Australian Network of Environmental Defender's Offices

Australian Network of Environmental Defender's Offices Inc

Submission to the Joint Select Committee on Northern Australia
- Inquiry into the Development of Northern Australia

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The Australian Network of Environmental Defender's Offices (**ANEDO**) consists of nine independently constituted and managed community environmental law centres located in each State and Territory of Australia.

Each EDO is dedicated to protecting the environment in the public interest. EDOs provide legal representation and advice, take an active role in environmental law reform and policy formulation, and offer a significant education program designed to facilitate public participation in environmental decision making.

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Table of Contents

Introduction

The Australian Network of Environmental Defender's Offices (ANEDO) welcomes the opportunity to comment on the Inquiry into the development of northern Australia which we understand will form the basis of the Federal Government's White Paper for the area.

EDOs have significant expertise in matters of environmental law and have a long history of constructive involvement in law reform. ANEDO focuses on federal law reform issues likely to impact the environment including climate change policy. While we believe specific inclusion of the need to consider the protection of the environment and the diverse range of ecosystems existing throughout northern Australia are unfortunate omissions from the Terms of Reference for this Inquiry, we submit that these issues remain relevant because the environment is inextricably linked with the future social and economic development of northern Australia. This submission involves directing the Inquiry to key areas necessary for environmental protection and our recommendations focus on the necessity for any regulatory management framework responsible for the development of Northern Australia to be underpinned by a strong and effective statutory regime to provide for these protections.

ANEDO remains concerned about the watering down of environmental protections through the "streamlining of environmental approvals and creation of a one stop shop approach to approval and licensing requirements". We remain sceptical of the evidence in favour of 'streamlining' environmental laws, and claims that removing regulatory oversight is consistent with maintaining environmental safeguards and outcomes.[1]

ANEDO submits that the Joint Select Committee on Northern Australia ('the Committee') in its Inquiry should find the Commonwealth Government must retain a strong leadership and oversight role in the assessment and approval of any development affecting matters of national environmental significance. Specifically, any environmental protection framework governing development in northern Australia should be overseen and coordinated by the Commonwealth Government, with state environmental agencies and regulators also playing important ongoing roles. ANEDO has noted a range of risks with accrediting the State and Territory governments for the assessment of environmental impacts and approval of development.

Best Practice Standards for Planning and Environment Regulation

ANEDO has previously identified ten general principles for best practice standards for planning and environmental laws and commends these principles to the Committee when conducting this Inquiry. The ten principles are extracted fully in *Annexure A* to this submission, but in summary are as follows:

[1] These concerns are detailed in the ANEDO submissions to the Productivity Commission inquiries into Major Projects and Mineral Exploration in March and September 2013 at www.pc.gov.au and www.edo.org.au

1. *Clear objectives that prioritise ecologically sustainable development.* This requires that environmental legislation and instruments clearly set out their objectives and make ESD the overarching aim. Such legislation must then be enforced consistently and rigorously.
2. *Objective test for good environmental outcomes.* Decision makers should be given robust, science based assessment tools so to allow for consistent and objective decisions.
3. *Independent assessment.* Assessment by independent accredited experts will ensure credibility and transparency.
4. *Comprehensive assessment based on best information available*. Environmental assessment should not be limited to just the direct impacts of a proposal, but should take into account the cumulative impacts of multiple projects, climate change impacts, and assessment of the potential impacts of alternative proposals.
5. *Projects must minimise environmental impacts (impact hierarchy).* Environmental impacts should be avoided if possible and if not, should be mitigated and/or offset as much as practicable.
6. *Best practice standards for strategic environmental assessment processes*. Strategic assessment should be undertaken pursuant to strict criteria which ensures that best practices in assessment are met. Such practices include that assessment be based on comprehensive and accurate mapping and data, be undertaken as early in the process as possible, assess alternative proposals and cumulate impacts, involves public consultation and complements assessment of site-level impacts.
7. *Oversight and review*. The Australian government must retain review power over state-based projects.
8. *Public participation.* Mandatory and meaningful public participation should be provided for at each stage of assessment.
9. *Compliance and enforcement.* Enforcement tools should be provided to ensure that breaches in legislation are addressed.
10. *Monitoring and review.* Independent review of all environmental assessment and planning legislation should be regularly conducted so as to ensure that the legislation is improvising or, at a minimum, maintaining environmental values and ecologically sustainable development. [2]

[2] Australian Network of Environmental Defenders Offices, *Background Briefing Paper: Environmental Standards & Their Implementation In Law* (June 2012), at http://www.edo.org.au/policy/policy.html; Australian Network of Environmental Defenders Offices, *Submission on Productivity Commission Issues Paper – Major Projects Development Assessment Processes*, (25 March 2013), 39 – 41.

Key Law Reform Recommendations

- The principles of ESD ought to be meaningfully incorporated into all planning and development legislation that facilitates the development of northern Australia.
- Development decisions should be transparent and provide for genuine engagement with the public and legislation should explicitly require adequate community participation in the decision-making that will impact upon the environment, the health and well being of the community and the use of natural resources.
- Planning and management of land and water resources in northern Australia should account for Indigenous rights and interests.
- Regulatory framework governing the development of northern Australia must allow for adaptive management and the government must invest in scientific research so that management and decision-making are underpinned by robust scientific research.
- Conservation of biological diversity is considered a fundamental factor in decision making and is in keeping with Australia's international obligations and the *Australian Biodiversity Conservation Strategy.* Regulations governing the development of northern Australia must be explicit in relation to the achievement of environmental outcomes.
- The protected areas including the world, national and indigenous heritage sites are to be protected, strengthened and managed according to the IUCN best management procedures.
- The economic benefits and value of biodiversity and the ecosystems services it provides should be recognized and promoted; regulatory framework should ensure these essential services are specifically accounted for in decision making.
- A climate change policy and strategy is necessary to reflect both the government's obligations pursuant to international Conventions and to allow for a cross regional effort to target the impacts of climate change.
- Implementation of the National Water Initiative should be strengthened so that governance arrangements for the management of water resources in northern Australia are strategically focused and collaborative with a specific recommendation that the Commonwealth maintain an overarching role in water management in northern Australia.
- The development of northern Australia provides an opportunity to expand renewable energy technology in the region and to export both the technology and the energy.
- Effective and genuine protection of the environment is achieved by an informed, accurate and consistent monitoring regime. Regular assessment of environmental regulations and their compliance delivers an effective and respected regime. Integrity of a monitoring process is further improved by reporting and making publically available the collected data.

Ecologically Sustainable Development (ESD) in Northern Australia

Ecologically Sustainable Development (ESD) is described in the Australian National Strategy for ESD as:[3]

Using, conserving and enhancing the community's resources so that ecological resources, on which life depends, are maintained, and the total quality of life now and in the future, can be increased.

ANEDO has recommended in previous submissions that planning, major projects and environmental legislation across Australia should adopt ESD as the overarching object, with reference to its recognised principles.[4] The individual principles which comprise ecologically sustainable development (ESD) are set out in Section 3A of the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth) ('EPBC Act').[5] In summary, the principles are: integrated decision-making, the precautionary principle, the principle of inter-generational equity, protection of biological diversity and ecological integrity, and the promotion of improved environmental valuation, pricing and incentive mechanisms.

At its heart, ESD is a balancing process which is designed to ensure that decision makers can make the best possible decision (one which takes into account long and short-term impacts, as well as environmental and social factors) when considering development proposals. Despite the fact that ESD has been recognised as the best way to achieve an 'integrated policy framework,'[6] there are still significant steps which must be taken to ensure that ESD is used in a meaningful and practical way to inform the development decision-making. ESD is generally only included in the objects clauses of legislative instruments,[7] leaving decision makers with a great deal of

[3] Following the definition, concepts and principles of ESD as set out in the Bruntland Report (World Commission on the Environment and Development, *Report of the World Commission on the Environment and Development: Our Common Future.* UN Doc A/42/427, June 1987, <http://www.un-documents.net/wced-ocf.htm>), the National Strategy for ESD was signed in 1992 by the Council of Australian Governments and was designed to guide the development of environmental law in Australia.

[4] ANEDO Submission on Productivity Commission Draft Report – Major Project Development Assessment Processes, 20 September 2013, 9. <http://pc.gov.au/__data/assets/word_doc/0007/128248/subdr092-major-projects.docx>

[5] See for example, *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), sections 3 and 3A; *Protection of the Environment Administration Act 1991* (NSW), s 6. Recognised principles of ESD include:

- the precautionary principle;
- intergenerational and intra-generational equity;
- conservation of biological diversity and ecological integrity as a fundamental consideration;
- improved environmental valuation, pricing and incentive mechanisms (for example, internalising environmental costs, 'polluter pays' principle).

[6] Allan Hawke et al, *Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (2009), [87].

[7] For example, the EPBC Act, 1999 (Cth)

discretion in determining how much weight (if any) to place on ESD when coming to a decision. ANEDO's recommendations in its submission to the Productivity Commission included:

> *Planning and development decision-making at all levels (local, regional, State and national) must happen within the scope of a clear legal framework that aims to achieve ecologically sustainable development (ESD).*[8]

ANEDO again submits that any recommendations or reports from the Committee must integrate economic, social and environmental factors in decision-making in accordance with ESD principles and that these ESD principles are meaningfully incorporated into all planning legislation that facilitates development throughout northern Australia. Environmental framework managing development in northern Australia should identify ESD as an overarching regulatory objective and that framework should require ESD and its principles are given legal effect throughout relevant planning laws and decision-making.[9]

The fundamental practice of ecologically sustainable development is the need to *balance* environmental, economic and social considerations.[10] That is, any decisions made in relation to the development of Northern Australia must assign adequate weight to environmental concerns, not just social and economic factors. Notwithstanding the inclusion of ESD in the objects of Australian environmental laws, previous attempts by Australian governments to balance ESD considerations have attracted criticism as largely too compromising of economic gain at the expense of environmental protection.[11] Any inquiry into northern Australia should seek to avoid repeating this critical analysis and provide certainty by assigning appropriate value to the ecosystem services Australia's tropics provides. Ecosystem services are discussed at page 15 below.

For the purpose of this submission, we will not reiterate the importance of each ESD principle, but will make comment on certain aspects supplementary to the key ESD principles and of which we believe the Committee ought to consider during its Inquiry.

1. *Informed Decision Making*

Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.

Decision makers must be provided with sufficient information to be able to make an informed and enlightened decisions regarding development. Development decisions should make provision for public participation, as well as allow for flexible decisions that will enable the

[8] See n 4 above, 10.
[9] See also ANEDO, Submission to COAG Standing Council on Energy and Resources, Draft National Harmonised Regulatory Framework for Coal Seam Gas 2012, 28 February 2013.
[10] *Bulga Milbrodale Progress Association Inc. ats Warkworth Mining Limited & Ors [2013] NSWLEC 48. <http://www.caselaw.nsw.gov.au/action/pjudg?jgmtid=164038>*
[11] Tim Bonyhady, Putting the environment first?, *Environmental and Planning Law Journal*, Volume 29 Part 4, 327.

adaptive management of environmental and social resources into the future. In 2009 the Northern Australia Land and Water Taskforce reported that there are knowledge gaps for effective decision making, specifically critical gaps in our knowledge and data sources and in our understanding of Indigenous knowledge. Local or catchment level planning and decision making will not be fully effective until these knowledge gaps are addressed. The Taskforce recommended Australian governments should significantly increase investment in climate, water, land and environment data collection and analysis to support land and water use planning, catchment level water planning and local decision making.[12]

i) Public participation:

The need for public participation is has been recognised and proclaimed as a vital part of the development process in international, national and state instruments.[13] ANEDO recommends that in addition to recognising the need for informed decision making, legislation across northern Australia should be amended to explicitly require adequate community participation in decision-making that will impact upon the environment, the health and well being of the community and the use of natural resources. Further, all information relating to environmental assessment and decision-making should be made publicly available, for example, information on Government websites.

The most common process by which the public can participate in decision making regarding proposed developments is through Environmental Impact Assessment (EIA). EIA ensures that all stakeholders can be involved in the assessment of a proposed project prior to any final decision being reached.[14] EIA requires decision makers to take both long and short term impacts of development into account and as well identify where monitoring programs may be necessary, and how the impacts of the development (if approved) can be managed into the future.

The *Intergovernmental Agreement on the Environment* made by the State, Territory and Commonwealth Governments of Australia notes in schedule three that EIA processes should be based on twelve core principles, of which relevantly to this submission, include that:

- Assessing authorities should provide all participants in the EIA process with guidance on the criteria for environmental acceptability of potential impacts including the relevant local and national standards and guidelines, protocols, codes of practice and regulations;
- Assessing authorities should provide proposal specific guidelines or a procedures for (the) generation (of EIA) including a clear outline of the process;
- Levels of assessment should be appropriate to the degree of environmental significance and potential public interest;

[12] Northern Australia Land and Water Taskforce, *Sustainable development of northern Australia* (2009) Commonwealth of Australia, 14.
[13]Convention on the Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (Aarhus Convention), Principle 10 Rio Declaration
[14]Mandy Elliott and Ian Thomas, Environmental Impact Assessment in Australia, Theory and Practice (5th Ed) (2009)

- There is full public disclosure of all information related to a proposal and its environmental impacts;
- Opportunities public consultation on proposals are provided before the assessment process is complete;
- Mechanisms to resolve conflicts and disputes regarding the assessment process should be developed.[15]

Public participation in the EIA process can at times appear to be merely a symbolic gesture, particularly in situations where the public cannot become involved until later in the process when the draft EIS is being reviewed.[16] In order to improve this perception, ANEDO recommends the adoption of an EIA process which allows for public participation before the development outcome has been largely determined. Genuine engagement with the public should allow for sufficient timeframes to be set in the EIA process, thereby providing adequate time to prepare a submission. ANEDO recommends that EIA processes should also allow both written and oral submissions, thereby allowing the widest section of society to be involved. [17] Further, with a large indigenous population in northern Australia,[18] ANEDO regards it as crucial that Indigenous people are central in land and water planning, management and decision making. Any consideration of economic futures for northern Australia must recognise the region's significance for Indigenous people and their intrinsic connectedness to land and water.

> *'Indigenous Peoples have rights, responsibilities and obligations in accordance with their customary laws, traditions, protocols and customs to protect, conserve and maintain the environment and ecosystems in their natural state so as to ensure the sustainability of the whole environment … Indigenous Peoples have always been part of and are crucial to the maintenance of our ecosystems and therefore want to ensure minimal impact from settlement and unsustainable development across Northern Australia.'*[19]

ii) Strategic Environmental Assessment and bio-regional planning

Strategic environmental assessment (SEA) of larger areas and multiple projects aims to ensure that information regarding the impacts of development on an area as a whole can be provided to decision-makers. SEA is in its early stages in Australia; as such, ANEDO submits that it must be

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[15] *Intergovernmental Agreement on the Environment*, 1992, Schedule 3, Item 3 (2, 3, 7, 9, 10, 11).

[16] Victoria Lambropoulos, *What can Australia learn from Europeans about public participation? Article 6 of the Aarhus Convention and Environmental Impact Statements* (2010) 27 EPLJ 272, 279.

[17] EIA processes which only provide for written comments can preclude participation of members of the public who come from non-English speaking backgrounds, who do not have easy access to computers, or members of the community who are unaware of the process for making written submissions. See Lambropoulos, above n 16, 278.

[18] See:< http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/1301.0~2012~Main%20Features~Population~245>

[19] Extract from the Mary River Statement, 6 August 2009: Declaration from the delegates of the North Australian Indigenous Experts Water Futures Forum. See: <http://www.nailsma.org.au/hub/resources/publication/north-australian-indigenous-experts-water-futures-forum-mary-river>

undertaken according to rigorous, objective and transparent requirements that should be set out in legislation.[20] Importantly it may *complement, but not replace, site-level assessment*.

Strategic assessment and bio-regional planning legislation should be developed so as to:

- Identify competing land uses and values at a regional level
- Undertake baseline studies of impacts
- Take into account cumulative impacts, thereby avoiding ad hoc and inconsistent decisions
- Integrate economic, social and environmental factors into long term regional decision-making
- Identify sensitive environmental areas where mining and resource extraction would result in unacceptable damage to the natural environment
- Provide comprehensive and guaranteed rights of public participation in regional planning.[21]

Strategic assessment and bio-regional planning instruments should also be designed so as to ensure that decision makers are made aware of the value of the ecological services provided by the natural environment (discussed in further detail below).

The Northern Australia Land and Water Taskforce has reported that northern Australia is an integrated region and that the treatment of northern Australia as a single, integrated region maximises the relevance and application of policies and actions for those who live there.[22]

2. *Adaptive management:*

Regulatory framework that allows for adaptive management helps ensure that long-term effects of development, unforeseen at the time of the initial assessment, can be addressed. It is important that scientific developments and increases in ecological knowledge are taken into account to ensure that approved developments continue to meet the requirements of ESD.[23] As part of this process, ANEDO encourages the Commonwealth, Queensland, West Australian and Northern Territory governments to continue to invest in scientific research so that their adaptive

[20] For example, SEA must:
- be based on comprehensive and accurate mapping and data
- be undertaken at the earliest possible stage
- assess alternative scenarios and cumulative impacts
- involve ground-truthing of impact assessment
- involve extensive public consultation, and
- complement, but not replace, site-level impact assessment

[21] EDO (NSW), *Mining Law in New South Wales,* Discussion Paper (2011) 8 and 36.
[22] Northern Australia Land and Water Taskforce, above n 12, 8.
[23] EDO (NSW), Submission to Sanding Committee on Natural Resource Management (Climate Change), *Sustainable Water Management Inquiry,* March 2010, 13; EDO (ACT), Submission to Environment & Sustainable Development Directorate, *Exposure Draft Nature Conservation Bill 2013*, January 2014, 6.

management frameworks and decision making processes are based on the best and most up-to-date ecological science.[24]

The importance of monitoring is dealt with from page 29 of this submission, however it is relevant to note here that ongoing testing and monitoring are key to ensuring that the impacts identified in an initial assessment process are not greater or different to the impacts which actually result from a development. Additionally, decision makers should be given the flexibility to review and update decisions in light of the monitoring and testing process and as new scientific research comes to the fore.

The final two principles which comprise ESD – the conservation of biodiversity and improved valuation and pricing mechanisms – are discussed in greater detail here. This is due to the interconnected nature of the two principles which ANEDO is concerned should be of primary consideration when considering the development of resources in northern Australia.

3. Conservation of Biological Diversity and Improved Valuation

i) Conservation of biological diversity

The consideration of biological diversity and ecological integrity should be fundamental considerations in decision-making.

The conservation of biological diversity and ecological integrity calls for a multilayered approach so as to ensure the protection of ecosystems, individual species and genetic diversity. This approach has been enacted at an international level in the *Convention on Biological Diversity, (*'CBD')*.*[25]

The state parties to the CBD recently reiterated their commitment to conserving the three core components of biological diversity with the adoption of a revised and updated Strategic Plan for Biodiversity which includes the Aichi Biodiversity Targets for the 2011-2020 period. The Aichi Biodiversity Targets outline a series of measures aimed at improving the status of biodiversity including (*inter alia)*: the conservation of areas of particular importance for biodiversity and ecosystem services[26], the prevention of extinction of known threatened species[27] and the

[24]EDO (ACT), Submission to Environment & Sustainable Development Directorate, *Exposure Draft Nature Conservation Bill 2013*, January 2014, 6.
[25] The CBD defines biodiversity as: '*The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems':* CBD, art 2. In accordance with that aim, the articles of the CBD call upon the state parties to establish, inter alia, protected areas and programs to allow for the conservation of biological diversity (art 8), programs to identify and monitor components of biological diversity (art 7) and economic and social measures to provide incentives for the conservation and sustainable use of components of biodiversity (art 11).
[26] Target 11
[27] Target 12

maintenance of genetic diversity of cultivated plants, farmed and domesticated animals, their wild relatives and other socio-economic and culturally valuable species.[28]

As part of the actions taken to ensure Australia meets its obligations under the CBD, the *Australian Biodiversity Conservation Strategy (*Strategy) provides a guiding framework for the conservation of Australia's biodiversity. The 2010-2030 Strategy notes that the manner in which Australia manages its terrestrial, aquatic and marine ecosystems has a direct impact upon the resilience of living creatures to survive and adapt to changing conditions.[29] Major threats to Australia's biodiversity and its resilience include: habitat loss, degradation and fragmentation, invasive species, unsustainable use and management of natural resources, changes to aquatic environment and water flow, changing fire regimes and climate change.[30]

The Strategy identifies three key priorities for policy makers to pursue in order to build resilience namely, [31] *Protecting diversity* achieved through measures such as protecting diverse ecosystem types , creating nature reservations and conservation measures, protecting habitat that will support large, genetically diverse populations,[32] maintaining connectivity and wildlife corridors through which species will migrate and move due to climate change; *maintaining and re-establishing vital ecosystem functions* such as oxygen production, water and nutrient cycling and carbon storage; and *raising public awareness and involvement* so as to reduce threats to biodiversity.[33]

Although policy guidelines and environmental statutes often note the importance of conserving biodiversity when making decisions regarding proposed developments, such instruments typically leave the weight to be placed on that objective up to the discretion of the decision maker. ANEDO recommend the introduction of regulations into environmental legislation to explicitly identify the priority to be given to the conservation of biodiversity in the event of a conflict or otherwise.

Particularly, ANEDO supports the development of environmental and development statutes which explicitly mandate particular environmental outcomes or standards to be achieved.[34] The introduction of specific mandates (such as a requirement that biodiversity be maintained and ecosystem integrity promoted) would ensure that decision makers are legally bound to make

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[28] Target 13

[29] *Australian Biodiversity Conservation Strategy,* 19. < http://www.environment.gov.au/resource/australias-biodiversity-conservation-strategy-0>

[30] *Australian Biodiversity Conservation Strategy,* 22. See also *A National Approach to Biodiversity Decline* (Biodiversity Decline Working Group 2005), *Australia State of the Environment 2006* (Beeton et al. 2006), *A National Approach to Addressing Marine Biodiversity Decline* (Marine Biodiversity Working Group 2008), *Australia's biodiversity and climate change: a strategic assessment of the vulnerability of Australia's biodiversity to climate change* (Steffen et al. 2009)

[31] *Australian Biodiversity Conservation Strategy,* 43 - 44. See also, ANEDO Submission to House of Reps Standing Committee on Climate Change, Environment and the Arts Inquiry into Australia's biodiversity in a changing climate, 5 August 2011

[32] See also: D Lindenmayer and M Burgman, *Practical Conservation Biology* (CSIRO Publishing, 2005).

[33] *Australian Biodiversity Conservation Strategy,* 44

[34] Brian J Preston, 'Adapting to the impacts of climate change: the limits and opportunities of law in conserving biodiversity' (2013) 30 EPLJ 375, 376.

decisions which promoted such objectives, and not just consider or endeavour to pursue them.[35] Outcomes-based legislation has already been successfully introduced internationally. In Scotland, for example, the *Climate Change (Scotland) Act 2009* (UK) requires Scottish Ministers to "ensure that the net Scottish emissions account for the year 2050 is at least 80% lower than the baseline" thereby imposing a legal obligation upon Scottish ministers.[36]

ii) Protected Areas

ANEDO recommends the continued recognition and protection of the world, national and indigenous heritage sites located in northern Australia.

Protection of habitat is achieved on public lands through the declaration of protected areas, known in Australia as the National Reserve System (NRS). All Australian jurisdictions have endorsed the goal of the NRS which is to achieve a system of protected areas that is comprehensive, adequate and representative.[37] Key targets associated with those objectives include:

- Comprehensiveness - at least 80% of the number of extant regional ecosystems in each bioregion are represented in the NRS by 2010-2015;
- Adequacy - the need to secure an 'adequate' size and configuration of protected areas to provide long term protection and security for the natural and cultural values they support (no quantified target set); and
- Representativeness - at least 80% of extant regional ecosystems in each sub-region are represented in the NRS by 2010=2020.[38]

The recognition of protected areas is essential for *in situ* conservation of biodiversity, particularly in areas that serve as habitats for threatened or endangered species.[39] In addition to primary conservation outcomes, protected areas also result in a range of other benefits such as the provision of ecological services.

Effective management of protected areas is key to ensuring that conservation objectives are met. Effective management therefore provides for adaptation of management procedures so as to allow for the fact that ecosystem areas can require different levels of human intervention in order to meet conservation goals at different times.[40] Effective management should also be equitable and involve the local communities and indigenous people who directly rely on the protected area and the ecological services it provides.[41] The Northern Australia Land and Water

[35] Ibid, 337.
[36] Ibid, 377.
[37] ANEDO Submission to House of Reps Standing Committee on Climate Change, Environment and the Arts Inquiry into Australia's biodiversity in a changing climate, 5 August 2011, 11.
[38] Ibid.
[39] IUCN report, https://portals.iucn.org/library/efiles/documents/PAG-021.pdf 2 and 10.
[40] S Woodley et al. 'Meeting AICHI Target 11: What Does Success Look Like for Protected Area Systems?' (2012) 18(1) *Parks* 12.
[41] Ibid. This view is supported by the wording of Aichi Target 11 which calls for protected areas to be 'effectively and equitably managed'.

Taskforce found that places of natural and cultural significance should be conserved; Northern Australia's natural heritage is iconic and indigenous culture and heritage across the north is diverse, strong and critically interconnected with the landscape. The overlap of the Indigenous estate with the conservation estate in northern Australia is also a unique feature of northern Australia.[42]

The International Union for Conservation of Nature (IUCN) has developed a system of categories to assist governments in determining the best management procedures for protected areas. The system is graded in the sense that it provides for increasing levels of management and governance depending on the particular area. In total, the system provides for six protected area categories. The first category calls for strict protection, with human visitation, use and impacts tightly controlled and limited. Such management practices should, at a minimum, be used for areas that possess outstanding ecosystems that will be degraded or destroyed if subjected to all but the slightest human impact.[43] In comparison, the sixth category allows for some limited sustainable use of natural resources thereby providing for situations where conservation and sustainable use can be mutually beneficial (such as in cases of small scale eco-tourism and recreation).[44]

Regardless of category, as part of its system the IUCN notes that all protected areas should aim to meet certain common objectives, set out in the box below.[45] Such objectives can only be met through effective management of the protected area in question.

All protected areas should aim to:

- Conserve the composition, structure, function and evolutionary potential of biodiversity;
- Contribute to regional conservation strategies (as core reserves, buffer zones, corridors , stepping stones for migratory species etc);
- Maintain diversity of landscape or habitat and of associated species and ecosystems;
- Be of sufficient size to ensure the integrity and long-term maintenance of the specified conservation targets or be capable of being increased to achieve this end;
- Maintain the values for which it was assigned in perpetuity;
- Be operating under the guidance of a management plan and a monitoring and evaluation programme that supports adaptive management;
- Possess a clear and equitable governance system.

[42] Northern Australia Land and Water Taskforce, above n 12, 9.
[43] Nigel Dudley (ed), IUCN, Guidelines for Applying Protected Area Management Categories, 13.
[44] Ibid, 22.
[45] Ibid, 12.

4. *Improved valuation of the environment, pricing and incentive mechanisms should be promoted.*

i) Economic benefits of biodiversity and ecological services

Ecosystem services are defined in the Millennium Ecosystem Assessment (MEA)[46] as the benefits that people receive from ecosystems. This broad and simple definition includes the benefits from ecosystems for future generations, and accordingly incorporates the ESD principle of intergenerational equity.[47] The specific benefits identified by the MEA include:

- Provisioning Services – fresh water, food, timber, fibre, fuel, medicines and new products and industries from biodiversity;
- Regulating and supporting services – biological regulation of ecosystem services, nutrient cycling, climate and air quality, human health (regulation of infectious diseases), waste processing and detoxification, regulation of natural hazards (such as floods and fires); and
- Cultural and amenity services – including cultural identity and heritage, spiritual services, aesthetic services, recreation and tourism. [48]

In order to provide ecological services, an ecosystem must possess sufficient biodiversity. A rich variety of species present in an ecosystem ensures that the processes which support ecosystem services continue to exist and remain resilient. Conversely, the loss of biodiversity increases the vulnerability of ecosystems to climate change as well as other environmental stressors.[49]

Almost every company, in every sector, depends upon ecosystem services.[50] Biotechnology and the pharmaceutical industries, scientific research, forestry, the construction and publishing industries, as well as the food and tourism sectors all rely to different extents upon the ecosystem services identified above.

It is therefore clearly apparent that gross domestic product (GDP) is dependent upon natural capital.[51] Natural resources are used to support the growth of GDP through both sustainable and unsustainable means. Sustainable growth occurs where industries seek to protect biodiversity and ecosystems (an example of such an industry is ecotourism). Unsustainable growth occurs where GDP is reliant upon extraction of irreplaceable natural capital. The UNEP TEEB initiative gives the example through the logging of forests in order to create new housing

[46] Millennium Ecosystem Assessment, Ecosystems and Human Well-Being, Synthesis, 2005, <http://millenniumassessment.org/documents/document.356.aspx.pdf>
[47] Kumar Pushpam (ed), *The Economics of Ecosystems and Biodiversity Ecological and Economic Foundations*, (Earthscan, 2010) 12 and 15.
[48] MEA, above n. 46, 39 - 46.
[49] Johan Rockstrom, 'A safe operating space for humanity' (2009), *Nature* 474.
[50] Joshua Bishop (ed), 'The Economics of Ecosystems and Biodiversity in Business and Enterprise' (Earthscan, 2012) 4.
[51] TEEB – The Economics of Ecosystems and Biodiversity for National and International Policy Maker – Summary: Responding to the Value of Nature 2009.

estates.[52] It is important to note that sustainable industries are not necessarily niche. Globally, ecotourism is worth approximately US $100 billion a year, it provides significant employment opportunities and is rapidly growing as consumers grow more aware and appreciative of the importance of the environment.[53]

Similarly, conservation practices and management have been recognised as constituting a significant economic sector in northern Australia. The Northern Australian Land and Water Taskforce found in 2009 that conservation and management of natural resources intersected with almost every major industry in the north of Australia (which was estimated to be worth approximately $200 million a year).[54]

An economy that values the ecosystem services provided by the environment and biodiversity is a forward looking economy. A report by PricewaterhouseCoopers has suggested that by 2050, sustainable business opportunities in natural resources (including energy, forestry, agriculture, water etc.) could have a potential market value of US $2-6 trillion (at constant 2008 prices).[55] While this figure is obviously dependent upon a number of assumptions and variables, the potential for a market which is based upon sustainable principles and which values ecosystem services, is arguably vast.

Similarly, individual and community well-being relies directly upon a healthy environment and the ecosystem services which it provides. Human wellbeing is not simply limited to reliance on clean water, food and shelter, but also encompasses cultural practices and aesthetic enjoyment. An example of cultural and ecosystem functions interacting in Australia is the fire management which occurs in Arnhem Land in the Northern Territory. Aboriginal land management through the use of patch fires ensures that native flora and fauna are revitalised, prevents out of control wild fires, and encourages tourists to visit the national parks in the area.[56]

Ecosystems also provide their services far more efficiently and cost effectively than manmade processes and structures. Forests, wetlands and mangroves for example, all provide valuable services in protecting against and mitigating the effects of floods and storms.[57] Across northern Australia, river flows ensure that food for aquatic plants and animals is carried to estuarine and marine ecosystems, a process upon which commercial and recreational fisheries rely.[58] Grasslands and savannahs found throughout the north of Australia, store carbon, protect biodiversity and provide essential services for indigenous communities such as through the provision of bush foods.[59]

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[52] Ibid, 18.
[53] Ibid, 7. Note also that architecture, engineering and product development are all industries that increasingly draw upon environmental services and knowledge to develop new products.
[54] Northern Australia Land and Water Taskforce, *Sustainable development of northern Australia* (2009) Commonwealth of Australia, 18.
[55] PricewaterhouseCoopers, Vision 2050, Feb. 2010 < http://www.pwc.co.uk/en_UK/uk/assets/pdf/vision-2050-pwc-economic-estimates-feb2010-sustainability.pdf>
[56] MEA, Ecosystems & Human Well-being: current State & Trends, Ch. 17 Cultural & Amenity Services, 462.
[57] TEEB, above n. 51, Ch. 1, 25.
[58] Northern Australia Land and Water Taskforce, above n 12, 19.
[59] Northern Australia Land and Water Taskforce, above n 12, 18.

ii) Biodiversity values of northern Australia

Northern Australia boasts a richness in biodiversity that is rare by world standards and is the only developed nation with a large tropical region. It supports the world's largest remaining tropical savannah, one of the world's largest networks of free-flowing tropical rivers, and the world's largest healthy near-shore tropical marine ecosystem.[60]

Snapshot of the biodiversity value in Northern Queensland

Tourism in Queensland generates approximately $22 billion p.a. A large portion of this figure is through tourism at the Great Barrier Reef. The Reef attracts up to 2 million people to North Queensland every year and is estimated to generate approximately $6.5 billion in income for the region.

World Heritage Sites in northern Queensland include:

The Great Barrier Reef is regarded by UNESCO as the 'world's most extensive coral reef ecosystem'. Its bio-diversity supports over 1,500 species of fish, 360 species of hard coral, 5,000 species of mollusc, and more than 175 species of bird.[61]

The *Wet Tropics Rainforest* is home to the Daintree Rainforest found within the Wet Tropics World Heritage Area. This tropical eco-system supports endangered and rare species of plants and animals and spans an area covering 894,420 hectares extending 450 kilometres along the northeast Australian coastline. It is a vital scientific site and tourist attraction for the region. UNESCO recognises it as a place that provides an 'unparalleled record of the ecological and evolutionary processes that shaped the flora and fauna of Australia'.

The *Riversleigh Mammal Fossil Site* is northern Queensland's third World Heritage listed site. UNESCO describes it as 'one of the world's great fossil sites' giving insight to key evolutionary stages of the unique mammal fauna of the Australian Island-Continent over the past 30 million years.

[60] Northern Australia Land and Water Taskforce, above n 12, 8.
[61] http://whc.unesco.org/en/list/154

Snapshot of the biodiversity value in the Northern Territory

The benefits of tourism to the Northern Territory economy cannot be overstated. Tourism is estimated to employ (both directly and indirectly) approximately 13% of the total NT workforce.[62] This is far higher than the national average. In dollar terms the Tourism Gross Value Added (considered the most accurate measure of the industry's contribution to the economy) contribution in 2011-12 was $1.6 Billion GVA.

World Heritage sites in the Northern Territory include:

Kakadu National Park is d*escribed* by UNESCO as *"A unique example of complex ecosystems, including tidal flats, floodplains, lowlands and plateau, and provides habitat for a wide range of rare or endemic species of plants and animals".*[63] Kakadu is one of four Australian sites included on the World Heritage List for both cultural and natural outstanding universal values. It is a place of enormous biological diversity. A wide range of vegetation classes are found within the park from savannah woodlands, eucalypt forests, monsoon forest, coastal beaches and mangroves. The area is home to a range of rare and endemic plant and animal species. The area supports 77 species of mammals (nearly a quarter of Australia's land mammals), 271 species of birds (more than 1/3 of Australia's bird species), 132 reptiles, 27 species of frogs, 314 fish species, almost 1600 plant species and over 10,000 insect species.[64]

Uluru-Kata Tjuta National Park is described by UNESCO as: *"[The Park] features spectacular geological formations that dominate the vast red sandy plain of central Australia. Uluru, an immense monolith, and Kata Tjuta, the rock domes located west of Uluru, form part of the traditional belief system of one of the oldest human societies in the world. The traditional owners of Uluru-Kata Tjuta are the Anangu Aboriginal People'.*[65] Uluru is a huge, rounded, red sandstone monolith 9.4 kilometres in circumference rising to over 340 metres above the plain. Rock art can be found in the caves around its base. About 32 kilometres to the west of Uluru lie the 36 steep-sided domes of Kata Tjuta. The domes cover an area of 3500 hectares with Mount Olga, the highest feature rising to 500 metres. Both parts of the world heritage area take in an arid environment of enormous diversity. The Traditional Owners traditional ecological knowledge of the area is critical to the ongoing scientific management of the species found in these habitats. The area is home to a number of rare mammals, included the hairy footed dunnart, the snadhill dunnart and the mulgara.[66]

The Northern Territory also has areas of National Heritage listed for their significant cultural values.

In addition to the above, the NT has a large number of National Parks all of which contain vast biodiversity and provide important economic benefits for the Northern Territory. Of particular note are *Nitmuluk National Park* which includes Katherine Gorge, and *Litchfield National Park* located in close proximity to Darwin.

[62] http://www.tourismnt.com.au/Portals/3/docs/research/NT%20TSA%202011-12.pdf
[63] http://whc.unesco.org/en/list/147
[64] http://www.environment.gov.au/node/19775
[65] http://whc.unesco.org/en/list/447
[66] http://www.environment.gov.au/node/19818

Snapshot of the biodiversity value in northern Western Australia

Tourism in the Kimberly Region generates approximately $637 million dollars each year.[67] Recently there has been a drop in eco and leisure tourism, which the Tourism Council of WA attributes to mining domination. The Tourism Council has reported that short term resource industry operations were seriously damaging long term tourism in the northern part of the State.[68]

The Kimberley Wilderness Area covers close to 423,000 square kilometres, including the Purnululu National Park (239,723 hectares). These areas are described as having unrivalled natural values, geological significance and indigenous cultural heritage going back tens of thousands of years. The Bungle Bungle Range within the Park are bee-hive structures formed from quartz, sandstone, silica and black lichen.[69] These areas were declared a World Heritage Site in 2003, for what the UN Committee recognised as of 'outstanding universal value from the aesthetic or scientific point of view'. UNESCO also describes the Bungle Bungles as '*outstanding examples of cone karst that have eroded over a period of 20 million years [and are] of great beauty and exceptional geological interest*'.[70]

iii) The costs of ignoring the value of biodiversity and ecosystem services

The costs relating to the loss of biodiversity and ecosystem services should not be underestimated. Many of the ecosystems and natural processes of the Earth are dependent upon the existence of stable conditions. Once a threshold for a key variable is breached, ecological systems can often react in nonlinear and abrupt ways.[71] This is of particular concern given that MEA found that over the past 50 years, human activity has changed ecosystems more rapidly and intensively than at any previous comparable period in human history.[72]

Depletion of natural resources, reduction in genetic diversity of crops, energy insecurity and a rise in natural disasters are all factors that public and private entities have to contend with and which are further exacerbated by the changing climate. An example of how the various environmental stresses build upon and amplify each other's impacts is the removal of coastal ecosystems such as mangrove forests. The removal of such forests generally results in an increase in greenhouse gas emissions. These emissions in turn exacerbate the impacts of climate change, including increases of wild storms which in turn can accelerate the loss of coastal ecosystems.[73]

[67] http://www.acfonline.org.au/sites/default/files/resources/Kimberley_economics_report_18-4-11.pdf
[68] www.businessfocus.com.au/index.php/2012/08/toursim-council-of-western-australia
[69] www.tourism.wa.gov.au
[70] http://whc.unesco.org/en/list/1094
[71] Johan Rockstrom, above n 49.
[72] MEA, above n. 46, 1.
[73] Bishop, above, n 50, 14.

Loss in ecosystem services can and does cause significant harm to the wellbeing – social and economic – of human communities. Thus for example the collapse in the early 1990s of the Newfoundland cod fishery (due to overfishing) led to tens of thousands of people losing their jobs and cost at least $2 billion in income support and retraining.[74] Similarly, failure to value ecosystem services can lead to depletion of resources that provide far greater value in their natural state.

ANEDO supports the federal environment department's 2011 observation that 'improving environmental outcomes is part of ensuring a sustainable future for Australia', both for our quality of life, and our continued economic prosperity.[75] The response cites a UN Environment Program report (2010) which estimates that ecosystems deliver essential services worth US$21 trillion to US$72 trillion a year, comparable with the 2008 World Gross National Income of US$58 trillion.[76]

iv) How to value biodiversity

Economic markets struggle to ensure the efficient use of resources which have not been given a monetary value.[77] Combined with a property system that tends to class natural resources as part of the 'commons', this has resulted in the benefits of biodiversity and ecosystem services being undervalued or ignored completely in public and commercial decision-making.[78] Biodiversity and ecosystem loss impacts greatly upon the long-term viability of manmade developments which rely upon natural resources.

Improved valuation and pricing of ecosystem services require that both the long and short-term impacts of development on the environment are taken into account. A comprehensive understanding of the value of the environment and its components can assist in ensuring that decision makers are fully aware of all of the costs and risks (including irreversible depletion of environmental resources) of a proposed development.

Where a decision is made to pursue the development of environmental resources, the internalisation of environmental costs can be expressed by having reference to two principles – 'user pays' principle and the 'polluter pays' principle.[79] The 'user pays' principle requires users to pay for the costs incurred to the environment, thereby encouraging investors to make sustainable and long term investments which won't irreversibly deplete natural resources. The

[74] MEA, above n. 46, 7.
[75] Commonwealth of Australia, *Australian Government Response to the Report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999* (2008) 3.
Available at: www.environment.gov.au.
[76] *Dead planet, living planet: Biodiversity and ecosystem restoration for sustainable development, A Rapid Response Assessment. United Nations Environment Programme,* Nellemann, C., E. Corcoran (eds). 2010, 6.
[77] Pushpam, above n 47, 4.
[78] Preston, 'Adapting to the impacts of climate change', above n. 34, 383-385.
[79] Justice Brian J Preston, *The Role of the Judiciary in Promoting Sustainable Development: The Experience of Asia and the Pacific,* Australian Centre for Environmental Law (2000), 193.

'polluter pays' principle requires polluters to bear the costs to the environment incurred by their pollution and the resulting resource degradation and environmental harm.[80]

These principles have been already put into legislative effect through a variety of mechanisms including the introduction of licensing for the emission of pollution, the creation of biodiversity credits and schemes providing incentives for private land owners to establish conservation areas on their properties.[81] The goal of adequately valuing the costs of pollution has also been recognised at a judicial level as an underlying principle to assist in determining the appropriate value of a sentence for a company fined with committing an environmental crime.[82]

ANEDO submits it is clear that a failure to appropriately value ecological services now will result in a loss of biodiversity and services into the future. ANEDO strongly encourages legislative reform so as to ensure that biodiversity and ecological services are more appropriately valued and taken into account when decision makers are considering proposed developments in northern Australia.

Climate Change Impacts in Northern Australia

The Committee would be well aware of Australia's international obligations to address global climate change issues through its ratification of the United Nations Framework Convention on Climate Change.[83] Furthermore, the Climate Change Authority [CCA] has suggested that 'a 5 per cent target is inconsistent with Australia's fair contribution to the long-term global goal to limit warming to below 2 degrees.' The CCA also notes that 'adopting stronger targets is easier than previously thought'.[84] ANEDO recommends the Committee investigate how the development of northern Australia might contribute to these important aims and obligations.

i) Climate Change and Australia

The Garnaut Review 2011 found that human activity since the early 19th century has caused an increase in atmospheric greenhouse gas emissions.[85] Changes to the global climate are evident in Australia.[86] That recent climate changes are the result of human activity rather than natural climate variation is widely acknowledged.[87] Any development in northern Australia will

[80] Ibid 194.
[81] Ibid.
[82] *Axer Pty Ltd v Environmental Protection Authority* (1993) 113 LGERA 357.
[83] UNFCCC. < https://unfccc.int/2860.php>
[84] Climate Change Authority, *Reducing Australia's Greenhouse Gas Emissions: Targets and Progress Review Final Report* (2014) 122-123.
[85] Ross Garnaut, *The Garnaut Review 2011: Australia in the Global Response to Climate Change* (Cambridge University Press, 2011) 3
[86] Ibid, 5. See also, National Sustainability Council, *Sustainable Australia Report 2013: Conversations with the future* (2013) 158.
[87] Evidence includes:

- An increase in global average temperatures: Australian Academy of Science, The Science of Climate Change' (2010) 7.

ultimately involve reliance upon Australia's land and its ecosystem services. There is mounting evidence suggesting that climate change also impacts social, economic, industrial and corporate structures relying upon ecosystem or environmental services.[88] As the Inquiry would be aware, Australia is a signatory to the World Heritage Convention and the Convention on Biological Diversity (CBD) which recognises a global degradation and decline in species caused by human impacts and is an agreement to protect a specified amount of terrestrial and marine areas. The CBD also recognises the links between climate change and biodiversity, acknowledging climate change as a significant driver of biodiversity loss through rapid habitat and life cycle changes.[89] ANEDO believes it is paramount for any inquiry into the development of northern Australia to investigate and plan for the future impacts of climate change. The development of policy by this Inquiry must account for Australia's international obligations under the CBD, the UNFCCC and the Kyoto Protocol. ANEDO is of the opinion that to address climate change effectively, proactive policy and incorporation into supporting legislation[90] is required and ought to be considered during this Inquiry.

Addressing climate change has the potential to contribute to the national economy as well as the environment.[91] The Inquiry must address the artificial dichotomy[92] between the economy and the environment in recognising that Australia stands to gain from global efforts to keep average temperature increases under 2°C.[93] For economic and environmental benefits to be achieved, it is necessary to consider the long-term benefits of upfront investment costs to accommodate for transitions into and the expansion of a renewable energy resources sector.[94] The CCA suggests that Australia can achieve a 15% emissions reduction target whilst the national

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- The concentration of atmospheric carbon dioxide has reached 400 parts per million, a rate not seen in at least 800 000 years: Yasuki Shirakawa, *The impact of atmospheric CO_2 concentration above 400 ppm* (13 November 2013) Global Carbon Capture and Storage Institute <http://www.globalccsinstitute.com/insights/authors/yasuki/2013/11/13/impact-atmospheric-co2-concentration-above-400-ppm>
- Australia recorded its hottest summer on record during 2013: Climate Council <http://www.climatecouncil.org.au/offthecharts>, see also
- Threats to biodiversity and ecosystem losses: David Lindenmayer et al 'Conservation strategies in response to rapid climate change: Australia as a case study' (2010)143 *Biological Conservation* 7 1587
- More extreme weather conditions such as prolonged periods of drought, flash flooding, sea level changes and increased climate unpredictability: ML Parry et al, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2007). See also Ross Garnaut, *The Garnaut Review 2011: Australia in the Global Response to Climate Change* (Cambridge University Press, 2011) 12

[88] For example agribusinesses and the energy industry, see Martin Linnenleucke et al, 'Firm relocation as adaptive response to climate change and weather extremes' (2011) 21 Global Environmental Change 123.
[89] MEA above n.46; See also: < http://www.cbd.int/convention/>.
[90] Preston, 'Adapting to the impacts of climate change', above n. 34, 378.
[91] http://www.abc.net.au/news/2014-02-15/environment-minister-greg-hunt-climate-change-imf-chief-lagarde/5262332
[92] Clive Hamilton and Richard Dennis, 'Impact of Microeconomic Reform on the Electricity Industry' (Australia Institute, 2000) 23.
[93] Climate Change Authority, above n.84, 122.
[94] Ben Saul et al, *Climate Change and Australia,* Federation Press, 2012 pg. 131-132

income and economy grows. [95] The Committee should also note that the resources industry has the capacity and drive to facilitate a change to cleaner or renewable energy. [96] There is huge potential for the renewable energy industry to be expanded in Northern Australia.

The Inquiry must acknowledge adaptation and mitigation strategies[97] to address the fact that some climate change in unavoidable.[98] The inquiry must recognise the increased unpredictability of Australia's climate and appropriately plan for the likely increase in the risk of natural disasters,[99] more extreme droughts[100] and increased stresses to ecosystem biodiversity.[101] By recognising that Australia's climate is predicted to rise by at least 2-3 degrees, we need to have strategies to deal with this.

ANEDO urges the Committee to investigate the ability of planning laws to advance Australia's capacity to tackle climate change for example, by taking into account the development and protection of northern Australia's carbon stores.

ii) Carbon Stores:

Australia's forests and other vegetation types provide a critical ecosystem service by acting as a carbon store within the natural carbon cycle.[102] The nation's forests have the capacity to store up to 117 years worth of Australia's 2010 greenhouse gas emissions.[103] Northern Australia's rainforests and established terrestrial ecosystems[104] are of extremely high value because of their function as a long-term carbon stock, rather than their ability to offset emissions from burning fossil fuels.

ANEDO has previously written about the need for any legislative framework to prioritise genuine carbon sequestration through proper management of existing carbon stores. ANEDO suggested that the focus of a carbon stores legislative scheme should be on providing incentives to landholders to manage carbon stores for the benefit of the broader community;[105] and

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[95] Climate Change Authority, above n. 84, 127.
[96] Andrew Mackenzie, 'Energy, Commodities and the global Economy' (Speech delivered at CERA Week 2014, Houston, 4 March 2014); See also: The Carbon Price Communiqué. <https://www.climatecommuniques.com/About/Carbon-Price.aspx>
[97] As suggested in the *IPCC (2007) Climate Change 2007: Synthesis Report* (see p 29 of Hodgkinson and Garner 'Global Climate Change: Australian Law and Policy').
[98] Department of Climate Change, 'Adapting to Climate Change in Australia: An Australian Government Position Paper' (2010) 1-6.
[99] Commonwealth of Australia, National Climate Change Adaptation Framework' <http://www.climatechange.gov.au/sites/climatechange/files/documents/03_2013/nccaf.pdf> 19,
[100] Ibid, 10
[101] Ibid, 13.
[102] As all photosynthesising plant life removes atmospheric carbon and stores this as solid matter. See Commonwealth of Australia 'Australia's State of the Forests Report' (2008) 112-113.
[103] Sustainable Australia Report, 2013, 163. < http://www.environment.gov.au/resource/sustainable-australia-report-2013-conversations-future>
[104] Such as the Wet Tropics of Queensland World Heritage Site, Kakadu National Park and the Northern Waterways described in the Northern Australia Land and Water Science Review 2009, 10.
[105] ANEDO Submission to the Inquiry into the implementation, operation and administration of the legislation underpinning carbon sink forests (2008), 3.

recommended that best practice standards and mandatory sustainability criteria should be enshrined in extensive Commonwealth legislation in order to maximize environmental and community benefits.[106]

ANEDO recommends the Committee make inquiries as to how the development of northern Australia might encourage carbon sequestration such as allowing for the maintenance of maximum levels of carbon storage by protecting stocks that already exist in natural ecosystems. These systems are already resilient, self-regenerating and carbon dense and must be protected from land use and development that would diminish carbon stocks. Mitigation value lies within the longevity of accumulated carbon stocks rather than a terrestrial system's short-term intake of carbon dioxide.[107] Further, the Committee should investigate as to how the depletion of carbon stocks might be minimised in recognition of the fact that the ecosystem services provided are irreplaceable. This would require a change to land-use management throughout northern Australia.[108] Consideration must also be had as to how rates of carbon sequestration may be increased. This includes increasing areas of vegetated land and restoring degraded land from previous uses such as agriculture, pasture and logging.[109]

Water Resources and the Development of Northern Australia

i) Sustainable water management

Australia's groundwater resources are under pressure from continuing water scarcity and climate change.[110] Consequently, there is increasing competition for scarce water resources in northern Australia.[111] Increased development will necessarily place further pressures on water resources and may impact on stream flows, aquifer recharge, groundwater-dependent ecosystems, and water quality.[112] Effective management of groundwater resources is critical to reduce these impacts, as '[f]ailure to address the range of challenges to the sustainable management of groundwater in Australia could result in irreversible degradation of this vital resource.'[113] Therefore, sustainable water management is a vital consideration in any proposal to develop northern Australia.

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[106] Ibid 6.
[107] Heather Keith, Brendan Mackey and David Lindenmayer, 'Re-evaluation of forest biomass carbon stocks and lessons from the world's most carbon-dense forests' (2009) 106(28) *Proceedings of the National Academy of Sciences* 11657.
[108] S Mark Holden et al, 'Adapting agriculture to climate change' (2011) 104(50) *Proceedings of the National Academy of Sciences* 19694.
[109] Heather Keith, Brendan Mackey and David Lindenmayer, above n. 107, 11660.
[110] National Water Commission, *Groundwater Essentials* (Commonwealth of Australia, 2012), II.
[111] Northern Australia Land and Water Taskforce, above n. 12, 3.
[112] NWC, above, n. 110.
[113] Ibid 27.

The Northern Australia Land and Water Taskforce reported that the freshwater river systems of northern Australia need to be recognised as nationally significant and their hydrological connectivity should be maintained. Very few rivers in northern Australia flow year-round and those that do are highly valued. They support complex and healthy ecosystems. The people who live in the north also have enduring historical, social and cultural connections to them. These are freshwater systems of national significance. Perennial rivers in northern Australia are rainfall dependent in the wet season and sustained by localised groundwater discharge during the dry season. The seamless interconnection between surface water flows and groundwater discharge (and recharge) is critical to their integrity.[114]

ii) Decisions impacting water should be science based and evidence driven

A primary priority in the effective management of groundwater is to ensure that management decisions are underpinned by robust scientific research. 'A major challenge to managing groundwater sustainably is poor understanding of the connectivity of groundwater to surface water systems and dependent environments.'[115] There is often a lack of knowledge surrounding the existing and future demands on water for human use.[116] It is critical that all water management practices are based on scientific understanding and knowledge of groundwater systems proper management of groundwater in Australia 'could result in irreversible degradation of this vital resource.'[117]

Flowing from the need for evidence-based decision-making, the Australian Government should significantly increase investment in research areas such as climate, water, land and environment to support water use planning and decision-making.[118] This could encompass 'a comprehensive geophysical survey to quantify groundwater resources and salinity risks in priority groundwater provinces of northern Australia'[119]. This understanding is integral to support water management in northern Australia.

Where there is a threat of serious or irreversible damage and a lack of scientific certainty as to the damage that may be caused, a precautionary approach should be applied. A recent CSIRO study found that water resources in northern Australia are delicately balanced and that ground water extraction limits require further study.[120] Decisions on developments which may impact on water resources, including unconventional gas mining, should not be made until adequate data has been obtained to make a proper assessment of whether an ecosystem can sustain such a development. Development should not proceed if there is inadequate data to evaluate whether the development will upset that delicate balance, or exceed an aquifer's "sustainable yield". Hydrological modelling, including analysis of interactions between groundwater and surface water, must be undertaken before any development commences, to determine the

[114] Northern Australia Land and Water Taskforce, above n 12, 9.
[115] NWC, above n 110, 35; see also 14.
[116] Ibid 35.
[117] Ibid 27.
[118] Northern Australia Land and Water Taskforce, above n. 12, 3.
[119] Ibid.
[120] CSIRO, *Northern Australia Sustainable Yields Project* (August 2009) National Water Commission <http://www.csiro.au/partnerships/NASY>..

short, medium and long-term impacts of the development.[121] The complex interconnection between surface water flows and groundwater are critical to the operation of the landscape in northern Australia, but are poorly understood.[122] Where there is uncertainty and a serious threat to the environment, appropriate precautionary steps must be taken before development can occur.

iii) Coordinated water management regulation

It is critical that water resources are managed and regulated via a coordinated statutory regime. Currently, regulation of water management throughout northern Australia is fragmented. States and territories have significantly different interests, political priorities and resources.[123] These differing approaches may fail to account for the connectivity of groundwater to surface water systems and dependent environments.[124] ANEDO is of the strong opinion that the Australian government would improve the management of land and water resources in northern Australia by supporting the implementation of the National Water Initiative.[125] Further, the Northern Australia Land and Water Taskforce has made some relevant recommendations in this regard such as the establishment of a Northern Australia Land and Water Authority which would further 'build institutional capacity, improve compliance with the National Water Initiative and advocate for the needs and interests of northern Australia.'[126]

iv) Commonwealth role in water management

The 'Water Trigger' was introduced into the *Environment Protection and Biodiversity Act* 1999 (EPBC Act) in June 2013.[127] It operates to ensure that large coal mines and coal seam gas (CSG) activities which are likely to have a significant impact on water resources, obtain Commonwealth approval.[128] The amendment to the EPBC Act was a clear statement that Australia's water resources are an integral and interconnected resource vital to Australia's future. Furthermore, the Water Trigger was largely brought about in response to concerns that State Governments were not adequately dealing with the impacts of mining and CSG projects on water resources, particularly groundwater.[129] ANEDO submits the State and Territory governments ought not be accredited with the responsibilities to assess the water impacts of large resource projects and that only the Commonwealth Government has the ability to provide the necessary 'bird's eye' cumulative approach to water resource assessment of systems (including 64 river basins) in

[121] ANEDO, Submission to Department of Sustainability, Environment, Water, Population & Communities, *Draft Significant Impact Guidelines under the EPBC Act: Coal seam gas and large coal mining developments – impacts on water resources* (July 2013) 4.
[122] Northern Australia Land and Water Taskforce, above n 12, 25.
[123] National Water Commission, *Water management and pathways to sustainable levels of extraction: issues paper* (Commonwealth of Australia, 2013) 14.
[124] EDO (NSW), *Technical Fact Sheet: Groundwater* (November 2011) 4.
[125] See also Northern Australia Land and Water Taskforce, above n 12, 4.
[126] Ibid.
[127] The EPBC Amendment Bill 2013 (Cth) passed the Parliament on 19 June 2013, and received Royal Assent on 21 June 2013.
[128] See EPBC Act, section 24D.
[129] Explanatory Memorandum, *Environment Protection and Biodiversity Conservation Amendment Bill 2013* (Cth), Item 1.

northern Australia which span more than one state or territory (such as the Great Artisan Basin). ANEDO urges the Committee to consider the advantages of the Commonwealth assessing the impacts on water resources by development both within and outside the borders of the northern states and territories.

ANEDO further recommends the impacts of mining and agriculture on water resources should be specifically considered and legislation should be reformed to ensure that this occurs. For example, the *Water Act 1992* (NT) contains an exemption for mining from the requirement to obtain groundwater extraction licences.[130] The impact of mining operations or any other development on water supply to indigenous communities should also be specifically considered.[131]

Renewable Energy and Northern Australia

It is of critical importance the energy requirements of northern Australia and the opportunity to expand renewable energy technology in this region be considered in this inquiry. Northern Australia provides an oversupply of natural advantage for renewable energy production. Expansion in this technology would provide benefits regionally as well as to remote communities which would prosper from such innovations. It would eventually alter the way business is done in the north to overcome many of the economic, social and geographic barriers that exist. Much of what is said in the ANEDO submission on the Australian Government Energy White Paper – stage 1 – issues paper is relevant to this inquiry. [132]

ANEDO recommends the Inquiry consider the following factors when preparing any of its findings or reports:

- Development of northern Australia is focused on making use of the natural advantages of the land and ocean in terms of production of renewable energy.
- Remote area power supplies based on renewable energy should be used to assist in the development of remote communities, in particular solar energy.
- Development of a renewable energy sector be an overarching objective of planning laws and decision making.

[130] Section 7, *Water Act 1992* (NT). In this regard, ANEDO would recommend section 24D of the EPBC Act be amended to include an equivalent water trigger for shale gas mining projects that will or are likely to have an impact on water resources.
[131] According to the COAG data collected as part of COAG's National Partnership Agreement on Remote Service Delivery, around 30 percent of people living in remote indigenous communities and experienced five or more interruptions to their water supply in the previous year.
[132] Further details can be found in ANEDO, Submission on Australian Government Energy White paper – stage 1 – Issues Paper, 7 February 2014, www.edo.org.au

i) Australia's current use of renewable energy

Currently 6% of electricity consumed in Western Australia is sourced from renewables,[133] Queensland around 3%[134] and less than 1% of energy in the Northern Territory comes from renewables.[135] The Australian Government's target is to achieve 20% renewable energy by 2020.[136] Approximately 50% of greenhouse gas emissions in Australia originate from electricity generation,[137] with 30% of emissions derived from coal.[138] Australia's current coal power plants are aging and will require progressive replacement in the upcoming years, for an estimated minimum cost of $100 billion.[139] Renewables are predicted to over-take gas and coal as the top source of energy by 2035,[140] so it is necessary to consider long-term benefits of initial investment to accommodate for expansion and transition into a renewable resource sector.[141] Expansion into renewables should be assisted through legislation, including via energy and planning laws, to provide a sustainable future for northern Australia.

ii) Alternative sources of power in northern Australia

There are a range of alternative sources of power that should be investigated by the Committee during its Inquiry. Solar energy provides a viable solution to a number of environmental problems[142] and Northern Australia has great potential for expansion into solar energy production due to high annual temperatures year round and a low percentage of cloud cover and rain in the large areas of inland desert.[143]

Expansion into ocean renewable energy on the northern coastlines is highly feasible with energy from the ocean able to supply 11% of Australia's demand by 2050,[144] according to the CSIRO. The coast of northern Queensland has ideal conditions for ocean thermal energy generation.[145]

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[133] http://www.finance.wa.gov.au/cms/content.aspx?id=15108

[134] http://www.climateinstitute.org.au/verve/_resources/cleanenergyjobssnapshot_queensland.pdf

[135] Environment Centre Northern Territory, *Renewable Energy* (2013) Environment Centre Northern Territory <http://www.ecnt.org/campaigns/renewable-energy>.

[136] *Renewable Energy (Electricity) Act 2000* Cth s 40.

[137] Talal Yusaf, Steven Goh and J.A. Broserio, 'Potential of Renewable Energy Alternatives in Australia' (2011) 15 (5) *Renewable and Sustainable Energy Reviews* 2221.

[138] Ibid 2214.

[139] Stewart Taggart et al, 'The Future of Renewables Linked by a Transnational Asian Grid' (2012) 100 (2) *Proc. IEEE* (2) 350.

[140] International Energy Agency' World Energy Outlook Factsheet' (Factsheet, International Energy Agency, 2013).

[141] Ben Saul et al, *Climate Change and Australia* (Federation Press, 2012) 131-132.

[142] Alireza Bahadori and Chikezie Nwaoha, 'A Review on Solar Energy Utilization in Australia' (2013) 18 *Renewable and Sustainable Energy Reviews* 1.

[143] Talal Yusaf, Steven Goh and J.A. Broserio, above n. 137, 2217.

[144] Jenny Hayward, *Ocean Power Making Waves in Australia's Clean Energy Future* (28 September 2012) The Conversation <http://theconversation.com/ocean-power-making-waves-in-australias-clean-energy-future-9689>.

[145] Ibid.

With such high-energy outputs, expansion into the renewable energy industry in northern States creates potential to send energy offshore to Asia, where rapid growth is predicted to more than double energy demand by 2035.[146] High Voltage Direct Current sub-sea electric cables successfully and profitably export energy from Norway to the Netherlands, and Tasmania to Victoria,[147] and are matters that should be investigated by this inquiry.

Monitoring and Enforcement of Development in Northern Australia

ANEDO has previously written about the importance of monitoring and enforcement[148] to ensure environmental regulation is a fair, powerful and effective means of protecting the environment. ANEDO recommends the Committee consider the importance of establishing a clear set of environmental indicators and targets to ensure development in northern Australia is ecologically sustainable.

1. *Monitoring*

To be most effective, policy development and decision-making must be informed by comprehensive, accurate and consistent environmental information.[149] Particularly when facing the risks of climate change, monitoring is essential to determine the effectiveness of environmental regulations and to ensure compliance with its requirements. Compliance monitoring and assessing the effectiveness of environmental regulation must be undertaken in conjunction with each other to ensure that the data gathered feeds into an iterative process to achieve environmental objectives.

Monitoring regimes must be conducted regularly, transparently and independently.
All data gathered as part of a monitoring requirement should be made publicly available, including all enforcement policies, complaints and reports on the exercise of enforcement powers. Such transparency would ensure the integrity of the monitoring process is upheld and deters a 'box-ticking' approach to monitoring.[150] By making this information readily accessible, public awareness of environmental regulation increases and incentivises appropriate responses to the outcomes of monitoring. Additionally, monitoring regimes must be undertaken by independent regulators to limit bias in reporting. Environmental regulators must be given adequate skills, powers and resources to undertake periodic monitoring. These powers should

[146] Andrew Campbell, Andrew Blakers and Stuart Blanch, *The North's Future is Electrifying: Powering Asia With Renewables* (21 August 2013) The Conversation <http://theconversation.com/the-norths-future-is-electrifying-powering-asia-with-renewables-17286>.
[147] Ibid.
[148] ANEDO, above n. 4, 46.
[149] Allan Hawke, above n 6, 319.
[150] Ibid, 314.

include the ability to audit without notice and issue penalties for a failure to comply. The issuing of appropriate water use and licencing fees will also improve such monitoring schemes.

ANEDO reiterates its recommendations made to the Productivity Commission on Major Projects that States should:

a. report annually on environmental outcomes and targets;
b. develop and integrate sustainability indicators and tools for monitoring and data-sharing; and
c. Publish compliance and enforcement statistics at least annually in a consistent and comparable form. [151]

i) Monitoring of effectiveness

Crucial to the long-term protection of Northern Australia's environment is an understanding of whether or not environmental regulation is working and in which areas resources should be allotted to improve the scheme. Measuring the effectiveness of environmental regimes is made more difficult when there are no clear objectives or targets to measure against.[152] His Honour Brian Preston suggests that environmental regulations must include clear outcomes-based objectives articulated in stringent, mandatory language. [153]

Plainly articulated objectives would ensure certainty and create a measureable standard by which to understand the effectiveness of environmental regulations. Furthermore, a specific environmental indicator ensures a true application of ecologically sustainable development.[154] Allocating significant legal weight to environmental objectives deters monitoring regimes from focussing solely on a development's economic or employment gains.

Implementing the results of a monitoring scheme should be applied through an adaptive management process.

ii) Monitoring for compliance

Ensuring compliance with environmental legislation is one of the greatest challenges for environmental law and regulatory authorities.[155] As with monitoring for effectiveness, clear, measureable targets are necessary to determine compliance and whether or not overall objectives are being met. Early intervening compliance audits are recommended as a means of reducing the risk of inadvertent non-compliance.[156]

[151] ANEDO, above n 4, 47-50.
[152] State of the Environment Committee, Australian State of the Environment Report (Department of Sustainability, Environment, Water, Population and Communities, 2011), 642.
[153] Preston, 'Adapting to the impacts of climate change', above n 34, 376-377.
[154] ANEDO Submission to Productivity Commission Issues Paper and Inquiry on Mineral and Energy Resource Exploration (19 March 2013), 10.
[155] Lee Godden and Jacqueline Peel, Environmental Law: Scientific, Policy and Regulatory Dimensions (Oxford University Press, 2010), 161.
[156] Allan Hawke, above n 6, 278.

2. *Enforcement*

Enforcement of laws is essential to give effect to environmental regulation and to protect its integrity. A penalty for non-compliance with statutory obligations acts to influence the attitude and behaviour of those who might cause adverse harm to the environment.[157] Any environmental laws for the development of northern Australia should adopt a regulatory mix to managing the environment. Regulations must include appropriately designed penalties that are of significant severity, including prosecution for serious environmental harm[158] and should also include incentive schemes to encourage positive obligations to protect the environment.[159]

i) Third Party Rights

Finally, but importantly, environmental and planning legislation should provide for broad or 'open standing' to allow community members to bring civil court proceedings where there is a suspected breach of the law. Standing to bring civil enforcement varies across Australian jurisdictions.[160] ANEDO has noted the substantial benefits of open standing in terms of access to justice, governance, community trust and other public interests.[161]

[157] D.E. Fisher, Australian Environmental Law: Norms, Principles and Rules (Thomson Reuters, 2nd ed, 2010) 522.

[158] Zada Lipman, 'An Evaluation of Compliance and Enforcement Mechanisms in the Environment and Biodiversity Conservation Act 1999 (Cth) and their Application by the Commonwealth' (2010) 27 *Environmental and Planning Law Journal* 98, 111.

[159] Preston, 'Adapting to the impacts of climate change', above n 34, 381.

[160] ANEDO Submission to the Productivity Commission on Access to Justice Arrangements, (November 2013).

[161] ANEDO, above n 4, 52; See also Brian J Preston, 'Third Party Appeals in Environmental Matters in New South Wales' (1986) 60 *Australian Law Journal* 215, 222.

Attachment A: Best practice standards for planning and environmental regulation

Following COAG announcements in April 2012 to streamline environmental assessment and approvals at the federal and state levels, ANEDO released a briefing paper on *Best practice standards for environmental regulation* (June 2012).[162] Below is an excerpt of this paper.

For the purposes of this paper, "best practice standards" is taken to mean those elements/provisions that must be clearly articulated in legislation (both state and federal) to enshrine best practice environmental planning and assessment processes.

This section sets out 10 high-level elements that should form the basis for effective environmental and planning laws, state and federal:

1. **Clear objects that prioritise ecologically sustainable development (ESD)**
2. **Objective test for good environmental outcomes**
3. **Independent assessment**
4. **Comprehensive assessment based on best information available**
5. **Projects must minimise environmental impacts (impact hierarchy)**
6. **Best practice standards for strategic environmental assessment processes**
7. **Oversight and review**
8. **Public participation**
9. **Compliance and enforcement**
10. **Monitoring and review**

These principles aim to ensure that our natural capital is sustained for the benefit and appreciation of present and future Australians. In giving effect to these elements, governments and communities will also protect the social and economic benefits of a healthy environment, which all of us rely upon.

1. Clear objects that prioritise ecologically sustainable development (ESD)

Environment protection and planning legislation must set out clear objectives, which prioritise ecologically sustainable development (ESD) as the overarching aim.[163] These objectives must

[162] Australian Network of Environmental Defenders Offices, *Background Briefing Paper: Environmental Standards & Their Implementation In Law* (June 2012), at http://www.edo.org.au/policy/policy.html.

[163] See for example, *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), sections 3 and 3A; see also *Protection of the Environment Administration Act 1991* (NSW), s 6. The aim of ESD is to achieve a level of development that meets the needs of the present without compromising the ability of future generations to meet their own needs. See World Commission on Environment and Development, *Our Common Future* (1987), at 43. Principles of ESD include: the precautionary principle; intergenerational and intra-generational equity; conservation of biological diversity and ecological integrity as a fundamental consideration; improved environmental valuation, pricing and incentive mechanisms (for example, internalising environmental costs and adopting the 'polluter pays' principle).

then be consistently and rigorously applied to all decisions and actions to implement the legislation.

2. Objective test for good environmental outcomes

All projects must be assessed against an objective and consistent test, such as whether the project will 'maintain or improve environmental outcomes'.[164] Robust, science-based methodologies and assessment tools should be developed to objectively and consistently apply the test to development proposals. Such a test will help ensure Australia develops in an ecologically sustainable way.

3. Independent assessment

Environmental assessment must be done by independent accredited experts, rather than by someone appointed and paid by the proponent. To increase transparency and remove any perceptions of bias, the experts should be assigned to a project by an independent body.

4. Comprehensive assessment based on best information available

Projects with the largest potential impacts should attract the greatest scrutiny. In addition to assessing the direct environmental impacts of a proposal, environmental assessment must be expanded to include:

- assessment of cumulative impacts of multiple projects
- assessment of climate change impacts (including mitigation and adaptation requirements), and
- assessment of the potential impacts of feasible alternatives.

Independent assessors and decision-makers must be provided with the best information available. Best practice assessment must therefore by underpinned by comprehensive baseline data and current environmental accounts, with resource and time allowances to address data gaps.

5. Projects must minimise environmental impacts (impact hierarchy)

Development proposals must demonstrate that they comply with an 'impact hierarchy':

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[164] For example, the Hawke review recommended a robust, scientific 'improve or maintain' test (with regard to environment and heritage) be adopted when approving a class of action under an endorsed policy, plan or practice. See Report of the Independent Review of the EPBC Act (2009), recommendation 6(2)(b)(ii). Several NSW environmental assessment processes adopt a test that actions cannot be approved unless they 'improve or maintain' environmental outcomes. This includes the Biobanking offsets scheme under the *Threatened Species Conservation Act 1995* (NSW), and the *Native Vegetation Act 2003* (NSW) which regulates land clearing. Similarly, a standard of "net environmental benefit" has been put forward in Western Australia and Victoria in the context of biodiversity offsetting. See e.g., EPA Victoria, *Discussion Paper: Environmental Offsets* (2008), http://epanote2.epa.vic.gov.au/EPA/publications.nsf/2f1c2625731746aa4a256ce90001cbb5/cfa2d441a0e31fb7ca2574670004b739/$FILE/1202.3.pdf

- first that environmental impacts have been avoided wherever practicable
- second, that unavoidable impacts been mitigated to the extent practicable, and
- third, if necessary, how offsetting may be used to offset eligible impacts.

Any proposed biodiversity offsetting must comply with clear legal requirements including:

- avoidance of 'red-flag' environmental values that cannot be offset
- equivalency of values that may be offset ('like for like'), and
- ensuring that any offsets are protected in perpetuity (including from future development).

Offsetting schemes that do not meet these criteria must not be accredited.

6. Best practice standards for strategic environmental assessment processes

Strategic assessment of larger areas and multiple projects must be undertaken according to rigorous, objective and transparent legislative requirements[…]. Strategic assessment must:

- be based on comprehensive and accurate mapping and data
- be undertaken at the earliest possible stage
- assess alternative scenarios and cumulative impacts
- involve ground-truthing of impact assessment
- involve extensive public consultation, and
- complement, but not replace, site-level impact assessment.

Any Commonwealth accreditation framework must ensure that the relevant strategic assessment meets strict, best practice criteria in terms of process, outcome and ongoing implementation. Accreditation can only occur when all criteria are met and it is demonstrated that the assessment will ensure ongoing maintenance or improvement of environmental values.

7. Oversight and review

Consistent with Australia's international obligations, and in order to accommodate new and emerging information, the Australian Government must retain a review or 'call-in' power over state-based projects, including those done under a strategic assessment or bilateral agreement. An expert 'Environment Commission' should be established to undertake an independent review role[…].

8. Public participation

Environmental assessment and planning laws must clearly prescribe mandatory public participation at each stage – in relation to strategic planning, strategic assessment and individual development assessment. All information relating to environmental assessment and decision-making must be publicly available. Sufficient timeframes must be set out in legislation to allow active, iterative, and considered participation from local communities. Involving the community should go beyond traditional 'inform and consult' models, and encourage best practice

engagement that delivers more widely acceptable outcomes. Specific requirements must be made for consultation with Indigenous Australians wherever a proposal or assessment involves cultural heritage.

9. Compliance and enforcement

A range of regulatory tools and penalties should be available to address breaches of legislation. To ensure transparency and accountability, all legislation should include 'open standing' to bring proceedings for breaches. Statistics on compliance and enforcement should be published regularly, in a consistent and comparable form.

10. Monitoring and review

The efficacy of all environmental assessment and planning laws must be periodically and independently reviewed – to assess whether the relevant processes, implementation and decision-making are improving or maintaining environmental values, and whether the legislation is achieving ecologically sustainable development. There must also be specific legislative requirements for regular review of any accredited plan or policy.