

## **SUBMISSION ON “EMISSIONS REDUCTION FUND GREEN PAPER”**

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### **1 INTRODUCTION**

In my personal search for answers about the impacts of greenhouse gas emissions on the global climate, I have been taken into the minds of many scientists, climate geeks, skeptics, the IPCC, and lay people. Thank the stars for the Internet.

It is to these people and organisations that I have turned to in my quest to understand the science, the politics, and the policy around climate change.

The most recent, and most compelling, assessment is that from NASA's James Hansen and 17 other scientists - [Assessing “Dangerous Climate Change”: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature \(Dec 2013\)](#).

My approach in this submission is not to make direct comment as invited in the blue boxes in the Emissions Reduction Fund (ERF) Green Paper. There are other key issues that I have emphasised. I have however, commented in greater depth about the Carbon Farming Initiative and have given an illustration of how the CFI can be applied for multiple benefits.

Before commenting on the ERF proper, it is important that three issues are exposed, because it is these that appear to have given an unfortunate outlook of the Green Paper.

### **2 SOME OPENING ISSUES**

#### **Issue 1 The “Carbon Tax” mis-use**

Throughout the ERF there are a number of references to a “carbon tax”. This is not helpful. The ERF also refers to the “Direct Action Plan”, and presumably this is the document “The Coalition's Direct Action Plan” that was taken to the 2013 federal election. I assume that it is. Therefore I object to the political term “a great big new tax” liberally used in the DAP, being associated with the Green Paper.

I will now explain.

The Clean Energy Act 2011 makes no reference whatsoever to “carbon tax” (ref. [http://www.comlaw.gov.au/Details/C2013C00372/Html/Text#\\_Toc362271492](http://www.comlaw.gov.au/Details/C2013C00372/Html/Text#_Toc362271492))

The Simplified Outline in the Act describes “a mechanism to deal with climate change by encouraging the use of clean energy.”

In “Definitions”, there is no definition of “carbon tax”.

The Clean Energy Act 2011 also describes succinctly about “eligible Australian carbon credit units”.

The Clean Energy Regulator’s website describes clearly the [Carbon pricing mechanism](#), **and nowhere is there a reference to “carbon tax”**.

Therefore, it is a **carbon pricing MECHANISM**. It is a **cap and trade scheme** where “carbon units” are issued, and the highest emitters exceeding 25,000 tonnes CO2 equivalent are required to offset their greenhouse gas emissions by a range of means, one of which is the purchase of carbon units. The Clean Energy Regulator issues the carbon units; a tax is not paid. It is a “charge unit” that is paid by the businesses subject to the charge.

THE “CARBON TAX” TECHNICALLY DOES NOT EXIST in legislation.

Now, in the repeal of the Clean Energy Act 2011, the repeal bill is named “Clean Energy Legislation (Carbon Tax Repeal) Bill 2013”.

Schedule 1 and 2 of the aforementioned Bill reference “carbon tax”.

It is contended that the reference to “carbon tax” is not correct, and in terms of the ERF, it is disingenuous.

Furthermore, it is staggering that the repeal bill refers to “carbon tax”, when indeed a “carbon tax” was never legislated. Indeed it could be argued that the bill, by its reference to “carbon tax” is **a bill to repeal nothing**.

It could be construed to be a cynical plot involving constant reference of “carbon tax” and “great big new tax” that the community has been exposed to over the past 4 years. If the intent was to be subliminal then it has likely been successful, but in time it will be exposed for its shallowness.

It is confounding that the federal government, the present Opposition, the media in general, and the community believe that there is a **carbon tax** in place.

It is wrong, and I contend that the repeal bill is factually in error when it refers to a “carbon tax”.

It places no credit on the ERF, and it is suggested that all references to “carbon tax” should be removed.

## **Issue 2      In The Ministerial Forward**

The use of the quotation from the Productivity Commission that “no country currently imposes an economy wide tax on greenhouse emissions or has in place an economy-wide ETS” is disingenuous and is a cavalier use of a quotation in a government Green Paper.

The Canadian Province British Columbia (although not a country) has had a Carbon Tax since 2008.

Here's BC's [Ministry of Finance statement on the myths of the Carbon Tax](#). And the BC Carbon Tax is, or is planning to be, economy-wide.

Another Canadian Province, Quebec, brought in a carbon tax in 2007, the first North American state or province to do so. Ireland (that's a country) introduced a Carbon Tax in 2010, Finland in 1990, Sweden in 1991. Great Britain introduced a "climate change levy" in 2001, whilst across the ocean in Boulder (Colorado) a carbon emissions tax was implemented in 2007. (Ref. <http://www.carbontax.org/progress/where-carbon-is-taxed/>)

Although not "economy-wide", these emissions tax arrangements do play an important role in behaviour change at the business, government, and personal level. And isn't that what the ERF should be aiming for?

Does it really matter if a carbon tax is economy-wide or not? Even our GST (now THAT is a tax) is not "economy-wide" as there are many goods (e.g. essential foods) and services (e.g. medical care) that are exempt, and so the use of a selective quotation is inappropriate and un-necessary.

There are many more examples of schemes that impose a cost of carbon pollution, for example South Africa's pending carbon tax (which will be economy-wide).

It is disingenuous to cherry-pick selective schemes to support the case that the ERF is propagating. For every case that is made about minimising Australia's responsibilities, an equal or better case can be made to strengthen Australia's role in climate change action.

My plea is - don't mess about trying to build a case that takes us back more than 25 years. I'll explain this later.

### **Issue 3      The Clean Development Mechanism**

The next problematic (incorrect?) assertion relates to the UN Clean Development Mechanism (CDM). By using this as an example in the ERF (Box 2.3 and elsewhere) is (and unfortunately for the UN) a poor choice and is inappropriate. Certified Emission Reductions (CER's) credit values collapsed in 2012. The philosophy behind the CDM is conjectural, and whilst the idea about assisting developing countries to achieve sustainable development is to be lauded, the CDM has been abused by opportunists to the point of corrupting its foundations. This merely illustrates how the vagaries of an abatement market can come unstuck.

It has been reported (Ref. <http://www.pointcarbon.com/aboutus/pressroom/pressreleases/1.2016190>) that there could be an **oversupply** of 1,400 million carbon credits issued by the CDM by 2020.

Suffice to say that there have been, and still are, significant problems with the CDM (Ref. [http://en.wikipedia.org/wiki/Clean\\_Development\\_Mechanism](http://en.wikipedia.org/wiki/Clean_Development_Mechanism)), and therefore, because the UNCDM model is proposed to be used in conjunction with "carbon buy-back or ERF", then the validity of the government's proposal is not only conjectural but also on shaky foundations.

Furthermore, the whole concept of purchasing carbon credits from developing countries to satisfy business emissions reductions, has a hint of being immoral and unethical. Surely Australia's, and Australian businesses', first priority is to reduce emissions as much as possible without having a potential primary opportunity to purchase cheap carbon credits from overseas.

A final point worthy of note are the bizarre and corrupted influences at play relating to HFC-23 (hydrofluorocarbon, a by-product from the manufacture of refrigerant gas) and the issue of CER units via the CDM. For further information, go here --> [http://en.wikipedia.org/wiki/Clean\\_Development\\_Mechanism](http://en.wikipedia.org/wiki/Clean_Development_Mechanism).

I would strongly urge the ERF designers to decouple a relationship with the CDM, or at least, from those parts of the CDM, that are perverse. The EU has.

**Recommended that the ERF reviews its “model” in light of the problems and failures of the CDM.**

### **3 GENERAL COMMENTS**

#### **3.1 Why Not A Carbon Price?**

Consider these next two quotations.

*“When other factors such as abatement from two years of the carbon tax and the ability to use surplus reductions achieved in the first commitment period of the Kyoto Protocol are taken into account, Australia’s abatement task falls from 591 to 431 Mt CO<sub>2</sub>-e.”*

(Ref. Department of the Environment, <http://www.environment.gov.au/node/35051>).

This is very interesting. Figure 1 on page 1 of the ERF uses this same figure, 431 Mt CO<sub>2</sub>-e cumulative abatement to 2020, to advise of the assessed abatement requirement. But, it is based partly on “two years of the carbon tax”. Therefore, with the “carbon tax” removed, the question is - how can the ERF fill the gap? How can it satisfy all the projections illustrated in

A “voluntary” emissions reduction scheme as proposed will not reach the low goal of 5% by 2020, contrary to what is asserted in the ERF paper. There is ample analysis in the public domain that supports this statement.

The amazing downsizing of Australia’s cumulative abatement task from 755 Mt CO<sub>2</sub>-e to 591 Mt in one year (from 2012 to 2013) is also an eye-opener.

It is difficult to believe that some creative accounting has not taken place to lessen Australia’s responsibilities at the global scale. I’m more than happy to accept persuasion to the contrary.

Now to the next quotation.

*“Australia is expected to be a net importer of eligible international emissions units, in order to achieve its emissions reductions targets.”* (Ref. Department of the Environment, Australia’s Emissions Projections 2012).

The deficiency in the ERF is that there is no compulsion on the large emitters to reduce their greenhouse gas emissions. “Businesses will be **encouraged** (my emphasis) to decrease their emissions below their historical business-as usual levels”, and “incentives” will be provided” (pg. 5).

This optimistic view about business involvement suggests that the abatement target will not be attained. Encouragement and incentives are fine, but why haven’t businesses decreased their emissions in the past?

Answer - because they weren’t compelled to. At least until the carbon pricing mechanism was in place.

Why haven’t businesses large and small conducted energy audits to determine savings and efficiencies? Sure, some have, but thousands have not.

Answer - because there has been no collective national plan to achieve such an objective. Why?

That is the flaw in the ERF approach. Unless there is a system that is more than “incentives” to drive energy efficiency, then the plan will fall way short of its mark.

**Recommended that the ERF include a carbon pricing mechanism modelled on an ETS capable of achieving at least 20% emissions reductions by 2020.**

My appeal is not to dismiss pricing carbon - both at the emissions stage and at the sequestration stage - because it seems that only by placing a cost or price respectively, will behavioural change take place. History has proven this.

### **3.2 The 5% emissions reduction target is far too low**

#### **(1) Global perspective**

If the warnings in this report previously mentioned - [Assessing “Dangerous Climate Change”: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature](#) (Dec 2013) by James Hansen and 17 other scientist contributors - are to be heeded, then the ERF/Direct Action Plan needs to be radically altered.

The luxury of time has long passed.

Consider Australia's vacillation on this most critical of issues in [Timeline of Australian climate change policy](#).

It is not an argument to plea that Australia's emissions are just 1.5% of global greenhouse gas emissions (Ref Department of the Environment - <http://www.climatechange.gov.au/international/international-action/global-context-australias-place>.)

Remember, Australia has just 0.33% of the global population.

Australia's emissions intensity **per capita** was 24.4 tonnes CO<sub>2</sub>-e (2012), nearly twice the OECD average, and near the highest in the world (Ref. <http://www.carbonneutral.com.au/climate-change/australian-emissions.html>). **Australia's per capita energy consumption is also 22% above the OECD average.**

Note that the Department of the Environment says per capita emissions are 27 tonnes CO<sub>2</sub>-e. Either way, per capita emissions are exceedingly high compared with other developed economies.

Thus, Hansen et al conclude (pg 10) ...

*"... it is urgent that large, long-term emission reductions begin soon. Even if a **6% per year reduction** (my emphasis) rate and 500 GtC (Gigatonnes Carbon, that's 500,000 MtC) are not achieved, it makes a huge difference when reductions begin."*

Rather than articulate the necessity to move to at least 20% or more emissions reduction, here's just one example of the unacceptability of the ERF.

## **(2) The Unaccounted Damage Resulting From Coal Exports**

It is hardly anything to be proud of by exporting a product that is a main contributor to global warming, but [according to this article](#), Australia's coal exports in 2013-14 are on track to be 350 million tonnes - and this would generate approximately 836 Mt CO<sub>2</sub>-e.

This is a staggering export of what ultimately becomes a global problem. And for what gain?

Australia's last reported CO<sub>2</sub>-e emissions (2011, [National Greenhouse Gas Inventory](#)) was 563,140,000 tonnes (i.e. 563 Mt).

Australia's **TOTAL ATTRIBUTED CO<sub>2</sub> -e EMISSIONS is therefore more like 1,400 Mt!**

But it would be more than that when fugitive emissions and all other emissions from mining and transport and associated industries are accounted for.

There is only one reason why Australia has expanded fossil mineral mining, and that is profit. It is the great dilemma of our times - fossil mineral exploration and mining. Whether it's methane hydrates in the Tundra, oil in the Arctic and Antarctic, tar sands in Canada, gas fracking everywhere. This is the dilemma for nations - when to STOP!

However, back in Australia, in the same source aforementioned, the estimated damage of just one year of coal exports is anywhere between \$11 billion and \$103 billion annually - this is based on a [US government report](#). **Compare this cost range with the expected \$41.5 billion in coal export revenue for 2013-2014, and the costs could outweigh the income.**

**The cost of the damage is not factored into the price of coal.** This is precisely the reason for having a tax or a cost on carbon emissions, so that these funds can be used for reconfiguring the mining economy that will, one day, become terminal.

It is also the reason why Australia and its trading nations must include a social and environmental cost on coal.

**Recommended that the ERF account for the global damage wrought by Australia's coal exports.**

**If it doesn't then the ERF will fall very short of Australia meeting its international obligations, including those under the Kyoto Protocol.**

### **(3) The Risk and Cost of a Low Target**

The ERF as it is presented thus far (and this includes the Direct Action Plan) has focused on just two segments of a constrained carbon economy - energy efficiency, and land-based sequestration. There is no doubt that the second is badly needed, and I'll come to that later.

The first, emissions reduction (or energy efficiency), is also highly essential, but it is only a part of the whole solution.

The ERF will need to incorporate pricing carbon, with a mechanism to be introduced quickly. For example, it is a possibility that once the dust settles in Europe, that the EU might impose sanctions on countries - like Australia - that do not have a price on carbon.

This matter is all about **risk management**. Businesses would normally examine their risk profiles and factor in all scenarios and associated future costs, and so should Australia.

The environmental costs of climate change on Australia are assessed to be so massive and so extensive, that they will dwarf the revenue from coal exports. These are the **externalities** that have not been appropriately recognised in the ERF.

For brevity, here's just one example ... CSIRO --> [New maps reveal locations of species at risk as climate changes](#).

**Recommended that externalities be factored in to the ERF/Direct Action Plan financial arrangements.**

## **4 The ERF and the World View**

### **(1) Australia's retreat**

The ERF has a regrettable narrow focus, and does not move Australia in step with international decisions on climate change.

As quoted recently on **Environment News Service** (Ref. <http://ens-newswire.com/2014/01/27/world-bank-head-calls-for-carbon-pricing-to-rescue-climate/>) ...

*“DAVOS, Switzerland, January 27, 2014 (ENS) - At the World Economic Forum in Davos, World Bank President Jim Yong Kim called for a price on carbon, requiring companies to disclose their climate risk exposure, and greater investment in green bonds in the fight against climate change.”*

*“At the World Economic Forum, Kim called on government leaders to break out of the small steps of business as usual and provide that structure. First, by putting a price on carbon and by having financial regulators require companies and financial institutions to assess their exposure to climate-related risks and disclose it.”*

*“According to World Bank Group estimates, in the poorest countries, climate change will increase the cost of development by 25 to 30 percent. The impacts*

*could roll back decades of development gains and push millions of people back into poverty.*

*Globally, weather-related losses and damage have risen from an average of about \$50 billion a year in the 1980s to close to \$200 billion a year over the last decade, making climate-resilient and disaster-resilient development critical.”*

*“Last November, at the international climate conference in Warsaw, governments agreed to seal a new international agreement by 2015 that would be applicable to all countries and would begin bringing down global greenhouse gas emissions. Kin said, “We know that current emissions reduction pledges are not enough to prevent a 2 degree Celsius temperature rise and that they could still leave the world to face a 4 degree-warmer world by 2100, possibly earlier.”*

Australia can not retreat from its international responsibilities, and its responsibilities under the Kyoto Protocol.

It was of great concern that Australia did not have a government Minister at the Warsaw conference in 2013. This gave a very poor impression that Australia was not serious about participating in a global campaign to arrest what the IPCC has concluded - higher CO2 concentrations will cause higher temperatures ... and with multiple impacts across the economy and society.

Refer back to the Hansen et al report mentioned previously, and then ask the question - does Australia have a global conscience and is it a good global citizen?

## **(2) The ERF’s “Step Aside” approach**

I say “step aside” because that’s what the ERF/DAP portray. The premise at section 1.3 in the ERF Green paper is to allow businesses to set the emissions reduction program, and participate in framing the “penalties”. It is tantamount to **voluntary** action on the part of business and organisations, where the “significant opportunities” and “significant potential” of emission reductions scenarios will compete with the demand for capital from other business operations.

Does anyone think that businesses would commit capital to emissions reductions projects if the ROI doesn’t stack up? And that’s what businesses would do - they would look at the competing demands for capital and carry out full analyses before they would commit to

emissions reductions expenditure. If a business is a public company, say a coal miner, coal exporter, or coal rail freight business, where would such capital be directed?

Why have the miners been so public and adamant against a carbon pricing mechanism? Because they see it as a “cost” and not as an opportunity.

Will the ERF/DAP achieve what is RIGHT for the planet and for Australia and its citizens, and what is right for future generations and the environment?

The Direct Action Plan states (Executive Summary) that “direct action on soil carbons will be the major plank of our strategy ...” As I have stated before, this is only one part of a solution, because sequestration is limited in comparison with reducing fossil mineral use.

I conclude that the ERF’s approach needs to be expanded to drive the steep emissions reductions that are needed across the board.

**Recommended that a carbon pricing mechanism be included in the ERF.**

## **5 The Carbon Farming Initiative**

This is one bright spot, and is an area that I have had an interest for more than 15 years as an agro-forester and environmentalist.

The elements described in the Direct Action Plan are welcome, not only because of the much-needed rural and regional investment that would occur, but also because of the need to repair and revegetate Australia’s landscapes. This is urgent.

“Australia 21” conducted a roundtable in Melbourne in February 2013 to discuss and resolve what is needed for our landscape repair and reforestation.

This issue is as important to Australia’s future as are the right policies to tackle climate change. A new paradigm and a new language are needed for Australia’s agricultural and grazing regions, because climate change will impact these regions and the people living in them, the most.

This conclusion has been articulated in many reports down through the years.

To illustrate my support for the CFI component of the DAP, I offer the following proposal about a new agri-economy for South Australia. I say this because South Australia will

most likely be hit the hardest from climate changes, mainly reduced rainfall.

This description is part of a series I have published at my website, Sustainable Space. For interest, here is the link --> [A Proposition For Change](#).

Before I proceed, I recommend that the “Cleaner Environment” (at <http://www.environment.gov.au/topics/cleaner-environment/clean-land/green-army>) proposal broaden its scope to embrace essential elements as I have outlined below.

These elements apply to all of agricultural Australia, but this particular focus is on South Australia.

## 5.1 Agricultural landscapes recovery - The Solution for South Australia

The solution is already known, it's just that there is no plan.

What is it? A **broad-scale long-term revegetation and biodiversity enhancement program with carbon sequestration benefits** will produce substantial advantages for the future of the state's rural economy, for sustainability and enhancement of both natural and farmed systems, and for support of rural communities.

The term “revegetation” is used generically. It covers a range of activities, from natural bush plantings, saltbush plantings, agro-forestry, new economic crops, farm shelter belts, roadside vegetation support, threatened ecosystem support, to riparian vegetation recovery. It also includes revegetation to ameliorate problem condition of natural resources.

The opportunities are well-known, and for the farm it is diversity. Without diversity, there is an escalation of risk of failure. This has been articulated in many reports, and in many books, over many years.

In today's times, I now accept that for change to occur in the agricultural lands (and on other public land listed below) there needs to be a **market-based mechanism**, and that is why carbon sequestration will be such a pivotal element for the future of agriculture in this state.

This needs urgent recognition and implementation.

This report - [Opportunities and Threats for South Australia's Agricultural Landscapes from Reforestation under a Carbon Market](#) - reveals a significant uplift for the agricultural sector from revegetation to generate carbon permits.

The potential is about \$1bn annually in a sector that has a current gross value in South Australia of about \$4.5bn; that's nearly a 25% uplift. This is most unlikely to be achieved with a continuation of the existing dryland cropping system, especially given the predicted decline in future yields resulting from climate change scenarios.

There is further upside as presented in the myriad employment, education, and research capabilities that would ensue. Subsets include seed production and harvesting, plant propagation, planting and sowing, maintenance, site assessment, monitoring, marketing, and trading.

The economic activity is potentially very substantial, and would certainly add to State Gross Product.

South Australia can benefit substantially by participating in the carbon market. If the federal government's Emissions Reduction Fund (if it becomes legislated) precludes this opportunity, or if the **Carbon Farming Initiative** falters, then South Australia should consider embracing it's own scheme to participate globally. There are many opportunities internationally, and for farmers and land-owners this will provide another source of revenue.

In my view, broad-scale revegetation of the agricultural landscape is the best opportunity to transform the rural economy, and to produce multiple benefits. Traditional dryland farming systems would stand a greater chance of avoiding some of the worst outcomes such as predicted decline in wheat yields of 30% by 2080 (referenced in "Opportunities and Threats" report above).

Think for a moment about what that would mean to the SA agricultural economy.

In my view, the focus and resources directed to "drought-tolerant" grain crops today is misplaced and is symptomatic of the 19th century cropping paradigm. The present condition of soil resources will not support further depletion of diminishing reserves. Government reports say so. Dryland salinity, soil acidification, soil nutrient decline, erosion, and other impacts will attest to that.

Nevertheless, the benefits of broad-scale revegetation go way beyond economic gain, and could include ... improved rainfall, less evaporation, temperature attenuation, greater ecosystem resilience, less erosion, better water quality, and so on. All these aspects have been the subject of institutional research over many years, which is in the public domain.

Another important advantage is the ability to achieve a number of the objectives in the **Climate Change Adaptation Framework** and the related SA **Government Action Plan**, particularly around community engagement. The retreat of resourcing of NRM Boards by the government can be halted. Their role can also be elevated.

The ideal outcome would be a framework that is based on biodiversity objectives, landscape recovery, farm income diversity, and carbon sequestration.

## 5.2 Ideas for revegetation

- Land that has been historically cleared for cropping, but is now laying idle or under-utilised, should be revegetated. Such land could become part of a Carbon Farming Initiative program.
- Vacant road, rail, water, and Council reserves (of which there is a huge land bank across the state) should be revegetated, and these areas also could participate in the CFI. This is where engagement with local governments can play a significant role, and add an important income stream for Councils. Disappointingly, Councils have yet to realise the potential of the vacant road reserve asset that they have been sitting on for many decades.
- Denuded hilltops and ranges should be revegetated where appropriate. Remnant systems in these environments would be able to provide the parameters for recovery.
- Inland watercourses should be revegetated and recovered as much as possible. It is baffling why the condition of South Australia's watercourses has been neglected for so long. In such situations the EPA Act should be the legal instrument to invoke change.
- Paddock trees and remnant scrubs should be protected and linked to nearby remnants. Continual open grazing in remnants should be severely limited to allow self propagation and understorey to flourish.
- Every rural school and every rural town could re-use its treated wastewater for agro-forestry for participation in a carbon market co-operative. Now, there's an idea for future sustainable funding for these organisations.
- A mallee future. The Future Farm Industries CRC points the way (e.g. biofuel industry, biochar, cineole).

### 5.3 The Scope for Landscape Change in South Australia

South Australia has more than 10.2 million hectares of cleared land for agriculture. Let's consider the following example to illustrate the magnitude of a revegetation project.

The recovery, repair, and revegetation of just 10% of the cleared land would result in more than 1 million hectares being devoted to a rural sustainability program.

The report already mentioned above - [Opportunities and Threats for South Australia's Agricultural Landscapes from Reforestation under a Carbon Market](#) - cited 20% conversion of agricultural land, but let's see what 10% yields.

And by the way, 10% to protect and sustain 90% would not be too unrealistic.

It is difficult to discover the total area that is revegetated in South Australia each year, however **Report on the Condition of Agricultural Land in South Australia** states that about 4,000 ha for non-commercial purposes have been revegetated in the past from all sources, public and private. If this rate were to be maintained it would take 250 years to revegetate 1 million hectares. The report also mentions about 5,000 ha if non-indigenous species were to be included.

This illustrates the scale - and the potential - of revegetation.

It only took a few decades to clear 10 million hectares. Quite an achievement, given the technology that was used at the time. With interruptions of war and drought, it is conceivable that the clearance rate could have been up to 200,000 hectares annually.

The same report afore-mentioned also stated that up to 50,000 ha of land should be revegetated annually to avert decline in natural resources condition such as dryland salinity, soil erosion, and native habitat restoration.

In all my readings, the only report that I have seen mention landscape revegetation at this scale is in **Report on the Condition of Agricultural Land in South Australia**.

A particularly nagging question is - WHY hasn't it been picked up in other reports? WHY hasn't it resonated with government departments about regional development?

Here's what the report [Tackling Climate Change - South Australia's Greenhouse Strategy 2007-2020](#) says about "Reducing emissions, sequestering carbon".

## Government actions

*Priorities for government in reducing emissions and sequestering carbon will be to:*

- *establish a voluntary offset scheme as part of the climate change legislation*
- *develop and implement a series of pilot projects for adopting commercial and noncommercial perennial vegetation options in the NRM regions of South Australia to promote and achieve biosequestration and deliver multiple NRM benefits.*

*Support can be provided for these actions by investigating perennial vegetation options for biosequestration.*

So, there we have it. A state government commitment in 2007, but here we are in 2014 (more than half way through the life of the Greenhouse Strategy), and neither of the actions have commenced (to my knowledge).

Let's get back to our 10% agricultural land revegetation project.

50,000 ha annually is a 20 years project of very large proportions with massive long-term benefits. It is still a long way from the annual rate of land clearance that has occurred, but it does illustrate a measure of the assault on the landscape in the 19th and 20th centuries.

Imagine if 20% of land was revegetated. A 20 years project at 100,000 ha annually, or a 40 years project at 50,000 hectares annually.

**50,000 hectares each year.** The number of people required to fulfill this area of revegetation, each and every year for 20 years, would be thousands. The multiplier effect would conceivably result in another 2.5 jobs being created.

**Note** - the **20 million trees** program in the Direct Action Plan would result in about 20,000 ha being planted. Compare this figure with what is needed in just one year in South Australia just to recover 10% of cleared land.

This is the scale of the problem in Australia, and it will need a very big **Green Army** to accomplish it. It will need a new way, and I think I have an answer.

## 5.4 Confronting landowner resistance

This is a very big issue with its roots deep in the human condition and in the historical context of colonial economic development. I attempted to explain this aspect [here](#), and **why humans behave the way they do when it comes to matters environmental**.

Given all that has been presented in reports about the state of the environment, there is really only ONE CONCLUSION - there has to be a new way, and a new language, to permeate through the whole of the South Australian community about the dire warnings described in the ***Climate Change Adaptation Framework***.

Existing legislation about environmental protection (i.e. Environment Protection Act, Natural Resources Management Act) should be (but never have been), invoked to repair damaged ecosystems and damaged natural resources in agricultural areas. This is a failure on the part of all governments, past and present.

As with every report on natural resources and landscape-scale change, there is a reliance on voluntary involvement. This will not happen, and it will not come from the farmer. History has proven this.

Unless ... the language of money and financial gain is just too overwhelming to resist.

## 5.5 The Carbon Farming Potential

In a time where the future of rural SA looks tentative, then visionary and bold thinking is needed. It is not in the scope of this submission to outline the cost-benefits of landscape-scale change from revegetation. There are many reports in the public domain that countenance such propositions.

I have already mentioned [the potential of about \\$1bn annually](#) from just participating in the carbon market ... **IF an appropriate carbon pricing mechanism was in place**.

Now consider the economic benefits of an **oil mallee industry**. From the WA experience, there is very good scope for SA, where most of the cleared farmland has occurred in mallee country.

But there's a lot of catching up to do.

WA has years of oil mallee research, growing, and processing experience, and the fledgling industry there has attracted [the interest of Virgin Airlines](#) for the production of biofuel.

There is no time to waste about the opportunities in oil mallee. All the research, potential, and opportunities have already been conducted on oil mallee biofuel and biochar production.

One of the greatest vagaries of agriculture is drought, and even in such times, there would always be the potential for farm income from planted vegetation assets. Farmers can limit their exposure to drought, and also to global commodity prices, by participating in a global carbon market.

Drought in South Australia should never be the enemy that it always is.

Nevertheless, given the restrictions in the CFI, the following ideas are proposed.

- It is very difficult, if not impossible, for small-scale agro-foresters to participate in the CFI, and accordingly a 20-year permanence rule, rather than 25 years as proposed (the current 100 years is a big impediment) would render many more potential projects viable. Why?  
20 years is a reasonable term for a crop rotation for certain species. These species are able to be coppiced (cut at or near ground level) on a rotation basis to produce multiple crops and continuous carbon sequestration. Much carbon is still retained in the root zone and in the soil around the plant. As outlined later, I have mentioned oil mallee's multiple benefits, so there could be a system to determine carbon capture from these types of crops.
- I have proven over 15 years on my small 33 ha property where I have established intentional carbon sequestration woodlots (10 ha), that non-local native species are best suited in some situations. These species are mostly native to my state South Australia. The limitations in the CFI for indigenous local species is recommended to be relaxed. For example, saltbush plantings can have multiple benefits on farms, but the plant itself may not necessarily be of a local provenance. Australia's agricultural landscapes have been enormously modified because of land clearing and the growing of exotic crops (e.g. grains), so to achieve environmental and economic benefits will require an open view about the application of the CFI.
- Small-scale plantings - and potentially community co-operative plantings - have scope to be involved in intentional carbon sequestration projects, but right now they don't exist because of the restrictions and costs to participate in the CFI. e.g. the audit process.

- A national network of local and regional reforestation entities could be established, and fully resourced (e.g. direct seeding equipment, training in seed harvesting techniques, site assessment and preparation methods, carbon assessment) perhaps under the auspices of a revived rural Landcare network, or in the case of South Australia for example, Trees For Life.
- Minimum bureaucracy influence would be desirable. For example, a local entity might have direct access to a farmer interested in farm forestry, and for which a project could be established quickly rather than through a larger government or semi-government organisation. To get optimum outcomes for funds that may be available, the focus should be on work on-the-ground.
- Local carbon accounting would be desirable so as to minimise costs and broaden the choice of service. Accordingly, it is suggested that funding for training be provided in the ERF.

## **5.6 Start-up funding**

A bold new policy initiative requires some lateral thinking. And so, here are some funding ideas.

- The state government to provide initial seed capital of \$3m to each of the eight NRM Boards for carbon sequestration and biodiversity plantings. The total amount of \$24m is a very small investment to protect and support \$4bn+ annual gross agricultural product. (The investment is just 0.6% of gross value).
- Seek partnerships with local authorities about carbon farming projects (my own Council already has committed to plant 1 million trees by 2020; compare this with the “20 Million Trees Program”).
- Forge partnerships with the state Department of Planning, Transport, and Infrastructure for the establishment of roadside carbon farming projects. There is a very large roadside land bank awaiting revegetation. It is strange that many areas along main roads that are subjected to cropping are in agricultural crop land that is so devoid of native vegetation. Bizarre!
- Form community co-operatives whose members contribute funds for purchase of shares to create biodiversity and carbon sequestration plantings.

- Introduce a special levy (say \$20 per property annually) within the NRM levy framework. These funds would be used for revegetation work only.
- Seek philanthropic funding. This could be done through the auspices of NRM Boards, and it might be surprising what arises.
- Examine the potential for crowd-funding (it seems to work in some other “popular” areas).
- Seek joint venture partners with corporations who are already participating in the voluntary carbon market. (I know of at least one major bank that is purchasing off-shore carbon credits).
- Farmers organisations and farmers themselves must be involved and it would be expected that they would forge joint venture partnerships with community co-operatives, or NRM Boards, or with corporations, with agri-businesses (after all, these agri-businesses would have an important vested interest in the outcomes).

## 5.7 A Funding Mechanism

There is one further aspect about funding that needs to be countenanced. Mining royalties.

Western Australia has a Royalties for Regions program, and I am aware of interest in the South Australian parliament last year about a similar scheme. I saw widespread evidence of the benefits of the RFR during travels through WA in 2012.

A scheme similar to this to provide consistent and on-going funding for a landscape repair, revegetation, and carbon sequestration program would produce significant economic returns.

SA is expected to receive \$225 in mining royalties in 2013-14 (ref [GST Review](#)). Previous years' royalty income was around \$220m-\$230m

Just 10% of this sum (\$23m) would be almost sufficient to provide the seed funding as mentioned above.

And 10% annually could then be used by the regions to further develop new crop opportunities (e.g. oil mallee and biofuels) and associated activities in revegetation.

A “Regional Investment Program”? Now, there’s an answer. Just 10% investment from mining royalties.

If this 10% state contribution can be matched by a federal government contribution, then the leverage would be very significant, as would the support for rural regions.

This funding model could be applied throughout Australia, particularly in the coal export mining states of Queensland and New South Wales.

Could this be another way, with the support of the federal government, to place a price on carbon? This is worth thinking about. Funds raised from an increased royalty (basically a state tax) would be directed to direct action projects.

## 6 CONCLUSIONS

The general thrust of the ERF and the DAP are predicated on a primary economic agenda, whereas the focus should (must) be on the environment first and foremost. Until that reversal of thinking happens, then the predicted consequences of global warming will control Australia’s future. The economy will be the big loser. And so will human systems and land and sea ecosystems.

I have made special mention of the Hansen et al review report **Assessing “Dangerous Climate Change”**, and I appeal to all in government to take the time to read this. It is your children and their progeny who will reap what we sow now, for good or for bad.

In principle, the ERF contains some important features, such as energy efficiency, the focus on emissions reduction, and the Carbon Farming Initiative.

However, it is a high risk strategy ...

- to support no cap on emissions
- to have a weak 5% emissions reduction target by 2020, whereas credible scientific reports say that it must be at least **6% per year** to stabilise climate influences from global warming
- rely almost totally on voluntary involvement from business to achieve emissions reductions
- not to have transitional arrangements for pricing carbon emissions
- to ignore pricing the social cost and environmental cost of coal exports

- to have a primary focus of “protecting jobs” and protecting businesses (these are still important, of course), and not amortise future costs to the present day
- to allow businesses to be a part of setting a “penalty” for not attaining emissions reductions
- to rely solely on soil carbon sequestration as the repository for domestic carbon emissions

My plea is to consider each of these aspects in light of what science is telling us about “climate forcing”, climate feedbacks and irreversible climate change. Australia certainly needs a new direction, one that is based on being a good global citizen and a responsible leader.

Consider this - it is better to be inside the ring-fence where dialogue and mutual actions can be developed for the good of mankind, rather than outside it. It matters not whether the United States or other nations are outside the fence - although in the US some of its parts are inside - because in time when the collective sound of all those voices (large and small) are heard from the inside, then there is only one way that the dissenters can go. They have to come inside. Australia needs to be inside the fence.

On the Carbon Farming Initiative, it is recommended that its structure be further examined to broaden its access and availability, thereby allowing a whole-of-community approach to landscape repair and reforestation. This is urgent.

In addition, the pricing of carbon credit units needs to be defined so that project cost-benefits can be ascertained.

The potential for employment is very significant from a restructured Direct Action Plan and CFI and goes beyond a “Green Army” style of program.

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