

4 April 2014

Committee Secretary  
Senate Standing Committees on Environment and Communications  
PO Box 6100  
Parliament House  
Canberra, ACT 2600

*Re: Senate inquiry into the history, appropriateness and effectiveness of the use of environmental offsets in federal environmental approvals in Australia.*

Dear Committee Secretary,

Thank you for the opportunity to provide a submission into this important matter. I have addressed the terms of reference in my submission which appears on the following pages and includes the following sections:

- Principles that underpin the use of offsets,
- Processes used to develop and assess proposed offsets,
- Adequacy of monitoring and evaluation of approved offsets arrangements to determine whether promised environmental outcomes are achieved over the short and long term,
- Consistency of carbon offsetting with other principles, and feasibility of different offset options,
- Notes on Waratah Coal's Galilee Coal Project,
- Notes on North Queensland Bulk Port's Abbot Point Coal Terminal Capital Dredging Project.

I trust that this will be a worthwhile contribution and wish you all the best with your deliberations.

Yours Sincerely

Dr Su Wild-River, BSc (Env) Hons,  
MEIANZ, MAEA, MWMAA, AMTEFMA, AMNSWF



## Principles that underpin the use of offsets

The principles of the use of offsets are ostensibly laudable. In particular, the focus on direct offsets, the requirement that they make up at least 90% of a suitable offsets package, and the requirement for conservation gains as the benefit of direct assets are all features which protect Australia's biodiversity values.

It is worth comparing the NCOS principles with those of the EPBC Offsets to achieve some perspective on the principles underpinning these offsets. This is because carbon offsets are far more widespread and mature than those within the EPBC Act. It is worth noting that the Australian National Carbon Offset Standard (NCOS) is consistent with international carbon offset standards which have been thoroughly tested, and have passed tests of time and of application in vastly different international settings. These are robust approaches to environmental offsetting with the potential to provide best practice examples.

Of course there are differences between ecological offsets and carbon offsets. The key difference is the commensurability of carbon units. Commensurability has been achieved through established emissions factors for different activities, and the resulting capacity to express all contaminants through the common unit of carbon dioxide equivalence (CO<sub>2</sub>e). Because of this, one tonne of CO<sub>2</sub>e can readily be justified as equivalent to any other tCO<sub>2</sub>e, regardless of origin and any NCOS offset easily fulfils all of the principles for EPBC Act offsets. In contrast, it seems unlikely that any such equivalence is feasible, or defensible when it comes to EPBC Offsets. Nonetheless, the principles underpinning carbon offsetting could be applied more fully to EPBC Act offsets.

The table below compares Australia's carbon offset principles enshrined in NCOS, with those of the Environmental Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012) (EPBC Offset Policy). Rows are coloured using the universal 'traffic light' approach (albeit with a dark orange added) to indicate the degree to which different NCOS principles are reflected in those for EPBC offsets. Rows coloured green appear to have complete consistency between the NCOS principles and the EPBC offsets. The red row does appear least consistent.

Offset principle	NCOS	EPBC Offset Policy
<b>Additionality</b>	Abatement must go beyond business as usual obligations.	Consistent. Suitable offsets must be additional to what is already required (Offset requirement 7.6)
<b>Permanence</b>	Offsets must permanently reduce emissions, with a minimum time horizon of 100 years.	Somewhat consistent. Addressed by the risk management requirement, for offsets to account for the risk of the offsets not succeeding. In practice this is achieved by larger land areas being protected, than are damaged. (Offset requirements 7.2, 7.5). Approvals are for less than 100 years (eg 40 years in the case of the Abbot Point approval), and cannot be considered permanent when taking account of ecological timeframes (for example, the time needed for a tree to mature sufficient to develop hollows, or for

		a coral reef to recover from acidification). This is moderated by efforts made to ensure that protection of EPBC offsets is maintained in perpetuity through conservation covenants and the like.
<b>Measurability</b>	Measurement of offsetting must be robust and based on defensible scientific method. The boundaries, sources, sinks and methods must be defined.	Consistent in principle but not practice. Offsets must be of a size and scale proportionate to the residual impacts (Offset requirement 7.4). However standards for measuring the ecological impacts of developments are by no means as straightforward or mature as the emissions factors used in carbon offsetting. Thus, the assessment of EPBC offsets is fraught with conflict.
<b>Transparency</b>	Stakeholders must have access to information about offset projects, methodologies, estimates and monitoring arrangements.	Consistent in principle, but not practice. Offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced (Offset requirement 7.8). Conditions “will require that data be made readily available to the department and in a format that can be easily integrated into a departmental database” (p.24).
<b>Leakage avoidance</b>	Offset projects must not cause additional increases in emissions elsewhere which nullify project benefits.	Consistent in principle but not practice. Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matter. The problem of accurate measurement also applies to leakage avoidance, with disagreement and conflict being common in practice.
<b>Independent audit</b>	Emission reductions must be audited by an independent, qualified third party.	Somewhat consistent in principle. Offsets must be designed in a way that is able to be measured, monitored, audited and enforced, but such auditing is not a requirement of offsets (Offset requirement 7.8 and p.24)
<b>Registration</b>	Offset units must be listed and tracked in a publicly transparent registry.	No consistent. There is no national EPBC offset registry, nor is there a requirement for confirming the effectiveness of offsetting (as with the requirement to retire offsets within the NCOS).

This analysis suggests that there are several areas in which EPBC offsets are relatively weak in comparison with other offset schemes. It also gives some insight as to why conflict and social outrage often accompanies the offsets arrangements in EPBC decisions.

The academic field of *social risk analysis* is a useful reference for understanding why outrage often follows offset decisions under the EPBC Act. Research shows that social risk and technical risk are often not aligned, but that nonetheless social risks can be managed, in part by understanding the factors that lead to outrage. Sandman<sup>1</sup> for instance, argues that 12 components of outrage need to

<sup>1</sup> Snow, E. 2004. “Risk Communication: Notes from a class taught by Dr. Peter Sandman” URL <http://www.psandman.com/articles/risk.htm>

be dealt with. These 12 components are listed below, with the feature least likely to cause outrage on the left, and its opposite, which will bring on outrage if present on the right of each pair:

- Voluntary vs. coerced
- Natural vs. industrial
- Familiar vs. not familiar
- Not memorable vs. memorable
- Not dreaded vs. dreaded
- Chronic vs. catastrophic
- Knowable vs. unknowable
- Individually controlled vs. controlled by others
- Fair vs. unfair
- Morally irrelevant vs. morally relevant
- Trustworthy sources vs. untrustworthy sources
- Responsive process vs. unresponsive process

One way to improve outcomes from EPBC offsets would be to aim where possible to be on the left hand side of each spectrum. As an example, the voluntary selection of offsets would be more acceptable than if offsets are selected without consultation, and imposed on populations. Offsets that involve natural systems will cause less outrage than those relying on industrial solutions. Fair, trustworthy and responsive processes will receive more public acceptance than unfair, untrustworthy or unresponsive ones and so on. Quality consultation processes could be used with affected communities and key stakeholders to identify offset options that are least likely to cause outrage.

The potential to manage the technical risks of projects also begs questions, although it is not clear whether these can be addressed through offsets or alternatively through enforcement provisions.

Another potential gap in the principles relates to gradual degradation of environmental values due to iterative development projects. The evaluation of ecological values and offsets is based on contemporary factors, rather than the inherent values of systems. So systems that have been degraded by past developments warrant lower levels of offsets than their pristine counterparts. If offsets are not successful in raising environmental values, or if other developments without offsets are underway, then the effective is gradual degradation. The increasing gaps between the inherent and residual values of Australia's environmental features is worthy of consideration in reviewing offset principles.

It is also worth noting that the accepted principles and practices to exclude carbon from EPBC Act offsets might be outdated. This exclusion relies in part on High Court rulings that greenhouse gas emissions are not matters of national environmental significance, but the rulings (including the [Wildlife Whitsunday Case was in 2006](#)) pre-date Australia's signing of the Kyoto Protocol. It seems likely that this signing confirms greenhouse gas emissions as matters of national and international environmental significance, similar to impacts on World Heritage Areas. A contemporary High Court case testing the exclusion of greenhouse gas emissions from EPBC offsets may well deliver a different ruling and require carbon offsetting in EPBC Act approvals. It is noteworthy that a mature, and over-supplied market exists for global carbon credits and that Australian projects would have no trouble sourcing sufficient credits from the Clean Development Mechanism and other sources to offset the carbon footprint of even the largest Australian project.



## Processes used to develop and assess proposed offsets

The Offset assessment guide is used to develop and assess proposed offsets. This is an excellent, clearly written policy document which is easy to find, download and understand. Some elements that are worthy of scrutiny and improvements are suggested below.

Offsets are one of many considerations weighed at the decision stage (EPBC Policy p12). It is therefore entirely possible that a project with significant impacts could be approved either without offsets, or without offsets that provide for genuine conservation benefits consistent with the Offset Policy. This situation is shown in Figure 1 (p.13) by the pathway comprising “Yes, controlled; Yes, residual measures have been taken; Yes significant impact remains likely; No, offsetting not feasible; Yes, environmental matters taken together with economic and social factors the proposal is acceptable”. In this case, the pathway is to approve or approve with conditions. Checks to ensure that the conditions in the final decision adequately protect Australia’s matters of national environmental significance seem thin on the ground here. Further guidance is warranted on how conditions could be framed in this situation, especially in the lead-up to the One Stop Shop for environmental approvals.

Some of the elements of the draft policy that were not carried over into the final would have addressed these concerns. For example, 2011 draft of the policy quoted in the Galilee Basin Biodiversity Offset Strategy included the following principles, which appear to have been watered down in the final version:

6. Environmental offsets should be located within the same general area as the development activity.
7. Environmental offsets should be delivered in a timely manner and be long lasting; and
8. Environmental offsets should be enforceable, monitored and audited.

One issue that appears not to be as well covered by the final version of the policy as it was in the draft is connectivity conservation. Connectivity conservation recognises [the importance of maintaining, reconnecting and restoring habitats and ecosystems](#). This is increasingly recognised as critical for maintaining biodiversity, especially with climate change and other long-term environmental threats.

I have only had a brief look at the Offset Assessment Guide. At first glance this looks like an excellent tool. It is worth noting that such tools do necessarily over-simplify complex ecosystems, and are guides rather than comprehensive analyses, and that qualitative reports, discussing details are necessary for effectively communicating and weighing up options, in addition to this type of spreadsheet analysis. An offset may look perfect on the spreadsheet, but still fall short of acceptable in real life, partly because of the social risks of a proposal, but also for technical reasons that are not fully covered.



## Adequacy of monitoring and evaluation of approved offsets arrangements to determine whether promised environmental outcomes are achieved over the short and long term

As noted in the table above, the monitoring and evaluation of EPBC offsets is less stringent than those applied to NCOS carbon offsets.

In the case of carbon offsets these must be retired in order to count towards an environmental or compliance requirement. Achieving equivalent environmental outcomes in consecutive years requires equivalent effort and processes, which are scrutinised and assessed as an inherent and essential part of the process. There are national and international registers of the offsets, and there is no capacity for offsets to be claimed by companies, but not delivered.

In the case for EPBC offsets, the requirement is for offsets to “be able to be readily measured, monitored, audited and enforced”. The EPBC offset policy also requires proponents to report data that allows for the performance of an offset to be evaluated, and also suggests that conditions will require that data be made readily available to the department and in a format that can easily be integrated into a departmental database. There are no hard and fast requirement for the monitoring and evaluation to be reported publicly, or to be reported in a timely manner. Adding these elements to the system would be an improvement, especially in the lead up to the One Stop Shop.

### Notes on Waratah Coal’s Galilee Coal Project

It is worth noting that the Biodiversity Offset strategy for this project drew on the 2011 draft of the EPBC offset policy. Conservation connectivity is among the principles adopted in the Galilee Coal Biodiversity Offset Strategy (Rev B. p.15 of 42). This is positive, since The Brigalow remnants and regrowth areas, and the remnant and non-remnant grasslands that are shown clearly in the *Galilee Coal Project (China First) Biodiversity Offset Strategy*. Even taking account of the 2011 draft of the Offset Policy, connectivity conservation was not explicitly covered in the *Biodiversity Offset Strategy*. Ongoing transparent, public and timely reporting of the outcomes of this connectivity conservation would be worthwhile.

The Galilee Coal Project is a very clear example of the need to re-test the legal presumption that carbon offsetting is not relevant to EPBC Act decisions. The carbon footprint of the coal mined in this project is of international concern, especially in relation to the global ‘carbon budget’ which means that [three quarters of the fossil fuel reserves need to stay in the ground](#) in order to avoid extremely dangerous climate change. There are good arguments for Australia to take some extended global responsibility for the impacts of its coal mining, and this project is worthy of consideration for such action.

### Notes on North Queensland Bulk Port’s Abbot Point Coal Terminal Capital Dredging Project.

The following commentary focuses on the application of environmental offsets in the Approval for the Abbot Point Coal Terminal), Port of Abbot Point, Queensland (EPBC 2011/6194). The approval was signed by the Minister on 10/12/2013 and has effect until 30 November 2053.

#### **1) Included Offset conditions**

- Sections 29-37 cover the Marine Offset Strategy
- Overall, the approval conditions appear minimal, considering the scale of environmental and social risk involved. There has been international concern over this project's potential impact on the World Heritage values of the Great Barrier Reef, as well as many campaigns and other commentary on the issues.
- Condition 33, requiring the Marine Offset Strategy is to be consistent with the department's Environmental Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (October 2012). In the lead up to the One Stop Shop for environmental approvals, this begs the question of which agency will maintain the Offset policy, and whether compliance with it will be audited.
- Offsetting to manage the impacts of dredge plume on seagrass beds to the west of the terminal has received [some public criticism](#). The dredge plume modelling showed that "the dredge plume, whilst acting for a much shorter period of time than the wet season, will have a higher impact to the west of Abbot Point" (GHD 3D Plume Modelling Executive Summary, p. 8). There is an offset requirement that sedimentation be reduced in the river mouth to offset this. The capacity for such an offset to be measured in a timely and accurate way is questionable.

## **2) Potential, offset conditions not included**

The potential for offsets to deal with technical risks was raised briefly above, and this is worth discussing with regard to the Abbot Point Coal Terminal. Many commentators have pointed out the increased risk of damage to the Great Barrier Reef in the possible event of accidents in the shipping lanes. The increased shipping of fossil fuels through the reef as a result of this project certainly increases both the likelihood and consequences of such accidents. It would be possible to use offsets to deal with risk issues such as this. For instance, where such a risk is substantial (as in this case) then offset requirements may be higher than in other cases, so that resilience values can build up sufficient for the system to withstand an uncommon, but highly damaging pollution event.