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## **Review of Regulatory Framework for Environmental Information**

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### **Abstract**

*If Australian scientists are to fully and actively participate in international scientific collaborations utilising online technologies, policies and laws must support the data access and reuse objectives of these projects. To date Australia lacks a comprehensive policy and regulatory framework for environmental information and data generally. Instead there exists a series of unconnected Acts that adopt historically-based, sector-specific approaches to the collection, use and reuse of environmental information. This paper sets out the findings of an analysis of a representative sample of Australian statutes relating to environmental management and protection to determine the extent to which they meet best practice criteria for access to and reuse of environmental information established in international initiatives. It identifies issues that need to be addressed in the legislation governing environmental information to ensure that Australian scientists are able to fully engage in international research collaborations.*

### **1. Introduction**

The recent United Nations Intergovernmental Panel on Climate Change (IPCC) controversy (in which the results of publicly funded research were not released by the East Anglia University in response to an application made under the UK Freedom of Information Act) highlights the importance of having national data access policies and laws in place that are consistent with and support the rules governing international scientific collaborations.[1] Failure to establish a bridge between international data access principles and national policies and laws means that the benefits flowing from data sharing cannot be realised.

### **2. Information policy initiatives**

Different layers of regulation exist over systems for developing open access to environmental data. In establishing these systems, governments tend to look firstly towards major science collaborations such as the GEOSS project, and at regional policy documents such as the EU INSPIRE Directive, and the US federal government's OMB Circular A-16. Information policy initiatives for access to and reuse of publicly-funded scientific research data and results have taken place at both the international and national levels.[2] The recurring themes/principles that may be distilled from the policy initiatives are:

- openness/accessibility at the lowest possible cost and at a central point of access;
- no intellectual property restrictions on commercial use or value-added activities by virtue of open access copyright licensing practices, although copyright ownership may be reserved;
- transparency in the form of information on research data and data-producing organizations, which should be accessible online; and
- technological, semantic and legal interoperability between datasets to facilitate international and interdisciplinary access to and use of data.

Implementation of these principles, in order to be effective, requires support by local (national) laws.

### **3. Implementation of policy initiatives**

In Australia, there are several online portals that provide access to environmental information, for example, the Environmental Resources Information Network (ERIN), the Integrated Marine Observation System (IMOS), the Online System for Comprehensive Activity Reporting (OSCAR), the Australian Water

Resources Information System (AWRIS), the National Pollutant Inventory (NPI) and the Queensland Digital Exploration Reports System (QDEX). In recently welcoming the Bluewater and Climate Science node of IMOS, Innovation, Industry, Science and Research Minister Senator Kim Carr stated that:

The information collected by IMOS is made widely available to the public and to scientists via the internet through the IMOS Ocean Portal. Sharing knowledge in this way encourages the community to understand and appreciate our fragile marine environment and opens up opportunities for collaboration between scientists from around the world.[3]

Federal government agencies such as Australian Bureau of Statistics (ABS), Bureau of Meteorology (BoM), and Geoscience Australia (GA) have also taken operational steps towards implementing open access principles, including by using Creative Commons licences to distribute their information and datasets.

While these efforts may facilitate open access, re-use and transparency in the data, these organisation- or agency-based efforts do not necessarily lead to technological, semantic and legal interoperability between datasets across the total information spectrum. General open access principles may be implemented in various ways. The focus of most recent implementation efforts has been on laws of general application, such as laws in regard to right to information, privacy, copyright and confidentiality. Laws which specifically govern the reporting and collection of environmental sector data, on the other hand, tend to have been overlooked in recent general application initiatives. Therefore, a key strategy in ensuring that these international best practice policies which require “full and open exchange of data” are effectively acted on in practice lies in the development of a coherent legal framework at a national level, which is integrated into legislation which specifically govern the collection of environmental data.[4] This legislative underpinning will need to overcome the current shortcomings, including on reuse, identified in this paper.

## 4. Environmental Information Legislation

To date Australia does not have a comprehensive regulatory regime for environmental information and data. Our review of the current legislative regimes shows that there is a series of unconnected Acts, having different regulatory approaches for separate sectors within the broad environmental information spectrum (e.g. mining, petroleum, toxic release of chemicals). These regimes are often limited to the collection of information for specific purposes and tend to overlook

the potential re-use opportunities for this collected information.

In short, the current situation with respect to reporting, access and reuse of environmental information appears to be fragmented and lacks a coherent legal or policy foundation, whether viewed in terms of interactions within or among the different levels of government at the local, state/territory, and federal levels or between the government, academic, and private sectors. In order to address identified shortcomings in the environmental information system, on 11 May 2010 the Federal Minister for Environment Protection launched an initiative to develop a National Plan for Environmental Information. In proceeding to develop the National Plan, it will be necessary to critically examine and analyse existing legislative provisions governing environmental information to ensure that the regulatory environment is consistent with the stated national policy objectives.

What follows is an analysis of a representative sample of Australian statutes, measured against best practice criteria for access to and reuse of environmental information. This examination of the legislative provisions includes consideration of the following issues, where applicable:

- Broad scope and purpose of regime;
- Who carries the reporting obligations;
- Data format and access to the information;
- Use/restrictions on use of information.

### 4.1. Greenhouse gas and Energy

**4.1.1. Broad scope and purpose.** The *National Greenhouse and Energy Reporting Act 2007* (Cth) (NGER Act), establishes a single, national system for reporting greenhouse gas emissions, greenhouse gas projects, and energy consumption and production by corporations. The objects of the NGER Act include the dissemination of greenhouse gas and energy information, informing government policy formulation and the Australian public, the avoidance of duplication of similar reporting requirements in the States and Territories, and meeting Australia’s international reporting obligations.

**4.1.2. Reporting obligations.** The NGER regime, which took effect on 1 July 2008, mandates that corporations which emit a threshold amount of greenhouse gases to the environment provide a report to a designated Greenhouse and Energy Data (GED) Officer for each financial year. This report covers the greenhouse gas emissions, energy production and energy consumption from the operation of the company’s facilities during that financial year.[5]

**4.1.3. Data Format and Access.** Under section 16 of the NGER Act, the GED Officer is obligated to keep a

“National Greenhouse and Energy Register” containing certain reported greenhouse gas and energy information and also audit results of individual corporations. The GED Officer is authorised to disclose all or part of the contents of the Register to the public. The regime also sets up an online reporting system called OSCAR (Online System for Comprehensive Activity Reporting) which is administered by the Australian Federal Department of Climate Change.[6]

**4.1.4. Use/restrictions on use.** The NGER Act (in section 3) cites “informing the public” as one of its objectives and provides for access to the data. The NGER Act appears to focus on access to the information, but is silent in regard to copyright ownership in the published information. The Commonwealth Department’s copyright statement allows only limited reuse rights. Users may download, display, print and reproduce material in unaltered form only for personal, non-commercial use or use within their organisation. The statement does not clearly set out the conditions under which the data may be used, and places undue restrictions on potential commercial value-adding initiatives.

## **4.2. Environmental protection and Biodiversity conservation**

**4.2.1. Broad scope and purpose.** The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (the EPBC Act) is the Australian Government's central piece of environmental legislation. It commenced on 16 July 2000, establishing a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places.

**4.2.2. Reporting obligations.** A range of environmental assessment and reporting obligations are set out in the EPBC Act. Any proposed action (e.g. projects, developments, activities etc) which is likely to have a significant impact on a matter protected by the EPBC Act requires approval from the Australian Federal environmental minister. If a matter is flagged as potentially carrying a significant impact on the environment, the minister may require certain information to be provided by the person proposing the action in order to decide whether an Environmental Impact Assessment (EIA) is required. If the minister then decides that the matter warrants an assessment, an EIA will be carried out and an environmental impact statement (EIS) or public environment report (PER) will be prepared by the department.

**4.2.3. Data Format.** Annual reports on the operation of the act, and statistical information on referrals,

assessments and approvals under the reporting regimes are available on the Commonwealth Department of Sustainability, Environment, Water, Population and Communities’ website. Four databases sourced from information gathered under the EPBC Act are made publicly available on the website.[7] An example is the Protected Matters search tool which allows users to generate an indicative report on whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in a certain area.[8]

**4.2.4. Use/restrictions on use.** For Commonwealth reports, the general copyright statement on the website merely allows for “personal, non-commercial use” of Commonwealth government material “in unaltered form only”.

In general, the focus of the legislation is on the regulation of the direct processes which may adversely affect the environment, e.g. assessing whether a certain action will result in “significant impact” to the environment. In other words, the data is utilized mainly to satisfy the procedures required by the legislation in relation to a specific “proposed action”. There is little consideration of the underlying data gathered in carrying out these assessments and in preparation of the reports, which are in fact a valuable resource but are not recognised as such.

## **4.3. Environmental Pollutants**

**4.3.1. Broad scope and purpose.** The *National Environment Protection (National Pollutant Inventory) Measure 1998* (Cth) (NPI NEPM) provides the framework for the National Pollutant Inventory (NPI), with legislative backing provided by the *National Environment Protection Council Act 1994* (Cth). The purpose of the NPI database is to:

- (a) provide information to enhance and facilitate policy formulation and decision making for environmental planning and management;
- (b) provide publicly accessible and available information, on a geographic basis, about specified emissions to the environment, including those of a hazardous nature or involving significant impact; and
- (c) promote and assist with the facilitation of waste minimisation and cleaner production programmes for industry, government and the community.[9]

**4.3.2. Reporting obligations.** Although the NPI NEPM is established by Commonwealth legislation, it is implemented cooperatively by the Commonwealth, State and Territory governments. The NPI NEPM provides that participating States and Territories will collect the data

and provide the data to the Commonwealth, and the Commonwealth will compile and collate the data, and disseminate the information annually.[10]

In Queensland, the NPI NEPM is implemented by the Department of Environment and Resource Management under the *Environmental Protection Act 1994* (Qld) and the *Environmental Protection Regulation 1998* (Qld). Under regulation 85, if the substance emissions or transfers of certain “reporting facilities” exceed a specified reporting threshold for a substance, the facility must report to the chief executive.

**4.3.3. Data Format.** The NPI is an internet-based database of information about emissions and transfers of substances in the Australian environment. It shows on a geographical basis, where substances are being emitted, in what amount and by whom. In addition to enabling the public to view NPI data, reporting facilities are also able to edit and submit their NPI data via the NPI Online Reporting System.

**4.3.4. Use/restrictions on use.** Access to NPI data is provided for under clause 29 of the *National Environment Protection (National Pollutant Inventory) Measure 1998* (Cth), which states that the data will be “released to the general public by the Commonwealth on or before 31 March in the following year”. Sub-clause (3) further provides that such access will be primarily provided via internet access to the NPI database and summary reports.

While clause 31(1)(b) provides that the data will “be free to the public”, it does not cover issues relating to copyright. A copyright notice on the NPI website states that all rights in the website material are reserved by the Commonwealth. It goes on to permit users to “download, store in cache, display, print and reproduce the material in unaltered form only” for their personal, non-commercial use or use within their organisation, but does not allow users to “re-transmit, distribute or commercialise the information or material without seeking prior written approval from the Commonwealth”.

Therefore, similar to the greenhouse gas and energy regime set up under the NGER Act (discussed above), it appears that the NPI allows for access to the data, but provides very limited reuse rights

## **4.4. Petroleum and Mineral Resources (Queensland)**

**4.4.1. Reporting obligations.** The *Petroleum Act 1923* (Qld) and *Petroleum Regulation 2004* (Qld) set up numerous reporting obligations which apply to petroleum tenure holders. For example, a petroleum tenure holder must keep records and samples about exploration data, and also lodge a copy of the records and part of the

samples to the State (under ss 76A & 76B of the Act). Similarly, the *Mineral Resources Act 1989* (Qld) provides for the reporting obligations of mineral exploration and development permit holders. For instance, as a condition of the mineral exploration permit, the permit holder must submit to the relevant Minister an annual report, a report about reduction in area of exploration permit, and a report summarising the exploration results after the permit ends (under s 141).

**4.4.2. Broad scope and purpose.** The Geological Survey of Queensland (GSQ) provides this geoscience and resource information to the public, with the aim of improving the knowledge of the geology, minerals and energy resource potential of Queensland. The information is provided to facilitate mineral and petroleum exploration (see s 76B(8) of the *Petroleum Act 1923* (Qld)).

**4.4.3. Data Format.** From 1 January 2004, all reports prepared for work carried out on exploration permits, mineral development licences and petroleum tenure must be submitted digitally using the Queensland Digital EXploration Reports (QDEX) electronic lodgement system. QDEX is an internet-based document management system utilised by the Geological Survey of Queensland to manage exploration reports. Users who are registered with the Department of Mines and Energy are able to search QDEX for reports, view the descriptive elements or metadata, and download or view report components. However, unregistered users cannot save searches, create subscriptions etc.

**4.4.4. Use/restrictions on use.** Section 76D of the *Petroleum Act 1923* (Qld) provides that the mere fact of the existence of a petroleum tenure is taken to be an authorisation from its holder to the chief executive to publish, as prescribed by regulation, required information for the tenure for public use, including, for example, to support petroleum exploration, production and development.[11] Further, s 76B(3) mandates that the chief executive ensure QDEX is available for inspection on the department’s website. Section 76B(8) authorises the State to use submitted records and samples to build “a publicly available database to facilitate petroleum exploration for the services of the State”. Again, the legislation stops short at allowing access to the reports and information, and does not go on to consider copyright ownership.

In regard to registered users, a QDEX Access Agreement, which sets out certain conditions of use, is annexed to the QDEX user registration form. One of the conditions prohibits use of the QDEX Service to “provide or facilitate direct electronic access for any

purposes whatsoever to any third party”. The QDEX Access Agreement is also silent on reuse rights.

The Department of Mines and Energy website copyright statement (linked to from the QDEX site), states that “[t]he Queensland Government supports and encourages the dissemination and exchange of information”. It also provides that the Queensland Government asserts the right to be recognised as author of its material and “the right to have its material unaltered”. Users requiring further information on the conditions are instructed to send an email to a departmental contact.

## 5. Conclusion

The various legislative regimes governing environmental information discussed in this paper establish specific and detailed sets of information collecting and reporting requirements. While most of the regimes expressly acknowledge the objective of increasing public awareness in regard to the subject of the particular legislation, the legislative provisions tend to stop short at access and do not cover the public’s ability to reuse the information, including by sharing, on distributing, value-adding or exploiting commercially (see Table 1).

**Table 1. Select environmental data legislation**

| Type of information                                    | Act  | Use/reuse rights |
|--|--|------------------|
| Greenhouse gas and energy                              | <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth)   | Silent           |
| Environmental protection and biodiversity conservation | <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)   | Silent           |
| Environmental pollutants                               | <i>National Environment Protection (National Pollutant Inventory) Measure 1998</i> (Cth); <i>National Environment Protection Council Act 1994</i> (Cth). | Silent           |
| Petroleum and Mineral Resources (Queensland)           | <i>Petroleum Act 1923</i> (Qld); <i>Petroleum Regulation 2004</i> (Qld); <i>Mineral Resources Act 1989</i> (Qld)   | Silent           |

Copyright ownership and reuse rights are not addressed in the legislation considered here, but left instead to pronouncements of governmental policy. The current legislative provisions are often unnecessarily limited in scope, with the focus being restricted to the

immediate purpose(s) of the particular regime. For example, the Environmental Impact Statements (EISs) are required by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) in order to assess the environmental impact of certain proposed activities. Although information gathering and reporting forms a large component of these assessments, the failure to provide for any explicit re-use rights appears to reflect a failure to appreciate or identify the potential reuse opportunities and benefits presented by such information.

Such legislative practices seemingly fail to recognise the seriously limiting impact these environmental reporting provisions may have on the prospective broader uses of the information, whether by scientists or the general public. Policies or Acts of general application such as the Queensland Government Enterprise Architecture (GEA) or *Right to Information Act 2009* (Qld) can only operate in sync with these specific environmental data legislative provisions. Although the specific environmental legislative regimes play an important role in the data management landscape, their limiting impact has not been fully recognised or considered.

The present legislative shortcomings identified in this paper represent a serious impediment to Australian scientists and researchers fully participating in international research collaborations which increasingly utilise online technologies. If the recently announced initiative to develop a National Plan for Environmental Information is to be operationally effective it must overcome the current shortcomings. The legislation underpinning the National Plan will need to address:

- who owns IP in the collected information;
- in what format should the data be collected and released; and
- under what terms and conditions is the information to be made available to the public.

Part of that reform would need to consider removing current legislative impediments including amendments to the various specific legislative regimes to include explicit broad reuse entitlements. Also, various current website terms and conditions which are silent on or set out restrictive re-use entitlements will need to be reviewed and amended to more closely reflect the Australian Government’s response to the Government 2.0 Taskforce report and the recently amended Commonwealth Intellectual Property Principles identifying the least restrictive Creative Commons Attribution (CC BY) licence as the appropriate default standard for re-use entitlements.[12] Once these issues are effectively addressed, Australian research scientists will be able to share data on clearly articulated open access terms (including the use of CC licences) and fully engage, as

equal partners in collaborative initiatives, with their international and national colleagues to address the globe's major environmental challenges.

## 6. Acknowledgements

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## 7. References

[1] Peter Doherty, "Shoot the messenger but accept the facts", *Australian Financial Review*, 11 February 2010.

[2] Examples include the Organisation for Economic Co-operation and Development (OECD) *Recommendation on Public Sector Information and Principles and Guidelines for Access to Research Data from Public Funding*, the United Nations Economic Commission for Europe (UNECE) *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters* ("Aarhus Convention"), the EU INSPIRE Directive and the US federal government Office of Management and Budget (OMB) Circular A-16. At the Australian federal level of government, there is the Office of Spatial Data Management (OSDM) *Australian Government Policy on Spatial Data Access and Pricing*. See Brian Fitzgerald (ed), *Access to Public Sector Information: Law, Technology & Policy*, Sydney University Press, 2010, available at <http://eprints.qut.edu.au/34085/> and Anne Fitzgerald, *Open Access Policies, Practices and Licensing: A Review of the Literature in Australia and Selected Jurisdictions*, 2009, available at <http://eprints.qut.edu.au/28026/>.

[3] Senator the Hon Kim Carr, *Scientists Exploring a Sea of Knowledge*, Media release, 14 October 2010, available at <http://minister.innovation.gov.au/Carr/Pages/SCIENTISTSEXPLORINGASEAOFKNOWLEDGE.aspx>. The IMOS project is not governed by a legislative regime for information collection, reporting and re-use.

[4] Anne Fitzgerald et al, *The Future of Data Policy*, in Tony Hey et al (eds), *The Fourth Paradigm: Data Intensive Scientific Discovery*, Microsoft Research, Washington, 2009, p 204, available at [http://research.microsoft.com/en-us/collaboration/fourthparadigm/4th\\_paradigm\\_book\\_part4\\_fitzgerald.pdf](http://research.microsoft.com/en-us/collaboration/fourthparadigm/4th_paradigm_book_part4_fitzgerald.pdf).

[5] *National Greenhouse and Energy Reporting Act 2007* (Cth), s 19. Part 4 of the *National Greenhouse and Energy Reporting Regulation 2008* (Cth) details the reporting obligations, including the contents of reports to be provided by registered corporations. See also the obligation to undertake energy efficiency opportunities assessments and reports under the *Energy Efficiency Opportunities Act 2006* (Cth), ss 9, 20, 21, 22 & 23.

[6] See <https://www.oscar.gov.au/>.

[7] See <http://www.environment.gov.au/epbc/publications/databases.html>.

[8] See <http://www.environment.gov.au/erin/ert/epbc/index.html>.

[9] *National Environment Protection (National Pollutant Inventory) Measure 1998* (Cth), clause 7.

[10] *National Environment Protection (National Pollutant Inventory) Measure 1998* (Cth), clause 8.

[11] Ways prescribed under regulation include on the department's web site on the internet and in digital or electronic form (e.g. on a disc or tape): *Petroleum Regulation 2004* (Qld), r 36. This would cover publication of the information on QDEX.

[12] *Government Response to the Report of the Government 2.0 Taskforce*, May 2010, Recommendation 6, available at <http://www.finance.gov.au/publications/govresponse20report/index.html>; *Statement of Intellectual Property Principles for Australian Government Agencies* (amended on 1 October 2010), Principle 11(b), available at [http://www.ag.gov.au/www/agd/agd.nsf/Page/Copyright\\_CommonwealthCopyrightAdministration\\_StatementofIPPrinciplesforAustralianGovernmentAgencies](http://www.ag.gov.au/www/agd/agd.nsf/Page/Copyright_CommonwealthCopyrightAdministration_StatementofIPPrinciplesforAustralianGovernmentAgencies).