may think this proposal will benefit the people of Eden and may not realize that once it is operational it is forecast there will be only six jobs at the power generator.

It concerns me that any perceived support from people from Eden could be a result of lack of information or misinformation.

If the proprietors are serious about generating electricity they have an ideal site for wind power and I believe that would be far more environmentally friendly (no trucks involved) and it wouldn't involve adding infrastructure that justifies the wood chip mill's existence and the harvesting of forests for chips. I do not support the biomass proposal and believe if it goes ahead there needs to be strict controls to monitor exactly what it is that is being fed into the power station.

I am also concerned about Eden's reputation. With climate change recognised it seems utterly stupid to use forests to make electricity and I'd hate Eden to be known as the town doing just that.

Twofold Bay is stunningly beautiful, the town of Eden has a rich heritage both Aboriginal and non-Aboriginal, and there's a strong community feel. But this proposal is not a good move for the area. If it goes ahead what happens if the wood chip industry collapses?

Regards,

Amanda Midlam