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Department of Industry and Science

On behalf of the E3 Committee

Greenhouse and Energy Minimum Standards (GEMS) Review 2015 Report

Report Name	GEMS Review – final report
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Date	15 June 2015
Version	Version 1.5

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Contents

1 Glossary

Ai Group	Australian Industry Group
AIIA	Australian Information Industry Association
AREMA	Air conditioning and Refrigeration Equipment Manufacturers Association of Australia
BAU	Business as Usual
CBA	Cost Benefit Analysis
CEC	Clean Energy Council
CUAC	Consumer Utilities Advocacy Centre
E2WG	Energy Efficiency Working Group
EUP	Energy Using Product
GAMAA	Gas Appliance Manufacturers Association of Australia
HEPS	High Energy Performance Standards
IGA	Inter-Governmental Agreement
LCA	Lighting Council Australia
MCE	Ministerial Council on Energy
NPA	National Partnership Agreement
OPBR	Office of Best Practice Regulation
RIA	Regulation Impact Assessment
RIAT	Regulatory Impact Assessment Team
RIS	Regulation Impact Statement
S&L	Standards and Labelling
SCO	Senior Committee of Officials
TasCOSS	Tasmanian Council of Social Service
TTMRA	Trans-Tasman Mutual Recognition Act
VCOSS	Victorian Council of Social Service
WELS	Water Efficiency Labelling and Standards Scheme
WTO	World Trade Organisation

2 Executive Summary

2.1 Introduction

The Department of Industry and Science, on behalf of the Equipment Energy Efficiency (E3) Program Committee, commissioned Databuild Research and Solutions to undertake an independent review of the Inter-Governmental Agreement (IGA) for the Greenhouse and Energy Minimum Standards (GEMS) legislative scheme and the GEMS Act, which gives effect to the E3 Program.

The E3 program is a cross jurisdictional program through which the Australian Government, states and territories and the New Zealand Government collaborate to deliver a single, integrated energy efficiency standards and energy labelling program for equipment and appliances. It is one of the suite of programs implemented by COAG's Energy Council.

The program aligns with national energy efficiency policies, being an identified action under COAG's National Strategy on Energy Efficiency, and is a key deliverable under the theme - Reducing impediments to the uptake of energy efficiency. The National Partnership Agreement on Energy Efficiency is the enabling instrument that gives effect to the National Strategy and remains in force until 30 June 2020, or until it is expired and replaced by an alternative agreement.

The Energy White Paper, released April 2015, identifies that the Australian Government will work through the COAG Energy Council to develop a national energy productivity policy framework to deliver the collaborative actions in a National Energy Productivity Plan. The White Paper also identifies that continuous improvement in labelling and minimum energy performance standards (MEPS) under GEMS will continue. Opportunities for continuous improvement in MEPS and Labelling - under GEMS - are expected to be included in the National Energy Productivity Plan.

Individual state and territory programs also provide policy and program context for delivering E3 program outcomes. For example, the program contributes to meeting targets of South Australia's Strategic Plan including:

- Target 59: Greenhouse gas emissions reductions - limit to 108% of 1990 levels during 2008-2012 and 60% reduction by 2050.
- Target 60: Energy efficiency of dwelling - improve the energy efficiency of dwellings by 15% by 2020.
- Target 61: Energy efficiency of government buildings - improve the energy efficiency of government buildings by 30% by 2020.

The Terms of Reference of the review were agreed by COAG ministers[1]. These requirements were further developed at the outset of the review through workshops with the Department, E3 Committee and stakeholder groups, to inform the objectives of the review.

[1] The Terms of Reference for the review is available in the Appendix. Also available in the Appendix is a summary of how the review objectives refer to the original Terms of Reference.

Objectives: The objectives of the review were to:

1. Review the case for policy intervention: To inform
    a. What form the intervention should take? (e.g. mandatory, voluntary) – exploring viable cost effective alternatives which meet the objectives of GEMS; and
    b. Who should implement the E3 program?
2. Review the outcomes of the E3 program: To understand whether the program has met its stated objectives and how cost effectively it has done so, as well as understanding the impact of the program on consumers and industry.
3. Review program processes: To understand whether existing processes could be made more efficient and/or effective, whilst maintaining an even market for all competitors and achieving an appropriate level of risk control.

Methodology: The review was conducted between September 2014 and February 2015 and comprised a method development stage, followed by a review of secondary evidence and 98 in-depth interviews with a range of stakeholders. These included government, industry, consumer and environmental groups, retailers, sector experts and test laboratories. In addition, an online survey was hosted to gather further feedback and two submissions were received from industry and consumer/environmental representatives.

2.2 Findings: The case for policy intervention, types of intervention, scheme design and administration

The case for intervention: There are a range of significant market failures which lead to consumers and businesses purchasing energy inefficient products. These include imperfect or insufficient information, split incentives, access to capital, externalities and bounded rationality[2]. As a result, there is a strong case for policy intervention to tackle them.

Types of intervention: Policy interventions such as mandatory minimum energy performance standards (MEPS) and mandatory energy labelling programs are highly effective at tackling these market failures, providing significant benefits to consumers and businesses compared to their costs and burden on industry.

MEPS: MEPS are generally mandatory because regulation, with good compliance, delivers certainty and consistent outcomes for businesses and consumers. Voluntary agreements and other alternatives to MEPS can and have been implemented, although not in Australia or New Zealand, with the exception of set top boxes and swimming pool pumps. These appear successful only in specific circumstances, such as when markets are dominated by a limited number of domestic manufacturers, with similar (high) technical competency and incentives to develop energy efficient product. These circumstances do not apply to the Australian and New Zealand markets.

Energy Labelling: Comparison energy rating labels work best when all or most products in retail outlets are labelled and therefore these programs are typically mandatory. Mandatory comparison labels provide authoritative and trusted information for consumers and for this reason the large majority of stakeholders support their use. Endorsement labels are almost always voluntary and

[2] See Section 5.1 for explanation of market failures.

appear to present a potentially useful non-regulatory opportunity. However, where they have been used in Australia or New Zealand, they have leveraged off the mandatory labelling scheme. Also, national and international experience shows that they require significant, long term resources for promotional and other activities, such as compliance, to generate consumer value on which such schemes rely.

Scheme design and administration

MEPS and comparison labels[3]: MEPS and comparison labelling schemes should be run by Government and stakeholders support a Commonwealth-led approach. However, as there are multiple requirements/ conditions for effective design and administration, involvement is also needed from state government, industry and consumer groups. As a result, an approach which has governance structures and agreements to facilitate this are likely to be more effective.

Endorsement labelling: The stakeholders' view is that endorsement labels can be run by government, non-governmental bodies or industry bodies, although recognising the significant and long-term commitment of resources required.

2.3 Findings: Meeting IGA, GEMS and E3 objectives, impacts on consumers and industry

Program outcomes: Significant energy cost savings are likely to be realised by the program, and in a cost-effective manner. Projections for the E3 Program in Australia, developed by the Department of Industry and Science (DoIS), show a Net Present Value in the range of $3.3 - $7.3 billion; and a Benefit : Cost Ratio in the range of 1.7 – 5.2, over the period 2014-2020[4]. The majority of savings are likely to have been delivered by MEPS (and associated compliance activities). Whilst it is challenging to find useful comparators, GEMS savings compare reasonably well to other schemes. Notwithstanding this, the review found opportunities for the program to achieve further savings, by extending the range of products covered and/or setting more stringent standards for currently regulated products.

Impact on consumers and industry: There is little evidence to suggest that consumers have been significantly negatively impacted by increased product prices and/or reduced choice as a result of the program[5]. There are costs to industry in delivering the program, however only a minor proportion is born by domestic industry. Overall the costs are significantly outweighed by energy bill savings, experienced by consumers and businesses.

2.4 Findings: Program processes – the IGA, GEMS Act, program administration and funding

The IGA: The IGA provides a sound governance structure, which is good practice as it formally involves all jurisdictions (apart from the Northern Territory) in the policy process, bringing them together to deliver a national program led by the Commonwealth. It also allows a pooling of

[3] Throughout this report, the term "comparison labelling" has been used to refer to labels such as the Energy Rating Label; and the term "endorsement labelling" to refer to labels such as the voluntary Energy Star program.

4 The range is large because these statistics have been developed using data from a range of sources. All data sets contain statistical errors, which compound when sets are added together.

[5] In the vast majority of cases, industry stakeholder representatives state that business compliance costs are passed on to consumers.

resources and expertise to help deliver greater outcomes more effectively than would be achieved otherwise. This is in general supported by members of the E3 Committee who recognise key advantages over the previous state and territory run scheme. However, there are issues in practice which can create tension[6] such as differences in priorities between jurisdictions (although this is inherent in a federal system and was also evident under the previous arrangements). For example, some jurisdictions have raised concerns about the Commonwealth's regulatory offsetting policy stopping regulatory proposals being implemented if offsets are not identified. Other issues include lack of active involvement from some states and territories; and some perceptions that the structure holds up the process. Despite these issues, wider stakeholders are supportive of the E3 Committee and its work and perceive benefits over the previous scheme.

The review concludes that the IGA provides a strong framework for national cooperation in implementing GEMS and the E3 Program. However, should any party to the IGA decide not to meet their obligation to provide annual funding to the program, the IGA provisions that only those jurisdictions contributing funding participate in decision making should be applied

The GEMS Act: The Act supports the delivery of significant benefits compared to costs. It is not possible at this early stage to conclude with confidence that the Act is supporting delivery of improved outcomes over the previous multi-jurisdiction scheme, however there are indications to suggest it is. In general, stakeholders felt that the GEMS scheme, as a national program compared to the previous multi-jurisdictional scheme, provides consistency within the market; is more economical to comply with, mainly due to reduced uncertainty and administrative burden; and is less confusing for consumers.

Overall, the Act appears to be effective and necessary with provisions in place to ensure they are delivered at least cost to consumers and industry, whilst maintaining a fair and equitable market. Some opportunities have been identified for streamlining to improve administrative efficiency and for amendment to the Act to improve effectiveness. Those which are recommended for action are detailed below. None of the opportunities identified represent a fundamental risk to the achievement of the program's objectives.

Program administration: The program is still bedding into its delivery role. Bearing this in mind, the program's administration is being delivered reasonably effectively. Some aspects of administration demonstrate best practice in delivery, including compliance and enforcement (and the infrastructure is in place to deliver it).

In addition, the process for developing GEMS determinations appears to be broadly robust and examples of good practice and administrative efficiency are demonstrated (e.g. international harmonisation efforts are seen as best practice). There are some areas where the process could be improved, such as: further use of evidence to inform policies; exploration of all possible interventions; consistency in stakeholder consultation; and improved interactions with the Office of Best Practice Regulation (OBPR). Increasing the pace at which determinations are developed would also help, noting that often a combination of factors impacted timescales, including: negotiations

[6] However, to date these matters have been resolved through discussion in the E3 Committee.

with industry, particularly where new stakeholders joined the process at a late stage; reaching agreement within the E3 Committee; slow progress through OBPR approval; and internal disruptions within jurisdictions (such as agency reorganisations and staff turnover).

In addition to core MEPS and energy labelling activities (including innovations such as climate zone labelling), the development of supporting initiatives, such as further development of the website and recently launched smartphone App, were seen as positive steps which will help achieve the program's policy objectives more effectively.

Funding

Cost recovery: The general level of industry funding (via registration fees) appears accepted by the majority of stakeholders. There would be value in better communicating the contribution of fees to the overall program budget. Some adjustment to the registration requirements for particular categories of products may also make the fees appear more equitable. Industry could potentially tolerate a reasonably minor increase in cost recovery, although respondents were generally resistive to this and noted that costs would be passed on to the consumer. In setting up GEMS and the current fee levels, the Commonwealth determined that fees would be reviewed at three yearly intervals, and that over time the program will move to a full cost recovery model. A fee review will occur in October 2015 and should take account of stakeholder comments provided in this review.

Alternative Government funding options: The issue of funding, in particular state and territory government contributions, is a complex and sensitive issue and it is difficult to make robust conclusions either way based on the exploration undertaken within the scope of this review. The majority of stakeholders are clearly in favour of maintaining the partial cost-recovery model at approximately the current level. There appears to very little understanding by most stakeholders of the split between industry and government contributions. However, there is an assumption by industry that current government funding levels will be maintained.

2.5 Recommendations

2.5.1 Program design

The review recommends that MEPS and labelling should be retained as national government measures. Improvements to design of the program should consider:

1. For MEPS and comparison labelling: Exploring all possible voluntary and mandatory interventions. However, as current practice demonstrates, most future standards are expected to be mandatory as they provide the greatest level of certainty for businesses and consumers and deliver significant savings at least cost.
2. For endorsement labelling: Exploring voluntary interventions, noting that in the Australian and New Zealand markets, these have sat on top of the mandatory regulations. If voluntary schemes are supported, to attract strong consumer support and acceptance they will need significant financial and administrative resources for their development, implementation and promotion.

Key recommendation

In future, both MEPS and labelling schemes should be retained as national government measures.

2.5.2 Delivering IGA, GEMS and E3 objectives

Existing product specific work should continue but areas for improvement include:

1. Improving the evidence base: The program should undertake further outcome evaluation studies to improve the evidence on program savings and cost effectiveness. In particular, this should continue to focus on actual market impacts rather than projections and isolating the impact of the program from other factors. Furthermore, it would be useful to better understand the impacts of labelling through further research in order to help understand the costs and benefits of labelling vs. MEPS.
2. Increasing impacts: The program should:
    a. Implement MEPS and labelling for planned products groups and consider further broadening coverage of product groups;
    b. Increase the stringency of MEPS levels or the energy labelling requirements for existing product groups; and
    c. Give consideration to the further use of endorsement labelling where it can be demonstrated that this would add value to the Program.

Key recommendation

The program should implement MEPS and labelling for planned products groups and consider further broadening coverage of product groups.

2.5.3 Opportunities to reduce burden and improve outcomes

The introduction of the GEMS legislation and the IGA were significant steps to reducing the regulatory burden arising from the previous multi-jurisdictional arrangements. Further opportunities for major reform are therefore limited.

The IGA: The IGA in its current form represents good practice, providing a strong framework for the governance of the program.

The Act: The Act supports the delivery of significant benefits compared to costs. While detailed review has found no fundamental gaps or inefficiencies, the following opportunities to reduce regulatory burden and improve outcomes have been identified.

Opportunities to reduce regulatory burden:

1. Removing the requirement for registrants to provide information relating to import, manufacture etc. of products[7]. Such information is necessary to help inform the impact of the program. A voluntary approach to collecting this information is currently being trialled, whereby industry has agreed to provide it on an 'as needed', rather than regular, basis. If this approach is not successful, the provision could be brought into effect. If it does prove successful, then this provision in the Act could be removed, cutting over $12 million in costs over 10 years[8].

[7] The GEMS Act, Part 5, Division 7, sub-division B.

[8] Whilst the information has not been sought by program administrators to date, the requirement places a burden on industry through the need to keep and manage such data should it be required. Cost savings have been estimated by DoIS using the OBPR Regulatory Burden Measure calculator.

2. Removing the allowance for state and territory laws to go beyond levels required by GEMS[9]. This clause has not been applied to date but does place a risk of increased regulatory burden on industry if it were to be in future[10].
3. Allowing streamlining of the required process for updating GEMS determinations[11]: Currently, the Minister cannot vary a GEMS determination (except to make minor administrative changes); it must be made anew, as the procedures required to replace a determination are the same as for establishing a new one. In practice this results in unnecessary burden by requiring the full COAG Best Practice Regulation process to be adhered to in all cases. This could be made more efficient and faster if a process were enabled which acknowledged previous analysis (e.g. Decision RIS) which had been accepted to establish regulations (as long as the previous analysis remained relevant and if certain conditions, such as agreement by stakeholders, were met). Further investigation, including legal advice and possible changes to the COAG Best Practice Guide, may be required to enable this.
4. Exploring the possibility of extending the length of registration periods (currently five years), where appropriate. This would provide a small saving to industry (<$50,000 p.a.)[12].

Opportunities to improve outcomes: A number of opportunities to improve outcomes were identified through review of the Act in relation to the regulatory requirements of other schemes[13]. However, these opportunities are also achievable through amendments to program administrative process, so are explored there.

Key recommendations

1. The IGA should be retained in its current form.
2. The Act should not be fundamentally changed. To do so would risk adverse outcomes such as reduced opportunity available for implementing energy efficiency measures and/or significantly increased risks to effective delivery and/or compromising equitable markets.
3. The program should consider and progress identified opportunities to reduce regulatory burden and improve outcomes.

Program Administration: Whilst there are no gaps or issues in program administration that represent fundamental risks to the achievement of objectives, the following opportunities for improvement have been identified.

Opportunities to reduce regulatory burden:

1. GEMS determinations:
    a. Stakeholders believe a continued focus on international harmonisation (for both test methods and energy efficiency standards) will be key in mitigating future burden.
    b. Increasing the pace at which determinations (including research and RISs) are developed and agreed will also reduce burden.

[9] GEMS Act, Part 1, Division 5, Clause 9.
[10] It is recognised that this is a relatively small risk, as its implementation does require the agreement of all participating jurisdictions.
[11] GEMS Act, Part 4, Division 2, Clause 35.
[12] GEMS Act, Part 5, Division 5, Clause 48.
[13] For example, the US MEPS scheme has requirements to develop and publish a strategic forward plan and regulatory schedule set out as regulatory requirements.

2. Product registration:
    a. Industry respondents are concerned that the Department progress several practical actions to resolve identified issues with the registration system to simplify the process. This includes some practicalities of completing forms, making payments and removing any information collected which isn't strictly necessary[14].
    b. Whilst most respondents were accepting that financial contributions made via the registration fee were appropriate, a reduction in fees would be welcome amongst industry (although it is less of a concern than administrative issues).
    c. Consideration could also be given to removing the requirement for test reports to be lodged in cases where they are not routinely used by technical assessment officers in assessing a registration request. In these cases, suppliers would still be required to provide evidence for their declaration should the need arise.

Opportunities to improve outcomes:

1. Communication with stakeholders and strategic planning:
    a. Stakeholders reported mixed experiences of communication with DoIS, an element of which included a lack of understanding and engagement on the strategic direction of the program. The introduction of three year strategic planning and a stakeholder engagement plan should help improve this. Improved stakeholder awareness, understanding and ability to influence the direction of the program at an early stage could bring a number of potential benefits, such as accelerating RIS processes, if potential difficulties had already have been explored prior to it starting.
    b. The input of consumer and environmental groups could be improved. This could be achieved through strategic planning consultation (seen as a more effective forum for such groups to engage) and considering supporting resources for this, such as through Energy Consumers Australia (which superseded the Consumer Advocacy Panel[15] in January 2015).
2. Compliance and enforcement: Whilst there is broad recognition that this is an area demonstrating good practice, both government and industry stakeholders suggested that there are opportunities to further target check-testing in areas at risk of non-compliance. In order to act as an effective deterrent to non-compliance and to foster trust in GEMS, registration and labelling surveys, testing activity and the penalties imposed for violations should be more visible[16]. Publicising this information more widely[17] would also reassure those who may be unclear on the amount of compliance activity DoIS undertakes and/or are concerned about 'cowboy' operators.

Key recommendations

1. GEMS determinations – the overall GEMS determinations process should be maintained and opportunities for improvements identified within this review explored. This includes continuing the focus on international harmonisation, implementing a set timetable for development, and

[14] See Appendix for further details.
[15] http://www.advocacypanel.com.au/
[16] CLASP 2010, Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labelling
[17] Results of labelling surveys and check testing are published on the Energy Rating website

greater cooperation between with the program and the Office of Best Practice Regulation (OBPR).

2. Product registration - practical issues with registration should be addressed as a priority to reduce administrative burden. A change in registration requirements for particular product categories, could be considered in order to make the fees more equitable.
3. Communication with stakeholders and strategic planning – the Department should continue its efforts to extend and formalise stakeholder engagement and strategic planning for GEMS.
4. Compliance and enforcement - delivering compliance and enforcement effectively should remain a top priority.
5. Other initiatives – innovations such as climate zone labelling and supporting policy initiatives such as the website and mobile application should continue to be developed.

Program funding

The existing funding model is broadly accepted by stakeholders and could be maintained (with consideration given to the above recommendations relating to the registration process).

Key recommendations

1. Take account of stakeholder feedback in relation to cost recovery levels when reviewing registration fees in October 2015.

3 Introduction and objectives

This section introduces the Review of the Greenhouse and Energy Minimum Standards (GEMS) Legislative Scheme and underpinning Inter-Governmental Agreement (IGA), including:

- An introduction to standards and labelling programs;
- Background to GEMS, the IGA and Equipment Energy Efficiency (E3) program; and
- The context, rationale and objectives of the review.

3.1 Introduction

3.1.1 Introduction to standards and labelling programs

Standards and labelling programs are commonly implemented policy interventions to improve product energy efficiency. There are two main elements: minimum energy performance standards (MEPS) and labelling.

MEPS relate to requirements for the minimum allowable energy efficiency of a product[18]. They provide an energy efficiency 'floor' for a product group, below which individual product models cannot be sold. The level of the floor can be raised over time, providing a means of raising the average energy efficiency of the product type.

Energy rating labelling – there are two main types of labels, which can either be implemented through mandatory measures (i.e. regulation) or voluntary measures (such as through market-led schemes).

Both types of labels 'pull' the appliance, equipment and lighting market toward greater energy efficiency[19] (although for voluntary schemes, this depends upon the extent to which they are taken up by industry):

1. Comparison labelling[20] – relates to requirements for the display of energy rating labels, such as those commonly seen on products including refrigerators, dishwashers and televisions, amongst others. Energy rating labels allow consumers to compare the energy consumption of similar products, and factor lifetime running cost into their purchasing decision. For some products, labelling requirements also relate to specific information that must be marked on the product itself or the box in which it is supplied. Under GEMS, mandatory labelling is currently only required for products sold through "bricks and mortar" stores as the requirements in the Act refer to physical labels. There is capacity within the Act to extend those requirements to online sales. However, the E3 Program is instead trialling a voluntary approach to seek businesses' cooperation in using the label online.
2. Endorsement labelling – relates to the display of energy labels which identify products which satisfy certain criteria, such as the most energy efficient in a product class. Generally endorsement labelling schemes provide little product specific energy use information, but

[18] http://www.energyrating.gov.au/about/other-programs/meps/
[19] Energy Efficient Strategies (2014) Energy Standards and Labelling Programs throughout the World in 2013.
[20] Known within GEMS as Energy Rating Labels.

provide a 'seal of approval' to inform prospective purchasers that the product is highly energy efficient for its class.

Best practice in Standards and Labelling programs: As energy efficiency issues have risen up the policy agenda in recent decades, the number and type of standards and labelling schemes have increased substantially across the world[21]. As they have done so, a body of evidence has been developed which has reviewed schemes and produced guidance on best practice for the purposes of helping policy makers design better and more effective schemes. As energy using product markets tend to operate on a regional/global level, while policy tends to be set at the national/regional level, such guidance plays a useful role to help harmonise policy and therefore reduce compliance burden. This body of work has been used as an input to inform this report. A full list of sources of evidence is provided in the Appendix.

3.1.2 Background

The *Greenhouse and Energy Minimum Standards Act 2012* (the Act) implements the commitments of the Australian Government and the Council of Australian Governments (COAG) to establish national legislation to regulate energy efficiency and energy labelling standards for appliances and other products.

GEMS objectives: The objectives of GEMS are

1. To give effect to the obligations that Australia has under the United Nations Framework Convention on Climate Change[22].
2. To promote the development and sale of products that use less energy and result in the production of fewer greenhouse gases, or that help reduce the energy used or the greenhouse gases produced by other products.

The Equipment Energy Efficiency (E3) program is the delivery mechanism which supports the achievement of GEMS objectives.

History and development: The GEMS Act created single national legislation to regulate energy efficiency and labelling standards, making the Commonwealth the regulator. Prior to the GEMS Act, the E3 program, which commenced in 1992, was nationally coordinated with regulations implemented via individual state and territory legislation.

Rationale for the transition to national legislation: The evolving expansion of the program under separate state and territory laws was reported to have resulted in inconsistencies which increased the regulatory burden for businesses and government agencies[23]. These included a lack of coordination of the implementation date for agreed regulations; some jurisdictions implementing requirements that were more stringent than nationally agreed MEPS levels; and differences in how registrations, compliance and enforcement were dealt with between jurisdictions. These issues

[21] The number of countries with a standards and labelling program in 2013 is 81 (increased from 50 in 2004). The number of product types subject to mandatory energy performance standard measures is 55 (from 42 in 2004). Energy Standards and Labelling programs throughout the world in 2013.
[22] http://unfccc.int/2860.php
[23] Examples of this included Queensland adopting higher MEPS for some classes of air conditioners in 2009 and South Australia in 2010.

were reported to have resulted in delays in implementation, increased costs to industry and reduced benefits expected to flow to consumers[24].

In response to these problems, a consultation and Regulation Impact Statement (RIS) process was undertaken to explore options to improve the regulatory framework. The RIS explored a number of framework options[25] and concluded that the most cost effective option was to establish a streamlined nationally consistent regulatory framework. As a result, the GEMS Act was passed in October 2012.

Regulatory framework changes: The key changes the Act established were to:

- ensure that any labelling or regulations would be consistent across jurisdictions and take effect simultaneously;
- establish a unified administrative and data collection framework;
- ensure the legislation enables and supports efficient and cost-effective operation of the program[26];
- ensure there is a unified compliance framework which makes use of Commonwealth powers in relation to border controls[27];
- require suppliers of registered products to report annually on national imports, sales or supplies and exports, if necessary;
- enable 'grandfathering[28]' provisions to be harmonised across all jurisdictions and programs; and
- establish a single national regulatory system and allowing for enforcement options to be consistent and available to the regulatory authority, irrespective of the jurisdiction where non-compliance is detected.

The opportunity was also taken with the Act to expand the range of matters that could be the subject of regulations to include:

- the extension of mandatory labelling to on-line sales and advertising;
- coverage of products using energy forms other than electricity;
- commercial use of regulated products;
- coverage of non-energy using products which impact on energy use or efficiency;
- labelling (or otherwise indicating) the greenhouse gas impacts of covered products;
- setting greenhouse gas-intensity standards for covered products; and
- minimising the (non-energy) environmental impacts of regulated products.

The Act is published on the Australian Government ComLaw website[29] and the full rationale for the transition to national legislation is set out in the Act's explanatory memorandum[30].

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[24] Decision Regulation Impact Statement: National Legislation for Appliance and Equipment Minimum Energy Performance Standards (MEPS) and Energy Labelling (2010).
[25] Ranging from co-regulations involving Commonwealth options and Commonwealth legislation options.
[26] With regard to coverage of products irrespective of their energy type, coverage of non-energy-using products, use of label data in other media, and greenhouse labelling and standards.
[27] E.g. where a class of products is declared a prohibited import, as is the case with conventional incandescent lamps.
[28] In the context of the GEMS Act, the term 'grandfathering' refers to the period for which non-compliant products may continue to be sold.
[29] Greenhouse and Energy Minimum Standards Act 2012 C2012A00132
[30] http://www.comlaw.gov.au/Details/C2012B00107/Explanatory%20Memorandum/Text

Anticipated impacts: The RIS, which underpins the Act, assessed a range of different regulatory options against a set of criteria including impacts on:

- policy consistency and risk;
- administrative efficiency and cost;
- program efficiency and cost effectiveness;
- compliance and enforcement; and
- costs and benefits.

The impact assessment was calculated on the basis of assumed improvements and efficiencies expected to be realised by the new regulatory framework, estimated to be $39 million per annum in 2009/10[31].

3.1.3 Framework within which GEMS operates

The program operates within the policy framework of the National Partnership Agreement on Energy Efficiency[32] (NPA-EE), the National Strategy on Energy Efficiency[33] (NSEE) and the GEMS Inter-Governmental Agreement (IGA[34]).

The regulatory framework is set out in Australian legislation, subject to and limited by decisions of a ministerial council, with representation from states and territories. To implement this, an IGA was signed by the Commonwealth and all states and territories, with the exception of the Northern Territory[35]. The IGA sets out the objectives and governance arrangements for the program. Only jurisdictions that sign the IGA and provide funding can formally participate in the program. Full details are available in the IGA document, and a summary is provided below.

Governance

Ministerial Council: COAG Energy Council is the ministerial council responsible for the IGA, which comprises ministers from each jurisdiction who are responsible for the objectives of the program. The Ministerial Council is ultimately responsible for policy, planning and implementation of the program. Decisions are made, where possible, by consensus and by voting where consensus isn't reached[36].

Inter-jurisdictional Advisory Committee (E3 Committee): The IGA set out the establishment of an advisory committee (the E3 Committee), chaired by the Commonwealth and with up to two representatives from each jurisdiction. The main functions of the Committee are to:

- provide planning, policy development, standards setting and budget advice and technical input to the Ministerial Council;
- take lead responsibility for, and coordinate the development of, new or revised GEMS requirements; and
- advise and assist the regulator in the implementation of all major aspects of the scheme (compliance, enforcement and monitoring/ evaluation of outcomes).

[31] Decision RIS National Legislation for MEPS and energy labelling 2010 (pp 60).
[32] https://www.coag.gov.au/node/183
[33] http://www.industry.gov.au/Energy/EnergyEfficiency/Pages/NationalStrategyEnergyEfficiency.aspx
[34] Available in the Appendix.
[35] http://climatechange.gov.au/communiqu%C3%A9-0
[36] Each jurisdiction gets one vote, and for non-budgetary matters decisions are carried if voted in favour by all, less two. For budgetary matters, agreement must be unanimous.

New Zealand is not a signatory to the IGA, but is a member of the E3 Committee under the IGA. New Zealand contributes funding towards administration in line with other jurisdictions.

E3 Review Committee: The E3 Committee is advised by the E3 Review Committee, comprised of industry groups and associations and consumer advocacy groups. The Review Committee meets twice a year, back-to-back with the E3 Committee, and is chaired by the Chair of the E3 Committee (the head of the branch in the DoIS responsible for the E3 Program). The Review Committee is also consulted via email or telephone at other times as issues arise or advice and feedback is sought.

The Review Committee is a valuable mechanism for consultation on work priorities, timeframes, technical details, across the products either regulated under the GEMS Act or where there is voluntary action. Stakeholder engagement, particularly during the product investigation process, provides important advice in relation to:

- Informing the identification of products for investigation;
- Developing timeframes for the investigation process;
- Informing and reviewing product profiles;
- Providing key information, data and perspectives for Consultation RISs;
- Informing draft determinations;
- Providing information towards and reviewing proposals for voluntary measures;
- Participating in the development of technical standards and testing methods;
- Providing ongoing feedback on the effectiveness and efficiency of the administration of the E3 Program;
- Inputting into compliance mechanisms and processes; and
- Provide input into the ongoing evaluation of the E3 Program and GEMS legislation.

Administration and funding

Program administration and the GEMS Regulator: The E3 program is managed on behalf of all jurisdictions by the Appliance Energy Efficiency Branch in DoIS. The role of GEMS Regulator is undertaken by a senior public servant, and their responsibilities are set out in the GEMS Act.

Program funding: The IGA sets out the agreement for the funding of the program for the first four years. Table 1 shows the percentage of funding contribution of each jurisdiction. Total indicative operating non-staff budgets are shown in

Table 2.

Table 1: Percentage of GEMS funding contribution by jurisdiction[37]

Jurisdiction	Cth	NSW	ACT	NT[38]	QLD	SA	TAS	VIC	WA	NZ
Funding contribution	42.2%	13.7%	0.7%	0.4%	8.5%	3.1%	1.0%	10.5%	4.4%	15.6%

[37] Note: these percentages are rounded from two decimal places
[38] The Northern Territory has not signed the IGA so does not contribute to the budget

Table 2: Indicative operating budgets of non-staff costs 2013-16 ($AUDM[39])

Year	2013-14	2014-15	2015-16
Indicative total budget	$4.882	$5.601	$6.461

Industry registration fees for eligible products provide a further $2.2 – 2.3 million per year (approximate annual estimate).

In addition to funding provided by jurisdictions under the IGA, the Commonwealth provides funding to meet staffing costs for the implementation of the E3 program, and program activities not funded under the IGA. Other jurisdictions also incur some staffing and other costs for E3 related activities. While not part of the IGA, New Zealand also funds its staffing and project costs to implement E3 outcomes in accordance with its national standards and labelling legislation.

3.1.4 Operation of the Equipment Energy Efficiency (E3) Program

A summary of the objectives and operation of the E3 program is provided in the Appendix.

3.1.5 Context for the review

This review fulfils a requirement under the IGA to review the operation of the agreement within three years of the commencement of the Act. The review will play a key role in informing decisions about the future of the program. It is being undertaken:

1. In the context of delivering best practice in regulation – this refers to delivering against principles set out by the COAG best practice regulation guide[40]. These include establishing the case for action, options and cost/benefit appraisal, competition considerations, providing guidance and information, time considerations, consultation with stakeholders and proportionality.
2. Against the backdrop of Commonwealth Government and COAG focus on regulatory reform to reduce unnecessary burden on industry, businesses, community organisations and consumers.

With these two issues in mind, the review has focussed both on

1. Effectiveness: exploring whether the regulatory design and process is delivering best practice and what learnings can be gleaned to improve effectiveness; and
2. Efficiency: exploring opportunities to improve efficiency – reducing regulatory burden without compromising key fundamental criteria, such as retaining an even market for all and an appropriate level of risk control.

3.2 Review objectives

The Terms of Reference were agreed by COAG ministers[41]. These requirements were further developed through a series of discussions and workshops with the Department, E3 Committee and stakeholder groups during September 2014, resulting in the objectives detailed below.

[39] Including New Zealand contributions.
[40] "Best Practice regulation: A Guide for Ministerial Councils and National Standard Setting Bodies" 2007
[41] The full Terms of Reference are available in the Appendix. This also includes details of how the review objectives relate to those in the original Terms of Reference.

3.2.1 Objectives of the review

The objectives of the review were to:

1. **Review the case for policy intervention,** including:
   a. What form the intervention should take? (e.g. mandatory, voluntary) – exploring viable cost effective alternatives which meet the objectives of GEMS. This included investigating policy options such as removal of minimum standards, co-regulatory or voluntary programs and identifying the benefits and impacts to householders and businesses; and
   b. Who should implement the program? (e.g. national or state and territory governments, industry or other bodies).

2. **Review the outcomes of the program** to understand:
   a. Whether the program has met its objectives and how cost effectively it has done so; and
   b. What the impacts of the program are on consumers and industry.

3. **Review program processes** – to understand whether existing processes could be made more efficient and/or effective, whilst maintaining an even market for all competitors and achieving an appropriate level of risk control. This covers:
   a. Program governance – including the IGA and E3 Committee;
   b. Regulations (the Act) – including its scope and requirements for developing determinations standards, compliance and registration requirements; and
   c. Administration of the program – including the planning process, regulatory impact statement development, product registration, compliance and communication with stakeholders.

Scope

1. Time period: The review focuses on the time period October 2012 to the present. However, as program processes such as RIS development usually go over several years, where necessary we have gone back further in time.

2. Scope – the review focussed principally on standards and labelling interventions implemented through GEMS. However, other potential policy options were explored if they were spontaneously mentioned by respondents within stakeholder interviews.

4 Methodology

The methodology for the review was developed and agreed through the development of a methodology report. In summary, the approach comprised:

1. A review of existing evidence, including
   - Program documentation - the Regulations, governance and process documents and guidelines, policy development and implementation documents (e.g. planning documents, product profiles, RISs); and
   - Published literature relevant to the scheme, including best practice guidance, impact assessments, consultant reports, evidence reviews and evaluations of other international schemes.

2. Stakeholder feedback, obtained through:
   - 98 in-depth interviews and three workshops with a broad range of stakeholders impacted by the scheme, including industry, state and federal government, retailers, consumer and environmental groups and national and international product energy efficiency experts (see Table 1 below for the number of interviews conducted in each group); and
   - Hosting an online survey on the Energy Rating website to obtain additional stakeholder views.

Table 1: Stakeholder interviews planned and conducted

Group	No. interviews conducted
DoIS E3 staff - strategic planning leads	4
DoIS E3 staff - sector leads	10
State representatives on E3 committee	10
Technical experts / consultants	6
Manufacturers' Peak Bodies (E3 Review Committee)	7
Product sectors	34
Retailers	5
Consumer groups	11
Environmental groups	4
Other federal government	2
Test labs / certifiers	5
Total	**98**

In addition, two written papers from stakeholder groups were received[42]:

1. *Industry comments regarding the GEMS review* – a collaborative submission of industry associations: Lighting Council Australia (LCA), Gas Appliance Manufacturers Association of Australia (GAMAA), Consumer Electronics Suppliers Association (CESA), Clean Energy Council (CEC), Air conditioning and Refrigeration Equipment Manufacturers Association of Australia

[42] Both papers are available in the Appendix.

(AREMA), Australian Information Industry Association (AIIA), and The Australian Industry Group (Ai Group).

2. *The future of GEMS - recommendations from the consumer sector* – a collaborative submission of consumer advocacy groups - Alternative Technology Association, Choice, Victorian Council of Social Service (VCOSS), the Public Interest Advocacy Centre Ltd, UnitingCare Australia, Ethnic Communities Council of NSW Inc., South Australian Council of Social Service, Brotherhood of St Laurence, Tasmanian Council of Social Service (TasCOSS), Consumer Utilities Advocacy Centre (CUAC).

The full methodology is provided in the Appendix. The Appendix also provides lists of evidence reviewed, a summary of the interviews and surveys, and written submissions.

4.1 Approach considerations and limitations

4.1.1 Review and assessment of evidence

The findings in the report draw on a wide range of primary, secondary, qualitative and quantitative evidence[43]. The evidence varies considerably in both its applicability and/or relevance to GEMS and methodological rigour. This means that the findings should be interpreted in accordance with the strength of the evidence base, which is discussed within each section.

4.1.2 Stakeholder interviews

Interview approach: The qualitative approach taken for this project allows exploration of the wide range of experiences and provides depth of insight into potential opportunities for improvement. Balancing this flexibility, a topic guide was used in the interviews to structure the conversation, enabling comparison across interviews.

Stakeholder awareness and understanding: Awareness and understanding of the program varied significantly across respondents and between stakeholder groups. This limited the depth of discussion possible with respondents who have less awareness and understanding. As groups who have more understanding are able to comment on a broader range of issues, and in greater depth, this introduces a risk of bias in the reporting. This has been mitigated by highlighting, where possible, where some groups were less able to comment.

[43] For example, stakeholder interviews, impact assessments of the current and previous iterations of the GEMS program, evaluations of specific product groups, evaluations of other MEPS and Labelling schemes, international comparison reviews, amongst others.

5 Findings: The case for policy intervention, types of intervention, scheme design and administration

This section considers

1. The case for policy intervention to improve product energy efficiency. This includes a review of product energy efficiency market failures, policy interventions implemented to tackle them and evidence of their benefits;
2. Types of policy intervention which are most effective in achieving product energy efficiency. This focuses on standards and labelling schemes, experience and learnings from their implementation on a mandatory or voluntary basis; and
3. Who is best placed to lead the design and administration of Standards & Labelling policy intervention. This focuses on administration by government vs. possible alternatives.

5.1 The case for policy intervention

To review the case for policy intervention, evidence was considered to inform:

1. Market failures and barriers which lead to supply of energy inefficient products; and
2. Policy interventions implemented to tackle market failures, and their benefits.

5.1.1 Product energy efficiency market failures and barriers

There is a significant body of evidence describing market failures which result in energy inefficient products. For example, the International Energy Agency (IEA)[44] 'Mind the Gap' study describes the main types of market barriers and failures globally and estimates the scale of the 'principle agent' barrier (split incentives) for case study countries (over 3800 PJ/annum of energy use). Drawing on this and other evidence, the principle market failures and barriers relevant to product energy efficiency in Australia and New Zealand are:

1. Imperfect information – consumers and businesses often do not have access to sufficient or accurate information about their energy efficiency options or the implications of model choice for on-going energy use and costs when purchasing products.
2. Split incentives – those purchasing energy using products can be different from those benefiting from their use, and the incentives facing the purchaser differ from the user (for example the tenant-landlord problem[45]. This is also the case where third parties dominate the specification of new products – such as plumbers).
3. Access to capital – consumers and businesses are often reluctant or unable to invest in energy efficiency due to up-front costs and/or real and/or perceived additional costs associated with energy efficiency.
4. Externalities – market participants are unable to fully capture the benefits from undertaking an energy efficiency investment or activity because of external factors (e.g. environmental benefits, reduced energy network investment).

[44] IEA 2007, Mind the Gap, Quantifying Principal-Agent Problems in Energy Efficiency.
[45] IEA 2007, Mind the Gap, Quantifying Principal-Agent Problems in Energy Efficiency. Where the landlord provides the tenant with appliances, but the tenant is responsible for paying the energy bills. In this case, landlords and tenants face different goals: the landlord typically wants to minimise the capital cost of the appliance (with little regard to energy efficiency), and the tenant wants to maximise the energy efficiency of the appliance to save on energy costs.

5. Bounded rationality – rationality of decision making by individuals is limited by the information they have, the cognitive limitations of their minds and the finite time they have to make a decision. Energy efficiency is often a secondary feature of many appliances and equipment and so, given these limitations, choice is often dominated by other factors.

In addition, there are barriers that are found in particular markets for specific product categories, for example:

- Extended supply chains that distort market signals (e.g. builders, developers, plumbers and installers -specifying products on behalf of customers); and
- Where the energy saving potential represents a small amount for individual items but because of the volume of stock nationally, the total potential savings are significant[46] (e.g. computers and monitors, standby power).

Evidence sources specifically related to GEMS which describe and assess market failures include product profiles and RISs developed in the setting of GEMS determinations. These explore the nature of market failures for specific product groups that policy interventions are designed to tackle.

5.1.2 Policy interventions and evidence of their benefits

In response to these market failures, there has been widespread implementation of standards and labelling policies to improve product inefficiency both nationally and internationally. As of 2013, there were 81 countries worldwide with implemented standards and labelling programs[47]. Outside of GEMS and its predecessor programs, some major international schemes include US MEPS and ENERGY STAR program, European Union Ecodesign requirements and Energy Label, and the Japanese Top Runner program.

The main reported reasons why policies have been put in place vary according to the type of intervention and policy priorities in each jurisdictions, however key themes include[48,49,50]:

- energy using[51] products account for a significant and growing proportion of the consumption of natural resources and energy and make a significant contribution to national greenhouse emissions;
- many energy-related products have significant potential for being improved (i.e. providing the same service, while using less energy) in order to achieve energy savings which leads to economic savings for businesses and end-users;
- the cost of avoiding electricity use through energy efficiency is significantly less than the cost of having to supply it, or providing new supply side resources; and
- the implementation of energy efficiency product policies based on international standards and norms can remove barriers to trade.

[46] A form of bounded rationality.
[47] This has grown from 50 in 2004.
[48] DIRECTIVE 2009/125/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products
[49] IEA 2104, Energy Efficiency Market Report
[50] Low Carbon Transition Unit, Denmark, 2013, Energy Policy Toolkit for Energy Efficiency in Appliances, lighting and Equipment.
[51] Or those which impact on the energy use of other products (such as insulation).

Many countries, including Australia, are also embracing energy productivity as a means of addressing these market failures. The Australian Government's recently released Energy White Paper (EWP)[52] recognises energy productivity improvements can help reduce business and household costs and encourage economic growth. As part of the EWP, the Australian Government announced it will develop a National Energy Productivity Plan that includes a national energy productivity improvement target of up to 40 per cent by 2030.

The Plan will seek to achieve the target through:

- energy markets providing consumers with new products and choice about how and when they use energy; and
- more efficient buildings, transport and equipment and appliances, including information and decision-making tools (e.g. labels and smart apps) for consumers on these choices.

The Australian Government will work through the COAG Energy Council to develop a national energy productivity policy framework to deliver the collaborative actions in the National Energy Productivity Plan.

Evidence of benefits

International evidence: International impact assessment evidence examples include:

1. The 2014 evaluation of the EU Ecodesign and Energy Labelling Directives, which estimates energy savings of 6700 PJ/annum will be achieved by 2020 (19% of the total consumption from the product groups covered[53]). The study also reports net savings for European consumers and businesses amount to €90 billion per year (1% of EU's current GDP) in the year 2020; and

2. The US MEPS scheme reports cumulative energy bill savings for consumers of $900 billion through 2020, growing to over $1.7 trillion through 2030[54].

3. The 2015 Energy Productivity and Economic Prosperity Index indicates that between 2001 and 2011, OECD countries gained 15% of their GDP growth from energy productivity improvements[55].

National evidence: Nationally, there are four main sources of evidence which report impacts of GEMS and its predecessor program:

1. GEMS impact analysis: The latest DoIS impact analysis estimates that GEMS will deliver between 69,000 and 80,000 GWh in cumulative energy savings between 2014 and 2020; and between 60 and 70 million tonnes of CO_2-e of greenhouse gas emissions (GHG) savings

[52] Australian Government (2015) Energy White Paper
[53] Ecofys (2014) Evaluation of the EU Ecodesign and Energy Labelling regulations.
[54] US Appliance and Equipment Standards History and Impacts figures.
[55] ECOFYS *(2015) Energy Productivity and Economic Prosperity Index*

between 2014 and 2020[56]. The benefits have a Net Present Value (NPV) of between $3.3 – 7.3 billion and a cost benefit ratio in the range of 1.7 - 5.2.[57]

2. GEMS product specific energy efficiency impact studies:
    a. The E3 2010 evaluation of energy efficiency policy for household air conditioners in Australia[58] reported that the annual rate of improvement before MEPS was around 0.5%, but grew to around 3% after the 2004 MEPS and to around 4% after the 2006/07 MEPS.

    b. The E3 2010 report on household refrigeration[59], assessing energy savings since 1986, which found that, by the end of 2009, the annual energy savings due to all policy measures on refrigerators was around 5.9 TWh/year. Most (around 4.1 TWh/year) is attributed to energy labels introduced from 1986, thus policies from the late 1990s onwards (i.e. MEPS) will have realised an estimated energy savings of around 1.8 TWh/year per annum by 2009.

    c. The E3 2009 greening whitegoods report also shows a similar trend of improved energy efficiency. Figure 1[60] shows how the energy efficiency of refrigerators was influenced by domestic and international policy and standards action. For example in 1996, new MEPS for refrigerators was first discussed publically and, at the same time, efficiency levels improved. This continued at other stages of standards development and implementation.

[56] DoIS impact estimates based on a national weighted average of emissions factors, from the National Greenhouse Account factors, 2014

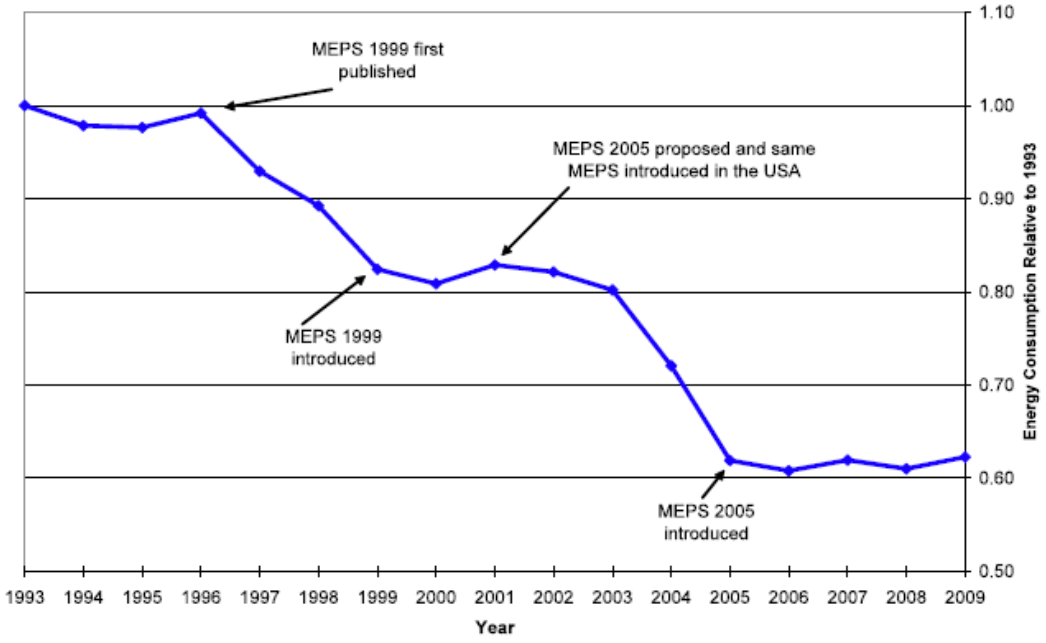
57 The range is large because these statistics have been developed using data from a range of sources. All data sets contain statistical errors, which compound when sets are added together.

[58] E3 Report (2010) Evaluation of Energy Efficiency Policy Measures for Household Air Conditioners in Australia

[59] E3 Report (2010) Evaluation of Energy Efficiency Policy Measures for Household Refrigeration in Australia – an assessment of energy savings since 1986

[60] E3 Report (2009) Greening Whitegoods - a report into the energy efficiency trends of white goods in Australia from 1993 to 2009

Figure 1: Energy Consumption of refrigerators 1993 - 2009



There are methodological challenges associated with the impact assessment evidence, discussed further in Section 6, however together these studies all help demonstrate product energy efficiency policies achieve significant benefits, cost effectively.

5.2 Types of policy intervention

The review considered what form of policy intervention is most effective in a product energy efficiency scheme in what circumstances and why. The review focussed on standards and labelling interventions[61] and explored whether they should be mandatory or voluntary.

5.2.1 MEPS and voluntary alternatives

MEPS in essence are applied to all regulated products. By definition those which do not meet the standard are excluded from the market, meaning that a mandatory approach is strictly the only viable option. However, national and international product policy experts discuss that voluntary energy efficiency 'standards' can be set through agreements with industry as an alternative to MEPS (e.g. a 'code of practice').

According to the report 'Energy Standards and Labelling Programs throughout the World[62]', as of 2013 there are nearly 1200 energy performance standards schemes globally, of which 90% are mandatory MEPS[63] (58% were mandatory in 2004). As the review has a focus on opportunities to reduce regulatory burden, national and international experiences and learnings of voluntary schemes are discussed below.

[61] Other policy interventions were not excluded as stakeholders were asked the question "What alternative cost effective and viable policy, process and funding models could be used in Australia?" However the resulting discussions were almost all discussions focussed on MEPS and labelling. There were two mentions of other types of policy, green procurement schemes and also building regulations, discussed in Section 5.2.3.

[62] Energy Standards and Labelling Programs throughout the World (2014).

[63] There are 1198 measures in total, of which 115 are voluntary (1083 mandatory).

International experience and learnings of non-mandatory MEPS schemes

1. Japan: The Top Runner scheme[64] operates by setting a national sales weighted efficiency targets which applies to the average efficiency of all products supplied by an individual manufacturer. There is no minimum standard and it is technically voluntary, but there are penalties if suppliers don't meet these (usually publication, but fines are also possible). The main industry association undertakes energy efficiency performance testing and products can be randomly selected for testing[65].

   The Top Runner program is prescribed under the "Law Concerning the Rational Use of Energy (Energy Conservation Law) – Section 6: Measures Related to Machinery and Equipment." The program is managed by the Advisory Committee for Natural Resources and Energy (ACNRE), an advisory body to the Minister of Economy, Trade and Industry. ACNRE, through various subcommittees, determines the relevant product categories, performance targets, measurement standards and overseas the evaluation and enforcement of the program. The Ministry has enforcement powers associated with the Energy Conservation Law that include public identification of firms that do not comply and fines.

   All responsible organisations (manufacturers or importers) are required to provide stipulated information to ACNRE soon after the target data in order to evaluate compliance. This includes the numbers of units shipped for the target fiscal year and their unit energy efficiency, etc. This data is provided privately to ACNRE often through established trade associations, due to its commercial sensitivity. ACNRE also tests the performance of individual products often with the assistance of the relevant industry associations.

   This evaluation process is more reliant upon the integrity of those concerned than in the type of compliance programs typically seen in western economies. However Japanese industry tends to place great weight on voluntary compliance with government policy. The main area of doubt about compliance appears to be for those product categories which have a growing share of imported products.

   Tests carried out in the early 2000's in Japan revealed a growing disparity between the tested performance of domestic refrigerators and their actual performance. To address this Japan adopted a revised test method, which has led to a change in the international IEC test method for refrigerators.

   A review of the Top Runner scheme undertaken in 2010 reported that the scheme has contributed significantly to driving product energy efficiency in Japan overall, although more so within some product groups than others. The report showed that some preconditions were necessary for the successful operation of the approach. These included:
   - the Japanese market structure – which is dominated by a limited number of domestic manufacturers;
   - all domestic manufacturers are similar; and
     - have high technological competency;

[64] http://www.eccj.or.jp/top_runner/
[65] For most product types covered by the scheme.

- can accept strict standards (i.e. none are excluded if set standards are high);
- have incentives to develop energy efficient products – e.g. to compete with foreign manufacturers; and
- all will comply with standards even without strict sanctions.

Where these preconditions were not met, significantly less was achieved.

2. EU: The EU scheme has also utilised voluntary MEPS initiatives in a few limited instances. These have been implemented in situations where[66]:
   - regulation may have been difficult to pass[67];
   - they can act as a pre-cursor to mandatory measures, in order to collect further information on technologies and 'test' appropriate measures; and
   - action is considered likely to deliver policy objectives faster or in a less costly manner – usually when similar market conditions exist for those described for Top Runner.

   The recent evaluation of the Ecodesign Directive[68] reported that voluntary agreement negotiations had been protracted, suggesting the process was not 'easier' than regulation, but that it is too early to fully assess their effectiveness. Product energy efficiency experts also discussed fundamental flaws in delivery of voluntary agreements, for example difficulties in establishing transparent and effective compliance processes, which contribute to a lack of confidence. Since the introduction of the Ecodesign Directive in 2005 there has been a significant trend towards mandatory measures[69].

The ECOS report 'International Comparison of Product Policy'[70] and interviews with product energy efficiency policy experts suggest that most economies have moved away from voluntary schemes for the following reasons:

- difficulties in finding a group of industrial partners to negotiate with, that account for a large enough proportion of the products sold on the market;
- problems of monitoring compliance;
- negotiations, which are often protracted and time consuming;
- lack of legal recourse in the event of breaches; and
- consequent lack of confidence in the achievement of policy objectives.

The ECOS review also reported that many industry associations acknowledge these difficulties and tend to prefer the clarity of a legally binding standard that is sure to apply a level playing field.

National experience and learnings

Voluntary standards are explored at several stages within the GEMS policy development process (e.g. product profiles, consultation and decision RISs[71]) but in almost all cases, the conclusion has been to opt for regulation for similar reasons to those reported above.

[66] DIRECTIVE 2009/125/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products
[67] For example where important market players cannot be covered by regulatory requirements (the example provided is the case of service providers in the case of complex set top boxes).
[68] Ecofys (2014) Evaluation of the EU Energy Labelling and Ecodesign Directives.
[69] As of 2013 there were only three product groups which use voluntary measures.
[70] ECOS (2013) International Comparisons of Product Policy.

There are some examples where voluntary approaches have been tested in Australia.

1. Gas water heaters: When E3 initiated development of standards for gas water heaters in 2006, the E3 Committee initially proposed that suppliers devise a voluntary program of retiring the least efficient water heaters and offered assistance to support it[72]. However, E3 representatives reported that suppliers did not respond satisfactorily and concluded that there was no prospect of significant voluntary change at that time. Subsequently mandatory MEPS were brought in for gas water heaters.
2. Set Top Boxes: In 2009, FOXTEL and AUSTAR worked with the Department of Climate Change and Energy Efficiency[73] to develop a voluntary code of conduct, which required signatories to meet minimum total energy consumption targets and design set top boxes to minimise energy consumption[74]. The scheme is perceived by stakeholders to be successful, mainly because the few major product suppliers recognised the benefits of developing and shaping a voluntary approach and have signed up to it.

Stakeholder views

Insights from the interviews with stakeholders showed broad and strong support for MEPS to be mandatory across all groups. In particular:

- Consumer representatives showed concern that a move away from this would be a retrograde step, removing necessary consumer protection and trust.
  "It's a highly successful program and it's well respected and been in place for some time. I think consumers would be devastated to see any weakening of the scheme or any attempts to hand over any apparent control to industry." (Consumer representative)

- Industry cited desires for a level playing field, transparency and robustness.
  "If it was a voluntary scheme there would be a lot of parallel imports and unknown brands. It doesn't support those doing the right thing and being fair competition." (Product supplier)

- Government respondents also voiced broad support for mandatory approaches, although a few stated that there was a potential role for voluntary measures, for example having a voluntary compliance period in the lead up to mandatory implementation to allow the market to prepare.
  "Occasionally a voluntary period could feed into a mandatory period to allow market take-up." (Government representative)

- Technical experts also voiced concerns about voluntary approaches.
  "Voluntary measures are not very useful - as often only a handful of products [suppliers] engage. If you're going to have energy declarations, it really doesn't make any sense for them not to be mandatory". (Technical expert)

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[71] Those reviewed include the three implemented since the GEMS Act came into force (TV revised standards, computers and computer monitors, gas water heaters).
[72] At the time it became apparent in 2006 that there would be significant delays in revising the standard through the RIS process.
[73] Since absorbed, in part, into the Department of Industry and Science.
[74] FOXTEL (2011) voluntary code of conduct for improving the energy efficiency in conditional access set top boxes.

International voluntary approaches, such as Japan's Top Runner were discussed with technical experts to explore whether, and if so how, they could be applied to the Australian and New Zealand markets. Respondents stated that the Top Runner approach would not work well domestically as the market has little domestic manufacturing industry, and/or willingness/ability to accept strict standards which would be adhered to by all without regulation.

5.2.2 Labelling

Comparison labelling

Comparison labelling can be either mandatory or voluntary. However, in order for it to be useful (e.g. in retail outlets) all or most products need to be labelled, which means it is usually mandatory. According to the 'Energy Standards and Labelling Programs throughout the World report'[75], as of 2013, there are 1149 comparative labelled measures globally, used in 78 countries of which 90% are mandatory[76] (83% were mandatory in 2004). Instances of voluntary labelling are only currently found in developing economies.

Voluntary and mandatory labelling: As discussed further in Section 6, there is little evidence available on which to assess the outcomes of labelling schemes in isolation from other interventions. (One exception is the 2010 evaluation of the actual energy savings attributable to energy labelling and MEPS programs implemented in Australia for household refrigeration products - see Section 5.1.2 for further discussion). There is also no evidence which allows for useful comparisons to be made between mandatory and voluntary schemes. We therefore drew on stakeholder views and other evidence such as international product energy efficiency reviews which discuss the advantages and disadvantages of voluntary and mandatory comparison labelling schemes.

Voluntary

- Advantages:
  - Potential savings for the tax payer as industry may be able to run schemes more efficiently (although some stakeholders stated that in the Australian experience, this has not necessarily been the case); and
  - Benefits for industry as they would have full control over design and implementation.

- Disadvantages for Australia (in partnership with New Zealand):
  - Risk of reduced outcomes arising from a market led approach to tackling market failures (i.e. consumer may have less trust in information provided by industry);
  - Take up and consistency risks if some market players do not participate.

Mandatory

- Advantages:
  - All products are labelled, providing consumers with the ability to make informed choices;

[75] Energy Efficient Strategies (2014) Energy Standards and Labelling Programs throughout the World in 2013.
[76] There are 987 implemented measures in total, of which 95 are voluntary (892 mandatory).

  - Government is seen as fulfilling its role – there is evidence from consumer surveys that consumers expect Government to help them save energy; and
  - Improved consistency, transparency, compliance and consumer trust.

- Disadvantages:
  - Costs to the taxpayer (although the RIS process ensures that benefits outweigh costs); and
  - Care needs to be taken to involve industry in design and implementation to ensure support for the scheme and minimise burden.

National experience and learning with voluntary comparison labelling

Whilst most labelling in Australia is mandatory, there are some product groups which have voluntary comparative labelling[77]. These are administered outside the GEMS legislation and E3 program. For example, from April 2010, the E3 Program has offered a voluntary labelling program for swimming pool pumps. Participation in the program allows suppliers to attach an Energy Rating Label to their product, showing its relative energy efficiency. While suppliers are not required to participate in this program, if they choose to participate they must abide by the program's Rules of Participation. These rules include a requirement for suppliers to provide independent test results certifying that the product meets the required MEPS level. The department has not undertaken a detailed review of the voluntary energy rating label when applied to pool pumps. Preliminary figures on the number of pool pumps which carry the label and total sales in the industry indicate that products with the label do sell larger volumes on average compared with products without the label. In 2012, 8% of products carried the label, however 25% of total sales were attributed to the 8% of products with the label. It is however unclear if consumers have a purchasing preference for product with a label or if manufactures with high selling products are interested in receiving a label to have an additional point of difference in the market.

DoIS is currently engaged in additional product testing and market research to inform a decision on possible regulatory action through a regulation impact statement (RIS). The effectiveness of the voluntary energy rating label will be evaluated in the RIS.

Stakeholder views

Whilst some stakeholders recognised and had experience of voluntary comparative labelling, there is strong overall support for mandatory schemes. Consumer representatives in particular were supportive of mandatory labelling, for the reasons stated above.

"Mandatory definitely, I think there is broad public benefit for information to be available and the public to know that what they are buying. It ensures that the most efficient producers aren't penalised for offering the most efficient product." (Consumer representative)

Industry was also broadly supportive of mandatory schemes, although the reasons for this were more due to the fact that there is an existing scheme which is well recognised. There were a few respondents who were opposed to mandatory labelling, preferring to have more control about how energy use information is communicated to their customers.

[77] Including some types of air-conditioners and water heaters.

"There are many ways to communicate with consumers to get this across...The label doesn't provide all of the information to help consumers compare one product with another." (Product manufacturer)

Government and technical experts also favoured mandatory comparison labelling.

"If the purpose of the scheme is to give information to customers, then the customers must know that the information is consistently arrived at and displayed so that they can make their choice. Anything that doesn't produce that outcome is questionable."(Technical expert)

Endorsement labelling

Endorsement labelling is almost always run as a voluntary scheme because it is only applied to the best performing products within the market and as such it is in the interests of those that qualify to use the label. According to the 'Energy Standards and Labelling Programs throughout the World' report, as of 2013 there were over 1002 endorsement individual labelling measures globally, used in 50 countries, of which 95% were voluntary (99% were voluntary in 2004). They are usually implemented as a complementary measure to both MEPS and comparison labelling (either integrated into those interventions, or as an entirely separate scheme) to help increase demand for the most energy efficient products[78].

International experience and best practice: There is little robust evidence on which to assess the effectiveness of endorsement labelling[79]. Discussions with energy efficiency experts indicated this was likely due to:

- Limited strategic drivers and data availability for evaluation for endorsement evaluation; and
- Difficulty in disaggregating the effects of endorsement labelling from other influences (e.g. MEPS).

Review of best practice guides and further discussions with experts shows that voluntary, endorsement programs rely heavily on promotional activities to create consumer demand. Without this, suppliers begin to lose interest and do not try to meet the requirements, which usually results in scheme failure. ENERGY STAR® has been known to invest substantial resources in the US for many years in order to create and maintain demand for the scheme to succeed. This is also a likely reason why many other countries have joined the scheme, as opposed to creating their own.

Other issues deemed to be important in delivering successful endorsement labelling schemes include:

- Undertaking research and development to inform design and implementation;
- Use and setting of appropriate standards;
- Links to comparison labelling schemes; and
- Links to other programs such as procurement, financial incentives and rebates.

[78] CLASP (2005) Energy efficiency labels and standards: A guidebook for appliances, equipment and lighting 2nd edition.
[79] The US ENERGY STAR scheme reports some figures in annual reports (ENERGY STAR (2013) 2013 ENERGY STAR Overview of Achievements), but it is difficult to interpret the numbers as the methodology for their calculation is not made clear.

Compliance is also a key issue for the integrity of endorsement labelling programs, as evidenced by the 2009 report on ENERGY STAR® which found that *"…the energy and greenhouse gas reductions claimed for qualified products may not be valid"*[80].

National experience

Australia and New Zealand are both involved in the international ENERGY STAR® program. Australia and New Zealand use the endorsement label for office equipment and home electronics. New Zealand also uses the label for a much wider range of products such as whitegoods, lighting, heating, water heating and windows. It is actively promoted by the Energy Efficiency and Conservation Authority (EECA) in New Zealand. In 2011, EECA commissioned research on the ENERGY STAR® value proposition and found that, when used in conjunction with the Energy Rating Label, the Energy Star mark has the potential to drive (and increase) the sales of high efficiency appliances, particularly where the mark is applicable in the mid-range of ERLs[81].

The endorsement label, the Good Environmental Choice Mark[82], is also used within Australia but to a lesser extent, with only limited crossover with GEMS products i.e. thermal building insulation products and window fittings.

Under the GEMS legislation, provision already exists for high performing products to be identified and promoted. For some labelled products, the energy rating scale extends above six stars to ten stars, identifying 'super efficient' products with a 'crown' of additional stars on its label. Additionally, for some standards relating to commercial/industrial equipment, High Energy Performance Standards (HEPS) complement Minimum Energy Performance Standards (MEPS), identifying higher performing products.

Stakeholder views: There appeared to be significantly less awareness and visibility of endorsement schemes in Australia perhaps because current policy is dominated by MEPS and comparison labelling measures. However, some industry and government respondents noted that schemes have been tried in Australia previously (for example, the Galaxy Energy Award program, run in Victoria until 2002, and its replacement, the Top Energy Saver Award, run from 2003 as part of the E3 Program. However, these schemes were withdrawn due to a mixture of changing government priorities and lack of funding, which led to a lack of traction in the market.

It was mentioned by a few respondents that New Zealand actively promotes ENERGY STAR[83] through the Energy Efficiency and Conservation Authority (EECA)[84]. These respondents thought that there was an opportunity for Australia to do more here.
One or two government and energy expert respondents expressed their support for doing more with regards to endorsement labelling through HEPS under the GEMS Act, albeit recognising that availability of resources were an issue.

80 U.S. Environmental Protection Agency, Office of Inspector General, [2009] "ENERGY STAR Program Integrity Can Be Enhanced Through Expanded Product Testing"
81 EECA Presentation (Internal working document), 2011
82 http://www.geca.org.au/
83 http://www.eeca.govt.nz/standards-and-ratings/energy-star
84 http://www.energywise.govt.nz/energy-star

"Whenever we've tried endorsement labels in Australia, governments have been unwilling to commit to spend on communication/promotion over a prolonged period." (Technical expert)

It is clear that endorsement labelling as an E3 policy is supported by some stakeholders. However, opportunities exist to fine tune the implementation and design of the current scheme.

5.2.3 Other policy interventions

Whilst almost all discussions with stakeholders focussed on MEPS and labelling[85], two other intervention types were discussed:

1. Green procurement policies – for example setting procurement standards to purchase energy efficient products; and
2. Building standards/energy efficiency policies – setting standards.

Neither of these policies could be implemented as part of the E3 Program. However, both were discussed as policies which should be applied 'in addition to', or 'in tandem with' MEPS and labelling as opposed to considering them as alternatives. It was also mentioned that these policies often rely upon MEPS and labelling standards upon which to set such policies. It is known that such supporting policies have been developed in other economies; however detailed analysis of this was not included within the scope of this review.

5.3 Scheme design and administration

5.3.1 Government intervention vs. alternatives

MEPS and comparison labelling

For reasons explored in Section 5.2, MEPS and comparison labelling schemes globally are design-led and administered by governments, with very few exceptions[86]. International best practice guidance discusses that this is because they require industry to take action where they would otherwise not, and therefore need the necessary powers to enable effective implementation. Administrations also should be strong with the political will necessary to manage potential issues – such as market reactions to setting of MEPS levels and compliance.

Stakeholder interviews

Most respondents from all stakeholder groups believed that the scheme should be administered by government, on the basis that it provides transparency and trust in the scheme and can effectively represent the interests of all stakeholders.

A few industry representatives suggested that industry-led administration could have advantages as they could more effectively reflect the needs of their markets in scheme design. Specific examples cited included the design of standards testing methods and appropriate consideration of market sub-categorisation (e.g. different classes of products within a group). However it was recognised that it would be challenging to select who might lead administration and how this would be resourced. Furthermore, it was also discussed that such issues could be resolved by other means –

[85] Stakeholders were asked "what alternative cost effective and viable policy, process and funding models could be used in Australia?"
[86] Energy Efficient Strategies (2014) Energy Standards and Labelling Programs throughout the World in 2013.

such as through effective involvement by industry in the design and delivery of government led schemes.

> *"I think the current arrangements work well" (Electronics industry respondent)*
> *"[Consumers] couldn't have faith in a scheme that was administrated by industry for industry. Motivations would be questionable if industry was involved." (Consumer representative)*

Endorsement labelling

Globally, endorsement labelling schemes can and are administered by government, non-governmental bodies and/or industry bodies. However, as discussed above, those which have gained significant traction internationally have generally benefitted from significant public sector resources to undertake promotion and administration.

5.3.2 Level of government

Given that government is, largely, best placed to design and administer schemes, further exploration was undertaken to help inform what level of government (e.g. national, state) would be best placed to take this forward.

Globally, experience can be drawn from across sub-national, national and trans-national levels of government administration. For example, in the EU, MEPS & labelling measures are determined across the single-market, but implemented by Member States. The USA runs a national appliance regulatory program, although there is potential for states to undertake additional actions under specific conditions.

Australia (in partnership with New Zealand) runs a federal scheme and previously ran a nationally co-ordinated state and territory scheme. Similar to the circumstances in the USA, the states can undertake additional action in specific circumstances.

Japan, China and other countries administer national schemes.

Over time, a trend has been observed where schemes evolve from sub-national or national beginnings to being administered by the 'highest' level of government over time[87]. Furthermore, there has been significant policy focus on harmonizing schemes internationally, as product markets tend to be and have become increasingly global in nature.

"International experience to date has shown that, in the case of energy labelling, cultural differences are often not as important as cultural similarities, and much of what works in one region is often transferable to another[88]" (CLASP Standards and Labelling guidance)

The reported advantages of administration by higher levels of government are similar to those behind the rationale for the transition to a Commonwealth led scheme for GEMS (Section 3.1.2). These include greater market coverage and harmonisation, removal of inconsistencies and reduction in administrative burden for compliance.

[87] LBNL (2012) International comparative analysis and current status of appliance energy efficiency standards and labelling programs.
[88] CLASP Standards and Labelling scheme guidebook (2005).

One study by CLASP has assessed and estimated the likely potential benefits of harmonisation, which reported that if the current most broadly based and stringent equipment efficiency regulations were to be adopted world-wide by 2030 it would save 4000 TWh of final electricity demand[89].

However, international harmonisation does not necessarily require administration by the highest level of government (although it is likely to be more efficient) – it just means that whoever is responsible for administration should ensure the scheme is aligned as far as possible with international markets. The GEMS predecessor scheme is reported in the literature as an example of how this can work (despite its reported problems)[90].

Best practice standards and labelling guidance states that whatever level of government leads the design and administration of a scheme, it needs to satisfy a number of key criteria[91]. This includes having:

1. A robust regulatory framework and process for enacting legislation;
2. Political legitimacy, support and will;
3. Ability to effectively represent the needs of stakeholders – principally industry, other levels of Government[92] and consumer/ environmental groups;
4. Institutional capacity – including financial resources, personnel and facilities; and
5. Authority and responsibility for implementation.

Furthermore, where schemes are led by transnational/national government, there are examples of and reasons for the involvement of state/sub-national levels of government. For example, member states in the EU Ecodesign Directive play a role in negotiating standards, to help ensure that national interests and issues are represented – such as national industries and differences in climactic conditions.

Stakeholder views

Australia has experience of both national and state and territory-run schemes so the experiences, advantages and disadvantages of this were discussed with stakeholders.

Nearly all respondents, and in particular industry were supportive of a nationally designed and administered scheme. Industry and retailers stated that it provides consistency within the market and is more economical to comply with. This is mainly due to reduced uncertainty and administrative burden compared to the previous multi-jurisdictional scheme. The Trans-Tasman Mutual Recognition Agreement between Australia and New Zealand also further extends this market. Consumer representatives also noted that a national program is less confusing for consumers.

> *"A national system is important given that we import products that are subject to MEPS and we need to know they meet regulations all over Australia. From a business perspective it is also a*

[89] 12% of the total and 4% of oil and gas demand in the residential, commercial and industrial sectors excluding energy used for transport and industrial process heat.
[90] LBNL (2012) International comparative analysis and current status of appliance energy efficiency standards and labelling programs.
[91] CLASP Standards and Labelling scheme guidebook (2005).
[92] Than those leading the design and implementation of policies.

more economical process because there are fewer jurisdictions to deal with and it makes it more certain about budget aspects." (Industry respondent)

State government representatives were also broadly supportive of a nationally-led scheme for similar reasons. Some also discussed the relative advantages of pooling of resources and economies of scale achieved in administration. However, some respondents also reflected that the previous scheme was not so different in reality to GEMS (which was a view also reflected by some technical experts). These respondents reported that registration was shared, so only required in one jurisdiction and that regulations were largely (with some notable exceptions) applied consistently across the jurisdictions. It was discussed that the achievement of consistency was largely attributed to the coordination role played by the Commonwealth at the time. Finally, there was also a strong view that the jurisdictions should be involved in governance and decision making to ensure representation of state issues, such as local climactic conditions and industries.

5.4 Conclusions and recommendations

5.4.1 The case for policy intervention

Conclusions

1. There are a range of significant market failures which lead to consumers and businesses purchasing energy inefficient products. As a result, there is a strong case for policy intervention to tackle them.

2. Policy interventions such as MEPS and labelling programs are highly effective at tackling these market failures, providing significant benefits to consumers and businesses compared to their costs and burden on industry.

5.4.2 Types of policy intervention

Conclusions

1. MEPS

MEPS are generally mandatory because regulation, with good compliance, delivers consistent outcomes. However, voluntary agreements and other alternatives to MEPS can and have been implemented.

These appear successful only in specific circumstances, such as when markets are dominated by a limited number of domestic manufacturers, with similar (high) technical competency and incentives to develop energy efficient product. These circumstances do not apply to the Australian and New Zealand markets.

Labelling

Comparison labels: Comparison labels work best when all or most products in retail outlets (and/or increasingly online sales outlets) are labelled and therefore these programs are typically mandatory. Mandatory comparison labels provide authoritative and trusted information for consumers and for this reason the large majority of stakeholders support their use.

Endorsement labels: Endorsement labels are almost always voluntary and appear to present a potentially useful non-regulatory opportunity. However, national and international experience shows that they require significant, long term resources for promotional and other activities to generate consumer value on which such schemes rely.

Recommendations

For MEPS and comparison labelling: Exploring all possible voluntary and mandatory interventions. However, as current practice demonstrates, most future standards are expected to be mandatory as they provide the greatest level of certainty for businesses and consumers and deliver significant savings at least cost.

For endorsement labelling: Exploring voluntary interventions. However, if schemes are supported, to attract strong consumer support and acceptance they will need significant financial and administrative resources for their development, implementation and promotion.

5.4.3 Scheme design and administration

Conclusions

MEPS and comparison labels: MEPS and comparison labelling schemes should be run by government and stakeholders support a Commonwealth-led approach. However, as there are multiple requirements/ conditions for effective design and administration, involvement is also needed from state government, industry and consumer groups. As a result, an approach which has governance structures and agreements to facilitate this are likely to be more effective.

Endorsement labelling: Endorsement labels can be run by government, non-governmental bodies or industry bodies.

Recommendation

In future, both MEPS and labelling schemes should be retained as national government measures.

6 Findings: Has the IGA, GEMS and E3 met their objectives?

This section reviews the outcomes of the program, including:

- whether the program has met its objectives and how cost effectively it has done so; and
- the impacts of the program on consumers and industry.

This is approached through exploring:

1. Achievement of savings and cost effectiveness. This is done through reviewing existing evidence of program impacts and their rigour. Impacts from other, similar interventions are also reviewed to inform an assessment of effectiveness (in comparison to other schemes).
2. Impacts of the program on consumers and industry. This involves:
    a. For consumers - reviewing evidence of impacts on consumer energy bills, product availability and purchase costs; and
    b. For industry - reviewing evidence of the impacts of the program on industry, with a focus on the domestic manufacturing base.
3. Finally, what opportunities there may be to increase outcomes.

Each section draws on both primary and secondary evidence and informs conclusions and recommendations relevant for GEMS.

6.1 Achievement of savings and cost effectiveness

There are a number of studies which can be drawn on to inform savings made by the program and how cost effectively they have been achieved. These are outlined in Section 5.1.2 and include the E3 2010 evaluation of energy efficiency policy for household air conditioners and the E3 2009 Greening Whitegoods report. Due to the long term nature of impacts (including savings) associated with the program, the evidence sources span both the time period covered by GEMS and the predecessor multi-jurisdiction program.

Program impact assessments: In parallel to this review, the Department updated projections prepared in 2014[93]. Table 3 shows the most up-to-date DoIS projections of costs and savings associated with the program between 2014 and 2020[94]. This is a work in progress and, as these are still to be finalised, a range is shown. The range is large because these statistics have been developed using data from a range of sources. All data sets contain statistical errors, which compound when sets are added together.

[93] E3 2014, Impacts of the E3 program: Projected energy, cost and emission savings, March 2014. The range between some estimated is large because these statistics have been developed using data from a range of sources. All data sets contain statistical errors, which compound when sets are added together.

[94] Aggregated savings over the period.

Table 3 Projected range of costs and benefits of GEMS for 2014-2020[95]

Indicator	Projected value for 2014 – 2020
Energy Savings (GWh)	69,000 – 80,000
Emissions Savings (million tonnes CO_2-e)	60 –70
Benefits ($B)	7.6 – 9.0
Costs ($B)	1.7 – 4.3
Net Present Value ($B)	3.3 – 7.3
Benefit : cost ratio	1.7 – 5.2

The DoIS projections indicate that significant net savings will be realised, and in a cost-effective manner. The methodology employed for these projections is an improvement on the original figures as the estimates utilise more and up to date market sales data (e.g. on appliance sales and the impact of trends in international standards) and ABS data on appliance usage. By contrast, the original impact assessment was largely based on forecast predictions based on impacts from RIS data, as opposed to ex-post evaluations of impact.

Notwithstanding the updated projections, the figures should be interpreted as indicative estimates, and with some caution, until the updated projections work has been finalised.

GEMS product-specific energy efficiency impact studies: As mentioned above, there are two product-specific impact studies which have been undertaken in 2009 and 2010 (household air conditioners and whitegoods[96]) as part of GEMS. This is the most recent evidence available and the three new product groups introduced under GEMS (insulation, glazing and ducting) have not yet been evaluated. Both studies are ex-post impact evaluation studies, which consider hypothetical estimates of the counterfactual[97]. The results show strong correlations between the timing of introduction of MEPS and labelling and improvements in energy efficiency, which are statistically significant.

Within the studies, the detailed evaluations of refrigerators and air conditioning report actual energy savings were significantly greater than had been anticipated in the relevant RIS documents. For example, the energy savings from the 2005 refrigeration MEPS was 750 GWh/year as calculated in the impact study (compared with 500 GWh/year, which was forecast in the RIS). In both cases, this is partly due to a tendency towards conservatism when undertaking RIS analysis (in order to mitigate risk of over-estimating benefits) and partly a result of greater sales volumes than were forecast.

These studies provide significantly more robust evidence of savings for these product groups. There are two limitations:

1. Attribution and the counterfactual: There are uncertainties surrounding the quantification of savings which are directly attributable to the program, as many other factors that affect energy

[95] Analysis by DoIS
[96] E3 2009, GREENING WHITEGOODS, A report into the energy efficiency trends of whitegoods in Australia from 1993 to 2009; and E3 2010, Evaluation of Energy Efficiency Policy Measures for Household Air Conditioners in Australia
[97] What would have happened in the absence of the intervention (business as usual estimates)

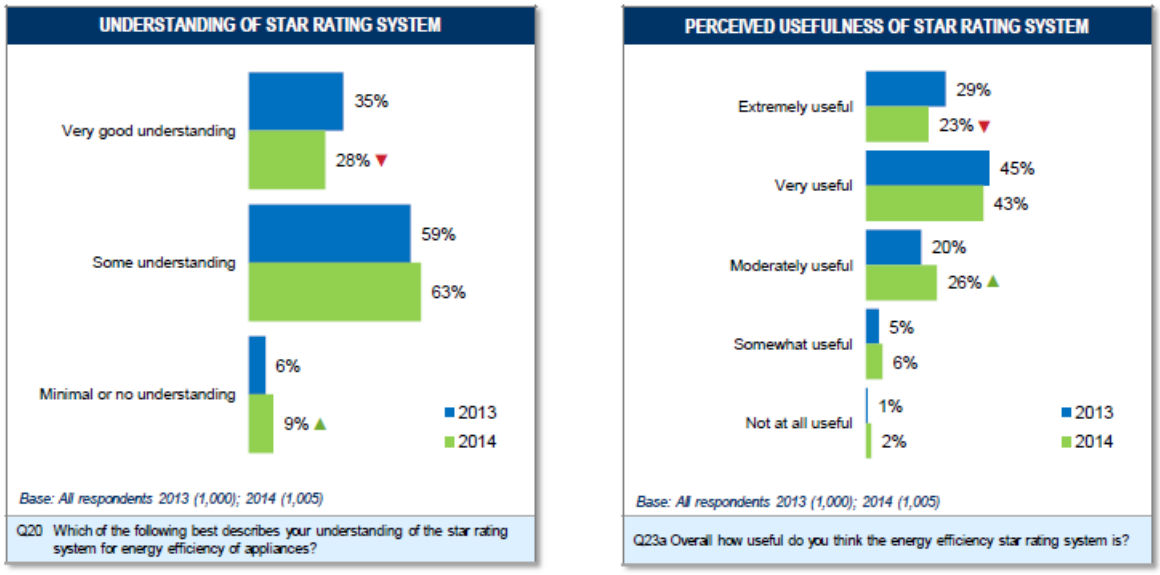
efficiency are also at play. These factors include changes in technology which affect energy efficiency and changes in consumer preferences. The whitegoods report provides an example of this, as it also reports significant changes in energy consumption amongst products where MEPS and labelling interventions do not change over the assessed time period[98].

2. MEPS vs. Labelling: Most of the studies do not attempt to disaggregate impacts which are driven by MEPS and those by labelling, so it is not always possible to know which has delivered what savings. However, in 2010, E3 commissioned an evaluation of the actual energy savings attributable to energy labelling and MEPS programs implemented in Australia for household refrigeration products[99]. The evaluation found that, by the end of 2009, the annual energy savings due to all policy measures on refrigerators was around 5.9 TWh/year. Most (around 4.1 TWh/year) is attributed to energy labels introduced from 1986, thus policies from the late 1990s onwards (ie. MEPS) will have realised an estimated energy savings of around 1.8 TWh/year per annum by 2009.

Evidence of labelling impacts: There are other sources of evidence, which explore awareness and influence of the Energy Rating Label on consumer purchase decisions.

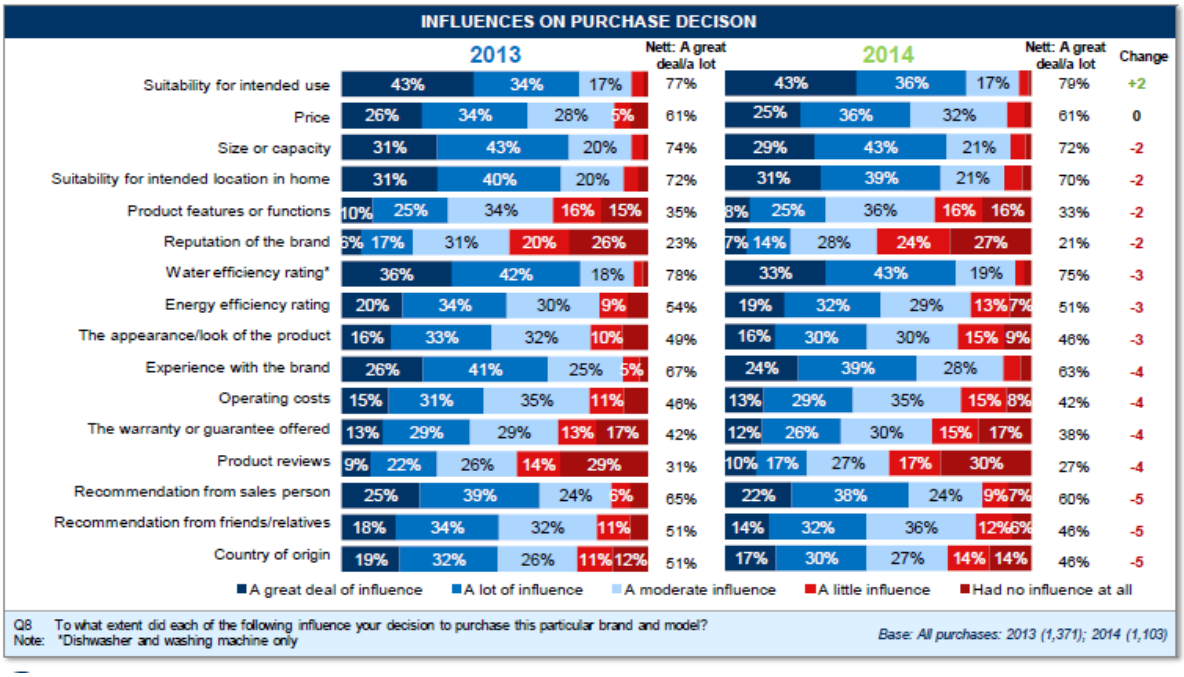
Quantitative online research[100] undertaken by Sweeney Research for the Sustainability Victoria Smarter Choice program in 2014[101] shows high awareness, understanding and perceived usefulness of the Energy Rating Label (Figure 2). The research also showed that the label influenced purchase decisions (amongst other influences; Figure 3).

Figure 2: Energy Rating Label understanding and perceived usefulness



[98] For example, the energy consumption of clothes dryers increased significantly from 2006-09, reportedly influenced by an increase in market share of larger capacity condenser models.
[99] E3 Report (2010) Evaluation of Energy Efficiency Policy Measures for Household Refrigeration in Australia – an assessment of energy savings since 1986
[100] Respondents had purchased an appliance within the last six months.
[101] The full report is not published, however Sustainability Victoria have given permission to publish aspects of the research which are relevant to the Energy Rating Label.

Figure 3: Influences on purchase decisions 2013 and 2014



This research is corroborated by a separate 2014 study by on the Energy Rating Label for DoIS, which showed that the four most important factors in a consumer's decision to purchase an appliance are (in descending order of priority) price, product features, brand reputation and energy use[102].

International learnings – improving impact assessments: There are limited ways to improve the impact assessment and attempts to quantify the E3 program's savings have gone further than other similar programs[103]. However, there may be an opportunity to improve the available data on consumer appliance and energy usage, by using a tool such as the Residential Energy Consumption Survey undertaken every four years in the USA[104].

Stakeholder views: Almost all stakeholders believed that savings have been achieved through GEMS, and many thought these were significant. Although most were not aware of data to demonstrate the savings[105], many pointed to the improved efficiency of products as a result of MEPS[106], which would translate into savings for consumers. In addition, some respondents (particularly the consumer and environmental organisations) had received anecdotal feedback about consumers making savings on energy bills.

> *"When you compare electricity running costs of a brand new appliance that is 3.5 stars versus a minimum standard version, there is a big difference. We receive verbal feedback from our clients that they are saving money." (*Consumer representative*)*

[102] Allen Consulting group (2014) Energy Rating Labels review.
[103] ECOS 2013, International Comparisons of Product Policies
[104] Lawrence Berkeley National Laboratory 2012, International Review of the Development and Implementation of Energy Efficiency Standards and Labelling Programs, February 2012
[105] With the exception of several who referred to the Impact Assessments undertaken by George Wilkenfeld
[106] E3 2009, GREENING WHITEGOODS, A report into the energy efficiency trends of whitegoods in Australia from 1993 to 2009 and E3 2010, Evaluation of Energy Efficiency Policy Measures for Household Air Conditioners in Australia, Prepared for Department of Climate Change and Energy Efficiency: Equipment Energy Efficiency Program, November 2010

"I think it definitely has been successful… energy labelling is a good tool and people need them to make purchase decisions. It also forces manufacturers to make more energy efficient products" (Consumer representative)

Whilst such views do not add to the evidence base per se, they do show that stakeholders have confidence that the scheme is delivering what it is expected to.

6.1.1 Comparisons to other interventions

The impact assessment figures are helpful in informing us of the impacts, but do not provide any assessment of whether the scale of impacts are good, or bad. We therefore sought some comparators. There are two potential sources:

1. Comparison of GEMS to other Standards & Labelling (S&L) programs; and
2. Comparisons to other Australian/New Zealand energy efficiency programs.

Comparisons to other S&L programs: Impact assessments reporting savings on consumers' energy bills are available for both the US Appliance and Equipment Standards program[107] and the EU Energy Labelling and Eco Design Directive. However, it is difficult to make useful comparisons with other programs such as these, as they all work in different markets and product groups and also take different approaches to impact assessment. It may be possible to make accurate comparisons, but that would take very detailed review of one or more other programs and make adjustments to attempt to make an 'apples with apples' comparison. This was outside of the scope of this review.

Comparisons to other Australian/NZ energy efficiency programs: Working with the DoIS, other potential energy programs were investigated to see if useful comparisons could be made[108], however unfortunately this was not possible, due to lack of available data.

6.1.2 Impact of the program on consumers and industry

Consumers

There are three main ways in which the program impacts on consumers:

1. Impact on energy bills;
2. Impact on consumer purchase choices ; and
3. Impact on the range of products within a product group and purchase prices.

With regards to energy bills, the GEMS impact assessment figures estimate savings of between AUD$45 and $120 per household per annum.

Impacts on consumer purchase choices were discussed with product retailers through the stakeholder interviews, who reported mixed experiences. Respondents stated that while some types of consumers did value energy efficiency, a significant proportion did not for many home electrical appliances, and that other key attributes such as suitability, size or capacity and brand were more important. One referenced an internal, unpublished survey which stated that energy efficiency was outside the top 5 decision factors in appliance purchases. This is in contrast to the

[107] US DOE Appliance & Equipment Standards, History and Impacts http://energy.gov/eere/buildings/history-and-impacts
[108] Such as the Energy Efficiency Opportunities (EEO) program (now closed).

evidence shown in Section 6.1[109], although it is not clear which product group or groups this research related to.

With regards to impact on the ranges of products within a product group and purchase prices, evidence from both Australia and the USA shows that raising energy efficiency standards does not necessarily lead to an increase in product prices. Actual price changes were often less than predicted, increases are outweighed by energy savings, and in some cases prices decreased[110]. Some industry stakeholders however, challenged this, stating that some product ranges had narrowed and prices increased (e.g. air conditioning) on introduction of revised MEPS. Technical experts added to the discussion, stating that whilst there may have been some short term impact on the air conditioner market, this recovered swiftly through suppliers bringing more efficient appliances to the market (which were already being sold in other appliance markets with higher pre-existing energy efficiency standards).

Industry

The Department provided the review team with program costs estimates, which are used to calculate costs and benefits using OBPR's Regulatory Burden Measure Framework[111]. These figures estimate an overall cost impact of $464 million on industry of the program over a ten year period ($46.4 million per annum). This includes ongoing substantive costs ($440 million, for product supply and labelling) and administrative costs ($24 million, for responding to legislative updates, record keeping, reporting, internal compliance assurances, registration fees and administration). These costs are assumed to be passed onto the consumer.

GEMS registration records comprise 20,000+ registrations[112], across 22 separate product types, from 1,400 different manufacturers (and retailers) responsible for supplying, offering for supply, or using for a commercial purpose a GEMS product. Of those 1,400+ businesses, 120 identify themselves in the GEMS product data record as having an Australian manufacturing address[113].

This indicates that the majority of industry costs are borne by non-domestic industry.

International experience and learning: It was not possible to source a useful comparison for industry costs for other programs, for the same reasons as reported above for overall program impacts (industry costs data is also less readily available as a published output). However, as discussed, international harmonisation is seen as one key way to mitigate regulatory burden and industry costs. The 'ECOS international comparison of standards and labelling programs' report discusses GEMS as being one of the most internationally harmonised programs globally. Mitigating regulatory burden is explored further in Section 7.

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[109] Allen Consulting group (2014) Energy Rating Labels review.

[110] American Council for an Energy Efficient Economy, Appliance Standards: Comparing Predicted and Observed Prices, Report No. E13D, July 2013, American Council for an Energy Efficient Economy, Better Appliances: An Analysis of Performance, Features and Price as Efficiency has Improved, Report No. A132, May 2013 and E3 2011, Retrospective Review of the E3 Program, Lessons learnt from two reviews, March 2011

[111] OBPR Regulatory Burden Measure Framework.

[112] Some registrations transferred across from pre-GEMS state-based registration systems.

[113] Note that this data field is filled in by the GEMS registrant and is not independently verified. Note also that the GEMS Act defines 'manufacturer' as the person who performs, or has performed on the person's behalf, the last process of manufacture of the product.

Stakeholder views: Some government and industry respondents cited examples of experiences in other sectors (e.g. the automotive industry) where a lack of alignment with international standards has caused issues for Australian industry as markets continue to globalise. Although other factors clearly play a part, these industries found they were unable to compete. Consumer groups were generally in favour of improving standards to meet international equivalents, as they are keen for consumers to realise maximum benefit from the program.

Industry respondents were more mixed in their attitudes to alignment with international standards, reflecting their particular circumstances. Industries reflecting product groups in favour of alignment included: consumer electronics, lighting, HVAC, motors, whitegoods. Product areas that are more wary include gas, water heaters and residential fridges.

> *"We can't risk the situation where we would require specific product for our market that is not required anywhere else. A lot of products and components are produced on a massive scale and manufacturers won't want to make specific items or changes for such a small market."* (HVAC industry respondent)

> *"Australia is so different as far as our conditions e.g. weather conditions, the applied pressures, or the electric voltage, we are different to everywhere else, that is why we need our own standards and certifications here."* (Water heater industry respondent)

Finally, some consumer group respondents made the point that a small burden for Australian industry was significantly outweighed by the overall benefit to Australian businesses, achieved through the program's energy bill savings.

6.1.3 Opportunities to increase impacts

There are three main ways in which program impacts could potentially be increased:

1. Broadening product group coverage;
2. Increasing the stringency of energy efficiency levels; and
3. Adding other policies.

Broadening product group coverage

The savings could be increased by implementing minimum standards and labelling for more product groups where there are opportunities for savings. GEMS currently covers 22 product types and some other schemes have a wider scope (including the USA, China and the EU[114]). The following table compares the product categories covered under the Australian, EU and US programs.

[114] ECOS 2013, International Comparisons of Product Policies and CLASP, 2014: Improving Global Comparability of Appliance Energy Efficiency Standards and Labels

Table 4: Comparison of product categories covered by standards and/or labelling

Product category	Australia	EU	USA
Air conditioning units	√	√	√
Commercial & Industrial (e.g. electric motors, transformers, refrigerator display cabinets)	√	X	√
Water heating	√ gas & electric storage only	X	√
Home entertainment (e.g. TVs)	√	√	√
ICT (e.g. computers, monitors)	√	√	√
Lighting	√	√	√
Non-energy using products (e.g. windows, insulation, taps, showerheads)	X	X	√
Pools	√	X	√ (heating)
White goods	√	√	√
Vehicles	X	√ (tyres)	X

Notes:

- Australia program
  - Water heating applies to gas and electric storage only.
- EU program
  - Operates *Energy Star* for computers and ICT in agreement with US govt.
  - Under "Plans for 2013 and beyond" the EU includes *Water heating* and *C&I*, and *Non-energy using products* are also included for 2012-14. These are not included in the table.
- US program
  - *C&I* includes transformers, commercial water heaters, commercial warm air furnaces, commercial packaged boilers, electric motors, 1-500 hp, clothes washers, A/C, refrigeration.
  - *Pool* includes pool heaters only (not pumps.)
  - *non-energy* includes faucets, showerheads, commercial rinse spray valves.

Review of the product groups covered by these other schemes indicates that specific opportunities exist with non-energy using products, such as the insulation of ducting for air conditioning units (about which industry stakeholder feedback was broadly in favour), insulation and windows. Non-energy using products are being considered for inclusion under the E3 Program because of the impact they can have on the energy efficiency of other energy using products. Analysis of the GEMS coverage of residential, commercial and industrial energy use suggests that the major opportunities for extension are outside the residential sector, for example, commercial refrigeration[115, 116].

Table 5: Products covered by standards and labelling in major economies (CLASP[117])[118]

Table PS-1. **Products covered by S&L (MEPS and/or labels) by economy for all products analyzed**

COUNTRY	MEPS	Labels	MEPS or Labels
US	47	40	70
European Union	62	35	67
China (PRC)	39	42	51
Australia	35	18	41
Mexico	23	23	33
India	5	14	16
Russia	8	9	14
Indonesia	7	8	10
South Africa	2	8	9
TOTAL:	**228**	**197**	**311**

Increasing stringency

The other main prospect for further savings is the setting of more stringent standards for products already covered by GEMS. Although comparisons with other programs must be interpreted carefully, it is clear that Australian performance requirements lag behind other countries for some product categories. There are a range of reasons for this, including:

a) Updating timescales: Technological improvements (that may be partially the result of government policies combined with exogenous improvements, mean that product performance tends to be improving over time) and therefore policy thresholds need to be revisited and adjusted to keep pace with this change. Typically this occurs on a 3-5 year

[115] In addition: Process & Industrial Equipment; Commercial Catering; and Commercial Electronics & Lighting. GWA 2004, Coverage of Residential, Commercial and Manufacturing Sectors, prepared for the AGO and GWA & MEA, DRAFT WORK PLAN July 2011-June 2014, Scope, Resource Requirements and Projected Impacts, 2011-2030

[116] New Zealand is leading development work on commercial refrigeration currently.

[117] CLASP, 2014, Improving Global Comparability of Appliance Energy Efficiency Standards and Labels

[118] Differences in the categorisation of products means that the CLASP figures differ from the DoIS figures. Nonetheless, it provides an indication Australia's situation relative to other countries.

cycle depending upon the rate of change for particular product categories. Over the past 5 years, energy efficiency standards and labelling programs (EESL) in the US and EU have introduced new and upgraded 'standards' for a wide range of products, and these have reflected the performances of current range of products on the market. Many of the performance thresholds in the Australian EESL program have not been reviewed or updated since the introduction of these overseas requirements, and therefore may not have kept pace with technological improvements.

It is also true that the development cycles for EESL programs around the world are not synchronised and as a result there tends to be a 'leapfrogging' effect. The performance standards adopted by one country or region at a certain time may be overtaken by another's when they come to review their standards one or two years later (due to the continuous improvement in product performance noted above). Therefore, at any one time, there may be a certain lack of consistency amongst performance requirements in different regions depending on where they are in their development cycle.

b) Life-cycle analysis: Performance requirements in EESL programs tend to be informed by least-life-cycle cost analysis, either formally or informally. The varying national inputs for this type of analysis will differ and therefore change the determination of the economically efficient energy performance level. For example, the relative cost of energy and different usage patterns vary by region and are likely to have an impact on the life-cycle analysis.

The products for which Australian performance standards lag behind other countries' include refrigerators, lamps, air conditioners, commercial refrigeration, electric motors and standby power[119]. These areas should be reviewed to assess the potential in Australia, especially in light of the stakeholder feedback demonstrating industry's preference to align with international standards where appropriate.

Stakeholder views

Stakeholders were asked whether the right number and types of product groups were covered and whether there should be greater or less coverage and why. They were also asked about stringency, although many found this harder to respond to due to a lack of awareness of how GEMS compares internationally.

Most industry respondents were only able to talk in detail about the product groups they represented, however most stated that coverage was 'about right'. Some (approximately equal numbers) also stated that there should be greater or less coverage than currently.

"They have taken the low hanging fruit first; any further changes would add enormous costs without adding gains." (Industry respondent)

"Just about anything that uses electricity should be able to be ranked. We are trying to reduce energy usage overall, need a simple scheme that tells people exactly what people use so they can make a judgement call." (Industry respondent)

[119] CLASP, 2014: Improving Global Comparability of Appliance Energy Efficiency Standards and Labels

Government respondents (state and Commonwealth) and energy experts also tended to state that coverage was broadly sufficient, but there was recognition that more could and should be done.

"Australia is not leading - rather moving where the international position and industry is moving. It could take a more strategic view." (State government respondent)

Consumer and environmental groups were more in support of extending the program to cover more product groups.

"It is also right that there has been an extension in the scope and that new products are being included." (Consumer representative)

Additional policy measures

As described in Section 3.2.1, exploration of other policy measures was limited to those discussed by stakeholders. One or two stakeholders noted Australia's lack of significant support of endorsement labelling schemes and pointed out that this is an additional measure which could help market 'pull' towards very energy efficient products.

6.2 Conclusions and recommendations

6.2.1 Conclusions

Program outcomes: DoIS's impact analysis indicate that significant and cost effective savings have been achieved by the program, saving householders and businesses money[120]. The majority of savings are likely to have been delivered by MEPS (and associated compliance activities). Whilst it is challenging to find useful comparators, GEMS savings compare reasonably well to other schemes. Notwithstanding this, the review found opportunities for the program to achieve further savings, by extending the range of products covered and/or setting more stringent standards for currently regulated products.

Impact on consumers and industry: There is evidence that consumers use the information provided in the form of energy labels on appliances. There is little evidence to suggest that consumers have been significantly negatively impacted by increased product prices and/or reduced choice as a result of the program. There are costs to industry in delivering the program, however only a minor proportion is born by domestic industry. Overall the costs are significantly outweighed by energy bill savings, experienced by consumers and businesses.

6.2.2 Recommendations

Existing product specific work should continue but areas for improvement include:

1. Improving the evidence base: The program should undertake further outcome evaluation studies to improve the evidence on program savings and cost effectiveness. In particular, this should continue to focus on actual market impacts rather than projections and isolating the impact of the program from other factors. Furthermore, it would be useful to better understand the impacts of labelling through further research in order to help understand the costs and benefits of labelling vs. MEPS.

[120] Note – whilst there are methodological issues with the evidence base, several different evidence sources support the conclusion which provides a good level of confidence in the savings. Furthermore, the model to measure achievements of the program is also being strengthened, which will add more rigour to the assessment in future.

2. Increasing impacts: The program should:
    a. Implement MEPS and labelling for planned products groups and consider further broadening coverage of product groups;
    b. Increase the stringency of standards for existing product groups; and
    d. Give consideration to the further use of endorsement labelling, where it can be demonstrated that this would add value to the Program.

7 Findings: How could the existing process be made more efficient, whilst maintaining an even market for all competitors and achieving an appropriate level of risk control?

This section considers each major element of the program as it currently operates (IGA, the Act and Program Administration), and explores:

1. The effectiveness of the program – considering how well outcomes are achieved through the current framework and implementation process;
2. Opportunities to improve efficiency – including reducing regulatory burden without compromising key fundamental criteria, such as retaining an even market for all and an appropriate level of risk control; and
3. Opportunities to improve effectiveness which could lead to improved outcomes.

This section is split into three sub-sections: the first reviews the IGA, followed by the Regulations (the Act) and finally, the administration of the E3 program. Each section explores each of the three areas above, drawing on both primary and secondary evidence (both national and international) to inform conclusions and recommendations relevant for GEMS. As these sections focus on more detailed aspects of the scheme, the review draws more on national evidence than the preceding sections.

7.1 The IGA

This section explores key aspects of the IGA, drawing on evidence from the agreement itself, discussions with stakeholders involved, in particular those on the E3 Committee and DoIS, and review of international schemes. It explores the governance structures in place, decision making processes and their effectiveness. Funding and administration are not included here as they are covered in Section 7.3 and 7.4.

As described in Section 3, the IGA forms the basis for a Commonwealth-led appliance energy efficiency standards and labelling program in Australia. The IGA sets out the governance structures, principles for developing new or revised GEMS requirements, funding and administrative arrangements on which the program is based.

7.1.1 Limitations

Reliance on a limited range of stakeholder views: Whilst some evidence and insight can be drawn from experience of governance structures of other schemes, the issues discussed are very specific to GEMS, so rely heavily on the views of stakeholders. There are risks associated with this as stakeholder responses are limited by their knowledge and awareness, and also have the potential to be affected by bias. In this case, only a relatively limited sub-set of the stakeholders interviewed within the review had the necessary awareness knowledge, experience to discuss the IGA and governance structures in depth. It was also not possible to discuss the views of the Northern Territory (which has not signed the IGA), as it did not participate in the review.

7.1.2 Governance

Issues discussed with regards to governance of the program were set within the context of international good practice guidance on governance of standards and labelling programs, discussed in Section 5.3, in particular the involvement of different 'levels of government' in design and administration. In this context, the IGA is the agreement which sets out the change from a multi-jurisdiction (nationally co-ordinated) program to a Commonwealth-led program, with decision making and funding from the Commonwealth, and participating states and territories.

Inter-Jurisdictional Advisory Committee (E3 Committee)

The majority of representatives on the committee were supportive of the E3 Committee, operating under the IGA and expressed that it was an effective structure and better than the previous scheme, for a variety of reasons.

"It has improved - there is only one law and only one date of implementation. Legislation allows us to do more - but they haven't taken up the options yet (not seeing more products or more compliance, which may be affected by deregulation or budgets)" (E3 representative)

However, as shown above there was some mention of the scheme not having taken advantage of the broadened scope the regulations provide for as yet. One example of this is the head of power to require industry to provide sales data for regulated products. A voluntary approach to collecting this information is currently being trialled, whereby industry has agreed to provide it on an 'as needed', rather than regular, basis. If this approach is not successful, data could either be purchased or this provision could be brought into effect[121]. If this approach does prove successful, then this provision in the Act could be removed.

Some discussed specific aspects of the program and process which were perceived to have become more rigorous as a result of the structure in place.

"The regulatory impact statement is a COAG-defined process, and is not defined by the states. It is overseen by the Office of Best Practice Regulation - which aims to make sure that the process is rigorous". (E3 representative)

It was clear from the interviews that some states and territories were more active than others in the program.

"The transition to the federal program wasn't a significant change for us. We haven't been especially active in GEMS and haven't seen much change" (E3 representative)

Issues

Two key issues were raised by stakeholders, which were impacting the effectiveness of the E3 Committee in delivering its functions.

1. Differences in jurisdictional priorities: The energy efficiency agenda is the 'common currency' between all states and territories, as this was supported by all as a fundamental reason for the existence of the program and its actions. Beyond this however, there are differences in the

[121] Before 2012, the program managed by accessing this type of data from other sources.

relative priorities of different states, territories and the Commonwealth. Some have more of a climate change/ greenhouse gas emissions focus than others, which doesn't cause major issues as this can and was described as an additional benefit of the program (over energy efficiency). However, it does mean for some that if this agenda is not supported by all, it limits the potential benefits, meaning that the program cannot be as ambitious as it otherwise could be.

However, as with any initiative being implemented by a number of jurisdictions, each will have their own priorities and will seek to prosecute them within the governance framework of the initiative. In the case of the program, there is a solid base of cooperation between all jurisdictions party to the IGA. They all support the objectives of the program and the best practice principles relating to the development of regulations. But from time to time each jurisdiction may have differing priorities in relation to which products are more important than others in setting new or improved standards and or labelling, and other aspects of government administration such as regulation reform.

2. Regulation reform: some states expressed concern that the Commonwealth-driven COAG regulation reform agenda could impact on and/or slow progress with the implementation of the program. On 13 December 2013, COAG issued a communique stating that, "*The Commonwealth has set itself a target of reducing the red tape which impacts on business, individuals and the community by at least $1 billion per year. This complements existing State deregulation activity. All governments agreed to work in their own jurisdictions to improve regulation and remove unnecessary red tape. … All governments acknowledged (…) that collective action is needed to remove the excessive burden currently placed on small business*.[122]"

In addition to the COAG announcement, many state and territory governments have made public statements regarding their commitment to regulatory burden reduction and, in the case of Victoria and New South Wales, have even nominated their own annual reduction targets.

This focus for the work of the E3 Program, to review and evaluate the burden placed on industry by the GEMS compliance requirements and to identify potential opportunities for reducing red tape, is not to remove regulations wholesale, but places a renewed emphasis on the first principles and best practices of policy development. The concern of some states is that the Commonwealth's policy requiring that the costs of new or changed regulation be offset before the regulation can come into effect, may block new regulations coming into force. As no new regulations have been put to the Energy Council for decision since this policy came into effect, its impact has not been tested in relation to the E3 Program.

The E3 Committee operates at the coal face where these potentially differing policy priorities are discussed and resolved. This may create some tensions, and a number of E3 Committee members expressed frustration at the slow rate of progress with GEMS initiatives[123]. However, the IGA governance framework has proved to be robust. Program decisions have been taken by consensus, but voting processes are specified in the IGA should they be needed. Should the E3 Committee not be able to reach a decision on any matter, it can be escalated to more senior

[122] https://www.coag.gov.au/node/516

[123] See further discussion at Section 7.3.1.2

committees of officials for decision. If senior officials are not able to reach agreement, matters will then be put to ministers for decision. Since the implementation of the IGA, the E3 Committee has resolved all matters within the committee.

3. Timescales and resources: A few states raised concerns that states occasionally hold up decision-making mainly due to lack of resource to undertake work rather than reservations about the subject. Furthermore, a few stakeholders noted that the process of achieving agreement from all parties makes the process laborious and contributes to delays, as some parties are more able to engage than others.

Industry, consumer groups and other stakeholder views

Other stakeholder views were sought to explore their perceptions of the effectiveness of the E3 program operating under the IGA.

> *"Very happy generally with the dialogue, especially recently. The energy efficiency regime has pushed suppliers into making more energy efficient products".*

> *"[My] First experience with GEMS was when the government tried to implement a program without consultation with industry - this program then went on to take over 10 years to implement. The industry did not want to be dictated to or dealt with like that, but it has changed greatly since then with a much more cooperative program. Just the fact that you're talking to us is a reflection of that".* (Industry representative)

7.1.3 Development of GEMS requirements and administration

The IGA sets out the principles by which the program will interact with the Act and principles by which new and revised GEMS requirements are developed, including the process and administration. These relate to the effectiveness of the regulations and program administration, which are explored in Sections 7.2 and 7.3.

Development of GEMS requirements

The IGA specifies that the 'development of proposals for new or revised GEMS requirements must undergo Regulation Impact Analysis (RIA) as required by COAG's 'Best Practice Regulation: A Guide for Ministerial Councils and National Standard Setting Bodies'. This remains the best practice approach and should therefore remain the basis for new or revised GEMS requirements.

Financial arrangements

As a party to the IGA, all jurisdictions have agreed to make annual funding contributions as set out in Section 3.1.3. To our knowledge, all participating jurisdictions have paid their annual contributions although, in the early years of the program, some were late which resulted in delays with some activities progressing.

The indicative budget for work funded under the IGA is identified up to financial year 2015-16. The IGA specifies that the Energy Council must unanimously agree to proposed budgets. For 2016-17 onwards, while an indicative budget has not been specified in the IGA, jurisdictions will need to continue to agree to the work plan and budget for each successive financial year. .

Dispute resolution, withdrawal and termination

Throughout the interviews, and as noted above, no specific examples were provided which required the dispute resolution process (e.g. referral to the Ministerial Council) to be used. This is not unexpected as all jurisdictions support the policy approach, and have shared interests in its successful implementation. While there has been robust debate about the merit of different aspects of the work plan, these have been resolved within the E3 Committee. There is therefore no reason to believe that the dispute resolution provisions in the IGA would not be effective if needed.

As there has been no case of a jurisdiction withdrawing from the IGA or seeking to terminate the IGA, the effectiveness of these provision have not been tested. However, the provisions in the IGA set out in a very clear manner how a withdrawal and termination is to be actioned if needed. These provisions therefore appear suitable and there is no reason to doubt that they would be effective. For the above reasons, these provisions of the IGA have not explored in further depth

7.1.4 Conclusions

1. The IGA provides a sound governance structure, which is good practice as it formally involves all jurisdictions in the policy process, bringing them together to deliver a national program led by the Commonwealth. It also allows a pooling of resources and expertise to help deliver greater outcomes more effectively than would be achieved otherwise. This is in general supported by members of the E3 Committee who recognise key advantages over the previous state and territory run scheme.

2. However, there are issues in practice, which are discussed in further detail in Section 7.3.1.2 These include

    - Differences of priorities between jurisdictions which can create some tension, such as the concern some states have in relation to Commonwealth's offsetting policy, but these matters have been resolved through discussion in the E3 Committee;

    - Lack of active involvement from some states and territories, both in the work of the E3 Committee and in managing E3 projects on behalf of the program; and

    - Some perceptions that the structure holds up the process, as many parties need to be brought up to speed in order to have the same understanding necessary to provide input.

Despite these issues, wider stakeholders are supportive of the E3 Committee and its work and perceive benefits over the previous scheme.

The review concludes that the IGA provides a strong framework for national cooperation in implementing GEMS and the E3 Program. However, should any party to the IGA decide not to meet their obligation to provide annual funding to the program, provisions allowing only those jurisdictions that contribute funding to participate in decision making should be applied.

7.1.5 Recommendation

Retain the IGA in its current form as it represents good practice, providing a strong framework for the governance of the program.

7.2 The GEMS Act 2012

This section explores the GEMS Act, drawing on evidence from review of the Act itself, the Regulatory Impact Statement underpinning the Act, program documentation, wider literature and stakeholder feedback.

An explanatory memorandum was published alongside the Act which provides a useful overview and explains each clause within it[124]. Each key area of the Act was reviewed using this explanatory memorandum. This would be too detailed to set out within this report, so it is provided in Section 9 of the Appendix. A summary of key outputs is provided below.

The effectiveness of the Act was assessed by considering the outcomes delivered by the scheme, comparing the regulations with the previous state based legislation and discussing these further within stakeholder interviews. Furthermore, the review included consideration of whether each major element of the Act was necessary and/or efficient, informed by evidence from other schemes and discussions with experts (Section 7.2.2). In doing so, potential opportunities to improve efficiency and effectiveness were identified (detailed in Sections 7.2.3 and 7.2.4).

7.2.1 Effectiveness of the Act

Delivery of outcomes

The evidence presented in Section 6 provides a clear indication that the Act is supporting delivery of significant, beneficial outcomes. As discussed in Section 6, it is not possible to quantify the impact on program outcomes achieved by the transition from the previous multi-jurisdictional scheme to GEMS. However, as discussed further below, detailed review of the Act has not unearthed any significant issues which results in concerns that the Act would be delivering lesser outcomes.

Comparisons between the GEMS Act and the previous multi-jurisdictional scheme regulatory framework

It is challenging to make comparisons between the GEMS Act and the previous scheme because the GEMS Act was only implemented in October 2012 – which is a short time frame in which to make useful comparisons[125]. However it was possible to draw insights and evidence from some sources, including:

1. The rationale upon which the Act was based and evidence of inconsistencies in the application of standards and labelling schemes in Australia. As reported in Section 3.1.2, there were two main issues which drove the implementation of the GEMS Act:
    a. Jurisdictions implemented regulations on different dates; and
    b. Some jurisdictions implemented some classes of air conditioning regulations which were more stringent than the nationally agreed levels.

    Both these issues resulted in product suppliers needing to comply with different standards in different jurisdictions, leading to increased regulatory burden. The RIS which underpins the Act undertook a cost benefit analysis (CBA) to estimate the impacts of moving to a national scheme. As detailed in Section 3.1.2, the CBA estimated significant benefits would be derived as a result

[124] Greenhouse and Energy Minimum Standards Bill 2012 Explanatory Memorandum.
[125] Several Government and energy expert stakeholders noted that it was relatively early days.

of the transition. The RIS uses estimates of benefits and costs, using OBPR guidance, and undertook analysis to assess the impact of:

- Regulatory framework changes (e.g. the ability to achieve national consistency, and efficient and administrative arrangements including compliance);
- Changes in scope – such as regulating non-electricity using products such as gas water heaters; and
- Changes in compliance levels and the speed at which new determinations can be set.

Each of these analyses presented significant benefits over the pre-existing scheme. The RIS is helpful in understanding whether benefits could eventuate, and the assumptions made in the analysis appear plausible and sensible. However, the analysis would need to be repeated and based on actual costs and benefits evidence in order to provide increased confidence in the cost benefit figures.

2. Stakeholder views: Most industry stakeholders, and in particular manufacturers, perceived that the administrative burden had decreased as a result of the transition to a national scheme.

"It's very hard to produce something for one area and not another... it's very, very hard, that was our biggest complaint in the past." (Industry respondent)

7.2.2 Detailed review of the Act - summary

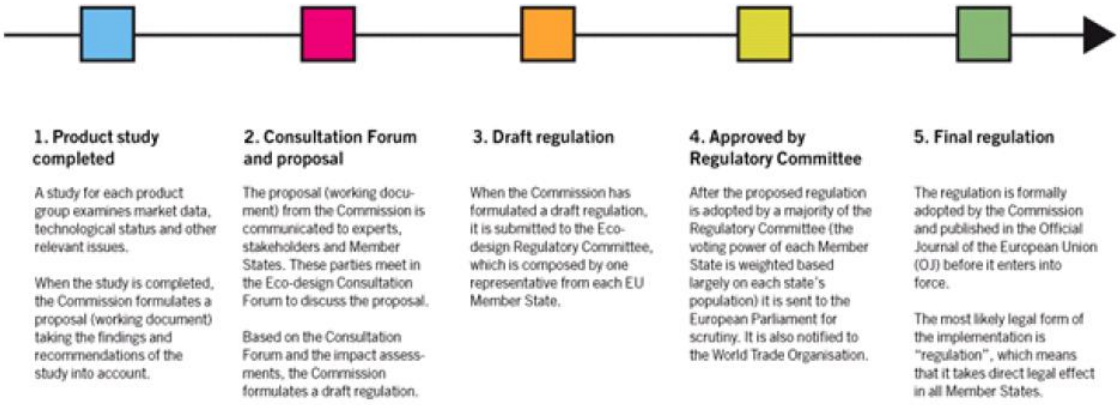
Key finding: Overall the review revealed no fundamental gaps and/or opportunities to remove any major elements of the Act without fundamentally compromising delivery[126]. A summary of key aspects of the review of the Act, which support the conclusions and recommendations, is provided below.

1. **Scope** - the scope of the regulations allows coverage of residential, commercial and industrial equipment and both direct energy using (electricity and gas) and products which affect energy use (e.g. insulation, air conditioning ducting). This covers a large proportion of overall energy use and is consistent with many international schemes[127]. A few stakeholders supported the removal of some product group areas (e.g. non-energy using products) on the basis that it could mean regulation in the future, but this was significantly outweighed by strong support for the inclusion of all product areas from government, consumer groups and most of industry. For example, expert energy efficiency stakeholders discussed that the previous schemes contained gaps (e.g. exclusion of products which influence energy use) which provided greater possibilities for achieving perverse outcomes (e.g. highly efficient heating and cooling systems, which need to work outside of their high efficiency ranges due to poor ducting or insulation). The GEMS Act covers products that don't use energy themselves but can impact on the efficiency of energy-using products. In addition, the broad scope provided flexibility to allow scheme administrators to explore and assess which interventions would deliver the greatest benefit at least cost to industry and consumers. The flexibility was also felt to be important as the cost effectiveness of taking action depends on fuel prices and technology costs, both of which can vary over time.

[126] A detailed assessment of the regulations by clause is provided in the Appendix.
[127] ECOS 2013, International Comparisons of Product Policies.

2. **Determinations process**[128] - the Act requires a RIS and preceding steps to be developed and agreed as part of the determinations process[129] in order to ensure there is a robust case for intervention and that regulatory burden is assessed for each product group. The RIS process follows OBPR guidance, which requires that regulation is a 'policy of last resort' and there is evidence from review of the RIS's implemented since (and prior to) the introduction of GEMS that this has been followed. The RIS's must also be signed off by OBPR to show that they comply with these requirements. From a regulation development perspective, the process set out is similar to that of other schemes, for example that of the EU (Figure 4) and US schemes, which includes two consultation stages.

Figure 4: EU Ecodesign determinations process overview



3. **Compliance and registration -** The GEMS regulatory approach to compliance is considered best practice within international scheme reviews[130] and a model to be followed. Fundamental to this is the requirement for registration, which assists targeting of compliance activities by allowing tracking of models currently on the market and follow up with manufacturers (an issue viewed by industry stakeholders and consumer groups as fundamental to a successful scheme). Market monitoring and enforcement powers set under the Act are also considered best practice[131,132] as they have a highly developed and transparent structure that is capable of targeting non-compliance and has a flexible set of responses that enable the regulator to implement enforcement measures proportionate to the severity of the transgression.

7.2.3 Opportunities to reduce regulatory burden

While detailed review has found no fundamental gaps or efficiencies, the following opportunities to reduce regulatory burden and improve outcomes have been identified. These are split by those which are recommended for action and those which are not, along with their rationale.

The process by which opportunities were identified and assessed included:

1. Opportunity identification – from exploration with stakeholders and review of the regulations.

[128] The determinations process is explained in the Appendix under Operation of the Equipment Energy Efficiency Program (E3).
[129] Including product profiles, risk assessment, cost benefit analysis, stakeholder consultation.
[130] ECOS 2013, International Comparisons of Product Policies.
[131] ECOS 2013, International Comparisons of Product Policies.
[132] Note that the market monitoring powers – requiring companies to provide sales data - have not been used by the GEMS Regulator and are not planned to be used.

2. Opportunity assessment – criteria used to assess opportunities included:
   a. Evidence supporting the existence of the opportunity (e.g. is it a clear requirement of the regulations, have stakeholders identified it);
   b. Viability of the opportunity; and
   c. Impact on core scheme objectives including:
      - What impact would there be on savings? (either through standards and/or compliance levels)
      - What impact would there be on costs, and regulatory burden?

Opportunities identified and recommended for action

1. **Requirement for registrants to provide information relating to import, manufacture etc. of products (Part 5, Division 7, sub-division B).** This requirement places a burden on industry through the need to keep and manage such data should it be required to be provided by the Regulator. Standards and labelling best practice guidance[133] states that this information should be gathered as it helps to determine the impact of the program. A voluntary approach to collecting this information is currently being trialled, whereby industry has agreed to provide it on an 'as needed', rather than regular, basis. If this approach is not successful, data could either be purchased or this provision could be brought into effect[134]. If this approach does prove successful, then this provision in the Act could be removed. Using the OBPR Regulatory Burden Measure Framework, the Department estimates this would remove over $12 million in costs over 10 years.

2. **Allowance for state and territory laws to go beyond levels required by GEMS (Part 1, Division 5, Clause 9).** This clause allows state and territory laws to set more stringent standards if deemed necessary on the basis that this ensures jurisdictions have the ability to regulate energy efficiency to meet local variables without undermining the objectives of the national program[135]. This clause has not been applied to date under GEMS but does place a risk of increased regulatory burden on industry if it were to be in future, so should be considered for removal. Note, however, that this would be ineffective unless the states and territories also repealed their own legislation.

3. **Process for updating GEMS determinations (Part 4, Division 2, Clause 35).** This clause specifies that the Minister cannot vary a GEMS determination (except to make minor administrative changes).The determination must be made anew, as the procedures required to replace a determination are the same as for establishing a new one. These requirements are set out in COAG's guide to Best Practice Regulation (2007). In practice this results in unnecessary burden by requiring the full COAG Best Practice Regulation process to be adhered to in all cases. This could be made more efficient and faster if a process were enabled which acknowledged previous analysis (e.g. Decision RIS) which had been accepted to establish regulations (if it remained relevant), and if certain conditions

[133] CLASP (2005) Energy Efficiency Standards and Labelling handbook.
[134] Before 2012, the program managed by accessing this type of data from other sources.
[135] To occur it does require the agreement of all participating jurisdictions.

were met (e.g. agreement by stakeholders). Further investigation including legal advice, and possible changes to the COAG Best Practice Guide, may be required to enable this.

4. **Timescales governing the length of registration periods (Part 5, Division 5, Clause 48).** The regulations specify a default timescale for registration of five years. There may be cases where a registration period of over five years is appropriate. There is currently no scope for the Regulator to vary this, but provision could be allowed for by amending the Act. This would provide a small saving to industry (<$50,000 p.a.[136]).

Suggestions by some industry stakeholders which are not recommended for action

1. **Registration requirements against GEMS determinations (Part 2, Division 2, Clause 13).** The removal of registration would reduce industry costs on an annualised basis, by approximately $5.3 million[137]. As discussed in Section 7.3, registration is seen as a crucial element of an effective compliance regime. It is also one way to understand the impacts that the program is having. Whilst it is not possible to quantify the benefits of registration (e.g. in terms of improved compliance activities), it is perceived by most stakeholders that the benefit of keeping registration significantly outweigh the costs.

2. **The ability to charge fees (Part 2, Clauses 8, 9[138], Part 6, Division 4, Clause 77).** It is not recommended to remove the ability to charge fees for registration and other aspects of the program. This is on the basis that the program was intended to operate on a partial cost recovery basis, which is supported by industry. Further, it would remove the potential for a useful funding stream and therefore increase costs to government. It is however, recommended that the level of fees be reviewed. This is discussed in Section 7.3.

3. **Ability to limit grandfathering (Part 4, Division 2, Clause 31).** In the context of the GEMS, the term 'grandfathering' refers to the period for which non-compliant products may continue to be sold. Removing this clause (which allows a limit for grandfathering) has been raised by industry as a way to reduce burden, which could be implemented. However, there are no examples of grandfathering limits having been implemented, nor obvious examples of where this would be a risk in the near future. This means that there is no actual regulatory burden impact of the measure, but it would leave the scheme open to risk if such an issue became apparent in a future GEMS determination. Finally, if grandfathering were to be identified as an issue, the issue would be addressed and discussed within RISs, which would allow industry the opportunity to discuss and respond.

4. **Removing products which affect energy consumption of other products such as insulation, window glass and air conditioner ducting (Part 2, Division 2, Clause 11)**. The Act specifically expanded the scope of the scheme to cover these products on the basis that they present a

[136] Calculated using total annualised registration costs (DoIS OBPR Regulatory Burden Measure Framework estimate), and assuming that extensions would be appropriate for less than 10% of registered products (i.e. products which are likely to be on the market for more than 5 years).
[137] This estimate includes costs of registration and the administrative burden on industry to register products.
[138] Of the Greenhouse and Energy Minimum Standards (Registration Fees) Act 2012.

significant opportunity to further reduce energy consumption and householder bills and to allow the scheme to focus on those which represent the largest savings for least cost. This has not changed (and more of these products are now covered by international schemes[139]), so we would not recommend their removal. Furthermore, some appliances are not significantly affected by other factors (e.g. televisions), whereas others can be (e.g. air conditioning, heating). The provision allows for greater consideration of key parts of the system where there are these dependencies, which can help deliver a significantly better energy efficiency and cost saving outcome.

5. **Including specific timeframes for implementation of determinations once they come into force within the regulations (Part 4, Division 2, Clause 34).** Some industry stakeholders have requested specific timeframes within the regulations. The advantage of this is that it provides industry with additional certainty that they will have sufficient time to ensure compliance prior to a determination coming into force. However, the disadvantage of this is that this would remove flexibility to move faster, or slower, if necessary (or due to unforeseen circumstances)[140]. Ensuring that timescales are discussed and agreed early in the RIS and determination development process[141] then removes the need for specifying this within the Act.

7.2.4 Opportunities to improve outcomes

In addition to streamlining actions, some opportunities to improve outcomes, either through amendments to the Act, if required, or simply changes to program administration (as noted below) were also identified. These include:

- Implementing strategic forward planning;
- Introducing a set timetable for developing and implementing (new or revised) determinations to ensure timely delivery;
- Maintain a policy of seeking alignment with international schemes (see further discussion in the Appendix at Section 9.1);
- Fulfilling requirements to publicise offences, contraventions and adverse decisions; and
- Improving the guidance for models/families of models criteria.

Further details of these opportunities and how they relate to the Act are detailed in the Appendix.

All of these opportunities are possible to implement through making amendments to program administration (covered in Section 7.3), as opposed to amending the Act, which would involve significant regulatory burden. As such, these opportunities have been recommended for action within Section 7.3.

Other issues

For much equipment covered by GEMs, the energy efficiency delivered is related to the technical capacity of the equipment. However, for some equipment, its installation and maintenance can have a major impact on its efficiency operation. While the GEMS Act does not apply to installation and maintenance, there is scope to improve equipment performance for consumers by focusing on end-

[139] Such as the US and EU schemes.
[140] For example, the fans industry have requested regulation and for it to be implemented as soon as possible.
[141] I.e. at the product profile and consultation RIS stages. International schemes also have 'fast 'and 'slow' track processes.

use regulations, for example under the Ozone Protection regime[142]. The ozone Protection regime already has the infrastructure to deliver such an outcome and its extension to energy efficiency matters may have little additional cost. While it is beyond the scope of this report, further work will be needed to analyse the options for end-use controls. This matter is currently being considered by the Department of the Environment in its review of the Ozone Protection Synthetic Greenhouse Gas Management Act. A joint project between the Department of the Environment and relevant industry groups may be a sensible step forward.

In relation to the registration system, industry supports the coordination of data collection across government. Data used across different programs should only be collected once and shared between different programs or activities. In the case of GEMS, data collected for other regulatory purposes – such as the Ozone Protection and Synthetic Greenhouse Gas Management Act – should be collected once and shared. The capacity for one data collection process to fulfil multiple regulatory needs across portfolios should be enabled.

7.2.5 Conclusions

1. The Act supports the delivery of significant benefits compared to their costs.

2. It is not possible at this early stage to conclude with confidence that the Act is supporting delivery of improved outcomes over the previous multi-jurisdiction scheme. However, providing consistency in standards and labelling reduces regulatory burden on industry and is viewed positively by most industry stakeholders.

3. Overall, the Act appears to be effective and necessary with provisions in place to ensure they are delivered at least cost to consumers and industry, whilst maintaining a fair and equitable market.

4. Some opportunities have been identified for streamlining to improve efficiency and for amendment to improve outcomes. None of the opportunities identified represent a fundamental risk to the achievement of the program's objectives.

7.2.6 Recommendations

1. The Act should not be fundamentally changed. To do so would risk adverse outcomes such as reduced opportunity available for implementing energy efficiency measures and/or significantly increased risks to effective delivery and/or compromising equitable markets.

2. The program should consider and progress the identified opportunities to reduce regulatory burden and improve outcomes.

[142] http://www.environment.gov.au/protection/ozone/legislation

7.3 Program administration

This section examines the program administration, drawing on evidence from the review of program documentation, wider literature and stakeholder feedback.

The effectiveness of program administration is assessed by reviewing the major elements of the program's delivery, focussing on planning, GEMS determinations process, product registration and compliance. In doing so, opportunities to improve efficiency and effectiveness, and reduce implementation costs and the regulatory burden, are identified.

7.3.1 Effectiveness of administration

7.3.1.1 Strategic planning

Strategic planning, for the purposes of the review, is defined as planning for the overall program, which serves to identify needs, select product groups for investigation and set out a development schedule for regulatory or non-regulatory action.

Although strategic planning is undertaken, many stakeholders stated that this could be more formal, rigorous and transparent. A strategic work plan is currently under development by DoIS and so while this wasn't covered in the review, it may address some of these concerns in the near future.

International evidence and learning: Most of the major standards and labelling schemes internationally have some form of strategic planning process.

Discussion with energy experts, review of international schemes and best practice suggests that both the EU and US schemes have well regarded and robust approaches to strategic planning[143] [144]. This was felt to be because they have sufficient resources to invest in market and/or technical assessments to inform plans. Furthermore, once a plan is agreed, resources are allocated in order to stick to the procedure and timelines as far as possible. For example, the European Commission has commissioned a project to inform the development of the 2015-17 Ecodesign Directive workplan. The year-long project involves the identification of 30 product groups for investigation, undertaking high level market and technical assessments, alongside stakeholder consultations, in order to inform a priority list of products, which is then passed to the Commission to develop further.

National evidence and learning

Prior to the transition to GEMS, a number of strategic plans were published for specific sectors (e.g. commercial refrigeration, HVAC), which were used as a tool to develop work plans, reviewing targeting and appropriateness of product groups selected for regulation including timescales for doing so. The plans were supported by three year work plans, which included energy efficiency projections to help inform planning. However, the strategic plans were not conducted for all product sectors, and neither the strategic plans nor the three year work plans have been revisited to date under GEMS.

Stakeholder views: Many stakeholders, across industry, consumer and environmental groups expressed a desire for greater visibility of, and input into, the strategic direction of GEMS. Greater

[143] US Appliance and Equipment Standards program rule making schedule.
[144] EU Ecodesign Directive study to establish the 2015-17 Work Plan.

involvement and transparency at this stage, it was felt, would provide reassurance about the program's aims and directions and the rationale over why certain measures were selected for determinations over others. Furthermore, some respondents who had been actively involved with GEMS since 2012, expressed that this would also be a good way to improve efficiency, as it would help prevent 'strategic' challenges being made during the GEMS determinations process (i.e. questions as to whether or not that product group should be selected for regulation).

7.3.1.2 Development of GEMS determinations

The review explored the effectiveness of the current process for developing GEMS determinations, how it compares to other schemes and stakeholder views.

1. Robustness

In 2012, the Lawrence Berkley National Laboratory (LBNL) undertook a review of international standards and labelling schemes and reviewed the regulatory impact assessment process between the US, EU, Australia and China[145]. This showed that Australia compared well internationally, in particular with regards to balancing rigour with market conditions and other factors. For example, the US, China and EU undertake detailed technical assessments of products to determine the likely cost of improving energy efficiency[146]. Rather than repeating these specifically for Australia[147], the scheme reviewed these analyses and utilised them to inform RISs for their own markets.

Furthermore, a 2004 comparison of the US and Australian processes[148] suggested that Australia's process has been highly effective, especially with regards to its approach to international harmonisation and focus on cost-effectiveness[149]. However, the comparison study identifies opportunities to improve the program's cost-benefit analysis approach, including undertaking further investigation of the impact of MEPS on product prices and more detailed data on product usage. This was recommended as a further approach if the benefits of doing so outweighed the costs[150].

A high level review of the three RISs which have been implemented since GEMS came into force was undertaken as part of the review[151] to explore the process in greater depth to understand what evidence was used and how the process was undertaken. Whilst it was not possible to explore the CBA process and modelling assumptions in depth, the following areas are notable.

Elements which appeared to be robust:

- The modelling undertaken and assumptions used are clearly detailed and transparent;

[145] Lawrence Berkeley National Laboratory 2012, International Review of the Development and Implementation of Energy Efficiency Standards and Labelling Programs, February 2012
[146] ECOS 2013, International Comparisons of Product Policies
[147] Which is costly and time consuming and arguably less worthwhile as there is not a major manufacturing base in Australia and most products are imported.
[148] Comparison of Australian and US Cost-Benefit Approaches to MEPS Environmental Energy Technologies Division Lawrence Berkeley National Laboratory (LBNL) Berkeley, California, USA
[149] Note that although the review was conducted on the program prior to GEMS, there have been no significant changes that would reduce the impact of the RIS process. A number of small improvements were recommended, but these were not expected to produce a dramatic impact on the results of the process.
[150] Comparison of Australian and US Cost-Benefit Approaches to MEPS Environmental Energy Technologies Division Lawrence Berkeley National Laboratory (LBNL) Berkeley, California, USA
[151] This included RISs for computers and monitors, gas water heaters and phase out of greenhouse intensive water heaters.

- Several scenarios are modelled in order to help inform objective decisions; sensitivity analysis and consideration of risks are also considered;
- Issues which would have a significant effect on outcomes are considered, such as compliance and product performance;
- Regulatory burden on industry is given a clear focus;
- Consultation is clearly undertaken both as part of the RIS and in steps prior to the RIS, albeit sometimes response rates appear to be low; and
- Recommendations are based on those which deliver the greatest benefit to society as a whole (as determined by the modelling approach).

Issues:

- There may be opportunities to gather more primary evidence to inform the assessment of market failures, barriers and industry impacts – to help to robustly inform the existence and the scale of issues[152].
- Voluntary measures are considered, but in some cases ruled out prior to in-depth review (albeit good reasons for this are usually provided).

It should be noted that the review of the RISs was high level, and therefore limited. It would be recommended to undertake a more detailed review to further inform the issues set out above. Furthermore, in all three cases, the RISs were initiated prior to GEMS and were developed and approved under the OBPR and COAG best practice guidelines in place at the time[153].

2. Reducing industry burden

As discussed above, Australia is noted in the literature as leading in terms of international harmonisation through standard setting in order to help reduce burden for industry. This view was supported through the stakeholder interviews, where several government, industry and product energy efficiency experts noted that efforts were made to achieve harmonisation. This was felt not only to reduce burden for industry, but also to improve the range of products available within markets. As Australia and New Zealand are comparatively small product markets, suppliers could choose not to bring products to the market if there were significant obstacles.

3. Awareness and consultation

Stakeholder feedback indicated that:

- Industry respondents had mixed experiences of communication with DoIS (for example, the air conditioning industry noted their positive experiences) and therefore a consistent engagement approach could contribute to accelerating the RIS process, as any potential difficulties would already have been explored. All respondents expressed a preference for a participatory and collaborative approach, although awareness and understanding of the process varied, with some using industry associations to relay information.

[152] These were identified as issues relating to the product profiles which inform RISs. For example, the gas water heater RIS uses existing evidence to inform the existence and scale of market failures (e.g. tenant landlord issues), however primary evidence was not undertaken to inform the nature and scale of issues in the Australian market.

[153] It is worth noting that improvements are being made to the RIS process under GEMS, which may mitigate these concerns for new RISs.

- Consumer and environmental representatives generally did not have sufficient knowledge of the RIS process to feel able to make informed comments about the process itself.
- Many consumer and environmental representatives recognised that they had not been extensively involved with the process to date (and this view was reflected by several government stakeholders). Government and technical expert respondents identified that input from consumer and environmental organisations is essential in ensuring that GEMS reflects the full range of views on product energy efficiency. However, NGOs highlighted funding and resources as key barriers to participation for their organisations, particularly as the scheme is complex and requires them to keep abreast of many technical issues and documents in order to effectively represent their members' views.
    - A couple of non-government organisation (NGO) respondents put forward the approach taken by the Consumer Advocacy Panel[154] as a way of supporting the input of NGOs, by providing resources for participation and grants for research.
    - Other potential solutions could include supporting more varied roles, such as encouraging organisations to disseminate information and educate consumers. This provides a less intensive commitment for organisations whose main focus is not energy efficiency, but could enable DoIS to reach specific audiences and especially those less likely to access the Energy Rating website (e.g. low income households, seniors, non-English-speaking communities).
- Finally, some stakeholders (across the groups) had poor awareness of the detailed process. In some cases, this led to a perception that they were consulted late in the process, which may also be mitigated by the strategic planning and stakeholder engagement activities discussed above.

The planned introduction of a stakeholder engagement plan would ensure that best practice is shared throughout the team, whilst allowing flexibility to tailor the approach to industry circumstances. The agreement and application in October 2014 to a new work planning process (projecting forward three years) will likely improve the openness and transparency relating, and allow stakeholders to engage in work planning. The new Statement of Service has been published on the Energy Rating website and sets out E3's principles for engaging with stakeholders. This will serve to embed in program practices approaches that are open, transparent, inclusive and consultative.

4. Timescales

In general, the timescales under GEMS are comparable with the regulatory development processes undertaken by other programs (for example: in the US approximately 3.5 years; China between 1 and 3 years; and Japan about 2 years, accelerated by the greater use of modelling)[155]. However, Australia and New Zealand have considerably smaller product markets, which mean it could be expected that the process ought to be faster[156]. There are also

[154] The Consumer Advocacy Panel was superseded by Energy Consumers Australia in January 2015.
[155] ECOS 2013, International Comparisons of Product Policies
[156] On the basis that there are fewer market players, which means it should be easier and faster to consult with the market and make decisions.

examples where the process has been lengthy, such as standby power where the process commenced in 2004 and has yet to be finalised.

There are examples in the literature where international schemes have used alternative processes to help expedite the process. For example, the USA has introduced the 'negotiated rulemaking' process to make their process more efficient[157]. Industry and energy efficiency advocates, including NGOs and state level energy agencies, set up an independent process to try and reach agreement on proposed energy efficiency standards. If they are able to, the Department of Energy will assess the proposed standards and may decide to adopt them if they deem that they satisfy regulatory requirements. By omitting some of the secondary analytical steps and public review processes, this process can shorten the time taken to develop and issue the ruling[158].

Insights from the interviews with stakeholders across both government and industry highlighted concerns with the time taken to complete the RIS process, including:

- The data used for analysis, which can become outdated, leading to reduced outcomes; and
- Protracted periods of uncertainty for industry, as most felt unable to take action until the determination is made (to safe-guard against last-minute alterations).

The causes of the delays vary for the affected products' RIS processes. In most cases, a combination of factors impacted timescales, including: negotiations with industry, particularly where new stakeholders joined the process at a late stage; reaching agreement within the E3 Committee; slow progress through OBPR approval; and internal disruptions within jurisdictions (such as agency reorganisations and staff turnover).

> *"Projects can and have 'reset' because of staff turnover and things appear to go slow"* (Government respondent)

While noting the above reasons for project delays, strategies need to be put in place to ensure projects progress within reasonable timeframes. Each of the above issues impacting on project delivery are discussed further below:

Engagement with industry: Robust stakeholder consultations and negotiations are crucial in developing any product standard or labelling proposal. Proposals follow a generic approach outlined in Appendix 2 which is adapted to suit the circumstances relating to each project. As standards and labelling proposals directly impact industry, they have views and need appropriate timeframes for engagement. These timeframes are currently identified as part of project specific plans, and they need to recognise that many businesses have finite resources and capacity. As a result, quick turnaround timeframes are generally not feasible. Timeframes do need to be set and adhered to as incremental extensions of different processes can cumulatively negatively impact timelines.

[157] http://energy.gov/eere/buildings/appliance-standards-and-rulemaking-federal-advisory-committee and http://energy.gov/gc/articles/doe-announces-changes-energy-conservation-standards-process
[158] ECOS 2013, International Comparisons of Product Policies

Some government and industry respondents perceived that industry was sometimes consulted late in the RIS process. This led to a perception that the opportunity for them to influence the outcome was reduced, with a decision to regulate a product (and the way it will be done) having already been made. Likewise, they identified the effectiveness of consultation with consumer organisations as another potential hurdle to approval by OBPR, as the limited consultation to date may not reflect all views. Ensuring early and broad consultation would alleviate some of these concerns.

Standards development: Standards Australia (SA) processes are set by SA, and timeframes largely determined by the various committees overseeing the various standards. Timeframes are therefore outside the control of the E3 Program. If standards committees do not keep to their timelines, this will impact on E3 projects. To partly address this, DoIS is considering assessing each of its projects and determine if the standards work needed can be undertaken within the department. Standards that align to government, industry and consumer stakeholder interests, and standards called up under the GEMS Act would also be free. This approach, although yet to be developed, has the potential to streamline this work.

E3 Committee oversight and agreement: The E3 Committee meets twice yearly where the direction of the program, and progress of individual activities, is formally discussed. This approach has provided the necessary formal meetings where decisions are taken on the budget and work plan. At other times, the states and territories can, and do, communicate with the DoIS on program activities. In the second half of 2014, DoIS and EECA initiated monthly teleconferences to discuss issues relating to the implementation of the program in Australia and New Zealand. This has provided a good basis for discussing and confirming progress on activities and other issues.

In April 2015, DoIS re-established a program board that oversees the implementation of the E3 Program (among other programs). The program board had been on hold as a result of machinery of government changes in which the program had moved from one government agency to another. The re-establishment of the program board provides a level of assurance and oversight (not decision making) in relation to the implementation of the program. Its role is to consider risks and issues impacting on the timely implementation of program activities. This is a positive step, and should provide an additional level of program oversight.

As the E3 Committee oversees the work of the program, and as delays occur which may or may not be in the control of the Committee, the Committee as a whole would benefit from greater visibility of the status of work plan activities. It is therefore recommended that the E3 Committee hold teleconferences once every two months to review progress with work plan activities.

E3 Committee member requests to expand the scope of projects can lengthen project timelines. This occurs when draft reports (e.g. product profiles, research documents, draft consultation and decision RISs) are circulated and in response, additional requests are made to include new options or analysis. At one level, this is hard to avoid as not everything is apparent up front

with a project. However, to help avoid delays with projects, requests for additional work should be considered carefully and only be proposed if they will have a material impact on the project.

OBPR approval: Securing OBPR approval of consultation and decisions RISs can be lengthy. Both OBPR and DoIS have sought to streamline processes and build experience and capacity, including placing an OBPR officer in the relevant branch in the department responsible for writing RISs. This was useful in building engagement, but DoIS has advised it did not lead to a marked improvement in RISs being cleared at a quicker pace. RISs also need to be well argued and crafted for the decision makers. E3 RISs can include too much technical information that needs to be included as an annex with the RIS itself a relatively short document focused on the key arguments. Some past E3 RISs are noted on the OBPR web site as representing best practice.

Issues that have been raised which complicate the RIS process and slow approval include inconsistencies in the approval process and need to re-argue the case for action from the start on each occasion. There has been occasion where at the working level a section of a RIS has been approved, but at a later stage it is not agreed. Further, under current processes it is necessary to re-establish or re-argue the market failure, without any reference to past RISs where the market failure is the same and was accepted. While it is necessary to establish the case for action in a new RIS, and present current data, where there are parallels to what has previously been approved, being able to reference that work in some way to justify the rationale for action could save time and streamline the RIS process.
Organisational issues within jurisdictions: Governments re-organise their administrative arrangements as and when they consider it necessary. Staff changes can be unpredictable and therefore difficult to plan around. These events can be disruptive and lead to time delays, but agencies seek to minimise the impact they have on delivering services, activities and programs.

7.3.1.3 Product Registration

Many other S&L programs utilise product registration[159] and the benefits of this are widely recognised. The advantages and disadvantages are detailed in the table below[160]. These benefits were also identified by many government and consumer stakeholders. In addition, a recent review of the EU Ecodesign Directive has recommended the introduction of a product registration database, in order to provide quality data for revision of standards and compliance activity[161].

[159] The EU program being an exception.
[160] CLASP 2010, Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labelling
[161] Ecofys 2014, Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive ENER/C3/2012-523

Table 6: Advantages and disadvantages of product registration

Advantages	Disadvantages
Enables impact assessment, by collecting performance data	Needs to be funded, often through costs to product suppliers
Assists identification of non-registered products	Administrative burden of registration and data management
Enables enforcement, as it provides a clear: • claim of performance that can be verified; and • link between models and supplier enables enforcement. Several industry stakeholders indicated that industry conducts more check testing on competitors' products than the program does.	
Data can be used for other purposes – e.g. impact assessment, informing new policies, providing consumers with accurate information on products in the market via the Energy Rating smartphone App.	

Stakeholder views

Although a small number of industry respondents felt that registration of manufacturers (rather than individual products) would be simpler and cheaper, the majority of respondents valued registration as a source of data for compliance and consumer information. A much greater concern was in ensuring that the process was as quick and straightforward as possible.

"These sites and information provide vital consumer information - the key to good decision making." (Retailer respondent)

Industry respondents highlighted a number of concerns with aspects of the registration process, such as the practicalities of completing forms and making payments. These are mainly administrative points and are therefore listed in the Appendix document. Some industry respondents perceived that the registration fees had increased under GEMS (compared with the state- and territory-based programs) and felt that this was becoming onerous.

"If the [registration] process was made more efficient then it would reduce the costs associated (Lighting industry respondent)

This concern about registration fees was not industry-specific, but could be mitigated by addressing some of the issues identified with the registration process, such as administrative difficulties or confusion around application of product families. In addition, the Department's recent efforts to simplify the registration process should continue, as the process currently collects more information than strictly necessary. It is worth noting alongside this discussion that there is evidence that a

number of issues on the registration process (particularly with regards to new product groups) have been considered and amended by DoIS to the satisfaction of industry.

Consideration could be given to removing the requirement for test reports to be lodged. Although the current requirements for the test reports are less onerous than some equivalent programs[162], the provision of a test report does not reduce the liability of suppliers to supply compliant products in the market. There are already products under GEMS that don't require submission of a test report (e.g. commercial refrigeration) and wider removal would simplify the registration process. In this case, suppliers would still be required to provide evidence for their declaration should the need arise.

Examples of best practice in product registration: As the main issues pertained to administrative burden, we looked for other schemes which might take a different or improved approach. In Canada, importers of regulated products are required to provide basic information on the documentation required by customs. As many products regulated by GEMS are imported into Australia, this may provide an opportunity to streamline the administrative process. Other opportunities, including for products manufactured domestically, might include aligning with other government programs, such as electrical safety requirements (suggested by both a technical expert and some industry respondents). However, streamlining registrations or data across different programs can be complicated and require legislative changes (to enable data sharing). Data sharing becomes more complicated where some programs are run by the states and others by the Commonwealth, which raises further legal, practical and other barriers.

7.3.1.4 Compliance

The review explored the effectiveness of the current compliance process, how it compares to other schemes and stakeholders views.

In order to act as an effective deterrent to non-compliance and to foster trust in GEMS, CLASP's Practitioner's Guidebook highlights the importance of testing activity and undertaking registration and labelling surveys. Further, applying penalties (where appropriate) in response to violations also needs to be plainly visible[163]. Publicising this information more widely[164] (e.g. through the relevant industry bodies or publications) would also reassure the majority of non-government respondents who were unclear on the amount of compliance activity DoIS undertakes and the many who were concerned about 'cowboy' operators.

Robustness

Historically, Australia has undertaken greater compliance activity than most other S&L programs and is perceived internationally as having a thorough approach to compliance[165]. Both check-testing for adherence to MEPS and surveys of product registration and labelling have been undertaken, facilitated by the product registration database[166]. Interviewed technical experts indicated that the transition to a national program strengthened the structures for compliance and drew

[162] For example, allowing reports from overseas and in-house laboratories
[163] CLASP 2010, Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labelling
[164] Results of labelling surveys and check testing are published on the Energy Rating website
[165] LBNL (2012) International comparative analysis and current status of appliance energy efficiency standards and labelling programs.
[166] ECOS 2013, International Comparisons of Product Policies

responsibilities together under one regulator. Under both GEMS and the state and territory-based programs, the results of check-testing and labelling surveys have been published in order to communicate to the markets and wider stakeholders the findings of the compliance program[167].

One technical expert noted that since the transition to GEMS, there has been a focus on strengthening the compliance process and ensuring that manufacturers and retailers are aware of their obligations. The GEMS Regulator's objective is to maximise the number of responsible parties who choose to voluntarily comply with the GEMS Act, whilst implementing strategies and responses to identify, and then deter, non-compliance. This is achieved via a compliance framework which includes:

- Engagement and education;
- Monitoring compliance;
- Investigating non-compliance; and
- Responding to non-compliance.

Framework policies and procedures have been developed to provide rigour to compliance monitoring activities and to ensure a transparent and defensible response to breaches of the legislation's requirements. Stakeholder engagement and education, via the likes of an enhanced web presence, and the publishing of compliance policies, compliance monitoring plans, and enforcement outcomes where appropriate, will also assist to raise the profile of GEMS compliance over the coming years.

Within the Department, a compliance manual has been developed, documenting procedures for enforcing the regulations (e.g. correct methods for data collection, evidence required for action under the new legislation). Externally, the updated Energy Rating website provides guidance and information; DoIS has published the protocol for check-testing and also the compliance and enforcement policy. This raises the profile of compliance requirements and activity, which is appropriate following the introduction of the new legislation.

Stakeholder views

All stakeholder groups viewed compliance activity as crucial and a key advantage of the program, as well as wanting increased visibility of compliance activity. Among both industry and consumer representatives, there is a desire for the testing results and any penalties imposed to be more widely publicised, as this was felt to be crucial to the integrity of the program.

As the program matures from the transition period and participants understand their obligations more thoroughly, further compliance activity is likely to be welcomed. In conjunction with this, there was a strong preference for compliance activity to be targeted at perceived risk areas (e.g. imports) and for industry insight to be utilised, including a clear route to raise concerns about breaches.

> *"[It's] essential that compliance is monitored by an entity that is separate from industry - one that is independent from political and industry pressures."* (Consumer representative)

[167] Now available from the Energy Rating website

7.3.1.5 Other policy development activities

Climate Labelling

The program has been developing a new type of energy label for products where energy performance can vary significantly based on climactic conditions (e.g. air conditioning, heat pump water heaters and solar water heaters). The issue of accurately communicating performance variation due to climate differences was raised by several industry and some government and NGO respondents as an important factor in ensuring that a product's performance is fairly reported and that consumers can make informed decisions. As a result, the development of climate labelling is seen as a welcome step, which should be brought in as soon as possible.

Energy Rating website and smartphone App

The Energy Rating website[168] and recently launched smartphone App provide information and guidance for consumers to compare energy use of different models of registered products and cost calculators to help inform purchase decisions.

Industry representatives had mixed experiences of using the website. Most felt it was an important mechanism for providing information to consumers and some had used it personally, to assist a purchase decision, although others hadn't viewed it at all. While some users reported a good experience, others noted that it could be more user-friendly. The Department has made improvements to the website in the second half of 2014 and it is likely that some users were referring to the previous version.

Most consumer organisations had used the website and App and reported positive experiences. The information was seen to be user-friendly, although some weren't sure how widely the website had been publicised, as not all had visited it before becoming aware of the GEMS Review.

"Things that are particularly good is how easy it is to get to the product comparison pages from the front page (easily identified and only 2 clicks) and the information presented in the comparison tables themselves is clear and consistent between products" (Consumer representative)

The main reservation about the website was that it may not be effective for communicating with all types of consumers. These groups include those who don't read English or who are unable to access the internet (e.g. low income, seniors, migrants) and they need alternative communication methods, such as own language newspapers and radio.

The app was also viewed positively, as a handy way for consumers to access information:

"The app is a fantastic starting point … a great way to encourage people to think about the different running costs of the appliances." (Consumer representative)

Opportunities for streamlining to make program administration more efficient and opportunities to improve effectiveness are explored below.

[168] Note this discussion is about the function of the website as a guide to influence purchase choices by consumers.

7.3.2 Conclusions on the effectiveness of administration

1. The program, under the GEMS Act, is still bedding into its delivery role. Bearing this in mind, broadly the program's administration is being delivered reasonably effectively. The review has uncovered some gaps and issues which require addressing to improve effectiveness. However, with the exception of the timescale issues addressed above, none of these represent a fundamental risk to the achievement of the program's objectives.

2. Some aspects of administration demonstrate best practice in delivery. This includes compliance and enforcement activities and the program infrastructure put in place to allow this (e.g. the GEMS database). These activities are highly valued by industry and other interested stakeholders, although action could be taken to address concerns (whether perceived or real) about levels of check testing and compliance monitoring.

3. The process for developing GEMS determinations appears to be broadly robust in the purpose it serves, and examples of efficiency are demonstrated through international harmonisation efforts and use of analyses (e.g. technical analysis) undertaken by other administrations, rather than repeating them for Australia and New Zealand. There are areas where the process could be improved however, which include:
   a. Further use of primary evidence to better inform market failures and barriers;
   b. Exploration of all policy measures in detail (e.g. voluntary measures) within the assessment of options (noting that all RISs reviewed were developed pre-GEMS);
   c. Consistency in approach to stakeholder consultation, including seeking out more involvement from non-industry stakeholder groups more proactively;
   d. Increasing the pace at which determinations are developed and agreed, by addressing some of the issues around delays in timescales discussed above; and
   e. Better two-way interaction with OBPR.

4. Product registration serves its intended purpose and is robust. However there are some issues creating administrative problems for those undertaking registrations and making payments. This is a key issue which industry is concerned is resolved. The Department is aware of the issues and is working through a program of improvements.

5. Activities can experience delays for a number of reasons, including negotiations with industry, particularly where new stakeholders joined the process at a late stage; reaching agreement within the E3 Committee; slow progress through OBPR approval; and internal disruptions within jurisdictions (such as agency reorganisations and staff turnover).

6. Effective strategic planning is a gap currently. This is an area recognised by the program and actions are in place to address it.

7. There are a number of opportunities identified for streamlining to improve efficiency and for amendment to improve effectiveness.

8. Finally, the development of other policy supporting initiatives, such as climate labelling and further development of the website and recently launched App were seen as positive steps which will help achieve policy objectives more effectively.

The following two sub-sections explore opportunities which have been identified to improve program efficiency and outcomes.

7.3.3 Opportunities to reduce regulatory burden

1. GEMS determinations

Whilst recognising the achievements of the program, stakeholders believe a continued focus on international harmonisation (for both test methods and energy efficiency standards) will be key in mitigating regulatory burden in future.

There might be cases where a streamlined process could expedite the RIS, for example where there is clear agreement from stakeholders on the measures or where international standards are being adopted. The US 'negotiated rulemaking' process might provide a framework for consideration. This fast-track process could reduce the administrative costs for all involved, at the same time as providing certainty for manufacturers more quickly. It would, though, require a change to the current COAG RIS processes.

2. Product registration

Industry respondents are concerned that the Department progress several practical actions to resolve identified issues with the registration system to simplify the process (see Appendix for further details). This includes some practicalities of completing forms, making payments and removing any information collected which isn't strictly necessary.

A few industry respondents noted increases in costs for registrations in the transition to GEMS. Whilst most respondents were accepting that contributions were appropriate, a reduction in fees would be welcome amongst industry (although it is less of a concern than administrative issues being addressed).

Furthermore, consideration could be given to removing the requirement for test reports to be lodged.

3. Communication & engagement with stakeholders

Industry respondents had mixed experiences of communication with DoIS, although all preferred a participatory and collaborative approach. The introduction of a stakeholder engagement plan would ensure that best practice is shared throughout the team (for example, the air conditioning industry noted their positive experiences), whilst allowing flexibility to tailor the approach to the industry circumstances. This would contribute to accelerating the RIS process, as any potential difficulties would already have been explored.

7.3.4 Opportunities to improve outcomes

1. Communication with stakeholders and strategic planning

   a. Stakeholders reported mixed experiences of communication with DoIS, an element of which included a lack of understanding and engagement on the strategic direction of the program. The introduction of three year strategic planning and a stakeholder engagement plan should help improve this. Improved stakeholder awareness, understanding and ability to influence the direction of the program at an early stage would bring a number of potential benefits, such as accelerating RIS processes, as any potential difficulties would already have been explored prior to it starting.

   b. The input of consumer and environmental groups could be improved. Input from consumer and environmental representatives was identified as essential in ensuring that GEMS reflects the full range of views on product energy efficiency. Funding and resources are key barriers to participation for these organisations, particularly as the scheme is complex and requires them to keep abreast of many technical issues and documents in order to effectively represent their members' views. The Consumer Advocacy Panel[169] was highlighted as an organisation that is supporting the input of NGOs well, by providing resources for participation and grants for research. As well as a role in informing the current impact and future development of GEMS, there could be a role for consumer organisations to disseminate information and educate consumers. This provides a less intensive commitment for organisations whose main focus is not energy efficiency, but could enable DoIS to reach specific audiences and especially those less likely to access the Energy Rating website (e.g. low income households, seniors, non-English-speaking communities).

2. Compliance

There is a perception that the amount of check-testing and compliance monitoring of sales outlets has been lower under GEMS than has been undertaken previously (although DoIS records show that check testing levels have remained similar pre and post implementation of GEMS).

In order to act as an effective deterrent to non-compliance and to foster trust in GEMS, registration and labelling surveys, testing activity and the penalties imposed for violations need to be more visible[170]. Publicising this information more widely[171] (e.g. through the relevant industry bodies or publications) would also reassure the majority of non-government respondents who were unclear on the amount of compliance activity DoIS undertakes and the many who were concerned about 'cowboy' operators.

Both government and industry respondents suggested there are opportunities to further target check-testing in areas at risk of non-compliance. The Department could emphasise the role of

[169] The Consumer Advocacy Panel was superseded by Energy Consumers Australia in January, 2015.
[170] CLASP 2010, Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labelling
[171] Results of labelling surveys and check testing are published on the Energy Rating website

industry in highlighting non-compliance, providing safeguards are in place to ensure this doesn't provide an avenue to unfairly target competitors. Stakeholders suggested that, in order to ensure increased compliance activity remains affordable, the GEMS Regulator could consider putting the initial onus of proof on the party alleged to be in breach of the regulations and encouraging remediation action. However, this could be problematic, as presumably the Regulator would have first had to check test the products and found potential non-compliance. In any case, it is important to ensure the full range of enforcement action is available (from informal advice to prosecution) to maintain effective sanctions[172].

7.3.5 Recommendations

1. Compliance and enforcement - Delivering compliance and enforcement effectively should remain a top priority.

2. Strategic planning – the E3 Committee should continue its efforts to extend and formalise strategic planning for GEMS, considering the best practice examples of the US and EU programs. This could include making strategic planning a formal part of the process through the Act or as part of the E3 policy approach.

3. GEMS determinations – the overall GEMS determination process should be maintained and opportunities for improvements identified within the review explored, in particular those which will improve stakeholder consultation and expedite development timescales. Any improvements should be balanced with practical constraints such as time and costs.

4. Registration - practical issues with registration should be addressed as a priority to reduce administrative burden. A reduction in registration fees could also be considered.

5. Program oversight – the E3 Committee hold teleconferences once every two months to review progress with work plan activities.

6. Other policy initiatives – such as climate labelling, the website and App should continue to be developed and implemented as soon as possible.

7.4 Funding

The current funding arrangement for the program operates under the IGA and is described in section 3.1.3. The importance of funding and resources to the success or failure of standards and labelling programs is well documented in the evidence and best practice guidance discussed in the sections above.

[172] CLASP 2010, Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labelling

There are two main areas which can be explored with regards to funding models

1. **Cost recovery**: This involves obtaining contributions from regulated parties (i.e. industry) to fund the scheme through registration fees. Different models of cost recovery can be explored, including:
   a. Partial cost recovery – where industry funds some elements of the scheme, such as compliance and enforcement activities; and
   b. Full cost recovery – where all elements of the scheme are funded.
2. **Alternative Government funding options**: This is explored in more detail with Commonwealth and states and territories government respondents and other stakeholders.

7.4.1 Limitations

The following limitations are noteworthy for this element of the review:

1. Reliance on stakeholder views: Whilst some evidence and insight can be drawn from experience of funding of other schemes, the issues are very specific to GEMS and so the exploration of funding models relies heavily on discussions with stakeholders. There are risks associated with this as stakeholder responses are limited by their knowledge and awareness, and also have the potential to be affected by bias. These were mitigated by exploring issues with several different stakeholders[173], however this limitation should be considered alongside any conclusions and recommendations drawn.

   One specific limitation of the approach was that whilst a range of state and territory government representatives were included in the sample, resources only generally allowed for coverage of E3 Committee officials' views. It was not possible to seek the views of all government agencies in all jurisdictions involved in decisions on the program.

   Linked to the previous discussion, some (industry) stakeholders interviewed did not address the issue of funding sources, since they believed that the program had underspent its budget in recent years, and therefore felt there wasn't a budgetary issue.

2. Approach to exploring funding scenarios: Exploring funding scenarios can be a sensitive issue, particularly when there is likely to be a direct impact on respondents interviewed. To mitigate for this and to encourage an open and honest discussion, funding scenarios were explored in an 'open' way with stakeholders, as opposed to exploring fixed funding scenarios (e.g. full cost recovery) which could have resulted in a negative discussions or a lack of willingness to participate[174].

7.4.2 Cost recovery

The establishment of the GEMS Regulator was based on initially recovering part-only of the Regulator's product registration and compliance functions through registration fees. It was planned that registration fees would be reviewed every three years in order to eventually move to full cost recovery of the Regulator. The point for reaching this is not firmly set, however, the end of the first three-year fee cycle is October 2015.

[173] For example, in the sample we included both industry representative and individual manufacturers across a range of product groups. We also covered most states and territories in the sample.
[174] Acknowledging that this may compromise discussion on several other key issues, which were also covered within the interviews.

Industry has generally supported the program and acknowledged the importance of cost recovery of registration and compliance activities, in that these activities provide the basis for *compliant* products being sold in the Australian (and New Zealand) market, thus providing the foundation for a level playing field for all companies.

Increased levels of compliance activity and greater visibility of this – e.g. more information of what compliance actions are being undertaken and the results of those actions (without breaching confidentiality provisions in the Act) – sends a strong signal to companies registering products for supply and sale that the compliance provisions in the Act are being implemented. The result is that identified non-compliant products are either made compliant or are withdrawn from the market.

In calendar year 2014, product registrants paid $2.3 million to register products against GEMS determinations. In the same year it cost about $4.6 million to provide a product registration service (inclusive of a registration website, helpdesk and functionality enhancements, registration assessments, and associated staffing) and registration compliance services (inclusive of check testing, compliance monitoring, reporting and education and associated staffing). Industry - through registration fees - is currently contributing about fifty percent of the full cost of registration and compliance.

The Department has advised it plans to commence a review of registration fees at the end of the first three-year fee anniversary (October 2015) and finalise this review in the first half of 2016. This partly aligns with a broader review of functions for which fees are charged across a range of activities implemented by the Department - which is to be undertaken in 2016/17. Thus the approach being taken with GEMS fees will be considered in conjunction with the approach for other programs. Broad discussions with industry on cost recovery issues across a range of services and programs will allow a more holistic approach to re-calibrating GEMS registration fees.

Cost recovery research

Cost recovery in standards and labelling programs has recently been explored in a report funded by the Australian Government for the Vietnamese Ministry of Industry and Trade, under the Vietnamese Energy Efficiency S&L Program[175]. The report shows that cost recovery has been increasingly undertaken by standards and labelling programs internationally, in most cases obtaining a reasonably minor contribution (as a proportion of total program costs) from participants[176]. Further details are provided in the DoIS cost recovery report, however in summary; costs are recovered through two main routes:

1. Registration fees – when a supplier registers a product; and
2. Check testing fees – usually these are to pay for follow up tests, when a product has failed an initial test undertaken through compliance and enforcement activities.

There are also one or two examples of charging for voluntary endorsement labelling (an annual registration fee).

[175] MEA (2012) Cost recovery in energy efficiency standards and labelling programs.
[176] An exception to this is the Energy Saving Trust Recommended scheme, however this is a voluntary endorsement labelling scheme, which prior to moving to industry funding, had many years of UK Government backing.

Currently GEMS charges fees through both of the above routes and registration fees are published[177], which range between AUD$440 to $780. Other programs internationally also do both, or one or the other and have registration fees which are broadly similar to GEMS. The extent to which these reflect actual registration and/or other program costs is not known[178], although in terms of broad scale it is known that they are predominately funded by government[179].

The DoIS cost recovery report examines a number of issues including what program elements are best suited to cost recovery, what level of cost recovery (e.g. partial or full) and the likely impact on the market. The report states that all costs relating to maintaining an open and fair market could legitimately be funded. This includes costs associated with operating a registration (or similar) process, as well as the monitoring, verification and enforcement of program rules.

The report also discusses whether there should be full or partial cost recovery, but states there is no universal view on this, and that it needs to be explored with the market. It does note that while industry is unlikely to welcome additional costs, they are small compared to other costs of bringing products to market, and most of industry understands that they ensure fair operation of the market[180]. Finally, the report also notes that some sectors (e.g. low volume product groups) would be affected more, if registration is continued to be the main mechanism by which recovery is taken.

Testing cost recovery with industry and other stakeholders

1. Current levels of cost recovery

Overall, it was found that there was fairly limited awareness and understanding of the current funding arrangement and the extent to which industry contributes towards overall costs. Awareness of this was significantly higher amongst industry peak bodies than individual suppliers.

Where the overall split of funding was discussed, there was a perception that industry was contributing fairly significantly towards overall costs. .

"[I am] not sure how much is covered by the tax payer, I would imagine the program is fairly well covered by the registration fees." (Industry respondent)

"My impression is that the taxpayer doesn't pay anything. It's funded by the people who want to sell the products." (Industry respondent)

There was some discussion about the increase in fees associated with the transition to GEMS in 2012[181], and that this was tolerated on the basis of the benefits to industry of the program.

[177] Registration fees under GEMS legislation.
[178] MEA (2012) Cost recovery in energy efficiency standards and labelling programs.
[179] Lawrence Berkeley National Laboratory 2012, International Review of the Development and Implementation of Energy Efficiency Standards and Labelling Programs, February 2012
[180] However, it is not clear what stakeholder consultation was undertaken to inform this view.
[181] Registration costs under the multi-jurisdictional scheme ranged slightly between states and territories, but were approximately $AUD 180-200 (MEA 2012, Cost recovery in S&L programs).

"We don't get communications about where the fees are spent, but [the] assumption is that it is on the running of the program. That is why we accept the higher fees, because it is a good program which is fully funded." (Industry respondent)

Industry was mainly accepting of the current costs, on the basis that benefits from the program are recognised, particularly emphasising that it helps keep unscrupulous suppliers, with "*cheap and poorly performing*" products, from entering the market. The costs were acceptable, providing there was confidence that it was being mostly (and efficiently) spent on compliance activities to ensure high levels of compliance. There was a general consensus amongst industry that a cost sharing model was the most appropriate, striking a balance of costs between those who benefit.

"[Costs] should be shared, there is a benefit to the manufacturer in having products registered, because they can't sell without registering, also benefits to the tax payer in terms of lower energy usage, less greenhouse gases, less pollution." (Industry respondent)

However, as described in Section 7.3, a few respondents felt the current fees were onerous, particularly those who had more registrations to pay for, per volume of product sold and/or those where the 'families of models' route was not a possibility (e.g. lighting). Furthermore, there was discussion about the costs of testing products born by some product group suppliers – in particular those where this is a significant cost[182].

"testing is the big cost, to test ….. costs $16,000.[183]" (Industry respondent)

Others discussed the costs of product development in order to comply with the scheme as a reason for scheme costs funded by industry to be low.

"I don't want to put a comment on that because it is about where you believe the responsibility lies, for product development it lies with us so I don't think the cost to industry should be high." (Industry respondent)

Most government and NGO representatives perceived that it was right that the government funded a portion of the cost of GEMS, as there is a public benefit.

"Given the public benefit there is definitely a role for government funding, but there is also a benefit to suppliers themselves so there is an argument for their contributions. The key is that it needs to be funded properly." (Consumer representative)

2. <u>Higher levels of recovery</u>

Exploration of possible higher levels of cost recovery with industry respondents revealed that whilst it would not be welcomed, some would tolerate increases in costs, albeit within a fairly limited scale (as shown above) and others would find this difficult.

[182] Note, products need to be tested for a variety of reasons, including electrical safety, so these costs are not only as a result of GEMS requirements.
[183] An element of the quote has been redacted in order to mitigate risk of the respondent organisation being identifiable.

"Note some of the products covered are low profit margin so can't pass on any additional cost. The funds should come from where the benefit is –[I] believe it is with the government and consumer, so they should pay." (Industry respondent)

"GEMS recovery costs from the industry is not supported as it encourages open ended regulations and costs. Costs to register products should be at cost or nominal fee." (Industry respondent)

One or two discussed that some aspects could reasonably be recovered, but others could not.

"Commonwealth can't levy industry for the cost of government effort (the compliance activities and policy development) - which really only leaves the registration process." (Industry respondent)

Others drew further on the point about there being a public benefit and therefore that the public purse should bear some of the costs. This point also made by other stakeholders, including government and consumer representatives.

Furthermore, government respondents expressed concern over increased industry burden from higher costs.

"S*o why would industry pay twice, once for the implementation costs and again for the program*…. [You] c*ould go through cost-recovery, but it's not an expensive program. The scheme is ultimately designed to benefit consumers, not necessarily to benefit industry"* (State government respondent)

Finally, a point which was reflected through all of the discussions was that no matter the funding source, it was important that the program was funded appropriately to ensure it could deliver effectively.

"The key is that it needs to be funded properly." (Consumer representative)

Impact of higher cost recovery: Two main points were made with regards to impacts if higher cost recovery was pursued:

1. Costs would be passed on to the consumer – this was noted by the majority of respondents; and
2. If cost increases were significant, some suppliers would consider not bringing products to the market – however this point was only made by one or two respondents.

"If there was a significant cost increase we would start to look at the products sold. If not high sales, we would take them off the market and reduce product choice. This would have an impact on the competitiveness, consumer choice. It's a very competitive market already." (Industry respondent)

7.4.3 Alternative government funding options

Testing alternative government funding options was undertaken solely through stakeholder interviews, using the current funding split as a basis for discussions. Two main scenarios were explored:

1. Maintaining current levels of funding (with the possible benefit of additional cost recovery); and
2. Removal of state funding (i.e. a fully Commonwealth funded scheme, with the possible benefit of additional cost recovery).

1. Maintaining current levels of funding

Government views: Most state and territory respondents who discussed funding expected that that the status quo would and should be maintained[184].

"State contribution is modest and the scale of the benefits dwarfs the cost. It is effective direct action." (State government respondent)

Some discussed that the advantage of this was that this increases input and interest in the program (as an active funding contribution is being made), which helps to ensure that local issues are represented.

Some state and territory representatives also discussed that the funding arrangement was fairly standard for this type of COAG scheme and did not see it as a 'real' issue.

"*Whether it is state or federal - it's all coming from the same tax pool. For me, we need to decide which is the most cost effective way of delivering the scheme."* (State government respondent)

A few respondents discussed that decisions on future funding were a political issue which could change significantly, depending on the administration in power.

"That's a question that will go back and forwards depending on the view of the government of the day. It's not something that we can give any specific certainty on." (State government respondent)

Other stakeholders had little of value to add to the discussion.

2. Removal of state funding

Government views: Further to the discussion above, some state and territory representatives discussed that there was a significant risk that removing state funding would reduce representation of state and territory issues, so decisions could be made which go against local conditions (e.g. climate related issues). This would increase the risk of states and territories implementing their own regulations, noting the examples of this which led to the implementation of GEMS.

"There is a real risk that some states won't do it [support the national scheme]. Or you could be running 5-6 different schemes [if states go out on their own]." (State government representative)

This was a view which was also reflected by a minority of Commonwealth Government representatives.

[184] Note discussions were held with state and territory public servants. Ministerial views were not sought through the review.

However, some other Commonwealth Government representatives were in favour of a fully Commonwealth funded scheme, on the basis that it would remove inefficiencies in the process, through having fewer negotiations to develop GEMS determinations.

One or two respondents noted that not all of the state and territory funds were being spent annually. This was perceived to be causing some issues for states and territories to continue to secure funds if the previous years' allocation was not spent. Furthermore, it raised the question of whether the funds were needed.

Finally, one or two respondents noted that this was worthy of separate investigation as it was a complex issue.

Industry views: The majority of industry, in particular individual suppliers, were unable to comment in detail of the subject due to a lack of sufficient knowledge. A common response, however, was to express concern that removal of funding from the states could leave a gap, with questions as to how it would be filled.

"Clearly it will mean greater costs or a reduction in the program. Costs to manufacturers are passed on as increased product costs" (Industry respondent)

Some peak bodies, however, did express views, and supported a move to a fully Commonwealth funded program. This was on the basis that this should remove state and territory involvement, which would improve efficiency.

"It is Commonwealth and state jurisdictions that get to decide on GEMS. In the Commonwealth function you would have [the benefit of] one regulator, one police and one group that you need to deal with." … *"It keeps recurring that there are the issues with the various states that are associated with MEPs*." (Industry respondent)

Impact of the removal of state funding

The impact of removal of state funding is largely discussed above and can be summarised as having the following:

Perceived advantages:

- Increased process efficiency, through a streamlined process; and
- Increased speed of implementation, as a result of a streamlined process.

Perceived disadvantages:

- Risk of reduced state and territory issues represented; and
- Increased risk of states and territories implementing their own regulations.

7.4.4 Conclusions

Cost recovery

1. The general level of industry funding appears accepted by the majority of stakeholders and could be maintained. There would be value in better communicating the contribution of

fees to the overall program budget. Some adjustment to the registration requirements for particular categories of products may also make the fees appear more equitable.

2. Industry could potentially tolerate a reasonably minor increase in cost recovery, although respondents were generally resistive to this and noted that costs would be passed on to the consumer[185]. There was also a concern about increasing the burden for industry, a view similarly reflected by government respondents.

Alternative government funding options

1. The issue of funding, in particular state and territory contributions is a complex and sensitive issue and it is difficult to make robust conclusions either way based on the exploration undertaken within the scope of this review.

2. Some are clearly in favour of the status quo. Others are in favour of a Commonwealth funded scheme, but are not perhaps aware of what the full implications of this might be for the framework within which GEMS operates.

3. The issue should be investigated further, exploring more specific scenarios, including their potential benefits and risks, which can feed into post 2015/16 planning.

7.4.5 Recommendations

1. Cost recovery – The Commonwealth take account of stakeholder feedback in this review on cost recovery when reviewing registration fees in October 2015.

2. Alternative government funding options - Planning for post 2015/16 funding needs to commence. Planning on the basis of different scenarios would be sensible, including:
   a. Keeping state and territory funding under the framework of the IGA; and
   b. Exploring alternatives, such Commonwealth-only funding or a scenario where some states and territories continue to fund and others do not.

[185] And depending on the level implemented, there could be an impact on consumer choice.

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