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***About the Author***

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# EXECUTIVE SUMMARY

This report challenges the widely held assumption that carbon sequestration projects — so called “sinks” — are environmentally advantageous. The evidence presented shows instead that sinks projects can lead to significant negative environmental impacts. The report outlines how Tokyo Electric Power Company (TEPCO), Japan’s largest power utility and a pace-setter in the use of carbon sequestration, is implicated in native forest destruction in the Australian state of Tasmania through plantation investments designed to obtain “carbon credits” under the Kyoto Protocol. These native forests are areas of high conservation value. Some are old-growth forest, others represent significant habitats for threatened species.

TEPCO, along with Mitsubishi, has invested Aus\$10 million in a \$90 million plantations joint venture with Australian company North Forest Products (NFP) in the Australian state of Tasmania. The main product from the plantations will be pulp for Mitsubishi, but TEPCO’s investment will also yield an estimated 130,000 tonnes of “carbon credits”. Areas of land that will be cleared for North Forest Products’ plantations include areas of native forest (interview with NFP CEO Mike Beardsell 1/9/00 — see p10). TEPCO’s sequestration-related investment is an integral part of the joint venture’s overall capitalisation, and is therefore associated with this native forest destruction.

NFP may seek to distinguish between pulp production for Mitsubishi on cleared native forest, and previously cleared land for TEPCO’s carbon sinks. Yet there has been no disaggregation in terms of land ownership between NFP and TEPCO. Furthermore, making such a distinction is academic, as both forestry land uses are occurring on the same properties. TEPCO’s carbon plantation investment is inseparable from ecologically destructive management practices of NFP.

In addition, post-hoc attempts to pick and choose “previously cleared land” across NFP’s plantation holdings and delineate them as TEPCO sinks is both an unethical and potentially unauditible approach. Existing vegetation data sets are not always accurate and frequently conflict, further complicating attempts to independently assess land use history.

The TEPCO case is not an isolated example. This report also documents the attempts by Australian company Gunns Ltd to attract investment in their plantations by claiming that they are potentially eligible for “carbon credits” under Federal Government guidelines. An examination of Gunns plantations acquired from the Australian company BORAL and groundtruthing of available data on the Private Timber Reserve database reveals that many of Gunns’ plantations are on recently cleared native forest. This is the clearest evidence yet that carbon credits may become an economic driver for native forest destruction.

Furthermore, the clearance of native forest for plantations is an inevitable ramification of the Tasmanian Government’s plantations agenda. Forestry Tasmania states clearly:

*“The objective is estimated to require around 100,000 hectares of new eucalypt plantation. Of the total area needed for plantation, both eucalypt and softwood, approximately 70% will come from native forest conversion...” [emphasis added].*

Tasmania is obligated to maintain only 80% of its native forest estate under current policies (Tasmanian State Government, State of the Forests Report, p. 13). This means that as much as 20% of Tasmania's native forest cover, including areas of high conservation value with threatened species habitat, could be converted to plantations over the next few years. This report provides evidence that some in both industry and government would like to use carbon credits to help finance plantation expansion investments that include native forest clearance.

This November the Parties to the Climate Change Convention will meet in The Hague in The Netherlands to continue negotiations on the Kyoto Protocol. One of the most contentious issues will be whether sinks projects can be included in the Clean Development Mechanism (CDM) of the Kyoto Protocol. This mechanism is designed to promote greenhouse gas projects in developing countries while assisting them to achieve sustainable development. The question must be asked: if carbon credits are enhancing investments that may encourage native forest destruction in industrialised, first world countries, then surely there is an even greater risk that in poorer countries with less-developed institutional controls and civil society oversight, the potential for perverse outcomes is even higher? Another question is whether industrialised countries can include more sinks in their countries to meet their Kyoto targets. Thus far, no government advocating for this expansion has made a proposal with any environmental standards to prevent this type of project from occurring. The inescapable conclusion from this report is that not only are sinks projects a questionable method of addressing climate change, but they may also lead to negative environmental outcomes.

# INTRODUCTION

*The idea that a specified fragment of wooded land can “offset” a specified amount of industrial carbon dioxide emissions depends on false assumptions about calculatability. Large-scale ‘offset’ plantations, instead of mitigating global warming, could even make it worse. In delaying the transition to a more equitable distribution of emissions and more sensible energy regimes, such plantations could result in an increased amount of avoidable carbon emissions both from industry and from the land. Forestry, therefore, should not be integrated into climate negotiations. Policymakers must separate the issue of emissions reduction from that of carbon sink protection measures.*

*Lohmann, Larry, “The Carbon Shop: Planting New Problems”,  
World Rainforest Movement, Montevideo, 1999, p. 20*

Few people would now dispute that global warming and climate change will be a major challenge to life on earth over the coming decades. What was once dismissed as far fetched fantasy has been accepted by governments the world over. The “Kyoto Protocol”, and its measures to combat these problems has become the subject of intense public debate: will governments and industry take sufficient action in time to stop the predicted results of unfettered use of fossil fuels?

So far the track record has been poor: scientists estimate that global emissions of carbon dioxide must be reduced between 60-80% if we are to avoid dangerous climate change and its severe consequences yet so far agreement has only been reached for a reduction of 5.2% of 1990 levels.

Clearly, the most obvious solution to reducing global emissions is to reduce the use of fossil fuels and undertake energy conservation programmes. However, those countries and industries most responsible have been unwilling to take these steps. Instead, they are looking for alternatives that do not require reductions in fossil fuel usage, such as carbon storage or sequestration.

At first glance the idea of “sequestering” carbon in vegetation that naturally absorbs carbon dioxide as it grows looks like an appealing, “win win” solution for all concerned. Companies get to continue releasing CO<sub>2</sub> into the atmosphere and instead of implementing abatement and reduction programmes, they can “offset” those emissions by planting vegetation that “fixes” an equivalent amount of CO<sub>2</sub>.

The trouble with this concept is that it encourages companies to neglect their responsibility to clean up their act, implement energy conservation measures and reduce emissions. But in the rush to find a quick and profitable fix, it seems objections are being ignored.

By far the most popular method of sequestration is to plant trees. Many companies around the planet are now seeking to plant trees wherever they can. Vehicle manufacturers, power utilities, oil companies, and many companies with a heavy “carbon profile”, are looking to plantations to offset their emissions levels so they can continue to pollute in a business-as-usual fashion.

However, rather than increasing carbon stocks, the use of plantations as “carbon sinks” may actually fuel increased logging and loss of biodiversity. These plantations are short rotation wood fibre crops; consider-

able accounting trickery is required to claim that they are contributing significantly to carbon sequestration. If industry can get away with this kind of activity in a developed nation like Australia, what hope have the other countries of the South that they will not be similarly exploited?

The global forest commons is facing its biggest challenge since the industrial revolution began. Many forest-dependent species are on the brink of extinction. How ironic it would be if the Kyoto Protocol were complicit in sending some of them over the edge.

# The Use of Plantations to Respond to Climate Change in Australia

## The Federal Government

*“The National Greenhouse Strategy contains a number of measures to enhance sinks through revegetation programs and sustainable forestry and vegetation management Plantations for Australia: the 2020 Vision, which was launched by the Commonwealth, States and industry in October 1997, outlines a series of measures designed to remove impediments to plantation establishment, establish a commercial plantations culture and improve information flows. It aims to treble the area of Australia’s plantation estate by the year 2020. This will require plantings of 80,000 hectares each year or a total of two million hectares by 2020.”*

*Australian Greenhouse Office “National Emissions Trading: Crediting the Carbon. Discussion Paper 3”, Commonwealth of Australia, 1999.*

As a result of the Regional Forest Agreement process, Australia’s forests have been deregulated and “opened up” to global free trade (strictly speaking the removal of export licensing arrangements including fixed level quotas ). This has resulted in significant international investment, particularly by US and Japanese corporations.

Plantation establishment is also linked to the Federal Government’s the “Farm Forestry Programme” and “Plantations for Australia: the 2020 Vision”, which seeks to establish 80,000 ha. of new plantations every year to 2020, which will be funded to the tune of \$3 billion over the life of the scheme. At the same time, new taxation regulations and changes to capital gains tax provisions have increased tax deductibility rates available for plantation establishment and management costs.

Similarly, the Australian Federal Government is pursuing a private sector, non regulatory approach to greenhouse gas emissions. Through the Australian Greenhouse Office it has developed a voluntary programme with greenhouse producers - the “Greenhouse Challenge” - and is developing a “National Carbon Accounting System” to track carbon sequestration measures for the domestic carbon trading market in advance of formal intergovernmental agreements. As shown in the above excerpt, the Federal approach to carbon sequestration is to encourage plantation establishment prior to the Kyoto Protocol commitment period of 2008-2012 and whilst pointing out the risks to private companies to undertaking private sector sequestration initiatives it has not regulated this approach so far ( [http://www.greenhouse.gov.au/pubs/factsheets/fs\\_emissions.html](http://www.greenhouse.gov.au/pubs/factsheets/fs_emissions.html) ).

In short, the messages coming from the Commonwealth are mixed, and have the potential for environmentally perverse outcomes on the ground, such as clearance of native forests for plantations which will be funded/capitalised partly through sale of carbon credits. This of course is being capitalised upon by the private sector, with forestry companies seeking to engage in deals with carbon producers to “offset” their emissions.

# CLEARANCE OF NATIVE FORESTS FOR CARBON PLANTATIONS IN TASMANIA

## State Government, associated agencies and plantation establishment

*The objective is estimated to require around 100,000 hectares of new eucalypt plantation. Of the total area needed for plantation, both eucalypt and softwood, approximately 70% will come from native forest conversion on State forest.*

*Forestry Tasmania, "Post - Regional Forest Agreement (RFA) review of sustainable high quality Eucalypt sawlog supply from Tasmanian State forest" (1998)*

As a result of the RFA native forests are being cleared for plantation establishment. This is the State Government's explicit policy, which is being executed via relevant agencies (Private Forests Tasmania –PFT - and Forestry Tasmania - FT). The RFA has developed an operational framework for the clearance of 20% of Tasmania's remaining native forest cover to plantations. Based on the available RFA plantation productivity data, this translates into a potential of over 600,000 hectares available for plantation establishment.

An analysis of the Bass District Forestry Tasmania Working Circle (which contains the Tamar valley) indicates that over the three year planning period 1998/99 - 2000/01 over 3,300 ha. of State Forest will be converted to softwood plantation, whilst over 2,400 ha. of State Forest will be converted to hardwood plantation (Forestry Tasmania, 1998-1999 to 2000-2001 Three Year Wood Production Plan, undated, pp. 38-40). A substantial part of the "Tamar Tree Farms" joint venture involving TEPCO is located within this area.

Forest types not adequately protected via the RFA process are being cleared for plantation establishment. This includes *E. ovata*, wet *E. viminalis* and *E. regnans* on more productive soils. The forest planning process does not allow for ecosystem-level protection, and consequently the cumulative impacts of a block by block approach is leading to aggregated ecosystem collapse on a landscape unit level.

This problem is compounded by the fact that the RFA and TASVEG 2000 vegetation mapping is inconsistent. It is therefore not possible to use these data sets to verify claims with any degree of certainty once the land has been planted to monoculture. Furthermore, once an area is cleared of native forest, and the data sets show conflicting vegetation types, how can it be proved what forest was originally there?

In addition, land clearance of important forest communities may also be predicated on the very fact that they have been identified as something else on the data sets (eg rainforest mapped as silver wattle). This possibility is historically linked to the fact that important data layers (such as timber harvesting histories) collated by Forestry Tasmania during the RFA process were not made available for public review

The Tasmanian Regional Forest Agreement clearly indicates that in addition to maintaining a permanent native forest estate, reservation levels of specific forest communities in each Interim Biogeographic Region of Australia (IBRA) must also be maintained (Tasmanian RFA, Attachment 9). Clearance of *Eucalyptus ovata* and

wet *E. viminalis* forest for plantation establishment in the IBRA regions that include the Meander Valley and Tamar Valley is clearly in contradiction of this. Furthermore, there are currently no monitoring and reporting provisions in place to address this problem.

There is also clear evidence that threatened species habitat is being cleared for plantation establishment. Threatened species management practices via the State fauna management manual is allowing for prescriptive logging, but this is not being properly implemented in some operations and is ineffective in others. One species, located within the state's most intensive native forest conversion area, the North east highland snail (*Anoglypta launcestonensis*) was delisted by the Scientific Advisory Committee despite intense academic dispute and insufficient information. All scientists agreed however that between 30-37% per cent of the remaining habitat for this species is now available for logging and conversion to softwood and hardwood plantations. (TASRMPAT 55, sections 33-39).

With the announcement of a proposed 800,000 tonne woodchip/sawntimber/biomass plant being sourced from the Southern Forests (<http://www.southwoodresources.com.au> ) the clearance of native forests for plantations is set to escalate. Forestry Tasmania is a major partner for this proposal. This is one of several new large industrial wood processing complexes proposed for Tasmania.

# CASE STUDIES

## **NORTH Forest Products, TEPCO and the Tamar Tree Farms Project**

*TEPCO's contribution to the TTF program will involve A\$10 million dollars allowing the total area under eucalypt plantation to expand by 3000 hectares to 25,500 hectares by 2011. TTF is a component of total plantation estate in Tasmania which covers 54,000 hectares which is managed by North subsidiary, North Forest Products.*

*NFP Media release 4/10/99*

NORTH Forest Products is a large private landowner, currently owning about 120,000 ha of land and it is progressively converting its holdings from native forest and rainforest into softwood and (predominantly) hardwood plantations. These are exported as woodchips for conversion to pulp and paper products in Japan. The holding company is known as Australian Forest Holdings - AFH. It has undertaken a number of plantation establishment joint ventures. These include Timbercorp. (1,000 ha) and the joint venture with Mitsubishi Corporation, Mitsubishi Paper Mills (23,500ha.) and TEPCO (3,000 ha.). A joint venture company, Tasmanian Forest Holdings (TFH) has been established to manage the Japanese joint venture, which is 62% NFP owned, whilst the joint venture is divided amongst the three Japanese partners: Mitsubishi Corporation 35%; Mitsubishi Paper Mills 35%; TEPCO 30%. These AFH/TFH plantations are scattered across the north of the state.

The response of NFP CEO Dr Mike Beardsell to an interview by the researcher on sequestration issues associated with the project indicated that the company would comply with whatever the outcomes of COP6 would be. However, he expressed support for crediting plantations established on erstwhile native forest where there was a clear increase in carbon compared to the previous forest. Dr Beardsell also confirmed that the joint venture plantations would be logged for pulp.

### **Telephone interview with NFP CEO Mike Beardsell 1/9/00**

*1 Is NFP establishing plantations on native forest that has been expressly cleared for subsequent plantation establishment?*

*"Yes"*

*2 Will any of these subsequent plantations be used for carbon sequestration/offset projects?*

*"If someone gave us a system that worked we would use it"*

*3 Are any of the plantations subject to the TEPCO joint venture established on erstwhile native forest cleared for the purposes of plantation establishment?*

*"Yes"*

4 What is the relationship between the MPM and TEPCO plantations within the Tamar Tree Farms project, specifically:

a is there a segregation of plantations between MPM pulp utilisation and TEPCO carbon sequestration?

Dr Beardsell declined to comment saying that matter was in commercial confidence

b will any of the MPM plantations be utilised by TEPCO for carbon offset purposes?

Dr Beardsell declined to comment saying that matter was in commercial confidence

c will the TEPCO plantations be used for pulp production at any future stage?

“Yes”

5 Are there any third party verification mechanisms in place to track the TEPCO offsets?

“This is not possible until there are some rules in place”

#### **Tamar Tree Farms**

“Tamar Tree Farms” applies to the TEPCO joint venture properties specifically, and which fall within the Tamar Valley (Exeter and Beaconsfield map sheets), as well as being a general term that can be applied to all “Tasmanian Forest Holdings” that occur within NFP’s Tamar working circle. Media reports and NFP’s own literature is contradictory. Of the 27 properties listed in the joint venture, 7 are found in the Tamar Valley itself, 13 outside the Tamar valley, but within the NFP Tamar working circle and 7 in the North East.

The properties investigated by the researcher show a mix of forestry land uses on the individual properties, namely:

- cleared native forest converted to plantations (or in the process of being converted);
- plantations established on previously cleared farmland; or
- both uses on the one property.

Investigations of a joint venture property at Porters Bridge Rd revealed these forests form part of a larger area for which NFP has entered into contracts and include endangered forest communities. This forest is *E. ovata* dominated along the drainage line, whilst the forest on the flat was most probably damp sclerophyll. Elsewhere “shrubby *Eucalyptus ovata*” forest was also evident. It is the researcher’s understanding that either all or part of this property is proposed for conversion to plantation. Under the RFA, 100% of *E. ovata* is supposed to be protected under the IBRA targets for this bioregion. This would be in breach of the RFA.

Whilst it is possible that NFP may seek to justify its plantings as being separated between pulp production for Mitsubishi Paper Mills and Mitsubishi Corporation on erstwhile native forest, and cleared land for TEPCO’s carbon sinks, there has been no disaggregation in terms of land ownership between NFP, TFH and TEPCO. Furthermore, making such a distinction is academic, as both forestry land uses are occurring on the same properties. This corporate structure makes tracking of ownership difficult.

Concerns over TEPCO's plantations include that they are part of a planned clearance regime by NFP and that the clearance regime may be contrary to the threatened community provisions of the RFA, and quite possibly the Forest Practices Code as well. It is not possible to disaggregate TEPCO's plantations from ecologically unsustainable management practices occurring due to the joint venture structure and the mix of forestry land uses on the single title.

It appears that TEPCO itself has placed its trust in NFP rather than develop independent monitoring provisions. Indeed, the responses indicate that TEPCO has placed all responsibility with NFP. TEPCO's responses give rise to questions as to its level of understanding of the complexities associated with carbon sequestration:

*Thank you very much for your e-mail, dated 29 February, 2000, regarding the Australian plantation projects.*

*TEPCO has positively promoted the preservation of nature as one of the foremost management priorities in environmental policy. We will continue to make our best endeavors to promote environmental awareness. Based on the concept above, we are seeking ways for sequestration of carbon and we appreciate your comments.*

*For more information and inquiries regarding the plantation project in Tasmania, please contact the following: External Relations Manager, NORTH FOREST PRODUCTS, Telephone: 03 6221 1111, Facsimile: 03 6221 1108*

*TEPCO*

Email to the researcher, 29/02/00

### **Verification mechanisms**

The researcher has found no evidence that suggests NFP has developed independent, third party auditing procedures to verify previous land use on any of its properties at this stage. Dr Beardsell's comment "This is not possible until there are some rules in place" confirms this. Any claims it may make regarding prior land use will therefore be on trust, and the veracity of claims that TEPCO plantations have only been established on previously cleared agricultural land (albeit part of a multiple use regime that has also included land clearing) will not be able to be substantiated.

It is possible that NFP may go through an "audit process" once it has cleared and established the approx. 22,500 ha. of MPM/MC plantations and 3,000 ha. of TEPCO plantations, i.e. after the fact. That way, it may seek to pick and choose "previously cleared land" across its holdings, and delineate them as TEPCO sinks. This would be an unethical – and unauditible – approach. Alternatively, it may simply wait and see what the outcomes of COP 6 are, and badge its plantations accordingly. This would also be an unethical approach. Combined with the fact that it may not be possible to prove the previous land use, this approach could be doubly perverse.

Based on correspondence between TEPCO and the researcher, the company appears to have only a superficial understanding of the role of plantations in sequestering carbon and has apparently given no thought to the negative environmental consequences of the plantation establishment programme they have developed in Tasmania. The researcher was referred back to NFP when he raised concerns over environmental problems.

## Gunns Ltd

October 26, 1999

*After such successes as Great Southern Plantations and Timbercorp, timber, hardware retail and construction group Gunns Ltd has today announced that it has joined the bandwagon and will launch a public offering to finance a new plantation in Tasmania. The project will involve the plantation of Radiata Pine and Eucalyptus over an area of up to 5,000 ha/year, targeting an estate in excess of 50,000 ha.*

*The prospectus for the issue will be open to the public, the company said. It is anticipated that the project will produce resources including pulpwood, saw logs and veneer logs suitable for further processing in the company's milling operations.*

*<http://www.egoli.com.au> (accessed 13/09/00)*

Companies other than NFP have also cleared native forest for plantation establishment in the Tamar Valley. This included BORAL, whose plantation assets have now been acquired by Gunns Ltd.

Through its own plantation prospectus offer, Gunns will establish and manage land for plantations. This land will be obtained from various sources: land from previous corporate acquisitions, and land leased from proprietors (including FT). 50,000 hectares are targeted over the life of the project. Gunns plantation even goes so far as to claim that some plantations are eligible as a sink under the Australian Greenhouse Office criteria (see below). Some of these prospectus plantations have been established on erstwhile native forest and rainforest, providing – in the absence of realtime groundtruthing – the clearest evidence to date that native forest has been cleared and earmarked for sequestration programmes.

In its most recent investment prospectus, Gunns Ltd identifies a number of plantations which it appears to claim are eligible as sinks under Australian Greenhouse Office methodologies.

*If the Kyoto Protocol becomes a reality and appropriate supporting national protocols are developed it seems likely that afforestation and reforestation projects, undertaken since 1990, and involving land which has been under a different land use for an extended period (i.e. Kyoto forests), will produce sequestration, which is countable during the first commitment period (2008 to 2012).*

*It is understood that the majority of the plantations to be developed under the Prospectus will satisfy these conditions.*

*In predicting the likely sequestration rates of carbon by plantations it is important to apply accepted formulae to expected green wood growth to convert this to the equivalent carbon and carbon dioxide figures.*

*The Greenhouse Challenge Vegetation Sinks Workbook, produced by the Australian Greenhouse Office, provides details of appropriate formulae to use. VDFC [independent forestry consultant] has reviewed the methodology used by Gunns in the modeling process for the Prospectus and can confirm that the formula used for this conversion process is consistent with that provided in the Greenhouse Challenge Vegetation Sinks Workbook.*

*Gunns Plantations, Woodlot Project 2000 emphasis added)*

At least one of these properties is comprised of plantations established on erstwhile native forest and rainforest, which was cleared and planted as late as 1998-1999. This clearance regime of "log now, sequester later", affects the "carbon integrity" of any of the holdings in the prospectus.

*I am a resident of Western Creek and am aware of the Byrne block on Nells Bluff now managed by Gunns. The block was covered in native forest with rainforest until recently when much of it was cleared for plantation establishment.*

*Email to the researcher from L.Goldsworthy, 13/09/00*

### **Other forestry companies**

*While trees are continually replanted and harvested, timber is much less a contributor to the greenhouse effect. In fact, plantation expansion will absorb carbon from the atmosphere, and if carbon trading becomes a reality, it may provide extra income for investors*

*Plantations 2020, "An Investment Opportunity. Australian Forest Plantations: Sustainable Returns in the New Century" (undated)*

A number of other entities have a stated interest in trading the carbon sequestered in their plantations and refer to the financial value of sequestration in their promotional literature (e.g. Forestry Tasmania).

## Plantation Investments investigated in Tasmania (my emphasis)

<i>Company</i>	<i>Plantation Programme</i>	<i>Sequestration Potential</i>
Grantham Mayo van Otterloo & Rayonier	"We are pleased to be manager for <b>this 100,000-acre forest estate in Tasmania,</b> " Lee Nutter, Chairman, President and CEO, said. Rayonier now manages, and in some cases holds equity in, 156,000 acres of joint-venture owned timberland in New Zealand and Australia. GMO Renewable Resources Ltd. is a unit of Grantham, Mayo, Van Otterloo & Co. LLC, an investment manager with approximately \$27 billion in assets. GMO has selected Rayonier as its forest manager of choice for timber investment and forest management opportunities worldwide. ( <a href="http://www.rayonier.com">http://www.rayonier.com</a> accessed 15/09/00)	<i>"Replacement of natural forest with plantations should, of course, be excluded."</i> GMO Renewable Resources, email to the researcher 08/09/00
Gunns Ltd	After such successes as Great Southern Plantations and Timbercorp, Timber, hardware retail and construction group Gunns Ltd has today announced that it has joined the bandwagon and will launch a public offering to finance a new plantation in Tasmania. The project will involve the plantation of Radiata Pine Eucalyptus over an area of up to <b>5,000 ha/year</b> , targeting an estate <b>in excess of 50,000 ha</b> . ( <a href="http://www.egoli.com.au">http://www.egoli.com.au</a> October 26, 1999)	<i>It is possible that you will receive proceeds from the sale of carbon rights during the course of the project...</i> (Gunns Plantations, Woodlot Project 2000)
Forestry Tasmania	<b>The land available in this Offer is State Forest that was previously: Farmland which Forestry Tasmania has purchased; or Areas of native forest which have been harvested for sawlog and pulpwood and will be replanted as native forest. Under the National Forest Policy Statement, it is appropriate to undertake conversion of previous native forest areas to plantations, provided this does not adversely affect regional conservation or catchment management objectives. This also complies with the Regional Forest Agreement (p.16)</b> <b>Political and economic</b> Tassie trees is consistent with the objectives set by the "2020 Vision" <b>There has been no conflict with the Commonwealth over plantations, with the "2020 Vision" strategy encouraging plantation establishment.</b> There seems little risk that the Commonwealth will act in a way that could reduce the chance of world parity pricing for plantation products (Forestry Tasmania, "Tassie Trees Trust 2000 Offer" pp. 21-22)	<i>Forestry Tasmania will retain all rights to carbon credits and similar rights which might attach to the land or trees at some time in the future</i> (Forestry Tasmania, "Tassie Trees Trust 2000 Offer")
NORTH Mitsubishi Paper Mills Tokyo Electric Power Co	Tepco's contribution to the TTF program will involve A\$10 million dollars allowing the total area under eucalypt plantation to expand <b>by 3000 hectares to 25,500 hectares by 2011</b> . TTF is a component of total plantation estate in Tasmania which covers <b>54,000 hectares which is managed by North</b> subsidiary, North Forest Products. (NFP Media release 4/10/99)	<i>5) Carbon Sequestration quantity: 130,000 tons/year (estimate)</i> (Midori Sasaki, TEPCO, email to the researcher 28/02/00)
Private Forests Tasmania	Provides support and advice for any farmers leasing their land to plantation establishment, and has a number of small in house projects (about 1750 ha. to date). It also maintains a database of Private Timber Reserves (PTRs). It has however agreed to a confidentiality agreement with forestry companies in exchange for the making it difficult to establish what company has planted what where. (Des King, PFT, emails to the researcher, 7-12/09/00)	<i>Non wood values such as "carbon credits", while not specifically included, could readily be accommodated.</i> <a href="http://www.privateforests.tas.gov.au/JV.htm">http://www.privateforests.tas.gov.au/JV.htm</a>

# CONCLUSIONS

Australian Federal and State Government forestry policies call for the establishment of 2 million hectares of new plantations in Australia by 2020. A complementary Federal/State initiative, the “Regional Forest Agreements” also channels taxpayers’ money to fund this.

Both State Forest and private land is being earmarked for conversion to plantations, mixed between land uses currently in native forest and in agricultural production.

The native forest destruction for plantations agenda in Australia is inextricably linked to the “carbon credits” game. The system is already being exploited for potential commercial gain, and investments are going into various corporate plantation share offers due in part to the belief that money will be made by selling carbon rights and via joint ventures later on.

When examined holistically, the economics of the developing carbon sequestration market is becoming an additional economic driver for projects also clearing native forests, further enhancing their profitability. In the case of the TEPCO joint venture, the power utility paid \$10 million dollars for the Australian partner to establish “offset” plantations within the larger joint venture worth \$90 million. In turn, this money will have been used by NFP for logging and wood chipping of forests elsewhere in Tasmania.

The corporate structure of the project makes it hard to prove conclusively that any one area of forest was cleared for TEPCO, but the intertwining of these interests also makes it impossible for TEPCO to rule out the fact that is not the case.

To conclude, rules governing sinks projects are not adequate, because they allow integrated companies to mix and match investments with land use practices. Again, this points to the risk of carbon subsidies for commercial, industrial tree plantations.

This one case study demonstrates that the risks to forests and the climate are vast if these types of projects are permitted to enter into the Kyoto Protocol. Rather than sequester additional carbon, such activities would encourage cutting down native forests and planting large-scale industrial plantations. This benefits neither biodiversity nor the climate and would greatly undermine the credibility of the Kyoto Protocol. While ecosystems do absorb carbon, they also provide a broader range of services that will not be integrated into the sequestration crediting approach. It is therefore highly likely that the value associated with the carbon service of that ecosystem will undermine the others and lead to the Tasmania outcome.

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# DEFINITION OF TERMS

## ***Carbon sequestration:***

The removal and storage of carbon from the atmosphere by green plants through the process of photosynthesis, in which carbon dioxide is combine with water to form carbohydrates that can be stored in plant tissues. Carbon sink: An area where the rate of carbon uptake by living organisms exceeds the rate of carbon release, so that carbon is sequestered in organic or inorganic forms.

## ***Climate change:***

An alteration to measured quantities (e.g. precipitation, temperature, radiation, wind and cloudiness) within the climate system that departs significantly from previous average conditions and is seen to endure, bringing about corresponding changes to ecosystems and socio-economic activity. Associated with greenhouse gas emissions, of which fossil fuel combustion and forest decline are contributors.

## ***Certification:***

Certification is a process which in a written quality statement (a certificate) attesting to the origin of raw wood material and its status and/or qualifications following validation by an independent third party (Baharuddin and Simula, 1996 in: Tropenbos, 1997).

## ***Ecological or Environmental sustainability:***

This entails maintaining an ecosystem and adjacent ecosystem at the same or higher levels as the ecosystem in question to be able to maintain its productivity, adaptability and capacity for renewal. It requires that forest management respects, and builds on, natural processes (Tropenbos, 1997).

## ***Ecosystem:***

A community of all plants and animals and their physical environment, functioning together as an interdependent unit (Collins English Dictionary).

## ***Forests:***

An ecosystem characterised by a more or less dense and extensive tree cover. It means natural forest and does not include plantations or agroforests (National Forest Summit, Australia 1999).

## ***Old growth forest:***

Forest that is ecologically mature and has been subjected to negligible unnatural disturbance such as logging, mining, roading and clearing. The definition focuses on structural diversity and includes forest in which the upper stratum or overstorey is in the mature and late mature stage, and regrowth more than 120 years old produced through natural processes, ie. Wildfire or windstorm (National Forest Policy Statement, December 1992, and the Report to the Minister for the Environment, December 1999).

## ***Plantations:***

Treed areas lacking most principles characteristics and key elements of native ecosystems as defined by FSC-approved national and regional standards of forest stewardship, which result from the human activities of planting, sowing or intensive silvicultural treatments.

## ***Wood chipping:***

Process whereby trees are converted into small pieces of wood for subsequent conversion into pulp and paper products (Boycott Woodchipping Campaign, 1996)