



# australian network of environmental defender's offices

## Submission on the Inter-departmental Task Group Discussion Paper – *A Cleaner Future For Power Stations*

December 2010

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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## **Executive Summary**

The Australian Network of Environmental Defender's Offices (ANEDO) is a network of 9 community legal centres in each state and territory, specialising in public interest environmental law and policy.

ANEDO has been involved in a large number of climate change consultation processes at a federal level, providing comment on range of proposed measures, including the *Carbon Pollution Reduction Scheme Bill*, national greenhouse reporting regimes, the expanded renewable energy target, the *Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008* and the National Carbon Offset Standard.<sup>1</sup> EDO offices have also been engaged in proposals at State level to develop emission and energy efficiency standards, for example under the Victorian Climate Change Act. EDO offices have also been engaged in proposals at State level to develop emission and energy efficiency standards, for example under the Victorian Climate Change Act. We therefore welcome the opportunity to provide comment on the Inter-departmental Task Group Discussion Paper – *A Cleaner Future for Power Stations*.

In this submission we provide comment on the following:

1. Best Practice Emissions Standards for Coal-fired Power Stations
2. Carbon Capture and Storage (CCS) Ready Standards
3. Energy Efficiency Opportunities Program Expansion
4. National Energy and Greenhouse Reporting.

Our key comments and recommendations are:

- Renewable energy represents the primary long-term viable solution to climate change and should be the dominant feature of Australian energy policy;
- The building of new coal-fired power stations should be prohibited in Australia;
- If the Australian Government persists with coal, then the proposed best-practice emission standard is supported, but it should apply to expansions and extensions of existing power stations in addition to all new coal-fired power stations;
- A standard of 0.7 tCO<sub>2</sub>-e/MWh is supported as it represents the emissions intensity of the most efficient technology currently available (ultrasupercritical and integrated gasification combined cycle);
- The best practice standard should apply to any project where regulatory approvals (including development consent and works approvals) have not already been granted at the time of the Federal Standard being implemented;
- The best-practice standard should be activated through legislation administered by an independent regulator;
- All applications made under the new legislation should be publicly exhibited and a database listing applications and standards for particular coal-fired power stations should be established;
- The legislation should establish a process to accredit state processes where equivalent or tighter standards are effectively implemented and reported;

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<sup>1</sup> Please see [www.edo.org.au](http://www.edo.org.au) for a full list of, and access to, ANEDO submissions.

- The legislation should facilitate ongoing monitoring of power stations to ensure the best practice standard is being maintained;
- There should be appropriate civil and criminal penalties for breaches of the legislation. There should be an open-standing provision allowing any person to enforce breaches of the Act;
- The best-practice standard should be reviewed every 1-2 years to ensure that it continues to reflect a best-practice approach and to incorporate improved technologies over time;
- The standard should only be phased out after detailed modelling demonstrates that the market is adopting a best-practice emissions approach;
- CCS is an end of pipe response that attempts to manage the effects on electricity generation without focussing on reducing actual emissions;
- Legislation should ensure that coal-fired power stations that use CCS technology adhere to strict standards relating to permanence and leakage. CCS projects should also be subject to robust environmental impact assessment and public participation;
- CCS legislation must be guided by the principles of ecologically sustainable development, particularly the precautionary principle and inter-generational equity;
- Once CCS technology becomes commercially available, plants should be required to retrofit within 3-5 years;
- The independent authority who administers the emissions standard should be charged with assessing and declaring when CCS technology is “commercially available”. This should be entirely a scientific determination with no opportunity for the Minister to influence the authority or issue directions;
- The extension of the *Energy Efficiency Opportunities Act 2006* to all existing generators, including coal-fired power stations, is strongly supported;
- The *Energy Efficiency Opportunities Act 2006* should be amended to remove the exemption for electricity and gas transmission and distribution companies;
- The threshold for participation in the *Energy Efficiency Opportunities Act 2006* should be reduced from 0.5 petajoules to 0.2 petajoules;
- The *Energy Efficiency Opportunities Act 2006* must include a clear provision requiring *implementation* of identified cost-effective energy efficiency opportunities; and
- The Commonwealth Government’s commitment to publish annual facility-level greenhouse gas emissions and electricity production data for electricity generators is strongly supported.

## **1. Best Practice Emissions Standards for Coal-fired Power Stations**

ANEDO submits that renewable energy represents the primary long-term viable solution to climate change and should be the dominant feature of Australian energy policy. The Australian Government should therefore be pursuing carbon emissions reductions through a shift to renewable energy sources. The recent report *Zero Carbon Australia Stationary Energy Plan* shows that all of Australia's stationary energy requirements could be met with zero emissions by 2020, using existing renewable technologies<sup>2</sup>.

The building of new coal-fired power stations is inconsistent with the Australian Government's commitment to reduce carbon pollution. The Australian Government has stated that it is in the national interest to stabilise greenhouse gases at a maximum of 450 parts per million (ppm)<sup>3</sup>, which is the level estimated to limit global temperature rises to between 2.0 and 2.4°C<sup>4</sup>. To achieve the 450 ppm target, global emissions need to peak by 2015 and be reduced by 50-85% (of 2000 levels) by 2050<sup>5</sup>. The IPCC estimates that Annex I countries (which include Australia) will need to reduce their emissions by 25-40% (of 1990 levels) by 2020 and by 80-95% by 2050.<sup>6</sup> While any emissions standard of 0.8 tCO<sub>2</sub>-e/MWh or below would result in reduced emissions intensity relative to existing coal-fired power stations in Australia<sup>7</sup>, building new coal-fired power stations would result in Australia continuing to increase its net emissions from burning coal. Until carbon capture and storage (CCS) is proven to provide secure CO<sub>2</sub> storage in the long term, emissions intensity figures estimated for coal-fired power stations with CCS cannot be counted upon to be realised (see comments on CCS below). Therefore, any new coal-fired power station represents an increase in Australia's emissions. In light of the above, ANEDO strongly submits that there should be a prohibition on additional coal-fired power stations in Australia.

However, as the Government has indicated that it wishes to persist with coal-fired power, it is imperative that only power stations that adopt best-practice energy efficiency technology are approved. ANEDO therefore supports the commitment by the Commonwealth Government that all new coal-fired power stations will be required to meet an emission standard set with reference to best practice coal-fired generation technology for commencement in 2011. ANEDO supports a standard of 0.7 tCO<sub>2</sub>-e/MWh, which represents the emissions intensity of the most efficient technology currently available (ultrasupercritical and integrated gasification combined cycle), and hence represents a genuine best-practice standard. Moreover, ANEDO submits that the

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<sup>2</sup> Wright, M. and P. Hearps (2010). *Zero Carbon Australia Stationary Energy Plan*. Carlton, Victoria, University of Melbourne.

<sup>3</sup> <http://www.climatechange.gov.au/government/reduce/national-targets.aspx>

<sup>4</sup> Pachauri, R. and A. Reisinger, Eds. (2007). *Climate change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Geneva, Switzerland, IPCC.

<sup>5</sup> *Ibid.*

<sup>6</sup> Gupta, S., D. A. Tirpak, et al. (2007). Policies, instruments and co-operative arrangements. *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. B. Metz, O. Davidson, P. R. Bosch, R. Dave and L. Meyer. Cambridge, United Kingdom and New York, NY, USA, Cambridge University Press.

<sup>7</sup> Tarong North is currently the Australian coal-fired power station with the lowest emissions intensity at 0.822 tCO<sub>2</sub>-e/MWh. Source: Tarong Energy Annual Report 09-10 available at [http://www.tarongenergy.com.au/Portals/0/docs/annualReports/TE%20AR%2009-10\\_WebVersion.pdf](http://www.tarongenergy.com.au/Portals/0/docs/annualReports/TE%20AR%2009-10_WebVersion.pdf)

standard should not only apply to new coal-fired power stations but also to expansions and extensions of existing power stations.

The Discussion Paper seeks to exclude “advanced” or “committed” projects from the standard. ANEDO does not support this proposal, as it is unnecessarily complex and uncertain and may exclude proposed power stations that are still at the conceptual stage. Having all relevant planning and construction approvals and licences is listed as just one of a number of criteria to be considered in determining whether a project is advanced, along with obtaining rights to land, negotiating contracts for the supply and construction of proposed projects and the level of commitment to financing arrangements. If a project meets three of these requirements then it will be considered “advanced”. Thus, it is feasible that a project could be considered advanced even where the relevant environmental approvals and licences have not been obtained. ANEDO does not support this proposal. Prior to obtain the relevant regulatory approvals, including development consent to build a power station and works approvals as required in some states, a proposal power station could not be said to be at an advanced level of development. It is an investment contingent on getting final approval, and may be refused consent. ANEDO therefore submits that the standard should apply to any project where regulatory approvals (including development consent and works approvals) have not already been granted at the time of the Federal Standard being implemented.

The Standard should be implemented in legally enforceable legislation at a federal level. The Standard should commence at a fixed date in 2011. ANEDO supports the creation of a new independent authority charged with enforcing the legislation. An independent regulator would be transparent and ensure that only objective standards are used to determine approval. All applications made should be subject to public scrutiny including the establishment of a web-based database listing applications made and publishing the emissions standards of coal-fired power stations. The Federal Standard should not prevent a State or Territory going further than the Standard and implementing lower emission intensity limits if it chooses. To avoid duplication, there could be provision in the new Act to accredit state processes where equivalent or tighter standards are effectively implemented and reported.

The legislation should facilitate ongoing monitoring of power stations, as performance can change over time, which the Discussion Paper acknowledges. This will ensure that power stations that have received approval continue to adhere to the best practice standard. Complementing this review mechanism, there must be an appropriate penalty regime for breaches of the legislation, comprising both criminal and civil penalties.<sup>8</sup> This will deter non-compliance and is critical in ensuring that the standard is in fact being applied. The legislation should therefore require all States and Territories to have a consistent penalty regime for breaching the Standard. We recommend a penalty structure comprising of a strict liability offence for operating a new power station without approval from the independent regulator, or operating a new coal-fired power station (or extension) above the best practice standard. In addition, there should be an offence of knowingly operating without approval, which would attract higher penalties. There must

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<sup>8</sup> Guidance should be sought from *He Kaw Teh v R* [1985] HCA 43 where the High Court discussed the three tiers of penalty provisions; intentional breaches, strict liability and absolute liability.

also be an ability for any person to take action to enforce a breach of the legislation in line with other environmental pollution legislation in Australia.<sup>9</sup>

In addition, ANEDO submits that the best-practice standard should be reviewed regularly to ensure that it continues to reflect a best-practice approach and to incorporate improved technologies over time. This review should be conducted annually or not longer than every 2 years.

Finally, we do not support the automatic phase out of the standard if an economy-wide carbon price is introduced. It should not be assumed that the market will ensure that best-practice emission standards will be adhered to, especially in the context of proposed financial assistance to coal-fired power stations to cushion them from the carbon price, which would reduce the necessity for abatement. Therefore we support the maintenance of the standard on an ongoing basis until it is clearly apparent that a best practice emission standard is being adopted as a result of a carbon price mechanism. This should be assessed using detailed modelling.

## **2. Carbon Capture and Storage (CCS) Ready Standards**

The Discussion Paper reveals that the Government intends to put in place CCS-ready standards which all new coal-fired power stations must meet in order to be approved. Coal-fired generators will be required to retrofit CCS technologies “within an appropriate time after they become commercially available”.

ANEDO has significant concerns with the reliance by the Commonwealth Government on CCS technology as the major mitigation strategy for the electricity sector, which accounts for 36 percent of Australia’s total greenhouse gas emissions. ANEDO has previously provided extensive comment on CCS. In June 2008 we provided comment on the proposed *Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill*.<sup>10</sup> ANEDO also appeared before the House of Representatives Standing Committee on Primary Industries and Resource inquiry into the bill on 16 July 2008.<sup>11</sup> In addition, we made a submission in August 2008 to the Senate Standing Committee on Economics in its inquiry into the same bill and appeared before that committee to give evidence on 29 August 2008.<sup>12</sup> Please refer to these submissions and transcripts for an extensive discussion of ANEDO’s concerns.

In our view, CCS should not be seen as a silver bullet for addressing greenhouse gas emissions. It is an end of pipe response that attempts to manage the effects on electricity generation without focussing on reducing actual emissions. It is therefore a ‘business as

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<sup>9</sup> For example, *Protection of the Environment Operations Act 1997* NSW, section 252 (1) - Any person may bring proceedings in the Land and Environment Court for an order to remedy or restrain a breach of this Act or the regulations.

<sup>10</sup> ANEDO Submission on the draft *Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill*, 2008. Found at: [http://www.edo.org.au/policy/080630greenhouse\\_gas\\_storage.pdf](http://www.edo.org.au/policy/080630greenhouse_gas_storage.pdf) (10 December 2010).

<sup>11</sup> See Official Committee Hansard, House of Representations Standing Committee on Primary Industries and Resources, *Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008*, Wednesday 16 July 2008, Canberra, pp 44-55. Found at: <http://www.aph.gov.au/hansard/reps/committee/R11017.pdf> (10 December 2010).

<sup>12</sup> ANEDO Submission to the Inquiry into the *Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill*, August 2008. Found at: [http://www.edo.org.au/policy/080812greenhouse\\_gas\\_storage\\_senate.pdf](http://www.edo.org.au/policy/080812greenhouse_gas_storage_senate.pdf) (10 December 2008). Official Committee Hansard, Senate Standing Committee on Economics, *Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008*, Friday 29 August 2008, Canberra, pp 44-46, <http://www.aph.gov.au/hansard/senate/committee/S11199.pdf> (10 December 2010).

usual approach'. Moreover, the potential deployment and effectiveness of CCS technology remains largely theoretical and it will be some time before CCS technology becomes commercially available. Although CCS projects are being trialled in Australia and overseas, none have yet demonstrated that they can safely and permanently store carbon in the long-term.<sup>13</sup> These trials will need to be undertaken for some decades to be certain about the integrity of CCS technology.

ANEDO strongly supports the requirement that an assessment of the economic feasibility of a CCS retrofit is undertaken. The use of CCS technology is estimated to increase the energy needs of a coal-fired power station by 24-40%<sup>14</sup>, which will have a significant impact on economic viability. Future legislation should require that new coal-fired power stations can only be approved if they are able to demonstrate that CCS retrofitting and operation will be economically viable.

The Discussion Paper states that once CCS becomes “commercially available”, operators will have 7 years in which to retrofit their power plants. ANEDO submits that this should be reduced to between 3-5 years. Once technology is “commercially available” then it should not take an inordinately long time to retrofit existing plants. The same independent authority who administers the emissions standard as discussed above should be charged with assessing and declaring when CCS technology is “commercially available”. This should be entirely a scientific determination with no opportunity for the Minister to influence the authority or make directions.

If and when CCS technology becomes commercially available, ANEDO submits that legislation should ensure that coal-fired power stations that use CCS technology adhere to strict standards relating to permanence and leakage.<sup>15</sup> In addition, all projects should be subject to robust environmental impact assessment and public participation.

Any future legislation must also be guided by the principles of ecologically sustainable development (ESD). That is, a requirement for all CCS operations to be consistent with the principles of ESD. Particular regard must be had to the precautionary principle and the principle of inter-generational equity.

The Precautionary Principle in the context of environmental protection essentially pertains to the management of scientific risk.

“Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.”<sup>16</sup>

In relation to CCS, scientific uncertainty exists around the long term storage capacity of greenhouse gases. It is important therefore that legislation contain rigorous safeguards to manage the unknown impacts associated with CCS. Such safeguards should include the undertaking of extensive environmental impact assessment as indicated above.

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<sup>13</sup> For a list of some of Australian trials, please see ANEDO Submission on the draft *Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill*, 2008, p8.

<sup>14</sup> Metz, B., O. Davidson, et al., Eds. (2005). IPCC Special report on carbon capture and storage. Prepared by Working Group III of the Intergovernmental Panel on Climate Change. Cambridge, United Kingdom and New York, USA, Cambridge University Press.

<sup>15</sup> See ANEDO submissions above for in-depth discussion of these issues.

<sup>16</sup> United Nations Conference on Environment and Development (UNCED), Rio de Janeiro, 1992.

The principle of intergenerational equity is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.<sup>17</sup> For CCS to effectively prevent emissions from escaping into the atmosphere, it is essential that the emissions remain at the site where they are injected. The leakage of greenhouse gases from a storage site not only renders the entire expensive CCS operation redundant, it additionally provides an environmental burden for future generations who will have to deal with the consequences of leakage.

ANEDO therefore submits that the incorporation of the principles of ESD is essential to demonstrating that all CCS operations in coal-fired power stations be conducted in an ecologically sustainable manner.

### **3. Energy Efficiency Opportunities Program expansion**

ANEDO strongly supports the extension of the *Energy Efficiency Opportunities Act 2006* to all existing generators, including coal-fired power stations to commence in 2011. The current exemption for electricity generators is limiting the efficacy of the Act, which is designed to ensure that large energy-using businesses identify and evaluate cost effective energy efficiency opportunities.

However, in addition to this welcome reform, we submit that the Act should be further amended in two key respects.

First, electricity and gas transmission and distribution companies remain excluded from the Act. ANEDO submits that the Act be amended to remove this exemption. It is important that all companies identify energy efficiency improvements regardless of their position on the energy supply chain.

Second, to increase coverage of the scheme, the threshold for corporate groups should be reduced from 0.5 petajoules to 0.2 petajoules. We believe that this is a more appropriate threshold, taking into account that 0.2 petajoules is a significant amount of energy use.

Third, the Act must include a clear provision requiring *implementation* of identified cost-effective energy efficiency opportunities rather than simply the production of a report that identifies these opportunities as is currently the case. Actions that are identified as having a 10 year payback period or less must be required to be implemented by liable entities under the scheme.

In Victoria for example, the Environment and Resource Efficiency Plan (EREP) scheme requires all commercial and industrial sites that use more than 100TJ of energy and/or 120 ml of water in a financial year need to prepare an EREP which identifies actions to improve resource efficiency. The corporation *must* implement all actions contained in the plan with a three-year or better payback period, otherwise penalties apply. The Victorian EPA states the average payback period of mandatory actions is about 10 months, and that the businesses in the EREP program are set to achieve savings of over \$70 million per year.

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<sup>17</sup> World Commission on Environment and Development 1990, *Our Common Future*, Australian edn, Oxford University Press, Melbourne, p.85.

#### **4. National Energy and Greenhouse Reporting**

ANEDO strongly supports the Commonwealth Government's commitment to publish annual facility-level greenhouse gas emissions and electricity production data for electricity generators. This is consistent with previous submissions made by ANEDO.<sup>18</sup>

Under the current *National Energy and Greenhouse Reporting Act 2007*, corporations which trigger the corporate reporting threshold are required to submit both corporate level and facility level data to the Greenhouse and Energy Data Officer (GEDO). However, only corporate totals are made publicly available by GEDO. ANEDO is strongly of the view that the publication of accurate information at the facility level is essential to enable the public to find out the emissions attributable to particular facilities. A corporate-wide total obscures the true emissions profile of a company. We therefore applaud the proposed amendments to the *National Energy and Greenhouse Reporting Act 2007* to require the public disclosure of the emissions from all facilities that are required to report under the legislation, regardless of whether facilities are part of broader corporate groups.

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<sup>18</sup> See for example ANEDO Submission on the *National Greenhouse and Energy Reporting System Regulations Discussion Paper 2007*, 23 November 2007, Found at: [http://www.edo.org.au/edonsw/site/pdf/subs07/nger\\_regs071123.pdf](http://www.edo.org.au/edonsw/site/pdf/subs07/nger_regs071123.pdf) (10 December 2010).