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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

HOUSE OF REPRESENTATIVES

NATIONAL GREENHOUSE AND ENERGY REPORTING BILL 2007

EXPLANATORY MEMORANDUM

(Circulated by authority of the Minister for the Environment and Water Resources,
the Honourable Malcolm Turnbull MP)

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NATIONAL GREENHOUSE AND ENERGY REPORTING BILL 2007

OUTLINE

The *National Greenhouse and Energy Reporting Bill 2007* (the Bill) establishes a single, national framework for reporting greenhouse gas emissions, abatement actions and energy consumption and production by corporations from 1 July 2008.

The Bill lays the foundation for the Australian Emissions Trading System announced by the Prime Minister on 17 July 2007. Robust data reported under this Bill will form the basis of emissions liabilities under emissions trading, and will inform decision making during the establishment of the emissions trading system, including with regard to permit allocation and incentives for early abatement action.

The Bill also gives effect to the decision of the Council of Australian Governments (COAG) on 13 April 2007 to streamline the reporting obligations of corporations. It will eliminate duplicative reporting and reduce red tape currently imposed by the patchwork of separate state, territory and national reporting schemes.

The Bill includes the following elements – mandatory registration of controlling corporations with the national system, requirements for registered corporations to keep records and provide reports, requirements concerning the security and disclosure of information under the scheme, compliance and enforcement arrangements, administration arrangements (including the establishment of the position of Greenhouse and Energy Data Officer), and compliance monitoring arrangements.

FINANCIAL IMPACT STATEMENT

The Government has appropriated \$26.1m over five years from 2007-08 to introduce the measure. Ongoing funding will be required in subsequent years to maintain the national reporting system and to continue administration of the programme.

REGULATION IMPACT STATEMENT

**A national system for streamlined
greenhouse and energy reporting by
business**

REGULATION IMPACT STATEMENT

**Council of Australian Governments Greenhouse and Energy
Reporting Group**

November 2006

1. Introduction

The Commonwealth, State and Territory governments have agreed to develop a nationally consistent framework for greenhouse and energy reporting by industry to meet the current and prospective reporting needs of government, business and the public.

On 14 July 2006, the Council of Australian Governments (COAG) considered recommendations by the Environment Protection and Heritage Council (EPHC) and the Ministerial Council on Energy (MCE) on this matter, which were developed following a national stakeholder consultation process held during April 2006.

COAG agreed that a single streamlined system that imposes the least cost and red tape burden is the preferable course of action. The reporting system will be based on national purpose-built legislation to provide for cost-effective mandatory reporting and disclosure at the company level. COAG has asked senior officials to report back, by December 2006, with a detailed proposal for the reporting system, including advice on timing, thresholds and governance arrangements.

A COAG Greenhouse and Energy Reporting Group (CGERG) was formed under the auspices of the COAG Climate Change Group to prepare this advice. With the COAG decision having settled key foundation issues, such as the case for mandatory reporting and the preference for purpose-built legislation, the CGERG focused on key details of how the national reporting framework will be designed and implemented, while building on the analysis and consultation conducted previously.

The national reporting system will improve management of energy and greenhouse information, streamlining data collection, reporting and verification to meet a range of greenhouse and energy information needs and programme requirements. Streamlining will include:

- data collection through a single, online entry point based on the Greenhouse Challenge Plus Programme's Online System for Challenge Activity Reporting (OSCAR);
- a standardised greenhouse and energy reporting data set; and
- a consistent methodological approach.

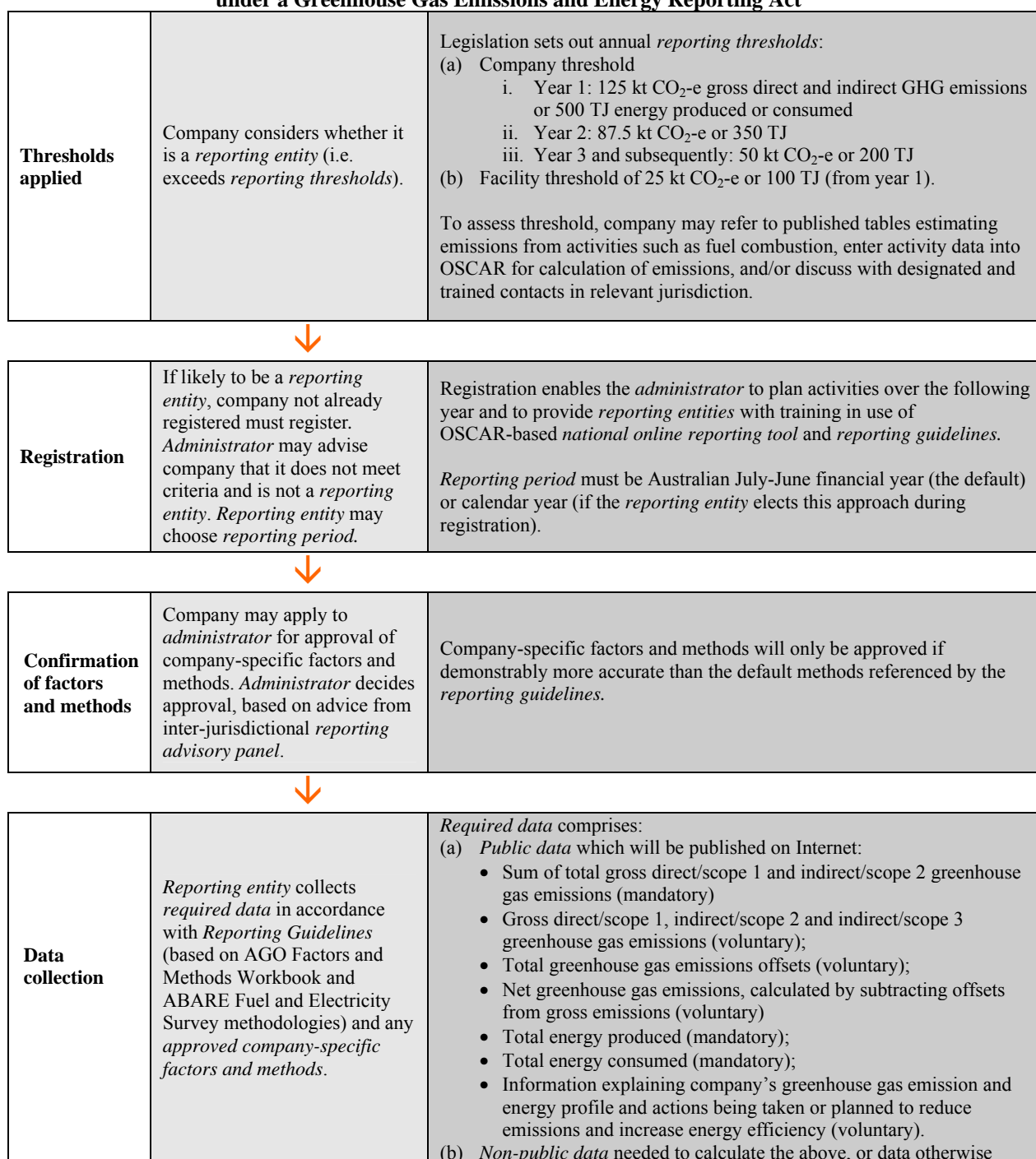
The proposed legislation will make reporting mandatory for companies with energy production/use or greenhouse gas emissions above certain thresholds. Mandatory reporting would occur through the streamlined reporting system. The streamlined reporting system would remain available to companies below the threshold, which were participating in relevant greenhouse and energy programmes.

This Regulation Impact Statement (RIS) includes a detailed description of the preferred option, including specific proposals on key design elements of the reporting system that will need to be written in the legislation, such as reporting thresholds, public disclosure, data security and access, compliance, and timing of implementation. The preferred option for the proposal is summarised in Figure 1, and is explained in more detail in

section 4 below on *The proposed national reporting system: Streamlined reporting underpinned by purpose-built legislation*, along with other options for consideration, including baseline or ‘business as usual’ scenarios, streamlining without a legislative underpinning and inclusion of greenhouse gases in the National Pollutant Inventory (NPI).

Stakeholder consultation was conducted during October 2006, on the basis of a draft RIS. Feedback from stakeholders, including 37 written submissions and comments made at two stakeholder forums, has informed this RIS.

Figure 1: Diagram of proposed reporting requirements under a Greenhouse Gas Emissions and Energy Reporting Act



		required by the reporting guidelines - for example, emission factors activity data such as quantity of output (coal, aluminium, lime or clinker, etc), electricity consumed or fuel combusted; fuel type and type of equipment used to generate or consume energy. Scopes 1 and 2 emissions, scope 3 emissions (optional) and emissions offsets reported separately to allow aggregation of data across companies without double counting.
		↓
Submission of report	<i>Reporting entity</i> must submit <i>acquired data</i> through OSCAR-based <i>national online reporting tool</i> by no later than 4 months after completion of <i>reporting period</i> .	Non-compliant <i>reporting entity</i> will receive reminder notices. <i>Administrator</i> will work with <i>reporting entity</i> to help bring it into compliance. Legal action may be taken if <i>reporting entity</i> does not take corrective action.
		↓
Record-Keeping	<i>Reporting entity</i> must keep records to allow independent verification of <i>required data</i> .	
		↓
Sharing of data	<p><i>Administrator</i> makes available to each jurisdiction:</p> <ul style="list-style-type: none"> • <i>Required Data</i> related to all facilities located within that jurisdiction • Data relating to all jurisdictions aggregated by jurisdiction and ANZSIC code • Additional data covered by an MOU between administrator and another agency • Additional data for which company has consented to disclose to a jurisdiction 	<p>Access to <i>required data</i> by participating jurisdictions is needed to meet objectives of the Act, including providing data to inform government policy making and programme implementation and effect streamlining (i.e. meeting data requirements across different programmes and jurisdictions through a single report using a standardised data set submitted into a single <i>National Online Reporting Tool</i>).</p> <p>MOUs between <i>administrator</i> and other agencies would identify persons authorised to access data; confidentiality protocols, including methods for recording access, and preventing and reporting unauthorised access; and purposes for which data may be used.</p> <p>Act will include provisions covering the protection of confidential information and offences and penalties for breach of confidentiality.</p>
		↓
Public disclosure	<i>Administrator</i> publishes <i>public data</i> for each company, and contextual information through <i>national online reporting tool</i> by 30 November of each year.	<p>Contextual information includes emissions and energy statistics at national, State and Territory, and sectoral levels.</p> <p><i>Reporting entity</i> may apply to <i>administrator</i> to suppress disclosure of public data. <i>Administrator</i> makes decision based on assessment of whether disclosure would reveal proprietary business, competitive or trade secret information about a specific facility, technology or corporate initiative.</p>
		↓
Independent verification	<i>Administrator</i> causes a proportion of company reports to be independently verified each year.	Target companies could include a random sample and companies or sectors identified as having high risk of non-compliance.
		↓
Rectification of reports	<i>Administrator</i> may request company to rectify deficiencies in record-keeping that prevent <i>required data</i> to be verified or <i>material discrepancies</i> in <i>required data</i> identified by the <i>independent verifier</i> within a prescribed period.	A discrepancy is material if a decision based on <i>required data</i> would change if the discrepancy was corrected. Verifiers must determine what represents a material discrepancy when undertaking a verification using their own professional judgment and taking into account the characteristics and circumstances of the <i>reporting entity</i> being verified.

2. Statement of the problem

Background

The earth's climate is changing. During the past 100 years, global average surface temperature increased by about 0.6°C. The twentieth century was the warmest of the past 1800 years in the northern hemisphere, and globally the 10 warmest years on record have all occurred since 1990. It is becoming increasingly clear that greenhouse gas emissions resulting from human activity is a major cause of this climate change.

In its third assessment report released in 2001, the Intergovernmental Panel on Climate Change (IPCC) stated that “there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities”. The IPCC is continuing to detail evidence of climate change and to provide projections about the possible future impacts of climate change, which include significant environmental and economic impacts both globally and in Australia over the next century.

Climate change is inextricably linked with energy issues. Australia's energy sector greenhouse gas emissions increased by 34% between 1990 and 2004, and accounted for 69% of Australia's net national greenhouse gas emissions in 2004. While the availability of abundant and cheap energy has provided Australia with a competitive advantage, improving the sustainability of these sources is fundamental to Australia's continued prosperity.

To address the twin challenges of combating climate change and securing our energy future Australian governments have put in place a range of greenhouse and energy programmes. Some of these are designed primarily to deliver information and data to meet international obligations and to underpin development of government policies and programmes. For example, the Fuel and Electricity Survey is the primary vehicle for collecting energy consumption data to underpin national energy policy analysis, as well as to meet Australia's reporting obligations to a range of international bodies, including the International Energy Agency.

Other programmes are designed to encourage action to reduce greenhouse gas emissions and/or sustainable, efficient and environmentally responsible use of our energy resources.

Table 1 lists current voluntary and mandatory programmes with greenhouse/energy reporting needs, and the year of commencement for each of the programmes. Some of these programmes require additional information to be reported, such as emissions reduction actions. The cost benefit analysis at Attachment A provides further detail on greenhouse and energy programmes and their different characteristics, including whether they are voluntary or mandatory.

Table 1: Existing programmes with greenhouse and/or energy reporting requirements.

Greenhouse or Energy Reporting Programme	Year Established	Voluntary or Mandatory?	Report greenhouse gas or energy emission reductions, offsets or abatement actions?
ABARE Fuel and Electricity Survey (ABARE FES)	1973	V	No
Ozone Protection and Synthetic Greenhouse Gas Management Act	1989	M	No
National Greenhouse Gas Inventory (NGGI)	1990	V	No
Greenhouse Challenge	1995	V	Yes
Australian Petroleum Statistics	1996	V	No
National Pollutant Inventory (NPI)	1998	M	No
NSW Load Based Licensing	1999	M	No
Mandatory Renewable Energy Target (MRET)	2001	M	Yes
Protocol for Environmental Management; Greenhouse Emissions and Energy Efficiency in Industry (EPA Victoria Industry Greenhouse Programme)	2001	M	Yes
NSW/ACT Greenhouse Gas Abatement Scheme ¹	2003	M&V	Yes
Greenhouse Challenge Plus ²	2004	M&V	Yes
Queensland EcoBiz	2004	V	Yes
NSW Energy Savings Plans and Fund ³	2005	M	Yes
Queensland 13% Gas Scheme	2005	V	Yes
Energy Efficiency Opportunities (EEO) ⁴	2006	M	Yes

¹ The NSW/ACT Greenhouse Gas Abatement Scheme is a mandatory program for benchmark participants (e.g. electricity retailers) but voluntary for abatement certificate providers, including most electricity generators. NSW generators are, however, required to report emissions annually.

² Mandatory for companies seeking more than \$3million in fuel tax credits. Voluntary for other companies.

³ Mandatory for companies using more than 10 GWH/yr at a site. Companies required to prepare Energy Savings Plans are encouraged to apply for the Energy Savings Fund.

⁴ Mandatory for companies greater than 0.5PJ of energy/yr.

The need to streamline greenhouse and energy reporting

Because they evolved separately, many of the existing reporting requirements have unique characteristics, including reporting formats, methodologies and definitions. There has been some standardisation of reporting methodologies, for example through widespread use of the *AGO Factors and Methods Workbook* and adoption of World Business Council for Sustainable Development/World Resources Institute Greenhouse Gas Protocol *Corporate Accounting and Reporting Standard (GHG Protocol)*. In addition the AGO has progressively combined the reporting requirements for Greenhouse Challenge and Generator Efficiency Standards under the Greenhouse Challenge Plus Programme (GCP), so that electricity generators who are members of both initiatives can submit a combined report. A part of this report is also used for the NGGI, although the compilers of the NGGI must still approach about 20 generators each year (non-members of GCP, or members who fail to report).

However, important differences remain in the reporting requirements of existing programmes that will not be removed without political will across all jurisdictions. Differences remain with respect to:

- emission source categories covered: most reporting programmes cover on-site fuel combustion and the off-site emissions associated with purchased electricity, but there are differences in the treatment of on-site fugitive and industrial process emissions and off-site transport;
- fuels covered: most programmes cover only the main fuels such as coal, natural gas and the common transport fuels; others include all fossil fuels, or all energy forms including renewable fuels;
- greenhouse gases covered and modes of reporting: carbon dioxide only, all 6 Kyoto Protocol gases expressed as carbon dioxide equivalent (CO₂-e), all gases expressed as a single CO₂-e value, etc;
- the emission factors used to derive emissions from energy used, their source, whether they correspond to ‘Scope 1, 2 or 3’ as defined by the *GHG Protocol*, the rules for non-standard factors etc;
- the treatment of ‘offsets’ such as carbon take-up by forestry activities: some schemes do not recognise offsets at all, some permit them to be separately reported and some permit them to be netted from total emissions;
- reporting periods (whole calendar or financial year, or six-month periods) and frequencies (annual or other); and
- constraints on passing on data to third parties.

These factors are not left to the discretion of reporting entities, but are fully detailed in the reporting forms and accompanying guidelines and manuals prepared by the respective Data Requiring Agencies.

While some of the differences may appear minor, in effect they mean that at present a report prepared by a reporting entity for one agency may not be accepted by any other agency. Even those agencies with lesser or simpler data needs specify data requirements

in particular formats, so entities participating in more than programme must repackage the data for each.

The companies with the highest emissions are often caught by, or choose to participate in, several programmes with greenhouse and energy reporting and reduction reporting elements.

Boxes 1 and 2 below provide real case studies provided by two companies operating across jurisdictions and reporting to multiple greenhouse and energy programmes.

Box 1: Case Study 1 – A multi-jurisdictional company with mining, gas and electricity operations

Programmes under which this company reports include:

- NSW/ACT Greenhouse Gas Abatement Scheme (mandatory)
- Greenhouse Challenge Plus, including Generator Efficiency Standards (GES) (voluntary)
- National Greenhouse Gas Inventory (voluntary)
- Mandatory Renewable Energy Target (mandatory)
- Fuel and Electricity Survey (voluntary)
- Queensland 13% Gas Scheme (mandatory)
- Protocol for Environmental Management; Greenhouse Emissions and Energy Efficiency in Industry (EPA Victoria Industry Greenhouse Programme)

Box 2: Case Study 2 - A mining company operating in multiple jurisdictions

Programmes under which this company reports include:

- Greenhouse Challenge Plus (mandatory)
- Energy Efficiency Opportunities (mandatory)
- NSW Energy Savings Plan (mandatory)
- National Greenhouse Gas Inventory (voluntary)
- Western Australian Greenhouse Gas Inventory (mandatory, upon commencement of programme)

Large mining, petroleum and manufacturing companies, especially those with high non-energy greenhouse emissions as well as high energy use, may also participate in and report to a number of programmes. The Fuel and Electricity Survey respondents with higher energy use are also likely to take part in one or more greenhouse programmes.

The repackaging of data to meet the different reporting requirements of multiple programmes creates cost for industry. Attachment A outlines the following assumed elements of the annual costs to business of greenhouse and energy reporting. Estimated values for these costs used in the analysis in Attachment A are summarised in Table 2.

- An annual fixed administrative cost to the Reporting entity of participating in greenhouse and energy reporting programmes – this is assumed to be constant

irrespective of the number of programmes or the number of sites involved, once staff resources are assigned to this area;

- An annual fixed cost per site – this is the cost of collecting the data for that site, without formatting it for reports; and
- Annual variable cost per site – this is the cost of preparing different reports from the same base data, and so is sensitive to the number of different reports required.

Table 2: Estimated annual fixed and variable costs to companies of greenhouse and energy reporting

Emissions category kt CO ₂ -e/yr	Fixed costs \$/Entity	Fixed sites cost \$/site	Variable cost \$/site report
>125	10 000	1 200	900
25-125	10 000	1 200	900
10-25	5 000	800	600
5-10	2 000	600	400

The annual variable cost per site could be reduced by replacing existing reporting arrangements with a single online reporting tool enabling collection of data for all relevant programmes in a streamlined way. To ensure that such annual variable costs did not rise again in future, future reporting requirements would also need to be streamlined through the same system.

Table 3 shows estimates of the annual costs of current reporting arrangements to reporters and government, drawing on the analysis at Attachment A.

It was estimated that there are currently 3 077 companies reporting to greenhouse and energy programmes. These companies report on 5 600 sites and produce 7 475 reports per year. The current total cost to the economy of current greenhouse and energy reporting arrangements was estimated at \$16.2m per year.

It was estimated that streamlining of reporting through a single online reporting tool, without any increase in the total number of companies reporting and with one report required per facility (ie a reduction in the number of reports per year from 7 475 to 5 600), would deliver a reduction in total annual reporting cost to the economy of around \$1.7m, or 10% of current reporting costs. The cost reduction for reporting entities would be around \$1.2m per year or 9%. The cost reduction to governments owing to streamlined administration would be around \$0.5m per year or 16%.

Table 3: Estimated total annual fixed and variable costs to business, and annual administrative costs to governments of greenhouse and energy reporting under current and streamlined reporting scenarios

	Entities	Sites	Reports	Reporting Entity (RE) Costs \$m/yr				Govt costs \$m	Total annual costs \$m
				Fixed costs/entity	Fixed costs/site	Variable costs/site	Total RE costs		
Current reporting	3 077	5 600	7 475	6.0	3.5	3.5	13.0	3.2	16.2
Streamlined reporting	3 077	5 600	5 600	6.0	3.5	2.2	11.8	2.7	14.5

The need for streamlining is increasing. The start dates for existing programmes in Table 1 shows that there has been a significant increase in the number of greenhouse and energy programmes since 2003. This trend is continuing – there are already new reporting needs being considered. The Western Australian, South Australian and Northern Territory governments have already committed to legislate within their own jurisdictions if a national reporting system is not established. The States and Territories are considering a national emissions trading scheme that would require high quality, company-level data in a nationally consistent format, which could not be delivered by existing reporting programmes. In the absence of a centrally available data source, each new programme will require its own reporting system, adding to the average number of reports required of reporting entities and hence to the annual variable cost to reporters. Industry has clearly indicated that it considers the current reporting environment inefficient and the burden of reporting to multiple programmes unacceptably high.

The need for regulation

There are likely to be **limits** to the extent to which existing reporting requirements in all jurisdictions can be streamlined through a single reporting system without a legislative underpinning. There could be legal obstacles related to data collection and transfer across jurisdictions due to the range of confidentiality provisions under current programmes. There are also likely to be practical reasons why some programmes are less able to be adapted to a streamlined data collection framework.

Also, a **voluntary approach** to streamlining may not be fully effective in removing existing, duplicative reporting requirements or restricting the future growth of reporting requirements. In practice, programme managers would be reluctant to abandon their own reporting requirements, particularly where these were needed to meet legislated obligations, in favour of a reporting system without legislative backing. Programme managers would have concerns about their access to collected data, the continuation of the reporting system and the quality of data reported. This problem could be addressed by legislating a requirement for jurisdictions to remove duplicative reporting requirements and ensure that future greenhouse and energy data needs were met through the streamlined system, where possible.

There are also significant problems with the current greenhouse and energy reporting environment that will not be addressed by streamlining alone. The overall data set provided through existing programmes is **incomplete**, not consistently robust and **often not comparable** across jurisdictions and between programmes. The sectoral coverage, thresholds and emissions focus of reporting requirements varies significantly between programmes in different jurisdictions, as does the degree to which data are subject to verification.

Although approximately 60% of Australia's greenhouse gas emissions in the sectors investigated in the cost benefit analysis at Attachment B are covered by reporting under existing programmes, only a **fraction of the data collected are available** to any one programme or jurisdiction, due to confidentiality provisions and a lack of data sharing protocols between programmes and jurisdictions.

It is estimated that around 60% of companies that would trigger a reporting threshold of 50 kt CO₂-e or 200 TJ of energy annually are already reporting to one or more mandatory or voluntary programmes. However, **significant data gaps** exist where other

companies, which are not currently covered by mandatory programmes, choose not to report under voluntary programmes.

The Commonwealth, State and Territory governments have found that current data collections are not adequate to meet their needs, and have an interest in increasing the **quality of the information** about greenhouse gas emissions and energy use/production in the economy that they can access. This information is necessary for:

- compiling national energy statistics in order to supply governments and industry with vital data;
- meeting Australia's reporting obligations as a member of the International Energy Agency, reporting to the United Nations and participating in Asia Pacific Economic Cooperation (APEC) energy programmes;
- compiling the National Greenhouse Gas Inventory (NGGI) in order to meet Australia's reporting obligations under the UN Framework Convention on Climate Change;
- general economic and trade forecasting and planning;
- planning, implementing and monitoring national-level greenhouse gas reduction and energy efficiency programmes; and
- planning, implementing and monitoring State-level greenhouse gas reduction and energy efficiency programmes.

The range of data needs is relatively wide, partly because of the differing policy approaches to greenhouse gas reduction taken by the various governments. Some of the more complex reporting requirements come out of the structuring of programmes to fit jurisdictional boundaries, both regulatory and geographical. For example, the accounting needs of a State-based baseline-and-credit scheme such as the NSW Greenhouse Gas Abatement Scheme may be more complex than would necessarily be the case for, say, a national emissions permit trading scheme.

The data collected by the FES, including from around 280 companies (representing around 2 500 sites) that use or produce more than 100 TJ energy annually, are more detailed than energy data collected by other programmes. The high quality and detailed data provided through the FES are essential to provide Australia's national energy statistics, which are the basis of efficient and effective energy policy and vital to meeting Australia's international reporting obligations under the International Energy Agency Energy Agreement and the United Nations Framework Convention on Climate Change.

The number of companies responding to the FES has been **declining over time**, as companies have been more reluctant to report voluntarily in light of increasing reporting demands under other programmes. If the integrity of this data collection is not maintained, Australia's energy policy processes and compliance with international obligations would be compromised.

Over the past decade there has been some **deterioration** in the greenhouse and energy data available to governments, whether collected by the FES or directly reported. For

example, the share of power generation energy use covered by direct reports has fallen from near 100% in the early 1990s (when most generators were publicly owned) to about 80%. The balance of fuel use (and emissions) is now indirectly inferred from other data sources.

Effective energy efficiency and greenhouse reduction programme **planning** relies on more detailed information, including how the energy delivered to customers is actually used. For residential and smaller business users, this information can be gathered by random survey and statistical methods. The wider variability of energy use in medium to large manufacturing businesses, however, requires more direct reporting.

Many policymaking agencies spend considerable resources in commissioning special studies, trying to access data from other agencies in the face of jurisdictional and confidentiality barriers, and making comparisons across data sets which are often inconsistent. It is likely that they would be in a better position to develop **informed policies** if they could access the same, high-quality data set. Greater co-ordination of data collection would also provide a better base for assessing the impacts of energy efficiency programmes.

Improved data availability and quality would also enhance the ability of policymakers to **assess, implement and monitor** a range of other potential measures for addressing greenhouse gas emissions which current greenhouse and energy reporting programmes could not support. Recognising this, most State and Territory governments have indicated an intention to introduce new reporting requirements. As mentioned above, State and Territory governments are considering new measures that will require additional reporting by business. While programmes such as these may go some way towards addressing data gaps, they would not provide all the data necessary for national energy statistics, and may lead indirectly to a further reduction in reporting to the FES.

The **non-reporting** by a significant number of companies that would trigger a reporting threshold of 50 kt CO₂-e or 200 TJ of energy annually means that these companies may not have an active greenhouse and energy management plan in place. Many greenhouse and energy programmes are based on the premise that reporting entities derive benefits from their participation in greenhouse and energy reporting, including:

- the value to corporate image and reputation of participation in the reporting programme;
- enhanced credibility of the entity's public statements regarding its emissions;
- a general interest in increasing the quality of national energy and greenhouse data; and
- focussing the entity's attention on opportunities for increasing energy efficiency and reducing greenhouse gas emissions that it would not otherwise be aware of.

Public scrutiny of companies' emissions may encourage greenhouse gas emission reductions and more efficient use of energy, as public perceptions of companies are at stake. However, company-level data are not available in a consolidated, publicly accessible format under current arrangements.

Many companies are aware of public and investor interest in their energy use and emissions. ‘Triple bottom line’ reporting on financial, social and environmental indicators is becoming widespread among global and national companies.

The work of the Carbon Disclosure Project – an international initiative encouraging large companies to disclose information on their exposure to carbon risks – has demonstrated that there is a **substantial demand for this information amongst institutional investors** to support decision making. The Carbon Disclosure Project encourages the FT500 largest companies in the world to publicly disclose information on their greenhouse gas emissions. The most recent report of the Carbon Disclosure Project states that 225 institutional investors are signatories to the project, representing over US\$31.5 trillion in assets globally. Climate change related risks to companies identified in the report as reasons for public disclosure of emissions data include: regulatory risks resulting from national and international regulations to curtail greenhouse gas emissions; competitive risks generated by a possible decline in consumer demand for energy-intensive products and a rise in costs for energy-intensive processes; and reputational risks from perceived inaction on climate change.

Companies, and their industry associations, also wish to **publicise their efforts** to reduce emissions and to increase the efficiency of their resource use, including energy and water. Gaining recognition for such efforts is a major incentive for participation in voluntary programmes such as Greenhouse Challenge Plus.

This creates some tension between the perceived value of public disclosure of greenhouse and energy data which can be seen in a positive light and the wish to withhold data which could reveal information of use to competitors. Some companies resolve this tension by publicising their efforts to reduce emissions and their estimates of emissions saved, while not revealing the absolute level of emissions or the trend over time. Some report total emissions (in CO₂-e), and sometimes emissions per unit of output, but do not report energy use, emissions broken down by source or separate fuel, or the level of output.

Some companies try to follow one or more of the guidelines for *calculating* emissions, such as those of the Greenhouse Challenge Plus or the World Business Council for Sustainable Development. However, there is no standard format for publicly *reporting* emissions, which for complex entities means combining data from a large number of disparate sites and operating entities and presenting them in a way that is both internally consistent and comparable with other companies.

Those trying to provide data in good faith have to develop their own reporting formats (or select from a wide range of possible formats) and convince data users that the method of data collection is valid, and has been rigorously applied.

Users of data are rarely in a position to compare different companies’ emissions or emissions-reduction performance because of **inconsistency of data formats**, legitimate doubts about **consistency of method and quality** and the **lack of sufficient disaggregation** of reported results to allow users to check at least some of the assumptions.

3. Objectives

Recognising the above problems, the Commonwealth, State and Territory governments have agreed to work together to develop a nationally consistent framework to streamline and strengthen greenhouse and energy reporting by business that will meet the current and prospective reporting needs of government, business and the public.

To this end, the proposed mandatory reporting system would meet the following objectives:

1. To provide a single, cooperative, streamlined reporting system for greenhouse and energy data across all jurisdictions that imposes the least cost and red tape burden needed to maintain the integrity of existing national data collections;
2. To provide for the removal of current, and avoidance of future, duplicative reporting requirements;
3. To provide greenhouse and energy data that are nationally consistent, robust and comparable across jurisdictions to inform decision making on greenhouse and energy policy and actions by government and business; and
4. To make information on the greenhouse and energy related performance of companies available to the public, while maintaining the confidentiality of commercially sensitive information.

4. The proposed national reporting system and alternatives

Introduction

The proposed national reporting system, including purpose-built national legislation, is described below, along with regulatory and non-regulatory alternatives to the proposed approach.

Several alternatives refer to the streamlining of greenhouse and energy reporting. Streamlining in this RIS means the replacement of existing duplicative greenhouse and energy reporting processes, both voluntary and mandatory, with a single online reporting system. Streamlining could be pursued with or without a regulatory underpinning, with varying degrees of success.

Under any regulatory approach, the threshold levels define the number of companies that would be required to report and the proportion of national emissions that would be reported. Thus, threshold levels would be the key determinant of the costs and benefits of the proposed national reporting system.

The lower the threshold level, the higher the number of companies required to report, the greater the total reporting and administration costs and the greater the coverage of emissions and energy data available to government and other stakeholders. While a higher threshold would involve less cost, there is a risk that existing national data collections would not be maintained.

Three different threshold settings, explored in the analysis at Attachment B, are described in Table 4.

Table 4: Threshold models analysed in Attachment B

Model 1	Mandatory reporting of company-wide emissions and energy data by companies above 50 kt of CO ₂ -e or 200 TJ of energy
Model 2	Mandatory reporting of company-wide emissions and energy data by companies above 25 kt of CO ₂ -e or 100 TJ of energy
Model 3	Mandatory reporting of company-wide emissions and energy data by companies above 50 kilotonnes (kt) of carbon dioxide equivalent (CO ₂ -e) or 200 terajoules (TJ) of energy annually <u>plus</u> reporting of site-level emissions and energy data for sites that exceed 25kt CO ₂ -e or 100TJ of energy

Facility-level thresholds were also explored in the analysis at Attachment A, including thresholds set at 1 kt CO₂-e, 5 kt of CO₂-e, 10 kt of CO₂-e, 25 kt of CO₂-e and 125 kt of CO₂-e and equivalent energy use/production levels.

These threshold levels could apply under any regulatory approach.

Option I. The proposed national reporting system: Streamlined reporting underpinned by purpose-built legislation

(i) Overview

It is proposed that national purpose-built legislation be developed to underpin a nationally consistent framework for streamlined greenhouse and energy reporting by industry. In addition, all elements of the proposal to streamline greenhouse and energy reporting outlined below under Option IV: *Non-regulatory alternative: Streamlining without new legislation* would be pursued as part of the preferred alternative.

The form of the legislation has not been decided. Options include stand-alone Commonwealth legislation, or a mirror legislative model under which legislation would be enacted in all participating jurisdictions.

The legislation would provide for mandatory reporting of greenhouse and energy data by business through a single, online entry point. An online reporting tool will be developed in parallel to the development of the legislation. The online tool will be based on the Greenhouse Challenge Plus Programme’s Online System for Challenge Activity Reporting (OSCAR), which will require significant modification to meet the requirements of the national reporting system.

The Commonwealth, State and Territory governments are committed to removing existing duplicative reporting requirements within their jurisdictions where their current data needs can be reasonably met by the proposed national mandatory reporting system. This commitment also applies to any future reporting requirements.

Programmes proposed for inclusion in the streamlined reporting system are listed in Table 5.

Table 5: Programmes proposed for inclusion in the streamlined reporting system

<p>ABARE Fuel and Electricity Survey (ABARE FES)</p> <p>Energy Efficiency Opportunities (EEO)</p> <p>Greenhouse Challenge Plus (GCP) – including Greenhouse Friendly (GHF) and Generator Efficiency Standards (GES)</p> <p>National Greenhouse Gas Inventory (NGGI)</p> <p>National Pollutant Inventory (streamlining to focus on fuel consumption data)</p> <p>Queensland EcoBiz</p> <p>Northern Territory GHG Reporting Programme</p> <p>NSW Energy Savings Plans</p> <p>South Australian Greenhouse Strategy</p> <p>Protocol for Environmental Management; Greenhouse Emissions and Energy Efficiency in Industry (EPA Victoria Industry Greenhouse Programme)</p> <p>NSW/ACT Greenhouse Gas Abatement Scheme</p> <p>Mandatory Renewable Energy Target (MRET)</p> <p>Queensland 13% Gas Scheme</p> <p>WA Greenhouse Gas Inventory (WAGGI) (Proposed)</p> <p>Victorian Environment Protection (Amendment) Act 2006 – Environment and Resource Efficiency Plans (effective 1 July 2007)</p>

The Commonwealth, State and Territory governments will establish and implement a Plan of Action to further streamline greenhouse and energy reporting that will include:

- Transition arrangements from the current reporting environment to use of the national reporting system, including approaches to dealing with current differences between programmes (for example with regard to emission/energy factors, reporting methodologies, verification and compliance procedures);
- Phased removal of existing duplicative reporting requirements;
- Expansion of the streamlining data set to include additional, non-mandatory company-level information including action plans, abatement data, energy efficiency savings, emissions and energy projections, performance/intensity indicators, benchmarks and standards, and standardisation of verification procedures;
- Further development and refinement of the online reporting tool to better meet the needs of governments, reporting entities and data users; and
- Rationalisation of greenhouse and energy programmes.

In addition, further exploration of the integration of greenhouse and non-greenhouse emissions reporting by business, which could lead to further streamlining of emissions data reporting, may be considered following implementation of the national reporting system for energy and greenhouse data.

Detail on the key design elements of the legislation is elaborated below. Much of the operational detail of the national reporting system will be elaborated through guidelines, including Reporting Guidelines.

(ii) Objects clause

The legislation would include an objects clause reflecting the objectives set out in section 3 above. This clause would provide transparency regarding the purpose of the legislation and guide its implementation and future development.

(iii) Thresholds for reporting

Thresholds will be set that, at a minimum:

- maintain the integrity of appropriate national energy and greenhouse gas emission data collections and provide for a picture of industry greenhouse gas emissions and energy consumption and production in Australia by state/territory and industry; and
- do not significantly increase the cost to business.

To deliver on these aims, the proposed approach to thresholds includes:

1. a company-level threshold to be phased in during the first three years following commencement of the legislation, set at:
 - a) 125 kilotonnes (kt) of carbon dioxide equivalent (CO₂-e) or 500 terajoules (TJ) of energy annually for the first year;
 - b) 87.5 kt CO₂-e or 350 TJ of energy annually for the second year; and
 - c) 50 kt CO₂-e or 200 TJ of energy annually for the third and subsequent years.
2. a facility-level threshold of 25 kt CO₂-e or 100 TJ of energy annually to apply from the start of the new system;
3. reporting of company-wide emissions/energy data by all companies triggering the above thresholds (the possibility of requiring companies triggering only the facility threshold to report only data relating to facilities above this threshold will be reconsidered during the development of the legislation).
4. formal review and possible amendment of the threshold levels following submission of the first reports subject to threshold (c) above, to ensure that the threshold is set at an appropriate level that maintains appropriate coverage levels and does not impact significantly on small enterprises.

The thresholds would apply to the combined total of gross scope 1 (fuel and energy produced or consumed and greenhouse gas emissions produced directly by the company) and gross scope 2 (greenhouse gas emissions from consumption of electricity, heat or steam imported from sources outside the company boundaries) data. Company-level thresholds would be applied at the highest level of the corporate structure rather than to subsidiaries. Scope 3 emissions and emissions offsets would not be considered in applying the threshold, but would be reported by companies participating in mandatory reporting, at their discretion.

Companies falling below the thresholds could participate in the national reporting system by voluntarily joining one of the programmes listed in Table 5. There may be

some opportunity for companies that fall below the thresholds to elect to participate in the legislated elements of the reporting system, including compliance provisions, although these companies may be required to cover the administrative costs to government resulting from their participation.

It is recognised that the proposed model introduces a greater level of complexity to the threshold design than has been considered in previous consultations. However, the different elements are intended to deliver on the above aims in different ways. The company-level threshold is intended to exclude companies with relatively low total emissions/energy use or production, while the lower, facility-level threshold is intended to capture large facilities operated by companies that do not trigger the company-level threshold, recognising the significance of facility-level data to existing data collections.

Table 6 illustrates how the threshold system would work for greenhouse gas emissions for three hypothetical companies, each with three facilities. Company A, with company-wide emissions of 125 kt CO₂-e, would trigger the company-level threshold. Company B, with company-wide emissions of 40 kt CO₂-e and a highest facility-level emissions figure of 20 kt CO₂-e, would not trigger either the company-level or facility-level thresholds. Company C, with company-wide emissions of 40 kt CO₂-e and a highest facility-level emissions figure of 25 kt CO₂-e, would not trigger the company-level threshold, but would trigger the facility-level threshold.

Company A would be required to report company-wide emissions. Company C would be required to report only emissions from Facility X – data from facilities Y and Z would not be reported. Company B would not be required to report any emissions.

Table 6: Application of threshold model to hypothetical companies

Company	Facility	Triggers company threshold?	Triggers facility threshold?	Reports
A: 125 kt CO ₂ -e	X=60kt	✓	✓	Company-wide emissions (125 kt CO ₂ -e)
	Y=40kt			
	Z=25kt			
B: 40 kt CO ₂ -e	X=20kt	✗	✗	Not required to report
	Y=15kt			
	Z=5kt			
C: 40 kt CO ₂ -e	X=25kt	✗	✓	Facility X emissions only (25 kt CO ₂ -e)
	Y=10kt			
	Z=5kt			

(iv) Data subject to mandatory reporting

This section deals with the data to be submitted by companies to government – it does not deal with data to be made public, which is covered under *Public disclosure* below.

The key data to be provided through the proposed national mandatory reporting system would be fuel and energy produced/consumed by fuel type and equipment type, emissions of each of the six Kyoto Protocol classes of gases (where methodologies permitted separate estimation of the gases), and total emissions of the six classes of greenhouse gases in carbon dioxide equivalent. The six Kyoto Protocol classes of gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆). Fuel types and equipment types would be similar to those currently used by the ABARE Fuel and

Electricity Survey (an indicative list is at Appendix 1). The list of fuel and equipment types will be refined during the development of reporting guidelines under the legislation.

The legislation would apply to companies in all sectors of the economy. Reporting of emissions from all *IPCC emissions sectors*, except agriculture and land use change and forestry, would be mandatory from the outset of the national system. Reporting of agricultural emissions would not be mandatory in the first instance, as methodologies in the agriculture sector are not yet sufficiently robust to provide meaningful data at the company level. Reporting of agricultural emissions would become mandatory once robust methodologies were available. Work to develop such methodologies is being carried out by the Australian Greenhouse Office and COAG.

Emissions from the land use change and forestry sector would not be mandatory unless companies were also reporting carbon sinks within their own boundaries, because Australia already has in place a system to provide detailed data on emissions from land use change and forestry – the National Carbon Accounting System. While not mandatory, reporting of emissions from all IPCC sectors would be encouraged.

Data would be reported to facility-level resolution (although companies would have the option of aggregating smaller sites – see *Aggregation level for data collection* below), with separate reporting of scope 1 and scope 2 data. The applicable emissions and energy data for each facility would be those included in Scopes 1 and 2, as defined in the *GHG Protocol* operational boundary definitions. These would include fuel and energy produced or consumed and greenhouse gas emissions produced directly by the company (Scope 1), and greenhouse gas emissions from consumption of electricity, heat or steam (Scope 2) imported from sources outside the company boundaries. Scope 1 and Scope 2 data would be reported separately.

These key data will in most cases be an output of the online reporting tool, rather than reported directly by the company. Where data are provided through standard default methodologies (see *Emissions/energy factors and methodologies* below), companies would report underlying activity data, to which standard energy content conversions and emissions factors will be applied. A list of data elements applying to the default methodologies is provided for information at Appendix 2.

The online reporting tool will enable uploading/downloading of information to/from in-house reporting systems.

Box 3 illustrates the types of data that may be reported by a company – in this example, data relating to cement manufacture.

Box 3: Emissions and energy data from cement manufacture

Cement manufacture involves grinding and heating of raw materials (including ‘calcination’ of limestone to calcium oxide), production of clinker from these materials, grinding of clinker, and addition of other materials. The main emission sources are CO₂ released from calcination, heating in cement kilns (combustion of gas, coal, biomass, used tyres, etc), and electricity consumption for mechanical grinding and blending.

Cement manufacturers would be required to submit the following data. *Only data identified as public data (see section on Public Disclosure) would be disclosed.*

- fuel consumed by fuel type and equipment type, and associated direct CO₂-e emissions (scope 1);
- quantity of clinker produced and associated direct CO₂ emissions (scope 1);
- electricity consumed by equipment type and associated indirect CO₂-e emissions (scope 2);
- emission and energy conversion factors and methods used (if not standard factors and methods).

Companies could also report voluntarily:

- offsets acquired from third parties by source and type;
- other indirect emissions (scope 3);

Information about the reporters would also need to be provided. This would include:

- Contact information – minimum information would include the registered business name of the company, trading name (if different), ABN/ACN, postal and street addresses, primary and secondary contact persons and details;
- Corporate hierarchy – including subsidiaries and business units;
- Primary Australian and New Zealand Standard Industry Classification (ANZSIC) for each facility; and
- Location of company and facilities being reported on individually by street address.

Companies would also be able to report offsets acquitted under government programmes in participating jurisdictions. Some contextual information, including the scheme under which the offsets were acquitted, would need to be reported with offsets. Where a company reported offsets in the agriculture or land use change and forestry sectors within its own boundaries, it would also need to report its emissions or emitting activities in those sectors to ensure balanced reporting. Consideration will be given to including offsets in the mandatory data set.

Companies could also report other data on a voluntary basis, including greenhouse gas emissions from indirect activities (*GHG Protocol Scope 3*), companies’ actions to reduce emissions and make more efficient use of energy, and other contextual data and information.

Offsets and scope 3 data would not be considered in applying mandatory reporting thresholds, and would need to be reported separately from scope 1 and scope 2 data.

(v) Emissions/energy factors and methodologies

As a default, companies would report using Australian Bureau of Agriculture and Resource Economics Fuel and Electricity Survey (ABARE FES) energy content factors listed in the ABARE FES fuel type summary and fuel codes, and standard emission factors and methodologies from the *AGO Factors and Methods Workbook*, as updated from time to time, in line with improvements to the methodology supporting the National Greenhouse Gas Inventory and in consultation with all participating jurisdictions.

Company-specific factors and methods, or direct emissions measurements, could be approved, in consultation with all participating jurisdictions, where these were more accurate than the default methods specified in the ABARE FES and the *AGO Factors and Methods Workbook* and consistent with the National Greenhouse Gas Inventory methodology. Approval procedures would be established for this purpose under the legislation.

Emissions data would be calculated and reported to the nearest calculable tonne using either the default or approved alternative emissions factors and methodologies and the relevant activity data.

(vi) Data quality

The accuracy of reported data would be dependant on the quality of the underlying data. Reporters would be encouraged to assess their data gathering processes and to improve these processes over time. Guidance on data sourcing, record keeping and ongoing monitoring and review of data sets by the reporting entity would be set out in the reporting guidelines.

(vii) Aggregation level for data collection

It is proposed that data be reported by companies to facility-level resolution. That is, companies would report data on individual facilities, although they would have the option of aggregating smaller facilities for reporting purposes.

To provide for cost-effective reporting of small sites while still providing useful data, the online reporting tool will offer reporting entities with a number of smaller sites the option of aggregating those sites for reporting purposes to 3 digit ANZSIC level for industrial facilities and 2 digit ANZSIC level for commercial/transport operations and by state/territory.

Statistically valid site sampling could also be undertaken in accordance with international practices and the reporting guidelines, and the results extrapolated across similar small sites. For example, a business could assess a sample of retail outlets that is representative of a larger population of outlets; a sample of vehicles that is representative of a larger fleet of vehicles (road, rail, air or water) or a sample of machines or processes that are used in the same way at other sites, or a sample of commercial buildings that is representative of a population of commercial buildings. Companies would need to provide information on the methodology used.

Companies would not be permitted to aggregate any individual sites over the facility-level threshold of 25 kt CO₂-e or 100 TJ of energy annually.

Additional guidance on the treatment of small sites would be provided in the reporting guidelines.

(viii) Frequency of reporting

Companies would be required to submit reports once annually.

Reports would be due no later than four months after the end of the reporting period. The default reporting period would be the Australian financial year, although companies would be able to nominate a calendar year reporting period when they register as a reporting entity under the legislation.

To enable collation of data on either a financial or calendar year basis to meet the different needs of government programmes, the online reporting tool would divide the data into two equal halves, unless companies voluntarily provided their data in more accurate six-month blocks. Where data are provided in a single block, companies would be required to advise of any significant differences between the first and latter halves of the reporting period, for example the acquisition or commissioning of new plant increasing emissions.

(ix) Public disclosure

In this document public disclosure refers only to the publication of data in the public domain. Disclosure of data other than by publication in the public domain is dealt with under *Data security and access* below.

It is proposed that company-level data be made publicly available online by the national reporting system.

For greenhouse gas emissions, the basic level of disclosure would be a single aggregated total of gross emissions in CO₂-e (i.e. combining scope 1 and scope 2 emissions). Only total energy consumed and produced would be required for public disclosure.

Provision would be made in the legislation to publicly disclose additional data where the company had given its consent or requested to do so. Data for voluntary disclosure would include gross scope 1 emissions, gross scope 2 emissions, total offsets, total net emissions, underlying activity data, companies' actions to reduce emissions and make more efficient use of energy, and indicators such as greenhouse gas emissions per unit of production.

Companies would still be bound by disclosure protocols of existing programmes in which they participate.

The legislation would establish a procedure through which companies could apply to have confidential data exempted from public disclosure, where necessary to protect commercial confidentiality. Each application would be considered on a case-by-case basis against set criteria, based on the principle that there would be no public disclosure of information that could reveal proprietary business, competitive or trade secret information about a specific facility, technology or corporate initiative.

The administrator of the mandatory reporting scheme would be empowered to publish additional data appropriately aggregated, for example, by ANZSIC code, region or

locality, fuel type and equipment type. This activity would be coordinated with other data and statistical agencies to avoid duplication. Rules safeguarding commercial confidentiality, developed by the Australian Bureau of Statistics, would apply to the disclosure of such data.

(x) Data security and access

This section deals with data security and the circumstances and conditions under which access may be given to data that is not publicly disclosed. Relevant models would be considered in preparing the legislation, for example legislation related to the Australian Bureau of Statistics, the Australian Taxation Office and the *Renewable Energy (Electricity) Act 2000*.

Data security

The legislation would require that the data be stored securely in a centralised database and that confidentiality arrangements be put in place. The legislation would allocate responsibility for data security, including for establishing relevant protocols and procedures governing data security and access, physical security of premises where data is stored and enforcement of confidentiality requirements (see *Compliance* below).

Data access

To enable streamlining of reporting across jurisdictions, governments would agree to use the national reporting system where it could reasonably meet existing greenhouse and energy reporting needs and needs under the proposed national legislation. To ensure continued streamlining into the future, provision would be made in the legislation for the national reporting system to be used, where possible, as the data collection tool by new greenhouse and energy programmes that are established at a time later than the preparation of the legislation.

The legislation would require the administrator (see *Roles and responsibilities* below) to make available to each jurisdiction:

- All reported data related to all facilities located within that jurisdiction;
- Data relating to all facilities in all jurisdictions aggregated by jurisdiction and ANZSIC code;
- Additional data covered by an agreement between the Administrator and another agency; and
- Additional data which the company concerned has consented to disclose to a jurisdiction.

Data made available to jurisdictions under the national system may only be used for:

- All existing purposes for which greenhouse and energy data currently collected under the programmes listed in Table 5 are used;
- Informing decision making on greenhouse and energy policy and actions;
- Undertaking legal proceedings connected with the national reporting system or with the current and future energy or greenhouse programmes that are agreed to be

included in the national reporting system, including with regard to compliance, verification and breaches of energy or greenhouse laws;

- Publication of reports on greenhouse gas emissions and energy, consistent with the confidentiality provisions relating to the national greenhouse and energy reporting system; and
- Purposes relating to greenhouse emissions and energy use, in connection with other legislative instruments.

Agreements between the Administrator and agencies would identify persons authorised to access data; confidentiality protocols, including methods for recording access, and preventing and reporting unauthorised access; and purposes for which data may be used. For example, data may be provided for policy analysis and program development, management and assessment.

(xi) Definition of company boundaries

The company at the top of the corporate hierarchy will be defined as the reporting entity rather than a subsidiary. The proposed approach to defining boundaries around company activities (organisational boundaries) within which greenhouse and energy data will be collected and reported is for the reporting entity to report all emissions and energy data relating to facilities/sites over which they have operational control.

Operational control is attributed to a company, or one of its subsidiaries, if it has full authority to introduce and implement its operating policies at an operation. Operational policies include occupational health and safety, and environmental policies. Operational control does not necessarily mean the ability to make all decisions for an operation.

Operational control is distinct from equity share or financial control. While financial and operational control are aligned in most cases, a company that owns an interest in an operation does not necessarily have operational control over that operation. For example, under a joint venture the company that has responsibility for, and control over, the operation of a jointly owned facility may not have financial control over the facility. Guidance on operational control is provided in the WRI/WBCSD Greenhouse Gas Protocol *Corporate Accounting and Reporting Standard*.

Some complexities will need clarification in the legislation, for example, in relation to leased buildings and contracting out. It may be preferable for the lessee of a building to include electricity use in their inventory where they pay the bill despite some ambiguity over whether they have operational control.

While reporting using operational control would be mandatory, companies would be able to provide additional data voluntarily, based on equity share or financial control to define organisational boundaries.

In exceptional circumstances, where the application of operational control would give rise to unreasonable complexity and cost, a company may apply to the Administrator, on the basis of agreed criteria, to report using financial control or equity share methods. In these cases, the company would be required to explain how the alternative method would change reported data.

(xii) Independent verification

An independent verification system would be established and companies would be required to keep adequate records to allow independent verification of reports. It would be anticipated that all companies would aim for best-practice reporting and continuous improvement in ascertaining the company's emissions in order to capture the benefits of greenhouse reporting such as the identification of opportunities to reduce emissions and the management of greenhouse risks. Independent verification and the required levels of report completeness and data accuracy would be based on the principles of best-practice reporting as described in the *GHG Protocol* and outlined in detail in the verification guidelines.

To ensure an adequate supply of verifiers, the Administrator could, if necessary, coordinate verifier training and accreditation with administrators of other greenhouse and energy programmes.

A proportion of companies would be subject to independent verification each year. As a basic approach, companies would be chosen randomly for verification. In addition, more targeted verification could be conducted based on a risk management approach. The administrator of the national reporting system would have responsibility for establishing a panel of appropriately qualified independent verification providers and for arranging verification of reports.

If verification of the same, equivalent or higher standard by an accredited verifier had been initiated by a company or another agency, this could be recognised as satisfying verification requirements under the national reporting system. A procedure based on transparent criteria would need to be established for the recognition of alternative verifications in the verification guidelines.

The Greenhouse Gas Emissions & Energy Data Office would bear the cost of verification except where verification had been initiated by the company or another agency.

Best practice reporting requires companies to capture all emitting activities as accurately and as completely as possible. In order to reduce the reporting burden it will be suitable to estimate the impact of activities where emissions are difficult to quantify and where the inaccuracies introduced by estimation are immaterial. Materiality refers to the relative significance of discrepancy (error, omission or misrepresentation) in the company's reports.

A discrepancy is material if a decision based on the report by any party would change if the discrepancy was corrected. Verifiers would determine what represents a material discrepancy when undertaking a verification using their own professional judgment and taking into account company characteristics and the potential use of the reported data. Further guidance on what constitutes a material discrepancy could be provided in the verification guidelines.

Independent verification would identify any material discrepancies in company reports and identify suitable amendments. A company may be requested to rectify such inaccuracies or rectify any record-keeping discrepancies that prevent verification within a prescribed period.

(xiii) Compliance

The compliance provisions of the legislation would be informed by *A Guide to Framing Commonwealth Offences, Civil Penalties and Enforcement Powers* (Australian Government Attorney-General's Department, 2004) and relevant models will be considered, including the *Energy Efficiency Opportunities Act 2006* and the *Renewable Energy (Electricity) Act 2000*.

Key compliance steps could include:

- Registration by companies likely to exceed the reporting threshold, during the first six months of the first reporting period;
- Submission of the report within the required timeframe; and
- Verification that the report is to the required standard.

A compliance pyramid would be established, under which the compliance response would be escalated gradually, from a cooperative approach through to legal action. The sequence of actions taken where reporters were found to be out of compliance could include:

- Verbal advice;
- A warning letter; and
- Legal action with penalties sought.

Appropriate penalties could apply to:

- Failure to keep records (companies would be required to maintain sufficient records to enable verification of data, for a specified time);
- Failure to lodge report;
- Providing false or misleading information;
- Failure to provide information that is required;
- Breaches of confidentiality requirements.

(xiv) Roles and responsibilities

Participating jurisdictions

Some of the roles and responsibilities of the participating jurisdictions will be defined in the proposed legislation. Accompanying the proposed legislation will be an agreement between the Commonwealth, State and Territory governments, which will further elaborate arrangements for the governance of the national reporting system, including roles and responsibilities.

Table 7 presents a model for roles and responsibilities under the proposed legislation, as well as arrangements that would primarily be established under the governance agreement.

Involvement of stakeholders

The involvement of stakeholders, including data reporters and users, will be important in developing and implementing the national reporting system. Stakeholder input will be sought in elaborating detailed elements of the reporting system such as reporting guidelines and processes for treatment of confidential information. It is also proposed that stakeholders would be involved in the work of a Reporting Advisory Group, which would have responsibility for matters such as the development of reporting guidelines (see Table 7 below).

Table 7: A model for roles and responsibilities which could be assigned under governance arrangements and legislation

Governance Agreement	Greenhouse Gas Emissions and Energy Reporting Act
COUNCIL OF AUSTRALIAN GOVERNMENTS	PARLIAMENT
<ul style="list-style-type: none"> • Sign intergovernmental agreement and any amended versions 	
MINISTERIAL COUNCIL	MINISTER/S
<ul style="list-style-type: none"> • Oversee implementation of, and provide policy guidance on, national reporting system, including general oversight of intergovernmental agreement and legislation • Approve draft legislation (initial bill, amendment bills and proposed regulations, including reporting guidelines) • Develop and implement action plan to streamline reporting • Monitor operational performance of national reporting system, and report to COAG on strategic issues • Coordinate with other ministerial councils on greenhouse and energy reporting • Initiate review of national reporting scheme, intergovernmental agreement and legislation in accordance with review provisions in intergovernmental agreement and legislation • Agree changes to national reporting system • Recommend to COAG any proposed amendments to intergovernmental agreement • Respond to stakeholder and other advice on issues relating to national reporting system • Nominate State and Territory members of Reporting Advisory Group • Oversee work of Reporting Advisory Group • Agree annual budget and work programme of national reporting system, including Greenhouse Gas Emissions and Energy Data Office. 	<ul style="list-style-type: none"> • Must obtain agreement of Ministerial Council on initial bill, any amendment bills and proposed regulations – this requirement to be specified in intergovernmental agreement and, if possible, legislation [advice is being sought on this matter]. • Must not hinder Administrator from performing functions and duties (e.g. distributing data to jurisdictions or disclosure of ‘public’ data, as authorised by legislation) • May refer matters to Administrator for advice • May require Administrator to provide information necessary to meet ministerial accountabilities and duty to uphold laws of Commonwealth • Table annual reports on national reporting system in parliament • Ensure decisions of Ministerial Council are acted on
REPORTING ADVISORY GROUP	ADMINISTRATOR Statutory office holder
<p>To comprise Chairperson, Administrator or delegate (ex officio), representatives of each jurisdiction, and non-government members with relevant qualifications and expertise.</p> <ul style="list-style-type: none"> • Develop reporting guidelines and factors and methods • Implement streamlining work programme, including 	<p>Greenhouse Gas Emissions & Energy Data Office Non-statutory body; administrative unit within an existing agency.</p> <ul style="list-style-type: none"> • Administer national greenhouse and energy reporting system • Collect, compile, analyse and disseminate

<p>investigation of non-inventory greenhouse/energy data</p> <ul style="list-style-type: none"> • Provide advice to Administrator on technical matters related to administration of legislation, including development of online reporting tool, applications for non-disclosure, use of company-specific factors and methods, etc • Undertake other tasks relating to the national reporting system, as required by the Ministerial Council, including through sub-groups and consultancies as appropriate 	<p>greenhouse and energy data</p> <ul style="list-style-type: none"> • Provide access to database and data to Commonwealth, State and Territory bodies as required by legislation, and—by arrangement with other agencies—other services, advice or assistance relating to greenhouse and energy data • Arrange public disclosure of ‘public’ data • Ensure inter-jurisdictional coordination of operations related to national reporting system, including ongoing streamlining of reporting, provision of training and technical advice to reporting entities, public awareness, and compliance activities • Formulate, and ensure compliance with, standards for carrying out data operations • Operate national online reporting tool and make it available to reporting entities and jurisdictions • Approve applications for non-disclosure of data, and company-specific factors and methods • Accredite third-party verifiers • Ensure compliance with mandatory reporting requirements
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(xv) Timeframe for legislative framework

It is envisaged that mandatory reporting under the national reporting system would begin no later than 1 July 2008, with submissions of first reports due by the end of October 2009.

To effect a smooth transition to the new system, prior to this date the Commonwealth, State and Territory governments would amend the relevant programmes, whether mandatory or voluntary, to enable collection of greenhouse and energy data covered by the national reporting system exclusively through the national online reporting tool.

Companies would be encouraged to participate, on a voluntary basis, in a trial reporting period in 2007-08, with submission of reports for the reporting period submitted by the end of October 2008.

Option II. Baseline 1: No change to current reporting arrangements

This alternative would involve no action by COAG to streamline current reporting arrangements.

It should not be seen as a ‘do-nothing’ option for COAG or a ‘business as usual’ scenario, as it would require all jurisdictions to refrain from introducing any new programmes requiring new greenhouse and energy reporting arrangements in the future, including where jurisdictions have already indicated an intention to do so. Effectively, this alternative would require an agreement by all jurisdictions to that effect. This is not considered a realistic option but is included as a baseline against which alternatives can be compared.

Table 1 lists current greenhouse and energy reporting programmes.

Option III. Baseline 2: Current and new reporting arrangements

Like *Baseline 1* above, this alternative would involve no action by COAG to streamline current reporting arrangements.

It differs from Baseline 1 in that it would not require jurisdictions to refrain from introducing new greenhouse and energy reporting programmes. Given that there are already new reporting needs being considered by many jurisdictions, this option could be considered a 'business as usual' scenario. It could also be regarded as a 'do-nothing' option because no action would be required of COAG in order for new reporting arrangements to be introduced.

The Western Australian, South Australian, Northern Territory and Victorian governments have indicated commitments to new reporting requirements for their jurisdictions. States and territories are also considering a national emissions trading scheme that would require new data reporting. Furthermore, the COAG communiqué of 14 July 2006 noted that "the States and Territories reserved the right to use the NPI if the Commonwealth, States and Territories failed to reach agreement on national purpose-built legislation at COAG's next meeting." The NPI alternative is discussed separately below.

Option IV. Non-regulatory alternative: Streamlining without new legislation

Streamlining of greenhouse and energy reporting would involve an agreement by all jurisdictions to remove existing mandatory and voluntary greenhouse and energy reporting arrangements and replace them with reporting through a single online reporting tool and standard data set, where data needs can be met through this system.

Streamlining forms part of the preferred approach discussed above, but could also be pursued as a separate alternative without a legislative underpinning.

The programmes proposed for inclusion in a streamlined reporting process in the first instance are listed in Table 5. Other programmes could be included over time.

The national online reporting tool for streamlined reporting would be based on the Online System for Challenge Activity Reporting (OSCAR), currently the online reporting tool for Greenhouse Challenge Plus. OSCAR handles greenhouse, energy, waste, water and cost data. Reporters can submit data online, with a high level of data security. Users can manage their own data and details, and control who can access their data. In-built validation and submission functions highlight data anomalies, reduce reporting times and assist users to produce accurate reports. Users can create charts and tables of data-trends for sectors, business units, regions or facilities.

OSCAR stores all necessary conversion and emission factors to convert energy, fuel, waste and materials consumption data into greenhouse gas emissions in quantities of carbon dioxide equivalent.

OSCAR would need further development to serve multiple programmes and increase functionality. This would include enabling information download from company data systems.

A greenhouse and energy reporting data set would be developed to cover all data that could be reported for programmes identified in Table 5. The data set would be the same as that proposed in Appendix 2 but could also include some additional elements

currently reported under some voluntary and mandatory programmes, such information on energy efficiency and emissions abatement activities.

Not all categories or elements identified in the greenhouse and energy reporting data set would be reported under all programmes. Reporting entities would only report the items required by programme(s) they participate in (and any other items they wish to report voluntarily).

Where companies or facilities are reporting to multiple programmes, not all data would be made available to all programmes. Programme administrators would only have access to information already required under their programme or any voluntary data.

Option V. Regulatory alternative: Greenhouse and energy reporting through the National Pollutant Inventory (NPI)

The COAG communiqué of 14 July 2006 stated that:

In relation to energy and greenhouse gas emissions reporting, COAG agreed that a single streamlined system that imposes the least cost and red tape burden is the preferable course of action. To this end:

- *COAG agreed that Senior Officials report back to COAG in December 2006 with a proposal for streamlining emissions and energy reporting in line with the above objectives. The report should be based on the preparation of national purpose-built legislation to provide for cost-effective mandatory reporting and disclosure at the company level at the earliest practicable date. The report will also need to include advice on timing, thresholds and governance arrangements;*
- *COAG also agreed that the NPI would not be used as a vehicle for reporting greenhouse gas emissions and that no further work be undertaken by the Environment Protection and Heritage Council on incorporating greenhouse gas emission reporting in the NPI pending finalisation of the above report; and*
- *COAG further agreed that every effort should be made to reach agreement on a national purpose-built legislation by December 2006. States and Territories reserved the right to use the NPI if the Commonwealth, States and Territories failed to reach agreement on national purpose-built legislation at COAG's next meeting.*

The NPI NEPM was established in 1998 under the *NEPC Act 1994*. A draft varied NPI NEPM and an accompanying Impact Statement was released by the National Environment Protection Council (NEPC) in June 2006 to provide a basis for public consultation of the proposed variation of the NPI NEPM. These documents were prepared prior to the COAG agreement of 14 July 2006 and include a detailed proposal for the inclusion of greenhouse gases in the NPI. Most of the text in this section has been based closely on the draft varied NEPM, as this is the most up-to-date publicly available version of the NPI proposal.

This alternative assumes that greenhouse and energy reporting would be streamlined through the online reporting tool based on OSCAR, consistent with Option IV outlined above. This would enable streamlined reporting of the full greenhouse and energy data

set currently collected, which would not be possible if reporting were to be done directly to the NPI. The NPI would provide for mandatory reporting of relevant greenhouse and energy data and mandatory public disclosure of greenhouse gas emissions. Once collected, the relevant data would be transferred from the greenhouse and energy reporting tool to the NPI. This is one of three options discussed in the Impact Statement accompanying the draft varied NPI NEPM.

Other aspects of this alternative are taken from the draft varied NPI NEPM and from suggestions about how the draft NEPM variation may be updated and implemented. It is recognised that the draft varied NEPM may change and a greater level of detail will be elaborated, should COAG fail to reach agreement on the preferred alternative and EPHC resumes its work on the inclusion of greenhouse gases in the NPI.

(i) Thresholds for reporting

In the draft varied NPI NEPM, a new threshold for greenhouse gas reporting is proposed of 25 kt CO₂-e, equivalent to 100TJ of energy use.

This threshold would be applied at a business entity level and would include: emissions of the six Kyoto classes of greenhouse gases. Emissions or energy use would be included arising from activities conducted at any facility operated by the business entity and activities conducted outside the boundary of the business entity's facilities, but attributable to the activities of the business entity, such as a transport fleet or the off-site generation of electrical energy where that electrical energy is used by the business entity.

In addition, there is an existing facility-level threshold currently requiring reporting of activity data for estimating other combustion gases, that would require facility-level reporting of carbon dioxide and nitrous oxide where individual facilities burn 2 kt of fuel (approximately equivalent to 5 kt CO₂-e greenhouse gas emissions).

(ii) Data subject to mandatory reporting

The draft varied NEPM includes the reporting of the 6 Kyoto greenhouse gases (scope 1) emissions in addition to the indirect (scope 2) emissions described in Option 1, section 4(iii).

Information concerning energy, in the form of both fuel usage and electricity consumption, is already reported to the NPI voluntarily, as a means of demonstrating compliance with thresholds and activity data for the calculation of emissions. The ability to mandate energy data collection without further changes to the NEPM may be possible, since clause 9(1)(c) in the NEPM specifies that "any information that may be required to assess the integrity of the emission data" is to be provided. The legal basis for collecting some energy data, such as production of coal, oil, gas, and electricity – if not used to assess the integrity of emissions data – would need to be investigated and may require changes to the NEPC Act.

Companies would be able to report additional data into OSCAR on a voluntary basis, as outlined in Option 1.

(iii) Emissions/energy factors and methodologies

As a default, companies would report using Australian Bureau of Agriculture and Resource Economics Fuel and Electricity Survey (ABARE FES) energy content factors listed in the ABARE FES fuel type summary and fuel codes, and standard emission factors and methodologies from the *AGO Factors and Methods Workbook*, as updated from time to time, in line with improvements to the methodology supporting the National Greenhouse Gas Inventory and in consultation with all participating jurisdictions.

An estimation technique which is likely to provide more accurate emission data than the technique set out in the relevant industry reporting materials can be used upon agreement with implementing jurisdictions, as is the case with current program arrangements.

(iv) Data quality

Before providing data to the Commonwealth under the draft varied NPI NEPM, each participating State and Territory shall, for each reporting facility located within that State or Territory undertake any reasonable action within its powers which it considers necessary for that particular reporting facility to confirm the accuracy of the information furnished by the occupier.

(v) Aggregation level for data collection

Businesses are required to supply data to the states and territories at the facility level. The draft NEPM variation is silent regarding the possible aggregation of smaller sites. It is proposed that, to provide for cost-effective reporting of small sites while still providing useful data, reporting entities with a number of smaller emitting sites would have the option of aggregating those sites into a single ‘facility’ for reporting purposes. While this could be implemented in a number of ways, a “small facility” cut off threshold would most likely be used to determine aggregation level.

(vi) Frequency of reporting

Companies can submit reports at either of two set periods of the year (calendar or financial year) for any 12-month reporting period agreed with the jurisdiction. The default reporting period is the Australian financial year. Reports are due no later than three months after the end of the reporting period.

(vii) Public disclosure

The Commonwealth releases facility-level emissions information gathered by 31 January to the general public for the preceding financial year via the NPI web site and publishes reports summarising NPI information.

It is proposed that company-level greenhouse data be made publicly available online, with the 6 Kyoto classes of greenhouse gases and indirect emissions displayed separately to the current NPI substances. The 6 Kyoto greenhouse gases would be displayed individually, where methodologies exist to do so.

Claims that data should be treated as confidential is already dealt with in the NEPM and briefly outlined below.

(viii) Data security and access

Data security

Participating jurisdictions ensure that information provided by companies is not released to the public prematurely, unless the jurisdiction is legally compelled to release it, and that information provided is not able to be altered, unless as provided for by the NEPM.

A claim by a reporting facility that particular information should be treated as Commercial in Confidence is, unless the existing law of the relevant participating jurisdiction provides otherwise, dealt with through existing clauses in the NEPM and a corresponding *Commercial in Confidence handbook*. A claim that information should be treated as confidential on the grounds of national security can also be assessed by the Commonwealth, as outlined in the existing NEPM.

Secure storage of information is provided by participating jurisdictions where confidentiality claims have been granted or have been sought and are being assessed, or information is supplied in confidence for the purposes of developing aggregated emissions data, or information is supplied for the purposes of verifying emissions data.

Data Access

As stated in the NEPM, a participating State or Territory is not to release any of the information provided to it unless the occupier consents to its release, the State or Territory is legally compelled to release it, or it is specifically required by another State, Territory or Commonwealth data gathering program. This information can only be supplied to the State, Territory or Commonwealth program that requires it.

(ix) Definition of company boundaries

Under the draft varied NPI NEPM, business entities would be identified by Australian Business Number (ABN). Greenhouse gas emissions would be attributable to the business entity where they arose from activities conducted at any facility operated by the business entity and activities conducted outside the boundary of the business entity's facilities, but attributable to the activities of the business entity, such as a transport fleet or the off-site generation of electrical energy where that electrical energy is used by the business entity.

For facility-level reporting of carbon dioxide and nitrous oxide, the occupier of a facility would be required to report emissions.

It is proposed that, instead, the approach outlined in Option 1 could be adopted under the NPI. That is, the approach to defining boundaries around company activities (organisational boundaries) within which greenhouse and energy data will be collected and reported is for companies to report all emissions and energy data relating to facilities/sites over which they have operational control.

(x) Verification

Each participating State or Territory conducts assessments of integrity of reported emission and transfer data, from reporting facilities located within its jurisdiction, in accordance with preferred outcomes and procedures as agreed between participating jurisdictions in MOUs between the Commonwealth and State and Territory Governments. Site compliance inspections are also carried out in some instances, particularly where there is reason to believe that a reporting facility has failed to report as required.

(xi) Compliance

All compliance and enforcement is carried out by State and Territory implementation staff and is detailed in State and Territory legislation. These follow the principles stated in the current NEPM.

Enforcement action may be taken by the relevant participating jurisdiction if a reporting facility does not provide information required under the NEPM to the nominated agency of the relevant participating jurisdiction, or provides false or misleading information to the nominated agency.

The enforcement action will, unless the law of the relevant participating jurisdiction provides otherwise, be taken in accordance with the following principles:

- (a) the occupier of the reporting facility will be given the opportunity for an impartial hearing;
- (b) if, following that hearing, the nominated agency thinks that the circumstances so warrant—
 - (i) the occupier may be named in the annual report of the Council as breaching its reporting requirements; and/or,
 - (ii) appropriate penalties may be prescribed.

Information provided by a reporting facility solely for the purposes of the NPI will not be used by a participating jurisdiction as evidence in any court proceedings for non-compliance with another obligation imposed by the jurisdiction.

(xii) Roles and responsibilities of jurisdictions

The roles and responsibilities of jurisdictions would be the same as those already established under the NEPC framework.

(xiii) Timeframe for legislative framework

The NEPC is scheduled to consider the draft varied NEPM in April 2007. Amendments to the NEPM could be implemented from 1 July 2007, although it is recognised that further consideration of the legal basis for greenhouse gas reporting under the NEPC Act is required and that relevant regulations and information technology infrastructure would need to be put in place. A review of the NEPC Act is scheduled to be completed in June 2007.

5. Costs and benefits of the proposed national reporting system and alternatives

Introduction

The costs of alternative approaches to a national reporting system and have been estimated in two analyses, which are attached to this report.

The first analysis (Attachment A) was commissioned by the EPHC/MCE working groups and undertaken by George Wilkenfeld and Associates and Energy Strategies. It informed the drafting of the consultation paper, *Reducing the Burden*. This analysis compared the potential costs of mandatory reporting under different facility-level thresholds with a 'BAU' scenario. It included a full description of the methodologies and assumptions underlying the analysis, including sensitivity analysis.

The second analysis (Attachment B) was commissioned by the Australian Greenhouse Office and undertaken by George Wilkenfeld and Associates. Building on the first analysis, it compares the potential costs of mandatory reporting under two company-level thresholds and a mixed company-level and facility-level threshold model with a 'BAU' scenario (which corresponds with Option 2: *Baseline 1* in this RIS). It includes a description of the refinements made to the methodologies and assumptions since the first analysis.

The differences between the methodologies used in the two reports are largely due to the difference in focus (ie facility-based reporting compared to company-based reporting). Both analyses are used in this RIS.

The benefits of the proposed national reporting system and alternatives are discussed qualitatively in this RIS. The benefits of greenhouse and energy reporting are difficult to quantify because they are non-financial. The one quantitative measure available is the total emissions coverage of each alternative, and this is discussed.

Each alternative is also discussed in the context of the four objectives of the proposed national reporting system.

Option I. The proposed national reporting system, including alternative threshold levels

The proposed model includes both replacement of existing reporting arrangements with a single streamlined reporting system and national legislation making reporting mandatory for companies above certain thresholds.

Costs

The costs of this alternative include costs of mandatory reporting by entities triggering the thresholds, as well as continued voluntary reporting by companies below the thresholds. The reporting thresholds would determine the number of new reporters brought into the system, and would thus be the primary determinant of marginal costs of the proposed system. Three threshold models, already described in Table 4, were analysed in Attachment B.

The analysis at Attachment B defines cost categories and provides estimates of average costs in each category. For reporting entities, the cost categories are:

- Annual ‘entity costs’: representing the fixed cost to the business of participating in the reporting regime (whether mandatory or voluntary), and of collecting and submitting data, irrespective of the number of sites. The costs are estimated at \$10 000 per annum for companies triggering threshold model 1, \$5 000 for businesses triggering threshold model 2 but not model 1 and report on all their sites, \$4 000 for businesses that trigger threshold model 2 but not model 1 and report only on individual sites greater than 2k kt or 100 TJ energy (for threshold model 3), and \$1 000 for those businesses which only have sites below 25 kt or 100 TJ but report voluntarily.
- Sites costs: representing record-keeping costs per site. The cost estimate ranges from \$2 000 for a site which meets Trigger A on its own to \$200 for a small site below 25kt/100TJ (eg a branch owned by a national bank, a shop owned by a national retailer). In the BAU scenario, site costs are increased by the estimated average number of reports prepared for each site (1.25).

These costs are summarised in Table 8.

Table 8: Summary of annual reporting costs to reporting entities

Entity and Site Types	\$/year
Entity cost per reporter (entities > 50 kt/200 TJ)	\$10 000
Entity cost per reporter (entities between 25 kt/100 TJ and 50 kt/200 TJ reporting all sites)	\$5 000
Entity cost per reporter (entities between 25 kt/100 TJ and 50 kt/200 TJ reporting only sites > 25 kt/100 TJ)	\$4 000
Entity cost per smaller voluntary reporter	\$1 000
Site cost per site (sites > 50 kt/200 TJ)	\$2 000
Site cost per site (sites between 25 kt/100 TJ and 50 kt/200 TJ)	\$1 200
Site cost per site (larger sites below 25 kt/100 TJ)	\$500
Site cost per site (smaller sites below 25 kt/100 TJ)	\$200

In addition, there may be some cost to companies in terms of staff time in dealing with verification processes under a mandatory reporting system.

The administrative costs to governments of the proposed reporting system are estimated in the analysis at Attachment B as:

- Annual processing costs of \$500 per report from each business larger than 50 kt/200 TJ, \$400 per report from each business between 25 kt/100 TJ and 50 kt/200 TJ and \$300 per report for sub-threshold reporters below 25 kt/100 TJ.
- Recurrent fixed administrative costs of running the national greenhouse and energy reporting system database of \$1 m per year (including information technology costs and system management costs).

It is assumed that if a mandatory framework is established, those currently reporting businesses which fall below the threshold will continue to report, but gain some cost savings from producing a single annual report, rather than making multiple reports as at present. These continuing sub-threshold businesses are termed ‘sub-threshold

reporters'. As thresholds are lowered, the number of sub-threshold reporters falls, since some will become mandatory reporters. The elimination of multiple reporting also lowers the administrative costs to data requiring agencies, since fewer reports need to be processed.

The annual cost would increase to \$16.1m under threshold model 1 – an increase of \$2.9m above the cost of existing reporting arrangements as estimated in Attachment B. Under threshold model 2, annual costs would be \$17.6m, or \$4.4m higher than current costs. Under threshold model 3, the annual reporting cost would increase by \$3.5m to \$16.7m.

The cost of reporting for entities currently participating in multiple programmes would decrease due to streamlining. The average cost per reporter would increase under the threshold models due to an increase in the average size of reporters, reflecting the fact that all new reporters are larger than average and hence have higher compliance costs. The average annual costs per participating business are estimated at \$3 323 under current reporting arrangements, where the average size of reporting entities is relatively small, \$4 016 under Model 1, \$4 201 per annum under Model 2 and \$4 054 per annum under Model 3, reflecting the increased average size of reporting entities under these models rather than an increase in costs for entities already reporting. Information on the benefits of the proposed reporting system is given under *Benefits* below.

The threshold proposed in section 4 above corresponds closely to threshold model 3.

Benefits

Objective 1: A single, cooperative, streamlined reporting system

This alternative would deliver a single, cooperative streamlined reporting system for greenhouse and energy data across all jurisdictions. It would enable a data set to be created and made mandatory under legislation, ensuring that existing national data collections, including greenhouse gas data and energy statistics, were maintained. The cost and red-tape burden would depend on the thresholds found necessary to maintain the integrity of national data collections. It would also provide for continued reporting of companies not triggering the reporting thresholds, through the same online reporting tool.

Objective 2: Removal of current duplicative reporting requirements

Under the current proposal, all jurisdictions would agree to remove existing arrangements for the reporting of greenhouse and energy data and replace these with a single, streamlined reporting system where this could be achieved while still meeting the requirements of the underlying programmes. This agreement would be embodied in the governance agreement and/or the legislation.

Objective 3: Consistent, robust and comparable; inform decision making by government and business

The proposal includes provision for all jurisdictions to agree on the use of standard methodologies, data elements and definitions of such things as organisational boundaries and emissions scopes, ensuring that data would be consistent and comparable across programmes and jurisdictions. Total data coverage in the sectors analysed would be around 69.6% under threshold model 1, 74.2% under threshold model 2 and 71.2% under threshold model 3. Data access provisions in the legislation would ensure that all

jurisdictions had access to data to inform policy making, including access to all data relevant to the specific jurisdiction and aggregated data for all jurisdictions. All companies above the thresholds would be required to report and thus would be in a position to make informed decisions on greenhouse and energy policy and actions.

Objective 4: Make information available to the public

Public disclosure of information on the greenhouse and energy related performance of companies forms part of the proposal. This information would be available centrally and online, and in a consistent format. Provisions would be included in the legislation to ensure the protection of confidential information.

Option II. Baseline 1: No change to current reporting requirements

Costs

Different estimates of the total annual costs to the economy of current reporting arrangements were derived from the analyses at Attachment A and Attachment B. These differences arose from differences in methodology between the two analyses.

Attachment A put the total annual cost at \$16.2m. This includes an estimated compliance cost to business of \$13m and government costs of \$3.2m. The costs to business from this analysis are given in Table 2.

Attachment B put the total annual cost at \$13.2m, of which around 83%, or \$11m, is borne by reporting entities. This analysis estimated the average annual cost per entity to be \$3 323 under current reporting arrangements.

Benefits

Objective 1: A single, cooperative, streamlined reporting system

This alternative would not deliver a streamlined reporting system. Because current programmes include duplicative reporting arrangements, there is higher cost and red tape than is necessary to deliver the current level of reported data.

Objective 2: Removal of current duplicative reporting requirements

Existing reporting requirements would not be removed under this alternative.

Objective 3: Consistent, robust and comparable; inform decision making by government and business

Current reporting arrangements deliver data coverage in the analysed sectors of 60.6%, but only a small proportion of these data is available to support policy making and programme implementation in any one jurisdiction.

Objective 4: Make information available to the public

Data are not currently available to the public in a centralised location or in a consistent format. Companies that are currently reporting would continue to be in a position to make informed decisions on greenhouse and energy policy and actions.

Option III. Baseline 2: Current and new reporting arrangements

Costs

Under this alternative it is assumed that new reporting requirements would be imposed, including those already identified by some jurisdictions, and that these would lead to increased reporting costs to reporting entities and governments.

Average annual cost per entity of current reporting arrangements plus additional reporting requirements, which would likely apply to more relatively large emitters, are expected to be greater than \$3 323. The marginal costs of new/proposed reporting requirements cannot be quantified.

Benefits

Objective 1: A single, cooperative, streamlined reporting system

This alternative would not deliver a streamlined reporting system. Because current programmes include duplicative reporting arrangements, there is higher cost and red tape than is necessary to deliver the current level of reported data. Future reporting requirements would add to the number of reporting systems, and hence the cost and red tape burden.

Objective 2: Removal of current duplicative reporting requirements

Existing reporting requirements would not be removed under this alternative.

Objective 3: Consistent, robust and comparable; inform decision making by government and business

Individual jurisdictions would introduce reporting requirements with the aim of meeting specific policy and programme needs. Data coverage in the analysed sectors would be expected to increase above 60.6%, although not all of these data would be available to support policy making and programme implementation in any one jurisdiction.

Companies reporting under current and new programmes would be in a position to make informed decisions on greenhouse and energy policy and actions.

Objective 4: Make information available to the public

Individual jurisdictions may choose to make some data available to the public under specific programmes.

Option IV. Non-regulatory alternative: Streamlining without legislation

Costs

It is assumed that this alternative would effectively be the same as Baseline 2, except that current reporting arrangements would be replaced by a single streamlined reporting system and that planned reporting requirements would use this system to deliver their data, thereby avoiding any duplication of reporting.

The analysis at Attachment A found that replacing current reporting arrangements with a single streamlined online reporting system would deliver a reduction in total annual reporting cost to the economy of around \$1.7m, or 10% of current reporting costs. This would be achieved through a reduction in the number of reports per year from 7 475 currently to 5 600 under a streamlined system. The cost reduction for reporting

entities would be around \$1.2m per year or 9%. The cost reduction to governments owing to streamlined administration would be around \$0.5m per year or 16%.

The analysis at Attachment A assumes no new reporting, either voluntary or mandatory. In practice, the costs of a streamlined reporting system would be expected to increase as new programmes were implemented because these would bring new reporters into the system. Annual reporting and administration costs could be expected to remain around 10% lower than the costs of Baseline 2, and may tend towards the costs of the preferred model as the percentage of companies with relatively high emissions/energy use covered by reporting requirements increased over time. The additional costs associated with new reporters would be partially offset by more cost-effective reporting under a national system, compared with business as usual.

Benefits

Objective 1: A single, cooperative, streamlined reporting system

This alternative would aim to deliver a single, cooperative streamlined reporting system for greenhouse and energy data across all jurisdictions. It would enable the maintenance of existing national data collections, including greenhouse gas data and energy statistics, through a standard data set. This option offers the least cost and red-tape burden, but would rely on voluntary reporting to maintain the integrity of national data collections.

There are likely to be limits to the extent to which existing reporting requirements in all jurisdictions can be streamlined through a single reporting system without a legislative underpinning. There could be legal obstacles related to data collection and transfer across jurisdictions due to diverse confidentiality provisions under current programmes. There are also likely to be practical reasons why some programmes are less able to be adapted to a streamlined data collection framework.

Objective 2: Removal of current duplicative reporting requirements

This alternative would not provide a means to ensure removal of existing reporting requirements, although this would be encouraged by a COAG decision to that effect. In practice, programme managers would be reluctant to abandon their own reporting requirements and systems, particularly where these were needed to meet legislated obligations, in favour of a reporting system without legislative backing. Programme managers would have concerns about their access to collected data, the continuation of the reporting system and the quality of data reported.

Objective 3: Consistent, robust and comparable; inform decision making by government and business

Under this alternative, data coverage in the analysed sectors would be expected to increase above 60.6%, consistent with the increase in coverage under the Baseline 2 alternative. Not all of these data would be available to support policy making and programme implementation in any one jurisdiction. Individual jurisdictions would introduce reporting requirements with the aim of meeting specific policy and programme needs. Companies reporting under current and new programmes would be in a position to make informed decisions on greenhouse and energy policy and actions.

Objective 4: Make information available to the public

This alternative would not provide for improvements in public disclosure of data. Individual jurisdictions may choose to make some data available to the public under specific programmes.

Option V. Regulatory alternative: Greenhouse and energy reporting through the National Pollutant Inventory (NPI)

Costs

In the analysis at Attachment A it is concluded that the form of regulation selected is not likely to have a significant impact on the cost of the reporting system. The costs of establishing or modifying a reporting system would be small in relation to the on-going costs, and the adjustment costs to government – including the costs of developing legislation – would be small in comparison with those incurred by reporting entities.

Since it is assumed that the NPI option would be implemented along with streamlining, the costs of the NPI option would include both mandatory reporting under the NPI and continuation of reporting by companies under other existing greenhouse and energy programmes not triggering the NPI threshold.

The precise costs of the NPI option have not been estimated. The costs of the NPI alternative to individual reporting companies may be similar to those discussed above for the preferred alternative. The threshold proposed in the draft NPI NEPM variation released for public consultation in July 2006 corresponds most closely to threshold model 2, although the facility-level threshold may capture more companies.

Benefits

Objective 1: A single, cooperative, streamlined reporting system

There is some doubt about whether the NEPC Act, under which the NPI National Environment Protection Measure has been made, offers a legal basis for the reporting of greenhouse gas emissions in its current form. A review of the NEPC Act is scheduled for completion in June 2007.

Assuming that greenhouse gas reporting could be mandated under the NEPC Act and that consistent with Option IV, greenhouse and energy reporting were streamlined through a single online tool, this alternative would deliver a single, cooperative streamlined reporting system for greenhouse and energy data across all jurisdictions. It would enable a data set to be created that would enable existing national data collections to be maintained, although the maintenance of energy statistics would still rely on voluntary reporting as some energy data could not be collected under the legal framework underpinning the NPI. The cost and red-tape burden would depend on the thresholds found necessary to maintain the integrity of national data collections.

Objective 2: Removal of current duplicative reporting requirements

The NPI alone would not provide a means to ensure that existing reporting requirements were removed, although this could be encouraged by a COAG decision to that effect.

Objective 3: Consistent, robust and comparable; inform decision making by government and business

Consistent and comparable greenhouse gas data could be provided through the NPI to inform policy making and programme implementation. There would be greater restrictions on the provision to jurisdictions of energy data collected for the purpose of verifying emissions data. Not all the energy data required for energy statistics would be reported under the NPI, so would only be collected through OSCAR on a voluntary basis and could not be made available to jurisdictions with the NPI data. Total data coverage in the sectors analysed would be around 69.6% under threshold model 1, 74.2% under threshold model 2 and 71.2% under threshold model 3. All companies above the thresholds would be required to report and thus would be in a position to make informed decisions on greenhouse and energy policy and actions.

Objective 4: Make information available to the public

Information on the greenhouse performance of companies would be publicly disclosed. Mandatory disclosure of energy data would not be possible under the NPI. Provisions are already included in the NPI to protect confidential information.

Summary

Streamlined reporting underpinned by purpose-built legislation is the preferred alternative because it is the only alternative that can ensure that all of the stated objectives are met to the greatest degree possible. A voluntary approach would not address some of the data quality issues arising from the patchwork of programmes across jurisdictions, including the consistency and comprehensiveness of data for policy analysis. There could be legal obstacles related to data collection across jurisdictions. Furthermore, a voluntary approach to streamlining is unlikely to be effective in restricting the future growth of reporting requirements in all jurisdictions, meaning that companies would be subject to new data requests over time. State and Territory Governments have clearly indicated their intention to pursue the NPI for greenhouse gas reporting, rather than a voluntary approach.

The NPI alone is not the preferred alternative because it would not provide for mandatory reporting of all the energy data needed for national energy statistics, it does not offer the means to ensure removal of duplicative reporting arrangements, and there are doubts about whether it offers a legal basis for the reporting of greenhouse gas emissions.

Summary data on non-regulatory alternatives and three threshold models under the regulatory alternatives (ie the preferred alternative and the NPI) are given in Table 9. The proposed threshold model for the preferred alternative corresponds to threshold model 3; the threshold model proposed in the draft varied NPI NEPM corresponds most closely to threshold model 2, although the NPI includes an additional, facility-level threshold. Quantitative determination of a preferred option on the basis of net benefit to the community is not possible owing to the non-quantitative nature of the benefits of greenhouse and energy reporting.

The percentage of data coverage in the analysed sectors is of some use in comparing the costs and benefits of different alternatives. It provides an indication of the proportion of emissions/energy use occurring in companies that are reporting and are thus in a position

to make informed decisions on greenhouse and energy policy and actions. Percentage data coverage is of less use in comparing the benefits for government decision making of regulatory and non-regulatory alternatives, because under non-regulatory alternatives there is no coordinated means to ensure that all relevant reported data is available to support decision making when needed.

Based on data from Attachment B, the annual total cost per percentage point of data coverage under threshold model 1 would be \$0.231m. Under threshold model 2 it would be \$0.237m and under threshold model 3 it would be \$0.235m. These figures are around 6-9% higher than the annual total cost per percentage of data coverage under current arrangements of \$0.218m. It is not possible to compare these costs with the costs per unit of data coverage under the Baseline 2 and non-regulatory streamlining alternatives.

The preferred threshold model (model 3) has a higher cost per unit of data coverage than model 1. This threshold model is preferred because reporting of data from all facilities greater than 25 kt/100 TJ has been identified as necessary to ensure that the integrity of current national data collections was maintained, and that this could be achieved without applying a company-level threshold of 25 kt/100 TJ, which would lead to a higher cost per unit of data coverage.

Table 9: Summary of impacts of regulatory and non-regulatory scenarios

Scenario	Total number of companies reporting (mandatory and voluntary)	Total number of companies triggering new mandatory reporting thresholds	Additional companies reporting as a result of new regulation	Marginal total annual costs (i.e. above total annual costs of current reporting arrangements) \$m	Proportion of data covered in sectors included in analysis %	Total annual cost per percentage unit of data coverage \$m
Option I (preferred): Streamlining plus threshold model 3 (50 kt company + 25 kt facility)	3584	698	318	3.5	71.2	0.235
Option II: Baseline 1 (existing reporting arrangements)	3266	0	0	0	60.6	0.218
Option III: Baseline 2 (existing and planned arrangements)	> 3266	> 0	> 0	> 0	> 60.6	not estimated
Option IV: Streamlining without national legislation	> 3266	> 0	> 0	≥ 0 or ≤ 0	> 60.6	not estimated
Streamlining plus threshold model 1 (50 kt company)	3470	504	204	2.9	69.6	0.231
Option V (approximate): Streamlining plus threshold model 2 (25 kt company) ⁵	3662	886	396	4.4	74.2	0.237

6. Consultation

May 2005

Late in 2004 the Environment Protection and Heritage Council and the Ministerial Council on Energy set up an inter-jurisdictional Joint Working Group (JWG) of officials to develop options for a national approach to business reporting of greenhouse and energy to meet a range of government, industry and community information needs. The JWG sought comment during May and June 2005 on a consultation paper, *Greenhouse and Energy Reporting: Consultation Paper*. Submissions were received from a combination of industry associations, companies and government departments.

⁵ The NPI threshold is most closely approximated by this model but also includes a facility threshold which may change data such as cost and emissions coverage.

On the basis of this consultation process and feedback from participating jurisdictions, the JWG found clear support for a nationally consistent approach to streamline reporting, and recommended that inter-jurisdictional work on this approach continue.

April 2006

Inter-jurisdictional policy and technical working groups were established jointly by the Ministerial Council on Energy and the Environment Protection and Heritage Council in November 2005. The working groups undertook a national, public consultation process during April 2006 on the basis of a consultation paper, *A streamlined national reporting framework for greenhouse and energy data: Reducing the Burden*. Views received during this process informed recommendations to, and the decision by, COAG.

The working groups received 49 submissions. Thirty-seven of these submissions were from industry and industry associations and 11 were from other organisations, including government departments and universities. A list of stakeholders that provided submissions is at Attachment C.

October 2006

The COAG Greenhouse and Energy Reporting Group consulted stakeholders during October 2006 on the basis of this draft Regulation Impact Statement. Advertisements were placed in national newspapers on 7 October 2006 alerting stakeholders to the commencement of the consultation process. Stakeholders who attended briefing sessions during the previous consultation and/or provided submissions were notified of this process, as were current members of Commonwealth Government greenhouse and energy programmes. Interested members of the public were invited through a notice on the AGO website to provide written submissions responding to this RIS.

Victorian Greenhouse Gas Emissions Reporting and Disclosure Pilot

Some State and Territory views in this process have been informed by the Greenhouse Gas Emissions Reporting and Disclosure Pilot led by EPA Victoria.

Parties that will be affected by the proposed action

The parties that will be affected by the proposed action are:

- Companies that would be required to report under the proposed legislation. The proposed thresholds are expected to capture relatively large emitters and/or users/producers of energy. Small businesses will not be affected by proposed national legislation, but may benefit from more streamlined reporting arrangements where they are already participating in existing greenhouse and energy programmes.
- Data users and administrators of existing and proposed greenhouse and energy programmes would also be affected by the proposed national reporting system; and
- Members of the public.

Outcomes of the October 2006 Stakeholder Consultation

Thirty-nine stakeholder submissions were received on the Draft RIS. Respondents included 18 companies, 16 industry associations, 3 private citizens, 1 government department, and 1 data user/research group. Industry association and company respondents covered a range of industry sectors including mining, electricity generation

and distribution, communications, aviation, water, agriculture, technology, manufacturing, and the food and beverage industry. A list of stakeholders that provided submissions is at Attachment D.

Overall feedback, through submissions and comments at the stakeholder forums, indicated a high level of support for the preferred option. The majority of concerns raised related to implementation issues such as thresholds for reporting, frequency of reporting and the timeframe for the legislative framework, which have been addressed. This feedback also highlighted a number of areas where more detailed consideration and explanation is needed, and underlined the importance of substantial stakeholder engagement in processes to develop the proposed legislation and supporting documents such as reporting guidelines.

Views on the preferred and alternative options

Twenty-nine respondents provided comment. Of these, 23 indicated a preference for Option I (the preferred option). These respondents included 8 companies, 13 industry associations, 1 data user/research group and 1 government department. Two companies who indicated a preference for other options expressed support for Option I as a fallback.

Five of the respondents in support of Option I stressed the importance of the work to progress streamlining, and requested further detail on how the transition from current reporting requirements to the proposed new reporting regime would be achieved. The need to develop a Plan of Action to address expansion of the streamlined data set, removal of current duplicative reporting requirements, progression into the new system, and further development of the online reporting tool OSCAR has been acknowledged in the overview section to Option I.

One company expressed a preference for Option V (reporting under the NPI), and 1 industry association indicated support for Option V as a fallback from Option I. Two respondents (1 company, 1 industry association) indicated support for Option IV. Fifteen respondents (5 companies, 10 industry associations) indicated opposition to Option V. Five respondents (1 company, 4 industry associations) indicated opposition to Options II-V.

Two companies and 3 industry associations commented on possible legislative models. All five respondents indicated a preference for unitary Commonwealth legislation.

Comments on design elements of the preferred option

(i) Thresholds

- 23 respondents provided comment.
- 12 respondents (5 companies, 7 industry associations) indicated support for a threshold model including a 50 kt/200 TJ company-level threshold and a 25 kt/100 TJ facility-level threshold, with five of these respondents (including 1 company and 4 industry associations) indicating that companies triggering the facility-level threshold only should be required to report emissions/energy data from only that facility. These preferences have not been incorporated into the threshold model under Option I, but will be subject to further investigation during the development of the legislation.
- One major industry group stated opposition to any threshold lower than 125 kt/500 TJ. This respondent also indicated that, should a lower facility-level threshold be implemented, companies triggering the facility-level threshold only should be required to report emissions/energy data from only that facility.
- Other issues raised were that the proposed threshold model was too complex (2 companies, 1 industry association), and that thresholds should be aligned with the EEO approach where a controlling corporation participates if its emissions exceed 0.5PJ, and there is no facility level requirement (1 company, 3 industry associations).

(ii) Data subject to mandatory reporting

- 12 respondents provided comment.
- 2 industry associations and 2 companies expressed support for the proposed model. Two respondents provided additional comment, suggesting company contextual information should be kept to a minimum, and companies should be encouraged to report offsets and abatement actions. Under Option I offsets would be reported by companies participating in mandatory reporting, at their discretion.
- 1 company and 4 industry associations commented that the development of robust technologies for reporting of emissions from the agricultural sector should remain a top priority.
- 1 company considered reporting by equipment type inappropriate as it would add unnecessary complexity. It has been acknowledged under Option I that the list of fuel and equipment types will be refined during the development of reporting guidelines and under the legislation.

(iii) Emission/energy factors and methodologies

- 14 respondents provided comment.
- 6 respondents (5 companies, 1 industry association) supported the inclusion of company-specific emission factors where approved by relevant jurisdictions.

- There was support from 3 industry associations for the default methodologies proposed.
- 3 respondents (2 companies, 1 private citizen) expressed concern with the use of the AGO Factors and Methods Workbook (F&M Workbook) in its current form. The F&M Workbook will be developed further with the assistance of the proposed Reporting Advisory Group as part of the forward process.

(iv) Aggregation level for data collection

- 9 respondents provided comment.
- Some respondents supported the proposal to report to facility level resolution with the option to aggregate sites where appropriate (2 companies, 2 industry associations).
- 1 company preferred to report total energy use and greenhouse gas emissions and site information only for those sites over the threshold.
- 1 company suggested the requirement to restrict aggregation of sites above 25kt CO₂-e may place unreasonable burden on water utilities.
- 1 industry association suggested reporting for the lot feeding sector should be according to the ABARE feedlot survey, as individual facility reporting would be costly and inconvenient.
- 1 company questioned the theory behind aggregation of data, commenting that the method misses the opportunity to gather detailed data, and appears to accommodate businesses who may have indicated an unwillingness for more detail based on cost concerns.

(v) Frequency of reporting

- 17 respondents provided comment.
- There was significant opposition to the proposed option (8 industry associations, 5 companies). These respondents preferred to report data once annually on a calendar or financial year basis. Reporting of data in two six-monthly blocks was considered by respondents to require additional work for little benefit, and to add significantly to the administrative and financial cost of reporting. Accordingly, under Option I companies will no longer be required to report data in two six-monthly blocks, rather they will report once annually.
- 1 industry association suggested the data could be divided into two six-monthly blocks by the administrator of the national reporting system. This suggestion has been included in Option I, where the online reporting tool would divide the data into two equal halves, unless companies voluntarily provided their data in more accurate six-monthly blocks.
- 3 companies supported the proposed option.

(vi) Public disclosure

- 15 respondents provided comment.
- The majority of respondents (6 industry associations, 3 companies) supported the proposed option, 4 on the condition there is adequate protection of commercially sensitive data. Two of these respondents (both industry associations) suggested the confidentiality provisions for the new reporting system should align with other economic collections by the ABS. Option I now states that the rules safeguarding commercial confidentiality, developed by the ABS, would apply to the public disclosure of aggregated greenhouse and energy data.
- It was suggested by 1 industry association that facility level data be publicly available, with appropriate exemptions for commercially sensitive data.
- 1 data user/research group strongly advocated the mandatory separate disclosure of scope 1 and 2 emissions in addition to combined scope 1 and 2 disclosure to meet the needs of investors and analysts. This respondent considered it rare for large companies to take the form of a single company and noted it was unclear how corporate groups would be treated in the proposed reporting system.
- 1 industry association suggested the publication of aggregated total gross greenhouse gas emission data does not give regard to the efficiency of particular commercial operations and could be taken out of context.

(vii) Data security and access

- 12 respondents provided comment.
- The majority of respondents (5 industry associations, 3 companies) supported the proposed option, agreeing that strong data security and access provisions should be comprehensive from the commencement of the framework, and include authorisation levels, policy development requirements and ongoing monitoring and assessment.
- 2 industry associations suggested a criterion be included regarding the physical security of facilities at which data is housed. One industry association suggested data confidentiality and access protocols could be on par with that applying to data supplied by business to the Australian Tax Office.
- 2 respondents commented on the confidentiality provisions of the proposed system. One industry association suggested modification of the confidentiality provisions to allow for exemption of industry segments where the character of that segment is such that publication of emissions data would reveal commercially sensitive information. Another industry association opposed public access to company data, and recommended company data be automatically protected under legislation at each jurisdictional level.

(viii) Definition of company boundaries

- 13 stakeholders provided comment.

- The majority of comments (6 industry associations, 2 companies) concerned the alignment of organisational boundaries across reporting programmes, particularly between the proposal and the existing EEO programme (4 industry associations, 2 companies).
- 2 industry associations and 1 company supported the use of operational control also on the proviso that the definition used is consistent with other programmes.
- 1 company strongly opposed the use of operational control for a mandatory reporting system. Reasons include that it could be difficult to unambiguously define who has operational control and that the underlying data can be commercially sensitive so in some cases it may not be appropriate for operators to consolidate. They also had concerns about the operator signing off on reports that relate directly to the performance of an asset they do not own.
- 2 companies had questions around the obligation to report data when companies are merged, de-merged, acquired or divested. One company suggested the supporting legislation and online reporting tool allow for disaggregation and reassignment of historical data in the event of changes to corporate structure. Option I now states that company-level thresholds would be applied at the highest level of the corporate structure, and not to subsidiaries.

(ix) Independent Verification

- 13 respondents provided comment.
- Over half of respondents (5 industry associations, 3 companies) commented that consideration should be given to accepting independently verified inventories already carried out by a recognised verifier on behalf of the company in question. This has been recognised under Option I. It has also been suggested a procedure based on transparent criteria be established for the recognition of alternative verifications in the verification guidelines.
- 3 industry associations and 1 company considered the cost of verification should be borne by the government as it is a compliance activity. Option I now acknowledges that the Greenhouse Emissions and Energy Data Office would bear the cost of verification except where it has been initiated by the company or another agency.
- 2 industry associations supported random selection of companies for verification.
- 1 respondent commented that materiality issues will need to reflect the needs of different emitters and energy users, as it is unrealistic to report emissions data to the nearest tonne for industry sectors such as electricity generation, or the transport component of a company's operations, such as a small vehicle fleet.

(x) Roles and Responsibilities of jurisdictions

- 8 respondents provided comment (5 industry associations, 3 companies). All of these respondents highlighted the need for the proposed national reporting system to be based on agreement and commitment by all jurisdictions to ensure consistency in implementation.

- 1 company and 2 industry associations supported an administering agency independent of any emission or energy regulator and of policy agencies, such as the Australian Bureau of Statistics.
- 2 industry associations stressed the importance of preventing regulatory creep within the mandatory system, stating that future changes to the legislation, MOUs, guidelines and other related instruments should only be implemented with the agreement of all jurisdictions, and after consultation with industry. One respondent suggested this could be achieved through the inclusion of an ‘objects clause’ in the legislation. This has been included under Option I.

(xi) Timeframe for legislative framework

- 12 respondents provided comment.
- The majority of respondents (5 industry associations, 3 companies) supported the proposed start date for the mandatory reporting system as it will give companies not yet reporting time to set up the reporting systems required to comply with the national framework.
- Most respondents (5 industry associations, 4 companies) opposed the application of retrospective legislation for the 12 month reporting period from 1 July 2007. The option to apply legislation retrospectively has been removed from Option I. Reasons given for opposition to retrospective legislation included:
 - Current reporting requirements are adequate to cover the intervening period;
 - The online reporting tool will take at least 12 months of testing, fine-tuning, and full appreciation;
 - Retrospective legislation does not engender business certainty; and
 - The timeframe is too tight for reporters to introduce adequate reporting systems.
- 1 company and 1 industry association suggested a provision by which entities could voluntarily submit trial reports under the new reporting system prior to the scheduled start date. This option has been included under Option I.

7. Evaluation

It is concluded that Option I best addresses the problem outlined in section 2, above, and best meets the objectives laid out in section 3, above.

A voluntary approach would not address some of the data quality issues arising from the patchwork of programmes across jurisdictions, including the consistency and comprehensiveness of data for policy analysis. There could be legal obstacles related to data collection across jurisdictions. Furthermore, a voluntary approach to streamlining is unlikely to be effective in restricting the future growth of reporting requirements in all jurisdictions, meaning that companies would be subject to new data requests over time. State and Territory Governments have clearly indicated their intention to pursue the NPI for greenhouse gas reporting, rather than a voluntary approach.

The NPI alone is not the preferred alternative because it would not provide for mandatory reporting of all the energy data needed for national energy statistics, it does not offer the means to ensure removal of duplicative reporting arrangements, and there are doubts about whether it offers a legal basis for the reporting of greenhouse gas emissions.

Of the threshold models analysed, the proposed threshold model best meets the objectives in the most cost effective way. It would provide sufficient coverage of emissions and energy data to provide a sound basis for greenhouse and energy policy development and programme administration and maintain the integrity of existing national data collections, while avoiding creating an excessive compliance burden or impacting on small business.

Responses from stakeholders during the October 2006 consultation process indicated that Option I is strongly supported by stakeholders, particularly by industry.

8. Review

It is envisaged that the legislation will sunset no later than nine years after its commencement, unless a decision was made before that date to extend the sunset to a later date. Such later date would be a date not more than five years later than the sunset date in place at the time such an agreement to extend the date is made.

No later than four years after the commencement of the legislation, and no later than each succeeding period of five years, a review of the legislation would be conducted. Each review of the legislation after the first would include a recommendation as to whether the sunset of the legislation should be extended.

The Review will make recommendations on whether the arrangements for the national reporting system and matters set out in the legislation should continue or cease to be in force and whether the legislation should be repealed or amended.

Appendix 1: Indicative lists of equipment and fuel types

Equipment Types

Aero engines	Feedstocks	Natural gas production and distribution
Aerosol propellant	Field and plant use	Natural gas reticulation own use and losses
Anode baking oven	Flare and unaccounted losses	Non-electric kiln
Anode production	Flocculating agent for coal dust	Other miscellaneous equipment
Batch drier	Fluid bed reactor	Other mobile machinery
Bitumen heating plant	Fluid bed roaster	Other non-fuel uses
Blast furnace injection	Fluid pumps	Packaging equipment
Boiler – for mechanical power	Food cookers	Paint curing ovens
Boiler – for process heat	Food preparing equipment	Petroleum refining equipment
Boiler for co-generation	Furnace (electric)	Piston engine for power generation
Boiler for power generation	Furnace (non-electric)	Plaster products manufacture
Briquette manufacturing equipment	Galvanising bath	Power station own use
Char manufacturing equipment	General industrial. Electric equipment (eg motors, space heating)	Pulverised wall boiler for power generation
Coal conversion equipment	Glass products manufacture	Pumped storage
Coal products manufacturing equipment	Hydrogen reformer	Reductant
Coal washery equipment	Illumination equipment	Reduction furnace
Coil annealing	Incinerator	Road vehicle engines
Coke oven	Industrial heating equipment	Ships' internal combustion engines
Combined cycle gas turbine for power generation	Industrial hot oil heater	Ships' steam engines
Commercial appliances e.g. cooking, space heating, lighting	Inert or reducing atmosphere producing equipment	Solvents
Communication equipment	Inventory changes	Spray drier
Compressor engines	Iron & steel industry equip excluding blast furnace consumption	Stationary combustion engines
Continuous drier	LNG plant equipment	Stationery materials-handling equipment
Crushing & beneficiation plant	Locomotive engines	Tangentially fired boiler for power generation
Cutter stock	LPG own use and losses	Textile industry equipment
Direct fired batch reactor	Metal melting equipment	Towns gas (reformed, tempered or synthetic) production
Direct fired continuous reactor	Metallurgical heating equipment	Turbine engine for power generation
Domestic appliances e.g. cooking, space heating, lighting	Metallurgical process – ancillaries	Unspecified agricultural industry equipment
Dredging plant	Miscellaneous electrical equipment	Unspecified mining industry electrical equipment
Dust suppressant	Mobile construction equipment	Water and sewerage treatment equipment
Electric kiln	Mobile earthmoving plant	
Electric rock melting process	Mobile engines	
Electrolytic cells	Mobile materials-handling equipment e.g. forklifts	
Emission control equipment	Natural gas pipeline use	
Explosives		

Fuel Types

Agricultural and food processing residues

Bagasse

Biodiesel

Biogas

Black coal coking

Black coal steaming – bituminous

Black coal steaming – sub-bituminous

Black liquor

Brown coal

Coal seam methane

Condensate

Crude oil

Electricity (from renewable or other sources)

Ethane

Ethanol

Fuels derived from coal, including:

- blast furnace gas
- Benzene toluene and xylene
- coal tar
- coke
- coke oven gas
- briquettes
- gaseous fuels derived from coal
- synthetic liquid.

Hydrogen and reductants

Landfill gas

Liquid natural gas

Methanol

Natural gas – commercial quality

Natural gas – non commercial quality

Natural gas liquids

Other recyclable materials used as an energy source (e.g. used lube oil and tyres, sewage sludge).

Petroleum fuel blends (e.g. blends of petroleum and ethanol).

Petroleum products including:

- automotive diesel oil
- automotive gasoline (petrol)
- aviation gasoline (avgas)
- aviation turbine fuel (avtur)
- fuel oil
- kerosene, heating oil
- liquid petroleum gas
- marine diesel oil
- naphtha
- refinery fuel
- sulphur
- lubes and greases
- bitumen
- petroleum coke
- waxes
- other oil feedstock
- synthetic petroleum products derived from natural gas.

Reformed gas

Sewage gas

Solar energy

Solvents

Steam (if used to provide energy).

Town gas

Unconventional crudes and related oils (e.g. shale oil).

Wind energy

Wood and wood waste.

Appendix 2: List of data elements

IPCC sector ⁶	Category ⁷	Algorithm elements ⁸ (some of these items will be collected from business, some items (eg. emissions factors) are agreed by programmes)
Fuel Production	production <ul style="list-style-type: none"> ▪ by fuel type – equipment/technology type 	<ul style="list-style-type: none"> ▪ activity data (eg quantity of each fuel type used in each equipment type) ▪ energy contents (eg of each fuel type)
Stationary energy	combustion <ul style="list-style-type: none"> ▪ by fuel type – equipment/technology type electricity (end use, transmission and distribution and retail) <ul style="list-style-type: none"> – equipment/technology type electricity (generation and cogeneration) <ul style="list-style-type: none"> – equipment/technology type 	<ul style="list-style-type: none"> ▪ activity data (eg quantity of each fuel type used in each equipment type) ▪ energy contents (eg of each fuel type) ▪ emission factors (eg GHG by fuel type) ▪ oxidation/conversion factors <ul style="list-style-type: none"> ▪ imported (consumed) ▪ purchased ▪ transmitted and distributed ▪ emission factors <ul style="list-style-type: none"> ▪ generated ▪ exported (sent out) ▪ power station own use and losses ▪ capacity ▪ capacity/output factors ▪ imported (consumed) ▪ thermal efficiency ▪ emission factors ▪ additional factors (eg. Heat recovered and input into prime movers & boilers)
Stationary energy cont'd	renewables <ul style="list-style-type: none"> ▪ by energy type – equipment/technology type 	<ul style="list-style-type: none"> ▪ activity data (eg quantity of each energy type used in each equipment type) ▪ energy contents (eg of each energy type)
Transport	combustion <ul style="list-style-type: none"> ▪ by fuel type – technology used 	<ul style="list-style-type: none"> ▪ activity data (eg quantity of each fuel type used in each equipment type) ▪ energy contents (eg of each fuel type) ▪ emission factors (eg GHG by fuel type) ▪ oxidation/conversion factors
Fugitive	coal mining	<ul style="list-style-type: none"> ▪ activity (eg quantity of coal mined, recovered methane) ▪ emissions, emission factors
	oil and gas	<ul style="list-style-type: none"> ▪ activity (eg venting and flaring activity) ▪ emissions factors

⁶ Column 1 identifies the relevant IPCC sector.

⁷ Column 2 identifies the categories under which different data would be reported.

⁸ Column 3 indicates the data required by different programmes within each of the sectors. Some of the listed data would be reported by businesses and some (such as emissions factors) would be provided/agreed by programme administrators.

IPCC sector ⁶	Category ⁷	Algorithm elements ⁸ (some of these items will be collected from business, some items (eg. emissions factors) are agreed by programmes)
Industrial processes	mineral products chemical products metals products production and consumption of halocarbons and SF ₆ use of explosives	<ul style="list-style-type: none"> ▪ activity (eg. production and consumption of carbonates, non-energy use of fossil fuels) ▪ process related emissions factors and GHG emissions ▪ GHG emissions ▪ activity (eg production and/or consumption) ▪ emissions factors (eg loss rates) ▪ activity ▪ emissions factors
Waste	solid waste disposal wastewater	<ul style="list-style-type: none"> ▪ activity (eg food disposal) ▪ additional constants ▪ emissions factors ▪ activity (eg generation, population or production levels) ▪ additional constants ▪ emissions factors

Attachment A: Facility-level Cost Benefit Analysis – George Wilkenfeld & Associates
(March 2006) *Costs and Benefits of a National Greenhouse and Energy Reporting Framework.*

**Costs and Benefits
of a
National Greenhouse and Energy Reporting
Framework**

George Wilkenfeld and Associates

with

Energy Strategies

for

**the Joint Environment Protection and Heritage
Council/Ministerial Council on Energy
Policy Working Group**

March 2006

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Important notice

This paper is intended as a basis for consultation with stakeholders. It should be regarded as a working document prepared by the Policy and Technical Working Groups on Greenhouse and Energy Reporting, which will report to the Environment Protection and Heritage Council and the Ministerial Council on Energy on the outcomes of this consultation.

The views and opinions expressed in this publication do not necessarily reflect those of the Australian, state and territory governments, the Environment Protection and Heritage Council, or the Ministerial Council on Energy.

While reasonable efforts have been made to ensure that the contents of this publication are factually correct, the Australian Government does not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.

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Terminology and Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
AGO	Australian Greenhouse Office
DEH	Department of the Environment and Heritage
DITR	Department of Industry, Tourism and Resources
DRA	Data Requiring Agency. An agency (Commonwealth, State or Territory) which currently requires entities to report greenhouse and/or energy data.
EEOA	Energy Efficiency Opportunities Assessment. A programme of DITR
ESAA	Energy (formerly Electricity) Supply Association of Australia
FES	Fuel and Electricity Survey. Survey of historical and projected energy use, conducted annually by ABARE since 1973
GEPR	Greenhouse and Energy Projection Reporting. Systematic reporting by REs (not participating in energy efficiency or greenhouse gas reduction programmes) of projected energy use and greenhouse gas emissions
GER	Greenhouse and Energy Reporting. Systematic reporting by REs of actual historical energy use and greenhouse gas emissions
GWP	Global Warming Potential
NGGI	National Greenhouse Gas Inventory
NGERA	National Greenhouse and Energy Reporting Agency. The agency with the function of administering the NGERR (could be an existing agency or a cross-jurisdictional entity)
NGERR	National Greenhouse and Energy Reporting Requirement. The agreement (if voluntary) or legislation under which REs and DRAs participate in national reporting.
NPI	National Pollutant Inventory
NPV	Net Present Value
Pollutant	A substance classified as a pollutant for the purpose of the NPI. (At present, does not include the main greenhouse gases: CO ₂ , CH ₄ or N ₂ O).
PRR	Programme and Reduction Reporting. Systematic reporting by participants in energy efficiency or greenhouse gas reduction programmes of actions taken or planned and/or estimated reductions achieved or projected.
RE	Reporting Entity. The corporate or other entity with the obligation to submit reports under the NGERR

Gases

		Global Warming Potential (GWP)
CF ₄	Perfluoromethane (a PFC)*	6,500
C ₂ F ₆	Perfluoroethane (a PFC)*	9,200
CH ₄	Methane*	21
CO	Carbon monoxide	NA
CO ₂	Carbon dioxide*	1
CO ₂ -e	CO ₂ -equivalent (a)	1
HFCs	Hydrofluorocarbons*(b)	3,800 – 11,700
N ₂ O	Nitrous oxide*	310
NMVOG	Non-methane volatile organic compound	NA
NO _x	Oxides of nitrogen	NA
PFCs	Perfluorocarbons*	6,500 – 9,200
SF ₆	Sulphur hexafluoride*	23,900
SO ₂	Sulphur dioxide	NA

* Emissions of these gases are covered by the Framework Convention on Climate Change (a) Not a gas, but a GWP-weighted accounting term (b) Includes several distinct HFCs with different GWPs.

Executive Summary

Background

There is a large number of programmes which require (or invite) business and other entities to monitor and report energy use and greenhouse gas emissions to Commonwealth, State or Territory agencies.

Some of these programmes also require or invite businesses to investigate or undertake activities to increase efficiency of energy use and take other measures to reduce emissions.

These programmes have nearly all evolved independently. They differ greatly with regard to their basic approaches, the conditions of participation (voluntary, mandatory, or the incentive to create valuable tradeable instruments), the trigger thresholds for participation (scale of energy use, rules for site aggregation) and range of energy forms or emissions taken into account.

The common factor is that each programme requires participants to report their historical energy use and/or greenhouse gas emissions. Many reporting entities participate in more than one programme, and are required to submit different reports to more than one Data Requiring Agency. It is estimated that the average is about 1.33 reports per reporting entity, but for the largest emitters it can be as high as seven.

Multiple reporting increases costs and reduces the value of the reporting effort, because:

- the data are distributed across a number of Agencies, and cannot be combined due to technical, regulatory or confidentiality barriers. Consequently, governments as a group cannot make optimum use of the data for policy and planning purposes;
- the aggregated information prepared by each Agency and made available to the public is less accurate than it could be, because no reporting framework has comprehensive coverage; and
- where entities choose to disclose information about their emissions to the public, they cannot demonstrate that they have used a single standard method of calculation, because there are so many available. This undermines public confidence in business reporting of emissions and in statements about measures to reduce them.

A consistent national approach to greenhouse and energy reporting could address these issues, reduce the cost of the reporting effort and increase its value.

A first step would be the establishment of a consistent reporting framework for historical energy use and greenhouse gas emissions. The establishment of such a framework is the subject of the present study.

The ideal model would be a single annual energy and greenhouse report to which all Agencies could have controlled access, so no Agency would need to request additional historical greenhouse or energy reports from participants. This would satisfy the

requirements of those programmes which are concerned solely with energy and greenhouse data collection.

Harmonising the reporting of measures taken to reduce emissions, their projected impacts and their actual effects is far more difficult, and is beyond the scope of the present study. Agencies operating programmes with greenhouse or energy reduction objectives as well as data collection objectives would still need to seek the relevant additional data.

While the establishment of a national greenhouse and energy reporting framework would not on its own eliminate greenhouse programme overlaps, it would create the conditions for their convergence.

It would also make possible the development and implementation of new types of measures, which could not be adequately supported by the present fragmented reporting arrangements.

It would also provide a basis for more detailed, consistent and credible public disclosure of corporate or site emissions. However, the choice of the mode or level of disclosure is a separate issue; automatic public disclosure is not necessary to meet the main objectives and benefits of the reporting framework.

Objectives

This report was commissioned by the Department of the Environment and Heritage on behalf of the Environment Protection and Heritage Council/Ministerial Council on Energy Working Group on Greenhouse and Energy Reporting. The Working Group has identified the following objectives for energy and greenhouse reporting:

1. reduce the overall burden on industry and business in reporting greenhouse gas emission and energy data;
2. provide appropriate and consistent information on the greenhouse and energy related performance of companies for:
 - a. investors and business planners - to improve the flow of market information and thereby facilitate sound market decisions;
 - b. the general public - to inform public debate on greenhouse and energy issues; and
3. ensure that data provided by companies to governments is nationally consistent, robust and comparable across programmes that may be located in different jurisdictions to inform government policy making.

The criterion used in this report for testing options against Objective 1 is a monetary one. The existing arrangements impose a range of quantifiable costs on Reporting Entities, whether those are privately owned 'industry and business' or whether they are public agencies, as many participants are. They also impose costs on the Data Requiring Agencies.

To the extent that a proposal is likely to reduce overall monetary costs to Reporting Entities, it would satisfy Objective 1. However, the distribution of cost and benefits between different groups of Entities and changes in the pattern of costs to Agencies also need to be taken into account.

The criteria for assessing proposals against Objective 2 are essentially qualitative and in large measure subjective. There is no objective measure of the ‘soundness of market decisions’ with regard to the value which investors attach to the energy use or greenhouse gas emissions of a company’s operations. Nor is there a measure of the extent to which ‘public debate on greenhouse and energy issues’ may be inhibited by limitations in the quantity and quality of data publicly available on the performance of individual companies.

Objective 3 could conceivably be met by adopting a completely new common greenhouse and energy reporting requirement without abandoning or modifying any of the existing requirements, or by designating one of the existing programmes as the data collection point and ensuring that all Entities join it, but without removing their other reporting obligations. This would achieve Objective 3, a ‘nationally consistent, robust and comparable’ data collection, and most probably advance Objective 2 as well, but at the expense of increasing the reporting burden and so failing Objective 1.

Options

This report reviews the existing reporting arrangements in detail, considers a range of options to establish a national greenhouse and energy reporting framework and estimates the costs and benefits compared to the option of leaving the arrangements as they are (the ‘Business as Usual’ case). The options are summarised in Table S1.

Only quantifiable reporting costs are subject to cost-benefit analysis. Other factors such as the preferred extent of public disclosure of collected data are matters of judgement for governments.

Table S1 Summary of Options

Option	Reporting Entities (REs)	Data Requiring Agencies (DRAs)	Corresponding option in Terms of Reference
1. BAU	As at present	Each free to set own rules	a. Status Quo
2. Establish NGERR, without new regulation	Voluntary participation	Some incentive to accept NGERR reports	b. Harmonisation without additional legislation
3. Establish NGERR, with new regulation	Mandatory participation	Strong incentive to accept NGERR reports	c. extend NPI d. new NEPM
4. Establish NGERR, with new regulation	Mandatory participation	Obligation to accept NGERR reports	e. New specific legislation

The ‘Business as Usual’ option would achieve little progress towards the Objectives. The number of reporting requirements is not likely to fall, and may well continue to increase. There may be some rationalisation of the technical aspects of reporting requirements, as there has been in the past, although the further opportunities seem to be limited.

The second option is the establishment of a consistent national greenhouse and energy reporting framework, but without regulation. This would require agreement between Data Requesting Agencies to harmonise their existing data requirements and to forego the future imposition of new requirements. The incentive for them to agree to this would presumably be access to better data than they get now, or lower-cost ways to obtain data. Alternatively, governments could direct their Agencies to participate.

A regulatory approach may have a greater chance of success in implementing a national reporting framework than a non-regulatory approach, since it would remove many of the risks facing any single agency trying to establish a framework on its own, and avoid the delays and uncertainties of agencies negotiating an agreed framework.

There is no existing regulation capable of supporting a national greenhouse and energy reporting framework without extensive modification. The only possibility so far identified – the National Pollutant Inventory – may need extensive modification. Alternatively, new legislation would be required either within the National Environment Protection Measure (NEPM) framework, or outside it.

Any of these regulatory options would take some time. Expert legal advice would be required to establish which option could be implemented most rapidly and could best meet the technical requirements of the framework, once those are defined.

In any case, the form of regulation eventually selected is not likely to have a significant impact on the costs of the framework. The ‘adjustment’ costs of changing to a new framework are small in relation to the on-going costs, and the adjustment costs to government – including the costs of developing legislation – are small in comparison with those which would be incurred by Reporting Entities.

Public Disclosure

There is no necessary link between the obligation to report data to a national reporting framework and the obligation (or choice) to disclose the data publicly.

Establishing a national framework would provide the *capability* for greater detail, quality and consistency in data disclosure than at present. Once the data are compiled for the purposes of reporting to government there are no additional monetary costs associated with public disclosure, whether by the Reporting Entity or by the Data Requiring Agency.

Mandating public disclosure of all or part of the reported data requires government to balance the interests of reporting entities with those of data users, and with the general public interest in reducing greenhouse gas emissions. In general:

- The implementation of a nationally consistent reporting framework would enable government to increase the quality of aggregated public reporting on greenhouse gas emissions and energy use;
- The implementation of a nationally consistent reporting framework is itself likely to increase the quality and extent of voluntary public reporting of greenhouse gas emissions and energy use by the businesses affected; and

- The cost and benefits of public disclosure can be treated separately from the costs and benefits to governments and other stakeholders of measures to improve the quantity and quality of greenhouse and energy data.

Analysis

The analysis is based on modelling the number of sites which exceed given emissions thresholds in the Manufacturing, Mining, Commercial and Services and Electricity sectors. The number of Entities is also considered, because whether site-based or company-based thresholds are used will lead to differences in coverage and hence costs.

Energy-related emissions – natural gas, coal and petroleum (Scope 1 emissions) and electricity imported from off-site (Scope 2 emissions) – and non-energy fugitive and industrial process emissions are all included.

Figure S1 illustrates the estimated number of sites exceeding successively lower emission thresholds in the Mining, Manufacturing, Commercial and Services and Electricity Generation sectors. Figure S2 indicates the percentage of sectoral emissions covered. Because average site emissions (mostly attributed to Scope 2 electricity use) are so much lower in the Commercial sector, emissions coverage would still be low even if a large number of sites were obliged to report.

Figure S3 illustrates the estimated net present value (NPV, at a 10% discount rate) of the costs incurred by both Reporting Entities and Data Requiring Agencies over a projected 12 year period, under different threshold scenarios. If the NPV is lower than in the BAU case, this indicates that there would be reduction in quantifiable reporting costs, and hence a net monetary benefit.

Figure S1 Estimated Number of Sites Exceeding Emission Thresholds

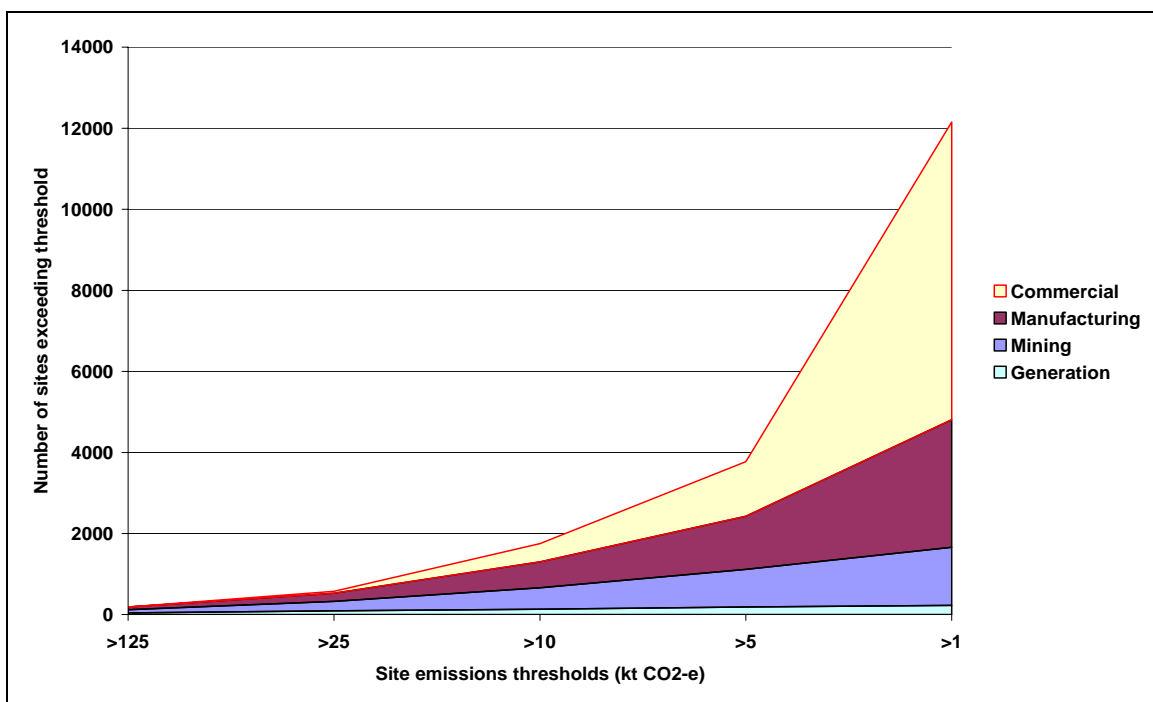


Figure S2 Percentage of Sector Emissions covered

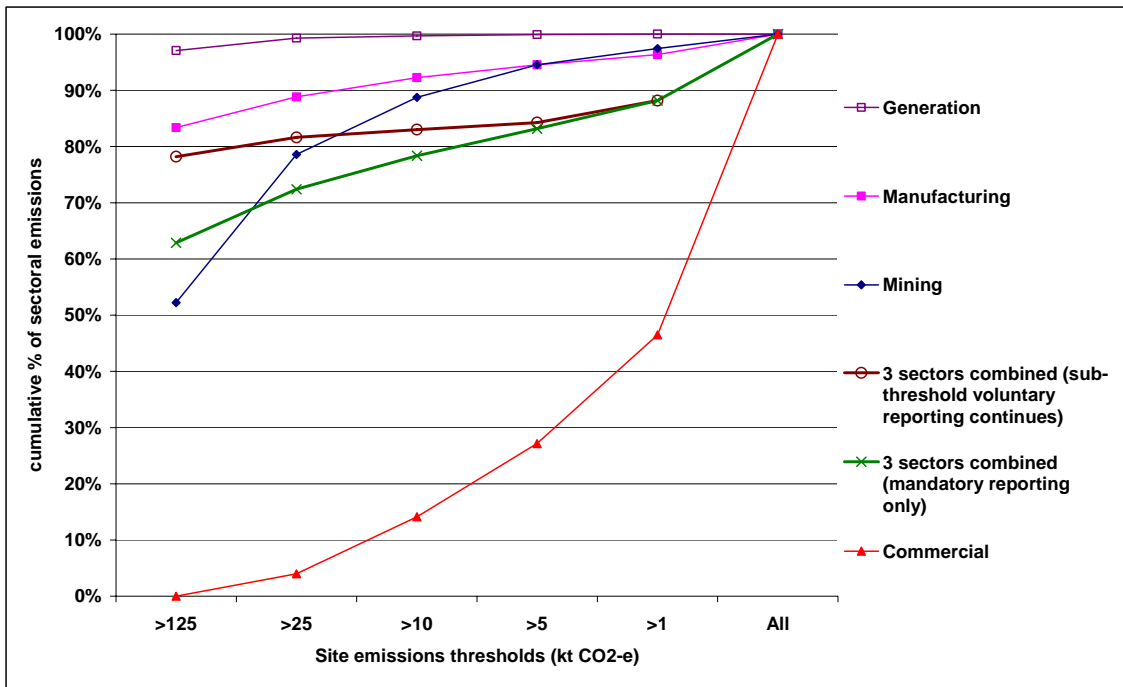
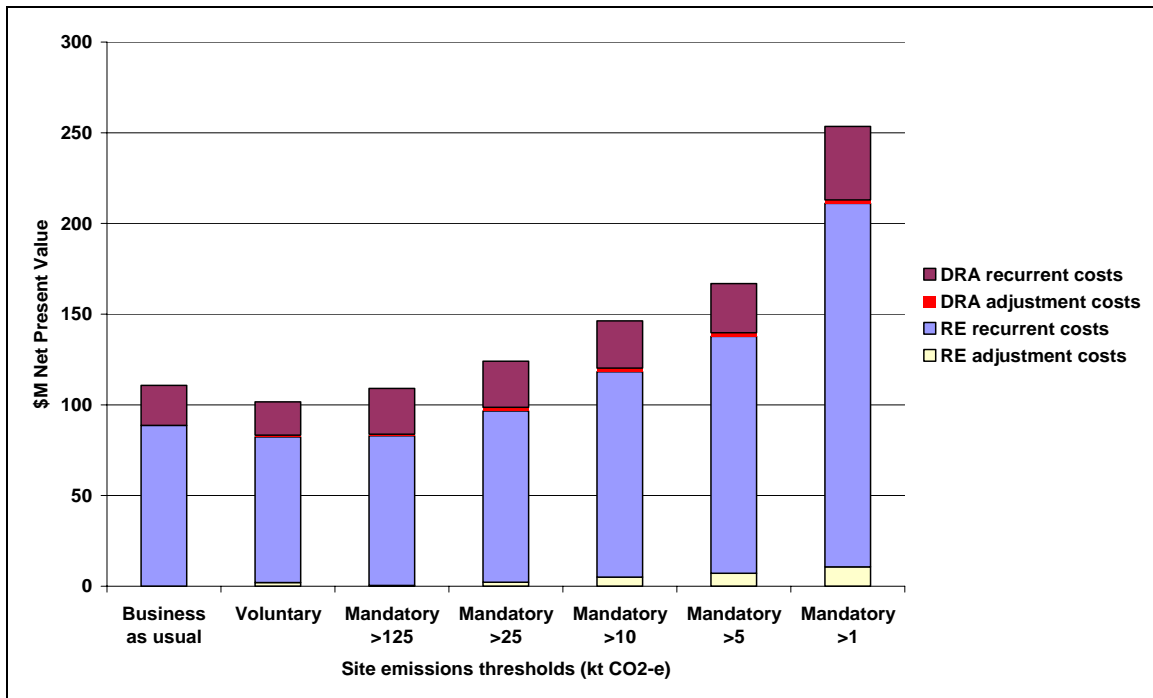


Figure S3 Estimated reporting costs under alternative scenarios



Net Present value of costs incurred over 12 year period, at 10% discount rate

Conclusions

The costs of the options examined are summarised in Table S2. The Voluntary implementation scenario assumes the introduction of a new single report for all existing Reporting Entities, without the addition of any new Entities. There are some initial adjustment costs to both Reporting Entities and Data Requiring Agencies, but these are rapidly offset by lower annual costs (even assuming that the new framework carries recurrent fixed administrative costs of \$1m per year, plus \$300 variable cost per data report processed).

The potential monetary benefits of moving to a single report would be appreciable for existing entities, reducing overall reporting costs by about 8% (Table S2). However, the potential reporting costs to new entities captured by mandatory thresholds would exceed these cost savings for threshold below 125 kt. However, other benefits of lower thresholds would include:

- a quantifiable increase in the proportion of emissions covered (see below);
- a major increase in data consistency, quality and useability, in moving from the present regime to a mandatory regime, but the value of this cannot be quantified.

The only valid basis for differentiating the costs of the regulatory options as a group is by participation threshold, rather than by the form of the regulation. Whatever regulation is used, it would need to satisfy certain characteristics if it is to support the successful implementation of the framework. The costs of amending legislation or implementing new legislation are low in comparison with other costs (they form only part of the ‘DRA adjustment costs’ in Figure S3), and any cost differences between alternative regulatory approaches would be negligible.

Table S2 indicates the proportion of the emissions of *end user* entities in the mining, manufacturing, commercial and services sectors that would be covered by mandatory reporting at each successive threshold, ranging from 66% at present up to 88% if all sites above 1kt report.

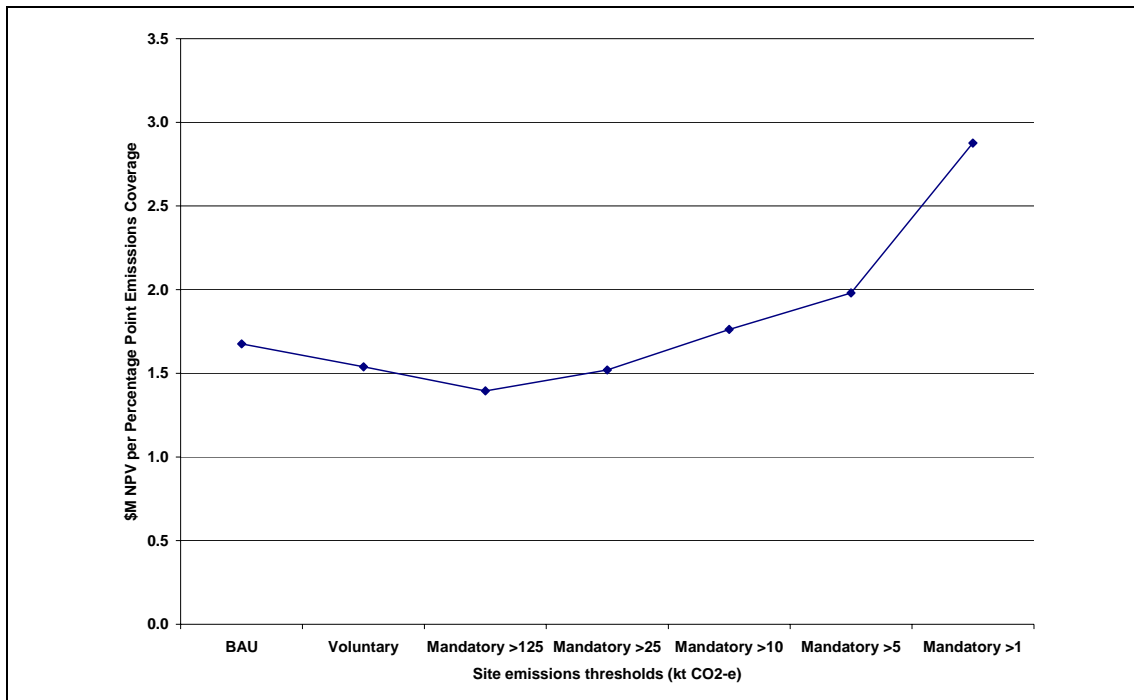
Table S2 Summary of costs and emissions coverage

Options (a)		NPV of 12-yr total cost \$M(b)	Coverage of end user emissions (c)	\$M per % covered	Comparison with BAU			Coverage of electricity sector emissions
					Cost increment \$M	Increment in % of emissions covered	\$m per additional % of coverage	
Non-regulatory	1 BAU	\$110.7	66.0%	\$ 1.7				80.0%
	2 Voluntary	\$101.6	66.0%	\$ 1.5	-\$9.1(d)	0%		80.0%
Regulatory	3 Mandatory >125	\$109.0	78.2%	\$ 1.4	-\$1.7	12%	-\$0.1	97.1%
	4 Mandatory >25	\$124.1	81.6%	\$ 1.5	\$13.4	16%	\$0.9	99.3%
	4 Mandatory >10	\$146.3	83.0%	\$ 1.8	\$35.6	17%	\$2.1	99.7%
	4 Mandatory >5	\$166.8	84.3%	\$ 2.0	\$56.1	18%	\$3.1	99.9%
	4 Mandatory >1	\$253.6	88.2%	\$ 2.9	\$142.9	22%	\$6.4	100.0%

(a) Table 13. (b) Table 21; 10% discount rate over 12 year projection period. (c) % of estimated sum of emissions from end user energy consumption, fugitive and industrial process emissions from mining, manufacturing, commercial and services sites. (d) Saving from elimination of multiple reporting.

The cost per % of emissions covered is a rough indicator of the cost-effectiveness of each threshold level (Figure S4). A threshold as low as 5 kt might be justifiable on this indicator, when improvements in data quality are taken into account. However, the average cost of coverage at the 1 kt threshold is about 70% higher than the BAU.

Figure S4 Total greenhouse and energy reporting costs per percentage point of emissions covered



Overall Ranking of Options

If objective 1 were the sole or over-riding criterion, the preferred option would be a voluntary framework or a mandatory framework with a 125 kt threshold, since these appear to have lower costs than the present arrangements.

However, objective 3 requires factors such as coverage and data quality to be taken into account. This places the optimum threshold at 10 kt, or arguably even 5 kt.

The 1 kt threshold has much higher costs than other options, and the increases in emissions coverage beyond a 5 kt threshold are small.

All options have a similar capability to support the provision of ‘appropriate and consistent information on the greenhouse and energy related performance of companies’, so there is no basis to differentiate between them with regard to objective 2.

1. The Problem

Background

Policy Context

Energy

Monitoring and planning for energy supply, consumption, imports and exports has been a long-standing function of the Commonwealth and some State and Territory governments since the oil crises of the 1970s.

The predecessors of the Department of Industry, Tourism and Resources (DITR) commenced an annual survey of large energy users in 1973/74. The survey is now called the Fuel and Electricity Survey (FES) and is managed by the Australian Bureau of Agricultural and Resource Economics (ABARE). This data collection forms one of the key bases of historical energy data and projections of energy demand at a national and State level. It is also an essential input to the National Greenhouse Gas Inventory, which Australia must report annually to the International Energy Agency as one of its obligations under the United Nations Framework Convention on Climate Change

Some industry associations also regularly compile and publish data on energy consumption (and production) covering their industry, or at least the members of their association. Examples include Energy Supply Association of Australia (formerly the Electricity Supply Association of Australia), which covers most large electricity generators, and the Australian Petroleum Production and Exploration Associations, which covers producers of oil and natural gas.

The Australian Bureau of Statistics (ABS) has also collected data on energy use at the household, manufacturing site, commercial building or company level from time to time, although there are no collections with the continuity of the FES.

These energy reporting arrangements were not necessarily related to obligations to reduce energy consumption or increase the efficiency of energy use. Their main aim was to ensure that policy-makers and the public had access to the best available data, while preserving confidentiality. Public disclosure is generally limited to the State and Territory level, or to the industry level for the whole of Australia – complete disaggregation at *both* state and industry level is limited. None of these collections report data publicly at the company or site level.

Greenhouse Gas Emissions

Measuring and reducing greenhouse gas emissions were adopted as policy objectives by the Commonwealth, and some State and Territory governments even before the adoption of the first National Greenhouse Response Strategy by the Council of Australian Governments in 1992.

Australia's first National Greenhouse Gas Inventory, covering emissions for the years 1987/88 and 1989/90, was published in 1994. The Australian Greenhouse Office (AGO) within the Department of the Environment and Heritage (DEH) now compiles the NGGI annually, and publishes a revised series recalculated back to 1990 using the latest data and methodologies.

As emissions from fuel combustion account for over 63% of national emissions, the NGGI relies heavily on accurate and comprehensive reporting by energy users to the Fuel and Electricity Survey and on the response of the largest fuel users such as power stations to direct requests for data (Table 1). The estimation of fugitive emissions from fuels and industrial process emissions rely on a combination of direct reporting by companies to the NGGI and the application of standard factors to published production data, such as coal mined or aluminium smelted.

Calculating emissions from fuel use relies not only on data about the quantity of each type of fuel consumed, but also on the quality of the fuel and the equipment in which it is combusted.

The chemical composition of the fuel determines the emissions intensity per unit of energy (expressed as eg kt CO₂/PJ). This is relatively consistent for refined fuels such as petroleum products, but varies up to $\pm 1\%$ from year to year for natural gas and up to $\pm 3\%$ for generation coal. These qualitative variations are not reported by the FES, and can only be monitored by direct data requests.

The combustion characteristics of fuel using equipment have a major bearing on the emissions of CH₄ and N₂O, as well as CO, NO_x, SO₂ and NMVOCs. Estimating emissions from industries, sites or transport fleets relies on data on the share of fuel used in equipment of different types or vintages, not just on the total quantity used. For 'Other Stationary Energy' use, this data is based on responses to ABARE's FES survey, and for Transport, on data about engine technology and the age of the vehicle fleet.

Table 1 Main Data Sources and Estimation Methods used in the NGGI

Sector or Subsector	Mt CO ₂ -e 2003(a)	Share of total	Main data sources and estimation methods
Electricity	190.3	34.6%	Direct data requests, FES
Other Stationary Energy	77.8	14.1%	FES, statistical methods
Transport	79.8	14.5%	FES, statistical methods
Fugitive	26.4	4.8%	Direct data requests, statistical methods
Industrial Processes	32.3	5.9%	Direct data requests, statistical methods
Solvent & Other product use	N(b)	NA(b)	Statistical methods
Agriculture	97.3	17.7%	Statistical methods
Land Use, Land Use Change & Forestry	34.8	6.3%	Statistical methods
Waste	11.4	2.1%	Statistical methods
Net emissions	550.0	100.0%	
Non-energy	175.8	32.0%	
Energy – fuel combustion	347.9	63.2%	
Energy - fugitive	26.4	4.8%	

(a) Source: NGGI 2003 (b) Emissions consist entirely of NMVOCs, which have zero Global Warming Potential and hence do not contribute to CO₂-e total.

The estimation of emissions from Agriculture, Land Use, Land Use Change and Forestry and Waste is somewhat different in that there are more data aggregation levels between individual sites or emitters and the NGGI, and in some cases the data collection process bypasses individual sites entirely. Agriculture emissions are derived mainly from livestock population estimates and crop production statistics, and land use change emissions from ground observations collected by satellite.

Airborne Pollutants

Pollutants are substances considered to have potential for direct impacts on the health of humans, animals or plants at or near the site of emissions, or downstream or downwind. In this respect they differ from greenhouse gas emissions, where the negative impacts are likely to be indirect via contribution to global climate change, and the effects generalised rather than localised.

The National Pollutant Inventory (NPI), established in 1998, is a publicly accessible database containing information on the types and amounts of listed substances emitted to the Australian environment. Information in the database is supplied by State and Territory environment agencies which receive the information from facilities in their jurisdictions. The legislation which established the NPI requires the owners of facilities which trigger the reporting criteria to report annually. The States and Territories themselves estimate pollution from 'diffuse, non-industrial' sources such as transportation, domestic and commercial activities, and emissions from facilities that are not reported because the relevant thresholds are not exceeded or the industry is excluded from reporting.

Some substances listed on the NPI (CO, NO_x, SO₂ and NMVOCs) are emitted during the same fuel combustion processes which lead to the emission of the greenhouse gases CO₂, CH₄ and N₂O, which are not listed on the NPI. One of the triggers for a facility to report to the NPI is the quantity of fuels used on site, data which the facility may also report to the Fuel and Electricity Survey or the NGGI.

Greenhouse and Energy Reduction Programmes

The energy, greenhouse and pollutant reporting arrangements described above focus exclusively or primarily on historical data.⁹ They are described as 'D' type programmes on Table 2. Their main purpose is to help to accurately document the consumption of energy and the emission of greenhouse gases and pollutants over time, to improve forecasting and to assist policy-makers, researchers and participants in the energy supply industry. The NPI has the additional objective of making information about potentially hazardous substances publicly available.

The main purpose of a second, larger group of programmes (indicated 'R' in Table 2) is to encourage or require participants to report on their energy use or emissions as part of demonstrating that they have taken steps to increase their efficiency of energy use

⁹ The FES also invites respondents to estimate emissions for some years into the future to assist ABARE in developing national projections of energy use (ABARE also uses other inputs for this purpose, such as projections of economic activity, together with an overall modelling framework).

and/or to reduce emissions by other means. These programmes generally require two categories of reporting by participants:

- Greenhouse and energy reporting (GER): the reporting of historical data, similar to the reporting only programmes;
- Programme and reduction reporting (PRR): this covers measures that the entity proposes to take to reduce emissions and their projected impacts on business as usual (BAU) emissions as well as measures taken and their estimated impacts;

Those programmes where participation is mandatory often require an initial collection of greenhouse and energy data for ‘screening’ purposes - to establish whether the entity triggers the criteria for inclusion in the programme, and if so, the category of participation. In general, entities using more energy or with higher emissions have more programme obligations. The screening data may not actually be reported if the entity determines that it falls below the participation threshold, but would presumably need to be available should the agency running the mandatory programme decide to audit the entity.

The ‘Reduction’ type programmes serve a number of objectives:

- They serve greenhouse reduction policy by directly engaging the large emitters;
- They can create incentives for large emitters to take action by giving them monetary incentives (eg the creation of saleable instruments such as Renewable Energy Certificates (RECs), NSW Greenhouse Abatement Certificates (NGACs) or Queensland Gas Electricity Certificates (GECs));
- They can increase awareness of the emissions and emissions-reducing actions of corporations by government agencies, non-government organisations, financial intermediaries and the general public. This is intended to enable organisations and consumers to take greenhouse performance into account when dealing with companies as customers or as investors.

‘Reduction’ programmes based on tradeable instruments do not necessarily require programme and reduction reporting by all participants. For example, the creation of RECs, NGACs and GECs can largely be determined through greenhouse and emissions reporting by the entities creating the instruments.¹⁰ Similarly, if a ‘cap and trade’ emissions permit scheme were introduced, it could be enforced and monitored solely through greenhouse and emissions reporting by participants.

Programmes which invite or require participants to undertake measures that they would in theory not otherwise have undertaken, but without monetary incentive, generally

¹⁰ NGACs can also be created through reduction measures which do require considerable program and reduction reporting. Regulator registration and supervision is also necessary to ensure the integrity of the markets in the instruments.

require elaborate and extensive reporting to demonstrate to stakeholders that the measures have indeed been implemented, and that they have been effective.

Table 2 Summary of Commonwealth and State Programmes with Greenhouse and Energy Reporting Requirements

Programme	Type (a)	Data Requiring Agency	Reporting Entity	Approx no. participants	Historical GER				Projected GER				Historical PRR				Projected PRR				Pollutants	
					SF	SE	SO	OS	SF	SE	SO	OS	SF	SE	SO	OS	SF	SE	SO	OS		
FES	D	ABARE	Selected large energy users	1300	*	*			*	*												
NGGI	D	AGO	Selected electricity generators	20	*																	
			Other large emitters	30			*															
NPI	D	States	Sites meeting trigger criteria	3600		*															*	
GHC+	R	AGO	Self-selecting energy users	800	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
GES	R	AGO	Self-selecting generators	17	*	*							*	*								
GHF	R	AGO	Self-selecting, any company	8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
MRET	R	ORER	Generators creating RECs	80	*	*																
EEOA	R	DITR	Energy users >0.5PJ/yr	250	*	*			*	*			*	*			*	*				
LBL	R	NSW EPA	Sites exceeding production limits	300																	*	
GGAS	R	NSW IPART	'Category B' generators	9	*	*																
			Generators creating NGACs	66	*	*																
			Large users creating LUACs	2	*	*	*															
Energy Saving	R	NSW DEUS	Largest electricity using sites	225	*	*							*	*			*	*				
			Largest local governments	46	*	*								*	*			*	*			
13% Gas	R	QLD DOE	Accredited power stations	5	*	*																
SEPP/AQM	R	VIC EPA	'Scheduled premises' below energy or GH thresholds	502	*	*																
			'Scheduled premises' exceeding energy or GH thresholds	516	*	*			*	*			*	*			*	*				
ESIPC	D	SA ESIPC	Generators in SA	12	*	*																
WAGGI proposed	R	WA DOE	Sites exceeding GH thresholds	?	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
			Site below GH thresholds	?	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Adapted from Appendix B, JWG (2005a). Excludes programmes which require only reporting of fuel or energy *production*, not fuel or energy *use* or emissions. Shading indicates that participation, reporting and/or reduction actions are required by legislation. Participant numbers not additive, since many programmes cover same participants. (a) D = data collection only; R = programme aims to reduce emissions. (b) GER = Greenhouse and Energy Reporting, PRR = Programme or Reduction Reporting, SF = Quantity and/or emissions from fuel use on site, SE = Quantity and/or off-site emissions from electricity and other fuels used on site (for generators, may also include reporting of electricity sent out), SO = Quantity of other on-site emissions (mainly fugitive and industrial process), OS = Off-site emissions (mainly related to transport fuels for entity-operated vehicles).

In addition to the programmes listed in Table 2, which are run by government agencies, there are a number of international reporting programmes in which Australian companies, or global companies with Australian sites, choose to take part.

The largest of these is the Global Reporting Initiative (GRI), an organisation which publishes on its internet site the list of participating companies with links to their environment and sustainability reports. At present 39 of the 768 companies listed on the GRI website are Australian.¹¹ Several other companies headquartered in other countries also report on their Australian operations.

There is no single specified format for reporting, although participant entities are to give preference to reporting greenhouse gas emissions using the guidelines published by the World Business Council for Sustainable Development and the World Resources Institute (WBCSD 2005). It should be noted that the GRI reports many different aspects of environment and sustainability, and not all of the Australian companies which participate include greenhouse and energy within their GRI reporting.

Proliferation of reporting obligations

At present each of the existing and proposed programmes in Table 2 has its own unique reporting obligations, formats and forms (whether paper-based or electronic). There have been some efforts to streamline or harmonise reporting requirements, at least within the same Data Requiring Agencies, and to standardise some of the input factors common to many reports.

The AGO has progressively combined the reporting requirements for Greenhouse Challenge Plus (GHC+) and Generator Efficiency Standards (GES), so that electricity generators who are members of both programmes can make a combined report. A part of this report is also used for the NGGI, although the compilers of the NGGI must still approach about 20 generators each year (non-members of GHC+, or members who fail to report).

Perhaps a more significant point of convergence is the use of common emissions factors for electricity, natural gas and other fuels. Most programmes now refer reporting entities to the AGO *Factors and Methods* workbook, which is updated from time to time. The latest version (AGO 2005) publishes factors calculated using the 'Scope 1, 2 and 3' guidelines of the World Business Council for Sustainable Development and the World Resources Institute (WBCSD 2005). These factors have been incorporated into the OSCAR on-line reporting tool for GHC+ participants.

Therefore there have been important steps towards streamlining reporting for programmes operated by the AGO, and towards standardising some of the technical inputs common to many programme reports. However, important differences remain.

¹¹ <http://www.globalreporting.org/guidelines/reports/search.asp> accessed January 2006

Scope of Participation and Reporting

All of the programmes in Table 2 involve a relationship between the Data Requiring Agency and the legal entity (almost always a corporation) responsible for the site or sites at which energy is used or emissions occur, and the off-site activities (eg transport) associated with the on-site activities.

Most programmes require the participating corporation to produce greenhouse and energy reports for every site under its control, or at least for every site exceeding certain activity thresholds. There are different approaches to accounting for partially owned sites – in some cases site emissions must be attributed to one entity only (say on the basis of operational responsibility), while in others it can be divided according to share of ownership. The latter approach creates obvious difficulties in incomplete coverage of sites and in tracking the performance for entities which acquire or dispose of sites.

The Greenhouse Challenge Plus (GHC+) has the greatest diversity of scope in membership: industry associations, corporations, divisions of corporations, single sites within larger corporations, single-site entities of all sizes (from power stations to schools), government departments and sub-departmental agencies. Reporting is generally at the aggregation level of the participant. Because of multiple layering the emissions and the reduction activity at the one site can be (and have been) reported by more than one GHC+ participant.

There is of course considerable overlap in participation – many emitters participate in, or are caught by, more than one programme. In these cases the emissions and/or reduction activity are reported to more than one programme. The only Reduction type programme which attempts to distinguish its own impact from that of other programmes is the NSW Greenhouse Gas Abatement Scheme, which has elaborate rules to prevent the same entities from creating NGACs, RECs and GECs from the same activity.

Participation Conditions and Thresholds

For programmes where participation is mandatory (shown shaded in Table 2) it is necessary to define trigger points and thresholds. These are different for each programme – not just in terms of magnitude but in fundamental design.

For the NPI the trigger point is the quantity of site fuel use (TJ/annum) or the level of emissions of scheduled substances (tonnes/annum, with different tonnages specified for different pollutants). Electricity use above 60 GWh per year also triggers reporting. The greenhouse emission thresholds corresponding to these triggers are shown in Table 3.

Table 3 Greenhouse emissions corresponding to NPI fuel and electricity triggers

	Trigger	TJ	kt CO ₂ -e
Biogas	400 t/yr	22.2	0.0
Nat Gas	400 t/yr	17.8	0.9
Fuel oil	400 t/yr	17.1	1.3
LPG	400 t/yr	19.8	1.2
Diesel	400 t/yr	18.2	1.3
Petrol	400 t/yr	18.6	1.3
Coal	400 t/yr	9.4	0.8
Wood	400 t/yr	6.5	0.0
Electricity	60 GWh/yr	216.0	54.0(a)

(a) Emission factor 0.9t CO₂-e/MWh

The Energy Efficiency Opportunities Assessment (EEOA) programme captures corporations (not individual sites) using more than 500 TJ/yr of energy (electricity included) (DITR 2005). There is no emissions threshold, so the greenhouse emissions associated with the trigger can vary from as low as 26 kt CO₂-e/yr to as high as 125 kt. This is illustrated in Table 7, which shows that an entity using 500 TJ of purchased electricity would be responsible for the emission of 125 kt CO₂-e, whereas an entity using the same amount of natural gas would be responsible for only 26 kt. Participants are required to develop and implement emissions reduction plans covering all their energy uses.

The trigger for participation in the NSW Load-based licencing (LBL) scheme is production capacity, eg maximum MWh of electricity that could be generated per annum or tonnes that could be produced (different tonnages for different commodities).

The only greenhouse-emitting entities for which reporting under the NSW Greenhouse Gas Abatement Scheme (GGAS) is mandatory are the so-called Category B generators named in the Rules (reporting of electricity sales is mandatory for the electricity retailers with liability under GGAS, but these are not energy using or emitting entities). Otherwise, participation is voluntary.

The 225 corporate-owned sites listed for participation in the NSW Energy Saving Order are the largest electricity using sites (Table 4). The smallest uses about 10,000 MWh/annum (36 TJ). Although electricity use is the sole trigger for participation, participants are required to develop and implement emissions reduction plans covering all their energy uses.

Table 4 Triggers and participants in NSW Energy Savings Order programme

Draft emissions reduction plan required by:	Electricity use			'Bodies'	Sites	Sites/Body
	MWh/yr	TJ/yr	kt CO ₂ -e(a)			
30 June 2006	>25,000	>90	>22.5	63	95	1.5
30 September 2006	16-25,000	58-90	14.4-22.5	60	82	1.4
31 December 2006	10-16,000	36-58	9.0-14.4	43	48	1.1
Total private sector participants				166	225	1.4
30 Sept 2006 – metropolitan councils				34	NA	NA
30 Sept 2006 – regional councils				12	NA	NA

(a) Emission factor 0.9t CO₂-e/MWh, or 250 kt/PJ.

The Victorian SEPP/AQM programme covers only the 1,024 sites which require EPA emission licenses¹². Of these sites, only those which meet EITHER the energy use OR the emissions triggers in Table 5 are captured. Sites meeting the lower threshold but not the higher ('Category B') are required to undertake energy audits to analyse energy usage and to identify options for reducing energy usage. Sites meeting the higher threshold ('Category C') are required to have a more detailed energy audit. There are 216 Category B and 306 Category C sites. The other 502 sites ('Category A') are not required to take any action.

Table 5 Triggers for Victorian SEPP/AQM programme

Energy trigger		All Elec(a)	All Gas(b)	All Coal(c)	kt CO ₂ -e	All Elec	All Gas	All Coal
TJ/yr	MWh/yr	kt CO ₂ -e	kt CO ₂ -e	kt CO ₂ -e	Trigger (d)	TJ	TJ	TJ
7	1944	2.5	0.36	0.6	1.4	4	27	16
0.5	139	0.2	0.03	0.05	0.1	0	2	1

(a) Emission factor 1.3 t CO₂-e/MWh, or 361 kt/PJ. (b) Emission factor 52 kt/PJ (c) Emission factor 90 kt/PJ (d) Implied emission factor 200 kt/PJ

The parameters for the proposed Western Australian Greenhouse Gas Inventory (WAGGI) are set out in the WA Greenhouse Strategy, released by the Premier in September 2004¹³. All corporations with emissions in excess of 100 kt CO₂-e (aggregated across sites, with adjustments for part-ownership) will be required to participate, at staggered dates beginning with the largest emitters (Table 6). WA Government agencies and trading enterprises will also be required to participate, beginning in 2005/06. A government threshold is under consideration. Emissions associated with electricity and transport, as well as all site emissions are to be included.

Table 6 Triggers for Proposed WAGGI Programme

Participation to begin in:	kt CO ₂ -e	All Electric (a)	All Gas(b)	All Coal(c)
	Trigger	MWh	TJ	TJ
2004-05	500	555556	2000	9615
2005-06	250	277778	1000	4808
2006-07	100	111111	400	1923

(a) Emission factor 0.9t CO₂-e/MWh, or 250 kt/PJ. (b) Emission factor 52 kt/PJ (c) Emission factor 90 kt/PJ

Three trigger thresholds were suggested by the Policy Working Group to enable a cost-benefit analysis of a proposed national greenhouse and energy reporting framework, which is the subject of this report:

- 500 TJ energy OR 125 kt CO₂-e per annum;
- 100 TJ energy OR 25 kt per annum; and
- 4 TJ energy OR 1 kt per annum.

¹² This is a subset of all manufacturing sites in Victoria. For example, a factory site in Melbourne which discharges wastewater to the sewer would not need a licence, whereas an identical factory without access to the sewer and discharging to on-site treatment would. No commercial sites are covered.

¹³ *Western Australian Greenhouse Strategy*, WA Greenhouse Task Force, Government of Western Australia September 2004. http://www.greenhouse.wa.gov.au/documents/greenhouse_strategy_001.pdf.

Table 7 Triggers considered in this study

Energy trigger		All Elec(a)	All Gas(b)	All Coal(c)	kt CO ₂ -e	All Elec	All Gas	All Coal
TJ/yr	MWh/yr	kt CO ₂ -e	kt CO ₂ -e	kt CO ₂ -e	Trigger (d)	TJ	TJ	TJ
500	138889	125.0	26.0	45.0	125.0	500	2404	1389
100	27778	25.0	5.2	9.0	25.0	100	481	278
4	1111	1.0	0.2	0.4	1.0	4	19	11

(a) Emission factor 0.9t CO₂-e/MWh, or 250 kt/PJ. (b)) Emission factor 52 kt/PJ (c) Emission factor 90 kt/PJ (d) Implied emission factor 250 kt/PJ

Because of the different threshold structures and the infinite possibilities for triggering them through different combinations of on and off-site energy use, non-energy emissions and the differences in electricity-intensity between States, it is difficult to establish a direct correspondence between the thresholds in the different schemes.

Table 8 shows the lower emissions thresholds for each programme – the critical factor in determining the number of reporting entities that will be affected. Some programmes also have additional thresholds which trigger more stringent reporting or action requirements for higher emitters and energy users. The lower thresholds cover three orders of magnitude: the highest (WA) is literally 1,000 times as great as the lowest (VIC). Since the number of entities increases exponentially as consumption levels reduce, the choice of threshold is a critical factor in the design of these programmes.

Table 8 Emissions levels corresponding to participation triggers for mandatory programmes

Programme	kt CO ₂ -e/yr (a)	Entity
NPI (b)	0 – 54	Site
NSW Energy Saving Order (c)	9.0	Site
VIC SEPP/AQM (d)	0.1	Site
EEOA (proposed) (e)	26 (b)	Corporation
WAGGI (proposed) (f)	100	Corporation

(a) Energy and greenhouse triggers combine in different ways in different programmes (b) Table 3 (c) Table 4 (d) Table 5 (e) Lowest possible threshold, assuming all site use natural gas (f) Table 6 (g) Table 7

Energy and Emissions Covered

Apart from the trigger thresholds, there are other important differences in the programmes covered, with respect to:

- emission source categories covered: most reporting programmes cover on-site fuel combustion and the off-site emissions associated with purchased electricity, but there are differences in the treatment of on-site fugitive and industrial process emissions and off-site transport;
- fuels covered: most programmes cover the only the main ones such as coal, natural gas and the main transport fuels; others include all fossil fuels, or all energy forms including renewable fuels;
- greenhouse gases covered and modes of reporting: CO₂ only, all 6 Kyoto Protocol gases as CO₂-e, all gases expressed as a single CO₂-e value, etc;

- the emission factors used to derive emissions from energy used, their source, whether they correspond to ‘Scope 1, 2 or 3’ as defined by the WBCSD (2005), the rules for non-standard factors etc;
- the treatment of ‘offsets’ such as carbon take-up by forest biomass: some schemes do not recognise offsets at all, some permit them to be separately reported and some permit them to be netted from total emissions;
- reporting periods (whole calendar or financial year, or 6 month periods) and frequencies (annual or other); and
- constraints on passing on data to third parties (even parties under contract to the data requiring agency).

These factors are not left to the discretion of reporting entities, but are fully detailed in the reporting forms and accompanying guidelines and manuals prepared by the respective Data Requiring Agencies.

While some of the differences may appear minor, in effect they mean that at present no report prepared by a Reporting Entity for one Agency would be accepted by any other Agency. Even those Agencies with lesser or simpler data needs specify data requirements in particular formats, so Entities participating in more than programme must repackage the data for each.

Programme and Reduction Reporting

The preceding discussion was concerned solely with historical Greenhouse and Energy Reporting. Entities which believe that their historical greenhouse gas emissions and energy use are such as to trigger the participation thresholds must collect the necessary data, process it according to the rules of the programmes concerned, and then if they participate, must continue to report historical greenhouse and energy data in those formats. As Table 2 illustrates, historical Greenhouse and Energy Reporting is common to all the programmes listed.

Many of the programmes also require entities to report on the actions they propose to take and have taken to reduce emissions from their sites or off-site activities, and on the results achieved, ie Programme and Reduction Reporting.

Not all Reduction programmes have a Programme and Reduction Reporting requirement. The MRET, GGAS and ‘13% Gas’ schemes rely on encouraging the development of new generating sites with low emissions, and are less concerned with reductions in emissions at existing sites. Greenhouse and Energy Reporting alone is sufficient to establish the effectiveness of the schemes. The GES scheme on the other hand relies solely on documenting reductions in emissions at existing sites, and so has an elaborate Programme and Reduction Reporting framework.

Programme and Reduction Reporting formats are even more diverse than Greenhouse and Energy Reporting formats, since companies are invited to put forward whatever proposals suit them – in fact innovation and novelty are encouraged. The format of

plans, the rules for estimating impacts of measures against 'Business as Usual', the standards for assessing and reporting actual impacts after the fact, and the sanctions (if any) for failure to follow through with stated intentions, are not always clearly specified.

Some programmes have rules for energy audits to be carried out according to certain standards by qualified independent auditors, and an obligation for the entity to implement projects which meet specified financial hurdle rates. In other cases, participants volunteer a menu of proposals and undertake to make regular reports on whether they have implemented them, and if so, their own estimates of greenhouse or energy savings, which they calculate using the programme's guidelines.

The formats for Programme and Reduction reporting are less rigorously specified than for Greenhouse and Energy Reporting, partly because the information is more difficult to quantify and does not easily lend itself to standardisation.

Therefore although the diversity of reporting format and quality is very wide, there is considerable latitude for the Reporting Entity to adopt a mode and a form which suits its own interests. Even so, entities participating in more than one Reduction programme incur the costs of reporting to different Data Requiring Agencies (even if only to report the identical set of measures and savings projections to each of them).

With Greenhouse and Energy reporting, on the other hand, the Data Requiring Agencies each have highly specified rules which Reporting Entities have to satisfy individually.

Impacts on Stakeholders

There is obviously a considerable range and diversity of programmes requiring companies and other entities to calculate their historical greenhouse gas emissions and energy use (to determine whether they are obliged to participate), and if so to report their greenhouse emissions and energy use, and (in most cases) the actions taken to reduce it. The calculation methods, trigger points and reporting formats are different in every case, and the full range of requirements covers a very wide spectrum.

This is not necessarily a problem on its own if the benefits outweigh the costs, and if the situation represents the least costly way to meet the objectives of all programmes.

There is however a reasonable presumption that reducing the reporting burden would reduce costs significantly, while preserving or even increasing the benefits.

In 2004 the Environment Protection and Heritage Council (EPHC), comprising Australian, State and Territory Environment Ministers, and the Ministerial Council on Energy (MCE), comprising Australian Government, State and Territory Energy Ministers, established a working group to examine the costs and benefits associated with implementation of a nationally consistent framework for greenhouse and energy reporting from Australian companies to meet current and prospective needs of government, business and the public.

The following sections examine the issues from the viewpoint of stakeholders within the three main groups. It should be noted that the interests of stakeholders, even within the groups, do not necessarily align. Also, the previous section illustrated the wide range of different functions and technical approaches covered by the general term ‘greenhouse and energy reporting’, and the significance of apparently minor variations between them. Given that there are as yet no details of how a ‘nationally consistent framework for greenhouse and energy reporting’ might operate (other than the range of possible participation thresholds in Table 7), the assessment of its possible impacts, costs and benefits for stakeholders can only be preliminary.

Business

Multiple Programme Participants

The corporations with the highest emissions are often caught by, or choose to participate in, several programmes with Greenhouse and Energy Reporting and Programme and Reduction Reporting elements.

Electricity generators are a special category in this respect, since their sites represent the largest point source emitters of greenhouse gases in Australia, and among the largest sources of the substances covered in the NPI. Depending on which State it is located in, an electricity generator may be required to, or choose to, participate in up to 7 of the programmes listed in Table 2. Some of these involve only data reporting and some also involve undertakings to reduce emissions.

Large mining, petroleum and manufacturing companies, especially those with high non-energy greenhouse emissions as well as high energy use, may also participate in and report to 5 or 6 programmes. The FES respondents with higher energy use are also likely to take part in one or more greenhouse programmes.

Because they are such energy-intensive enterprises, these companies already monitor their fuel and energy use and greenhouse gas emissions in considerable detail. The costs of collecting, validating and maintaining the relevant data are part of their normal business costs, and there are usually one or more staff members with permanent responsibilities in this area. The marginal costs of producing an additional data report in a given format are relatively low, and conversely the marginal savings from reducing the number of formats are also low. The highest costs incurred tend to be the one-time set-up costs whenever a new reporting format is introduced. The costs of producing data reports in the same format in subsequent years is minimal.

Costs for the Reporting Entity are higher if the reporting process requires the data to be manually entered on a form (whether paper-based or on-screen) rather than exported automatically from the RE's database. Manual transcription can also introduce errors, which if detected take time for both the RE and the DRA to correct, and if undetected reduce the quality of the data.

Consequently, for multiple programme participants, the monetary benefits of establishing a nationally consistent framework for greenhouse and energy reporting depends on:

- whether the framework allows the use of one of the existing reporting formats, or whether a new format is required; and
- the physical arrangements for reporting.

In any case, the potential monetary benefit for this group of users is minor.

Single Programme Participants

Many medium to smaller entities participate in only one programme requiring estimation and reporting of energy consumption or greenhouse emissions. These would most likely be one of the programmes with the largest number of participants: the NPI (3600 participants) the Victorian SEPP/AQM (1018) or perhaps GHC+ (800). Those of the 1300 FES respondents with lower energy use are also likely to participate in that programme only.

For these entities, the impact of moving to a nationally consistent framework for greenhouse and energy reporting will depend on the threshold, the design of the programme and how smoothly the Data Requiring Agencies involved integrate the new format into their reporting requirements.

If the greenhouse/energy threshold is higher than the one which triggers the RE's present participation, then it will be excused from participation and so save the associated reporting costs. If the one programme that the entity participates in was

voluntary, it may wish to continue to report on a voluntary basis even if it falls below the threshold.

Consequently, for single programme participants, the monetary benefits of establishing a nationally consistent framework for greenhouse and energy reporting depend on:

- whether the Agency involved accepts reports meeting the national framework – if not, then the Entity’s reporting burden would be increased;
- whether the framework matches the reporting format which the Entity currently uses, or whether a new format is required – if the latter, there will be a one-time readjustment costs, but afterwards the annual cost will be the same;
- whether the Entity meets the threshold for the national framework – if not, and the Entity ceases reporting, its costs will obviously fall (if it chooses to keep reporting in a new format even if it no longer has to, then its costs could increase, but that would be a voluntary decision).

Therefore the effects of a national reporting framework on Reporting Entities who at present participate in one programme only could be to increase, decrease, or have little effect on costs – all depending on the design of the new framework and its thresholds.

Non-participants and new participants

The number of entities not presently participating in Greenhouse and Energy Reporting that would be drawn into a nationally consistent framework depends on the thresholds. If these are set low (eg 1 kt/yr) then several thousand new entities would be drawn in for the first time (the number at each given threshold is estimated in Chapter 3).

As Reporting Entities close to the threshold could not be certain whether or not they meet it, they would have to go to the expense of determining whether they do. Some of these would find they do not, and so would have no further involvement.

Therefore there may be three cost elements:

- Screening costs – ie the costs of formulating a response to the advice (presumably by the Data Requiring Agencies) of the existence of the nationally consistent framework and its possible application to the Reporting Entity;
- Set-up cost for those required to participate – ensuring that someone in the organisation has administrative responsibility, setting up an internal data collection process, creating spreadsheets etc;
- On-going annual report preparation costs to participants.

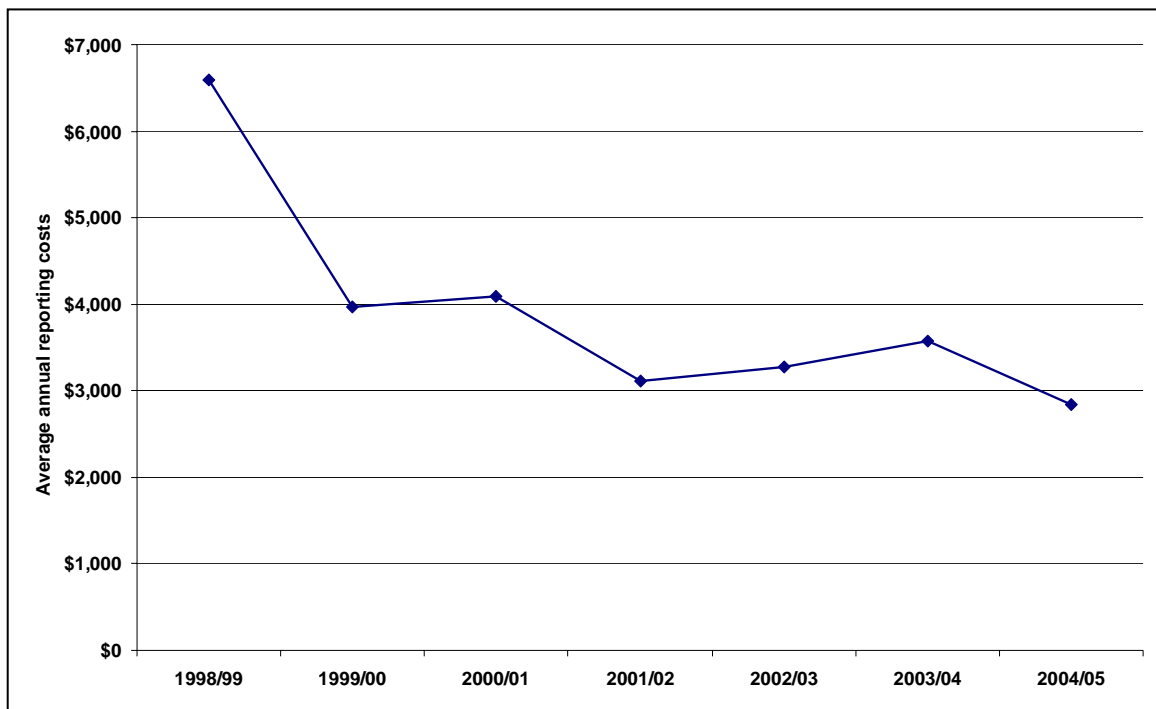
These costs would be much the same irrespective of the format of the national reporting framework, since none of the Reporting Entities have invested in any existing formats.

The National Pollutant Inventory (NPI) provides an indication of the magnitude of on-going reporting costs. NPI respondents are invited to indicate the costs of completing

their reports, and over the course of the programme 43% have done so. Figure 1 summarises the average reported values. It would be expected that costs would be highest in the first year, in which Reporting Entities establish their reporting systems, and then decline, and this was indeed the case. The long term average reporting costs appears to be converging to around \$3,000 per year (these are skewed by a small proportion of very high values – the median reported values are significantly lower).

It is reasonable to assume that for an entity with no previous reason to collect and report greenhouse and energy data, the task would be comparable in complexity and hence cost with the NPI. For entities already reporting under the NPI, the additional cost of expanding the report to include greenhouse and energy would probably be somewhat less.

Figure 1 Annual reporting cost indicated by NPI respondents



Source: EPA Vic, personal communication

Summary of Cost Impacts

The potential impacts on business reporting costs are summarised qualitatively in Table 9. In general, a national reporting framework is not likely to have a significant cost impact for larger entities which participate in and report to several programmes. It could have a more significant proportional impact for single programme participants, whose present reporting burdens could be either increased, decreased or eliminated altogether.

The number of entities with present multi- and single-programme commitments is in effect fixed (though difficult to estimate, without a census of participants in all programmes). Therefore the number of *existing* participants is not a variable in the cost impacts of transition to a new national reporting framework.

On the other hand, the number of potential *new* parties captured by a national reporting framework is a critical factor in the total costs: although the costs per entity may be significantly less than for larger emitters, the numbers affected could be very high, depending on the reporting threshold selected.

Table 9 Business reporting costs impacts of National Greenhouse and Energy Reporting Requirement (NGERR)

Category	Possible cost impacts (cf BAU)	Outcome sensitive to:
Multiple programme participants	Neutral Slightly lower costs	Not sensitive – same outcome likely under all NGERR designs
Single programme participants	Higher costs (if new format) Neutral (if same format) Lower costs (if screened out)	Format of NGERR Participation threshold
Prospective new participants – whether screened in or out	Higher costs (of addressing screening criteria)	Participation threshold (numbers) Screening cost
Prospective new participants – screened in	Higher costs (of reporting)	Participation threshold (numbers) Setup costs Annual reporting costs

Offsetting benefits: the value of energy savings

The previous section discussed reporting costs only. Of course, reporting entities also derive benefits from their participation in greenhouse and energy reporting, including:

- the value to corporate image and reputation of participation in the reporting programme;
- enhanced credibility of the entity’s public statements regarding its emissions;
- a general interest in increasing the quality of national energy and greenhouse data; and
- focussing the entity’s attention on opportunities for increasing energy efficiency and reducing greenhouse gas emissions that it would not otherwise be aware of.

The value of potential energy savings arising from programme participation can in theory be quantified. Entities which participate in multiple programmes are likely to be well aware of their opportunities for increasing energy efficiency and reducing greenhouse gas emissions, whether they report or not. At the other end of the scale, the value of any energy savings to smaller entities may actually be less than their reporting and energy efficiency investment costs.

A recent review of the Victorian SEPP/AQM programme (Environment Link 2005a) estimated the total value of the annual energy savings identified and ‘committed’ by programme participants, and the average costs of implementing those measures (Table 10). For the 216 Category B sites (less than 1.4 kt CO₂-e/yr) average energy cost savings per site were estimated at \$2,800/yr. For these sites, the annual programme reporting costs plus the annualised cost of energy-efficiency measures would have to be

less than \$2,800 to make participation cost-effective on the basis of energy savings alone.

For the 306 Category C sites with emissions over 1.4 kt CO₂-e, on the other hand, annual energy savings are so much higher than reporting costs that there is little doubt that participation is cost-effective, even if – as is quite possible – those Entities would have identified and acted on many of its energy saving opportunities irrespective of the VIC SEPP/AQM programme.

Table 10 Estimate energy savings to participants in the VIC SEPP/AQM programme

	Number of Sites	TJ/yr energy	kt CO ₂ -e /yr	Total kt CO ₂ -e/yr saved	Total \$M/yr saved	Total \$M cost	Average kt/yr/site saved	Average \$/yr/site saved	Average \$/site cost of measures
A	502	<0.5	<0.1	NA	NA	NA	NA	NA	NA
B	216	0.5-7	0.1-1.4	20	0.6	2.3	0.09	2,800	10,650
C	306	>7	>1.4	1070	33.8	47.2	3.50	110,500	154,250
	1024			1090	34.4	49.5		33,600	48,340

Source: Derived from Environment Link (2005a), Table 4

Government

Policymakers

Commonwealth, State and Territory government all have interests in increasing the quality of the information about greenhouse gas production and energy use in the economy that they can access. This information is necessary for:

- compiling national energy statistics in order to supply Commonwealth and State governments, and industry, with vital data;
- meeting Australia's reporting obligations as a member of the International Energy Agency, reporting to the United Nations and participating in APEC energy programmes;
- compiling the NGGI on order to meet Australia's reporting obligations under the UN Framework Convention on Climate Change;
- general economic and trade forecasting and planning;
- planning, implementing and monitoring national level greenhouse gas reduction and energy efficiency programmes; and
- planning, implementing and monitoring State-level greenhouse gas reduction and energy efficiency programmes.

The range of data needs is relatively wide, partly because of the differing policy approaches to greenhouse gas reduction taken by the various governments. Some of the more complex reporting requirements come out of the structuring of programmes to fit

jurisdictional boundaries, both regulatory and geographical. For example, the accounting needs of a State-based baseline-and-credit scheme such as the NSW GGAS are far more complex than would be the case for, say, a national emissions permit trading scheme.

The reliability of the NGGI is underpinned by three main elements:

- the quality and timeliness of the FES;
- direct reporting by large fuel users, and large emitters of fugitive and industrial process emissions; and
- the methodology and underlying data for the sectors where emissions are estimated by statistical techniques (eg fugitive emissions from coal mines, agriculture, land use change and forestry, waste and some industrial processes).

Direct reporting of emissions by smaller energy users and smaller emitters would not contribute to the quality of the NGGI.

Over the past decade there has been some deterioration in the quality of the greenhouse and energy data available to governments, whether collected by the FES or directly reported. For example, the share of power generation energy use covered by direct reports has fallen from near 100% in the early 1990s (when most generators were publicly owned) to about 80%. The balance of fuel use (and emissions) is now indirectly inferred from other data sources. Similarly, the methodology for estimating coal mine emissions is now based on analyses carried out in the early 1990s. Since then many mines have closed and new mines opened. Consequently the probability of significant divergence of estimates from actual emissions is increasing.

While data for the NGGI and for economic forecasting purposes is more or less adequate, effective energy efficiency and greenhouse reduction programme planning relies on more detailed information, including how the energy delivered to customers is actually used. For residential and smaller business users, this information can be gathered by random survey and statistical methods. The wider variability of energy use in medium to large manufacturing businesses, however, requires more direct survey and reporting.

Many policymaking agencies spend considerable resources in commissioning special studies, trying to access data from other agencies in the face of jurisdictional and confidentiality barriers, and making comparisons across data sets which are often inconsistent. It is likely that they would be in a better position to develop informed policies if they could access the same, high quality data set. Greater co-ordination of data collection would also provide a better base for assessing the impacts of energy efficiency programmes.

Improved data availability and quality would also enhance the ability of policymakers to assess, implement and monitor a range of other potential measures for addressing greenhouse gas emissions which current greenhouse and energy reporting programmes could not support

Data Requiring Agencies

The Data Requiring Agencies are those which are directly responsible for collecting and storing the greenhouse and energy data from the Reporting Entities. The Agency for each programme is listed in Table 2. Agencies may publish data as received (eg NPI), produce and publish their data analyses but not the base data (eg ABARE), use the data to verify compliance with mandatory requirements (eg IPART), or pass on the data or extracts from it to other agencies or other users, some of which may be within the same department (eg AGO).

The objectives of the DRAs are usually more limited than those of policy agencies. Their tasks are defined by the programmes requirements, which may be specified in regulations, and they need to develop management and data systems to satisfy those requirements, usually within budgetary constraints.

There is only limited information on the costs to DRAs of operating greenhouse and energy reporting programmes, which would be expected to fall into the following categories:

- The initial human and IT resource costs for setting up the reporting systems (fixed).
- The initial costs of identifying, contacting and negotiating with prospective programme participants (largely fixed, but some variation with number of prospective Reporting Entities).
- The on-going costs of maintaining the reporting system: eg server costs, maintaining and improving software, developing and updating emissions factors, producing data summaries. These costs are largely independent of the number of reporting entities.
- On-going variable costs related to number of reporting entities, eg liaison with participants, checking and correcting returns.
- For programmes involving undertakings to increase energy efficiency or otherwise to reduce emissions, working with participants to help them identify opportunities, possibly to fund or subsidise audits and studies and to follow up impacts (largely variable).

There are no published disaggregations of these cost elements, but there are some estimates of total costs. A recent review of the Victorian SEPP/AQM programme states:

Under the *Victorian Greenhouse Strategy Action Plan Update 2005*, an additional \$600,000 is being provided in 2005/06 to allow EPA to complete the current Programme and develop future GHG programmes for industry. (Environment Link 2005a, 22).

It is understood that about half of this is the annual recurrent cost of SEPP implementation, and only about 20% of this half (\$ 60,000) should be attributed to the costs of processing data reports, and the rest on managing broader compliance issues and monitoring abatement actions. Since there are now just over 1,000 participants, this represents about \$60 per reporting entity per year.

The NPI represents a ‘purer’ reporting programme in that participation is mandatory for entities meeting the criteria – so there is no need to spend on publicity and recruitment beyond alerting all likely parties to their obligations – and it requires data reporting only, without programme and reduction reporting.

Table 11 summarises the cost to government of operating the NPI since its establishment in 1997/98 (reporting commenced the following year). These are reported to be about \$640 per reporting entity per year (Environment Link 2005; this value appears to be inconsistent with the costs tabulated in the same report (Table 11), which indicate a total annual cost of \$694 per Entity). However, some of the costs presumably cover the inclusion of diffuse emissions such as transport which are calculated and reported by state agencies, so the actual effective cost per reporting business may be lower.

Table 11 Summary of NPI costs

	97/98 \$M	98/99 \$M	99/00 \$M	00/01 \$M	01/02 \$M	02/03 \$M	03/04 \$M	04/05 \$M
Commonwealth	NA	NA	NA	3.2	1.2	1.5	1.5	1.5
States (c)	NA	NA	NA	0.0	0.8	0.8	0.8	0.8
Total	2.8(a)	2.8(a)	2.8(a)	3.2	2.2(b)	2.3	2.5(b)	2.5(b)

Source: Environment Link 2005, 52. (a) Inferred (b) Totals given in source exceed apparent sum of contributions. (c) Source states: ‘A number of jurisdictions believe that this underestimates state contributions significantly.’

The cost of administering the NSW GGAS programme is not directly reported by IPART. However, the programme was designed to be more or less self-funding from accreditation fees and NGAC registration fees. Revenues from these sources are currently around \$1.1.m per year, so this may be an indirect indicator of the programme’s costs. As there are so many different types of REs reporting different classes of information (four categories of power station, NGAC creators, LUAC creators, energy utilities) and operating the NGAC register would account for a significant part of the expenditure, any estimate of average DRA costs per participant would be misleading.

The annual costs of operating the GHC+ reporting platform OSCAR, are estimated at about \$0.83m per year. This excludes the higher initial costs of development, and also the additional staff costs of liaison with programme participants, which are directed more to Programme and Reduction Reporting aspects than Greenhouse and Energy Reporting.¹⁴

Table 12 summarises the authors’ estimates, based on the available data, of the costs to government of three of the largest greenhouse and energy reporting programmes (no data were available for FES). The estimates in Table 12 nominally cover only the annual cost of running the greenhouse and energy reporting elements, and exclude the higher start-up costs and the additional costs (in the VIC SEPP/AQM and GHC+) of Programme and Reduction Reporting.

¹⁴ Author’s estimates based on discussions with Mr Lee Hopson, DEH.

The costs to government appear to range from about \$63 to about \$830 per reporting site per year, with an average of about \$610. Discussions with stakeholders suggest that some part of this is a fixed cost of maintaining a data receiving and storage capability, and part is a variable cost associated with processing (and often querying) data returns. In the absence of more detail, it is assumed that about half the average cost – say \$300 site - is the variable cost that agencies would save if they no longer collected greenhouse and energy data directly, but were able to access it from a central database. The agency which operates the central database would still incur these variable costs.

Table 12 Estimated annual costs of greenhouse and energy reporting elements of major programmes

	Total costs \$/m/yr(a)	Reporting Entities	Sites (b)	\$ per RE per yr	\$ per site per year
NPI	2.50	1577	3600	1585	694
VIC SEPP/AQM	0.06	642	959	93	63
GHC (GRE only)	0.83	780	1000	1064	830
All of above	3.39	2999	5559	1130	610
Estimated variable cost per site report received					300

Source: author estimates based on available data (a) Nominally for greenhouse, energy or pollutant data collection, processing and storage only, not for other programme expenditures. (b) See Chapter 3 for discussion of sites per RE

However, the non-collecting agencies would still incur the fixed costs of maintaining their own databases and processing capabilities. If half the reporting-related costs of the programmes listed in Table 12 are variable, the other half (averaging \$0.57m per programme per year) are fixed. These costs are likely to continue, since each agency will probably want to maintain its own distinct database, analytic capability and, for some, the links to its other programme and reduction activities.

The Public

Many companies are aware of public and investor interest in their energy use and emissions. ‘Triple bottom line’ reporting (on financial, social and environmental indicators) is becoming widespread among global and national companies.

Companies, and their industry associations, also wish to publicise their efforts to reduce emissions and to increase the efficiency of their resource use, including energy and water. Gaining recognition for such efforts is the main incentive for participation in voluntary programmes such as GHC+.

This creates some tension between the perceived value of public disclosure of greenhouse and energy data which can be seen in a positive light and the instinct to withhold data which can be interpreted to mean that the company is underperforming or which could reveal information of use to competitors. Some companies resolve this tension by publicising the efforts they have made to reduce emissions and their estimates of kt CO₂-e saved, while not revealing the absolute level of emissions or the trend over time. Some report total emissions (in CO₂-e), and sometimes emissions per unit of output, but do not report energy use, emissions broken down by source or separate fuel, or the level of output.

Some companies try to follow one or more of the guidelines for *calculating* emissions, such as those of the GHC+(AGO 2005) or the World Business Council for Sustainable Development (WBSCD 2005). However, there is no standard format for publicly *reporting* emissions, which for complex entities means combining data from a large number of disparate sites and operating entities and presenting them in a way that is both internally consistent and comparable with other companies.

Those trying to provide data in good faith have to develop their own reporting formats (or select from a wide range of possible formats) and convince data users that (a) the method of data collection is itself valid, and (b) it has been rigorously applied. This is sometimes done by engaging ‘auditors’ who are themselves uncertain about methods and have limited expertise.

Users of data are rarely in a position to compare different companies’ emissions or emissions-reduction performance because of inconsistency of data formats, legitimate doubts about consistency of method and quality and the lack of sufficient disaggregation of reported results to allow users to check at least some of the assumptions.

The situation is analogous to the disclosure of appliance energy efficiency information before the implementation of mandatory energy labelling: no single appliance (data) supplier, even if able to supply energy efficient appliances (demonstrate low emissions) is in a position to establish an energy labelling (greenhouse reporting) regime to the level of public confidence where it will be accepted by data users and not be liable to criticism by competitors. Only government is in a position to do this.

However, the analogy should not be taken too far. While members of the public, as consumers, have a direct economic interest in preferring a more efficient appliance or motor vehicle to another, and can be reasonably confident of the link between the product’s performance and its resource consumption, the relevance, meaning and indeed accuracy of public greenhouse and energy use comparisons between corporations is far more problematic.

‘Professional’ Data Users

‘Professional’ users of greenhouse and energy data include those with business interests (eg corporate advisors, competing companies, investment fund managers, and consultants), participants in public policy debates (eg journalists, environmental NGOs) and academics.

These data users are already able to infer or estimate the greenhouse gas emissions of major corporations using public data, sometimes combining information from different sources. For example, NGOs have from time to time compiled rankings of the largest emitting power stations in Australia by combining electricity output data published by NEMMCO with State fuel use estimates published by ESAA and emissions factors published by AGO. The estimates for each power station have been close to the values reported to the NGGI. Data for large emitters outside the electricity sector is more difficult to come by, but it can be and has been done. Those professional users who do not have the skills to do this themselves can and do employ consultants.

Rigorous comparison of the present emissions, likely emissions trajectories and carbon price exposure of different corporations requires a significant level of analysis beyond the raw energy and greenhouse data – product mix, production levels, technology used and regulatory environment.

Many companies will have an interest, which is likely to increase over time, in ensuring that such analyses are well informed and accurate, especially if they are seeking to demonstrate low or declining carbon exposure and increasing energy efficiency. The ability to start with a standard set of energy use and emissions data, as reported to government under a consistent national reporting framework, would assist these companies. In turn it is likely that professional data users would increasingly request this data from companies directly, and would draw their own conclusions if it were withheld.

For professional users, then:

- The present level of data availability is workable, but data users' costs would be considerably lower if more data were made public by more companies, whether through mandatory disclosure provisions or through response to the demands of informed data users. This would also increase the reliability of their assessments.
- The more difficult (and arguably more important) need to combine greenhouse and energy data with a wide range of other information to make useful comparisons and projections will still remain.

The above applies to companies with large emissions footprints – typically those in the mining, energy, metals and other materials processing sectors (bulk chemicals, pulp and paper, cement, ceramics, glass). For medium to small energy users, especially those in the service sector with electricity as their sole or main energy source, energy usually accounts for such a small share of business costs that professional data users and business analysts are not particularly concerned with it.

General Public

There is a high level of public interest in the climate change issue, in government policies and programmes to address it and in the efforts that public and private entities are making to reduce their emission levels.

However, the extent to which public access to the actual greenhouse gas emissions and/or energy use of specific facilities is necessary to serve this public interest is not so clear. Two arguments in favour of mandatory public disclosure frequently raised in recent reports (eg Rae 2005, Environment Link 2005a, EEOA 2005) are:

- the 'public right to know'; and
- the proposition that the greater the level of mandatory disclosure, the greater the attention paid by corporate managers – especially those choosing not to participate in voluntary programmes at present – to increasing energy efficiency and reducing emissions.

The 'public right to know' is based on precedents such as the NPI. However, unlike the substances covered by the NPI, greenhouse gas emissions do not represent direct and immediate hazards to public health and safety, and so do not fit the principles which underlie the NPI:

The reasons for establishing the NPI were to:

- provide information to enhance and facilitate policy formulation and decision making for environmental planning and management;
- satisfy community needs by providing publicly accessible and available information on a geographic basis, about specified emissions being released to the environment, especially those of a hazardous nature or involving significant impact; and
- promote and facilitate waste minimisation and cleaner production programmes for industry, government and the community (Rae 2004,8).

There has been little argument that the substances on the NPI reporting list are aptly described as 'pollutants' (Rae 2004,8). In contrast, there is considerable controversy whether non-hazardous substances such as CO₂, in particular, are pollutants in the same sense as the substances scheduled in the NPI.

Public disclosure is also a spur to improving performance. The Discussion Paper on reporting procedures for the Energy Efficiency Opportunities Assessment programme stated:

During consultation, some businesses communicated a reluctance to publicly report total energy use as this is considered commercially sensitive information. Others have indicated a willingness to provide this information, and have indicated that it is already reported voluntarily.

The intent behind the provision of total energy use is to ensure that information reported in relation to assessments is meaningful to stakeholders. Provision of total energy use data in some form will provide context to reporting potential energy saved from opportunities identified. In responding, businesses should bear in mind that the intent of the programme is to improve the uptake of energy efficiency through raising the profile of energy within a business, and that the possibility of increased public scrutiny is one way by which the profile of energy use can be raised (EEOA 2005, 23).

However, the publication of total energy use for all entities reporting energy and emissions (as could be mandated under a national framework) *without* a parallel mandatory obligation to report 'potential energy saved from opportunities identified' (which is outside the present terms of reference) would not necessarily provide any more incentive than at present. Less scrupulous companies could publish optimistic or entirely fanciful statements about their emission reduction plans along with their (rigorously calculated) historical emissions.

In summary, the publication of historical energy and emissions data, in the absence of equally rigorous information on reductions planned and achieved, may be of little value

to non-specialised data users, and may not of itself increase the pressure on companies to reduce emissions.

Commercial Confidentiality

Commercial confidentiality is often cited by business as a reason for non-disclosure of data, even to government agencies who are under regulatory obligation to maintain confidentiality. The fact that some entities with very high emissions voluntarily publish data in more detail than their competitors are prepared to disclose to government is beside the point. The assessment of commercial confidentiality is essentially a subjective one for each business to make.

There are different ways in which this discretion may be exercised. The ABS for example has a statutory obligation not to reveal information that could enable the identification of individual respondents. ABARE has chosen to adopt similar levels of confidentiality for the FES. For the NPI, on the other hand, the default is public disclosure, because the purpose of the NPI is to allow individuals to make their own assessments about ‘the locality or region in which concerned members of the public live, work or seek recreation’. Even so, data reported to the NPI may be held in confidence at the request of the submitter, but no such instances have arisen (Rae 2004).

Summary

There is no necessary link between the obligation to report data to a national reporting framework and the obligation (or choice) to disclose the data publicly.

However, establishing a national framework would provide the *capability* for the following levels of disclosure (in order of increasing commercial sensitivity):

- Entities could choose to publicly report their own emissions as submitted to and verified by the national framework. This would carry no commercial sensitivity implications since disclosure would be entirely voluntary.
- The national framework could report on the number of corporate entities reporting, number of sites covered and aggregated emissions. As the number of entities reporting and/or the actual sites covered would most likely change from year to year, it would be necessary to publish ‘like for like’ estimates to give any meaningful trends.
- The national framework could report on the number of corporate entities reporting, number of sites covered and aggregated emissions within each jurisdiction.
- The national framework could publicly report total emissions by named corporate entities (without disclosing sites).
- The national framework could publicly report total emissions at each site (ie the same level of disclosure as in the National Pollutant Inventory).

Once the data are compiled for the purposes of reporting to government there are no additional monetary costs associated with public disclosure, whether by the reporting

entity or by the data requiring agency. The qualitative costs and benefits appear to accrue as follows.

From the viewpoint of government policymakers, the establishment of a nationally consistent framework for greenhouse and energy reporting to government would probably increase the level of voluntary public reporting of greenhouse emissions and energy use, because more entities would be compiling the data in the same standard format, and there would be public pressure (mainly from professional data users) to disclose it. Also, the existence of a single standard method for calculating emissions would reduce (but not eliminate) one of the uncertainties surrounding public disclosure – that companies could select a different method of calculation (even among the range currently used by various Data Requiring Agencies) to publish the values that are most favourable to them.

Mandating public disclosure of all or part of the reported data requires government to balance the interests of reporting entities with those of data users, and with the general public interest in reducing greenhouse gas emissions.

Mandating minimal data disclosure of greenhouse and energy data (eg total corporate energy use and emissions) would be of limited use to professional data users, who generally seek detailed information, and of limited value to the general public, who would be in no position to judge whether an entity is efficient in its resource use, (without additional information on its production of goods or services), or whether the entity is making adequate efforts to reduce emissions (without detailed disclosure of its programme and reduction reports as well).

Mandating full data disclosure at the site level would benefit professional data users considerably, but may be of limited value to the general public without additional analysis and mediation (by professional data users, the government or the reporting entity itself). If only historic energy use and emissions were disclosed, the additional pressure on corporations to undertake emissions reduction or to increase energy efficiency may be limited.

If the public disclosure of all reported data were to be made mandatory under a national greenhouse and energy reporting framework, there may be a risk that reporting entities would withhold greenhouse and energy data, or seek to narrow the range of data reported to government in order to limit what is publicly disclosed.

To sum up:

- The implementation of a nationally consistent reporting framework would enable government to increase the quality of aggregated public reporting on greenhouse gas emissions and energy use.
- The implementation of a nationally consistent reporting framework is itself likely to increase the quality and extent of voluntary public reporting of greenhouse gas emissions and energy use by the businesses affected.

- The cost and benefits of public disclosure can be treated separately from the costs and benefits to governments and other stakeholders of measures to improve the quantity and quality of greenhouse and energy data.

Efforts to address the issues

The Joint Working Group on Greenhouse and Energy Reporting

The Australian Government recognised the issue of increasing greenhouse and energy reporting burdens in its 2004 Energy White Paper, *Securing Australia's Energy Future*. State and Territory governments also recognised the need to examine greenhouse and energy reporting. The Environment Protection and Heritage Council (EPHC) and the Ministerial Council on Energy (MCE) agreed to set up an inter-jurisdictional Joint Working Group (JWG) of officials to develop options for a national approach to business reporting of greenhouse and energy to meet a range of government, industry and community information needs.

The terms of reference for the JWG were 'to examine the costs and benefits associated with the implementation of a nationally consistent framework for greenhouse and energy reporting from Australian industry to meet government and public reporting needs. Specifically to:

- identify and, as appropriate, develop a national greenhouse and energy reporting framework suitable for Australian industry, taking into account emerging international reporting frameworks;
- identify the extent of data collected by or on behalf of government;
- explore cost-effective mechanisms, including the NPI, for implementing the national reporting framework, and assess the relative costs and benefits of these options;
- identify options for the ownership, collection, analysis and dissemination of energy and greenhouse data; and
- evaluate potential instruments for national greenhouse and energy reporting.

During 2005, the JWG held five meetings (in Melbourne and Adelaide), engaged a consultant to identify types of reporting requirements and conduct an analysis of current and prospective greenhouse and energy programmes (ACG 2005), and developed a paper as a basis for consultation with business, industry and government stakeholders (JWG 2005a).

The JWG consulted over 50 stakeholders through a series of targeted workshops held in Perth, Canberra and Melbourne in late May and June 2005, and provided progress reports to both the EPHC and MCE. In its August 2005 report (JWG 2005b) the Joint Working Group concluded that:

A nationally consistent and well-designed approach to greenhouse and energy reporting could:

- 1) minimise and streamline the administrative burden on business and government;
- 2) deliver greater consistency in greenhouse and energy reporting;

- 3) be flexible so as to accommodate future policy settings and reporting requirements;
- 4) facilitate Australian company participation in international reporting initiatives; and
- 5) identify a core minimum common data set for use by jurisdictions to meet respective policy and programme objectives for greenhouse and energy.

On the basis of consultation with industry and feedback from participating jurisdictions, the JWG found clear support for a nationally consistent approach to streamline greenhouse and energy reporting, but it also reported considerable differences in opinion among stakeholders about the preferred options to achieve this.

The EPHC/MCE JWG recommended that the MCE and the EPHC agree that:

1. States, Territories and the Australian Government will work together to develop and implement ways to:

- a. rationalise greenhouse and energy data that is currently or in prospect collected by companies or business and reported by them to governments and/or international institutions including through development of a minimum common data set;
- b. report and collect data in the form of a secure online tool mechanism that could function as a single entry point for greenhouse and energy data reporting by business to government; and
- c. progress this work with a view to having a new streamlined data collection and reporting system for greenhouse and energy in place by 30 June 2006.

2. States, Territories and the Australian Government will also work together to examine whether there is a need, among other options, for a new national requirement for companies and businesses above a certain threshold to report their greenhouse and energy data to deliver jurisdictions' policy objectives. This work will:

- a. include costs and benefits of possible options, thresholds, treatment of company boundaries, and approaches that could be used to meet public reporting objectives, while ensuring that commercially sensitive information is safeguarded, and the compliance burden is minimised; and
- b. be developed with a view to incorporating the outcomes from 1 (a-c) above and being in place by 30 June 2006.

Two working groups have been established to implement these recommendations:

- A Policy Working Group On Greenhouse and Energy Reporting: '...with relevant policy, programme and legal expertise representing all jurisdictions...to advise on the policy issues associated with mandatory reporting and public disclosure and efforts to streamline data collection and reporting for greenhouse and energy by business to governments. This group will aim to build on Joint Working Group findings to further identify and resolve policy issues which remain to be addressed'.
- A Technical Working Group On Greenhouse and Energy Reporting: '...with technical expertise and representation from each jurisdiction...to advise on the

development and implementation of ways to streamline data collection and reporting for greenhouse and energy by business to governments. This group will aim to build on Joint Working Group findings to reduce the reporting burden for business and industry through streamlining by further resolving and identifying commonalities in greenhouse energy and similar data currently collected or likely to be required in the near future with a view to minimising duplication of reporting requirements’.

This document

This report was commissioned by the DEH on behalf of the EPHC/MCE Working Group on Greenhouse and energy Reporting. Its objective is ‘to analyse and report on the costs and benefits associated with a national mandatory measure requiring Australian companies to report greenhouse and energy data, with public disclosure; and to inform the work of the Policy Working Group on Greenhouse and Energy Reporting.’

Terms of Reference

The summary of the terms of reference (included in full in Appendix 1) are as follows:

A Cost-Benefit Analysis (CBA) of a new mandatory reporting requirement and alternatives to mandatory reporting is the central task of this consultancy. The CBA should outline the costs and benefits of mandatory reporting, including direct and indirect economic, environmental and social costs and benefits, and an analysis of distinct alternatives (including the ‘do nothing’ or status quo option) to mandatory reporting. This assessment should take into account both effectiveness and efficiency.

It is envisaged that the analytical framework underpinning a regulatory impact statement (RIS) will be used throughout the Policy Working Group’s work, and the CBA will comply with the requirements set out in the Council of Australian Government’s (COAG) *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies*.

This means the CBA would include the elements outlined below. The focus of the consultancy services will be on impact analysis.

The assessment of impacts should include:

- Identification of stakeholder groups likely to be significantly affected by the options. These groups should be broken down into sub-groups, eg specific industry sectors, where options will have different effects on those sub-groups.
- Assessment of costs and benefits to government, businesses, consumers, and the community as a whole.
- Effects on competition, eg whether options would raise barriers to market entry, exit or innovation.
- Effects on small business. The report should include a sub-section that assesses the impact of each option on small business compliance costs and paperwork burden.
- Effects on trade, eg whether options would create unnecessary obstacles to international trade, such as discrimination between domestic and imported products.

Factors that will have a significant impact on the costs and benefits of mandatory reporting and other alternatives are the:

- threshold for reporting (eg reporting is required where entities consume over a certain amount of energy or emit a certain amount of greenhouse gas emissions);
- whether reporting must be disaggregated down to facility/site level or aggregated up to the company level;
- sectors/industries that would be covered by mandatory reporting; and
- a level of public or other disclosure (if any) ensuring that commercially sensitive information is safeguarded while “community right to know” objectives are met.

The CBA should assess the impact of these factors.

Levels of public disclosure suggested for analysis are:

- maintain the status quo (i.e. no new public disclosure);
- partial public disclosure; and
- full public disclosure (as in the National Pollutant Inventory).

Thresholds suggested for analysis were:

- 500 terajoules of energy, or 125,000 tonnes of carbon dioxide equivalent (t CO₂-e) per annum;
- 100 terajoules of energy, or 25,000 t CO₂-e per annum; and
- 4 terajoules of energy, or 1000 t CO₂-e per annum.

In the event, two additional thresholds have been analysed as well: 10 kt and 5 kt.

Structure of this Report

The structure of this report roughly follows the structure and order of a Regulation Impact Statement (RIS), as described in COAG (2004), the key headings from which are italicised below. However, this paper is not a full RIS, since there is no actual regulatory proposal to consider, but rather a preliminary regulation impact assessment.

Statement of the problem: *why is government action being considered in the first place? What is the problem being addressed? For example, this should state the market failure that the proposal seeks to remedy (COAG 2004).*

This is covered in Chapter 1 of this document.

Objective: *the objective which the regulation is intended to fulfil must be stated in relation to the problem. The objectives of a regulation are the outcomes, goals, standards or targets which governments seek to attain to correct the problem.*

Statement of the proposed regulation and alternatives: *this should describe the proposed regulation and distinct alternatives in sufficient detail to allow comparative assessment and evaluation in the rest of the RIS.*

These are covered in Chapter 2.

Costs and benefits: *there should be an outline of the costs and benefits of the proposal(s) being considered. This should include direct and indirect economic and social costs and benefits. There should also be analysis of distinct alternatives (including 'do nothing') to the proposed regulation.*

The direct monetary costs and benefits are calculated in Chapter 3 and the indirect cost and benefits are identified in Chapter 1. The overall assessment of costs and benefits is in Chapter 4. Only the costs to Reporting Entities and Data Requiring Agencies can be quantified. The costs and benefits of factors such as the extent of public disclosure are matters of judgement for governments.

Consultation: *a RIS must outline who has been or will be consulted, and who will be affected by the proposed action. On a case by case basis, this may involve consultation between departments, with interest groups, with other levels of government and with the community generally.*

In preparing this report we have drawn on the reports of consultations undertaken by others for the Joint Working Group during 2005. We have also held some limited discussions with representatives of large reporting entities, with the Victorian EPA and the AGO.

We understand that the material in this report will be used as an input into further consultations between the PWG and stakeholders.

Review: *there should be consideration of how the regulation will be monitored for amendment or removal. Increasingly, sunset provisions are regarded as an appropriate way of ensuring regulatory action remains justified in changing circumstances.*

This applies to actual regulatory proposals, so cannot be addressed in the present report.

2. Objectives and Options

Objectives

General Objectives

The Policy Working Group has identified the following objectives for mandatory reporting:

1. reduce the overall burden on industry and business in reporting greenhouse gas emission and energy data;
2. provide appropriate and consistent information on the greenhouse and energy related performance of companies for:
 - c. investors and business planners - to improve the flow of market information and thereby facilitate sound market decisions;
 - d. the general public - to inform public debate on greenhouse and energy issues; and
3. ensure that data provided by companies to governments is nationally consistent, robust and comparable across programmes that may be located in different jurisdictions to inform government policy making.

The criterion used in this report for testing options against Objective 1 is a monetary one. The existing arrangements impose a range of quantifiable costs on Reporting Entities, whether those are privately owned 'industry and business' or public agencies, as many participants are. They also impose costs on the Data Requiring Agencies.

To the extent that a proposal is likely to reduce overall monetary costs to Reporting Entities, it would satisfy Objective 1. However, the distribution of cost and benefits between different groups of Reporting Entities and any changes in the pattern of costs to Data Requiring Agencies also need to be taken into account.

The criteria for assessing proposals against Objective 2 are essentially qualitative and in large measure subjective. There is no objective measure of the 'soundness of market decisions' with regard to the value which investors attach to the energy use or greenhouse gas emissions of a company's operations.

Nor is there a measure of the extent to which 'public debate on greenhouse and energy issues' may be inhibited by limitations in the quantity and quality of data publicly available on the performance of individual companies.

Objective 3 could possibly be met by adopting a completely new common greenhouse and energy reporting requirement without abandoning or modifying any of the existing requirements, or designating one of the existing programmes as the data collection point and ensuring that all Reporting Entities join it, but without withdrawing from other programmes. This would achieve Objective 3, a 'nationally consistent, robust and

comparable' data collection, and most probably advance Objective 2 as well, but at the expense of increasing the reporting burden and so failing Objective 1.

A National Greenhouse Energy and Reporting Framework

The purpose of this study is to consider how a national greenhouse and energy reporting framework could meet, or contribute to meeting, the three Objectives above.

Participation in the framework could be either voluntary or mandatory (ie required by law) for all Reporting Entities meeting the specified conditions or thresholds, or voluntary for some subgroups and mandatory for others. If mandatory, the framework would become a national greenhouse and energy reporting *requirement*.

The involvement in the framework of Data Requiring Agencies could take different forms. Some could abandon their separate data requests entirely in favour of data collected through the national framework, others may participate but still choose (or be forced by their programme requirements) to seek additional data, while others may not modify or reduce their data requests at all. Thus the response of Agencies is as important in assessing overall impacts as the response of Reporting Entities.

Although it is premature to specify the nature of a national greenhouse and energy reporting framework, it is necessary to make some assumptions in order to assess the likely responses of interested parties, since those responses will have a bearing on total costs and benefits.

For example, the criteria or thresholds for an Entity's participation in the framework could be based on the characteristics of individual sites, or on the aggregation of energy use or emissions across all sites, irrespective of which State or Territory they are in. However, one factor affecting the likelihood that State Agencies would voluntarily remove or reduce their separate data requirements is the availability of site-level data for their jurisdictions. This does not necessarily mean that the participation threshold must be site-based (some alternative calculation options are discussed in Chapter 3), but that participant data should be collected, stored and accessible down to the site level.

This report deals only with the reporting of historical greenhouse and energy data. Even if all jurisdictions and Agencies agree (or are obliged) to accept data reported via the national framework as definitive, some may still require additional reports from those entities participating in (or caught by) their separate programmes, eg:

- Submissions of plans for increasing energy efficiency and/or reducing emissions. Such submissions are voluntary for participants in the GHC+, and mandatory under the Commonwealth EEOA legislation (when passed), the Water and Energy Savings Amendments to the NSW Energy Administration Act and Victoria's SEPP/AQM. Indeed, many entities may still be required to prepare energy efficiency plans for both Commonwealth and State agencies.
- Submission of estimates of energy and greenhouse savings actually achieved by projects implemented under each of the above programmes.

- Data on production of goods or services, to enable the tracking of ‘greenhouse intensities’.
- Additional ‘Scope 3’ greenhouse data for some programmes, eg fugitive emissions from the mining of coal used by generators reporting to IPART under the NSW Greenhouse Gas Abatement Scheme. Scope 3 reporting is also generally required for GHC+ ‘Leaders’.
- Data unrelated to the energy use or greenhouse gas emissions of the reporting entity itself, eg electricity sales to others are to be reported to IPART by parties with liability under the NSW Greenhouse Gas Abatement Scheme – in fact many of these parties may not otherwise be involved in a national greenhouse and energy reporting framework at all, since their actual energy use and emissions would be below the threshold.
- Projections of energy use (eg for FES).

The present study focuses on the reporting of historical energy use and greenhouse gas emissions, and not on the above factors. However, if a consistent national framework for greenhouse and energy data reporting were established, it would most likely facilitate the harmonisation of reporting of progress on energy efficiency and greenhouse reduction programmes, and possibly, the harmonisation of the programmes themselves in due course.

Although it is not listed as an objective, a key benefit of a national greenhouse and energy reporting framework is the capability of supporting new programme initiatives and approaches, should these be introduced at some stage.

Proposed Regulation and Alternatives

Alternative Approaches

The range of options default to four main alternatives, summarised in Table 13.

The first option is the status quo, which means accepting the continuation of the present range of reporting requirements and the possibility that more will be added, while endeavouring to streamline and harmonise them to the extent possible.

The second option is the establishment of a consistent national greenhouse and energy reporting framework, but without regulation. This would require agreement between Data Requesting Agencies to harmonise their existing data requirements and to forego the future imposition of new requirements. The incentive for them to agree to this would presumably be access to better data than they get now, or lower-cost ways to obtain data. Alternatively, governments could direct their Agencies to participate.

The third option is a mandatory requirement that obliges Reporting Entities to participate, but does not force Agencies and jurisdictions to abandon their current or future data demands. It would however create a strong incentive for them to do so, if that were a condition of access to what would become be the most comprehensive greenhouse and energy data set available.

The fourth option is a mandatory requirement which obliges both Reporting Entities and Data Requesting Agencies to participate.

The extension of the NPI or a new National Environment Protection Measure (NEPM) could all be the means of implementing Option 3, albeit with differences in detail and timing that could affect costs and benefits to some extent. The distinctive aspect of Option 4 is that it would prevent Agencies from requesting greenhouse and energy data outside the national reporting framework. It is doubtful that this can be achieved within the structure of the NPI or a NEPM, so Option 4 is likely to require new specific legislation.

Table 13 Summary of Options

Option	Reporting Entities	Data Requiring Agencies	Corresponding option in TOR
1. BAU	As at present	Each free to set own rules	a. Status Quo
2. Establish NGERR, without new regulation	Voluntary participation	Some incentive to accept NGERR reports	b. Harmonisation without additional legislation
3. Establish NGERR, with new regulation	Mandatory participation	Strong incentive to accept NGERR reports	c. extend NPI d. new NEPM
4. Establish NGERR, with new regulation	Mandatory participation	Obligation to accept NGERR reports	e. New specific legislation

The technical mode of reporting is a secondary consideration. In theory, the development of a convenient mode of reporting such as a web-based reporting tool could help to play a part in Option 2, especially if the establishment and operating costs were borne by a 'sponsoring Agency' such as the Commonwealth. It would reduce costs for those Data Requesting Agencies prepared to abandon or modify their current or future data demands (otherwise they would not depart from the status quo) but would only reduce cost for reporting entities if enough Agencies were persuaded to participate. Alternatively, a web-based reporting tool – or any other alternative - could simply be the mechanism for administratively implementing Option 2, 3 or 4.

Non-Regulatory Options

1. BAU

The 'Business as Usual' option would achieve little progress towards the Objectives. The number of reporting requirements are not likely to fall, and may well continue to increase, as evidenced by the WA government's announced intention to introduce mandatory reporting for a WA Greenhouse Gas Inventory. The reporting burden on business will probably continue to increase.

There may be some further rationalisation of the technical aspects of reporting requirements, although the opportunities for further rationalisation seem to be limited - most programmes already refer to the *AGO Factors and Methods Workbook*, and harmonisation of requirements within the same agencies appears to have proceeded as far as possible.

2. Establish a National Framework Without Regulations

It is open to the Commonwealth, State and Territory governments to establish a national greenhouse and energy reporting framework through agreement and negotiation.

Environment and Energy Ministers could direct the Data Requesting Agencies within their jurisdictions to work together to agree on a reporting format and reporting framework that would satisfy their requirements. There have been some tentative efforts along these lines in the past, but success has been limited, even within the same jurisdictions.

Alternatively, one 'sponsoring jurisdiction' (probably the Commonwealth) could create the conditions favourable for development of a national reporting framework by:

- Altering its reporting requirements to ensure that the data collected potentially covers the needs of all other Data Requesting Agencies; this would probably require a 'highest common denominator' approach, to capture the widest scope of data;
- Securing the agreement of Agencies to accept data from the national reporting framework in lieu of making separate data requests; this would probably require the 'sponsoring agency' to enter legal agreements with both Data Requesting Agencies (to satisfy them regarding their access to data) and with recruited Reporting Entities (advising them that the reported data will be passed on); and

- Once the above agreements are in place, recruit Reporting Entities by offering assurances that a single report would be made available to, and accepted by, other participating Agencies. Other incentives, such as public recognition or free technical assistance could also be offered.

This process carries risks to all parties, and may not succeed until a ‘critical mass’ of both Agencies and Reporting Entities is achieved. Considerable time and effort could be expended without outcome, so the probability that any Agency would agree to sponsor the process, and see it to completion, may be low.

Some Agencies may need to seek changes in their own regulations, which oblige them to obtain certain data as part of administering mandatory programmes, before being able to forego direct data and receive data reports from another Agency or other parties. Some Agencies may also wish to retain the right to independently verify or audit data collected by the ‘sponsoring Agency’, especially if they need to use the data to determine an Entity’s compliance with mandatory greenhouse reduction requirements. It is understood that the PWG will commission a study of these legal issues.

There is also a risk that partial implementation could *increase* the reporting burden and cost to both Reporting Entities and Agencies, by adding a further reporting layer without removing enough of the existing ones to compensate.

Nevertheless, Agencies could continue to explore the possibility of harmonisation of reporting requirements by agreement, within the framework of the EPHC/MCE Working Group on Greenhouse and Energy Reporting while also considering the advantages and disadvantages of regulatory approaches.

Regulatory Options

A regulatory approach would oblige those reporting entities meeting the criteria in the regulations to submit greenhouse and energy reports in specified formats to a designated agency or agencies – either existing or set up for the purpose. A regulatory approach may have a greater chance of success in implementing a national reporting framework, since it would remove many of the risks facing any single agency, and avoid the delays and uncertainties of agencies negotiating an agreed framework.

Regulations which define and possibly restrict the information seeking powers of Data Requesting Agencies, as well as define the obligations of reporting entities, reduce risks to a greater degree than regulations which place obligations on Reporting Entities only.

Some of the existing reporting programmes listed in Table 2 are supported by regulations which empower the relevant Data Requesting Agencies to require entities to report, but these are all based on different State legislation or on special Commonwealth legislation, and the relevant powers are limited to the programmes in question.

Elements Required in the Regulation

The following elements would be required in the regulation which supports a mandatory greenhouse and energy reporting requirement, whichever form the regulation may take:

- The designation of a department or agency (existing or new) to administer the regulation, and its structure and funding arrangements.
- Powers for the agency to make agreements with, and delegate functions to, other agencies (ie the existing Data Requesting Agencies).
- Powers for the agency to require entities meeting certain criteria to supply information.
- Powers to set the criteria (trigger thresholds and other conditions).
- Powers to specify the scope, form, mode and frequency of reporting.
- Powers to monitor and enforce compliance, including the power to request data from third parties (eg energy suppliers), and fines for non-compliance.
- Rules for dealing with data confidentiality and disclosure.
- Disputes resolution procedures.

Extension of National Pollutant Inventory

The NPI, established in 1998, was the first NEPM created by the National Environment Protection Council (NEPC), now the executive arm of the Environment Protection and Heritage Council (EPHC).

The proposal to include reporting of greenhouse gas emissions in the NPI was one of the recommendations of a 2001 review of the NPI. In 2004 the Victorian Government commissioned a consultancy to explore the options in more detail (Rae 2004). After consideration of this report, EPHC requested a further review of the NPI programme, which was completed in April 2005 (Environment Link 2005). In July 2005 EPHC decided to begin a variation process of the NPI NEPM which will consider, among other recommendations, the addition of greenhouse gas emission reporting.

EPA Victoria is currently investigating the matter further, and conducting a pilot study of the practicalities of adding greenhouse reporting to the requirements on NPI respondents (EPA 2005). That investigation is running in parallel with the present study. The two approaches are different in that the EPA investigation is not required to address the issue of whether the NPI would be the only, the most effective or the most cost-effective way to integrate all greenhouse and energy reporting requirements on business, but is limited to determining whether the NPI could accommodate the addition of greenhouse and energy reporting elements.

The great advantage of using the NPI as the regulatory basis for a national greenhouse and energy reporting framework is that it already exists, at the Commonwealth, State and Territory levels.

There are also major issues to be addressed, eg:

- The fact that the major greenhouse gases are not pollutants in the same sense as the substances presently scheduled.
- The imperfect coverage of industry sectors – the NPI only applies to activities for which emission estimation techniques have been published.
- The task of integrating greenhouse reporting rules with the already complex content of the emission estimation technique manuals.
- The task of including off-site (Scope 2 and 3) emissions, particularly for electricity use.
- The presupposition of public disclosure, which may not be appropriate or necessary for greenhouse and energy data.
- The NPI does not necessarily restrict the ability of Data Requesting Agencies to continue to seek additional greenhouse and energy data, so including greenhouse and energy reporting elements without reducing them elsewhere could actually add to the reporting burden.
- The apparent conflicts between the emissions corresponding to the current energy use triggers in the NPI (Table 3) and the optimum thresholds identified in Chapter 3 (ie a very low fuel use trigger and a very high electricity use trigger).

If a separate new regulatory vehicle is selected as the basis for a national greenhouse and energy reporting framework, it would be necessary to modify the NPI to avoid multiple reporting. For example, all fuel combustion-related emissions could be reported under the new national framework, and the data on the pollutant emissions (but not necessarily on the CO₂, CH₄ and N₂O emissions) transferred to the NPI for publication on its public database.

Alternatively, the NPI could become the main portal for all pollutant, greenhouse and energy reporting, and Reporting Entities could be directed via screening questions to fill in a NPI report only, a Greenhouse and Energy Report only, or both reports, using common fuel and electricity data.

Given the high level of Reporting Entity and Agency investment in the NPI, it is possible that there could be resistance to modifying it, so there is some risk that the NPI could continue as the last DRA outside a mandated greenhouse and energy reporting framework based on other legislation.

New Legislation

Any new legislation for greenhouse and energy reporting would presumably be designed to avoid the apparent limitations of using the NPI for this purpose. Whether it can be achieved within the NEPM or outside it is a matter for legal experts, but is not likely to have a major bearing on the achievement of the objectives of a national reporting framework.

An advantage of using the NEPM framework is that it provides a pre-existing matrix for the involvement and agreement of all jurisdictions. At the same time, a national greenhouse and energy reporting framework implemented under NEPM may not become fully operational, or achieve its full potential, until all jurisdictions enact the necessary legislation, and the stability of the framework could be subject to disruption by differences in jurisdictional interpretations, compliance effort and effectiveness, or in the 'sunset' periods for regulations. Problems of this type occur in the national energy labelling programme from time to time.

A Commonwealth measure would have some advantages in ensuring uniformity, but jurisdictions would not accede to such a regime without very strong assurances about access to data and a continuing role in managing the framework.

Conclusions

There is no existing regulation capable of supporting a national greenhouse and energy reporting framework without extensive modification. The only possibility so far identified – the NPI – would need extensive modification, or new legislation would be required either within the NEPM framework or outside it.

All three of these options would take some time. Further investigation by legal experts would be required to establish which option could be implemented most rapidly and could best meet the technical requirements of the framework once those are defined.

In any case, the form of regulation eventually selected is not likely to have a significant impact on the cost of the framework. Chapter 3 demonstrates that the 'adjustment' costs of changing to a new framework are small in relation to the on-going costs, and the adjustment costs to government – including the costs of developing legislation – are small in comparison with those incurred by Reporting Entities.

3. Costs, Benefits and Other Impacts

Factors Affecting Cost-Benefit Analysis

Number of Business Entities Potentially Affected

Number of Business Entities in Australia

The ABS publishes a count of the number of businesses in Australia, broken down by State and by industry sector, and distinguishing ‘employing’ from ‘non-employing’ businesses (ie those which are solely legal entities). ‘Employing businesses’ are further disaggregated by number of employees. It is assumed that each ‘employing business’ represents at least one site, however small, at which some business-related energy use takes place and/or greenhouse gas emissions may be produced, or (in the case of businesses dominated by mobile energy use), there is point of contact to which a request for information could be sent.

In June 2004 there were 837,078 employing businesses in Australia (Table 14), 821,102 operating in one state or territory only, and 15,976 with operations in more than one (an average of 3.1 operating jurisdictions for this group, or 1.08 for all employing businesses). While this number of businesses may appear high, it is reasonably consistent with the number of business customers reported by the Electricity Supply Association of Australia: 1.1 million at 30 June 2004 (*Electricity in Australia*).¹⁵

About a quarter of all employing businesses were in the Agriculture, Forestry and Fishing, Construction, and Transport and Storage sectors, which are dominated by petroleum fuels and mobile sources. The remainder of this analysis does not address these in detail, but focuses on businesses in the Mining, Manufacturing, Energy and Water Supply and Commercial & Services sectors, because:

- businesses in the Agriculture, Construction and Transport sectors are very poorly represented in existing greenhouse and energy reporting programmes, so little is known about the reporting characteristics of these businesses;
- for the transport sector, it is very difficult to separate the fuel consumption, and hence the emissions, of business transport users from private vehicle fuel consumption; and
- the sectors covered in detail account for the great majority of business emissions (Figure 2; note that electricity generation emissions are not additive, since they are also counted in the electricity use of business sites within each sector).

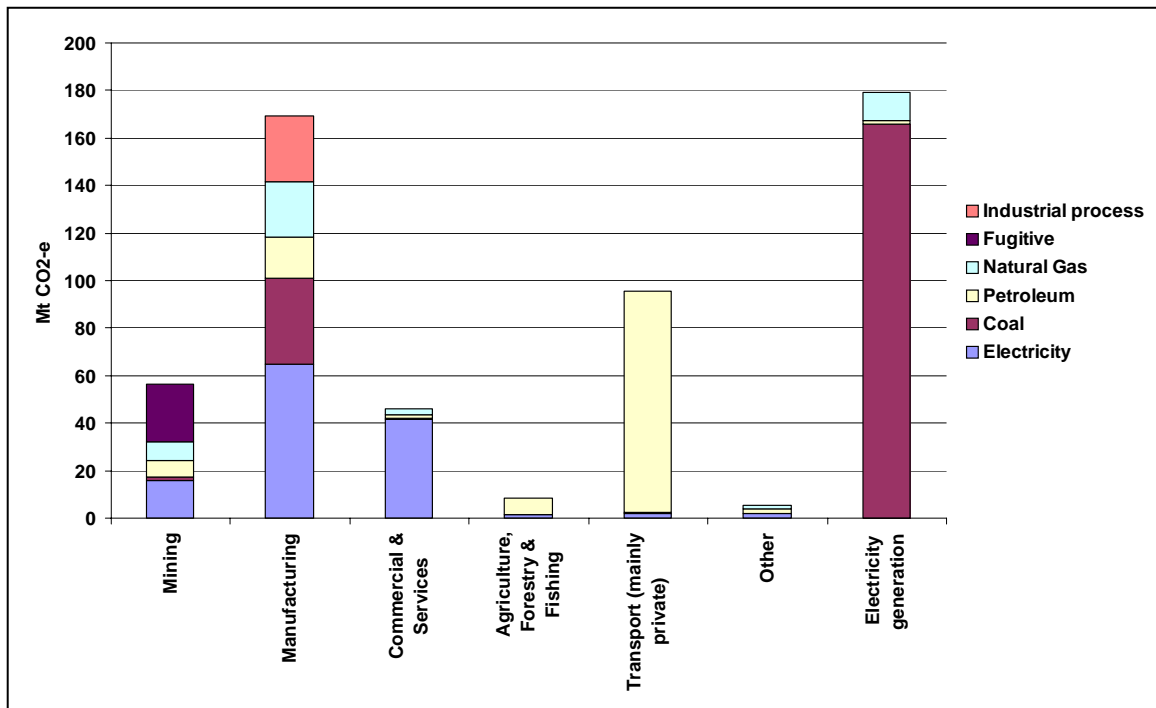
¹⁵ Recognising that electricity retailers generally count each billing account as a separate customer, and many business premises have more than one meter with its own account.

Table 14 Employing businesses in Australia and estimated number of sites

ANZSIC		Total employing businesses	Adjusted for multi-state ops (a)	Estimated number of sites (b)
DIV A	Agriculture, forestry & fishing	74,111	NA	NA
DIV B	Mining	2,731	3,181	3,181
21	Food, beverages, tobacco	4,543	4,885	5,374
22	Textile, clothing, footwear and leather	5,881	6,324	6,957
23-24	Wood, paper and printing	12,067	12,976	14,274
25	Petroleum, coal and chemical	4,085	4,393	4,832
26	Non-metallic mineral products	2,502	2,691	2,960
27	Metal products	11,065	11,899	13,089
28	Machinery and equipment	13,003	13,983	15,381
29	Other manufacturing	8,742	9,401	10,341
Div C	Manufacturing	61,888	66,551	73,206
	Electricity & Gas Supply	304	327	654
	Water Supply & Drainage	295	317	634
	Construction	113426	NA	NA
	Transport & Storage	37,374	NA	NA
	Commercial & Services	546,949	569,442	626,387
Total	Employing Businesses	837,078	870,833	NA
	Covered in this analysis	611,658	639,819	704,062

Source: Derived by authors from ABS 8161055001, June 2004 (a) Assuming all sectors have the same proportion of entities operating in more than one jurisdiction. (b) Assuming 1.0 sites per jurisdiction of operation for Mining, 2.0 for Electricity, Gas, Water Supply & Drainage and 1.1 for Manufacturing and Services

Figure 2 Estimated emissions from each sector



Business Entities by Emission Levels

A critical factor determining the reporting burden on business is the number of sites and businesses at each emissions threshold. We have estimated this by the following method:

1. Establish the total electricity, coal, petroleum and natural gas consumption in 2003-04 for each of the sectors listed in Table 14 (published on the ABARE website).
2. Estimate fugitive emissions in the Mining sector and industrial process emissions in each Manufacturing sub-sector (from the 2003 NGGI).
3. Estimate the number of sites falling into each of the emissions categories and the average annual electricity, coal, petroleum and natural gas consumption at each site.
4. Apply the Scope 2 emission factor for electricity (250 kt CO₂-e/PJ) and Scope 1 emissions factors for coal, petroleum products and natural gas (90, 75 and 52 kt CO₂-e respectively) to calculate the average energy-related emissions per site).
5. Estimate the average fugitive emissions per site (in Mining) and average industrial process emissions per site (in Manufacturing).
6. Ensure that average emissions per site remain within the constraints for that category (eg the sum of average electricity, fuel and other emissions for sites in the 25-125 kt category obviously cannot exceed 125 kt, and should preferably be near the midpoint of the category, which in this case is about 75 kt).

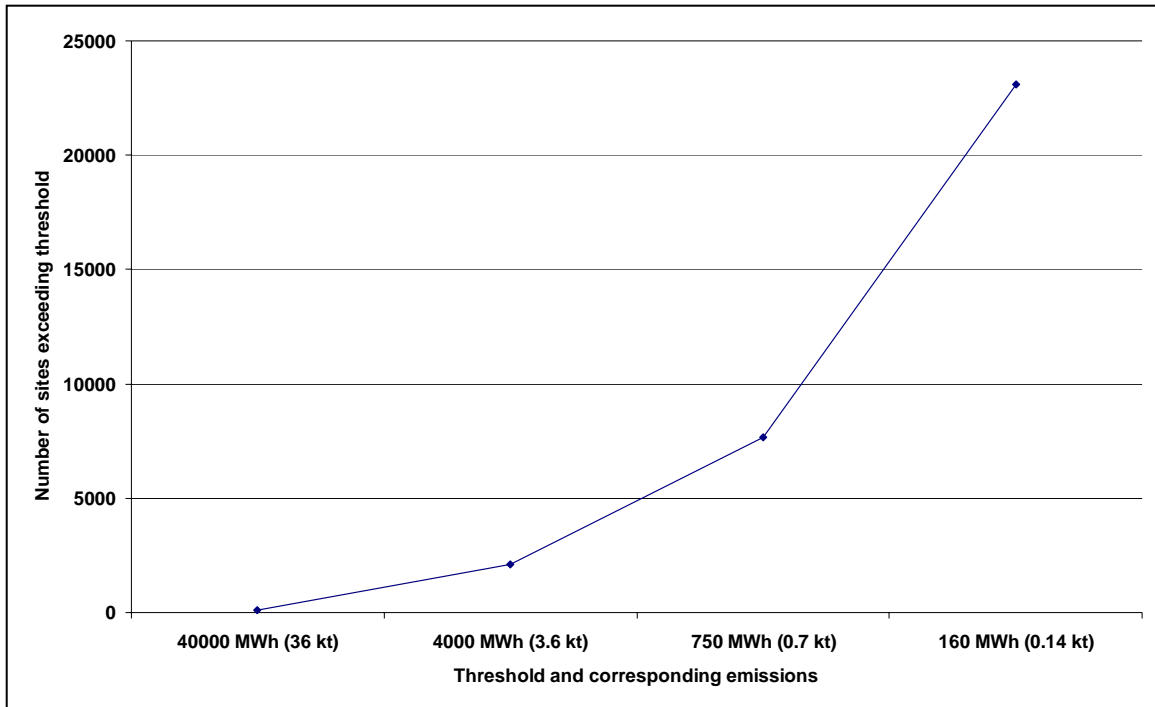
The process is reiterated until the emissions from all sites add to the known total for that subsector. There is obviously a measure of subjectivity in this method of distribution, but it is internally consistent, in that it must remain within the constraints of total energy use, emissions and sites and the emissions boundaries of each category. A valuable source of external verification is the reported number of sites meeting each electricity consumption threshold, published by the ESAA (Figure 3). For Electricity Generation, 41 sites where emissions exceed 125 kt CO₂-e per year were identified from the (unpublished) data collected for the NGGI. The distribution of the other sites is the authors' estimate. The results are summarised in Table 15 and detailed in Appendix 2.

Table 15 Estimated number of business sites in each emissions category, Australia

Category kt CO ₂ -e/yr	Mining	Manufacturing	Commercial	Generation	All	Cumulative Number
>125	80	65	0	41	186	186
25-125	150	138	50	52	390	576
10-25	300	435	400	39	1174	1,750
5-10	400	670	900	55	2025	3,775
1-5	500	1840	6,000	40	8380	12,155
<1	1,751	70,064	619,037	0	690852	
Total	3,181	73,206	626,387	227	703,007	703,007(a)

Source: Author estimates; includes Scope 2 emissions for supplied electricity, Scope 1 for other fossil fuels, plus fugitive and industrial process emissions. (a) Difference from the 704,062 sites estimated in Table 15 made up by Water Supply and Drainage and Gas Supply sites.

Figure 3 Number of sites exceeding electricity use thresholds



Source: Electricity Australia 2004

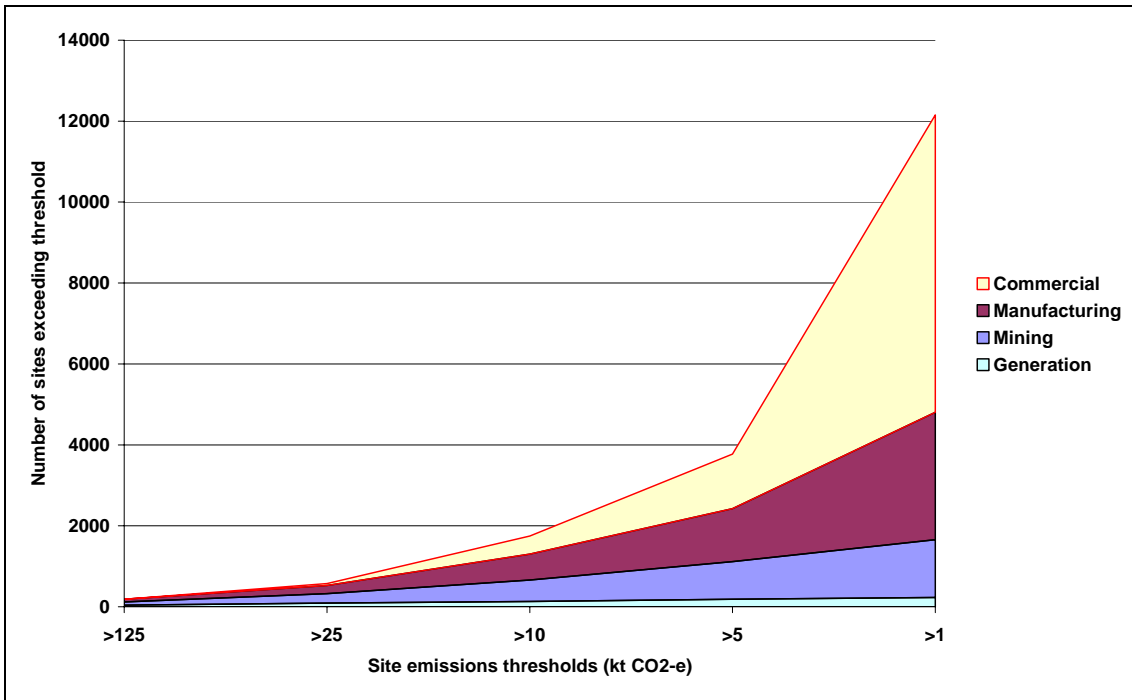
The number of sites increases rapidly as the emission threshold falls. For the three thresholds proposed in the terms of reference of this study, it is estimated that about 186 sites exceed 125 kt CO₂-e/yr, 576 exceed 25 kt and 12,155 exceed 1 kt. Below 25 kt the number of sites covered is very sensitive to the choices of threshold – in general, halving the threshold approximately doubles the number of sites.

Over two thirds of the sites in the smallest category are in the Commercial and Services sector, but none in the largest (Table 15, Figure 4). The smaller the emissions, the greater the proportion be made up by electricity. Figure 5 shows that about 16% of sites passing 125 kt would do so on electricity use alone (mainly aluminium and other metal smelters), but about two thirds of sites in the 1-5 kt category would pass on electricity use alone – for the other third, natural gas use gets them over the 1 kt threshold.

The makeup of average site emissions is illustrated in Figure 6 and Figure 7. Electricity accounts for about 30% of average emissions for sites above 25 kt, but over 80% for sites less than 10 kt. Collecting data on just two energy forms – electricity and natural gas – would account for over 90% of average emissions for sites below 10 kt. For sites above 25 kt, however it is necessary to collect data on the full range of emissions, including non-energy emissions.

The share of each sector's emissions covered by each category is shown in Figure 8. Sites above 125 kt account for over 97% of Electricity Generation emissions, 52% for Mining and 82% for Manufacturing (note that electricity generation emissions are double counted in the Scope 2 emissions at electricity-using sites). However, even the inclusion of sites down to 1 kt only accounts for 47% of emissions in the Commercial and Service sector.

Figure 4 Estimated number of sites exceeding emissions thresholds



Source: Table 15 – Percentage of sector emissions covered at each threshold is shown in Figure 8

Figure 5 Estimated number of sites exceeding emissions thresholds on all emissions and on electricity use alone

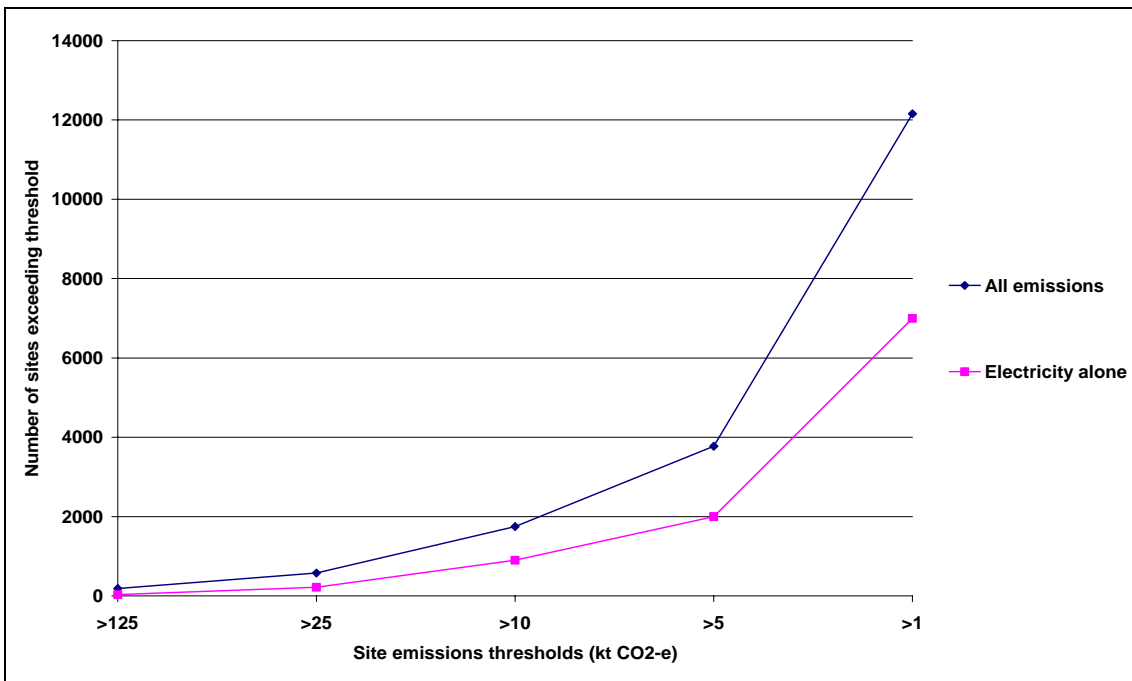
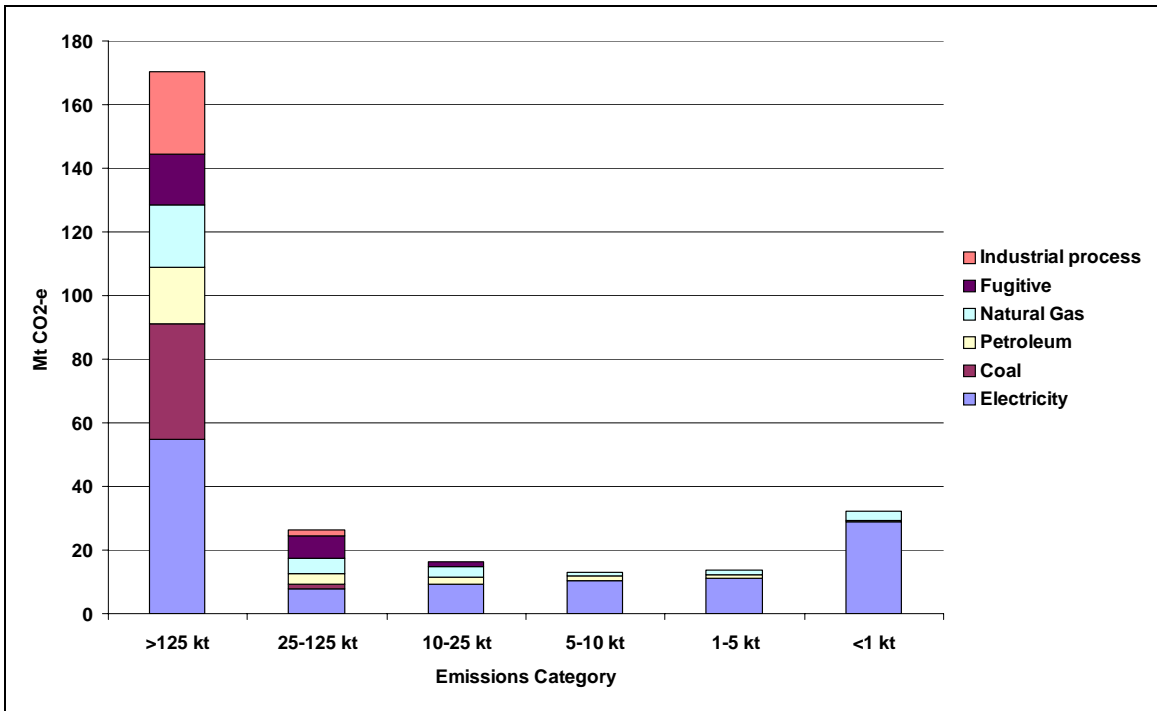


Figure 6 Composition of emissions by energy type and other (Mt)



Excludes electricity generation

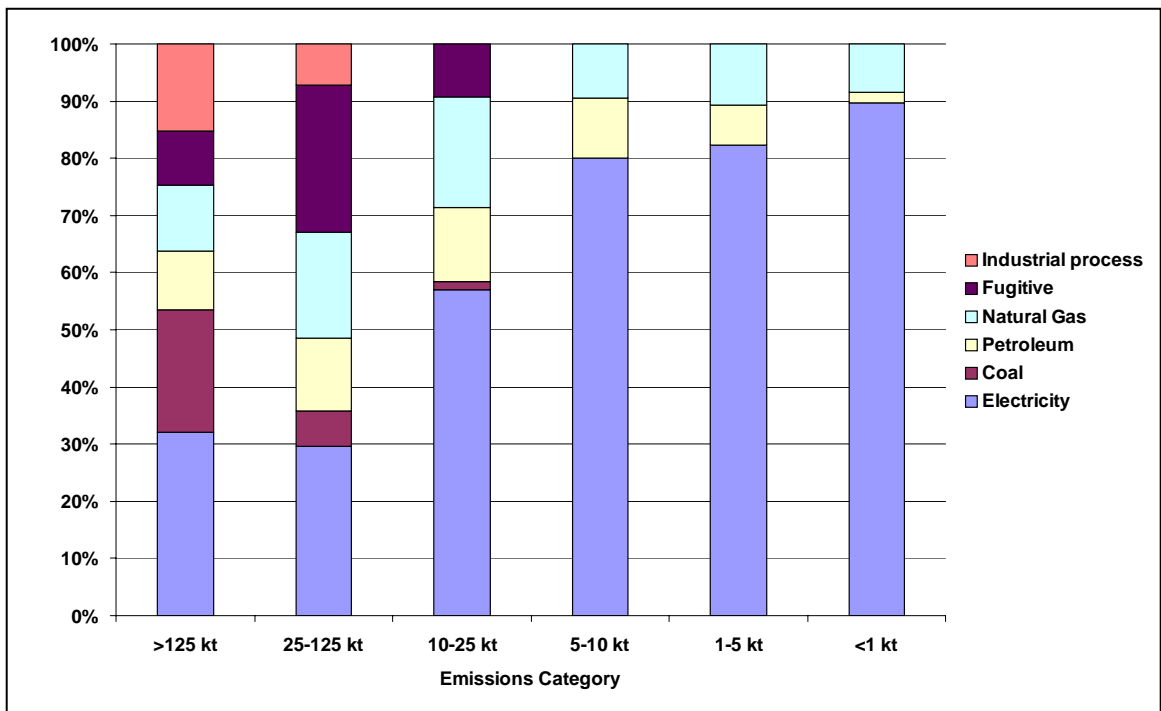
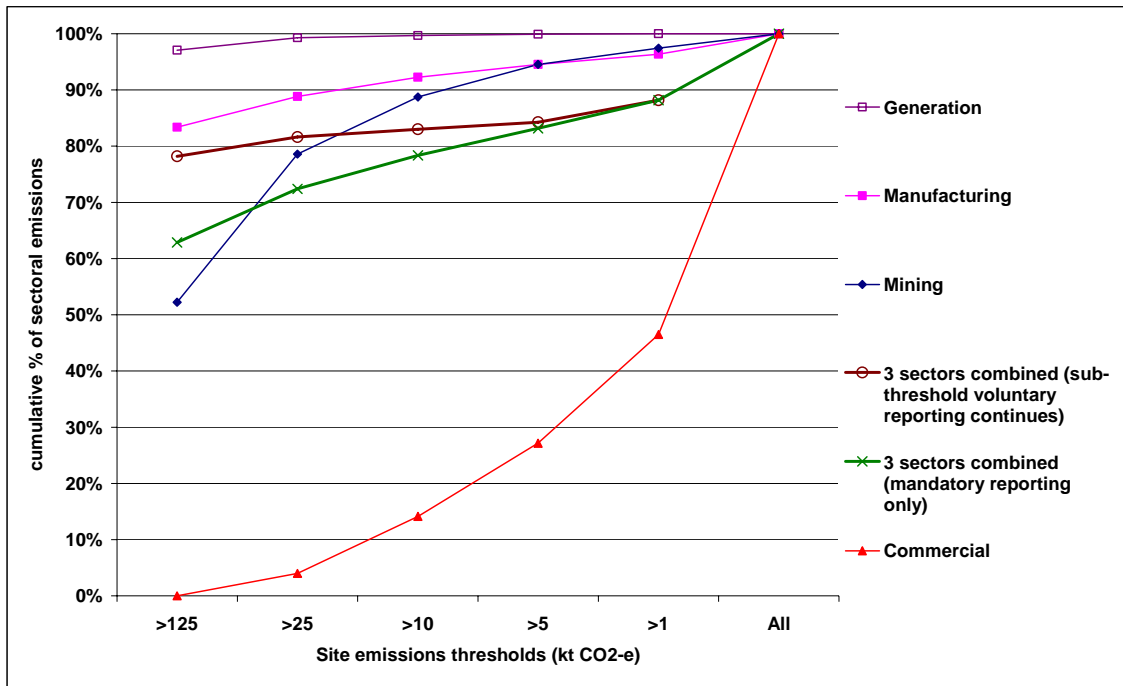


Figure 7 Composition of emissions by energy type and other (%)

Excludes electricity generation

Figure 8 Percentage of sectoral emissions covered



Entities and Sites in Existing Reporting Programmes

The greenhouse and energy reporting programmes listed in Table 2 cover only a fraction of the business sites in Australia. The authors have attempted to estimate the number of business entities and sites actually covered by the main programmes. This is obviously fewer than 7,788, the simple sum of ‘participants’ in all programmes, because many entities participate in more than one, and some of the entities listed in Table 2 are multi-site corporations while others are individual sites.

Assessing the overlap in participation, and hence the number of reporting obligations per participant, is an important factor in determining the extent to which a national reporting framework would reduce reporting costs. The authors have attempted this, with the assistance of the Victorian EPA.¹⁶ The number of corporations participating uniquely in each programme, in any two programmes or in any three programmes can be illustrated by a set diagram (Figure 9); it is not possible to plot the 21 corporations participating in both the NSW and the SEPP/AQM programmes, nor the subset of this number participating in all four programmes.

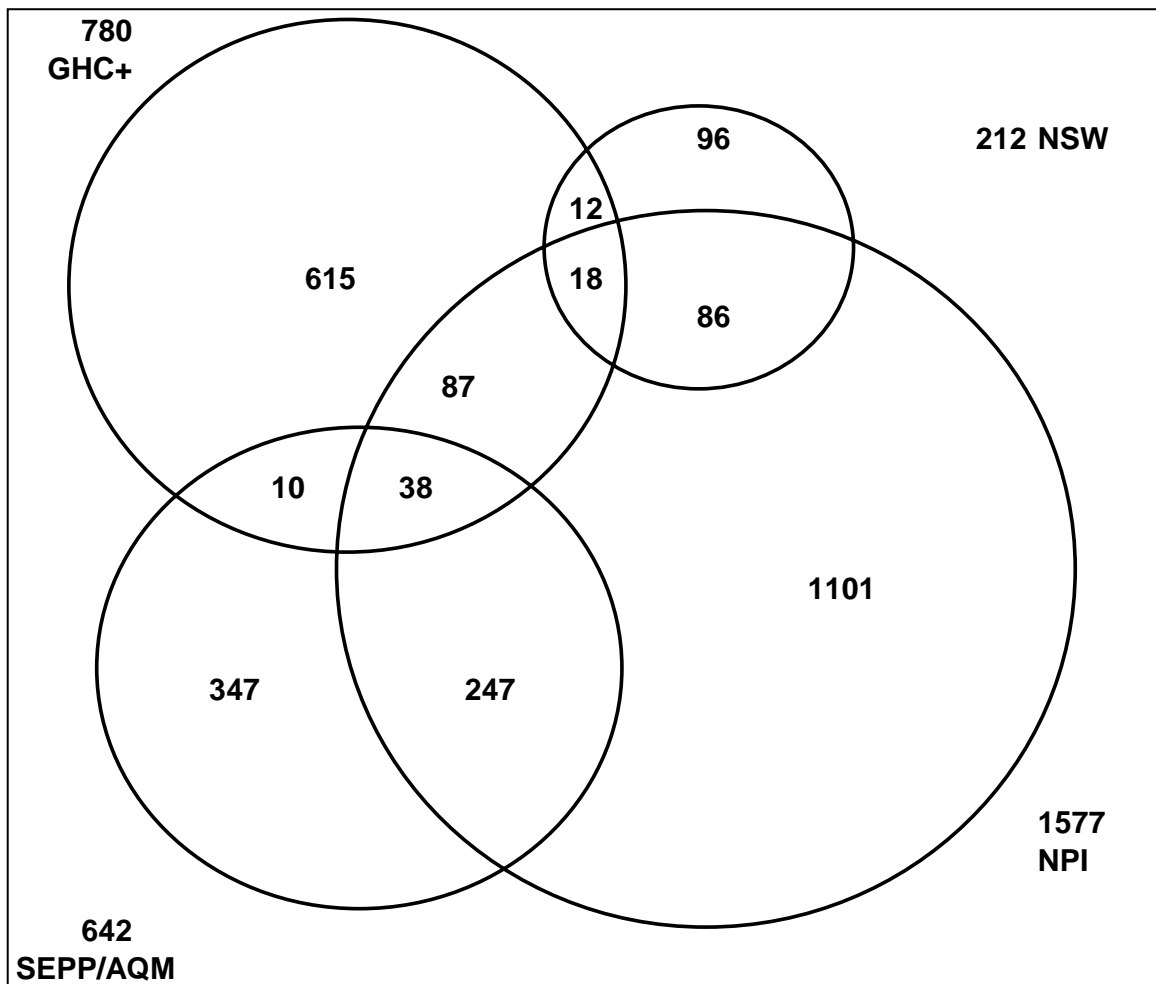
The analysis should be taken with some reservations, because the potential pool of participants in each programme is quite different. For example, the participants in the NSW programme are (in theory) all corporations operating a site in NSW with an

¹⁶ The EPA kindly provided a list of the ‘corporate’ entities in the NPI (fewer than the number of sites), compared it with the public list of Greenhouse Challenge Plus participants, and developed a list of corporations common to both. The EPA also provide a list of Category A, B and C sites covered by the SEPP/AQM measures. From this the authors developed a list of corporations, and determined whether the same corporations were also members of GHC+ and covered by the NPI.

electricity consumption greater than 10 GWh per year (plus 46 named local government authorities). The potential pool for SEPP/AQM is a subset of corporations operating any site within Victoria that is subject to EPA licensing. The NPI participation pool is national, and the criteria are regulated. The GHC+ pool is national and voluntary, and highly variable in scale of emissions, although it has very high coverage of sites in the electricity generation, oil and gas extraction, aluminium, and cement sectors.¹⁷ Most of the corporations included in Figure 9 are private sector businesses, but a significant number are publicly owned utilities, Commonwealth and State government departments and local government authorities.

The overlaps with the other large programmes in Table 2 could not be analysed because the ABARE FES respondent list is confidential, and the list of participants meeting the EEOA threshold has yet to be determined.

Figure 9 Overlap of corporate participation in four main reporting programmes



About 81% of the 2657 entities represented in Figure 9 participate in only one of the four programmes shown. The other 19% account for all of the overlaps. The

¹⁷ The GHC+ members that are industry and professional associations have been excluded from the analysis, although some of these may have agreements which cover the energy use of their own premises, as well as the operations or professional activities of their members.

programme with the highest ratio of ‘unique’ members is the GHC+, and the one with the lowest is the NSW programme, which is also the most recent to be implemented. About 55% of the entities required to participate in the NSW programme already reported energy and/or greenhouse emissions under other programmes (70%, if local government authorities are excluded; of course, the sites covered may well be different).¹⁸ The average number of programmes in which each entity participates is 1.21 (3211 participations/2657 entities).

From the 1 July 2006, changes to the Fuel Tax Act will require businesses wanting to receive fuel tax credits of more than \$3m per year to become members of the GHC+ Programme. Participant numbers are expected to increase by approximately 150 businesses as a result of these changes. In addition, the overlap between GHC+ and NPI reporters should increase by the same figure as those eligible for the Fuel Tax Credits would be large users of fuel and the NPI captures facilities that burn more than 400 tonnes of fuel per annum.

Table 16 Analysis of overlap between four main reporting programmes

Programme	Entity participations	Only in this programme(a)	In other programmes also	Sites covered (f)	Sites/entity
NSW	212	45%	55%	271(b)	1.28
NPI	1,577	70%	30%	3,600 (c)	2.28
GHC+	780	79%	21%	1,000(d)	1.28
SEPP/AQM	642	54%	46%	959(e)	1.49
Total	3,211	67%	33%	5,830	1.82

(a) % of entities not members of other 3 programmes (b) Author analysis – accounts for multiple corporation sites, assumes single site per local government participant. (c) Table 2 (d) Reported in *The Challenge*, May 2005. (e) Author analysis. (f) Before allowing for overlap.

Most entities have more than one site; the average for the programmes analysed is 1.82 (Table 16). It has not been possible to differentiate the averages for multi- and single-programme participants, so it is assumed that the same average holds for all. On this basis, the number of unique sites covered by the 4 programmes is 4,824 (Table 17). This does not take into account the sites covered by the FES (or the EEOA, which is likely to be contained entirely within the FES group). Assuming that a third of the sites covered by the FES are owned by corporations which do not participate in any of the programmes in Figure 9, this would add about another 800 sites.

¹⁸ Many local government authorities, particularly the larger ones included in the NSW programme, are also within the Cities for Climate Protection programme, which is yet another reporting channel with some overlap in reporting requirements.

Table 17 Estimate of sites covered by four main reporting programmes

Programmes joined	Entities	Entity participations	Sites/entity	Unique sites covered
1 only	2,159	2,159	1.82	3,920
2 only	442	884	1.82	803
3 only	56	168	1.82	102
1.21 average	2,657	3,211	1.82	4,824

Therefore the total number of sites presently contributing greenhouse and energy data to one or more reporting programme is estimated at about 5,600. The great majority of these would be in the Manufacturing, Mining and Electricity, Gas and Water sectors, which account for about 77,000 of the more than 700,000 business sites in Australia. While the number of sites currently covered by greenhouse and energy reporting programmes may represent only 6 to 7% of mining, manufacturing and utilities sites, and only a fraction of a percent of commercial and services sites, the proportion of emissions covered is of course much higher, since most programmes try to include the largest sites.

Business Reporting Costs

Existing Participants

The annual costs to business are assumed to be made up of the following elements (the estimated values for which are summarised in Table 18).

- An annual fixed administrative cost to the Reporting Entity of participating in greenhouse and energy reporting programmes – this is assumed to be constant irrespective of the number of programmes or the number of sites involved, once staff resources are assigned to this area;
- An annual fixed cost per site – this is the cost of collecting the data for that site, without formatting it for reports; and
- Annual variable cost per site – this is the cost of preparing different reports from the same base data, and so is sensitive to the number of different reports required.

Table 19 summarises the existing costs in each category, based on the estimated number of Reporting Entities (about 3,100) and sites (5,600) currently participating. Because of reporting to multiple programmes for the larger emitting sites, it is estimated that about 7,500 site reports are produced each year, averaging 1.33 for all sites. The costs to business total \$13.0 m. About \$9.55 m (73% of the total) is fixed, and \$3.45 m (27%) is variable.

Table 18 Estimated Entity reporting costs

Emissions category kt CO ₂ -e/yr	Fixed costs \$/Entity	Fixed sites cost \$/site	Variable cost \$/site report
>125	10,000	1200	900
25-125	10,000	1200	900
10-25	5,000	800	600
5-10	2,000	600	400
1-5	500	500	300
<1	0	500	200

Source: Author estimates

New Participants

Mandating the participation of entities would change the number of participants, sites and annual costs as indicated in Table 20. It is assumed that the average number of sites per new entity is lower than the present average, since the highest emitting firms are already likely to be participants. Each new participant is faced with the same fixed and variable costs as in Table 19, but only one report is required per site.

Adjustment and Compliance Costs

It is assumed that all new participants in the programme incur an additional adjustment cost in the first year, equivalent to the entity's annual fixed administrative costs (ie these are doubled in the first year). This assumption is consistent with the declining trend in annual reporting costs indicated by participants in the NPI (Figure 1).

For existing participants, there may be some adjustment cost if the mode of reporting for the new national framework requires additional or different internal procedures from the ones previously used. The total adjustment burden would be minimised by adopting the most prevalent form of reporting (possibly the FES, NPI or OSCAR), provided it meets the needs of all Data Requiring Agencies. In any case, adjustment costs are assumed to be lower than for new participants because the entity would already have some familiarity and expertise in greenhouse and energy reporting. Therefore it is assumed that the adjustment cost per entity already participating is one third as great as for new participants (ie one third the annual fixed administrative cost).

There would also be a one-time cost to those *non*-participants who took steps to determine whether their energy and/or other emissions met the threshold, and ascertained that it did not. This cost could be imposed on hundreds or even thousands of entities if a low threshold (1 kt) is adopted. Conversely there is likely to be a degree of non-compliance by entities unaware of the mandatory requirement, or aware but choosing to ignore it. These entities avoid all compliance costs (unless detected and fined, if there is such a regulatory provision).

A recent review of the NPI suggests surprisingly high non-compliance rates, with between 55% and 75% of companies that should be reporting not doing so (Environment Link 2005, 35). It is likely that non-compliance rates will be significantly lower for greenhouse and energy reporting, since the identities and details of a large number of Reporting Entities, including the largest emitters, are already known to Data Requesting Agencies. However, given the uncertainty about the extent of both over-compliance and non-compliance, it is assumed that the two cancel out, and have no bearing on the cost-benefit analysis.

Government Costs

The current costs to government of operating greenhouse and energy reporting programmes comprise initial and annual fixed costs, which are independent of the number of reports received and processed, and variable costs related to the number of reports; these are estimated at about \$300 per report (Table 12).

The recurrent fixed costs of running the national greenhouse and reporting framework database are estimated at \$1 m per year. It is assumed that reducing the number of reports without reducing the number of distinct programmes will reduce the variable data costs to other Agencies, but not their fixed costs. It is also estimated Agencies would face a total of \$1 m in one-time adjustment costs to change IT systems to be compatible with the reports conforming to the national framework, irrespective of whether the framework is optional or mandatory. For mandatory options, it is assumed that \$0.5 m is spent on developing and implementing the legislation (or on amending existing NPI legislation if that were to be the option) and a further \$0.5 m on publicising the requirement and on contacting potential participants.

These estimates are approximate only, but as these cost elements are small in comparison with business costs, varying them will have only a minor effect on the cost-benefit analysis.

Table 19 Estimated Annual Costs to Business of current Greenhouse and Energy Reporting Arrangements

Emission Category	Number of Sites	Number of Entities	Sites/entity	Participating Sites	% of sites participating	Fixed cost/entity \$/yr	Total fixed costs \$M	Fixed costs/site \$	Total fixed costs \$M	Variable cost/report \$	Reports/site	Total Site Reports	Variable site costs \$ M	Total cost \$ M	Total \$/entity	Total \$/site	Reduced reports per site	Total Reports	Variable site costs \$ M
>125	186	75	2.0	150	81%	10000	0.75	1200	0.18	900	3.0	450	0.41	1.34	17800	8900	1.0	150	0.14
25-125	390	125	2.0	250	64%	10000	1.25	1200	0.30	900	2.5	625	0.56	2.11	16900	8450	1.0	250	0.23
10-25	1174	409	2.2	900	77%	5000	2.05	800	0.72	600	1.8	1620	0.97	3.74	9136	4153	1.0	900	0.54
5-10	2025	750	2.0	1500	74%	2000	1.50	600	0.90	400	1.2	1800	0.72	3.12	4160	2080	1.0	1500	0.60
1-5	8380	1003	1.8	1800	21%	500	0.50	500	0.90	300	1.1	1980	0.59	2.00	1989	1109	1.0	1800	0.54
<1	690852	714	1.4	1000	0.1%	0	0.00	500	0.50	200	1.0	1000	0.20	0.70	980	700	1.0	1000	0.20
All	703007	3077	1.82	5600	0.8%		6.05		3.50		1.33	7475	3.45	13.00	4225	2322	1.0	5600	2.24
All >1	12155	2362		4600	37.8%		6.05		3.00			6475	3.25	12.30		2674		4600	

Note – excludes first year adjustment costs

Table 20 Estimated Annual Costs to Business of Mandatory Greenhouse and Energy Reporting Arrangements

Emission Category	Number of Sites	Number of Entities	Sites/entity	Participating Sites	% of sites participating	Fixed cost/entity \$/yr	Total fixed costs \$M	Fixed costs/site \$	Total fixed costs \$M	Variable cost/report \$	Reports/site	Total Site Reports	Variable site costs \$ M	Total cost \$ M	Change from present \$M	Total \$/entity	Change from present \$	Total \$/site	Change from present \$
>125	186	93	2.0	186	100%	10000	0.93	1200	0.22	900	1.0	186	0.22	1.38	0.04	14800	-3000	7400	-1500
25-125	390	260	1.5	390	100%	10000	2.60	1200	0.47	900	1.0	390	0.47	3.54	1.42	13600	-3300	9067	617
10-25	1174	839	1.4	1174	100%	5000	4.19	800	0.94	600	1.0	1174	0.94	6.07	2.33	7240	-1896	5171	1019
5-10	2025	1558	1.3	2025	100%	2000	3.12	600	1.22	400	1.0	2025	1.22	5.55	2.43	3560	-600	2738	658
1-5	8380	7618	1.1	8380	100%	500	3.81	500	4.19	300	1.0	8380	4.19	12.19	10.19	1600	-389	1455	346
All >1	12155	10367	1.17	12155	100.0%		14.65		7.04		1.0	12155	7.04	28.72	16.42	2770	-1455	2363	-311

Note – excludes first year adjustment costs

Table 21 Summary of Estimated costs and Benefits of Options, Base Scenario

					Reporting Entity (RE) Costs \$M/yr				Govt costs \$M	Total annual costs \$M	Yr 1 adjustment costs \$M				NPV of 12-yr total costs \$M			
					Entities	Sites	Reports	Fixed costs/entity			Fixed costs/site	Variable costs/site	Total RE costs	Exg RE \$M	New RE \$M	Govt \$M	Total \$M	RE \$M
BAU		3077	5600	7475	6.0	3.5	3.5	13.0	3.2	16.2	0.0	0.0	0.0	0.0	88.6	22.1	110.7	
Adjust voluntarily		3077	5600	5600	6.0	3.5	2.2	11.8	2.7	14.5	2.0	0.0	1.0	3.0	82.3	19.3	101.6	
	cf BAU	0	0	-1875				-1.2	-0.6	-1.8	2.0	0.0	1.0	3.0	-6.3	-2.8	-9.1	-8%
>125	Mandatory	93	186	186	0.9	0.2	0.2	1.4	1.1	2.4								
	Other	3002	5450	5450	5.3	3.3	2.1	10.7	2.6	13.4								
	Total	3095	5636	5636	6.2	3.5	2.3	12.1	3.7	15.8	0.2	0.2	1.0	1.4	82.9	26.1	109.0	
	cf BAU	18	36	-1839				-0.9	0.4	-0.5	0.2	0.2	1.0	1.4	-5.7	4.1	-1.7	-2%
>25	Mandatory	353	576	576	3.5	0.7	0.7	4.9	1.2	6.1								
	Other	2877	5200	5200	4.0	3.0	1.9	8.9	2.6	11.5								
	Total	3230	5776	5776	7.6	3.7	2.6	13.9	3.7	17.6	0.7	1.5	2.0	4.2	96.6	27.4	124.1	
	cf BAU	153	176	-1699				0.9	0.5	1.3	0.7	1.5	2.0	4.2	8.0	5.3	13.4	12%
>10	Mandatory	1192	1750	1750	7.7	1.6	1.6	11.0	1.5	12.5								
	Other	2468	4300	4300	2.0	2.3	1.3	5.6	2.3	7.9								
	Total	3659	6050	6050	9.7	3.9	3.0	16.6	3.8	20.4	1.3	3.7	2.0	7.0	118.3	28.0	146.3	
	cf BAU	582	450	-1425				3.6	0.6	4.2	1.3	3.7	2.0	7.0	29.7	5.9	35.6	32%
>5	Mandatory	2749	3775	3775	10.8	2.8	2.8	16.5	2.1	18.7								
	Other	1718	2800	2800	0.5	1.4	0.7	2.6	1.8	4.5								
	Total	4467	6575	6575	11.3	4.2	3.6	19.2	4.0	23.1	1.8	5.3	2.0	9.1	137.7	29.1	166.8	
	cf BAU	1390	975	-900				6.2	0.7	6.9	1.8	5.3	2.0	9.1	49.2	7.0	56.1	51%
>1	Mandatory	10367	12155	12155	14.6	7.0	7.0	28.7	4.6	33.4								
	Other	714	1000	1000	0.0	0.5	0.2	0.7	1.3	2.0								
	Total	11082	13155	13155	14.6	7.5	7.2	29.4	5.9	35.4	2.0	8.6	2.0	12.6	211.0	42.5	253.6	
	cf BAU	8005	7555	5680				16.4	2.7	19.1	2.0	8.6	2.0	12.6	122.5	20.4	142.9	129%

Aggregated Costs and Benefits

The Options

The cost elements included in the analysis of each of the main options identified are summarised quantitatively in Table 21 and qualitatively in Table 22. Obviously, some options will result in initial adjustment costs to business and to government, but lower annual costs thereafter, so the following assumptions have been adopted to compare all options:

- All adjustment costs (business and government) are incurred in year 1 of the change to the new regime (nominally 2006/07), and these are not discounted.
- A 10% discount rate is used to calculate the net present value of future year costs (2007/08 onward);
- A 12 year projection period is used; ie all costs incurred between 2006/07 and 2017/18 inclusive are counted.

Table 22 Summary of Options

Option	Corresponding option in TOR	Existing RE costs	New RE costs	DRA behaviour	Government costs
1. BAU, no new regs	a. Status Quo	Existing costs only	None	As now	Existing costs only
2. Establish NGERR, no new regs	b. Harmonisation without additional legislation	Adjustment + new (lower) annual costs	None	Some fall in multiple report demands	IT adjustment costs only
3. Establish NGERR, with regs	c. extend NPI d. new NEPM	Adjustment + new (lower) annual costs	Adopt new reporting framework	Large fall in multiple report demands	IT adjustment costs + publicity + regulatory
4. Establish NGERR, with regs	e. New specific legislation	Adjustment + new (lower) annual costs	Adopt new reporting framework	Elimination of multiple report demands	IT adjustment costs + publicity + regulatory

BAU Case

The total annual costs of the existing greenhouse and energy reporting arrangements are estimated at \$16.2 m. Of this, \$13.0 m is borne by Reporting Entities, and \$3.2 m by Data Requiring Agencies. The net present value (NPV) of the projected 12-year operating costs is estimated at \$110.7 m, four fifths borne by Reporting Entities and one fifth by Data Requiring Agencies.

This excludes the costs of conducting or reporting on emission reduction or energy efficiency programmes in which some of the Reporting Entities participate. It also excludes the fixed cost to Agencies. It is assumed that these latter categories of costs are unaffected by changes in the reporting of historical greenhouse emissions and energy use, so they have not been included in the analysis.

No-Regulation Option

If the introduction of a national greenhouse and energy reporting requirement could reduce the number of reports to one per site, without changing the number or composition of participants, the variable reporting costs to Reporting Entities would fall from about \$3.5 m to \$2.2 m per annum.

The first year adjustment costs are estimated at \$3.0 m (two thirds borne by Reporting Entities and one third by Agencies). The savings in operating costs are projected to rapidly exceed the initial adjustment costs, giving a NPV of \$101.6, or 8% less than under the BAU scenario.

The realisation of these savings assumes that Agencies relinquish their separate reporting requirements. If there is no reduction in these requirements, then the only effect would be to increase the total costs by the amount of the adjustment costs.

In a non-regulatory scenario, Reporting Entities would need some incentive to make the adjustments necessary to adopt the national reporting framework – or be given no choice. This would occur if the Agencies all changed their data requests and reporting formats to the agreed format, which would mean that they too incur an up-front adjustment cost.

Regulatory Options

The regulatory options are examined in descending order of site emissions thresholds. For simplicity, it is assumed that where Entities own more than one site, all of them meet the same emission threshold – the effects of corporate vs site-based thresholds are discussed later.

When a threshold is mandated, it is assumed that all entities with sites meeting that threshold participate, and that they submit a single report only. Entities meeting the threshold who already participate voluntarily also benefit, because the imposition of a mandatory requirement is accompanied by the implementation of a single report.

Entities falling below the threshold also benefit, because it is assumed that Agencies will require the same standard reporting format from all participants, even those who continue to participate voluntarily. If some of these were to withdraw to avoid the adjustment costs of switching to the new format, the overall reporting cost would fall (albeit with some small reduction in overall coverage of emissions).

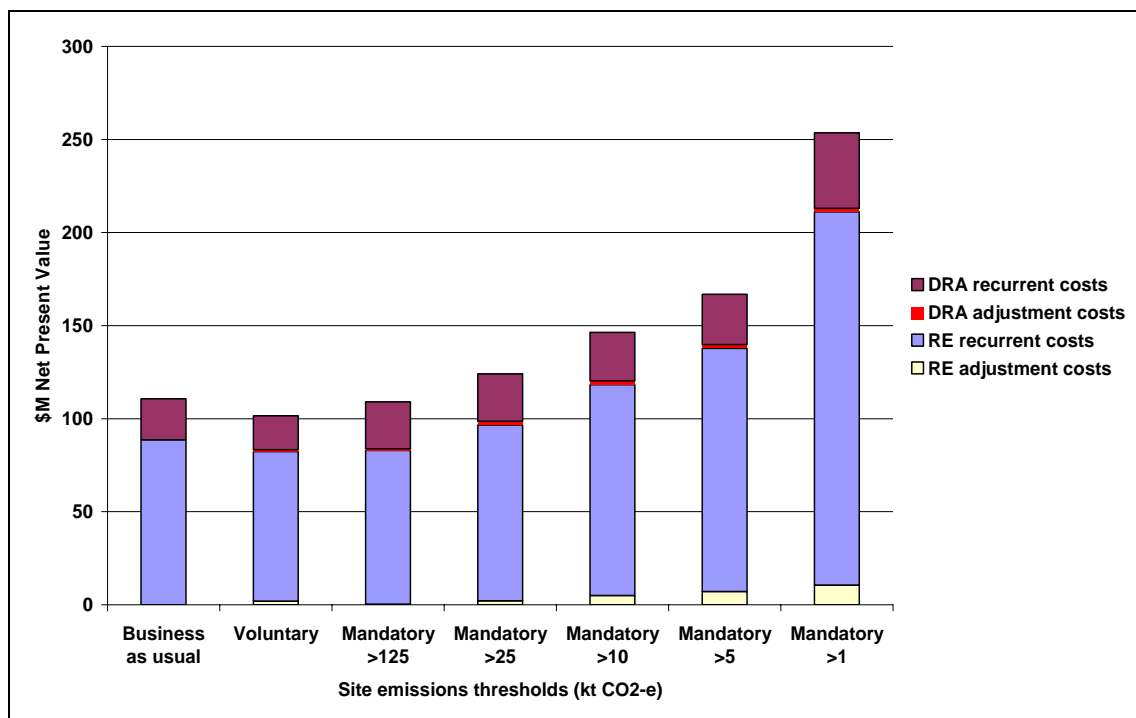
As the threshold reduces, the number of entities captured increases. More sites also change their status from voluntary participation to mandatory and move from multiple to single reports, but that in itself does not add to the number of entities or sites. About 1,000 sites continue to report greenhouse gas emissions or energy use even though they fall below the lowest mandatory threshold examined (1 kt), because they are part of GHC+ or VIC SEPP/AQM. It is assumed these would continue to participate in greenhouse and energy reporting because of their continued involvement (voluntary or mandatory) in Programme and Reduction Reporting.

For the cohort of largest sites (>125 kt CO₂-e) the effect of mandating participation is more or less cost-neutral. The savings from a lower reporting burden per site match the costs to the new participants. For all other cohorts, however, total Entity costs would rise due to the larger number of entities with reporting obligations. The greatest increase is for entities with sites between 1 and 5 kt, which would incur the largest increase in coverage (from 21% to 100% of sites) and the largest increase in costs (\$10.2 m). The average cost per new entity ranges from about \$14,800 for those with sites of >125 kt and with no previous involvement in any greenhouse and energy reporting programme (there are very few of these) to \$1,600 for newly participating entities with sites between of 1 to 5 kt, of which there are nearly 7,000.

As the threshold falls, the pattern of costs change as shown in Figure 10:

- Total Reporting Entity costs fall below BAU initially, but then increase as the costs to new participants exceed the savings to existing ones. The increases above BAU are fairly modest down to a 10 kt threshold, but then increase rapidly.
- Total Data Requiring Agency costs keep falling past the point at which Reporting Entity costs increase, but then rise steeply as the threshold falls below 5 kt.
- The NPV of total costs does not significantly exceed BAU until the threshold falls below 25 kt.

Figure 10 Summary of Estimated Costs of Options



Source: Table 21

Sensitivity Factors

Multiple Data Requests

The monetary savings to existing Reporting Entities are projected to come from the substitution of a single reporting requirement for multiple requirements, which are estimated to average 1.33 requests per site at present. For new participants, the costs of participation are partially offset by the fact that only one report will be required.

These are clearly best-case assumptions. Table 23 and Figure 11 illustrate what happens if some Data Requiring Agencies continue to demand multiple reports from existing Reporting Entities or, in an unlikely worst case, demand the same level of multiple reporting from all new participants as they demand from present Entities.

If multiple reporting for existing Entities persists at the present level, there are no monetary gains from implementation of a single national reporting framework at all. However, the cost increase from the Base Scenario is relatively small, indicating that the potential monetary benefits of moving to single reporting are minor, compared with the potential costs of including large numbers of new entities.

Table 23 Effects of continuation of multiple data request

Option	NPV of 12-yr total cost \$M			Change of Base	
	Base Scenario (a)	Multiple reporting: existing REs	Multiple reporting: new REs	Multiple reporting: existing REs	Multiple reporting: new REs
BAU	110.7	110.7	110.7	0.0	0.0
Voluntary	101.6	110.5	110.5	8.9	8.9
Mandatory >125	109.0	117.5	118.2	8.5	9.2
Mandatory >25	124.1	131.9	133.9	7.8	9.8
Mandatory >10	146.3	152.3	157.2	6.0	10.9
Mandatory >5	166.8	170.4	179.5	3.6	12.7
Mandatory >1	253.6	254.7	279.1	1.1	25.5

(a) Table 21 – assumes single reporting by all participating Entities

Cost Assumptions

The programme cost projections are obviously sensitive to assumptions about the costs to Reporting Entities and, to a much lesser extent, to the Data Requesting Agencies. It is relatively straightforward to model different cost levels, and different assumptions about the ratios of fixed to variable costs. However, while absolute costs change appreciably under different assumptions, the ranking of options does not.

Table 24 summarises the NPV of projected cost with all Reporting Entity annual costs halved, with one-time adjustment costs set to zero, and with the cost of producing different reports for the one site doubled. While absolute costs change, the cost ranking of options remains more or less the same, with the ‘voluntary’ and 125 kt mandatory thresholds indicating the least cost (Figure 11).

However, the lower the costs the smaller the absolute monetary differences between scenarios. For example, if the NPV of the cost of moving from a 10 kt threshold to a 5

kt threshold, which is \$20.5m in the Base Scenario, would fall to \$10.8m under the lowest of the cost assumptions illustrated. This would increase the potential for *non-monetary* factors to influence policy choices.

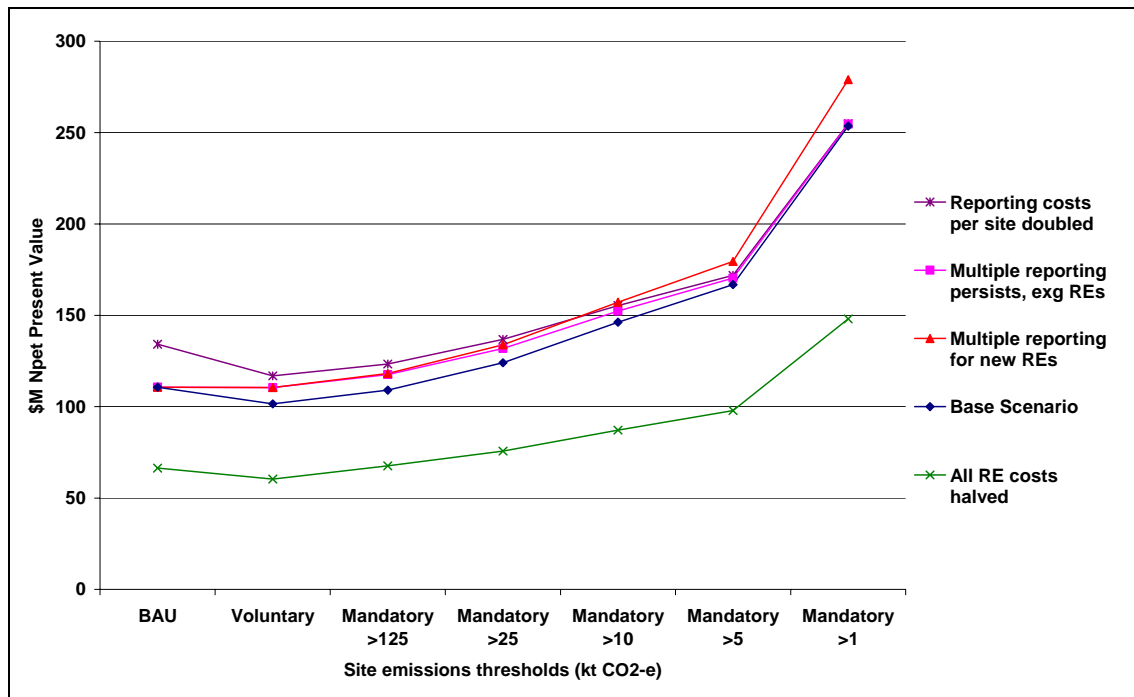
If the estimate of the cost of producing reports for each site were doubled, the benefit of moving to a single reporting framework would be greater for the largest entities, which have the highest multiple reporting burden at present. This is evident from Table 24. The transition to a single report by voluntary means – which would not force additional Reporting Entities to report - reduces overall cost by \$9.1 m (8%) compared with BAU in the Base Scenario, but if the estimated reporting cost per site is doubled, the reduction in total cost (ie benefit to participants) increases to \$17.4 m, a 13% reduction from BAU.

Table 24 Effect of changes in reporting cost assumptions

Option	NPV of 12-yr total cost \$M				Change from Base Scenario		
	Base scenario(a)	\$/RE annual costs halved	Zero adjustment costs	\$/site report costs doubled	\$/RE annual costs halved	Zero adjustment costs	\$/site report costs doubled
BAU	110.7	66.4	110.7	134.2	-44.3	0.0	23.5
Voluntary	101.6	60.4	99.6	116.8	-41.2	-2.0	15.3
Mandatory >125	109.0	67.6	108.6	123.4	-41.4	-0.4	14.3
Mandatory >25	124.1	75.7	121.9	136.9	-48.3	-2.2	12.8
Mandatory >10	146.3	87.1	141.3	155.4	-59.1	-5.0	9.1
Mandatory >5	166.8	97.9	159.7	171.9	-68.9	-7.1	5.0
Mandatory >1	253.6	148.0	243.0	254.9	-105.5	-10.6	1.4

(a) Table 21

Figure 11 Summary of sensitivities



Source: Table 23 and Table 24

Options to Reduce Costs

One possible regulatory option is have a tiered compliance obligation. Participation could be mandatory for sites above, say, 10 kt but optional for those with emissions below that threshold. The advantage of this approach is that smaller energy users would decide their participation from their own assessment of costs and benefits, and would only do so if they judged their own benefits to exceed their costs.

Another way to minimise cost is to tailor the reporting requirement to the quantity of energy used or other site characteristics, eg:

- Only sites consuming large quantities of coal (say >1 PJ per year) would need to report actual CO₂ emissions factors based on analysis of the coal used. This would primarily apply to power stations. All other Entities could use default emissions factors.
- A breakdown of the proportion of fuel or electricity used by equipment type (which is an element of the data collection in the FES, and so presumably an essential element of a national framework) might only be required for sites where fuel use and/or electricity use is above a given threshold.

Site and Corporate Thresholds

The number of reporting entities at each threshold is subject to significant uncertainties. Some of these uncertainties relate to the actual number of business, public facility and other sites in Australia, and the number falling into each category of energy consumption and non-energy emissions. However, there is not much latitude to depart from the assumptions illustrated in Figure 4 without violating the external data constraints discussed earlier.

Another layer of uncertainty is added by the many ways in which thresholds and other participation triggers could be given effect under a regulatory regime. The cost-benefit analysis has been carried out using the following simplifying assumptions:

- an entity must participate if it has at least one site meeting the threshold, and for multi-site entities, all sites are on the same emissions category;
- site emissions include Scope 1 emissions from fossil fuel combustion on site, Scope 2 emissions from purchased electricity and fugitive and industrial process emissions; and
- the same Scope 2 electricity emission factor is used throughout Australia; this is close enough for most jurisdictions, but not for Victoria and Tasmania, which have emissions factors that are, respectively, far higher and far lower than the national average.

Defining an entity's 'interest' in a site is not necessary for the overall cost-benefit analysis, but is obviously an unavoidable part of any regulations. It would also be

necessary to define the conditions for participation, which could be framed in any one of several ways, eg:

- An entity must participate if it has an interest in (fully owns, part-owns, controls, manages or some other definition) at least one site exceeding the threshold (in a defined period only – eg latest financial year, average of specified years, or a period of the Reporting Entity's own choosing).
- If so, does the entity have to prepare reports for its other sites, which may fall short of the threshold, as well as the 'trigger' site/s?
- Alternatively, the trigger could apply at the corporate level only, to the sum of emissions of all sites 'owned' or 'controlled'. Compliance would be more difficult to enforce at corporate than at site level, since it would be much harder to detect whether an entity has indeed 'declared' all its sites (especially if emissions are to be weighted by part-interest) than to track down the entity responsible for an identifiable site.

It is not essential to have the same conditions for participation as for reporting. For example, the entity participation trigger could be the site, but once caught, the entity could report for all its sites. Also, there could be dual triggers – entities with any one single site exceeding the threshold, *or* with a corporate emissions above the same (or a higher) threshold.

The design of the trigger could have a significant impact on the number of entities caught at any given threshold. If site emissions were aggregated, the number of entities caught at each threshold would be higher. For example, an entity with 3 sites at 9 kt each would not be caught at all at a 'site' threshold of 10 kt, but would be caught at a 'corporate' threshold of 10 kt – indeed it would be caught even at the higher corporate threshold of 25 kt.

Another option is to have a different (and lower) threshold for inclusion of a site in an entity's report, once the entity has been 'caught' by exceeding the threshold at its largest site. This sort of approach is adopted in the new GHC+ guidelines. Several manufacturing entities have a few large manufacturing sites and dozens of distribution sites, some of which would have very small energy use.

The more entities captured at each given threshold the higher the total monetary costs. This means that the costs to Reporting Entities and Data Requiring Agencies illustrated in Figure 10 would be higher at each threshold. The costs at the lowest threshold may well increase the most, since a 1 kt corporate threshold would bring in a large number (perhaps thousands) of commercial and service sector entities with many small outlets, stores or branches. It is difficult to estimate the magnitude of these effects, since little is known about average site ownerships and emissions levels of Commercial and Service sector entities, which are greatly under-represented in the existing reporting programmes.

4. Ranking of Options

Quantifiable Criteria

The costs of the options examined in Chapter 3 are summarised in Table 25. The voluntary implementation scenario assumes the introduction of a new single report for all existing Reporting Entities, without the addition of any new Entities. There are some initial adjustment costs to both Reporting Entities and Data Requiring Agencies, but these are rapidly offset by lower annual costs (even assuming that the new framework carries recurrent fixed administrative costs of \$1m per year, plus \$300 variable cost per data report processed).

The only valid basis for differentiating the cost of the regulatory options as a group is by participation threshold. Whatever regulation is used, it would need to satisfy certain characteristics if it is to support the successful implementation of the framework (see Chapter 2). The costs of amending legislation or implementing new legislation are low in comparison with other costs, and these cost differences between alternative regulatory approaches would be negligible.

Table 25 also indicates the proportion of the emissions of *end user* entities in the mining, manufacturing, commercial and services sectors that would be covered by mandatory reporting at each successive threshold, ranging from 66% at present up to 88% if all sites above 1kt report. There would also be a major increase in data consistency, quality and useability in moving from the present regime to a mandatory regime, but the value of this cannot be quantified.

Table 25 Summary of costs and emissions coverage

Options (a)		NPV of 12-yr total cost \$M(b)	Coverage of end user emissions (c)	\$M per % emissions covered	Comparison with BAU			Coverage of electricity sector emissions
					Cost increment \$M	Increment in % of emissions covered	\$m per additional % of coverage	
Non-regulatory	1 BAU	\$110.7	66.0%	\$ 1.7				80.0%
	2 Voluntary	\$101.6	66.0%	\$ 1.5	-\$9.1(d)	0%		80.0%
Regulatory	3 Mandatory >125	\$109.0	78.2%	\$ 1.4	-\$1.7	12%	-\$0.1	97.1%
	or							
	Mandatory >25	\$124.1	81.6%	\$ 1.5	\$13.4	16%	\$0.9	99.3%
	4 Mandatory >10	\$146.3	83.0%	\$ 1.8	\$35.6	17%	\$2.1	99.7%
	Mandatory >5	\$166.8	84.3%	\$ 2.0	\$56.1	18%	\$3.1	99.9%
	Mandatory >1	\$253.6	88.2%	\$ 2.9	\$142.9	22%	\$6.4	100.0%

(a) Table 13. (b) Table 21; 10% discount rate over 12 year projection period. (c) % of estimated sum of emissions from end user energy consumption, fugitive and industrial process emissions from mining, manufacturing, commercial and services sites. (d) Saving from elimination of multiple reporting.

The cost per percentage of emissions covered is a rough indicator of the cost-effectiveness of each threshold level. Figure 12 illustrates the total share of sectoral emissions by all entities covered under the present arrangements. It should be noted that this coverage is not available to any one Data Requesting Agency, since at present each Agency only has access to a subset of the reported data. Figure 12 also shows the estimated coverage if Reporting Entities were obliged to participate, at successively

declining thresholds. The coverage by 'All Reporting Entities' would still be higher, because sub-threshold entities who already report are assumed to continue reporting. Figure 13 illustrates the ratio of reporting costs to coverage, by tracking the indicator '\$M NPV per percentage point emissions covered'.

Figure 12 Percentage of emissions covered under current and potential reporting arrangements

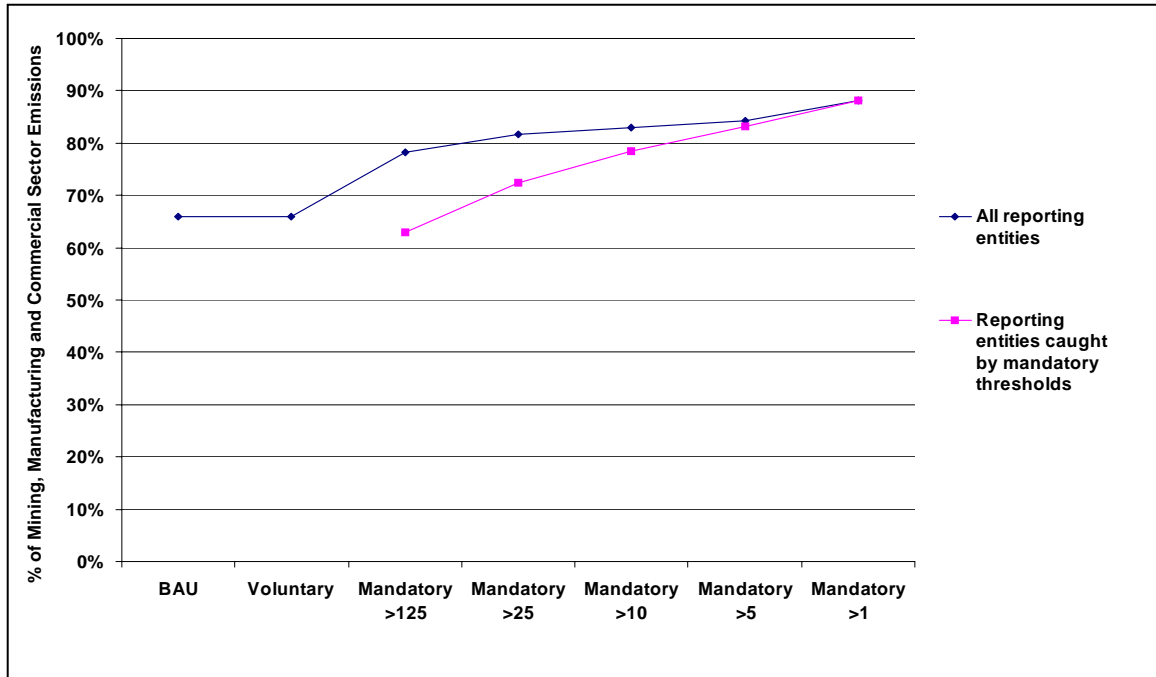
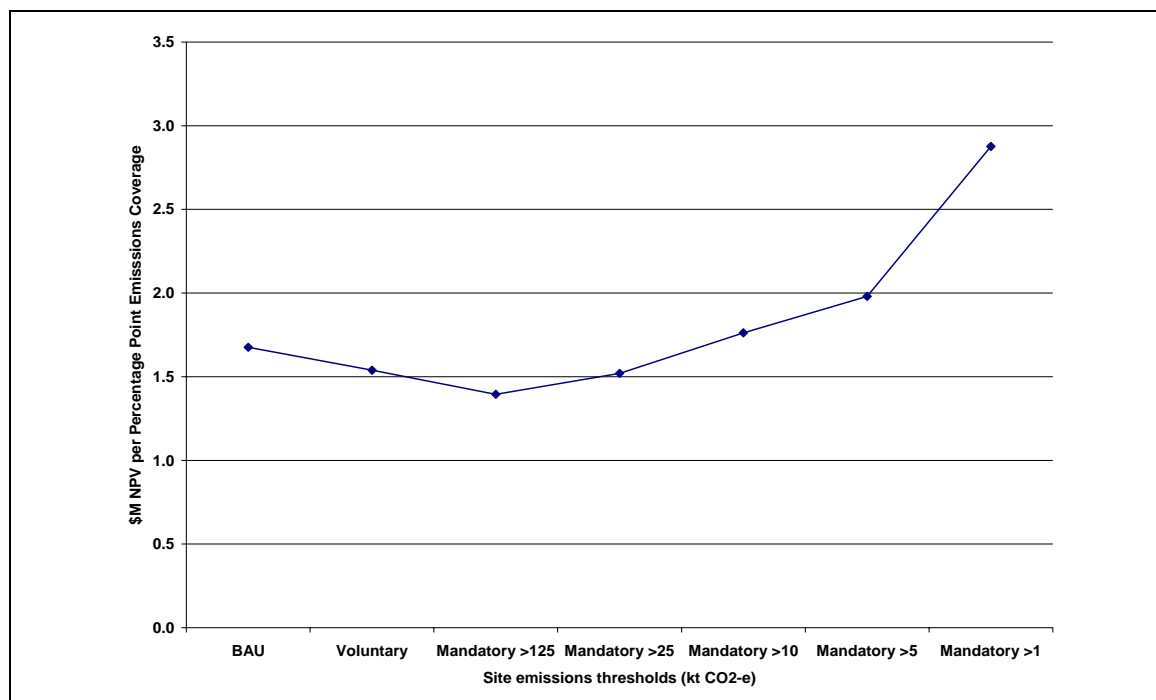


Figure 13 Total greenhouse and energy reporting costs per percentage point of emissions covered



The cost of a regime with a 125 kt threshold is slightly lower than the BAU case, with a higher coverage of emissions. The cost of a regime with a 25 kt threshold is higher than the BAU case but with appreciably higher coverage, and represents the point of highest emissions coverage per cost. The cost of a regime with a 10 kt threshold is about 25% more than the BAU case, but it also offers a similar increase in coverage, so the cost per percent of coverage is actually slightly lower. In fact, a threshold as low as 5 kt might be justifiable on this indicator, when improvements in data quality are taken into account. The average cost of coverage at the 1 kt threshold, however, is about 70% higher than the BAU (Figure 13). The electricity sector coverage is shown separately (noting that the emissions are double counted with end users). A 25 kt threshold would capture over 99% of emissions.

The above conclusions are based on mandatory participation. If voluntary participation of sub-threshold entities increased (and assuming all existing sub-threshold participants were retained) then both coverage and costs would be slightly higher.

Other Considerations

Effects on Competition

The Terms of Reference require consideration of whether options would raise barriers to market entry, exit or innovation. As energy and greenhouse reporting is a relatively straightforward (if time-consuming) process, we would not expect any significant effects at that level. However, the degree of public disclosure, which can and should be decided independently of the structure of the reporting framework, could have some effects on competition.

Effects on Small Business

The proportion of reporting entities captured at each emission threshold that would be ‘small business’ (having fewer than 20 employees, according to the conventional ABS definition) cannot be determined directly, but may be estimated indirectly.

Small businesses comprise 82% of employing businesses in each of the mining and manufacturing sectors, and 90% in the commercial and services sector. There are about 78,000 ‘Other’ (medium plus large) businesses (Table 26). There is likely to be high correlation between number of employees and energy use, so it is unlikely that any significant number of small businesses will be captured down to a threshold of 5 kt. Table 27 shows that at this level, there would be about 6575 sites captured, which would be equivalent to 8.4% of the number of ‘non-small’ business sites. At 1 kt, however, the number of sites is nearly twice the number at 5 kt, so the probability that some of the sites captured will be small business is much higher.

Table 26 Number of small and other business sites by sector

	Small	Other
Mining	2615	566
Manufacturing	59894	13312
Commercial & Service	562313	64074
Total	624822	77952

Derived by authors from ABS 8161055001, June 2004

Table 27 Estimated number of reporting entities and sites

	Entities(a)	Sites(a)	As % of 'Other' sites (b)
BAU	3077	5600	7.2%
Voluntary	3077	5600	7.2%
Mandatory >125	3095	5636	7.2%
Mandatory >25	3230	5776	7.4%
Mandatory >10	3659	6050	7.8%
Mandatory >5	4467	6575	8.4%
Mandatory >1	11082	13155	16.9%

(a) Table 21 (b) Table 26

Another way to approach the issue is via average tonnes CO₂-e per employee. Table 30 in Appendix 2 indicates that average emissions per employee in 2004 were 7 tonnes in the Commercial and Services sector, 564 tonnes in the Mining sector and 159 tonnes in the Manufacturing sector (ranging from 2 tonnes in Other Manufacturing up to 604 tonnes in Metal Products).

If it is assumed that the same average applies to businesses of all emission categories within an industry group, then it is possible to calculate an average number of employees per site from the site emissions. For example, the average number of employees at a Mining sector site emitting 125 kt would be 222 (125,000/564). The lower the intensity of an industry sector, the higher the implied number of employees per site. A 10 kt site in the Commercial and Service sector, for example (typically a large retail centre or a 20-floor office building) corresponds to 1,465 employees whereas a 10 kt site in the Mining sector corresponds to only 18 employees – bringing it under the ‘small business’ threshold if it were an independent business.

However, it is probable that intensity is not constant across all sites within a sector. The highest emitting sites (>25 kt) will have the most emissions-intensive processes, and so will have higher emissions per worker than the sector average. The less emitting sites will have lower than average emissions per worker. Applying these assumptions to the number of sites in each Sector (see Table 30) suggests that over 1,100 sites of the 12,155 that could be caught by a mandatory threshold of 1 kt could have fewer than 20 workers, and so are potentially ‘small business’.

Table 28 Estimated number of sites with fewer than 20 workers, by threshold

Emissions threshold kt CO ₂ -e	Estimated number of sites	Estimated number with <20 workers	% of sites with <20 workers
>125	186	0	0%
>25	576	0	0%
>10	1750	233	13%
>5	3775	633	17%
>1	12155	1133	9%

Source: Author estimates (see Table 30)

About half the potential ‘potential small business’ sites are in the Mining sector and the other half in the Manufacturing sector. The number of Commercial and Services Sector

small businesses with emissions of greater than or equal to 1 kt (representing about 1,111,000 kWh of electricity per year, and corresponding to 147 workers at the sector average) is considered negligible.

In the Mining sector, many businesses operate multiple sites, so the actual number of small businesses will probably be well below the number of sites with fewer than 20 employees. The number of actual ‘small businesses’ caught by a mandatory greenhouse and energy reporting requirement, even at a the minimum threshold of 1 kt, is likely to be well below 1,000.

The Department of Industry, Tourism and Resources has developed a ‘Costing Model’ to ‘assist officers formulate policy and, for each policy option, estimate the compliance costs on business.’¹⁹ The model is a guide to systematically estimating the labour and other costs involved in the nine ‘cost categories’ listed in Table 29, only three of which apply in the case of greenhouse and energy reporting.

The rigorous application of the costing model would require actual cost estimates against each of the cost categories, presumably based on interviews with a sample of potentially affected businesses, and giving them a draft reporting form reflecting the proposed reporting procedures. This would allow the survey respondents to check the requirements against their record keeping practices and staff skills, and so estimate the time and hence costs for the various grades of staff that would need to be involved.

As there is not yet a concrete proposal that can be researched in this way, it is not possible to apply the costing model. However, it is possible to calculate the number of staff hours implied by the reporting cost assumptions in the present study. These are shown in Table 29.

Table 29 Application of DITR ‘Costing Model’ to greenhouse and energy reporting costs for entities with emissions below 10 kt CO₂-e

Cost category (a)	Application to Greenhouse and Energy Reporting	5 to 10 kt CO ₂ -e		1 to 5 kt CO ₂ -e	
		Reporting cost allowance, \$ (b)	Approximate working hours (c)	Reporting cost allowance, \$ (b)	Approximate working hours (c)
Notification	No				
Education	Yes (Year 1)	\$2600	104	\$1000	20
Permission	No				
Purchase Cost	No				
Record Keeping	Yes (annual)	\$2600	104	\$1000	52
Enforcement	No				
Publication & Documentation	Yes (annual)	\$400	16	\$300	12
Procedural	No				
Other	No				

(a) From ‘Costing Model: Cost Category Guide’ at www.industry.gov.au/costingmodel (b) From Table 18, with adjustment (‘education’) costs in first year assumed to be same as recurrent fixed costs. (c) At gross average labour cost of \$25 per hour

¹⁹ The information on the Costing Model is taken from www.industry.gov.au/costingmodel and from presentation by Charles Rankin, Office of Small Business, DITR, at AGO on 17 March 2006.

The implied costs appear to be realistic. For example, an entity site emitting 5 to 10 kt CO₂-e is likely to do so on the basis of its electricity, natural gas and perhaps LPG or ADO use alone. An entity of this size may well have several sites, and several utility accounts serving each site, and monthly energy billing. Maintaining a database of utility and fuel supplier accounts and hence energy purchases is a clerical rather than a technical task. The cost estimates in Table 29 would cover 104 hours (about 14 working days) of clerical time each year for record keeping (assuming this is not already done as a matter of course) and 16 hours (about 2 working days) per year to submit a greenhouse and energy report on each site. These time budgets appear appropriate for the tasks, with the allowance in the present study for an additional 'adjustment' or 'education' cost in the first year of participation.

Effects on Trade

The greenhouse and energy reporting framework under consideration would cover actual energy use and emissions only. The information could be combined with other data to produce, say, values for greenhouse gas intensity per quantity of product, and if so it would be open to interested parties to compare such intensities with similar products produced in other countries. It is not possible to predict whether this would show differences between local and imported products, whether those differences would be valid or what if any impact this would have on consumer preference or trade.

Other trade might be related to whether there are measures to differentiate between goods, services and financial instruments (eg carbon emission permits) traded between participants and non-participants in the current Kyoto arrangements or in some possible post-Kyoto arrangement. If so, the adequacy and reliability of the base emissions data supporting such considerations could have important commercial and trade consequences. Again, this is entirely speculative, and whether the data would be capable of being used in these ways depends on whatever public disclosure arrangements might be made.

Overall Ranking of options

The Policy Working Group identified the following objectives for mandatory reporting:

1. reduce the overall burden on industry and business in reporting greenhouse gas emission and energy data;
2. provide appropriate and consistent information on the greenhouse and energy related performance of companies for:
 - e. investors and business planners - to improve the flow of market information and thereby facilitate sound market decisions;
 - f. the general public - to inform public debate on greenhouse and energy issues;
and
3. ensure that data provided by companies to governments is nationally consistent, robust and comparable across programmes that may be located in different jurisdictions to inform government policy making.

If objective 1 were the sole or over-riding criterion, the preferred option would be a voluntary framework or a mandatory framework with a 125 kt threshold, since these appear to have lower costs than the present arrangements.

However, objective 3 requires factors such as coverage and data quality to be taken into account. This places the optimum threshold at 10 kt, or arguably even 5 kt.

The 1 kt threshold has much higher costs than other options, and the increases in emissions coverage beyond a 5 kt threshold are small.

All options have a similar capability to support the provision of 'appropriate and consistent information on the greenhouse and energy related performance of companies', so there is no basis to differentiate between them with regard to objective 2.

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Appendix 1 – Terms of Reference

Statement Of Requirement For Consultancy to Undertake Analysis of Costs and Benefits Associated With Adopting a National Mandatory Requirement for Companies and Businesses to Report Greenhouse and Energy Data

Context

Consultancy services are required to provide analysis to support current work by the Australian, State and Territory Governments to streamline greenhouse and energy reporting by business.

Data collection and reporting requirements of industry and business in relation to energy use and greenhouse gas emissions are increasing both domestically and internationally. The Australian, State and Territory Governments have introduced, or are planning to introduce, a wide range of programmes and initiatives that require greenhouse or energy reporting from business. In addition, many companies, particularly global enterprises, are electing to report publicly on these matters as part of their approach to governance and corporate social responsibility. International standards and protocols for reporting by businesses have also emerged.

The Environment Protection and Heritage Council (EPHC), comprising Australian, State and Territory Environment Ministers, and the Ministerial Council on Energy (MCE), comprising Australian Government, State and Territory Energy Ministers, are working together to examine the costs and benefits associated with implementation of a nationally consistent framework for greenhouse and energy reporting from Australian companies to meet current and prospective needs of government, business and the public.

The first phase of the work was completed in August 2005¹ and presented to Ministers in October/November 2005. During this process, some jurisdictions and stakeholders proposed a national mandatory requirement for reporting from companies, on the basis that such a measure could help: create a level playing field where all companies would be subject to the reporting requirements regardless of location; reduce the reporting burden and red tape for business; address information gaps for investors; build an information base for future policy responses; and ensure that publicly reported data is nationally consistent, robust and comparable across programmes and across jurisdictions.

Work on the issue of mandatory reporting will continue through the *Policy Working Group on Greenhouse and Energy Reporting*, established jointly under the EPHC and MCE in line with the Terms of Reference at Attachment A.

The Working Group will provide its initial reports to the MCE and EPHC in April 2006 and final report by June 2006.

Related to this process, the EPHC decided in July 2005 to include greenhouse gases in the scope of a process to consider a variation to the National Pollutant Inventory (NPI), noting that there are other mechanisms that could be used. The variation process is to be

informed by the outcomes of the EPHC/MCE process. The EPHC is expected to consider this variation in October 2006.

Consultancy Objective

To analyse and report on the costs and benefits associated with a national mandatory measure requiring Australian companies to report greenhouse and energy data, with public disclosure.

The report will inform the work of the Policy Working Group on Greenhouse and Energy Reporting, established under the Ministerial Council on Energy and the Environment Protection and Heritage Council.

Scope of Consultancy Services

A Cost-Benefit Analysis (CBA) of a new mandatory reporting requirement and alternatives to mandatory reporting is the central task of this consultancy. The CBA should outline the costs and benefits of mandatory reporting, including direct and indirect economic, environmental and social costs and benefits, and an analysis of distinct alternatives (including the 'do nothing' or status quo option) to mandatory reporting. This assessment should take into account both effectiveness and efficiency.

It is envisaged that the analytical framework underpinning a regulatory impact statement (RIS) will be used throughout the Policy Working Group's work, and the CBA will comply with the requirements set out in the Council of Australian Government's (COAG) *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies*.

This means the CBA would include the elements outlined below. Specific guidance from the Policy Working Group will be provided to the successful tenderer at the commencement of the consultancy on: the statement of the problem, statement of objectives for mandatory reporting, and identification of regulatory and non-regulatory alternatives. The focus of the consultancy services will be on impact analysis.

1. Statement of the problem

The Policy Working Group has identified the following problems that might be addressed by mandatory reporting. They are:

- an onerous reporting burden for industry and business, created by different reporting requirements for greenhouse and energy data in different jurisdictions;
- inconsistent or inappropriate information on greenhouse and energy related performance of companies in the public domain – resulting in:
 - g. market decisions on issues such as carbon risks and energy consumption and costs that may not be fully informed;
 - h. public debate that may not be fully informed; and

- lack of national consistency, robustness and/or comparability in greenhouse and energy data reported by business – making it difficult for governments to develop new, or enhance existing, measures to reduce emissions and energy from companies.

2. Statement of objectives for mandatory reporting

The Policy Working Group has identified possible objectives for mandatory reporting. They are to:

- reduce the overall burden on industry and business in reporting greenhouse gas emission and energy data;
- provide appropriate and consistent information on the greenhouse and energy related performance of companies for:
 - i. investors and business planners - to improve the flow of market information and thereby facilitate sound market decisions;
 - j. the general public - to inform public debate on greenhouse and energy issues; and
- ensure that data provided by companies to governments is nationally consistent, robust and comparable across programmes that may be located in different jurisdictions to inform government policy making.

3. Identification of constraints

The successful tenderer will identify and document practical constraints on the feasibility of alternative options for greenhouse and energy reporting.

4. Identification of regulatory and non-regulatory alternatives

In line with the requirements for regulatory impact assessment as agreed by COAG, the successful tenderer will identify feasible options for reporting of greenhouse gas emissions and energy data. In conducting the analysis the consultant will consider the capacity of alternatives to address issues raised in sections 1 and 2 above. Additional guidance for the identification of options is contained in *A Guide to Regulation*, published by the (Australian) Office of Regulation Review.

The Policy Working Group has identified the following feasible options to be investigated in the cost benefit analysis:

- the extension of the National Pollutant Inventory;
- a new National Environment Protection Measure;
- development of new specific legislation or amendments to other existing legislation, with harmonisation of existing reporting requirements;
- harmonisation of existing reporting requirements through a web-based reporting tool without additional national legislation; and
- the status quo or ‘do nothing’ option i.e. all current voluntary and mandatory reporting requirements and prospective requirements for which there are firm government commitments and reporting requirements (e.g. mandatory membership of Greenhouse Challenge Plus for fuel tax credit recipients).

5. Assessment of impacts (costs and benefits) of each option

Economic, environmental and social impacts should be considered. Where possible, quantitative analysis and measures – such as financial and economic costs and benefits – should be identified and compared. However, the analysis should also include intangible, non-monetary costs and benefits. Where it is not possible to prepare a quantitative estimate, a qualitative assessment of costs and benefits should be undertaken.

The assessment of impacts should include:

- Identification of stakeholder groups likely to be significantly affected by the options. These groups should be broken down into sub-groups, eg specific industry sectors, where options will have different effects on those sub-groups.
- Assessment of costs and benefits to government, businesses, consumers, and the community as a whole.
- Effects on competition, eg whether options would raise barriers to market entry, exit or innovation.
- Effects on small business. The report should include a sub-section that assesses the impact of each option on small business compliance costs and paperwork burden.
- Effects on trade, eg whether options would create unnecessary obstacles to international trade, such as discrimination between domestic and imported products.

Factors that will have a significant impact on the costs and benefits of mandatory reporting and other alternatives are the:

- threshold for reporting (eg reporting is required where entities consume over a certain amount of energy or emit a certain amount of greenhouse gas emissions);
- whether reporting must be disaggregated down to facility/site level or aggregated up to the company level;
- sectors/industries that would be covered by mandatory reporting; and e level of public or other disclosure (if any) ensuring that commercially sensitive information is safeguarded while “community right to know” objectives are met.

The CBA should assess the impact of these factors.

Levels of public disclosure suggested for analysis are:

- maintain the status quo (i.e. no new public disclosure);
- partial public disclosure; and
- full public disclosure (as in the National Pollutant Inventory).

Thresholds suggested for analysis are:

- 500 terajoules of energy, or 125,000 tonnes of carbon dioxide equivalent (t CO₂-e)² per annum;
- 100 terajoules of energy, or 25,000 t CO₂-e per annum; and
- 4 terajoule of energy, or 1000 t CO₂-e per annum.

Sensitivity analysis may also be needed to assess the impact of estimation errors on the quantification of costs and benefits.

Appendix 2 Sites in Emissions Categories by Sub-sector

	Sites >125 kt		Sites 25-125 kt		Sites 10-25 kt		Sites 5-10 kt		Sites 1-5 kt		Sites <1 kt		All sites	
	Number	Avg kt CO ₂ -e	Number	Avg kt CO ₂ -e	Number	Avg kt CO ₂ -e	Number	Avg kt CO ₂ -e	Number	Avg kt CO ₂ -e	Number	Avg kt CO ₂ -e	Number	Avg kt CO ₂ -e
MINING	80	368	150	99	300	19	400	8.2	500	3.3	1751	0.83	3181	17.7
Food, beverages, tobacco	0	0	50	61	100	12	200	6.8	400	1.5	4624	0.36	5374	1.5
Textile, clothing, footwear	0	0	8	42	10	17	20	8.7	40	2.1	6879	0.07	6957	0.2
Wood, paper and printing	10	531	5	28	5	12	10	6.3	50	1.5	14194	0.01	14274	0.4
Petroleum, coal and chemical	18	1433	25	120	50	18	100	7.2	200	2.5	4439	0.04	4832	6.4
Non-metallic mineral products	25	457	25	37	200	12	200	2.8	200	1.1	2310	0.05	2960	5.3
Metal products	12	8230	15	100	50	17	100	6.8	600	1.5	12316	0.21	13093	8.0
Machinery and equipment	0	0	10	33	20	15	40	7.4	300	2.1	15011	0.07	15381	0.2
Other manufacturing	0	0	0	0	0	0	0	0.0	50	2.0	10291	0.00	10341	0.0
MANUFACTURING	65	2174	138	67	435	13	670	5.7	1840	1.7	70064	0.09	73212	1.3
COMMERCIAL AND SERVICES	0	368	50	36	400	12	900	6.6	6000	1.5	619037	0.04	626387	0.1
ELECTRICITY GENERATION	41	4513	52	80	39	20	55	8.7	40	4.1	0	0	227	839.7

Source: Author estimates

Table 30 Total Emissions by Sub-Sector and Emissions Source, and

	kt CO ₂ -e							Employ t CO ₂ -e		Employees if at average t CO ₂ -e/wotker					Est number 'small' business			
	Electricity	Coal	Pet Prods	Nat Gas	Fug-itive	Process	Total	-ment ('000)	per worker	125 kt	25 kt	10 kt	5 kt	1 kt	10-25 (a)	5-10 (b)	1-5 (c)	Total
MINING	15950	1539	6930	7673	24268	0	56360	99.9	564	222	44	18	9	2	200	200	167	567
Food, beverages, tobacco	5273	810	180	1560	0	0	7823	190	41	3042	608	243	122	24	0	0	0	0
Textile, clothing, footwear and leather	775	90	30	338	0	0	1233	62	20	6328	1266	506	253	51	0	0	0	0
Wood, paper and printing	3900	756	143	967	0	0	5766	193	30	4182	836	335	167	33	0	0	0	0
Petroleum, coal and chemical	4050	765	12413	6646	0	7214	31087	93	335	373	75	30	15	3	0	50	67	117
Non-metallic mineral products	3426	2385	510	3861	0	5384	15566	36	433	289	58	23	12	2	0	100	67	167
Metal products	44750	31635	4043	9376	0	15399	105202	174	604	207	41	17	8	2	33	50	200	283
Machinery and equipment	2325	0	60	265	0	0	2650	251	11	11854	2371	948	474	95	0	0	0	0
Other manufacturing	125	0	0	16	0	0	141	69	2	61271	12254	4902	2451	490	0	0	0	0
MANUFACTURING	64624	36441	17378	23029	0	27997	169468	1068.8	159	788	158	63	32	6	33	200	333	567
COMMERCIAL AND SERVICES	41650	351	1530	2272	0	0	45803	6708.8	7	18309	3662	1465	732	146	0	0	0	0
ELECTRICITY GENERATION	NA						190606								0	0	0	0
Total															233	400	500	1133

Source: Author estimates : Shaded cells represent categories where 'small' businesses (fewer than 20 employees) are likely to be represented (a) Assumes emissions per worker intensity is 2/3 of sector average (b) Assumes intensity is 1/2 of sector average (c) Assumes intensity is 1/3 of sector average.

Attachment B: Company Level Cost Benefit Analysis – George Wilkenfeld & Associates (June 2006) *Costs and Benefits of a National Greenhouse and Energy Reporting Framework – Additional Analysis.*

**Costs and Benefits
of a
National Greenhouse and Energy Reporting
Framework – Additional Analyses**

George Wilkenfeld and Associates

for

Department of the Environment and Heritage

June 2006

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1. Background

Background

A report analysing the costs and benefits associated with adopting a national mandatory requirement for companies and businesses to report greenhouse and energy data was prepared by George Wilkenfeld and Associates and published by the Australian Greenhouse Office in March 2006 (GWA 2006). That document is referred to as the ‘original CBA’.

A consultation paper, *A Streamlined National Reporting Framework for Greenhouse and Energy Data: Reducing the Burden*, which includes information drawn from the cost benefit analysis, was used as the basis for a national consultation process during April 2006.

The Environment Protection and Heritage Council (EPHC) and Ministerial Council on Energy (MCE) Working Groups on Greenhouse and Energy Reporting will provide their final report to the Councils for consideration in June 2006. The EPHC has also initiated a process to consider a variation to the National Pollutant Inventory (NPI), with a decision expected in April 2007.

This study

The present study was commissioned by the AGO to provide additional analysis of the costs and benefits of adopting a national mandatory requirement for companies and businesses to report greenhouse and energy data. It builds on the original CBA in the following ways:

- The thresholds for inclusion in the mandatory obligation are calculated at the ‘business’ level rather than the individual site or facility level as in the original CBA;²⁰
- The thresholds can be triggered by a range of criteria: greenhouse gases emitted, energy used, energy produced and electricity generation capacity installed. The original CBA focused solely on the criterion of greenhouse gases emitted;
- A slightly wider range of emissions sources is also taken into account. The original CBA considered energy-related emissions: natural gas, coal and petroleum (Scope 1 emissions) and electricity imported from off-site (Scope 2 emissions) as well as fugitive emissions and industrial process emissions. The present study has added emissions from biofuels and emissions from waste, but excludes emissions from the IPCC-defined sectors *Agriculture* and *Land Use, Land Use Change and Forestry*;

²⁰ The estimates of business numbers in this analysis are taken from ABS (2004). The method of enumeration is explained at length in that publication. The register of Australian Business Numbers (ABNs) is only one of the sources the ABS draws on. The final ABS estimate of businesses is lower than the total number of ABNs. Many ABNs attach to entities which are ‘out of scope’ and not enumerated as operating businesses.

- The original CBA focussed on three main ‘energy consuming’ sectors of the economy: Mining (ANZSIC Division B), Manufacturing (Division C) and Commercial & Services, as well as on the Electricity Generation sector. The present analysis also covers energy-related emissions in the Agriculture, Forestry and Fishing sector (Division A) and Transport.

The original CBA was a detailed stand-alone document that covered a range of issues such as regulatory frameworks and modes and options of public disclosure. The present analysis focuses on the quantifiable monetary costs to business and government. It is intended as a technical input into a wider Regulation Impact Statement and should be read in association with the accompanying spreadsheet. The tables in the present document are cross-referred to named data regions in the spreadsheet (eg <SiteSum>).

Thresholds and Triggers

The original CBA assumed that a business would be required to submit reports of its annual energy use and greenhouse gas emissions only if it owned or controlled at least one facility or site at which total greenhouse gas emissions met or exceeded a given threshold level. A range of declining thresholds was investigated: 125, 25, 10, 5 and 1 kt CO₂-e per annum.

If the threshold were set at 10 kt CO₂-e, for example, a business with one site emitting 30kt would be required to report, another with two sites at 11 kt each would be required to report but a third with 4 sites at 8 kt each would be exempt, even though its aggregate emissions were higher than the other two businesses. Also, where on-site emissions came solely from energy use, as would be the case in the great majority of cases, the quantity of energy use could vary widely – from 40 TJ for a site using only electricity (with a nominal emission factor of 250 t CO₂-e/TJ) to 192 TJ for a site using natural gas (with a nominal emission factor of 52 t CO₂-e/TJ).

Triggers in this Analysis

Four scenarios are compared in the present analysis:

BAU

In the ‘Business as Usual’ (BAU) scenario reporting businesses continue to be subject to a range of mandatory reporting requirements (eg NPI), and/or choose to voluntarily participate in others (eg Greenhouse Challenge Plus (GCP)), and continue to prepare different reports in different formats for each of those programs. The Data Requiring Entities (DREs) continue to independently receive, process and store the data as they do now.

Scenario A

Annual reporting of greenhouse gas emissions and energy use is mandatory for any reporting business which meets **one or more** the following criteria (collectively termed ‘Trigger A’ in this analysis).²¹

- a. The combined greenhouse gas emissions from all facilities for which the business is responsible are equal to or greater than 50,000 (50 kt) tonnes of CO₂-e per annum, OR
- b. The combined energy consumption of all facilities for which the business is responsible is equal to or greater than 200 TJ per year; OR

²¹ A ‘Trigger A’ site meets the criteria on its own. A ‘Trigger A business’ may have none, one or more Trigger A sites, none, one or more Trigger B sites and none, one or more ‘sub-B’ sites. The category ‘B not A’ applies to businesses or entities which would meet Trigger A but not Trigger B.

- c. The combined energy production of all facilities for which the business is responsible is equal to or greater than 200 TJ per year; OR
- d. The total installed electricity generation capacity at all facilities for which the business is responsible is equal to or greater than 30 MW.

Businesses which currently report but are not caught by Trigger A continue to report.

Scenario B

Annual reporting of greenhouse gas emissions and energy use is mandatory for any RB which meets **one or more** the following criteria (collectively termed ‘Trigger B’ in this analysis).

- a. The combined greenhouse gas emissions from all facilities for which the business is responsible are equal to or greater than 25,000 (25 kt) tonnes of CO₂-e per annum, OR
- b. The combined energy consumption of all facilities for which the business is responsible is equal to or greater than 100 TJ per year; OR
- c. The combined energy production of all facilities for which the business is responsible is equal to or greater than 100 TJ per year; OR
- d. The total installed electricity generation capacity at all facilities for which the business is responsible is equal to or greater than 30 MW.

Businesses which currently report but are not caught by Trigger B continue to report.

Scenario C

As for Scenario A, plus any businesses with one or more sites meeting Trigger B on their own must report for those sites only. This adds fewer businesses and sites than Scenario B, because:

- Businesses that would be have met Trigger B due to the accumulated emissions or energy use of sub-B sites are excluded; and
- Businesses that *are* caught are only required to report on their B site/s, not on their smaller sites.

Some of the businesses caught under Scenario C already report voluntarily. It is assumed that these companies continue to report voluntarily for their non-B sites as well.

Simplification of Threshold Assumptions

The analysis quantifies the number of sites and businesses in each sector caught by trigger criteria (a) and (b), ie the greenhouse and energy thresholds.

It is not necessary to separately analyse criteria (c) and (d) for the following reasons:

- Nearly all businesses which *produce* more than 100 or 200 TJ of energy per year are likely to consume at least as much energy, and so will be caught by criteria (a) or (b) in any case (eg average emissions **per site** in the electricity generation sector are nearly 300 kt CO₂-e, and average company emissions are much higher);
- For companies where energy is supplied for own use rather than for sale, if 30 MW or more of capacity is used at all, then the fuel consumption (typically natural gas) will trigger the energy threshold at any load factor higher than about 0.05 (ie if the capacity is used for an average of more than one hour per day – see Figure 14). Biofuel generation is less efficient, so the fuel use criterion would be triggered at even lower load factors.

The only class of business for which the ‘energy produced’ criterion is likely to make the difference between participation and non-participation will be smaller renewable energy generators, who consume no fuel and produce less than 100TJ (28 GWh) per year. At a load factor of 25% (typical for wind), companies with more than 12MW of plant would be captured. Larger renewable generators would be covered in any case by the 30 MW criterion.

Since nearly all renewable electricity generators already report to the Office of the Renewable Energy Regulator in order to create Renewable Electricity Certificates (RECs), the cost of submitting the same data to a national reporting framework would be negligible.

Therefore, the ‘30MW’ and ‘energy produced’ criteria will have no significant bearing on the analysis and do not need to be considered further.

It was stated in the terms of reference that ‘companies’ does not include government departments and agencies and the facilities they operate (eg schools, hospitals) – but should include government business enterprises such as power generators. The quality of the data do not allow such distinctions to be made, so in the analysis ‘businesses’ nominally cover publicly as well as privately owned enterprises.

Details to be defined in regulation

A wide range of issues would need to be defined in regulations before any mandatory reporting regime could be operationalised. These include:

- Definition of eligible ‘businesses’ for aggregation purposes – whether companies, local divisions of companies, collectives, public sector corporations etc.
- Definition of what constitutes a business’s ‘responsibility’ for a facility (eg ownership, tenancy, management responsibility or some other criterion) would determine the facilities which a company would need to take into account in assessing its liability. There will be enormous scope for double-counting, especially in the commercial sector – eg would Westfield (with 50 shopping centres in

Australia) be required to report energy use from its 22,500 tenants, when many of those – eg Woolworths, Coles Myer – would be required to report on their own?

- The actual emission factors to be used by businesses to initially screen for their eligibility to participate and, if so, the factors for reporting. The present study uses uniform national average factors, but if state-based factors were used, especially for electricity, the coverage of businesses would be different. In particular, commercial and service businesses with electricity-only sites in Victoria would trigger the CO₂-e criteria at much lower energy use than in other States.
- Rules for enumeration and retention of data at the state level for businesses which operate in more than one state. The original CBA identified this as a minimum requirement before the states would consider abandoning their own data requests.

The analysis assumes that these issues are adequately addressed in the regulation, design and administration of the reporting scheme. It makes no allowance for the possible continuation of multiple reporting or the potentially high costs to government of cleaning and reconciling data and removing double counts and overlaps. However, all such uncertainties are within the overall uncertainty of the analysis.

Energy, Sectoral and Emissions Coverage

The sectors and emissions sources covered in the analysis are summarised in Table 31. The number of business and sites or facilities are summarised in Table 32. The number of sites and companies meeting the trigger criteria is discussed in Section 2.

Table 31 Energy and emissions by Sector

	PJ	Energy kt CO2-e	Fugitive kt CO2-e	Process kt CO2-e	Total kt CO2-e
Agriculture, forestry & fishing	94.4	8,250			8,250
Mining	327.0	30,433	24,413		54,847
Manufacturing	1084.2	112,327		25,951	138,277
Transport businesses (a)	582.9	44,955			44,955
Commercial and Services	234.6	45,661			45,661
Above sectors combined	2323	241,627	24,413	25,951	291,990
Generation	2233	195,205			195,205
Water, sewerage and gas	38.5	1,578			1,578
Construction	27.5	1,980			1,980

<SectorSum> (a) Excludes private transport fuel use

Table 32 Business entities by Sector

	Business Entities(a)	Sites or Facilities(b)	Average kt/site	Number of sites Making up 50kt	AvgNumber of sites Making up 25kt
Agriculture, forestry & fishing	74,111	77,065	0.1	467	234
Mining	2,731	3,768	8.1	6	3
Manufacturing	61,888	71,044	1.6	32	16
Transport businesses	30,281	30,281	1.5	34	17
Commercial and Services	546,949	687,238	0.1	753	376
Above sectors combined	715,960	869,396	0.3	180	90
Generation	66	228	856	0.06	0.03
Water, sewerage and gas	NA	NA	NA	NA	NA
Construction	113,426	115,666	0.02	2921	1460

<Sitesum> (a) Employing entities only, from ABS 8181.0 (b) Author estimate

The number of businesses corresponds to the number of ‘employing businesses’ reported by ABS (2004). There are also nearly 2.2 million ‘non-employing businesses’ (mostly sole traders or very small family businesses). Of these, nearly 1.5 m are based in households, so their energy use is essentially indistinguishable from general residential sector energy use. The other 0.7m are ‘based’ elsewhere – in many cases a vehicle rather than a site. It is assumed that non-employing businesses will play no part in any national greenhouse and energy reporting framework.

Agriculture

Nearly all the energy used in this sector is petroleum. The average emissions per site are very low, so that 234 average sites would be needed to trip Trigger B (Table 32).

Consequently, only those few agricultural businesses will be caught that have one or more very large energy-using sites or an unusually large number of smaller sites.

Mining

Because fugitive emissions are of comparable magnitude to energy-related emissions, and a high proportion of energy is electricity, average emissions per site are the highest of the end-use sectors. There is a high probability that a mining business will meet the trigger criteria.

Manufacturing

Although average emissions per site are comparable to transport, there is a very wide range within the sector, from an average of 0.01 kt/site for 'Other Manufacturing' to 5.0 kt/site for 'Metal Products'.

Transport

Each transport business is treated as a single reporting facility irrespective of the number of sites or states of operation.

There are three main categories of transport energy use:

- a. Fuel used in private motor vehicles (this is generally divided by trip purpose: to and from work, in the course of business and private);
- b. Fuel used in vehicles offering a transport service on the open market (generally called 'hire and reward' transport businesses); and
- c. Fuel used in vehicle fleets operated by businesses whose main operations are not transport: eg truck fleets operated by miners or manufacturers, and car and van fleets operated by large service businesses such as banks or telecommunications companies.

The ABARE fuel use data only distinguish fuel use by mode (road, rail etc). The NGGI further divides road vehicle fuel use and emissions by vehicle type. The following assumptions have been used to allocate transport fuel and emissions to businesses:

- All car fuel is allocated to private users, except for the fuel used by taxis (which accounts for just over 1% of car fuel).²²
- All light truck fuel is allocated to the 'hire and reward' transport sector, even though a significant share of light trucks are now bought for private use.
- All transport fuel use reported for trucks, railways, aircraft and shipping is allocated to the 'hire and reward' transport sector.

²² Taxi statistics from Australian Taxi Industry Association, www.atia.com.au/statistics.php

- It is assumed that fuel used by ancillary transport is allocated to the sector of the company's principal business. For example, banks would report fleet fuel use in their total energy use (as indeed they do for the Greenhouse Challenge).

There are bound to be overlaps and double counting. For example, many large service and retail companies now contract out their fleet operations to 'hire and reward' operators, who reserve part of their fleet for the exclusive use of that customer. Who should report the energy? Also, many companies cover the costs of cars as part of employee remuneration packages. The cars are essentially used as private vehicles, even though the company pays for and records fuel purchases.

Table 33 shows the average annual fuel use and emissions for various vehicle types. It indicates that a heavy trucking business with more than 52 trucks, each using the national average amount of fuel annually, would trip Trigger B. ACIL (2004) reports 42 businesses in the road freight 'hire and reward' sector with 50-99 trucks, and 30 with more than 100 trucks, which are likely to trip Trigger A.

In fact, the number of large fleets reported for ancillary operators is far higher: about 200 fleets of 50-99 trucks and 60 fleets of more than 100. It is not clear whether ABARE would include the fuel used by these 'ancillary' fleets under transport or under the industry concerned, but in any case it is likely that nearly all of those companies would meet the reporting triggers solely on their stationary fuel use and emissions plus their fugitive or process emissions.

Table 33 Average energy and emissions by type of road vehicle

	Average TJ/veh	Average kt/veh	Veh/ 200TJ	Veh/ 100TJ
Cars - private	0.06	0.004	3458	1729
Cars - business (taxis, hire cars)	0.42	0.031	471	235
Light trucks - business	0.09	0.006	2325	1163
Med trucks - business	0.25	0.017	814	407
Heavy trucks - business	1.92	0.134	104	52
Buses - business	0.31	0.021	649	325

<Inputs>

Commercial and Services

The estimates of sites numbers in this sector are largely unchanged from the original CBA. However, as many service sector businesses are multi-site, additional research was undertaken to better understand the relationship between site and company emissions. **Table 34** summarises data for a sample of 10 companies, together accounting for 6.2% of sector emissions and 4.8% of sector energy (excluding their transport fleets).

This analysis indicates that 9 of the 10 businesses would meet both Trigger A and Trigger B because of their large number of sites, even though average fuel use and emissions per site are low (averaging 0.15-0.2 kt CO₂-e per site for financial services businesses). The four Greenhouse Challenge members listed in **Table 34** which report site numbers account for 2,784 sites between them. This conflicts with published

statements that the 780 businesses already participating in the Challenge ‘represent over 1000 operating sites of facilities in Australia’ (most recently reported in *The Challenge*, May 2005, p4). Consequently, the estimate of the number of sites covered by existing reporting entities in the ‘BAU’ case has been increased by 3,000.

Generation

The data for this sector are largely unchanged from the original CBA, although there has been some refinement of the estimate of number of businesses. Emissions from electricity generation should not be added to those for the end use sectors, because they are already captured in end use through the use of Scope 2 emission factors.

Construction

Average emissions per facility in the construction sector are an order of magnitude lower than the next lowest (commercial and services). It is likely that the data for the sector are distorted by the large number of small contractors in the industry, and possibly by undercounting of vehicle emissions. The energy use of large construction businesses is dominated by petroleum, and resembles that of large transport businesses, and for the time being is treated within the transport business sector. As total fuel use in the construction sector is less than 5% of transport business fuel use, this assumption is not likely to make any material difference to the analysis.

Water, sewerage and gas

This sector is not separately analysed. As most water and gas utilities already participate in existing greenhouse and energy reporting arrangements, their participation in any national framework is unlikely to add to reporting costs.

Waste

It is assumed that ABARE includes energy use in the Waste sector in Commercial and Services. Much of the landfill emissions captured for generation will be covered by electricity businesses. Only one business is known to report fugitive emissions from its landfills that are *not* captured (**Table 34**).

Table 34 Sample of commercial and service companies participating in Global Reporting Initiative

	kt CO ₂ -e Stationary	TJ Stationary	kt CO ₂ -e total	TJ Total	Trigger A	Trigger B	Sites	TJ/site	Stationary kt CO ₂ -e/ facility	GHP members May 05 list
Westpac (Financial services)	107	270	125	691	Yes	Yes	810	0.33	0.13	Yes
ANZ (Financial services))	118	478	121	526	Yes	Yes	756	0.63	0.16	Yes
IAG Insurance (Financial services)	43	173	52	295	Yes	Yes	280	0.62	0.15	No
NAB (Financial services)	186	746	242	1491	Yes	Yes	1218	0.61	0.15	Yes
Telstra (Communications)	1161	4668	1302	6559	Yes	Yes	NA	NA	NA	Yes
Singtel Optus (Communications)	154	620	164	749	Yes	Yes	NA	NA	NA	No
Transfield Services (excludes generation)	6	22	28	327	Yes	Yes	NA	NA	NA	No
Vic Super (Financial services)	0.3	1	0.3	1	No	No	3	0.41	0.10	No
Woolworths (Retail) excludes vehicles	999	3995	998.6	3995	Yes	Yes	1600	2.50	0.62	No
WSN Environment Solutions (Waste)(a)	39	364	377	396	Yes	Yes	NA	NA	NA	No
Total of above	2812	11336	3411.3	15031			4667 (b)	2.43 (c)	0.60 (c)	

<Examples> Derived by author from Sustainability Reports posted on <http://www.globalreporting.org/> (a) Excludes 1,598 kt CO₂-e fugitive emissions from landfills that are not captured. (b) Minimum value – does not include NAs (c) Maximum value – addition of NA sites would drive average down

Table 35 Summary of sites meeting Triggers A and B, 5 End Use sectors

	>50 kt				25-50 kt				<25 kt						
All Sites, this column	363	Total kt	157766	Avg kt	434.6	515	Total kt	20245	Avg kt	39.3	868517	Total kt	113979	Avg kt	0.1
	Sites	Total TJ	1071570	Avg TJ	2952.0	Sites	Total TJ	199829	Avg TJ	388.0	Sites	Total TJ	1052009	Avg TJ	1.2
>200 TJ	363	Total kt	157766	Avg kt	435	421	Total kt	17352	Avg kt	41	120	Total kt	2500	Avg kt	21
	Sites	Total TJ	1071570	Avg TJ	2952	Sites	Total TJ	185195	Avg TJ	440	Sites	Total TJ	29500	Avg TJ	246
100-200 TJ	0	Total kt	0	Avg kt	0	94	Total kt	2893	Avg kt	31	300	Total kt	5693	Avg kt	19
	Sites	Total TJ	0	Avg TJ	0	Sites	Total TJ	14634	Avg TJ	156	Sites	Total TJ	41000	Avg TJ	137
<100 TJ	0	Total kt	0	Avg kt	0	0	Total kt	0	Avg kt	0	868097	Total kt	105787	Avg kt	0.1
	Sites	Total TJ	0	Avg TJ	0	Sites	Total TJ	0	Avg TJ	0	Sites	Total TJ	981509	Avg TJ	9107
kt/PJ	147.2	Fug+Proc	44.7	Energy	102.6	101.3	Fug+Proc	12.5	Energy	88.8	108.3	Fug+Proc	-	Energy	108.3

<ENDUSEsum>

2. Method of Analysis

Method

Single Factor Site Analysis

The Original CBA described the process by which the energy use and emissions in each sector were allocated to categories of sites, classified by emissions. That analysis was modified in the following way:

- The Agriculture and Transport sectors were added, to make five ‘End Use’ sectors in all (the original CBA covered only Mining, Manufacturing and Commercial & Services); and
- The 25-125 kt category was split into two: 50-125 and 25-50, to better align with Triggers A and B (noting that the triggers apply at the business level rather than the site level).

The analysis of number of sites by emissions alone is summarised in Table 36. The share of the total emissions from the 5 end use sectors is also indicated, by way of comparison with the Original CBA.

The number of end use sites covered has increased from about 700,000 to about 870,000 due to the addition of the Agriculture and Transport sectors, but the share of the emissions of included sectors has fallen from 66.0% to 60.6%, due to the relatively low coverage of Agriculture and Transport businesses by the current greenhouse reporting regimes. Figure 15 illustrates the coverage for each sector, and what the coverage would be if reporting thresholds were determined by the single factor of site emissions. This diagram has been included as a link with the original CBA, and to indicate the level of BAU emissions coverage to which Scenarios A and B must be compared (ie 60.6%). However, the current study does not rely on single factor analysis but on the ‘dual factor’ analysis described below.

Table 36 Estimated number of sites by emissions category, 5 End Use sectors

Category kt/yr	Number of sites	Average kt/site	Mt this category	Share of emissions covered, this category	Cumulative share covered	Share of emissions covered by sites currently reporting
>125	106	1264	134.0	45.9%	45.9%	40.7%
50-125	257	92.7	23.8	8.2%	54.0%	6.5%
25-50	515	39.3	20.2	6.9%	61.0%	5.4%
10-25	1102	15.2	16.7	5.7%	66.7%	3.4%
5-10	2420	7.1	17.2	5.9%	72.6%	3.7%
1-5	8615	2.1	17.9	6.1%	78.7%	0.9%
<1	856381	0.1	62.1	21.3%	100.0%	0.1%
Total	869396(a)	0.3	292.0	100.0%		60.6%

<SITEmissions> Horizontal bands correspond to Trigger A and B emission categories (a) Does not match Table 35 total exactly due to rounding error

Dual Factor Site Analysis

Sites can be classified by energy use as well as by emissions. This was done in the following way (for each End Use sector and for Electricity Generation separately):

- Consolidate sites according to the three categories of emissions defined by Triggers A and B: >50 kt, 25-50kt and <25 kt. These are indicated as columns in Table 35.
- Estimate the number of sites in the three categories of energy use defined by Triggers A and B: >200TJ, 100-200 TJ and <100TJ. These are indicated as rows in Table 35.
- Estimate the number of potential sites in each of the 9 cells of the table using the following rules:

Average emissions for the sites in each cell must remain within the emissions constraints (eg the 94 sites in the centre cell average 31 kt/site, which is within the 25-50 kt range);

Average emissions for the sites in each cell must remain within the energy use constraints (eg the 94 sites in the centre cell average 156 TJ/site, which is within the 100-200 range);

Average kt/PJ emission factors must remain within bounds (ie not more than 250 kt/PJ, which would represent an all-electric site, and not less than 52 kt/PJ, which would represent an all-gas site), and preferably close to the weighted average emission factor for that group (indicated in the bottom row of Table 35).

These constraints make it impossible to have a site emitting more than 50kt with energy use of less than 200 TJ, and limit the maximum number of 25-50 kt/100-200 kt sites to 94 (note that these totals exclude Electricity Generation, which was analysed separately).

In the <25kt category, which is dominated by Commercial and Services, Transport and Agriculture Sites, the number of >200TJ sites is limited to large fuel-dominated facilities (the emissions from electric-intensive sites exceeding 200 TJ would exceed 25 kt and so violate the constraint). The number of 100-200TJ sites in this emission category is estimated at 300, but could potentially be much higher. If this estimate were increased, the residual average consumption of the remaining 868,097 sites shown at the bottom right cell of Table 35 would have to fall.

Once this table is solved, the number of sites meeting Trigger A and B can be read off. The 904 sites in the red cells meet either the energy or the emissions criterion for Trigger A – the sites in the ‘intersection cell’ (top left) meet both. The 394 sites in the orange cells meet the criteria for Trigger B but not A. The 868,097 cells in the green cell do not meet the criteria for either trigger. Figure 16 illustrates the estimated number of sites meeting Trigger A and B in each sector.

There are $(904+394) = 1298$ end use sites meeting Trigger B, since all sites meeting Trigger A automatically meet Trigger B as well. About 42% of Trigger A and 66% of

Trigger B sites meet *both* emission and energy criteria factors. Of the sites which meet one criterion only, more meet the energy than the emissions criterion (Table 37).

Table 37 Sites meeting energy and emissions criteria

	Sites meeting trigger by TJ			Sites meeting trigger by kt		
	>200 TJ	100-200 TJ	>100TJ	>50kt	25-50 kt	>25kt
Agriculture	1	54	55	0	5	5
Mining	370	50	420	160	200	360
Manufacturing	316	90	406	136	150	286
Transport	107	30	137	37	60	97
Comm & Services	110	170	280	30	100	130
End Use Sectors	904	394	1298	363	515	878
Generation	67	50	117	67	27	94
Total sites	971	444	1415	430	542	972

<ABsum>

It is possible to get some external verification of these estimates. ABARE reports that for the businesses covered by the FES (mainly Agriculture, Mining, Manufacturing, Transport and Generation, but not Commercial and Services) there are 777 sites with energy use exceeding 100 TJ per annum.²³ Table 37 indicates 1415 sites exceeding 100 TJ. This would imply that there are about 640 sites or facilities with >100TJ energy use not presently covered by reporting to the FES, and up to 280 of these are in the Commercial and Services sector alone.

²³ From ABARE FES, conveyed to author by PWG. Apparently 705 of these sites also exceed 250 TJ.

The Relationship between Companies and Sites

For single-site businesses there is a direct relationship between the number of sites meeting a given trigger and the number of businesses: if 75 sites meet Trigger A then so do 75 businesses. For any group of businesses having two or more sites, however, and where the sites differ in their energy and emission characteristics, three different outcomes are possible:

- The number of businesses meeting a given trigger could be *lower* than the number of sites meeting the same trigger. This would occur if some businesses had more than one above-trigger site;
- The number of businesses meeting a given trigger could be *higher* than the number of sites meeting the same trigger. This is possible because a business could have enough sub-trigger sites to add to the trigger; or
- The number of businesses meeting a given trigger could be *equal* to the number of sites meeting the same trigger. This is the least probable outcome.

Therefore, there is no necessary relationship between the number of sites meeting each trigger and the number of businesses. The best guidance would be a survey and analysis of a statistically significant number of firms in each end use sector. In the absence of such information, the number of businesses meeting each threshold can be estimated within the known constraints of total businesses, total sites meeting each trigger and total energy and emissions. This is the approach taken in this study.²⁴ All end use businesses are combined for this part of the analysis, because there is no real data basis to differentiate sectors, and many large companies will have sites across sectors.

In the solution illustrated in Table 38, 71% of businesses have one site, 15% have two and 14% have more than two (the average for this group is 3.0). In the end use sectors, the overall average of sites per business is 1.2 (in Electricity Generation it is 3.6). Sites not meeting trigger B ('sub-B') were split into Larger and Smaller, such that two Larger sub-B sites would be enough for a business to trip Trigger B. Of course, many sub-B sites are owned by businesses that also have A or B sites, and so do not change the compliance status of the business, and many B sites are owned by businesses that also have A sites. Many businesses, especially in the Commercial sector, will meet Trigger A trigger solely through having many Smaller sub-B sites (eg 5 of the 10 businesses in **Table 34**).

²⁴ Even within these constraints, there is an infinite number of solutions, and if high confidence were required a Monte Carlo type probability program would need to be set up to identify the region where the solutions converge. However, given the uncertainty surrounding reporting costs and other values critical to the cost-benefit analysis, and the relatively modest cost of the reporting regime as a whole, this does not seem necessary for the present.

Table 38 indicates that 504 businesses in Australia are estimated to meet Trigger A and a further 382 businesses would meet Trigger B.²⁵ The number of businesses and sites caught by Trigger C lies between the totals for Trigger A and Trigger B.

Table 38 Estimated number of businesses meeting proposed trigger criteria

Category of business in relation to trigger criteria	Number of businesses	Sites meeting Trigger A (a)	Sites only meeting Trigger B (a)	Larger sub-B sites (a)	Smaller sub-B sites (a)	Total reportable sites (a)	Average reportable sites per business
Businesses meeting Trigger A	504	1018	250	1185	2560	5013	9.9
Additional businesses meeting Trigger B	382	0	194	583	1177	1954	5.1
Total businesses meeting Trigger B	886	1018	444	1768	3737	6967	7.9
Additional businesses meeting Trigger C	194	0	194	0	0	194	1.1
Total businesses meeting Trigger C (b)	698	1018	444	1185	2560	5207	7.6
Businesses not meeting any Trigger	722233	0	0	2006	861223	863229	1.2
Total all businesses	723119	1018	444	3774	864960	870196(a)	1.2

<ABcombined> Includes Electricity Generation businesses (a) Number of sites which need to be covered in reporting. (b) In Scenario C, reporting on sub-B sites is only required for Trigger A companies. Only. (c) Does not match Table 35 total exactly due to rounding error.

Scenarios

To compare Scenarios A, B and C with the existing reporting requirements it is necessary to convert estimates of numbers of sites captured under the current regime (which in the Original CBA were based on emissions alone) to the dual factor classification used in Scenarios A and B. The conversion, illustrated in Table 39, suggests that about sixty per cent (300/504) of the businesses that would be caught by Trigger A (Table 38) are covered by existing reporting arrangements, and about fifty five per cent (490/886) of the sites that would be caught by Trigger B are already covered.

It is estimated that about 85% of the companies currently participating in greenhouse and energy reporting (some voluntarily, and some by obligation) would fall below Trigger B.

In Scenario C, all 504 of the businesses meeting Trigger A would have to report. However, only those of the 370 companies in the 'A to B' group which have one B site would need to report. It is estimated that there are 194 businesses in this category, with 194 B sites between them.²⁶ It is estimated that about half these businesses would already participate in existing reporting arrangements, so Scenario C would only bring in about 97 businesses and 97 B sites beyond Scenario A. (It is assumed that the businesses in this category which already report voluntarily report on all their sites and continue to do so, but businesses reporting mandatorily, report only on their B sites and not any other sites).

²⁵ Although the estimates are subject to some uncertainty the values are presented as they are produced by the spreadsheet rather than rounded to the nearest 10 or 100, which would be a more accurate reflection of their degree of approximation.

²⁶ Logically, a business in this category can only have one B site, because if it had more than one it would meet Trigger A.

Table 39 Estimated number of currently reporting businesses meeting proposed trigger criteria

Business Category	businesses reporting now	Eligible businesses	% eligible companies	Sites Meeting Trigger A	Sites Meeting B not A	Below Trigger B Larger	Below Trigger B Smaller	Total sites	Sites per business
A only	300	504	60%	605	200	100	300	1205	4.0
A to B	190	382	50%	0	80	150	500	730	3.8
Below B	2776	722233	0.4%	0	0	350	6424	6774	2.4
Total reporting	3266	723119	0.5%	605	280	600	7224	8709	2.7
Total sites				1018	444	3774	864960	870196	
% of sites covered				59%	61%	16%	0.8%		

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3. Findings

Once the numbers of companies and sites is estimated, it is relatively straightforward to calculate annual costs of the reporting framework, based on the cost assumptions in Table 40. The cost categories follow those used in the Original CBA:

- Annual ‘entity costs’ represent the fixed cost to the business of participating in the reporting regime (whether mandatory or voluntary), and of collecting and submitting data, irrespective of the number of sites. The costs are estimated at \$10,000 per annum for businesses meeting Trigger A, \$5,000 for businesses meeting Trigger B but not A and report on all their sites, \$4,000 for businesses that meet Trigger B but not A and report only on their B sites (for Scenario C), and \$1,000 for those businesses which only have sub-B sites but report voluntarily.
- Sites costs: these represent record keeping costs per site, and the estimate ranges from \$2,000 for a site which meets Trigger A on its own to \$ 200 for a small sub-B site (eg a branch owned by a national bank, a shop owned by a national retailer). In the BAU scenario, site costs are increased by the estimated multiple reporting factor (1.25).
- Administrative costs borne by the Data Requiring Agencies. The annual processing costs are estimated at \$500 per report from each Trigger A business, \$400 per report from each business meeting Trigger B but not A and \$300 per report for residual sub-B reporter. In the BAU scenario, processing costs are increased by the estimated multiple reporting factor (1.25).
- The recurrent fixed administrative costs of running the national greenhouse and reporting framework database are estimated at \$1 m per year.

As in the Original CBA, it is assumed that if a mandatory framework is established, those currently reporting businesses which fall below the threshold will continue to report, but gain some cost savings from reporting once only rather than making multiple reports as at present. These continuing sub-threshold businesses are termed ‘residual reporters’. As thresholds are lowered, the number of residuals falls, since some will become mandatory reporters. The elimination of multiple reporting also lowers the administrative costs to Data Requiring Agencies, since fewer reports need to be processed.

The principal cost findings are summarised in Table 41. The main points are:

- The cost of the existing reporting regime is about \$M 13.2 annually; about 83% of this is business costs, and the rest administrative costs.
- The annual cost would increase to \$M 16.1 under Scenario A (the 50kt/200TJ trigger, applied at the business level) and \$M 17.6 under Scenario B (the 25kt/100TJ trigger).
- The current reporting regime covers 60.6% of the total emissions from the 5 main end use sectors (ie excluding Electricity Generation, which must be analysed separately to avoid double counting). The coverage increases to 69.6% for Scenario A , 74.2% for Scenario B and 71.2% for Scenario C.

- The annual cost for Scenario C would be \$M 16.7. This represents a \$M 0.9 per year saving compared with Scenario B, but also a 3.0 percentage point reduction in end use emissions coverage.
- The cost per percentage point of sector emissions covered (the measure of effectiveness used in the Original CBA) is about \$M 1.48 per annum for the existing regime, and in the narrow range \$M 1.58-1.62 for Scenarios A, B and C. (The emissions coverage for the Electricity Generation sector is already over 98% under the current regime and would approach 100% under Trigger A, so the potential for increased coverage is negligible. However, 'single-report' mandatory reporting would result in a major reduction in the multiple reporting burden, which is highest in the Generation sector.
- The value to government, the public and to business users themselves of the significant increases in data quality, reliability and timeliness that a mandatory regime would bring about have not been estimated. If the value of these quality improvements were greater than \$M 4.8 per year – as is highly likely - even the most costly scenario (Scenario B) would be cost-effective.
- The Net Present Value of the costs of the reporting regime (at 10% discount rate over a 12 year reporting period) would be about 22% higher than BAU for Scenario A, 34% higher for Scenario B and 27% higher for Scenario C.
- Costs per participating business are \$3,323 per annum under BAU, \$4,016 per annum under Scenario A, \$4,201 per annum under Scenario B and \$4,054 per annum under Scenario C.

Table 40 Cost Assumptions

	\$/year
Gentility cost per reporter (Trigger A)	\$ 10,000
Gentility cost per reporter (Trigger B not A)	\$ 5,000
Gentility cost per B site reporter (Trigger C)	\$ 4,000
Entity cost per smaller voluntary reporter	\$ 1,000
Site cost per A site	\$ 2,000
Site cost per B not A site	\$ 1,200
Site cost per Larger sub-B site	\$ 500
Site cost per Smaller sub-B site	\$ 200
Administration costs A entity	\$ 500
Administration costs per B not A entity	\$ 400
Administration costs per sub-B entity	\$ 300
Weighted average all sites, BAU	\$ 324

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Table 41 Summary of Findings

	Number of reporting businesses (b)	Number of sites covered	M/yr \$entity costs	\$M/yr site costs	\$M/yr business costs	Average \$/yr per entity	\$M/yr admin costs	\$M/yr total costs	\$M NPV total Costs(a)	% of end use kt CO ₂ -e	\$M NPV per % of CO ₂ -e
BAU (Existing)	3266	8709	6.7	4.1	10.9	3,323	2.3	13.2	89.8	60.6%	1.48
Scenario A: Meeting Trigger A	3470	12517	8.8	5.2	13.9	4,016	2.2	16.1	109.7	69.6%	1.58
Scenario B: Meeting Trigger B	3662	13741	9.7	5.7	15.4	4,201	2.2	17.6	120.1	74.2%	1.62
Scenario C	3584	12631	9.2	5.3	14.5	4,054	2.2	16.7	114.0	71.2%	1.60

<Results> (a) Net Present Value at 10% discount rate of annual business and administrative costs over a 12 year period (b) Note that the estimates embody assumptions about the behaviour of existing reporters under changes in regime. This accounts for apparent differences between tables.

Table 42 Comparisons with BAU (a)

	Number of reporting businesses (total)	Number of reporting businesses beyond BAU	Number of sites (total)	Number of sites beyond BAU	Total costs \$M/yr	Total business costs \$M/yr	Total \$M/yr costs, averaged over reporting businesses	Total \$M/yr costs, averaged over covered sites
BAU (Existing)	3266	NA	8709	NA	13.2	10.9	4035	1513
Scenario A: All businesses meeting Trigger A	3470	204	12517	3808	16.1	13.9	4639	1286
Scenario B: All businesses meeting Trigger B	3662	396	13741	5032	17.6	15.4	4812	1283
Scenario C: As for A, plus businesses with a B site	3584	318	12631	3922	16.7	14.5	4667	1324

<Results> (a) Note that the estimates embody assumptions about the behaviour of existing reporters under changes in regime. This accounts for apparent differences between tables.

Figure 14 Relationship between 30MW generation capacity and Natural Gas use

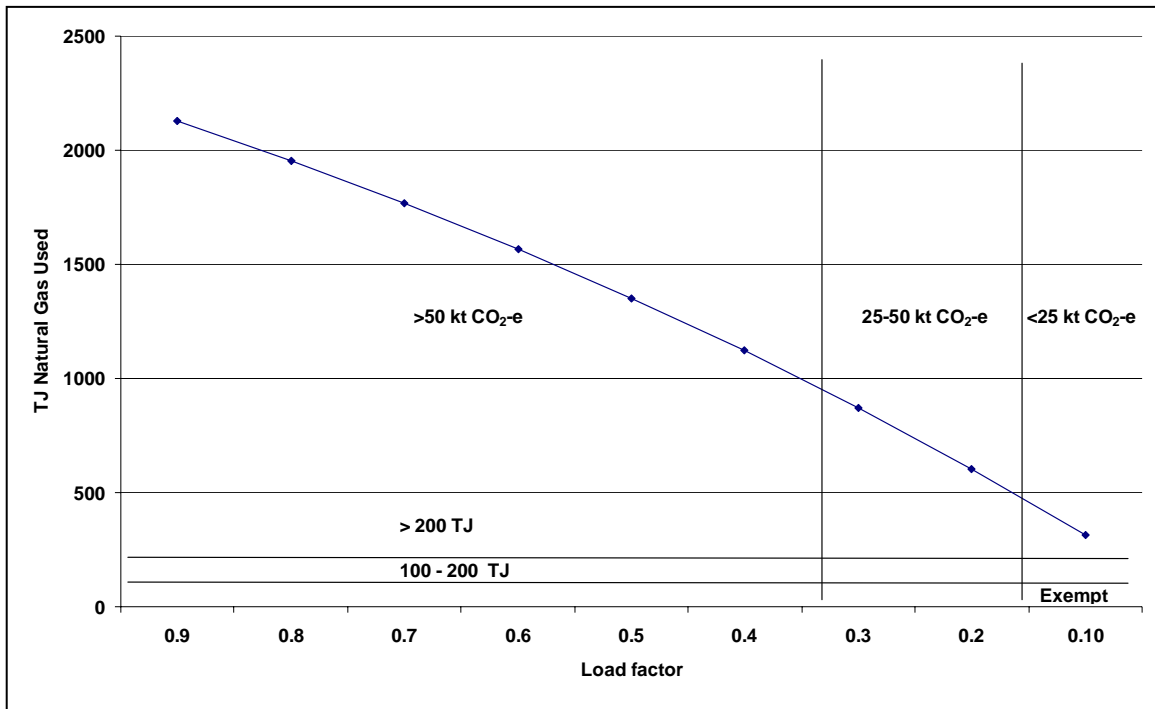


Figure 15 Estimated coverage of sector emissions by facility (NOT business) emission thresholds

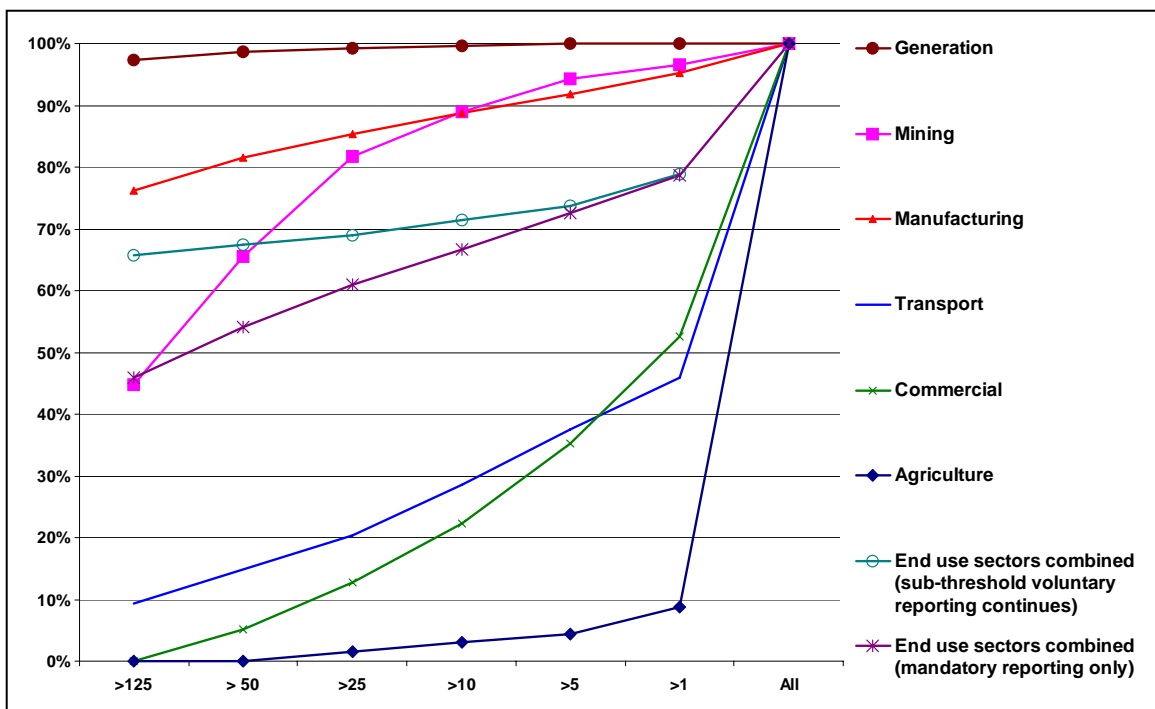


Figure 16 Number of sites meeting Triggers A and B by sector

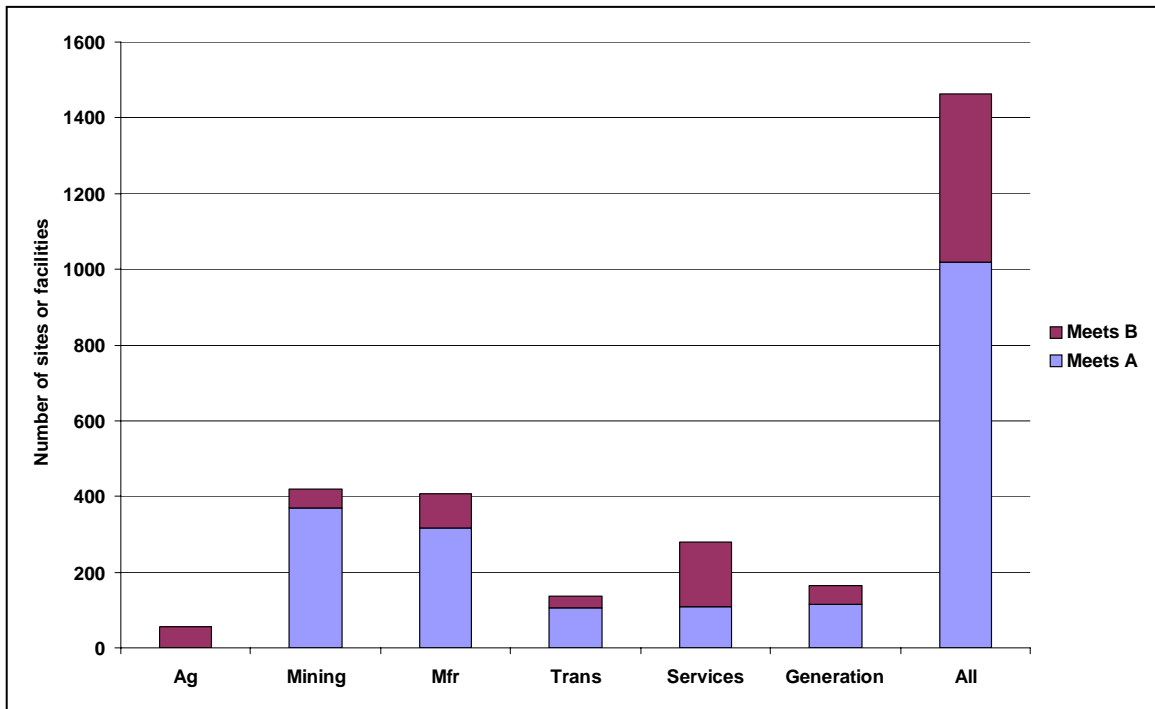
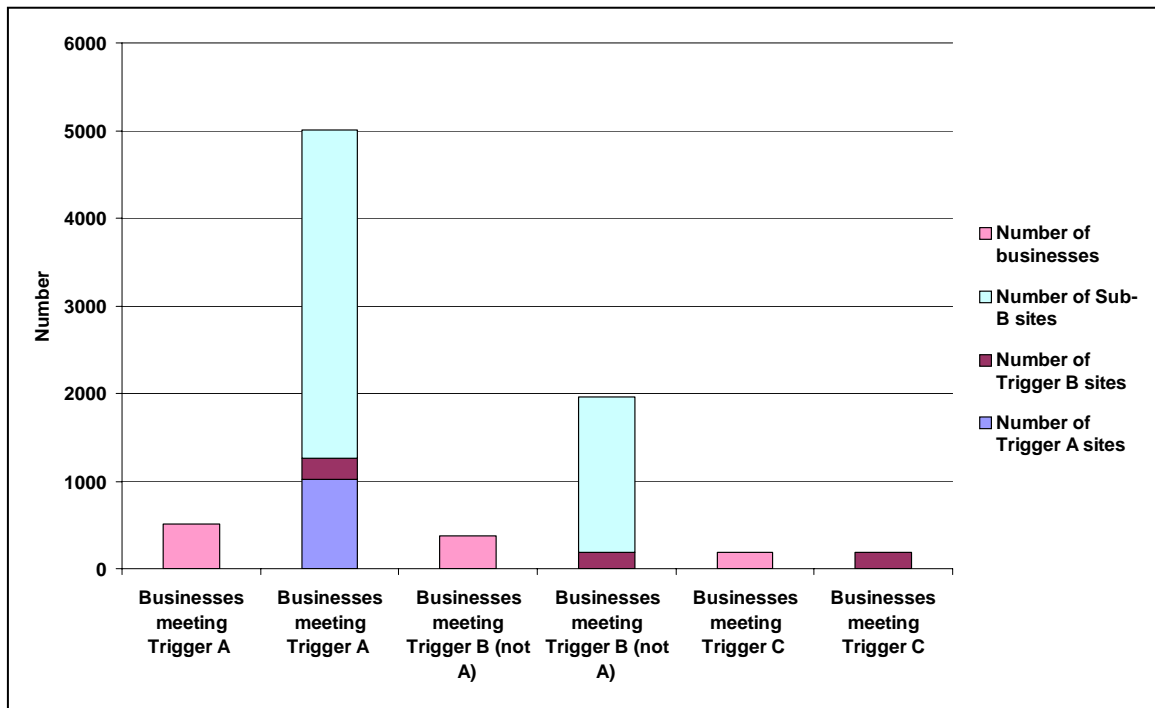


Figure 17 Number of business meeting Triggers A, B and C and sites covered



References

ABS (2004) *Australian Bureau Of Statistics Business Register: Counts Of Businesses - Summary Tables ABS 8161.0.55.001*, ABS October 2005

ACIL (2004) *Trucking –Driving Australia’s Growth and Prosperity*. ACIL Tasman, for the Australian Trucking Association, August 2004

GWA (2006), *Costs and Benefits of a National Greenhouse and Energy Reporting Framework*, George Wilkenfeld and Associates with Energy Strategies, for Department of the Environment and Heritage, March 2006

Attachment C: List of stakeholders that provided written submissions on the April 2006 Consultation Paper - *A Streamlined National Reporting Framework for Greenhouse and Energy Data: Reducing the Burden.*

1. Australia Post
2. ORICA
3. Infraser on behalf of Department of Corrective services and Department of the Attorney General WA.
4. WA Department of Health
5. De Bortoli Wines
6. Northlink/NIETL, School of Aerospace Mechanical and Manufacturing and Engineering, RMIT.
7. WA Chamber of Commerce and Industry
8. Greenbase
9. WA Water Corporation
10. WA Dept of Environment
11. Australian Vinyls
12. Carter Holt Harvey
13. School of Physics, Uni of Sydney
14. Australasian Railway Association
15. National Generators Forum
16. National Association of Forrest Industries
17. Energy Development
18. Anglo Coal
19. Verve Energy WA
20. Goldfields Esperance Development Committee
21. Alberfield
22. QLD Rail
23. Rio Tinto
24. Energetics
25. Australian Gas Light Company
26. WA Chamber of Minerals and Energy
27. Cement Industry Federation
28. Telstra
29. Fosters
30. NFF
31. ABS
32. Australian Sugar Milling Council
33. WA Department of Industry and Resources
34. AEBN
35. Alinta
36. APPEA
37. EcoCarbon
38. AIGN
39. Environment Business Australia
40. Alcoa
41. NSW Minerals Council
42. SA Water
43. Australian Lot Feeders Association
44. Australian Business Council for Sustainable Energy
45. Shell
46. TRU Energy
47. Australian Business Limited
48. CEC Constructions Pty Ltd
49. Australian Chamber of Commerce and Industry

Attachment D: List of stakeholders that provided written submissions on the October 2006 draft Regulation Impact Statement - *A National system for Streamlined Greenhouse and Energy Reporting by Business*.

1. David Collen (private citizen)
2. Hydro Tasmania
3. Telstra
4. CSR
5. A3P
6. The Griffin Group
7. Monash Sustainability Enterprises
8. Shell Australia
9. Tim Kelly (private citizen)
10. Arup
11. APPEA
12. Tomago Aluminium
13. AGL Energy
14. Queensland Resources Council
15. Australian Aluminium Council
16. National Generators Forum
17. NSW Minerals Council
18. Alcoa
19. Alinta
20. TRUenergy
21. WA Chamber of Minerals and Energy
22. Stanwell Corporation
23. WA Department of Health
24. Cement Industry Federation
25. Quenos
26. Australian Industry Greenhouse Network
27. The Water Corporation
28. Ben Rose (private citizen)
29. Australian Business Council for Sustainable Energy
30. Virgin Blue
31. Australian Lot Feeders Association
32. Greenbase
33. Australian Food and Grocery Council
34. South Australian Water Corporation
35. WA Chamber of Commerce and Industry
36. Plastics and Chemicals Industries Association
37. Australian Environment Business Network
38. Energy Australia
39. Australian Chamber of Commerce and Industry

NOTES ON INDIVIDUAL CLAUSES

PART 1 – INTRODUCTION

Division 1 – Preliminary

Clause 1 Short Title

1. This clause provides that the short title by which the Act may be cited is the *National Greenhouse and Energy Reporting Act 2007*.

Clause 2 Commencement

2. Paragraph 1 of the table in subclause (1) provides that the commencement date for clauses 1 and 2 and anything in the Bill not covered elsewhere by the table in subclause (1) is the day on which the Bill receives the Royal Assent.
3. Paragraph 2 of the table in subclause (1) provides that the commencement date for the clauses 3 to 77 will be the day after the day the Bill receives the Royal Assent.

Clause 3 Object

4. This clause sets out the objects of the Bill. The Bill requires mandatory reporting and dissemination of information related to greenhouse gas emissions, energy production and consumption by corporations, and reporting on greenhouse gas projects.
5. Greenhouse gas emissions reporting under this Bill will be used to underpin a future Australian Emissions Trading Scheme. The creation of a central, comprehensive data collection will facilitate policy formulation by government and assist in meeting international reporting obligations. Public disclosure of information under this Bill will inform the Australian public on greenhouse gas emissions and energy production and consumption by corporations operating in Australia. The Bill is also intended to streamline duplicative reporting requirements.

Clause 4 Constitutional basis for Act

6. This clause sets out the Commonwealth Constitutional powers upon which this Bill is based.

Clause 5 Act excludes some State and Territory laws

7. This clause supports streamlining of greenhouse and energy reporting by enabling corporations to meet the reporting requirements of multiple programmes through a single system, consistent with the government's commitment in the 2004 Energy White Paper *Securing Australia's Energy Future*.
8. This clause allows the Bill to cover the field with respect to all greenhouse and energy reporting by corporations, with the date of effect to be established through regulations. The Government's intention is to work cooperatively with State and Territory governments to transition towards a single reporting system across all jurisdictions.

Clause 6 Application to external Territories, Exclusive Economic Zone and innocent passage

9. This clause provides that the Bill will apply to all of the external Territories of Australia and will apply to Australia's exclusive economic zone. However, subclause 6(2) clarifies that the Bill will not apply to the extent that its application would be inconsistent with a right of innocent passage that is being exercised by a ship within the limits of the territorial sea.

Division 2 – Interpretation

Clause 7 Definitions

10. This clause defines key terms that are used throughout the Bill. Where possible, definitions mirror existing legislation and standards for greenhouse and energy reporting.
11. A key definition in this clause is the controlling corporation, which determines the entity responsible for reporting under this Bill. The controlling corporation is defined so that the corporation at the top of the corporate hierarchy is the corporation responsible for reporting. The definition includes all constitutional corporations, that is foreign corporations and trading and financial corporations formed within the limits of the Commonwealth. A controlling corporation will either have subsidiaries or be a single corporation, but in either case will not have a holding company incorporated in Australia.

Clause 8 Group and members of a group

12. This clause defines the group and members of that group. The definition of the group is important under the Bill as the reporting thresholds applicable for the reporting requirements are applied to the controlling corporation's group.
13. Subclause (1) defines a controlling corporation's group, although the definition has a limited application if the controlling corporation is not incorporated in Australia. The effect of this limitation is that a corporation not incorporated in Australia would not need to report on its subsidiaries. This is intended to address the situation where a corporation is incorporated in Australia and its foreign holding corporation could be considered the controlling corporation for a subsidiary. In this instance the controlling corporation in Australia is required to report on its subsidiaries, not the foreign holding corporation. This avoids a possible doubling up of reporting.
14. Subclause (3) deals with situations in which more than one holding company holds a controlling interest in a subsidiary according to the rules outlined in the *Corporations Act 2001*. In such a case, if another the company either (i) controls the composition of the subsidiary's board; or (ii) is in a position to cast, or control the casting of, more than one half of the maximum number of votes that might be cast at a general meeting of the subsidiary, they would be considered to be the holding company in precedence over the company which (iii) holds more than one half of the issued share capital of the first body (excluding any part of that issued share capital that carries no right to participate beyond a specified amount in a distribution of either profits or capital).
15. Subclause (4) makes provision for the situation where a controlling corporation's group is a joint venture. It requires a group member participating in a joint venture to

include that joint venture in their group if they have been nominated by the participants in the joint venture as the entity responsible for the joint venture. A group member participating in a joint venture would also be required to include that joint venture in their group if the joint venture participants have not nominated anyone as the entity responsible for the joint venture.

16. Subclause (5) makes provision for the situation where a controlling corporation's group is a partnership and takes the same approach to nominating an entity for reporting as subclause (4) on joint ventures, discussed above.
17. Subclause (6) allows regulations to be made to establish further rules regarding how a joint venture or partnership should make or revoke nominations for the purposes of subclauses (4) and (5).

Clause 9 Facilities

18. This clause defines a facility for the purposes of the Bill. Subclause (1) establishes that a facility is an activity or series of activities (including ancillary activities) that involve the production of greenhouse gas emissions, production of energy or consumption of energy.
19. Paragraph (1)(a) highlights that the activity, or series of activities of a facility must only form one undertaking or enterprise as well as meeting requirements that will be outlined in the regulations. Paragraph (1)(b) also clarifies that the Greenhouse and Energy Data Officer (GEDO) may declare a facility under clause 54.
20. Subclause (2) clarifies that if the GEDO declares an activity or activities to be a facility this will take precedence over any interpretation of the clause by a registered corporation.
21. Subclause (3) clarifies that the activity/activities carried out within a facility must not fall into more than one industry sector. Regulations made for the purposes of paragraph (1)(a) will specify what activities are attributable to a particular industry sector.
22. The definition of a facility as outlined in this clause is critical to what companies will or will not be required to report. The definition is deliberately broad to allow for further detail on determining the boundaries of facilities in different industry sectors to be provided in the regulations. Regulations on determining boundaries around facilities will need to be very detailed to ensure that corporations have clarity on their reporting obligations. The Australia New Zealand Standard Industrial Classifications will be used to guide development of the regulations for industry sectors.

Clause 10 Emissions, energy production and energy consumption etc.

23. Subclause (1) enables regulations to be made to define the key terms referred to in this subclause. Subclause (2) clarifies that regulations made for the purposes of defining emissions of greenhouse gas may specify a meaning of emissions of greenhouse gas that includes emissions related to the consumption of specified kinds of energy.
24. Subclause (3) enables the Minister to determine, by legislative instrument, methods, or criteria for methods, by which the value of the emissions, reduction, removal, offsets, production or consumption are to be measured.

Clause 11 Operational control

25. Subclause (1) defines operational control for the purposes of a facility. The definition is based on definitions in the World Business Council for Sustainable Development/World Resources Institute Greenhouse Gas Protocol Corporate Accounting and Reporting Standard and the International Standards Organisation's International Standard 14064-1. The definition has been modified to promote legal certainty in regard to which corporation has operational control over a facility.
26. Subclause (2) clarifies that if the GEDO declares a corporation to have operational control over a facility this will take precedence over any interpretation of the clause by a registered corporation.
27. Subclause (3) also clarifies that only one corporation can have operational control over a facility at any one time. This is important to avoid duplication of reporting.
28. Subclause (4) outlines how to determine which corporation has operational control in a case where more than one corporation could meet the criteria outlined in subclause (1). In this case the corporation with the greatest control over the operating policies and environmental policies of the facility would take precedence over the corporation with lesser control. The corporation with control over the operating policies and environmental policies of the facility would also take precedence over a corporation with control of the health and safety policies only. This is because control of operating policies and environmental policies is more analogous to control over emissions and energy than control of health and safety policies.

PART 2 – REGISTRATION

Division 1 – Applying for Registration

Clause 12 Obligation to apply to register

29. This clause outlines the period in which a corporation must apply to be registered for reporting under this Bill. A corporation can apply to register anytime from the beginning of the financial year for which they will be required to report, until two months after the end of that financial year. A civil penalty of 2000 penalty units applies to corporations which have not submitted an application to register by the due date and which have triggered a threshold. The penalty is designed to deter corporations from avoiding any reporting obligation by failing to register. In addition clause 30 allows a continuing penalty to be applied for each day that a corporation remains unregistered. This is intended to deter corporations from not registering once they have been penalised.

Clause 13 Thresholds

30. This clause outlines the thresholds at which corporations are required to register and report their greenhouse gas emissions, energy production and consumption under this Bill. The thresholds at paragraphs (1)(a), (1)(b) and (1)(c) apply to entire corporate groups as defined in clause 8. Each set of thresholds decreases over the first three years of the Bill. The majority of corporate groups which trigger the highest threshold will already be reporting through existing programmes. As the thresholds decrease, more corporate groups which may not be participating in, or complying with, existing requirements will trigger the thresholds. The staged thresholds will

alert corporations to their future obligations and allow them time to put the systems in place to meet these obligations.

31. The facility threshold outlined at paragraph (1)(d) is intended to ensure that large facilities operated by corporations which do not trigger the corporation-level threshold, are covered by reporting obligations. This is necessary for the maintenance of existing national data collections and to ensure that all facilities likely to be included in the future Australian Emissions Trading System are covered by this Bill.
32. Subclause (2) allows corporations that only control a facility for part of a financial year to apply a pro-rated threshold to determining whether they are required to report on that facility.

Clause 14 Applying to register in relation to greenhouse gas projects

33. This clause allows corporations to apply to be registered under this Bill in order to report on greenhouse gas projects. It is envisaged that this will facilitate smaller companies providing offsets into the pre-emissions trading voluntary offsets market and potentially into a future Australian Emissions Trading Scheme.

Clause 15 Requirements for applications

34. This clause outlines the matters that must be addressed in a controlling corporation's application to register under clauses 12 and 14.

Division 2 – The Register

Clause 16 The Register

35. This clause establishes a register called the National Greenhouse and Energy Register and outlines the information that will be kept on the register. The register will be used to record and inform the public as to the corporations that have registered under this Bill. The register can make public information related to the identity of registered corporations, their registration status and aggregated company data as provided for in clause 24 of the Bill.

Division 3 – Registration and deregistration of corporations

Clause 17 Registration of corporations

36. This clause outlines the GEDO's obligations with regards to registering a corporation. If a corporation, which is likely to trigger a threshold (specified in clause 13) has applied for registration and has met the requirement specified under clause 15, the GEDO must register the corporation. Alternatively if a corporation has elected to register in order to report on greenhouse gas projects under clause 14 and has met the requirements specified under clause 15, then the GEDO may register the corporation. Once the GEDO has registered a corporation, the GEDO must notify the corporation of its decision in writing, and registration would take effect when the GEDO has entered the name of the corporation on the register.

Clause 18 Deregistration of corporations

37. If a registered corporation has not met the thresholds for reporting and can demonstrate that they are unlikely to meet the thresholds for the next two financial

years, they can apply to be deregistered. This clause sets out what an application for deregistration must contain and what matters the GEDO must take into account when making a decision to deregister a corporation. The two year conditionality is to prevent corporations registering and deregistering on a regular basis.

PART 3 – OBLIGATIONS OF REGISTERED CORPORATIONS

Clause 19 Report to be given to Greenhouse and Energy Data Officer

38. This clause requires a registered corporation to provide the GEDO with a report each financial year relating to the greenhouse gas emissions, energy production and energy consumption of the corporation from the operation of facilities under the operational control of the corporation during that financial year.
39. A civil penalty of 2000 applies to not providing a report in relation to this clause by the due date. This provision is also subject to a continuing penalty provision under clause 30, which allows a penalty to be applied for each day that a corporation has not submitted a report. These penalties are intended to deter corporations from reporting late or failing to report in accordance with this clause.
40. The clause also clarifies the reporting requirements for corporations which control a facility for only part of a financial year. In this case the corporation is only required to report on the greenhouse gas emissions and energy production and consumption for the period during which it had operational control of the facility.
41. Subclause (4) allows a member of the controlling corporation's group to report data directly to the GEDO where data relates to facilities for which the member has operational control. The practical effect of this is to enable flexibility with regard to the internal data collation and reporting systems within the controlling corporation's group.
42. Subclause (6) specifies the information that must be provided in the report and the date by which the report is to be provided to the GEDO.
43. Subclause (8) enables regulations to be made specifying different reporting requirements for registered corporations. The regulations are intended to allow controlling corporations which are registered but do not meet any thresholds for a year to submit a simple report stating that they have not met the thresholds. It also allows regulations to specify different requirements for corporations which do not trigger certain thresholds (for example, the regulations may specify different requirements for corporations that meet a facility-level threshold and/or a corporate-level energy threshold, but do not meet a corporate-level greenhouse gas threshold).
44. Subclause (9) clarifies that regulations made for the purposes of paragraph (6)(c) may specify information that a state or territory has requested the GEDO to collect. The intention is to enable data required by relevant state and territory programmes to be reported through the national reporting framework, consistent with clause 3, where programme needs cannot be fully met by data otherwise reported under this clause. The Government's intention is to apply this subclause judiciously and to work cooperatively with states and territories to ensure that programme needs can be met in the most efficient way.

Clause 20 Liability of other persons to provide certain information

45. Subclause (1) clarifies that a registered corporation is not required to include information in a report if the GEDO has determined under subclause (3) that the information is to be provided by another person. Either the registered corporation or the other person may apply for a determination. The effect of a determination is that the other person must provide the information to the GEDO, rather than providing the information to the registered corporation. This clause is intended only to apply in cases where the other person is unable to disclose this information to the registered corporation for commercial reasons.
46. Subclause (3) sets out the matters to which the GEDO must have regard when making a determination under subclause (1). The determination of the GEDO must be made in writing, but is not a legislative instrument for the purposes of the *Legislative Instruments Act 2003* as the GEDO will be performing an administrative function and will not be determining or altering the content of the law.
47. Once the GEDO has made a determination under subclause (3) requiring the other person to provide the information, the other person must provide the information to the GEDO on or before the day specified in the regulations, in accordance with requirements specified in the regulations. Failure to do so will attract a maximum civil penalty of 2,000 penalty units. This penalty is also subject to a continuing penalty provision under clause 30, which allows a penalty to be applied for each day that a corporation has not submitted a report.

Clause 21 - Reports relating to greenhouse gas projects

48. This clause enables a registered corporation to report to the GEDO on greenhouse gas projects relating to the reduction of greenhouse gas emissions, removal of greenhouse gases and offsets of greenhouse gas emissions. It also clarifies that if a registered corporation, or a member of its group, undertakes greenhouse gas projects for part of a financial year, the report need only relate to that part of the financial year. Subclause (3) clarifies the circumstances in which a report must be provided.
49. Subclause (4) clarifies the matters that must be addressed in the report and the time by which the report must be provided to the GEDO. A maximum civil penalty of 1,000 penalty units will apply if the corporation fails to provide a report, which meets the requirements of this clause, to the GEDO by the required due date.

Clause 22 Records to be kept

50. This clause imposes a requirement of a registered corporation (or a person or corporation required to provide information under clause 20) to keep sufficient records of the activities of the members of the group to facilitate its reporting obligations. A contravention of this requirement will be a civil penalty, with a maximum penalty of 1,000 penalty units. The penalty for a contravention of the record keeping requirements is relatively high, as it is important to deter companies from hiding inaccurate reporting by not keeping records. Records must be retained for 7 years (consistent with the *Energy Efficiency Opportunities Act 2006*).

PART 4 - DISCLOSURE OF INFORMATION

Clause 23 Secrecy

51. This clause creates an offence for persons identified in subclause (2) to disclose greenhouse and energy information legitimately obtained in their capacity as a Commonwealth officer other than in accordance with the provisions of this Bill.
52. The clause sets out a maximum criminal penalty for unauthorised disclosure of such information of 2 years imprisonment. A note to subclause (1) also clarifies that the conduct under this clause may also constitute an offence of section 70 of the *Crimes Act 1914*.

Clause 24 Publishing of Information

53. This clause sets out the type of information that the GEDO may make publicly available. The GEDO is required to publish on a website, for each corporate group that is required to report and that meets the corporate-level greenhouse gas emissions threshold, the totals of greenhouse gas emissions and energy produced and consumed as specified by the regulations.
54. If a corporation meets the corporate level energy use or production threshold but not the corporate level greenhouse gas emissions threshold, data for that corporation will not be published on the website.
55. Subclause (2) provides for regulations to set out further requirements for publishing website information relating to a corporation's greenhouse gas reductions and removals, where that information has been reported.
56. Subclause (3) provides that the GEDO may allow data to be made public for each corporation in the corporate group. This subclause also allows the GEDO to publish information within a particular range of greenhouse gas emission or energy values where the corporation's application under clause 25 has been assessed as being valid.
57. Subclause (5) provides for the GEDO to agree to a state or territory publishing information disclosed to it if required by a state or territory law.
58. Subclause (6) allows Commonwealth Departments and Agencies outlined in clause 26 to publish aggregated data with the proviso that it does not disclose specific information about a controlling corporation, a controlling corporation's group or a facility. This means that data collected under this Bill will not need to be collected a second time by departments and agencies which publish greenhouse and energy statistics. Examples of where the data would be used include for Australia's National Greenhouse Gas Inventory – which is submitted to the United Nations Framework Convention on Climate Change, the Australian Bureau of Agriculture and Resource Economics Fuel and Electricity Survey, from which data is also submitted to the International Energy Agency, and for statistical analysis published by the Australian Bureau of Statistics.

Clause 25 Requests for information not be published

59. This clause provides for a corporation to make an application to the GEDO for information not to be publicly disclosed and sets out the requirements for the application. This allows data to be available to the public for information and analysis while maintaining the confidentiality of sensitive information.

60. The GEDO may accept or refuse the application and must notify the applicant in writing of the outcome.

Clause 26 Information may be disclosed to specified persons or bodies

61. This clause provides for the GEDO, or a person authorised by the GEDO, to disclose greenhouse and energy information to specified persons or bodies. Paragraph 23(2)(g) provides that all persons to whom information is provided under clause 26 are covered by the secrecy provisions under clause 23, which carry a criminal penalty of 2 years imprisonment.
62. Subclause (1) provides for the disclosure of greenhouse and energy information to Commonwealth Ministers and departments and authorities with a specific need for greenhouse or energy information.
63. Subclause (2) provides for the disclosure of greenhouse and energy information to a person providing services to the Commonwealth, or an authority of the Commonwealth, in relation to the administration of programmes or the collection of statistics. This will enable use of the data by third parties, including consultants, in undertaking work on behalf of the Commonwealth, such as contributing to the development of Australia's National Greenhouse Gas Inventory or projections of Australia's future national greenhouse gas emissions. Subclause (5) enables the GEDO to make disclosure of information under subclause (2) subject to conditions including restrictions on the disclosure of the information to other persons and security measures in relation to the confidentiality of the information.
64. Subclause (3) provides for the disclosure of greenhouse and energy information to a court or the Administrative Appeals Tribunal for the purposes of, or in connection with, proceedings or possible proceedings under this Bill.
65. Subclause (4) provides for the disclosure of greenhouse and energy information to another person for the purposes of facilitating reviews of Australia's compliance with its international obligations relating to greenhouse and energy reporting. These reviews will include reviews of Australia's National Greenhouse Gas Inventory under the United Nations Framework Convention on Climate Change.

Clause 27 Information may be disclosed to states and territories

66. This clause provides for the GEDO to disclose greenhouse and energy information to states and territories if it is collected on behalf of a state or territory, or the facility is located within that state or territory, including where a facility crosses more than one state or territory. States and territories will be able to use this information to understand greenhouse gas emissions and energy production and consumption in their jurisdiction. This will assist in developing effective and complementary policies in these areas.
67. The Bill allows the Greenhouse and Energy Data Officer to make disclosure of information to states and territories conditional on certain criteria. These could include, restricting disclosure to certain other persons (can be applied to further protect confidentiality where necessary), requiring specific security measures (to ensure that data and IT security is handled appropriately) and removing any duplicative reporting requirements.

Clause 28 Corporation may request information be disclosed

68. This clause provides for corporations to request the GEDO to disclose specified greenhouse and energy information related to the corporation and for the GEDO to disclose this information to the party nominated by the corporation in its request.

PART 5 – ENFORCEMENT

Division 1 – Civil penalties

Subdivision A – Civil penalty orders

Clause 29 Civil penalty provisions

69. The purpose of this clause is to clarify which provisions of the Bill are civil penalty provisions.

Clause 30 Continuing contraventions

70. Subclause (1) clarifies that a requirement in the Bill to comply with an obligation under a civil penalty provision, the obligation to comply with that requirement is a continuing obligation, notwithstanding the fact that the date for compliance with that obligation has passed.
71. Subclause (2) provides that a failure to comply with requirements to register, report or complete an external audit (clauses 12, 19, 20 or 73) by the date specified in those provisions will attract a penalty for each day of non-compliance. The penalty for failure to register or report (clauses 12, 19 or 20) will attract a civil penalty of 100 penalty units for each day of non-compliance following the date specified in those clauses. This will be in addition to the initial penalty applied for breach under those clauses. The penalty for failure to complete an external audit (clause 73) will attract a civil penalty of 10 penalty units for each day of non-compliance following the date specified in those clauses. This will be in addition to the initial penalty applied for breach under clause 73.

Clause 31 Court may order person to pay pecuniary penalty for contravening civil penalty provision

72. This clause enables a Court to order a person to pay a pecuniary penalty to the Commonwealth for each contravention of a civil penalty provision. The Court may only do so if the GEDO makes an application to the Court, on behalf of the Commonwealth, within 6 years of a person contravening a civil penalty provision.
73. Subclause (3) clarifies that the maximum penalty must not exceed the relevant amount specified in the civil penalty provision and the amount that the person is liable under clause 30 for the continuing contravention of the civil penalty provision. This amount is to be determined at the time the Court makes the order.
74. Subclause (4) sets out the matters that the Court must have regard to when determining the pecuniary penalty for a civil penalty provision.
75. Subclause (5) clarifies that if the more than one civil penalty provision has been contravened, a person cannot be liable to more than one pecuniary penalty in respect of the same conduct, regardless of whether proceedings have commenced in respect of more than one civil penalty provision.

Clause 32 Contravening a civil penalty provision is not an offence

76. This clause clarifies that contravention of a civil penalty provision is not an offence.

Clause 33 Persons involved in contravening a civil penalty provision

77. This clause provides that a person must not knowingly contribute to the contravention of a civil penalty provision by another person. Where this occurs, the person will be treated as though they themselves had contravened the civil penalty provision.

Clause 34 Recovery of a pecuniary penalty

78. This clause outlines that a pecuniary penalty is owed to the Commonwealth and may be enforced by the Commonwealth as if it were a judgment of the Court.

Subdivision B – Civil penalty proceedings and criminal proceedings

Clause 35 Civil proceedings after criminal proceedings

79. This clause prevents a Court making a pecuniary penalty order against a person where the person has been convicted of a criminal offence for substantially the same conduct.

Clause 36 Criminal proceedings during civil proceedings

80. This clause clarifies that any proceedings that have commenced for a pecuniary penalty order against a person for a contravention of a civil penalty provision will be stayed if criminal proceedings are started against a person for substantially the same conduct. The civil proceedings will be dismissed if the person is convicted of the offence but may be resumed if the person is not convicted of the offence.

Clause 37 Criminal proceedings after civil proceedings

81. This clause provides that a pecuniary penalty order against a person does not prevent criminal proceedings being started against the person for substantially the same conduct.

Clause 38 Evidence given in proceedings for penalty not admissible in criminal proceedings

82. Where criminal proceedings are commenced against a person who has already given evidence or produced documents in proceedings for a pecuniary penalty order arising from substantially the same conduct, this clause clarifies that evidence of this type is inadmissible in the criminal proceedings. However, this restriction does not apply where the criminal proceedings relating to the falsity of the evidence in the civil proceedings.

Division 2 – Infringement notices

Clause 39 When an infringement notice can be given

83. This clause enables the GEDO to issue an infringement notice for a civil penalty provision in circumstances where the GEDO reasonably believes that the person has contravened a civil penalty provision.

84. An infringement notice may only be issued within 12 months of the alleged contravention taking place.
85. This clause also clarifies that an infringement notice can be issued for contravention of multiple civil penalty provisions. However, no person can be obliged to pay more than one penalty for the same conduct.

Clause 40 Matters to be included in an infringement notice

86. This clause outlines the information that an infringement notice must contain. The details of the contravention must be set out and the party exempted from proceedings if the fine is paid. Details would include the date, time and place of the alleged contravention, and details of which civil penalty provision was allegedly contravened.

Clause 41 Amount of penalty

87. This clause clarifies that a penalty specified in an infringement notice relating to an alleged contravention of a civil penalty provision must be a pecuniary penalty equal to one fifth of the maximum penalty that could be imposed on the person for that contravention.

Clause 42 Withdrawal of an infringement notice

88. This clause allows the GEDO to withdraw an infringement notice. If the infringement notice is withdrawn after the penalty has been paid, the Commonwealth is obliged to refund the penalty.

Clause 43 Paying the penalty in accordance with the notice

89. If a penalty on an infringement notice is paid the person's liability is discharged. However, a payment by a person would not constitute admission of liability for the alleged contravention. Criminal or civil proceedings cannot be brought for the alleged contravention once an infringement notice penalty has been paid.

Clause 44 Effect of this Division on civil proceedings

90. This clause allows for an infringement notice to be used as an alternative to civil penalty proceedings. If the circumstances warrant doing so, civil penalty proceedings may be brought against a person instead of an infringement notice being issued. If an infringement notice is issued, and is withdrawn or not complied with, civil penalty proceedings may still be brought against the person. In civil penalty proceedings a court is not limited to the infringement notice penalty and may impose any penalty allowed the civil penalty provision.

Division 3 – Enforceable undertakings

Clause 45 Acceptance of undertakings relating to contraventions

91. This clause enables the GEDO to accept a written undertaking by a person in the circumstances set out in subclause (1). The GEDO will have the ability to seek such undertakings as an alternative to other enforcement measures.
92. Subclause (1) sets out the undertakings that the GEDO may accept. These include the person taking specified action to comply with the Bill and regulations; refraining

from taking a specified action in order to comply with this Bill and regulations; or taking action to ensure that they do not contravene or are unlikely to contravene the Bill and regulations in the future.

93. Subclause (2) provides that the written undertaking must state that it is an undertaking under this clause.
94. Subclause (3) provides that a person may withdraw or vary the undertaking at any time with the consent of the GEDO.
95. Subclause (4) provides that the GEDO may cancel the undertaking.
96. Subclause (5) gives the GEDO power to publish undertakings on an appropriate website to ensure transparency in the process, by making other regulated entities aware of the undertakings made by competitors.

Clause 46 Enforcement of undertakings

97. This clause enables the GEDO to apply for an order of the Court in circumstances where the GEDO considers that a person has breached an undertaken given under clause 45.
98. Subclause (2) sets out the orders that a court may make if it is satisfied that the undertaking has been breached.

Division 4 – Liability of chief executive officers of corporations

Clause 47 Civil penalties for chief executive officers of bodies corporate

99. This clause sets out the circumstances under which an executive officer for a body corporate will be taken to have contravened a civil penalty provision.
100. Subclause (2) makes it a civil penalty provision in circumstances where a corporation has contravened a civil penalty provision, and the chief executive officer either had knowledge of, or was reckless or negligent as to whether the contravention would take place and the officer was in a position to influence the conduct in question and failed to take all reasonable steps to prevent the contravention.
101. Subclause (3) specifies the pecuniary penalty that a Court may order a person to pay where the officer is taken to have contravened the civil penalty provision in subclause (1).

Clause 48 Did a chief executive officer take reasonable steps to prevent contravention?

102. This clause sets out the matters to which a Court must have regard in determining whether the chief executive officer has failed to take all reasonable steps to prevent a contravention of a civil penalty provision. These include whether the officer has arranged reviews of the corporation's compliance; steps they have taken to ensure the corporation's employees are aware of requirements under the provisions of the Bill; and any review actions they took on becoming aware that the corporation was contravening the Bill or the regulations.

PART 6 – ADMINISTRATION

Division 1 – The Greenhouse and Energy Data Officer

Clause 49 Establishment

103. This clause creates the position of the GEDO.

Clause 50 Functions

104. This clause outlines the functions of the GEDO. The functions of the GEDO are to undertake any functions conferred by this Bill, regulations made for the purposes of this Bill or any other law of the Commonwealth, and to do anything incidental to, or conducive to, the performance of these functions. This may include, for example, preparing capacity building and education campaigns for industry to assist compliance with this Bill.

Clause 51 Appointment

105. This clause provides that the GEDO is to be engaged under the *Public Service Act 1999*.

Clause 52 Staff

106. This clause enables persons who are employed by the Department, and are made available by the Secretary of the Department to be engaged under the *Public Service Act 1999* to be appointed to assist the GEDO.

Clause 53 Delegation

107. This clause enables the GEDO to delegate powers under this Bill to an employee of the Department at the Senior Executive Officer or acting Senior Executive Officer level.

Division 2 – Decisions by Greenhouse and Energy Data Officer

Clause 54 Greenhouse and Energy Data Officer may declare facility

108. Subclause (1) provides for the GEDO to declare an activity or series of activities to be a facility under this Bill.

109. Paragraphs (a) and (b) provide that the declaration of a facility may result either from an application by the corporation that has operational control over the facility or on the volition of the GEDO (operational control is defined in clause 11 of the Bill and the notes for clause 55 below explain the purpose of declaring operational control).

110. A declaration of the GEDO under subclause (1) is not a legislative instrument for the purposes of the *Legislative Instruments Act 2003* as the GEDO is performing an administrative function and is not determining or altering the law in this context.

111. Subclause (2) outlines the matters that must be addressed in an application by a controlling corporation to the GEDO for a declaration of a facility. Paragraphs (a), (b), (c) and (d) require that an application must identify the controlling corporation, identify the facility for which an application for which a declaration is being sought,

and include other information required by the regulations. An application should be given in a form to be specified by the GEDO.

112. Subclause (3) provides that facility declaration decisions must have regard to the matters set out in the regulations made under paragraph 9(1)(a). The GEDO should ensure that facilities declared under this clause are consistent with the definitions of facility set out in this Bill and regulations. Subclause (3) also requires the GEDO to ensure that there is no overlap or double counting of greenhouse and energy information reported from different facilities.
113. Subclause (4) requires the GEDO to notify applicants in writing of the outcome of their application.
114. Subclause (5) requires that where the GEDO declares a facility without an application having been made (i.e. a declaration under the provisions of subclause (1)(b)), then the corporation which the GEDO reasonably determines has control over the facility will be notified in writing of this declaration.

Clause 55 Greenhouse and Energy Data Officer may declare corporation has operational control

115. Subclause (1) provides for the GEDO to make declarations that a corporation has operational control over a facility (a facility is defined in clause 9 of the Bill and the notes for clause 54 above explain the purpose of declaring a facility).
116. The obligation for reporting greenhouse gas emissions as well as energy consumed and energy produced from a facility is established through declaring operational control (defined in clause 11). Paragraphs (a) and (b) provide that the declaration of operational control may result either from an application by the corporation claiming operational control over the facility or through a decision of the GEDO.
117. A declaration of the GEDO under subclause (1) is not a legislative instrument for the purposes of the *Legislative Instruments Act 2003* as the GEDO is performing an administrative function and is not determining or altering the law in this context.
118. Subclause (2) outlines the matters that must be addressed in an application to the GEDO to declare operational control. Paragraphs (a), (b), (c) and (d) require that an application must identify the controlling corporation, identify the facility for which an application for which a declaration of operational control is being sought, and include other information required by the regulations. An application should be given in a form to be specified by the GEDO.
119. Subclause (3) outlines the matters to which the GEDO must have regard when making a declaration under paragraph (1)(a). In this regard, the GEDO must have regard to the matters set out in the regulations made under paragraph 10(1)(a), and should also ensure that declarations of operational control under this clause are consistent with the definitions set out elsewhere in this Bill and regulations.
120. Subclause (4) requires the GEDO to notify applicants in writing of the outcome of their application.
121. Subclause (5) requires that where the GEDO declares operational control without an application having been made (i.e. a declaration under the provisions of paragraph (1)(b)), then the corporation which the GEDO reasonably determines has operational control of a facility will be notified in writing of this declaration.

Division 3 – Review of decisions

Clause 56 AAT review of decisions

122. This clause sets out the decisions made by the GEDO for which an application for review may be made to the Administrative Appeals Tribunal.

Division 4 – Compliance and gathering evidence

Subdivision A – Authorised officers

Clause 57 Appointment of authorised officers

123. Subclause (1) enables the GEDO to appoint a person as an authorised officer to carry out the powers as set out in this Division. Paragraphs (a) and (b) require that a person must either be an APS employee, or an employee of a State or Territory, or of an authority of a State or Territory.
124. Subclause (2) provides that authorised officers exercising powers or performing functions under this clause must comply with any directions of the GEDO. For example, this may include a requirement to follow all occupational, health and safety policies of premises they inspect.

Clause 58 Identity cards

125. Subclauses (1) and (3) require that authorised officers be issued with and carry an identity card when performing functions under this Part.
126. Subclause (2) makes it an offence for a person who has been issued with an identity card ceases to be an inspector, not to return the identity card to the GEDO. The maximum penalty for a contravention of this provision is 1 penalty unit.

Subdivision B – Powers of authorised officers

Clause 59 Entering premises to monitor compliance

127. This clause enables an authorised officer to enter premises to monitor compliance with the Bill with the consent of the occupier or in accordance with the terms of a monitoring warrant issued by a magistrate (clause 70 provides for the issue of monitoring warrants by a magistrate).
128. Subclause (1) sets out the circumstances under which an authorised officer can enter premises and exercise monitoring powers to substantiate information, or to determine whether the Bill has been complied with.
129. Subclause (2) prohibits an authorised officer from entering business premises unless the occupier has consented to the entry, or the entry is made under a monitoring warrant.
130. Subclause (3) clarifies that if an occupier of premises has consented to the entry by the authorised officer, the authorised officer must leave the premises when asked to do so by the occupier.

Clause 60 Powers of authorised officers in monitoring compliance

131. Subclause (1) sets out the powers that an authorised officer may exercise when the authorised officer has entered premises to monitor compliance with this Bill. These include powers to search, examine, photograph, inspect, copy, and to secure such things as the authorised officer reasonably believes to be evidence of a contravention of the Bill or an offence under the *Crimes Act 1914*.
132. Subclause (2) clarifies that an authorised officer may operate equipment at the premises to assess the correctness of information provided by the occupier under the Bill.
133. Subclause (3) clarifies that an authorised officer may use facilities at the premises to put information into documentary form, to copy the documents (e.g. photocopy, transfer electronic files to computer memory stick, disk, tape and so on) and to remove those copies from the premises.

Clause 61 Authorised officer may request persons to answer questions

134. Subclause (1) provides that an authorised officer, who has been given permission by the occupier to enter premises, may ask the occupier to answer questions and produce documents related to the operation of the Bill.
135. Subclauses (2) and (4) provide that where an authorised officer has been issued with a warrant the occupier must answer questions put and produce documents requested by the authorised officer, unless the answer to the question or production of the document may incriminate the person or expose the person to a penalty.
136. Subclause (3) makes it is an offence for a person to refuse or fail to comply with a requirement under subclause (2). The maximum penalty for a contravention of a requirement of subclause (2) is 10 penalty units.

Subdivision C – Obligations and incidental powers of authorised officers

Clause 62 Authorised officer must produce identity card on request

137. This clause prevents an authorised officer from exercising any powers under the Bill in relation to premises if he or she does not show his or her identity card at the request of the occupier of premises.

Clause 63 Consent

138. This clause provides that an authorised officer can only lawfully enter premises without a warrant if the authorised officer has informed the occupier that he or she is entitled to refuse consent and the occupier has then voluntarily given the consent.

Clause 64 Announcement before entry

139. This clause provides that before an authorised officer can enter premises under a warrant, he or she must announce that the entry is authorised by the Bill, and give any person at the premises the opportunity to allow the authorised entry.

Clause 65 Details of warrant to be given to occupier etc. before entry

140. This clause sets out the requirements for an authorised officer to execute a monitoring warrant, including making a copy of the warrant available to the person at the premises and identifying him or herself to that person.

Clause 66 Use of electronic equipment in exercising monitoring powers

141. Subclause (1) allows an authorised officer to operate electronic equipment, such as a computer, on the premises in order to exercise monitoring powers, in circumstances where the authorised officer reasonably believes that he or she is able to do so without causing damage to the equipment.

142. Subclause (2) provides that the authorised officer may secure the electronic equipment in certain circumstances where he or she requires expert assistance to operate the equipment.

143. Subclauses (3) to (8) set out certain requirements for, and limitations on, securing equipment for the purposes of executing monitoring powers under this Bill.

144. Subclause (9) defines premises for the purposes of this clause.

Clause 67 Compensation for damage to electronic equipment

145. This clause enables compensation to be payable by the Commonwealth to the owner of electronic equipment (such as information technology systems) operated under clause 66 in circumstances where the equipment is affected by damage or data corruption due to an authorised officer or other person exercising insufficient care in operating the equipment, or in selecting a person to operate the equipment.

Subdivision D – Occupier’s rights and responsibilities

Clause 68 Occupier entitled to be present during execution of warrant

146. Subclauses (1) and (2) provide that if the occupier of the premises is present then that person is entitled to observe the execution of a warrant, provided that the person does not impede the execution of the warrant.

147. Subclause (3) allows for the execution of the warrant in two or more areas of the premises at the same time.

Clause 69 Occupier to provide authorised officer with all facilities and assistance

148. This clause requires an occupier of premises (or a person who apparently represents the occupier) to assist an authorised officer executing a monitoring warrant and makes it an offence to not provide any reasonable assistance required to enable the authorised officer’s powers to be effectively exercised. A person commits an offence if the person fails to comply with this obligation, which attracts a maximum penalty of 10 penalty units.

Subdivision E – Warrants

Clause 70 Monitoring warrants

149. This clause enables an authorised officer to apply to a magistrate for a monitoring warrant, and sets out the procedures to be followed and requirements to be met for an authorised officer to seek and a magistrate to issue a monitoring warrant for the purposes of this Bill. It also outlines the information that must be included in the monitoring warrant.

Subdivision F – Information gathering

Clause 71 Power to request information

150. This clause provides the GEDO with powers to require information to be provided relating to a person's compliance with the provisions of the Bill. This clause applies to a person the GEDO has reasonable to believe has information relating to compliance with this in their possession, custody or control, either electronically or in other form. The GEDO can require a person to provide specified compellable information in a specified period of time and in a specified form.

151. A civil penalty of 50 penalty units applies to a person who fails to comply with a requirement of this clause. In addition, a civil penalty of 60 penalty units will apply in circumstances when a person provides false or misleading information in purported compliance with this clause.

152. The penalty for failing to provide specified information does not apply if person has a reasonable excuse. However, such an excuse would not include claims that the information is of a commercial nature, commercial in confidence, or commercially sensitive. A person is also not obliged to provide information if the provision of the information might tend to incriminate the person or expose the person to a penalty.

Clause 72 Prohibitions on disclosure of information do not apply

153. This clause clarifies that the provisions of this Division have effect despite any law of the Commonwealth, a State or Territory prohibiting disclosure of information.

Subdivision G - External audits

Clause 73 External audits – compliance

154. Subclause (1) enables the GEDO to require, by written notice, a registered corporation to arrange for an external auditor to carry out an external audit on one or more aspects of the corporation's compliance with the Bill or regulations made for the purposes of this Bill. The GEDO may only take such action if the GEDO has reasonable grounds to suspect a registered corporation has not complied with, or is proposing to not comply with, the provisions of this Bill or regulations made for the purposes of this Bill.

155. The requirements for the audit, of the GEDO notice and for the external auditor are set out in subclauses (2), (3) and (4) respectively.

156. A civil penalty of 1,000 penalty units will apply if a registered corporation fails to comply with the requirements of the notice issued by the GEDO and with the provisions of this clause.

Clause 74 External auditors – other

157. This clause allows the GEDO to appoint an external auditor to carry out an external audit on one or more aspects of a corporation’s compliance with the provisions of this Bill or regulations made for the purposes of this Bill.

158. A civil penalty of 1,000 penalty units will apply if a corporation fails to comply with the requirements in relation to the audit.

Clause 75 Requirements for external auditors

159. The GEDO will determine guidelines in relation to how an external auditor must conduct an audit and prepare a report. This will ensure that audits are conducted consistent with international standards and are of sufficient quality and rigour to provide a meaningful assessment of the accuracy of reported data.

PART 7 – MISCELLANEOUS

Clause 76 Modification of National Environment Protection (National Pollutant Inventory) Measure

160. This clause clarifies the application of a national environment protection measure, made under section 14 of the *National Environment Protection Council Act 1994*, with respect to the reporting or disclosure of information relating to greenhouse gas emissions or greenhouse gas projects. The intent is to prevent the reporting or disclosure of information relating to greenhouse gas emissions or greenhouse gas projects through any national environment protection measure made under section 14 of the *National Environment Protection Council Act 1994* in order to avoid the duplication of the reporting requirements.

Clause 77 Regulations

161. This clause provides that regulations may be made under the Bill.