Survey of Market Compliance Mechanisms for Energy Efficiency Programs in APEC economies

APEC ENERGY WORKING GROUP
EXPERT GROUP ON ENERGY EFFICIENCY & CONSERVATION

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Prepared by:

PO Box 109 Wagstaffe NSW 2257
P: +61 (0) 2 4360 2931 M: +61 (0) 424 264 014
E: mark@energyellis.com

For
APEC Secretariat
35 Heng Mui Keng Terrace Singapore 119616
Tel: (65) 68919 600 Fax: (65) 68919 690
Email: info@apec.org Website: www.apec.org

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EXPERT GROUP ON ENERGY EFFICIENCY & CONSERVATION

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Executive Summary

In many economies, energy efficiency initiatives represent the cornerstone of national policies designed to reduce energy consumption, tackle environmental issues such as climate change and improve energy security. Standards and labelling (S&L) programs for appliances and equipment are proven to deliver the largest quantity of energy savings at the lowest cost compared to most other types of energy efficiency programs.

The ability to maintain and increase these achievements relies on the development of effective market compliance regimes to ensure that products perform as claimed and consumers receive the services they pay for.

Achieving high rates of compliance has overall benefits for all stakeholders in the S&L process, as well as for the environment. Industry participants operate in a fair market that encourages investment and technological innovation, consumers and businesses benefit from reduced energy costs and governments achieve key environmental, energy security and economic policy objectives.

This report forms part of a project undertaken by Mark Ellis and Associates, commissioned by the Asia-Pacific Economic Cooperation (APEC) in June 2011 under the auspices of the Expert Group on Energy Efficiency and Conservation (EGEE&C).

The project aims to compile and disseminate information on monitoring, verification and enforcement (MV&E) processes used by regulatory and enforcement agencies to ensure compliance in S&L programs within APEC economies.

Within the APEC region there are a total of 32 energy labelling and 16 minimum energy efficiency standards programs operated by 18 economies. These include programs that have been running since 1978 to those that are in their infancy; programs covering up to 50 product types to those spanning only one or two. It is also relevant to note that the region includes some of the world's largest manufacturers of appliances and equipment supplying the global market, as well as economies that have little or no local manufacturing and reply upon the import of products.

These factors suggest that there is considerable opportunity to develop regional initiatives that will improve the transfer of knowledge and experience amongst economies with respect to energy efficiency S&L programs and their MV&E regimes.

The findings in this report are based on responses to a survey of 18 APEC economies, presentations made to the 39th APEC EGEE&C meeting in February 2012 and discussions with the energy efficiency community in the APEC region. These results are compared to similar surveys of European member states and G20 countries, and evaluated against the yardstick provided by '*Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labeling*' (MEA/CLASP, 2010b).

The following eight recommendations are designed to address shortcomings in MV&E process in the APEC region and assist in the development of a culture of compliance. They include proposals for individual S&L energy efficiency programs and also for opportunities to improve MV&E regimes through collaboration between economies in the APEC region.

Recommendation 1 – Awareness Raising

Governments and government agencies with responsibility for energy efficiency S&L programs need to be more aware of the importance of adequately supporting the establishment and operation of effective MV&E regimes – and therefore maintaining the integrity of their programs. Organizations

such as APEC should play a lead role in bringing these issues to the attention of governments in the region.

Recommendation 2 – Planning and Resources

All S&L energy efficiency programs need to periodically review their MV&E enabling legislation, processes and activities to identify ways of making sustained improvements. Such reviews should take into account the views of key stakeholders and international experience.

Since investment in MV&E is highly cost-effective, governments should invest sufficient funds in the development and on-going implementation of robust MV&E processes to ensure the integrity of their S&L programs. The budget for MV&E activities should include the provision of an adequate number of appropriately trained staff.

Recommendation 3 – Operational Guidelines

Providing transparent operational guidelines that detail the main elements of a program's administrative and MV&E procedures decreases the opportunities for misunderstandings and disputes, while facilitating compliance. Governments should ensure that S&L programs have developed such guidelines and made them available to stakeholders.

Recommendation 4 – Communication

Effective MV&E regimes in S&L programs, as in many other sectors, provide a credible deterrent to non-compliant behaviour by elevating the risk to suppliers that transgressions will be detected and penalised. Communications play a vital role in signalling the importance that governments place on compliance and making the risks obvious to stakeholders in S&L programs.

Governments need to consider how they can improve their communications with stakeholders and raise the profile of their MV&E activities and results.

Recommendation 5 – Access to Competent Laboratories

Access to competent testing facilities, both private and independent, is a key issue for most economies to address. In the APEC region there are a large number of test facilities with the ability to undertake tests on a wide range of energy-using products, and this gives rise to opportunities for more co-operative and creative approaches to accessing test resources on a regional basis.

These opportunities include:

- Providing better access to independent testing laboratories by maintaining a list of all independent test facilities throughout the APEC region, their location, capabilities and capacity. This resource would be valuable for programs that have insufficient access to independent testing facilities within their own economy, or wish to reduce costs by testing products in their country of origin.
- Developing an understanding of the competency of private test facilities in the APEC region by sharing information on local test facilities gathered by economies that indicate their level of proficiency. This may include those laboratories that: have taken part in round-robin tests; have had independent assessments of their facilities; have an established track record; or have been included on lists of recommendation. This will greatly assist economies deciding on which reports from overseas test laboratories require increased scrutiny to make a better-informed judgement.
- Improving the competency of regional laboratories by agreeing to undertake round-robin testing for specified products in order to improve test methods and the performance of

laboratories. This initiative could lead to mutual recognition arrangements between jurisdictions.

Each of these initiatives warrants further investigation, and should be developed under the proposal for a regional network (recommendation 8), or supported as individual APEC projects.

Recommendation 6 – Verification Testing

Currently verification testing is conducted by individual economies and programs without regard for what testing is being undertaken in other neighbouring economies. Considering that there are many common products traded within the APEC region, there would be benefits in a more co-ordinated approach to testing which include savings in costs and the gathering of market intelligence based on larger sample sizes.

Examples of the types of collaboration on verification testing that could be considered for the APEC region, and their advantages, include:

a) Focus on individual products:

An agreement between programs in different jurisdictions to undertake verification tests on the same category of product at a similar time within their own economies, and share results, to gain a greater insight into compliance issues relating to individual product types.

b) Focus on different products:

An agreement between programs in different jurisdictions to undertake verification tests on different categories of products over a designated period of time, and share results, in order to maximise coverage across a range of products.

c) Shared costs for testing programs:

An agreement between programs in different jurisdictions to undertake verification tests on the same type of products at a similar time and within the same laboratory(ies), and share results, to gain cost savings through economies of scale.

Further options for co-operation include:

a) Mutual recognition of test reports:

Where tests methodologies are technically equivalent, programs agree to allow suppliers to lodge the same test reports as evidence of compliance.

b) The sharing of test results and/or notification of enforcement actions:

Where products have been proven to be non-compliant in one economy, this information may be used by other programs to justify increased scrutiny and improve the targeting of limited testing budgets.

These options warrant further consideration by governments, and could be developed under the proposal for a regional network (recommendation 8).

Recommendation 7 - Industry Engagement

Most industries support the objective of producing more efficient energy-using appliances and equipment, and the need for governments to ensure they operate within fair competitive markets. Without adequate MV&E regimes, appliance and equipment markets can become distorted by unscrupulous suppliers undercutting those that invest in the production of more efficient products.

Governments with responsibility for S&L programs need to engage with industry participants, not only to ensure that they understand their responsibilities, but also to work together to develop more

effective MV&E regimes. Through constructive dialogue, industry can better understand the objectives of governments, and assist governments to find ways of reducing costs and increasing effectiveness.

For example, robust industry certification schemes and similar models may be of great benefit to some economies, but require co-operation between government and industry to be viable.

Governments should take steps to strengthen their engagement with industry and develop mechanisms to facilitate constructive dialogue on MV&E issues. Where appropriate, this could be supplemented by dialogue between governments and industry on a regional basis through APEC or similar organizations.

Recommendation 8 - Regional Network

To provide a focus for efforts to improve MV&E in the APEC region and to develop collaborative projects, economies should consider supporting the establishment of and participation in a forum on MV&E.

This would follow a similar model for a regional network of regulators and MV&E authorities that has been established in Europe to tackle many of the issues raised in this report.

If supported by sufficient APEC economies, it is recommended that a small group of volunteers should produce concrete proposals for the establishment of this network, including consideration of its relationship to APEC's EGEE&C working group, and other regional bodies.

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Australia	Lucinda McIntyre, Department of Climate Change and Energy Efficiency (DCCEE)
Canada	Victoria Ingram, Policy Analyst, Office of Energy Efficiency, Natural Resources Canada (NRCan) Kelly-Ann Chisholm, NRCan
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Indonesia	Totok Sulistiyanto, Energy Efficiency in Industrial, Commercial and Public Sectors in Indonesia (EINCOPS) Feby Andriah Misna, Division Head of Technical Assistance and Cooperation in Energy Conservation, Ministry of Energy and Mineral Resources Mr. Harris, Division Head of Application Technology of Clean and Efficient Energy, Ministry of Energy and Mineral Resources
Japan	Naoko Doi, The Institute of Energy Economics, Japan
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Mexico	Ing. Fernando Hernandez Pensado, Comisión Nacional para el Uso Eficiente de la Energía (CONUEE)
New Zealand	Laura Christen, Advisor of Product Policy, Energy Efficiency and Conservation Authority (EECA) Eddie Thompson, Team Manager (Standards and Compliance), EECA
Peru	Carlos Orbegozo, Secretario técnico, Comité Técnico Nacional de Uso Racional de Energía y Eficiencia Energética, DIrección General de Eficiencia Energética (DGEE), Ministry of Foreign Affairs Peru Jose Eslava, Director, DGEE
Philippines	Mirna R. Campanano, Division Chief, Lighting & Appliance Testing Laboratory (LATL), Department of Energy-Energy Research and Testing Laboratory Services (DOE-ERTLS) Raquel S Huliganga, Director, Department of Energy (DOE)
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Chinese Taipei	Henry Lo, Project Manager, Industrial Technology Research Institute (ITRI)

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Glossary

This glossary provides a guide to the use of terminology in this report.

Accreditation	Certification process by which the program administrator ensures that testing facilities perform tests correctly with properly calibrated equipment.
Certification	The validation of performance by a third party (i.e. not the product suppliers) in order to demonstrate that the product meets labelling or standards requirements, ensuring consistency, and giving credibility to claims about energy efficiency.
Check Testing	Taking a sample of products either from the factory floor or from the point of sale for independent laboratory testing.
Comparative Labels	Labels that present information allowing consumers to compare performance among similar products, either using discrete categories of performance or a continuous scale.
Compliance	Defined as the actions of a program participant that are in accordance with program requirements, even for voluntary programs (as the participant makes a commitment to any program requirements - even if they are not legally binding).
Compliance Monitoring	Activities designed to collect information about compliance within the program requirements. Usually monitoring is undertaken regularly throughout a standard or labelling program's life (i.e. during program implementation).
Compliance Regime	A comprehensive set of program specific processes purposefully established to check conformity with all program requirements, including: facilitation and education; monitoring; market surveillance and verification; enforcement and reporting. Also including methodology to ensure errors are found and corrected, and violations of requirements are returned to the permitted range or, if necessary, sanctions applied. It protects suppliers by making wilful non-compliance unacceptable.
Endorsement Labels	'Seals of approval' given according to a specified set of criteria.
Energy Efficiency Label	Informative labels affixed to manufactured products indicating energy performance that provides consumers with the necessary information to make informed purchase decisions. These may include comparative or endorsement labels.
Energy Performance	The characteristics of a product in respect to the energy or power it consumes under certain conditions.
Enforcement	The actions taken by an authority in response to incidents of non-compliance with the rules of a program.
Enforcement Regime	A structured set of actions used to remedy incidents of non-compliance that may include the establishment of a set of sanctions coupled with a progressive action plan for their application.
Entry Conditions	Describes a set of specific requirements that product suppliers need to meet in order to participate in either voluntary or mandatory standards and / or labelling programs.

Entry Requirements	See “Entry Conditions”.
Harmonization	The adoption of the same test procedure, performance standard level, energy labelling criteria or design as that of an international organization or trading partner, or the mutual recognition of test results for a particular appliance through multilateral forum or compact.
Impact Evaluation	Assesses the energy and environmental impacts of a standards or labelling program; can also assess cost effectiveness. Impact elements can include: influence of label on purchase decisions; tracking of sales weighted efficiency trends; energy and demand saving; pollutant emission reductions and other related effects.
Import Controls	The incorporation of national border control systems within the compliance framework of a program, with respect to imported (and potentially exported) products. Customs authorities can provide data on the traffic in products and may alert import companies that products must meet national energy efficiency requirements. Authorities may also check that products are accompanied by any relevant shipment or import documentation, including information required to gain entry to the country and its appliance market (e.g. energy test reports).
Laboratory Accreditation	This is the procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks. This is of particular importance for full procedure verification testing as accreditation reinforces the integrity of the laboratory undertaking the tests - the results of which will form the main body of evidence in an enforcement action.
Mandatory Program	An energy efficiency program in which participation is compulsory. There is no choice for suppliers about whether they participate.
Market Information	Type of entry condition requiring provision of sales or market penetration figures to a program administrator. This can be at time of entry to program or it may be flagged at time of entry that the administrator may request this information at any time for delivery within a specified time frame.
Market Surveillance	Those activities required to monitor compliance with program conditions once products are in the marketplace. It does not include the taking of products from the marketplace for verification testing.
Model	A specific unit or variety of a product.
Monitor	Observe and check that program requirements are being met, either as a one-off or systematically, over a period of time.
Non-Compliance	Any instance deemed by the ‘compliance regime’ to be discordant with requirements of a program.
Performance Standards	Prescriptions of minimal efficiencies (or maximum energy consumption) that manufacturers must achieve in order to be able to sell a product. The standard specifies energy performance but not the technology or design specifications for a product.
Private Reporting	Reporting on outcomes from monitoring, verification, enforcement and evaluation activities that are only shared inside the program administration body.

Product	A category of appliance that is included, either voluntarily or mandatorily in an energy efficiency program. A product may have a number of (product) models.
Product Information	A product information entry condition usually requires the submission of non-energy related product specifications such as model number, serial number, dimensions, weight and colour, along with other non-energy related information.
Program	A scheme to promote improved energy efficiency in appliances and equipment.
Program Administrator	The person or organization responsible for running a program.
Program Participant	The body taking part in a program, whether it is voluntary or mandatory. In the case of energy efficiency programs the participant usually refers to the 'supplier'.
Public Reporting	Sharing the outcomes of monitoring, verification and enforcement activities with all, or selected external parties.
Regime	A system or planned way of doing things, the conditions or rules under which a process or program happens.
Self-Certification	See "Self-Declaration".
Self-Declaration	The statement made by a product supplier that stipulates the energy performance of a product. This statement may take the form of a written declaration, a certificate or a verification mark.
Stakeholder	Any party who may have an interest. Stakeholders typically include representatives of suppliers, consumers, utilities, local governments, environment and energy efficiency groups and representatives of importers and international organizations.
Standards and Labelling (S&L)	Energy efficiency programs for appliances and equipment that may be mandatory or voluntary, and include the specification of minimum energy performance standards (MEPS) or energy performance labels.
Supplier	Defined as a manufacturer, importer or wholesaler of appliances or products included in an energy efficiency program.
Test	A laboratory procedure to determine one or more characteristics of a given product, according to a specified methodology.
Test Report	A report generated by the laboratory testing of a product that may be used to prove energy performance. Depending on program requirements a test report may be required as an entry condition and can be generated either in-house by program participants / suppliers or conducted by an independent laboratory.
Verification Testing	Verification testing in standards and labelling programs is used to prove the performance of a product with regard to its energy consumption in accordance with the specified test methodology. This can be done, depending on program requirements, either independently, via a third party laboratory or in-house in the form of a 'self-test'.
Voluntary Program	An energy efficiency program in which product suppliers participate of their own free will. Participation is not required by law or regulation, it is a choice.

1 Introduction

This report forms part of a project undertaken by Mark Ellis and Associates, commissioned by the Asia-Pacific Economic Cooperation (APEC) in June 2011 under the auspices of the Expert Group on Energy Efficiency and Conservation (EGEE&C).

The objective of this project is to survey strategies used by APEC economies to monitor market compliance with energy efficiency standards and labelling (S&L) programs for consumer appliances and office equipment. The project aims to compile and disseminate information on: experience with enforcement issues, market survey techniques, sampling efforts, and compliance indicators used by regulatory and enforcement agencies in APEC economies.

The project comprises the following three phases:

Phase 1 – Conduct a survey of energy efficiency market compliance strategies

Phase 2 – Produce a report detailing the results

Phase 3 – Organize an outreach workshop on best practice for market compliance

This report comprises Phase 2 of the project and provides the findings, analysis and comparison of the quantitative results of the survey undertaken in Phase 1.

1.1 Guide to this Report

This report comprises the following eight sections:

Section 1: provides an introduction to the report, including relevant definitions, contextual information and an outline of key elements of best practice MV&E regimes.

Section 2: describes the survey methodology and other inputs to the production of this report.

Section 3: contains summaries of the key elements of the MV&E regimes of the S&L programs operating in each of 18 economies within the APEC region.

Section 4: provides detailed survey findings across all the 18 participating APEC economies.

Section 5: compares some of the findings from this survey with previous surveys of the MV&E regimes in EU member states and G20 countries.

Section 6: contains a summary of the main findings and observations that follow from the survey of APEC economies.

Section 7: provides recommendations for APEC, governments and individual S&L programs within the APEC region.

Section 8: identifies external references used in this report.

1.2 Definitions

In this report, market compliance mechanisms comprise a range of activities designed to check that the particular requirements of energy efficiency standards and labelling (S&L) programs are implemented and adhered to by all relevant participants. Since these activities typically comprise monitoring, verification and enforcement, the term 'MV&E' is interchangeable with market compliance mechanisms.

This APEC project is primarily concerned with the MV&E strategies used by individual economies, which includes the organization, administrative processes and capacity (also sometimes referred to as the MV&E or compliance 'regime') of each economy with respect to MV&E activities.

1.3 APEC Context

At the Seventh APEC Energy Ministers Meeting (EMM-7) in Gyeongju, Korea, ministers agreed to: encourage APEC economies to adopt further measures to promote energy efficiency and conservation; direct the APEC Energy Working Group (EWG) to identify best practices to assess efficiency improvements; and further direct the EWG to support capacity-building efforts in this regard.

At the Eighth APEC Energy Ministers Meeting (EMM-8) in Darwin, Australia, energy ministers directed the EWG to "improve energy efficiency by sharing information on energy efficiency policies and measures". At the Nineteenth APEC Ministerial (Sydney, Australia, September 2007), ministers welcomed further work by APEC member economies to "share experiences on the range of economic policy instruments for promoting energy efficiency and greenhouse gas reduction". This goal was also endorsed in the APEC Leaders' Declaration on Climate Change, Energy Security, and Clean Development (Sydney, Australia, 9 September 2007).

At their meeting in Sydney, APEC leaders set an aspirational goal to reduce energy intensity by at least 25 per cent from 2005 levels by 2030. As noted at the Ninth Energy Ministers Meeting (EMM-9) in June 2010, "improving energy efficiency is one of the quickest, greenest and most cost-effective ways to address energy security, economic growth and climate change challenges at the same time." Effective and consistent enforcement of energy efficiency standards and of accurate energy efficiency labelling is essential if APEC economies are to achieve their energy savings potential.

The International Energy Agency (IEA) estimates that a quarter of all realizable energy savings and consequent greenhouse gas emission reductions can be lost without good monitoring and enforcement of market compliance. Therefore, good compliance and enforcement strategies are vital for economies to achieve optimal energy savings from standards and labelling. In light of the points mentioned above, this project has been commissioned to enable APEC economies to share strategies for ensuring market compliance in their energy efficiency standards and labelling schemes so that economies with more advanced strategies can transfer knowledge to economies where standards and labelling regimes are newly established.

On a regional basis, the project could facilitate trade in environmental goods and services (specifically energy-efficient products). Home appliances and office equipment are widely traded in the APEC region, with lights, computers, air-conditioners, refrigerators and freezers just a few of the many examples. In recent years, technological advances have resulted in the introduction of much more energy-efficient models. Thus, improved strategies for ensuring compliance with energy efficiency standards and labelling requirements will help to guarantee that the appliances and equipment that are sold and traded are actually as energy efficient as wholesalers, traders, households and businesses are led to believe.

With greater confidence in the enforcement of energy efficiency standards, traders who import energy-efficient appliances and components from one APEC economy to another will be assured that the imported products really have the energy-efficient performance that their manufacturers claim. This will stimulate the trade and purchase of energy-efficient equipment throughout the APEC region. In addition, the project could also help pave the way for more cross-jurisdictional compliance activities in the APEC region in the future, e.g. sharing of market intelligence and test results, and mutual recognition of efficiency ratings and labels. This should reduce the cost of market compliance and enforcement for both businesses and governments.

Potential beneficiaries of the project include all consumers and businesses in APEC economies, which may see reduced energy bills and carbon emissions from better enforcement of energy efficiency standards. Industries trading in the APEC region will also benefit from a market that is fair, constant and encouraging of investment and innovation in energy efficiency. More immediate beneficiaries include policy makers and program directors who can design energy efficiency

standards and compliance mechanisms to ensure that standards are actually met, so that broader societal goals for limiting energy requirements and carbon emissions can be achieved.

1.4 Transfer of Experience in Market Compliance Strategies

The proposed APEC project is the latest of a number of international and regional initiatives designed to improve the understanding of compliance regimes in S&L programs since 2008.

In February 2008, the International Energy Agency held a three-day conference called: '*Meeting Energy Efficiency Goals: Enhancing Compliance, Monitoring and Evaluation*'. This generated considerable interest in compliance issues, and demonstrated an appetite for sharing information and expertise on the design and implementation of MV&E regimes. The conference concluded that:

- Insufficient attention has been paid to 'compliance' issues by many programs – given their substantial impact on energy and greenhouse gas savings.
- There are opportunities for economies to learn from one another to improve MV&E processes and to collaborate to improve enforcement.
- There is a need to better understand compliance regimes in different economies and establish mechanisms for sharing expertise and information.

In order to address the need to improve knowledge about compliance regimes in different jurisdictions, a number of regional surveys were commissioned following the conference. These include:

- ATLETE survey of national legislation and conformity assessment for energy efficiency directives in European Member States (ATLETE, 2010). This built on earlier studies of MV&E practices (ANEC, 2007; Fraunhofer et al, 2009) in relation to the energy labelling directive (EC, 1992).
- *A Survey of Monitoring, Verification & Enforcement Regimes in Selected Countries*, undertaken in 2009-2010 and published in June 2010. This covers 14 countries including twelve G20 countries that operate standards and labelling programs as well as Chile and Tunisia (MEA/CLASP, 2010a).
- Survey by the 'Come On Labels' project on labelling display in over 700 retail outlets in 13 European countries undertaken in March 2012. In this report this survey is referred to as the 'Come On Labels' survey (Come on Labels, 2012).

In addition, in 2010 the following best practice MV&E guides were published and aimed at policy makers and practitioners as a means for sharing expertise and experience on the design, planning and implementation of MV&E:

- *Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labeling* (MEA/CLASP, 2010b).
- *Monitoring, Verification and Enforcement: Improving compliance within equipment energy efficiency programmes* (IEA, 2010). Published by the IEA as part of the Policy Pathways series.

In September 2010, two years after the first IEA conference, a second international meeting 'Saving More Energy Through Compliance' was organized by the IEA 4E Implementing Agreement. This brought together 120 government officials, representatives of enforcement authorities, industry representatives and compliance experts from 25 countries.

Conference participants proposed several priority projects designed to improve MV&E practices through international collaboration. These included:

a) The establishment of regional networks to develop initiatives for sharing capacity, information and expertise on MV&E, as an initial step towards further global initiatives.

b) Further opportunities to bring together interested parties to share experiences and strengthen ongoing communications, including international conferences.

The survey of APEC economies and the workshop on best practice in MV&E that comprise this APEC project address these proposals, and will make a significant contribution to the body of work aimed at improving the understanding of compliance regimes in different economies and establishing mechanisms for sharing expertise and information.

1.5 Best Practice in Market Compliance Strategies

There are many common features amongst compliance regimes that operate in different sectors in all economies. Most compliance regimes aim to encourage stakeholders to be compliant, and they achieve this by:

- Making sure all stakeholders understand their obligations.
- Minimising the transaction costs for demonstrating compliance.
- Increasing the risk that instances of non-compliance will be discovered.
- Taking corrective action quickly to minimise damage to the program and impacted parties.
- Making penalties proportional to the extent of transgression but sufficient to be an effective deterrent.
- Taking corrective action in a manner that is visible, in order to deter others.

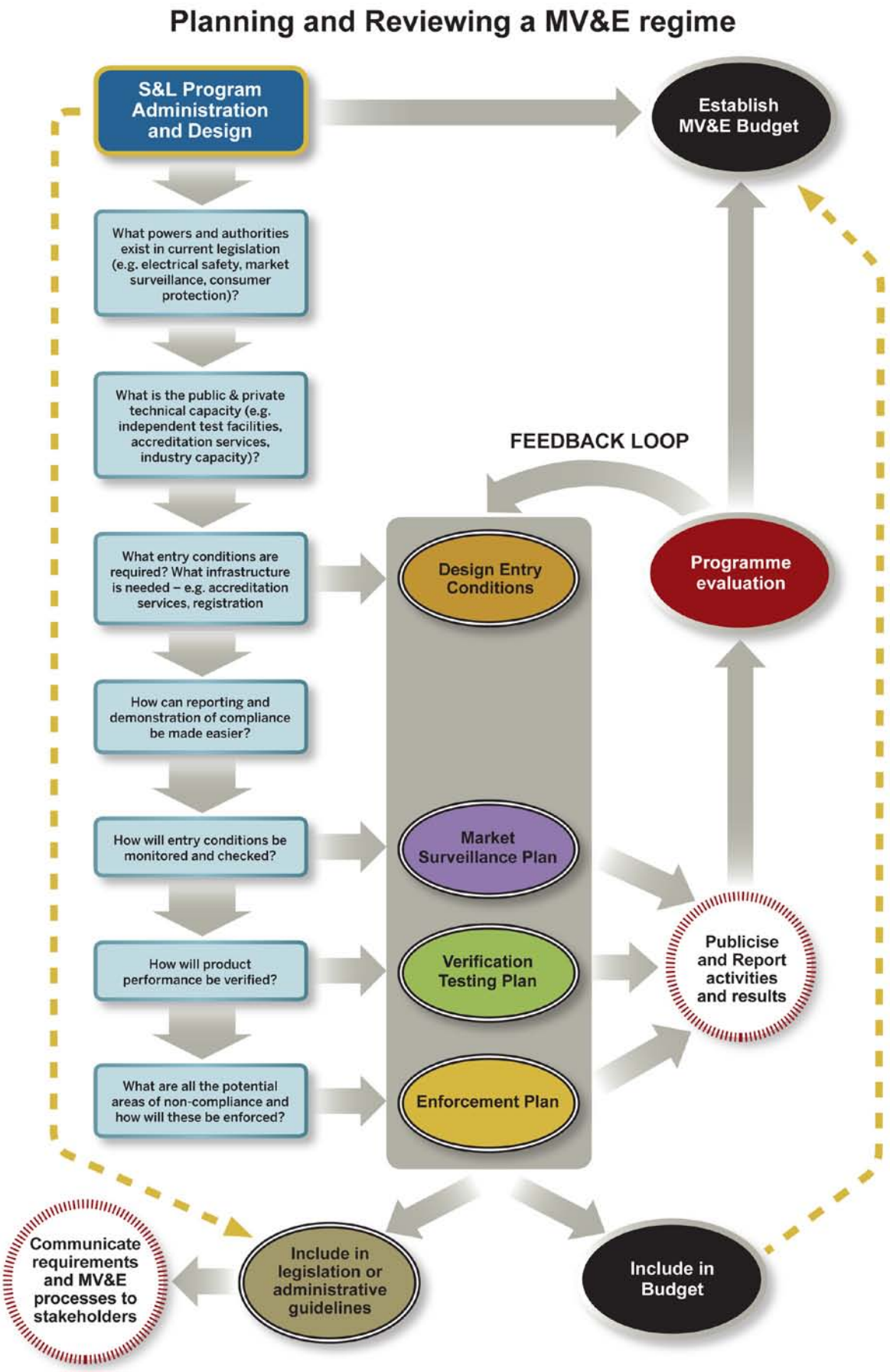
As a result, effective compliance regimes include all of the following eight important component mechanisms, although the design and implementation of each component will vary for each economy or sector:

1. Mechanism to facilitate compliance
2. Market surveillance
3. Verification testing
4. Enforcement
5. Communication, reporting, feedback
6. Legal and administrative framework
7. Budget and resource allocation
8. Evaluation processes

The features and options for each of these are explained further in the publication: '*Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labeling'* (MEA/CLASP, 2010b). The relationship between these components is illustrated in Figure 1.

These eight components provide a useful framework for the evaluation of MV&E regimes and are used in this report on market compliance mechanisms in the APEC region.

Figure 1: Guide to planning and reviewing a MV&E regime (MEA/CLASP 2010b)



2 Research Methodology

Two online questionnaires were developed for this project:

- Survey of Compliance Mechanisms for Energy Efficiency Standards Programs (MEPS);
- Survey of Compliance Mechanisms for Energy Efficiency Labelling Programs.

The surveys were designed to obtain a strong understanding of the compliance and enforcement processes and activities being undertaken in the APEC economies. The surveys were distributed to APEC representatives in the following 18 APEC economies: Australia, Canada, Chile, China, Chinese Taipei, Hong Kong, Korea (Republic of), Indonesia, Japan, Malaysia, Mexico, New Zealand, Peru, Philippines, Singapore, Thailand, US, and Vietnam.

No active S&L programs operate in the remaining APEC economies (Russia, Papua New Guinea, Brunei) and these were therefore not contacted.

Would-be participating representatives had the option of completing the surveys online or via Microsoft Word. It was recommended that the surveys were completed by experts within the economy who were familiar with energy efficiency programs and the compliance mechanisms used in that economy. The surveys consisted of a combination of multiple-choice and open-ended questions. The Standards Survey included 39 questions and the Labelling Survey 42 questions. Respondents were asked to complete either one or both of the surveys, depending on whether their economy had standards and/or labelling programs in place. The surveys were produced in English.

The participating representatives were asked to complete the surveys approximately one month after they were issued. However many were not able to make this deadline, and surveys continued to be welcomed and accepted. Telephone support was offered to those countries that appeared to be having difficulty in completing the questionnaires and in some cases it was necessary to complete or partially complete the questionnaire on behalf of the country concerned.

Copies of the survey questions are provided in the Appendix.

Once completed surveys were received, these were checked for consistency. In most cases the respondents were subsequently contacted to provide further information or clarification.

Where respondents were not able to provide all the necessary information, the researchers undertook supplementary desktop research of relevant reports and documents. The 39th meeting of the APEC EGEE&C working group held in Sydney in February 2012 included presentations by economies on their MV&E regimes and provided a further opportunity to check information.

Based on questionnaire responses and further research, a summary of the key elements of the MV&E processes for each economy was drafted. This was then sent back to respondents for their approval. Where requested, the summaries were then amended or corrected.

Analysis of the findings for the APEC region was conducted by using the combined data provided by each economy in the production of their economy summary.

3 Summaries of MV&E by Economy

This section provides summaries relating to standards and labelling energy efficiency programs in each of the following 18 individual APEC economies:

- Australia
- Canada
- Chile
- People's Republic of China
- Hong Kong, China
- Indonesia
- Japan
- Korea
- Malaysia
- Mexico
- New Zealand
- Peru
- Philippines
- Singapore
- Chinese Taipei
- Thailand
- United States
- Vietnam

The summary of each economy follows a uniform format aimed at capturing the key elements of the MV&E regime, as well as providing more general information such as the scope, date of commencement and contact details.

3.1 Australia

Program Type	Name	Products
MEPS	MEPS	17 product types (16 mandatory, 1 voluntary)
Comparative Label	Energy Rating Label	8 product types (7 mandatory, 1 voluntary)
Endorsement Label	Energy Star	1 product type (ICT); 6 products

Details of the Energy Star Program are not included in this summary.

3.1.1 Year of Implementation

The national Energy Efficiency Program began in 1992, although appliance energy rating labels had been used in some jurisdictions since 1986. Australia became an international Energy Star partner in 1999.

3.1.2 Responsible Government Department

The Australian Government Department of Climate Change and Energy Efficiency (DCCEE) administers the compliance program on behalf of the Equipment Energy Efficiency (E3) Committee. The E3 Committee is an inter-jurisdictional committee comprised of representatives from all state and territory jurisdictions and New Zealand.

3.1.3 Legal Framework

The legal basis for the program is contained in state and territory legislation/regulations, which require that prescribed electrical equipment must be registered with one of the state regulators before it can be sold. An application for registration must include a declaration of compliance with the relevant performance criteria for MEPS and where applicable, labelling and the results of testing and calculations. Regulations make reference to published standards that contain the relevant performance requirements and test methodologies for each category of regulated appliance, and where relevant, describe labelling requirements.

Regulations also provide the authority for the Regulator to examine or test equipment to determine whether it complies with the relevant performance standards or labelling requirements.

Procedures for verification tests, including the selection of products for testing, are contained in publicly available Administrative Guidelines.

New Commonwealth legislation (The Greenhouse and Energy Standards Bill) is under development and is likely to come into force in 2012. Although this will not change the basic requirements of the program, it will create a national regulator with powers to request annual sales data, undertake investigations and enforce civil and criminal penalties.

3.1.4 Overall MV&E Structure

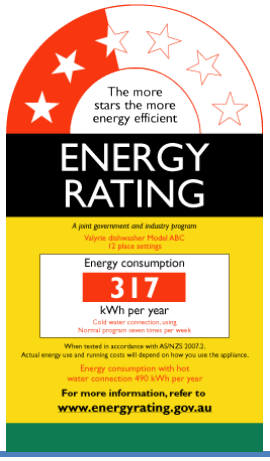
Manufacturers and importers are required to register the claimed performance of all products covered by the program before they can be sold. The Government verifies these claims by check testing samples of products on the market, using a selection process that aims to identify products that are likely to fail. Verification testing is conducted by independent laboratories and a risk-based approach is used when selecting products. The Government also regularly surveys retail outlets for compliance with labelling display requirements and to check that all eligible products are registered.

3.1.5 Education/Information

DCCEE ensures that industry understands the requirements of the programs through detailed information on the public website, leaflets and training programs, periodic conferences, consultation events with industry, and advanced notice to industry via direct mail. Meetings are also held with industry associations biannually to discuss the requirements of the programs. For some product categories (e.g. incandescent lamps), the Australian Customs Service is responsible for alerting importers to the requirements.

E3 held an industry forum on compliance issues in 2011, to discuss compliance issues and gain input from stakeholders into the selection of products for future testing and the compliance priorities for the next year. It is likely that this will be an annual event.

Figure 2: Australian Energy Rating Label



3.1.6 Monitoring

To check that all eligible products are registered and that the energy efficiency labels are placed correctly on products at the point of sale, E3 conducts regular surveys (see Table 1). These span retail outlets, catalogues and internet sites. It is the responsibility of the vendor to ensure that products offered for sale are correctly labelled.

Table 1: Store Survey Results 2009-2011

Product	Date	Appliances	Stores	Labelling compliance	Registration compliance
Refrigerator/freezers, dishwashers, clothes washers, clothes driers	2009	24,851	265	98.1%	99.4%
Air conditioners	2010	3,371	321	89.1%	98.1%
Televisions	2011	5,140	101	93.2%	98.2%

3.1.7 Verification of Product Performance

E3 conducts verification tests using independent accredited laboratories according to the program's publicly available Administrative Guidelines. These guidelines include a risk-based approach to the selection of products using historical information, competitor referrals and specific selection criteria to select models at greatest risk of failing check testing. Where a product fails an initial screen test on a single sample, a further set of tests on multiple (usually three) samples is used to confirm the non-compliance of the model.

Products are usually purchased from retailers for testing, however for commercial and industrial products these may be procured from wholesalers or directly from the supplier.

Of the 1,000 verification tests conducted between 1995 and 2010, 21% resulted in the cancellation of registration (excluding them from future sales), and a further 1% was referred to the Australian Competition and Consumer Commission for enforcement action.

Of the 75 tests completed in the first six months of 2011, 8% led to the cancellation of registration.

3.1.8 Enforcement

- **MEPS**

If a product fails the stage 1 test, the supplier is notified of the outcome and given 15 days to decide whether to voluntarily refer the model's registration for cancellation, or elect to proceed to stage 2 testing.

When an appliance is deemed by the regulator to have failed the second stage of verification testing, registration of the product is cancelled and the product must be removed from sale. Details of the brand, model and the nature of the non-compliance are uploaded to a public website. Once the registration has been cancelled, E3 may negotiate with the supplier for consumers to be recompensed for additional energy consumed and for the offsetting of environmental detriment through the purchase and retirement of carbon credits.

In 2010/11, there were five cases where compensation based on the additional energy consumed by the product was negotiated with the supplier. In addition, E3 may refer extreme or repeat offenders to the Australian Competition and Consumer Commission for further enforcement action.

- **Labelling**

When labels are found to be incorrectly displayed on products, the supplier is notified and asked to remedy the situation. Regulators may impose fines on retailers for each model incorrectly labelled. The process for verifying and enforcing the correct labelling of models according to their energy performance is the same as for MEPS (see above).

3.1.9 Public Information

All models within the program, as well as their energy performance details, are listed on public websites.

The following information is also publicly reported on a regular basis: the number of checks undertaken; the results of checks; the number of verification tests conducted (including pass and fail rates); individual products or brands that have failed verification testing; and compensation offered by suppliers of non-compliant products.

The results of labelling display and registration surveys are also published.

Further Information	
	http://www.energyrating.gov.au/programs/e3-program/compliance
Contact Person	
Lucinda McIntyre	Department of Climate Change and Energy Efficiency (DCCEE) Email: Lucinda.McIntyre@climatechange.gov.au

3.2 Canada

Program Type	Name	Products
MEPS	Standards	47 energy-using products (i.e. domestic appliances, HVAC, lighting, ICT, motors, etc.)
Comparative Label	EnerGuide	9 product types (mandatory for domestic appliance and AC; voluntary for some HVAC products)
Endorsement Label	Energy Star	50 products (i.e. HVAC, ICT/office equipment, lighting, domestic appliances, windows and doors)

3.2.1 Year of Implementation

The EnerGuide Program started in 1978 (in conjunction with the Consumer Packaging and Labelling Act). MEPS have been implemented since 1995, and the Energy Star program commenced in 2001.

3.2.2 Responsible Government Department

- **MEPS and Comparative Label**

The Office of Energy Efficiency (OEE), part of Natural Resources Canada (NRCan), runs the compliance regime for these energy efficiency programs in Canada.

- **Endorsement Label**

The following departments/organizations are responsible for the program and its compliance activities: NRCan, OEE, the US Environmental Protection Agency (EPA) and the US Department of Energy (DOE).

3.2.3 Legal Framework

- **MEPS and Comparative Label**

The legal basis for the compliance and enforcement regime are contained in the Energy Efficiency Act (1992, revised in 2009) and the Energy Efficiency Regulations (1995). The legal framework establishes: relationships with certification bodies (all products must have an energy efficiency verification mark from a certification body accredited by the Standards Council of Canada); market surveillance; and verification testing. The MEPS program also includes import controls under the legal framework. Monitoring and compliance activities of the MEPS and Labelling programs include: validating energy efficiency reports and import documents submitted to NRCan; maintaining a database of prescribed product models; stakeholder communication regarding compliance; and enforcement for issues of non-compliance.

- **Endorsement Label**

The Energy Star Program in Canada operates under an Administrative Agreement with the US EPA and DOE. The legal framework establishes relationships with certification organizations, market surveillance, and verification testing. Under the framework, NRCan/OEE must also prepare the Participant Administrative Arrangement/Letter of Permission. This outlines the responsibilities of the Agency and the participant.

3.2.4 Overall MV&E Structure

The Act and Regulations place the responsibility for demonstrating compliance with energy performance requirements on 'dealers', which include manufacturers, importers and those selling or leasing energy-using products from a person who manufactured the product in Canada or imported it into Canada. Dealers are required to ensure an energy efficiency report is submitted to NRCan for

models of prescribed products before they are imported into Canada or transported between provinces. Requirements include energy performance information on the products (for EnerGuide and MEPS). Import documents require information such as the type of product, brand name, model number, name and address of dealer, and purpose of import.

3.2.5 Education/Information

- **MEPS and Comparative Label**

OEE and NRCan communicate with stakeholders regarding compliance policy through product bulletins, government or trade conferences/seminars, their website and via direct mail. Consultations are also held with stakeholders as part of the federal regulatory process, which mandates a 75-day comment period between pre-publication and publication of a proposed regulation in Canada Gazette.

Methods of communicating responsibilities to stakeholders include: retailer training (EnerGuide); information provided on the website and via advanced notice through e-mail and occasionally direct mail. NRCan depends on the following monitoring mechanisms to ensure that industry understands the requirements of the program: self-monitoring by dealers and third party verification; energy efficiency report verification; independent product testing by NRCan; monitoring by regulated authorities; and tips and complaints.

Figure 3: Canadian ENERGUIDE Label

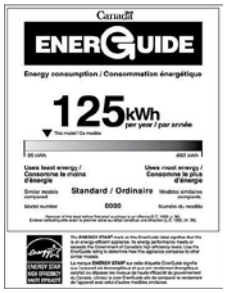


Figure 4: Canadian ENERGY STAR Label

- **Endorsement Label**

Retailers and manufacturers of products who are participants in the program receive regular email communications and have access to an exclusive web site. Their obligations are outlined in participant agreements. NRCan also holds online and in person meetings and teleconference calls, and an annual meeting and awards ceremony. Industry and the general population are made aware of developments within the program via: government advertisements in public media; government or trade conferences/seminars; information available on the department's website; and through communications from participants and other stakeholders. Industry is also involved in developing new specifications for the program.

3.2.6 Monitoring

NRCan maintains a database of compliant products. NRCan's OEE is required to: process import documents and energy efficiency reports and confirm that information from these documents is consistent; update the equipment database; conduct marketplace audits; and administer independent product testing.

One of the objectives of this system is to minimise the burden on regulatees (dealers of energy-using products, including manufacturers, importers and retailers). As much as possible, the regulatory requirements rely on information already provided in existing documents.

For MEPS, the certification bodies must conduct regular surveillance tests on products that they have verified. Other monitoring activities include: import controls; visuals checks of retail outlets; checks of catalogues and internet sites; and audits undertaken by external resources for the labelling programs.

The approximate cost for labelling surveillance in 2010 was $65,000 (CAD dollars). The overall compliance levels were 95-100% from 2008-2010 for the labelling and MEPS programs.

3.2.7 Verification of Product Performance

Canada operates a third party certification scheme featuring certification bodies that are accredited by the Standards Council of Canada (SCC).

3.2.8 Enforcement

Instances of non-compliance are dealt with initially by written communication between NRCan and the dealer. Failure to rectify the violation can lead to the imposition of fines, suspension from the program, and other market restrictions.

3.2.9 Public Information

NRCan maintains product databases (containing both EnerGuide and ENERGY STAR listings) and web-based product search engines, which inform and educate the general public, utilities, and other organizations and are used by other entities and jurisdictions as the basis of standards, programs, incentives, and outreach activities.

Further Information	
	http://oee.nrcan.gc.ca/regulations/16802
Contact Person	
Victoria Ingram	Natural Resources Canada (NRCan) Email: Victoria.Ingram@NRCan-RNCan.gc.ca

3.3 Chile

Program Type	Name	Products
MEPS (under development)	MEPS	2 products; 2 product types (lighting and refrigerators)
Comparative Label	Energy Efficiency Labelling Program (Programa de Etiquetado de Eficiencia Energética)	14 products; 5 product types (HVAC, motors, lighting, ICT, domestic appliances)

As the MEPS Program is under development, the information listed below only applies to the Comparative Label. The Government of Chile is to develop MEPS for incandescent lamps and refrigerators (and potentially other products) from 2012-2013.

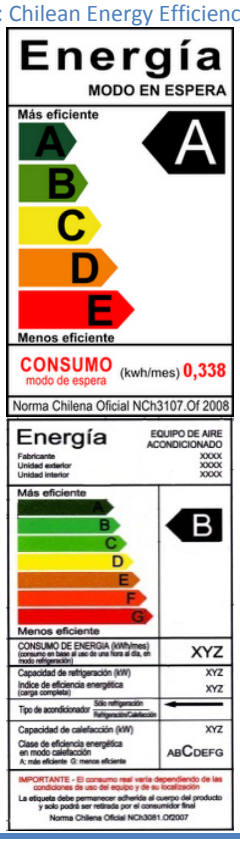
3.3.1 Year of Implementation

The first label was placed on the market in 2007.

3.3.2 Responsible Government Department

The authority with the overall responsibility for the labelling program is the Ministry of Energy. The Superintendence of Electricity and Fuels (SEC) administers the compliance program.

Figure 5: Chilean Energy Efficiency Label



3.3.3 Legal Framework

The legal basis for the program is contained in the 18.410 of 1985, *Organic Law of the Superintendence of Electricity and Fuels*, and *Decree #298* of 2005, which regulates the certification process of products that employ electricity and fuels. The legal framework establishes relationships with third party certification organizations. Market surveillance is conducted by SEC.

3.3.4 Overall MV&E Structure

Importers and producers must have their products certified through a third party certification institution before the products can be sold on the market. Products are tested by laboratories that are independent from industry and government. The results of testing are certified by a certification organization and the results are then given to SEC. The government also check tests samples of products on the market to ensure proper use of the labels. Verification testing is further conducted on samples of products.

3.3.5 Education/Information

The Ministry of Energy ensures stakeholders are aware of their responsibilities through government advertisements in public media, stakeholder training, and government or trade

conferences/seminars. Stakeholders are also given notice approximately 12 months in advance of a change in legislative or program requirements.

3.3.6 Monitoring

To check that all eligible products are registered and that the energy efficiency labels are placed correctly on products at the point of sale, the Ministry of Energy undertakes import controls and random visual checks of retail outlets. For instance, 72 surveys/controls were undertaken in 2008, 21 in 2009 and 103 in 2010. The approximate costs for labelling surveillance were $289,000 (US dollars) in 2008, $187,610 in 2009, and $205,729 in 2010.

The overall compliance rate for the program was 83% in 2008, 50% in 2009, and 72% in 2010.

3.3.7 Verification of Product Performance

The quality of third party certification agencies is maintained through a periodic renewal process administered by the National Standards Institute of Chile (INN). Independent verification on samples of products is also undertaken periodically every year (see Table 2).

Table 2: Number of models tested by year

Product	2008	2009	2010
Refrigerators	347 models	347 models	278 models
Lamps	528 models	839 models	657 models

3.3.8 Enforcement

When products are found to be incorrectly labelled, the following may occur: the supplier is notified and asked to remedy the situation; the supplier is issued with a warning, and/or fines are imposed.

3.3.9 Public Information

The models within the program, as well the energy performance details of these products, are not made publicly available via publications or websites.

Further Information	
Minimum Energy Performance Standard	http://www.minenergia.cl
Comparative Labelling	http://www.acee.cl/576/channel.html
Contact Person	
Marcelo Padilla	Ministerio de Energía Email: mpadilla@minenergia.cl

3.4 China PRC

Program Type	Name	Products
MEPS	Mandatory Standards	Over 46 products (i.e. lighting, ICT, domestic appliances, HVAC, motors, domestic cooking)
Comparative Label	Mandatory China Energy Label	25 products
Endorsement Label	Voluntary Energy-saving Certification Mark	50 products (i.e. ICT/office equipment, lighting, domestic appliances)

The following information relates mainly to the labelling programs.

3.4.1 Year of Implementation

MEPS were implemented in 1989. The Energy Saving Certification Mark was launched in 1999 and the Comparative Labelling program began in 2005.

3.4.2 Responsible Government Department

The authority with overall responsibility for energy saving and emission reduction is the National Development and Reform Commission (NDRC). NDRC issues the policies, regulations, guidebooks and programs on energy saving.

The comparative label and certification mark are under the management of conformity assessment, with the China Certification and Accreditation Administration (CNCA) being the competent administrative department in this role.

Standards that pertain to the comparative label and certification mark are issued by the Standardization Administration of China (SAC), but standards' research is done by CNIS (China National Institute of Standardization). CNIS is the research institute for all these energy saving and emission reduction standards.

China General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) is the competent administrative department of quality in China. The general compliance supervision on the comparative label and certification mark is undertaken by them.

China Energy Label Center (CELC) is the implementing department on the comparative label.

3.4.3 Legal Framework

The legal frameworks are: the Energy Conservation Law of the People's Republic of China, the Product Quality Law of the People's Republic of China, the Regulations of the People's Republic of China on Certification and Accreditation, and the Administration Regulation on energy efficiency labelling. For each labelling product, NDRC issues Implementation Rules in details with AQSIQ and CNCA together. The legal framework establishes market surveillance requirements for the program.

3.4.4 Overall MV&E Structure

- **Comparative Label**

In order for suppliers/manufacturers to join the program, CELC asks that the following be provided: a test report from an independent party laboratory (laboratory should be registered to CELC); a self-

declaration of energy performance; and completed registration for each model(s). Stores and suppliers are responsible for ensuring products for sale are correctly labelled.

Checks are conducted by the Government (AQSIQ and its branches) to ensure the labels are being used properly. Verification testing is undertaken on high efficiency models only; 10 products per product category are tested. CELC began verification testing in 2010.

- **Certification Mark**

Products applying for the certification mark are required to undertake a third party certification process.

- **Improving Laboratory Competence**

A program designed to improve the competence of laboratories is organized by CELC, and includes on-site checks and round-robins with the Chinese Reference Laboratory. 252 laboratories participated in the round-robin in 2009, and 338 in the following year. CELC also maintains a register of laboratories that have proved competent for testing 21 product categories. In 2010, there were 596 registered laboratories including 190 third party laboratories.

3.4.5 Education/Information

Industry is kept informed of the program's requirements through the Committee of Experts on Energy Efficiency Labelling, which liaises closely with CELC. CELC normally provides free information on websites and organizes free training seminars to manufacturers and stores.

3.4.6 Monitoring

A government agency undertakes surveys to check that labels are placed correctly on products at the point of sale. These checks include: import controls, visual checks of retail outlets, checks of catalogues, and checks of internet sites. AQSIQ organizes national market surveillance on MEPS and labelling; its branches monitor these for manufacturers that are located in their area. CELC also organizes annual sampling and a testing program, which includes additional market checks on the correct uses of the label (based on related policies).

According to CNIS, the overall compliance rate in 2008 for the mandatory labelling program was 96.77%.

Figure 6: China Energy Label

Figure 7: Chinese Energy Saving Certification Mark

3.4.7 Verification of Product Performance

Manufacturers provide product samples to CELC for verification testing on high efficiency products. Following requests from CELC, samples are collected from manufacturers and screen tests are conducted. According to CNIS, 225 appliances from 10 product categories were tested in 2010.

For monitoring, all samples are purchased from retailers or the market.

3.4.8 Enforcement

- **Labelling**

If products within the scope of the regulations are found to be incorrectly labelled, the following actions can occur: supplier or store is notified and asked to remedy the situation; supplier or store is notified and issued with a warning; fines are imposed; and/or the supplier or store is publicly named.

If products fail a verification test, the following actions can be taken: supplier is given a time period to rectify the situation; and/or the product must be withdrawn from the market.

- **MEPS**

If a product is found to be non-compliant the following actions can occur: supplier or store is notified and asked to remedy the situation; supplier or store is notified and issued with a warning; fines are imposed; and/or the supplier or store is publicly named.

3.4.9 Public Information

A list of models within the program and the energy performance details of these products are made publicly available via publications and a public website. The following information is also made public: the number of labelling surveys undertaken; the results of labelling surveys; the number of verification tests conducted (including pass/fail rates); and the individual products or brands that have failed verification testing.

Further Information	
	http://english.aqsiq.gov.cn/
	http://www.energylabel.gov.cn (just in Chinese)
Contact Person	
Zhang Shaojun	China National Institute of Standardization (CNIS) zhangshj@cnis.gov.cn

3.5 Hong Kong, China

Program Type	Name	Products
Comparative Label	The Hong Kong Mandatory Energy Efficiency Labelling Scheme (MEELS)	5 products; 3 product types (lighting, HVAC, domestic appliances)
Comparative Label and Endorsement Label	The Hong Kong Voluntary Energy Efficiency Labelling Scheme (VEELS)	20 products; 4 product types (HVAC, domestic appliances, lighting, ICT)

3.5.1 Year of Implementation

The Voluntary Energy Efficiency Labelling Scheme (VEELS) started in 1995, and the Mandatory Energy Efficiency Labelling Scheme (MEELS) commenced in 2009.

3.5.2 Responsible Government Department

The Electrical and Mechanical Services Department, HKSAR Government has overall responsibility for the program and for compliance.

3.5.3 Legal Framework

The legal framework for MEELS is the Energy Efficiency (Labelling of Products) Ordinance (Cap. 598), and the Code of Practice on Energy Labelling of Products (issued under the Ordinance). This establishes the requirements on testing laboratories, test reports, test methods and grading calculation methods as well as the market surveillance and verification testing processes for the program.

There is no legal framework for VEELS; however, there are still monitoring and verification requirements in the program. The Trade Descriptions Ordinance (Cap. 362) or Copyright Ordinance (Cap. 528) is also enforced by the authorities if incorrect information is identified on energy labels.

3.5.4 Overall MV&E Structure

- **MEELS**

In order to join the program or to sell products, a test report issued by an accredited laboratory or certified by a recognized independent certification body must be supplied. Checks are regularly undertaken at shops to ensure that the labelling specifications are being adhered to. The program has a two-part verification process. Products are tested to check that the energy performance requirements comply with the label information.

- **VEELS**

The following must be issued to join the program: a test report from a recognised laboratory and a certificate of the laboratory provided by a recognised party or accreditation body; and suppliers/manufacturers must also complete a registration process for each model/family of models. Verification testing is conducted at accredited laboratories on products that are selected at random.

3.5.5 Education/Information

- **MEELS**

Stakeholders are made aware of their responsibilities through: government promotion in public media, government or trade conferences/seminars, information available via a website or guidance documents, and notice via direct mail. Stakeholders are also given advance notice of a change in

legislation or a change in the program requirements. Industry is given a grace period of 18 months before the implementation of MEELS. In order to ensure that industry understands the program requirements, the following is undertaken: trade surveys, publicity visits to retail shops that supply products within the program, meetings/seminars with industry.

- **VEELS**

Stakeholders are informed of their responsibilities through: government promotion in public media, government or trade conferences/seminars, and information available via a website or guidance documents. Stakeholders are informed three to four months in advance of a change in the program and they are encouraged to provide comments.

Figure 8: Hong Kong China MEELS

Figure 9: Hong Kong China VEELS

3.5.6 Monitoring

- **MEELS and VEELS**

It is the responsibility of both the store and supplier to ensure products are correctly labelled. Suppliers are required to affix the labels to the products. Under both schemes, regular inspections at retail shops (and other supply points) are conducted.

3.5.7 Verification of Product Performance

- **MEELS**

The program operates a two-part verification process. Screen and full verification tests are conducted by independent accredited laboratories. Product samples are selected from retail by the government agency using random and risk-based sampling. Approximately 70 appliances were tested in 2010. The compliance rate for MEELS in 2010 was approximately 93% for those products subjected to verification tests.

- **VEELS**

Accredited laboratories are commissioned by the Government to buy samples from retail outlets and undertake testing. Products are selected using random and risk-based sampling. Full verification tests are conducted—screen tests are not. Approximately 30-50 appliances are tested annually, depending on funds and the rates of compliance. Approximately 80% of the appliances tested from 2008-2010 passed full verification tests.

3.5.8 Enforcement

- **MEELS**

The following actions are usually taken if participating products within the scope are found to be incorrectly labelled: the supplier or store is notified and asked to remedy the situation; the supplier or store is notified and issued with a warning; the supplier is not permitted to supply the relevant products; and/or prosecution is taken that may cause fines by the court.

If an appliance fails a verification test, the following can apply: the supplier is contacted and asked to explain; the product must be withdrawn from the market; and supplier/product information is uploaded to a publicly available website.

- **VEELS**

The following actions are usually taken if participating products within the scope are found to be incorrectly labelled: the supplier or store is notified and asked to remedy the situation; the supplier or store is notified and issued with a warning; and/or models are de-registered from the scheme. Suppliers/manufacturers that have violated the Trade Description Ordinance (Cap. 362) have also been referred to the relevant department in the past few years.

If a product fails a verification test, the supplier is contacted and asked to explain, and the supplier is given a time period to rectify the situation (if the product fails in the re-test). If the product fails in the re-test, it is removed from the list of registered products within the program.

Figure 10: Endorsement Energy Label

3.5.9 Public Information

A list of models within the programs and the energy performance details of these products are made publicly available on a website. In the MEELS program, the test results of all verification tests conducted (including pass/failure cases) are made publicly available through websites. The individual product models that have failed verification testing in the MEELS program are also made publicly available via website. In the VEELS program, the models that are found to be non-compliant are de-registered and removed from the website.

Further Information	
MEELS	http://www.emsd.gov.hk/emsd/eng/pee/eels_mandate.shtml
VEELS	http://www.emsd.gov.hk/emsd/eng/pee/eels_vlntry.shtml
Contact Person	
Lap-chi WONG	Electrical and Mechanical Services Department, HKSAR Email: wonglc@emsd.gov.hk

3.6 Indonesia

Program Type	Name	Products
MEPS (under preparation)	MEPS	5 product types (lighting (CFLs), air conditioners, TVs, refrigerators, motors)
Comparative Label	Energy Efficiency Labelling	1 product type (CFLs)
Endorsement Label (under preparation)	Energy Efficiency Labelling	9 products (air conditioners, refrigerators, rice cookers, electronic ballasts, motors, TVs, electronic irons, washing machines, fans)

3.6.1 Year of Implementation

Mandatory labelling came into effect in 2011 for compact fluorescent lamps (CFLs), and the intention is to introduce voluntary labelling for 9 other products types progressively according to the schedule in Table 3.

Table 3: Proposed Timetable for Labelling of Appliances

Products	Year				
	2011	2012	2013	2014	2015
CFLs					
Refrigerators & Air Conditioners					
Electric Ballasts, Fans & TVs					
Rice Cookers & Electric Motors					
Electric Irons & Washing Machines					

3.6.2 Responsible Government Department

The Ministry of Energy and Mineral Resources is responsible for the energy efficiency labelling program, with the Ministry of Trade responsible for the monitoring of product distribution in the market. The Ministry of Industry is responsible for the SNI label to certify safety, which must be obtained before a product can apply for the energy efficiency label.

3.6.3 Legal Framework

The legal basis for the implementation program is the Ministerial Regulation No.6/year 2011, which mandates energy efficiency labelling for CFLs.

3.6.4 Overall MV&E Structure

In order to gain the energy efficiency label, products are to gain certification through a government appointed accreditation body that ensures that products are tested by independent and accredited test laboratories. Products that meet the requirements can then be issued with a certificate and assigned a star rating (of four stars).

For CFLs, the manufacturer or importer must issue a written declaration of conformity and submit this to the Ministry of Energy and Mineral Resources before the Energy Efficiency Label can be put on that product.

3.6.5 Education/Information

The following information is used to ensure stakeholders are aware of their responsibilities: government advertisements in public media, government or trade conferences/seminars, and information made available via a website or guidance documents. Seminars are held with industry to monitor how well they understand the requirements of the program.

3.6.6 Monitoring

Monitoring activities will commence at the end of 2012 by the Ministry of Energy and Mineral Resources, Ministry of Industry and Ministry of Trade.

3.6.7 Verification of Product Performance

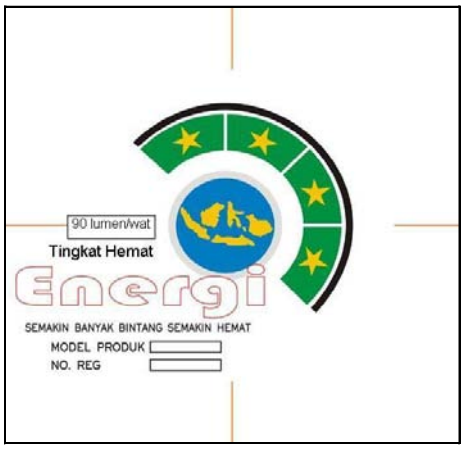
The verification process is being developed by the Ministry of Energy and Mineral Resources, Ministry of Industry and Ministry of Trade. There are some existing testing laboratories to support the energy efficiency labelling program, however, the capacity and capability of the laboratories are still limited.

3.6.8 Enforcement

For CFLs, violations of the provisions of the Declaration of Conformity may be sanctioned according to regulations.

Locally produced CFLs that do not bear signs of an energy-saving label will be removed from the market.

Figure 11: Indonesian Comparative Label



Imported CFLs that do not bear the energy efficiency label are prohibited entry into Indonesia and must be re-exported or destroyed.

3.6.9 Public Information

Public information is available at: www.konservasienergiindonesia.info.

Further Information	
	http://www.esdm.go.id/index-en.html
Contact Person	
Kunaefi	Head of Section for Energy Management Supervision Department of Energy & Mineral Resources Email : kunaefi_esdm@yahoo.com
Awang Riyadi	Head of Section for Efficient Energy Technology Implementation Department of Energy & Mineral Resources Email : awangriyadi@yahoo.com

3.7 Japan

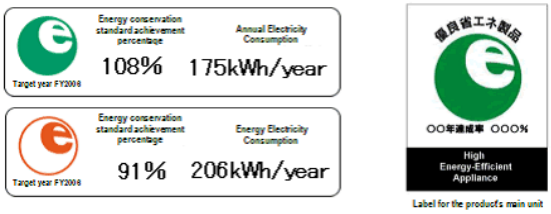
Program Type	Name	Products
Energy Efficiency Standards Program	Top Runner Program	23 products
Comparative Label	Energy Saving Labelling Program (for manufacturers)	18 products
Comparative Label	Uniform Energy-Saving Label (for retailers)	5 products (TVs, air conditioners, refrigerators, electric toilet seats, fluorescent lights)
Endorsement Label	International Energy Star Program	8 products; 1 product type (office equipment)

Details on the Energy Star Program are not included in this summary.

3.7.1 Year of Implementation

The first energy efficiency standards were created in 1979; however the Top-Runner Program was not introduced until 1999. The Energy Saving Labelling Program started in 2000 and the Uniform Energy-Saving Label went into effect in 2006.

Figure 12: Japanese Energy Saving Label



Note: green "e" mark indicates that product achieved the target; the orange "e" mark indicates that product did not achieve the target

Figure 13: Japanese Uniform Energy-Saving Label

3.7.2 Responsible Government Department

The authority with overall responsibility for the programs is the Ministry of Economy, Trade and Industry (METI). This agency also administers the compliance programs.

3.7.3 Legal Framework

- **Top Runner Program**

Top Runner differs from the usual application of MEPS in that it applies to the sales weighted average performance of products sold by each supplier. The legal framework is the Law Concerning the Rational Use of Energy (or the Energy Conservation Law). Related laws include the Enforcement Ordinances (Government Ordinance), the Enforcement Regulations (Ministerial Ordinance), and Notifications. The legal framework establishes requirements for verification testing, and education for stakeholders (e.g. manufacturers and importers), and allows the names of manufacturers/importers that do not meet the weighted average efficiency targets to be made public if they do not meet the targets.

- **Labelling**

The legal basis for the Uniform Energy Saving Label is the Act concerning the Rational Use of Energy. This framework establishes the registration process and the education of the program to mainly

consumers. Meanwhile, the Energy Saving Labelling Program for manufactures/importers is stipulated by JIS (Japanese Industry Standard).

3.7.4 Overall MV&E Structure

- **Top Runner Program**

In order to join the program, manufacturers/importers must supply a self-declaration of energy performance. The program also requires that manufacturers and importers display Top Runner information on the products. Checks are made by METI to ensure the products conform to the program's standards (e.g. documents are checked).

- **Labelling**

Manufacturers/importers must provide a self-declaration of energy performance prior to joining the program. The industry association (for certain product types) undertakes an energy efficiency performance test. Surveys are also conducted by a government agency to ensure that the labels are placed correctly on products at the point of sale. The industry association may randomly select products for testing.

3.7.5 Education/Information

- **Top Runner Program**

The following is used to ensure manufacturers and importers are aware of their responsibilities within the program: government advertisements in public media, training, information made available via websites or guidance documents, and government or trade conferences/seminars. Manufacturers/importers are notified 12 months in advance of a change in legislative or program requirements.

- **Labelling**

METI ensures that manufacturers and importers understand the requirements of the programs through government advertisements in public media and through the training of stakeholders. Manufacturers/importers are given notice 12 months' notice of a change in legislative or program requirements.

3.7.6 Monitoring

- **Top Runner Program**

The Agency undertakes checks to ensure the requirements of the Top Runner program are being complied with. For instance, documents submitted by manufacturers and importers are checked.

- **Labelling**

The industry associations take responsibility for ensuring that products are correctly labelled. Checks are also conducted by a government agency to ensure products are labelled correctly. For example, 150 manufacturers/importers were surveyed in 2009. The survey results showed that 119 companies for 12,000 product models were correctly labelled.

3.7.7 Verification of Product Performance

- **Labelling**

Depending on the product category, many industry associations conduct tests on randomly selected products and use peer-review amongst member companies to ensure the accuracy of labels.

3.7.8 Enforcement

- **Top Runner Program**

METI advises manufacturers of products that do not fulfil the requirements of the program. A name-and-shame approach is used if manufacturers do not make improvements when asked to do so by METI. Additional enforcement actions may be taken (e.g. fines).

- **Labelling**

If products are found to be incorrectly labelled, the manufacturers/importers or retailers are notified and asked to remedy the situation.

3.7.9 Public Information

- **Top Runner Program**

A list of models within the program is provided in a publicly available publication and on a website. The energy performance details of products within the program are also included on publicly available publications and/or websites.

- **Labelling**

Models within the program, as well as their energy performance details, are listed on public websites and publications.

Further Information	
	http://www.enecho.meti.go.jp/policy/saveenergy/toprunner2011.03en-1103.pdf http://www.ieej.or.jp/aperc/CEEP/Japan.pdf
Contact Person	
Naoko Doi	The Institute of Energy Economics, Japan Email: doi@edmc.ieej.or.jp

3.8 Korea

Program Type	Name	Products
MEPS and Labelling	Energy Efficiency Labelling and Standards Program	30 products; 5 product types (HVAC, domestic appliances, ICT, motors, lighting)
Endorsement Label	E-Standby Program & Standby Warning Label	22 products (e.g. ICT, domestic appliances)
Endorsement Label	High Efficiency Appliance Certification Program	36 products (e.g. motors, ventilators, boilers, chillers, fans, lighting, transformers, ventilators, power supplies)
Endorsement Label (from 2012)	Energy Frontier Label	TVs, refrigerators, air conditioners, drum washing machines

3.8.1 Year of Implementation

The Energy Efficiency Labelling and Standards Program began in 1992. The High Efficiency Appliance Certification Program was started in 1996 and the E-Standby Program began in 1999. The Energy Frontier Label is due to commence in 2012.

3.8.2 Responsible Government Department

The department that administers the MEPS and labelling programs is the Korea Energy Management Corporation (KEMCO) and the Ministry of Knowledge Economy (MKE).

3.8.3 Legal Framework

The framework is provided by the Rational Energy Utilization Act, which establishes market surveillance and verification testing.

To test products for energy efficiency, laboratories must qualify under the Korea Laboratory Accreditation Scheme, Article 35 under the National Standard Law, Article 23.

Figure 14: Korean Mandatory Warning Label for products failing standby standard

Figure 15: Korean E-Standby Program Label

Figure 16: Korean Energy Efficiency Grade Label for Refrigerator

3.8.4 Overall MV&E Structure

In order to sell products, suppliers must supply a test report from an independent third party laboratory. KEMCO undertakes labelling surveys and verification testing to ensure compliance with program requirements.

3.8.5 Education/Information

- **MEPS and Labelling Program**

The following are used to ensure stakeholders are informed of their responsibilities: stakeholder training, information made publicly available, and notice via direct mail. Industry is informed of changes to the program at least six months in advance.

- **Comparative Label**

Industry is informed of their responsibilities via: government advertisements in public media, government or trade conferences/seminars and notice via direct mail. Industry is made aware of changes to the program at least six months in advance.

- **Endorsement Label**

Industry is made aware of their obligations through: government advertisements in public media, and notice via direct mail. They are informed at least six months in advance of changes to the program.

3.8.6 Monitoring

- **MEPS and Labelling Program**

Manufacturers are responsible for ensuring that products offered for sale are correctly labelled. Surveys, such as visual checks of retail outlets and checks of Internet sites, are undertaken by a government agency to ensure labels are placed correctly on products. The approximate costs for labelling surveillance and monitoring, verification and enforcement activities on standards were $245,430 (US dollars) in 2008, $369,703 in 2009, and $435,205 in 2010. The overall compliance rate was 93% in 2008, 94.4% in 2009, and 95.1% in 2010.

- **Comparative and Endorsement Labels**

Surveys such as visual checks of retail outlets are conducted by a government agency to ensure labels are in compliance with the program requirements.

Figure 17: Minimum Efficiency Standard Label for Fluorescent Lamps Ballasts

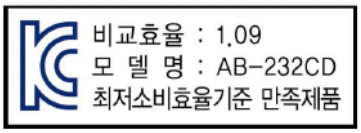


Figure 18: High-efficiency Appliance Label and Certification

3.8.7 Verification of Product Performance

- **MEPS and Labelling Program**

The program operates a two-part verification process. KEMCO selects the samples from retail using a risk-based approach, but also encourages a challenge process where manufacturers and the consumer protection board can request verification tests on products suspected of being non-compliant. 179 products were tested in 2009, with 10 models failing; 184 products in 2010, with 9 models failing; and 203 products in 2011 with 12 models failing.

- **Comparative and Endorsement Labels**

Samples are collected for verification testing from retail by KEMCO. Selection of products is based on a risk-based approach.

3.8.8 Enforcement

- **MEPS and Labelling Program**

The following can occur if products are found to be incorrectly labelled: the supplier or store is notified and asked to remedy the situation or is issued with a warning; fines are imposed; and/or the supplier/store is publicly named.

If an appliance fails a verification test, the following can occur: the supplier is contacted and asked to explain, the supplier is given a time period to rectify the situation, the supplier is fined, and/or supplier/product information is uploaded to a publicly available website.

- **Comparative and Endorsement Labels**

When appliances are incorrectly labelled, an administrative order or fine can be imposed in the Comparative Labelling Scheme. If an appliance fails a verification test, the following can occur: supplier is contacted and asked to explain, the supplier is given a time period to rectify the situation, and/or supplier/product information is uploaded to a publicly available website.

The mandatory warning label is used to signify that a product has not met the target for standby power consumption.

3.8.9 Public Information

The models within the program, as well as their energy performance details, are made available publicly.

Further Information	
	http://www.kemco.or.kr/new_eng/pg02/pg02100102.asp
Contact Person	
Jennifer Kim	Korea Energy Management Corporation (KEMCO) E-mail: jennifer@kemco.or.kr

3.9 Malaysia

Program Type	Name	Products
MEPS (mandatory)	MEPS	2 products implemented (fans, ballasts) 4 products in progress (air conditioners, refrigerators, televisions, lamps) 4 products under consideration (clothes washers, vacuum cleaners, rice cookers, microwave ovens)
MEPS (voluntary)	MEPS	1 product (high efficiency motors)
Comparative & Endorsement Label	Energy Efficiency Rating and Labelling Program (EE Label)	4 products (televisions, fans, air conditioners, refrigerators)

Information on the MEPS programs is limited. As a result, the data below mainly relates to the program for the Endorsement Label unless otherwise stated.

3.9.1 Year of Implementation

MEPS were implemented for ballasts in 1996 and for fans in 1999. Voluntary MEPS for motors were introduced in 2003. Labels for domestic refrigerators were introduced in 2003, followed by televisions, air conditioners and fans in 2009.

3.9.2 Responsible Government Department

The authority with overall responsibility for the Energy Efficiency Rating and Labelling Program and its compliance activities is the Energy Commission. Other bodies such as the Ministry of Energy, Green Technology and Water (KeTTHA), and Sustainable Energy Development Authority (SEDA) Malaysia promote the program and raise awareness.

3.9.3 Legal Framework

The legal basis for the MEPS programs is the Electricity Regulations 1994.

There is no legal framework to act on non-compliance issues for the EE Label; though action can be taken using trade and consumer laws, e.g. false declaration. The label is to be included in the Energy Efficiency and Conservation Act, which is currently in development and is expected to go into force in 2014.

3.9.4 Overall MV&E Structure

In order to join a program or to sell products, suppliers/manufacturers must provide the following items: a test report from an independent third party laboratory (e.g. one recognized by the Department of Standards Malaysia), a completed registration form for each model/family of models, and sales data.

3.9.5 Education/Information

The following is used to raise awareness among industry and consumers: import duties and sales tax exemptions for high efficient equipment such as TVs, refrigerators, air conditioners, lamps, ballasts, high efficiency motors and insulation materials. The SAVE rebate program (whereby rebates are distributed to consumers that purchase energy efficient appliances) was introduced by the Government, with SEDA as the implementing agency for the program under KeTTHA's coordination. Air conditioners and refrigerators that are part of this program must be tested and verified as energy efficient equipment (5 Star) and must be labelled. Training for retailers is also conducted, and information on the programs is made available via public websites and via consultations.

Figure 19: Malaysian Rating Label

Figure 20: Endorsement Label

3.9.6 Monitoring

It is the responsibility of the Energy Commission to ensure compliance with the safety requirements (as the law for energy labelling is under development).

3.9.7 Verification of Product Performance

Verification of product performance for the program is conducted by SIRIM QAS International Sdn Bhd.

3.9.8 Enforcement

If a product is found to be incorrectly labelled, voluntary compliance through education, advice or guidance is encouraged.

Since the program is voluntary, the Energy Commission will give advice to the manufacturer or importer on how to correct the label.

3.9.9 Public Information

A list of the models, along with their energy performance details, is provided on the Energy Commission's website and via a publication.

Further Information	
	http://www.saveenergy.gov.my/about/save-program http://www.st.gov.my/index.php?option=com_content&view=article&id=5171&Itemid=1774&lang=en"
Contact Person	
Mohd. Elmi bin Anas	Energy Management and Industry Development Department Email: elmi@st.gov.my

3.10 Mexico

Program Type	Name	Products
MEPS	Voluntary standards called Normas Mexicanas (NMX) and mandatory standards called Normas Oficiales Mexicanas (NOM)	16 product types and 6 system categories
Comparative Label	Mandatory comparative energy label	11 products; 3 product types (HVAC, domestic appliances, lighting)
Endorsement Label	Sello FIDE	7 products; 4 product types (lighting, domestic appliances, HVAC, motors)

3.10.1 Year of Implementation

MEPS and the Sello FIDE program were introduced in Mexico in 1995.

3.10.2 Responsible Government Department

The Secretary of Energy administers the MEPS and comparative labelling program, and the National Commission for Energy Efficiency (CONUEE) is responsible for compliance with mandatory standards (NOMS) and compliance activities.

The Sello FIDE is a voluntary endorsement label awarded by the Fideicomiso para el Ahorro de Energía Eléctrica (FIDE), a private non-profit organization financed by the largest public utility, the CFE (Federal Power Commission).

3.10.3 Legal Framework

The legal framework that underpins the MEPS and Comparative Labelling program is the 1992 Ley Federal Sobre Metrología y Normalización. This framework establishes: relationships with certification agencies; market surveillance through the Consumers Protection Agency or PROFECO (Producraduria Federal Del Consumidor); and verification testing.

There is no legal framework for the Sello FIDE program.

3.10.4 Overall MV&E Structure

- **MEPS and Comparative Labelling**

In order to join the program, manufacturers must supply a certificate provided by ANCE (Asociación de Normalización y Certificación), ONNCCE (Organismo Nacional de Normalización y Certificación de la Construcción y Edificación) or LOGIS (Organismo de Certificación de Productos). These organizations are private sector entities authorised by the Ministry of Economy. Manufacturers must also provide a test report from a laboratory accredited by the EMA (the Mexican accreditation entity). According to CONUEE, there are 54 test laboratories available that have been authorized by the Ministry of Economy. The following is also required to join the program: completed registration documents for each model, and annual sales data.

A third party is commissioned by the government agency to undertake import controls and visual checks of test certificates and registration details to ensure that the minimum energy efficiency standards are met. Verification testing is also conducted in the program.

- **Endorsement Label**

In order to join the program, manufacturers must provide a test report from a certified laboratory.

3.10.5 Education/Information

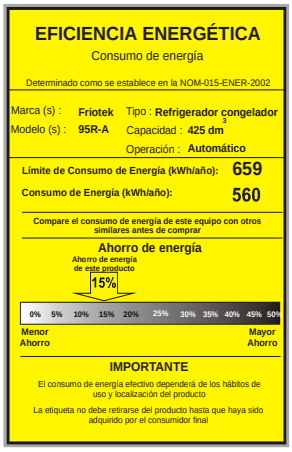
- **MEPS**

Stakeholders are made aware of their responsibilities within the program through information on a website or through guidance documents, and given advanced notice through direct mail. Stakeholders are notified 60 days in advance of MEPS being issued. Public consultations are also conducted.

- **Labelling**

The program uses the following methods to provide information on its program: government advertisements in public media, websites and guidance documents, and direct mail.

Figure 21: Mexican Comparative Label



3.10.6 Monitoring

- **MEPS and Comparative Labelling**

Market surveillance in the form of checks (import controls and visual checks of test certificates and registration details) is conducted by government to ensure that the MEPS program requirements are being complied with. It is the responsibility of stores, suppliers, certification organizations, PROFECO and government agencies that products offered for sale are correctly labelled.

- **Endorsement Label**

No information available.

Figure 22: Sello FIDE Endorsement Label

3.10.7 Verification of Product Performance

- **MEPS and Comparative Labelling**

Verification testing is conducted under the program. Samples are selected from retail outlets for testing. Three samples per model are selected for screen tests and full verification tests. According to CONUEE, 100% of the appliances tested from 2008-2010 passed full verification tests.

- **Endorsement Label**

Verification tests are conducted in the program. Samples are collected from retail outlets, and approved and accredited by certification entities.

3.10.8 Enforcement

- **MEPS and Comparative Labelling**

If products are found to be non-compliant (i.e. products found to be incorrectly labelled), the following can occur: the supplier is notified and asked to remedy the situation, the supplier is notified and issued with a warning, fines are imposed, and/or the supplier is publicly named.

If an appliance fails a verification test, the following may occur: the supplier is contacted and asked to explain, the supplier is given a time period to rectify the situation, the product must be withdrawn from the market, the supplier is fined, and/or the supplier must recompense consumers.

- **Endorsement Label**

No information available.

3.10.9 Public Information

- **MEPS and Comparative Labelling**

A list of models within the program, as well as their energy performance details, are not made publicly available via a publication or website.

- **Endorsement Label**

A list of the models is available on the FIDE website. Energy performance details are not provided on the website.

Further Information	
	http://www.fide.org.mx/ http://www.conuee.gob.mx/wb/CONAE/english
Contact Person	
Ing. Fernando Hernandez Pensado	Comisión Nacional para el Uso Eficiente de la Energía (CONUEE) Email: fernando.hernandez@conuee.gob.mx

3.11 New Zealand

Program Type	Name	Products
MEPS	MEPS	Approximately 20 products and 6 product types (lighting, transformers, motors, HVAC, commercial refrigeration, domestic appliances)
Comparative Label	Energy Rating Label	6 products; 2 product sectors (HVAC, domestic appliances)
Endorsement Label	Energy Star	7 products; 4 product types (ICT/office equipment, HVAC, lighting, domestic appliances)

The summary below refers to the MEPS and comparative labelling programs. The Energy Star Program is not covered unless specifically stated.

3.11.1 Year of Implementation

The MEPS and Energy Rating Program was implemented in 2002, and Energy Star was started in 2005.

3.11.2 Responsible Government Department

The Energy Efficiency and Conservation Authority (EECA) and its monitoring agency, the Ministry of Economic Development, are responsible for MEPS and Comparative Label.

3.11.3 Legal Framework

The legal frameworks include: the Energy Efficiency and Conservation Act 2000, and the Energy Efficiency (Energy Using Products) Regulations 2002. Recourse for non-compliance can also be sought under the Fair Trading Act 1986. The legal frameworks establish a requirement for manufacturers to register and supply test reports to confirm the performance claims of their products.

New Zealand develops MEPS and mandatory labelling measures in partnership with Australian states and territories under the Equipment Energy Efficiency (E3) Program.

Figure 23: New Zealand's Comparative Label

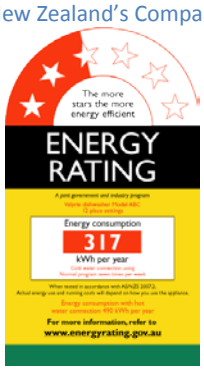


Figure 24: Energy Star Endorsement Label

3.11.4 Overall MV&E Structure

The MEPS and Energy Rating Label are developed and implemented under EECA's Products Program. The Energy Efficiency (Energy Using Products) Regulations place the following obligations on suppliers and manufacturers who must: supply a self-declaration of energy performance; complete a registration process for each model/family of models; be able to supply a test report showing the product has been tested to and complies with the criteria; and provide annual sales data. Verification testing is also undertaken and products that are thought most likely to fail are selected for testing.

3.11.5 Education/Information

Stakeholders are informed of their responsibilities in the program via: government advertisements in public media; training (e.g. training for store management); government or trade conferences/seminars; information available via a website or guidance documents; and direct mail. Stakeholders are also notified of changes to legislation or the program at least two years in advance. There is also a 28-day notice period between when a regulation is promulgated and when it goes into force. Annual sales data reporting, compliance surveys and site visits to retailers and suppliers are undertaken to ensure industry understands the program requirements.

3.11.6 Monitoring

Checks of test certificates and registration details are undertaken by EECA to ensure that MEPS and /or labelling thresholds are met. According to data on product registrations specific to New Zealand, 293 checks were conducted in 2008, 263 in 2009 and 238 in 2010. These checks are part of the confirmation process for each registration.

It is the responsibility of the store and supplier to ensure that products offered for sale are correctly labelled. Surveys (e.g. visual checks of retail outlets) are commissioned by EECA to check that energy efficiency labels are correctly placed on products at the point of sale (see Table 4). The approximate costs for labelling surveillance were $15,000 (NZD) in 2008, $20,000 in 2009, and $15,000 in 2010.

Table 4: Labelling Display Surveys in New Zealand

Number of surveys/checks conducted	Year	Number of stores surveyed	Number of products	Compliance rate
1	2008	120	8,720	98%
2	2009	204	14,547	99%
1	2010	134	9,251	98%

3.11.7 Verification of Product Performance

The check-testing scheme is administered by Australia. E3 conducts verification tests using independent accredited laboratories according to the Program's publicly available Administrative Guidelines. A risk-based approach is used when selecting products for testing. Screen and verification tests are conducted and a government agency employee or testing laboratory typically collects samples from retail outlets. According to EECA, approximately 140 appliances were tested in 2008 and 95 in 2009. The percentage of appliances that passed full verification tests between 1991 and 2010 (from July to June) was 73%. From 2009 to 2010, the pass rate was 77%.

3.11.8 Enforcement

The following six tier interventions are used to gain supplier compliance with regulation: informal action, compliance advice notice, failure to comply letter, letter of warning, settlement and prosecution. Generally it is found that the notification of suppliers or the issuing of warning letters is sufficient to stimulate remedial action.

If an appliance fails a verification test, the following actions can be taken: supplier is notified of the verification screen test failure and given the option:

- to accept the screen test result, or
- test additional units at their cost (Stage 2 check testing) at an independent accredited lab to prove compliance.

If the initial verification test failure is accepted by the supplier or the subsequent stage 2 check testing fails to meet the requirements, the following occurs. The product registration is cancelled; the product must be withdrawn from the market; the supplier may be fined (this can only be imposed through a successful prosecution); the supplier must recompense consumers. In addition the details of the case may be passed onto the consumer protection Regulator (Commerce Commission) and they may take further action under consumer law.

EECA's compliance and enforcement staff work across EECA's Products Program including the E3 Program (MEPS and mandatory labelling for products) ensuring compliance and enforcement activities are undertaken.

3.11.9 Public Information

Models within the program are listed on a public website and the energy performance details of these products are included on publicly available publications and/or websites. The following is also made public in the MEPS program: the number of checks undertaken; the results of checks; the number of verification tests conducted (including pass/failure rates); individual products or brands that have failed verification testing; and sales data on the number of regulated products imported, sold and exported each year (and correlating reductions in nationwide energy demand). Those are made public by newsletters to industry, reports on website, or through annual check testing reports.

Further Information	
	http://www.eeca.govt.nz/standards-and-ratings/minimum-energy-performance-standards-and-labelling
Contact Person	
Laura Christen	Energy Efficiency and Conservation Authority (EECA) laura.christen@eeca.govt.nz

3.12 Peru

Program Type	Name	Products
MEPS	MEPS Guide (Guía de estándares mínimos de eficiencia energética). *Published: January 2009 – not mandatory.*	11 products (product types include boilers, motors, refrigerators, water heaters, lamps)
Comparative Label (under development and is expected to become mandatory in 2013)	Energy Efficiency Label Regulation (Reglamento de la etiqueta de eficiencia energética). *Published: January 2009 – not mandatory.*	8 products (product types include boilers, water heaters, lamps, motors)
Endorsement Label	Efficient Lighting Initiative (ELI) Program	1 product type: CFLs

3.12.1 Year of Implementation

The MEPS Program started in 2009 with the publication of the MEPS Guide. The Energy Efficiency Label is currently voluntary, but is foreseen to become mandatory in 2013. The ELI Program started in Peru in 2000.

3.12.2 Responsible Government Department

- **Labelling and MEPS**

The Ministry of Energy and Mines works in collaboration with the National Institute for the Defence of Competition and Protection of Intellectual Property (INDECOPI) on the labelling program. The Ministry of Energy and Mines is responsible for MEPS and for the compliance of both programs.

- **ELI**

The authority that is currently responsible for the program is the ELI Quality Certification Institute. It works in collaboration with the China Standard Certification Center (CSC).

3.12.3 Legal Framework

- **Labelling and MEPS**

The framework for the programs is Law Nº 27345 - Promotion of Energy Efficient Use and Bylaw. It is foreseen that Product Certification Organisms (PCOs) will certify labelling within the labelling program. The public body will conduct market surveillance for the labelling program and the procedure for verification testing will be a part of the technical regulation.

- **ELI**

There is no legal framework for the program; though it is based on the Efficient Lighting Initiative (ELI), which is administered by the International Finance Corporation. The program has technical specifications and the ELI Certification Institute refers to regional and national laws and plans to adopt IOS/IEC regulations.

3.12.4 Overall MV&E Structure

- **Labelling and MEPS**

The MV&E processes are under development and have yet to be implemented.

- **ELI**

The program requires suppliers/manufacturers to have their products certified. The products must be tested to ELI specifications by an accredited first or third party laboratory in order to join the program. Suppliers/manufacturers must also supply the following to join the program: evidence of legal status; copies of quality management system manual and trademark registration certificates; a description of product samples that were tested; and design of the packaging of the product.

Monitoring and check testing is undertaken by the ELI Quality Certification Institute. Verification testing is also conducted by the Institute.

3.12.5 Education/Information

- **Labelling and MEPS**

The following will be used to ensure stakeholders are aware of their responsibilities: government advertisements in public media; stakeholder training; government or trade conferences/seminars; information made available via website or through guidance documents; and advanced notice to stakeholders via direct mail. Stakeholders are given six months' notice of a change in legislation.

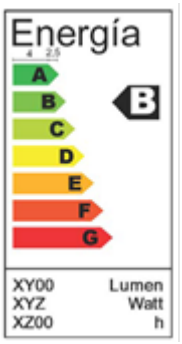
- **ELI**

Information about the program is available on the ELI website.

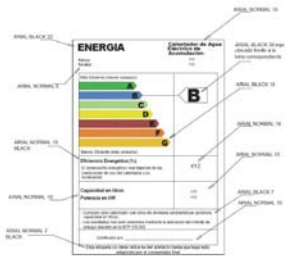
Figure 25: ELI Label

Figure 26: Peru's Energy Efficiency Label

Lighting



Electric water heater



3.12.6 Monitoring

- **Labelling**

A monitoring system has yet to be implemented. However, it will be the responsibility of the supplier to ensure products are correctly labelled. National manufacturers/import distributors will have to submit national or international labelling certificates.

- **ELI**

ELI Institute performs check testing of products within the program.

3.12.7 Verification of Product Performance

- **Labelling**

It is foreseen that the program will undertake independent verification on samples of products.

- **ELI**

ELI certification process must be conducted every three years. ELI also selects products at random and conducts verification testing. If products fail verification testing, they can either be disqualified from program or a second round of testing can be performed. If testing is conducted a second time, the manufacturer will incur the costs.

3.12.8 Enforcement

- **ELI**

ELI can disqualify products from the program and refuse products from reapplying to the program. Those that use the ELI logo improperly may also face legal action.

3.12.9 Public Information

- **ELI**

Information on the registered models, as well as their energy performance details, is available on the ELI website.

Further Information	
MEPS	http://www.minem.gob.pe/publicacion.php?idSector=12&idPublicacion=352
Labelling	http://www.minem.gob.pe/publicacion.php?idSector=12&idPublicacion=351
ELI	http://www.efficientlighting.net/FormerELI/peru/peru.htm
Contact Person	
Carlos Orbegozo	Ministry of Energy and Mines Peru Email: corbegozo@minem.gob.pe

3.13 Philippines

Program Type	Name	Products
MEPS	MEPS	3 products (air conditioners, CFL (self-ballasted type), linear fluorescent lamps)
Comparative Label	Philippine Appliance Energy Standards and Labelling Program	6 products (air conditioners, refrigerators, CFL (self-ballasted type), linear fluorescent lamps, circular fluorescent lamps, fluorescent lamp ballasts)
Endorsement Label	Efficient Lighting Initiative (ELI) Program	1 product type (CFLs)

3.13.1 Year of Implementation

The Labelling and MEPS Programs began in 1992. The ELI Program started in 2000.

3.13.2 Responsible Government Department

- **MEPS and Comparative Label**

The authorities that are currently responsible for the programs are the Department of Energy (DOE) and the Department of Trade and Industry (DTI). The Bureau of Product Standards (BPS), which is under the DTI, is mainly responsible for development of the relevant Philippine National Standards, product certification and enforcement activities.

- **Endorsement Label**

The authority that is currently responsible for the program is the ELI Quality Certification Institute. It works in collaboration with the China Standard Certification Center (CSC).

3.13.3 Legal Framework

- **MEPS and Comparative Label**

The legal framework for the programs includes the applicable Philippine National Standards and corresponding implementing guidelines. The framework establishes third party verification, market surveillance (by DOE, DTI or the BPS) and verification testing. The implementing guidelines provide that laboratories (used for testing) comply with the APLAC/ILAC/ECEE-CB/ASEAN/JPEPA mutual recognition agreement or other relevant international arrangements entered into by the certification body BPS.

- **Endorsement Label**

This is a voluntary program for compliance to the Efficient Lighting Initiative (ELI) endorsement label, administered by the International Finance Corporation. However, the products must still comply with existing Philippine trade laws and product certification requirements.

3.13.4 Overall MV&E Structure

Products that have been imported are issued with an Import Commodity Clearance (ICC) if they conform to the MEPS and Energy Label requirements.

- **MEPS**

Manufacturers and importers must supply a test report from a government-recognized testing laboratory and complete a registration process for each model/family of product models to be able to sell products. Checks of laboratory test reports are done jointly by DOE and DTI to ensure the

program requirements including safety requirements are being complied with. Verification testing is also conducted.

- **Comparative Labelling**

Manufacturers and importers must supply a test report from a government-recognized testing laboratory and complete a registration process for each model/family of product models. Surveys (visual checks of retail outlets) are done by the DTI to check that energy labels are placed correctly on the products. Verification testing is also conducted.

- **Endorsement Label**

This is a voluntary program whereby participating manufacturers and importers undergo a product certification process of ELI. The products must be tested to ELI specifications by an accredited first or third party laboratory in order to join the program. Suppliers/manufacturers must also supply the following to join the program: evidence of legal status; copies of quality management system manuals and trademark registration certificates; a description of product samples that were tested; and design of the packaging of the product.

Monitoring and check testing is undertaken by the ELI Quality Certification Institute. Verification testing is also conducted by the Institute.

ELI-certified products must also comply with the applicable Philippine trade and product certification requirements.

Figure 27: Philippine Comparative Label

Figure 28: ELI Endorsement Label

3.13.5 Education/Information

- **MEPS and Comparative Label**

Stakeholders are made aware of their responsibilities via: government advertisements in public media (newspaper and government websites); stakeholder training (i.e. stores, manufacturers, importers, dealers, distributors); government or trade conferences/seminars; information made available via website or guidance documents; and through advanced notice via direct mail. Industry is notified in advance of a change in legislations or change in program requirements. This time frame is agreed upon with the stakeholders. The DOE and DTI also provide clarifications for industry and may conduct additional meetings with them.

- **Endorsement Label**

Information about the program is available on the ELI website.

3.13.6 Monitoring

- **MEPS and Comparative Label**

Checks of laboratory test reports are undertaken to ensure MEPS are met. It is the responsibility of the supplier to ensure that products are correctly labelled. The government agency conducts visual checks of retails outlets to ensure labels are being used properly.

- **Endorsement Label**

ELI Institute performs check testing of products within the program.

3.13.7 Verification of Product Performance

- **MEPS and Comparative Label**

Verification testing is conducted in the program by DOE's Lighting and Appliance Testing Laboratory (LATL) or by testing laboratories that are recognized by DTI-BPS. New models are tested and older models within the program are also taken from the warehouse, production line, or from shipment and tested periodically. The government agency or their contractor selects the products using random sampling.

- **Endorsement Label**

ELI certification process must be conducted every three years. ELI also selects products at random and conducts verification testing. If products fail verification testing, they can either be disqualified from the program or a second round of testing can be performed. If testing is conducted a second time, the manufacturer will incur the costs.

3.13.8 Enforcement

- **MEPS**

The actions described below are taken if products within the scope are found to be non-compliant.

For air conditioners and refrigerators, if a product fails the first round of testing, another sample from the same lot shall be tested. If upon testing the product complies with the standard, the lot is declared as conforming to the requirements of the standard.

If both tests fail to conform to the requirements of the standard: i) the manufacturer will be advised to undertake remedial measures; and ii) the importer will be advised to export the products to the country of origin.

- **Comparative Label**

If the ratings on the energy label are incorrect, the manufacturer or importer is required to undertake the necessary corrections on the energy label.

- **Endorsement Label**

ELI can disqualify products from the program and refuse products from reapplying to the program. Those that use the ELI logo improperly may also face legal action.

3.13.9 Public Information

- **MEPS and Comparative Label**

Information on the registered models, as well as their claimed energy performance details, is made publicly available.

- **Endorsement Label**

Information on the registered models, as well as their energy performance details, is available on the ELI website.

Further Information	
	http://www.doe.gov.ph http://www.dti.gov.ph http://www.efficientlighting.net/FormerELI/philippines/philippines.htm
Contact Person	
Raquel S. Huliganga	Director, Energy Research and Testing Laboratory Services Department of Energy E-mail: raquelh@doe.gov.ph

3.14 Singapore

Program Type	Name	Products
MEPS	MEPS	2 products/product types (air conditioners, refrigerators)
Comparative Label	Mandatory Energy Labelling Scheme (MELS)	3 products (air conditioners, refrigerators, clothes dryers)

3.14.1 Year of Implementation

The labelling program was created in 2008 and the MEPS Program went into effect in 2011.

3.14.2 Responsible Government Department

The National Environment Agency (NEA) is the department responsible for the programs and the relevant compliance activities.

3.14.3 Legal Framework

The legal framework that underpins the program is the Environmental Protection and Management Act (EPMA) and subsequent Regulations. The legal framework requires suppliers to register their products and submit test reports (issued by accredited laboratories) to NEA. The framework also mandates that energy labels are affixed to products at the point of sale.

3.14.4 Overall MV&E Structure

- **MEPS**

In order to join the program, a test report must be provided. The test report can be from: a SAC (Singapore Accreditation Council) accredited laboratory; an accredited laboratory (if outside of Singapore) that has signed a Mutual Recognition Arrangement (MRA) with SAC; or the laboratory of the manufacturer (in-house testing). A registration process for each model/family of models is also required. Visual checks and screening tests are to be conducted in the future.

- **Labelling**

Importers/manufacturers must apply to the NEA to carry the label on their products. Suppliers are required to provide a test report from an approved laboratory that is prescribed by NEA, and complete a registration process for each model/family of models in order to join the program or to be able to sell products. NEA does not currently conduct verification testing, however the Agency plans to in the future.

3.14.5 Education/Information

Stakeholders are informed of their responsibilities within the programs through: government advertisements in public media; stakeholder training (labelling only); government or trade conferences/seminars; information via website or guidance documents; and via direct mail. They are also made aware of changes in the program requirements at least one year in advance. Consultations with industry are also conducted to provide clarifications on the programs.

3.14.6 Monitoring

- **MEPS**

Visual checks of test certificates are to be conducted by a government agency. These have not taken place yet as the program commenced in September 2011.

- **Labelling**

It is the responsibility of the store and supplier to ensure products are correctly labelled. Surveys (visual checks of retail outlets) are commissioned by NEA to check that energy efficiency labels are placed correctly on products at the point of sale. One survey was conducted in 2008 for two product types at all retail outlets, and one survey was conducted for three product types at all retail outlets in 2009 and 2010. The approximate costs for labelling surveillance was $7700 (Singapore dollars) in 2008, $4600 in 2009, and $2100 in 2010.

Figure 29: Singapore's Mandatory Energy Label

3.14.7 Verification of Product Performance

NEA will select product samples and conduct screening tests in the future for both programs. Products will be selected on the basis of numerous risk-based factors.

3.14.8 Enforcement

If products are found to be non-compliant, the following actions can occur: supplier is notified and asked to remedy the situation and/or issued with a warning, and fines are imposed. If a product fails a verification test, the following will occur in the future: the supplier is contacted and asked to explain, the supplier is given a time period to rectify the situation, the product must be withdrawn from the market (if the supplier fails to rectify the situation); and the supplier is fined (if the supplier does not make improvements).

3.14.9 Public Information

Models within the programs and the energy performance details of these products are made publicly available via publications and websites.

Further Information	
	http://app.nea.gov.sg/cms/htdocs/category_sub.asp?cid=258
Contact Person	
Agnes Koh	Energy Market Authority E-mail: agnes_koh@ema.gov.sg

3.15 Chinese Taipei

Program Type	Name	Products
MEPS	MEPS	3 product sectors covered (lighting, HVAC, domestic appliances); 8 total products covered, and 4 are pending.
Comparative Label	Energy Efficiency Rating	4 product types (RAC, refrigerators, dehumidifiers, self-ballasted fluorescent lamps - excluding automobiles, motorcycles).
Endorsement Label	Energy Conservation Label	6 product sectors (domestic appliances, HVAC, ICT, lighting, fans, domestic cooking); 32 total products covered (excluding vehicles)
Endorsement Label	Energy Star	1 product type (ICT / office equipment).

The Energy Star program is not covered in the summary below.

3.15.1 Year of Implementation

The MEPS Program began in 1999, the Energy Conservation labelling program started in 2000, and the mandatory Energy Efficiency Rating Labelling program entered into force on 1 July, 2010.

3.15.2 Responsible Government Department

The authority with overall responsibility for the energy labelling program and for MEPS is the Bureau of Energy, Ministry of Economic Affairs (MOEA). This authority is also responsible for the compliance programs.

3.15.3 Legal Framework

- **MEPS**

The framework for the MEPS program is the Energy Management Law, which establishes relationships with third party certification organizations.

- **Energy Conservation Label**

The framework for the Energy Conservation Label is the Guidelines of Implementation and Usage of Energy Conservation Labelling. The framework establishes relationships with third party verification or certification organizations, market surveillance and verification testing.

- **Energy Efficiency Rating Label**

The framework for the Energy Efficiency Rating Label program is the Energy Management Law, which establishes relationships with third party certification organizations or certification organizations, market surveillance and verification testing.

3.15.4 Overall MV&E Structure

- **MEPS**

Similarly to the labelling program, suppliers/manufacturers have to provide the following to join a program or to sell products: a certificate provided by an independent third party authority or a test report from an independent third party laboratory. The Government undertakes random visual checks of registration details to ensure that MEPS are met. The program uses accredited laboratories to undertake verification testing.

- **Energy Conservation Label**

In order to join a program or to sell products, suppliers/manufacturers have to provide a certificate provided by an independent third party authority or a test report from an independent third party laboratory. They have to complete a registration process for each model/family of models.

Routine and random checks, as well as store and internet checks, are conducted in the program to monitor labelling display. Independent verification testing on products is also undertaken.

- **Energy Efficiency Rating Label**

Similarly to the MEPS program, suppliers/manufacturers have to provide the following to comply with the program: a certificate provided by an independent third party authority or a test report from an independent third party laboratory. The Government undertakes random visual checks of registration details to ensure that labelling requirements are met. The program uses accredited laboratories to undertake verification testing.

3.15.5 Education/Information

- **MEPS**

Industry is informed of their responsibilities in the program via a website or guidance documents. They are made aware of changes to the program two to five years in advance.

- **Energy Conservation Label & Energy Efficiency Rating Label**

Stakeholders are made aware of their responsibilities through government advertisements in public media, training, government or trade conferences/seminars, information on websites and guidance documents, and via direct mail. Stakeholders are also informed of a change in the program requirements six to twelve months in advance.

3.15.6 Monitoring

- **MEPS**

Visual checks of registration details are commissioned by a government agency to ensure that minimum energy efficiency standards are met. The approximate cost for monitoring, verification and enforcement activities on energy efficiency standards was $13,000 (US dollars) in 2008, 2009, and 2010. The overall compliance rate was 92% in 2008 and 94% in 2009.

- **Energy Conservation Label**

Routine visual checks of retail outlets and checks of internet sites are undertaken by a government agency to check that labels are used correctly. It is up to the supplier to ensure products offered for sale are correctly labelled.

- **Energy Efficiency Rating Label**

Similarly to the Energy Conservation Label program, routine checks are undertaken by a government agency to check that labels are used correctly. The approximate costs for labelling surveillance were $20,000 (US dollars) in 2008, $25,000 in 2009, and $40,000 in 2010. The overall compliance rate was 75% in 2008 and 82% in 2009, however compliance in small stores is considerably less than this average.

3.15.7 Verification of Product Performance

- **MEPS**

Similarly to the previous program, the MEPS Program has a third party certification process and the Government and the Taiwan Accreditation Forum liaise to maintain the quality of the certification agencies. Verification testing is also undertaken in this program by accredited laboratories. According to the Industrial Technology Research Institute (ITRI), 32 products were tested in 2008, 40 in 2009, and 45 in 2010.

- **Energy Conservation Label**

The program has a third party certification process. In order to maintain the quality of the certification agencies, the Government and the Taiwan Accreditation Forum collaborate to regularly check the certification agencies are following procedures according to ISO guide 65 or ISO 17025. Details of the results of the testing activities of certification agencies are supplied to government.

Under the labelling program, independent verification on samples of products is also undertaken periodically.

- **Energy Efficiency Rating Label**

Similarly to the Energy Conservation Label program, the program has a third party certification process. Independent verification on samples of products is also undertaken periodically.

Figure 30: Chinese Taipei Energy Efficiency Label

Figure 31: Chinese Taipei Energy Conservation Label

3.15.8 Enforcement

- **MEPS**

The following actions can be taken if participating products within the scope of the MEPS are found to be non-compliant: supplier is notified and asked to remedy the situation, fines are issued, and/or the supplier is publicly named.

- **Energy Conservation Label**

When products are found to be incorrectly labelled, the supplier or store is notified and asked to remedy the situation and/or the supplier or store may be publicly named.

- **Energy Efficiency Rating Label**

Similarly to MEPS, if participating products within the scope of this labelling program are found to be non-compliant: the supplier is notified and asked to remedy the situation, fines are issued, and/or the supplier is publicly named.

3.15.9 Public Information

- **MEPS**

A list of models within the program is not made available via a public publication or website.

- **Energy Conservation Label & Energy Efficiency Rating Label**

The energy performance details of products within the programs are included in publicly available publications and/or websites. Individual products or brands that have failed verification testing are also made public via a website.

Further Information	
MEPS	http://www.moeaboe.gov.tw/English/english_index.aspx
Energy Conservation Labelling	http://www.energylabel.org.tw/product_en/product/list.asp
Energy Efficiency Rating Label	https://ranking.energylabel.org.tw
Contact Person	
Henry Lo	Industrial Technology Research Institute (ITRI) Email: henrylo@itri.org.tw

3.16 Thailand

Program Type	Name	Products
MEPS	MEPS	2 products mandatory MEPS (refrigerators, air conditioners) 3 products voluntary MEPS (CFLs, 3-phase motors, linear fluorescent lamps)
Comparative Label	No. 5 Saving Label	14 products; 4 product types (HVAC, lighting, domestic appliances, ICT)

3.16.1 Year of Implementation

The Labelling Program for electrical products went into effect in 1993/4, and the MEPS Program was created in 2010.

Figure 32: Thai No. 5 Saving Label

3.16.2 Responsible Government Department

- **MEPS**

The standards are set by the Department of Alternative Energy Development and Efficiency (DEDE) and regulated by the Thai Industrial Standards Institute (TISI) under the Ministry of Industry.

- **Labelling**

The Electricity Generating Authority of Thailand (EGAT) has the responsibility of the No.5 Saving Label program.

3.16.3 Legal Framework

The framework that underpins both MEPS and labelling programs is the Energy Conservation Promotion (ECP) Act, which was issued in 1992 and 2007 (Issue No.2). The legal framework establishes the relationship with the Thai Industry Standards Institute (TISI) to provide product certification and market surveillance.

3.16.4 Overall MV&E Structure

- **MEPS**

Suppliers / manufacturers must have their product certified by TISI and register either each model or family of models to be able sell products in Thailand. Visual checks of registration details are commissioned by the government agency. Verification testing is conducted within the program.

- **Labelling**

In order to obtain a label, a product must be sent to the Electrical and Electronics Institute (EEI) for energy performance testing. Suppliers / manufacturers must also complete a registration process for a model/family of models to be able to join a program or sell products. Verification testing for electrical products is undertaken by EGAT in the program.

3.16.5 Education/Information

Stakeholders are made aware of their responsibilities within the scope of the program through: stakeholder training (training course and seminar); government or trade conferences/seminars; and information provided on a website or in guidance documents. In both programs, stakeholders are given notice one year in advance of a change in legislative or program requirements.

3.16.6 Monitoring

- **MEPS**

For the MEPS, visual checks of registration details are commissioned by a government agency to ensure the standards are met. The rate of compliance was 97% from 2008-2010.

- **Labelling**

It is up to the supplier to ensure products offered for sale are correctly labelled. The overall compliance rate was 30% in 2008, 50% in 2009 and 60% in 2010.

3.16.7 Verification of Product Performance

- **MEPS & Labelling**

The government agency selects products from retail outlets for verification testing for MEPS. EGAT and DEDE annually select products within the program at random for verification testing for labelling. The laboratories that are used for verification testing must be accredited under the ISO/IEC 17025 systems.

One sample per model is selected for a screen test. If the sample has failed the government agency will select 3 samples from retail outlets to repeat the verification testing. For the labelling program, 300 samples were tested in 2008, 350 in 2009 and 485 in 2010. Moreover, 95% of appliances passed full verification tests in 2008, 2009 and 2010 within the labelling scheme.

3.16.8 Enforcement

- **MEPS**

If an appliance fails a verification test under the MEPS scheme, the product must be withdrawn from the market.

- **Labelling**

If products are found to be incorrectly labelled, the supplier or store may be notified and asked to remedy the situation. The product may also be withdrawn from the market if this occurs.

If products fail a verification test, they will potentially be removed from the program or their rating levels will be lowered. The supplier/product may also have to recompense consumers.

3.16.9 Public Information

- **MEPS**

Models within the program are made publicly available. Products that have failed verification testing are also made public.

- **Labelling**

A list of models within the program is provided in a publicly available publication. The number and results of labelling surveys are also provided on a website and in the media or via a public hearing seminar.

Further Information	
	http://www.dede.go.th/dede/ http://www.dsm.egat.co.th/en/index.php http://www2.egat.co.th/labelNo5/en_labelNo5/history.htm
Contact Person	
Supachai Sampao	Department of Alternative Energy development and Efficiency (DEDE) E-mail: supachai_s@dede.go.th

3.17 USA

Program Type	Name	Products
MEPS	Standards	Approximately 50 products (i.e. domestic appliances, HVAC, lighting, fans, ICT)
Comparative Label	EnergyGuide	11 products; 2 product types (domestic appliances, HVAC)
Endorsement Label	Energy Star	60 products (i.e. appliances, electronics, HVAC, ICT, lighting, etc.)

3.17.1 Year of Implementation

Energy efficiency standards went into effect in 1975. The EnergyGuide Program began in 1978, and Energy Star commenced in 1992.

3.17.2 Responsible Government Department

- **MEPS**

The authority with overall responsibility for the programs is the US Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy. The authority responsible for compliance with the energy efficiency programs is the DOE, Office of the General Counsel.

- **Comparative Label**

The Federal Trade Commission (FTC) is responsible for the EnergyGuide program and the compliance activities.

- **Endorsement Label**

The US DOE and the US Environmental Protection Agency (EPA) share responsibility for the program. The EPA is the brand owner and is responsible for the third party certification and verification process, and enforcement for the products within the program. The DOE oversees verification testing for products that are also subject to MEPs.

3.17.3 Legal Framework

- **MEPS**

For the MEPS, the framework is the 1975 Energy Policy and Conservation Act, as amended in 1977, 1987, 1992 and in subsequent years. The relevant Federal Regulations also provide a framework for the program. The framework is based on a self-declaration (in-house testing permitted) of compliance with the applicable standards.

- **Comparative Label**

The legal framework is the National Energy Policy and Conservation Act.

- **Endorsement Label**

The framework is the Clear Air Act and the Energy Policy Act of 2005.

3.17.4 Overall MV&E Structure

- **MEPS**

Manufacturers (including importers) must test in accordance with DOE test procedures and provide a self-declaration of energy performance for each model/family of models prior to distribution in commerce and on an annual basis. If requested, the manufacturer must supply test reports.

Manufacturers are also required to maintain test reports and compliance calculations that underlie self-declaration activities. Checks are undertaken to ensure MEPS are met. Assessment/verification testing is also conducted by the DOE. Enforcement testing is also undertaken if products are believed to be non-compliant. In this case, the manufacturer bears the costs of the tested units; DOE pays for testing.

- **Comparative Label**

The energy performance of products must be tested and a certified report must be supplied to the Federal Trade Commission (FTC). The manufacturer must also supply annual reports of all products to the FTC.

- **Endorsement Label**

The program requirements generally reflect the top 25% of energy efficient products. In order to label products as ENERGY STAR, the products must be tested by an EPA-recognized laboratory and certified by an EPA-recognized certification body.

3.17.5 Education/Information

- **MEPS**

Stakeholders are informed of their responsibilities within the schemes via training, government or trade conferences/seminars, information on websites or in guidance documents, and direct mail. Stakeholders are also given periods in which they can provide comments on proposed changes in regulations or in the program. This period usually lasts from 30-90 days. The DOE responds to queries from industry on a regular basis and undertakes periodic webinars and seminars to ensure that stakeholders understand the program requirements. A public database that provides information on the program is also available to industry and other interested stakeholders.

- **Comparative Label**

Information on the program can be found on FTC's website.

- **Endorsement Label**

There is a stakeholder consultation process within the program for specifications for new products. There is also a stakeholder process for amended specifications for products within the program. Training or other information is also provided to EPA-recognized third party certification bodies to ensure they understand new or revised requirements of the program.

3.17.6 Monitoring

- **MEPS**

The following checks are commissioned by a government agency and undertaken to ensure standards are met: automated checks of 100% of self-declarations, and random and targeted assessment testing.

- **Comparative Label**

No information available.

- **Endorsement Label**

The supplier is responsible for ensuring that products offered for sale are correctly labelled. Surveys are conducted by the government agency to check that labels are placed correctly on products. These checks include import controls, visual checks of retail outlets, checks of catalogues and internet sites, and checks at trade shows. A review/survey of six to eight retail stores was initiated twice per year from 2008-2010. This review covered approximately 40,000 products. Surveys of Commercial Food Service products were also conducted on websites and trade shows in 2010.

3.17.7 Verification of Product Performance

- **MEPS**

DOE can test a product at any time (this is referred to as assessment testing). Enforcement testing is also conducted when there is reason to believe that a product is non-compliant (risk-based approach). In enforcement testing, the manufacturers must provide the test units at their own expense. The DOE collects products for testing from retail outlets, the distribution chain or from the manufacturer. For assessment testing, generally one sample is tested for a screen test. For enforcement testing, a minimum of four samples is tested for a full verification test.

- **Comparative Label**

No information available.

- **Endorsement Label**

The program has a third party certification process. The EPA conducts audits on the certification bodies to ensure the program requirements are being met. Certification bodies perform verification tests annually to ensure that a portion of their certified models continue to meet the program requirements.

For verification testing, the testing laboratories must be accredited and recognized under international standards. In 2008, 31 tests were conducted on non-lighting products and 10 on residential light fixtures. In 2009, 60 tests were performed on non-lighting products; 24 on lamp-ballast platforms and 11 on residential light fixtures. In 2010, approximately 239 appliances were tested (largely part of the 2010 Pilot Program launched by DOE). The overall compliance rate for Energy Star testing was 93% in 2008, 91% in 2009, and 95% in 2010.

Figure 33: US EnergyGuide Label

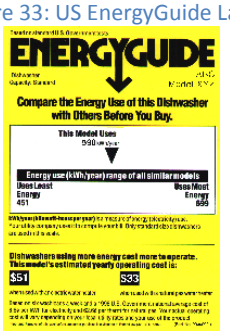


Figure 34: US Energy Star Label

3.17.8 Enforcement

- **MEPS**

The following actions can be taken if a product is found to be non-compliant: the manufacturer (or private labeller) is notified and directed to remedy the situation either through product modification or discontinuing the product; fines are imposed; the manufacturer is publicly named; and the manufacturer is required to inform all parties to whom the non-compliant product was distributed.

The following actions can be taken if an appliance fails a verification test: the manufacturer is contacted and asked to explain; the manufacturer is given a time period to rectify the situation; the product must be withdrawn from the market; the manufacturer is fined the manufacturer must recompense consumers, and/or the manufacturer/product information is uploaded to a publicly available website.

- **Comparative Label**

Fines can be imposed if products are found to be non-compliant.

- **Endorsement Label**

If products are found to be incorrectly labelled, they are in violation of US trademark law and the labeller is notified and asked to remedy the situation. If the labeller is an ENERGY STAR partner, restrictions may be placed on its partnership.

If a product fails a verification test, the following, may occur: the supplier is contacted and given time to respond. If the issue persists, the product may be disqualified and listed on the ENERGY STAR website.

3.17.9 Public Information

- **MEPS**

Individual products or brands that have been found non-compliant are made public.

- **Comparative Label**

The energy performance details of products within the program are made publicly available. Brands that have incurred fines are also published online.

- **Endorsement Label**

Detailed lists of Energy Star qualified products and their energy performance details are publicly available.

Further Information	
DOE Enforcement	http://energy.gov/gc/office-general-counsel
Energy Star	http://www.energystar.gov/3rdpartycert http://www.energystar.gov/integrity
Federal Trade Commission	http://www.ftc.gov/bcp/edu/pubs/consumer/homes/rea14.shtm
Contact Person	
Mark Friedrichs	US Department of Energy (DOE) E-mail: Mark.Friedrichs@ee.doe.gov

3.18 Vietnam

Energy Efficiency Standards and Labelling Programs:

Program Type	Name	Products
MEPS (from 2013)	MEPS	10 products; 5 product types (lighting, HVAC, domestic appliances, fans, ICT)
Comparative Label (from 2013)	Energy Label	5 product types
Endorsement label	Viet Energy Star	5 products (lighting), 3 more to be added

3.18.1 Year of Implementation

Voluntary labelling began in 2006. Following legislation that applied from September 2011, mandatory labelling and MEPS is expected to come into force in 2013, for a first tranche of products and in 2015 for a second tranche of products.

3.18.2 Responsible Government Department

The authority with the overall responsibility for the program is the General Directorate of Energy, Ministry of Industry and Trade (MoIT). The Science, Technology and Energy Efficiency Department is responsible for its implementation.

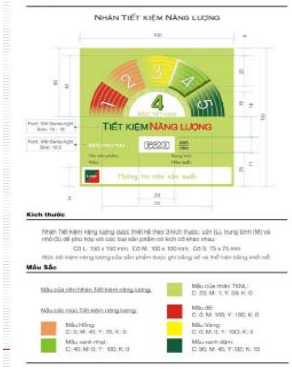
3.18.3 Legal Framework

The legal basis for the program is contained in the Law on Energy Efficiency and Conservation (effective from 01 Jan 2011), which requires that prescribed electrical equipment must be registered before it can be sold.

Circular No. 08/2006/TT-BCN (16 Nov 2006) also describes the processes and procedures for energy labelling.

Figure 35: Viet Energy Star

Figure 36: Vietnamese Comparative Label



3.18.4 Overall MV&E Structure

Manufacturers and importers are required to register the claimed performance of all products covered by the program before they can be sold. For MEPS, an application for registration must include a third party certification of compliance with the relevant performance criteria.

The Government will verify claims by check testing samples of products on the market, using a selection process that aims to identify products that are likely to fail. The Government also plans to survey retail outlets for compliance with labelling display requirements and to check that all eligible products are registered.

3.18.5 Education/Information

MoIT ensures that industry understands the requirements of the programs through holding workshops and having a specialist member of staff responsible for raising awareness with industry. Meetings are also held with industry associations to discuss the requirements of the programs.

3.18.6 Monitoring

MoIT plans to conduct regular surveys to check that all eligible products are registered and that the energy efficiency labels are placed correctly on products at the point of sale. These span retail outlets, catalogues and internet sites. It is the responsibility of the vendor to ensure that products offered for sale are correctly labelled. There was a $10,000 (US dollars) budget available in previous years for general market surveillance activity.

3.18.7 Verification of Product Performance

No verification of product performance has yet been undertaken in response to the new regulations.

3.18.8 Enforcement

- **MEPS**

No enforcement of product performance has yet been undertaken in response to the new regulations.

- **Labelling**

When products are found to be non-compliant with labelling regulations, the supplier will be notified and asked to remedy the situation and may be issued with a warning. The store may be fined.

3.18.9 Public Information

Models within the program, as well as their energy performance details, are not yet listed on public websites.

Further Information	
	http://www.moit.gov.vn/c/portal/layout?p_l_id=PUB.1.118
Contact Person	
Phuong Hoang Kim	Science, Technology and Energy Efficiency Department (MoIT) Email: kimph@moit.gov.vn

4 Survey Findings

The responses to questions in the questionnaires were analysed in order to provide a comparison between the approaches adopted across the APEC economies. The results are expressed as percentages unless identified otherwise.

4.1 Summary of Energy Labelling Programs in APEC Economies

A total of 18 economies in the APEC region responded to the survey. These responses together with further research indicated that there are currently a total of 32 energy labelling schemes in operation within the APEC region.

Of these, information was not provided for this survey on the voluntary labelling programs in Australia, China, Chinese Taipei, Japan and New Zealand, and for the mandatory label in the USA.

As a result, this survey covers a total of 26 energy labelling programs, including mandatory labels on approximately 185 different types of products and voluntary labels on approximately 303 products. It should be noted that the programs in Indonesia, Peru and Vietnam are in their infancy and are therefore only able to provide limited information on the intended operation of their MV&E regime.

All of the mandatory labelling programs comprise comparative type labelling using a star, numerical or similar rating. The majority of the voluntary labelling programs are endorsement labels used to indicate the most efficient appliances (e.g. Energy Star). In a minority of cases, comparative labels have been introduced on a voluntary basis as a transitional arrangement used to prepare suppliers and markets in advance of mandatory comparative labels.

As shown in Table 5, Figure 37 and Figure 38, energy labelling programs in the APEC region vary considerably by age and product coverage, which demonstrates that there is considerable potential for the transfer of experience and expertise amongst economies. The region also spans major 'producer' economies that supply much of the world's demand for appliances and equipment, through to economies that are almost entirely reliant upon the import of products from neighbouring economies.

Figure 37: Scope of Energy Labelling program in the APEC region by product coverage

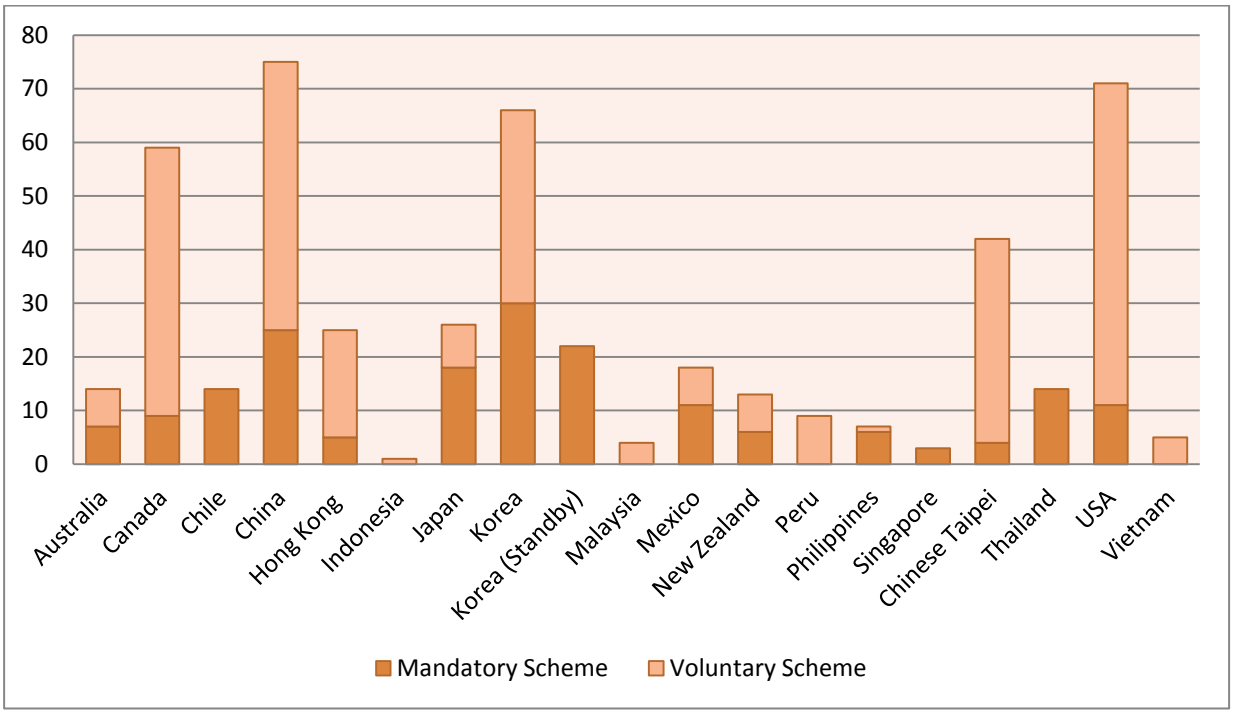
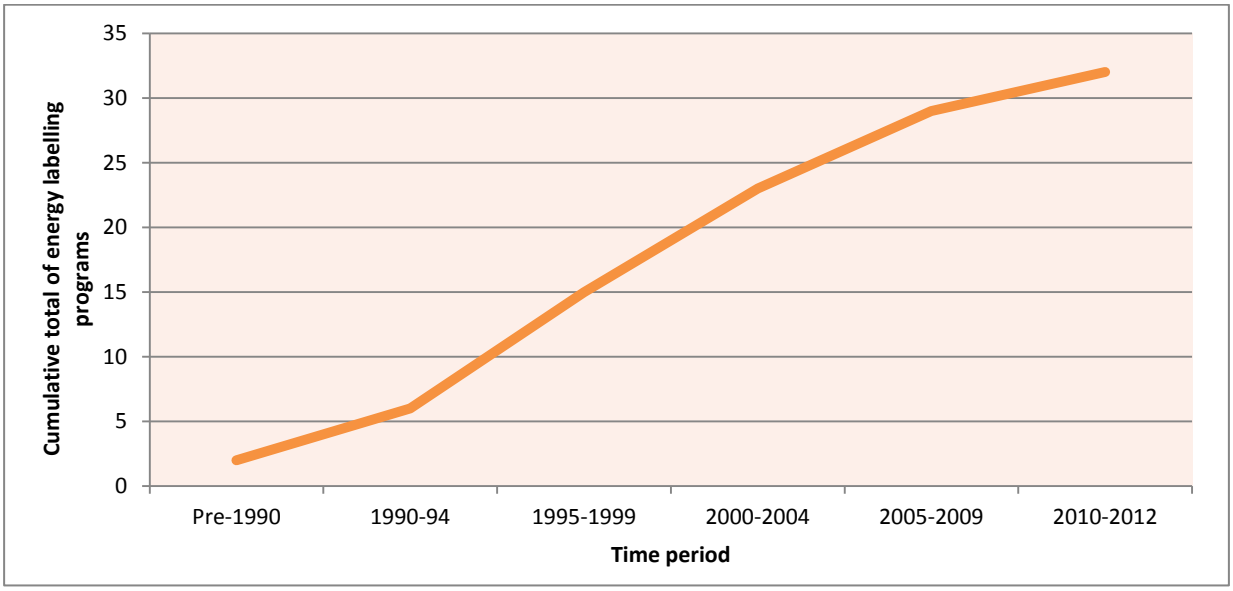


Table 5: Summary of Energy Labelling programs in APEC economies

Economy	Mandatory Product Coverage	Voluntary Product Coverage	Date Implemented	Notes
Australia	7	1	1992	
Australia		6	1999	No data supplied
Canada	9		1978	
Canada		50	2001	
Chile	14		2007	
China		50	1998	No data supplied
China	25		2005	
Hong Kong		20	1995	
Hong Kong	5		2009	
Indonesia		1	2011	
Japan		8	1995	No data supplied
Japan	18		2000	
Korea	30		1992	
Korea		36	1996	
Korea (Standby)	22		1999	
Malaysia		4	2003	
Mexico	11		1995	
Mexico		7	1995	
New Zealand	6		2002	
New Zealand		7	2005	No data supplied
Peru		1	1999	
Peru		8	2009	Mandatory in 2013
Philippines	6		1992	
Philippines		1	2000	
Singapore	3		2008	
Chinese Taipei		32	2000	
Chinese Taipei	4		2010	
Chinese Taipei		6	2000	No data supplied
Thailand	14		2003/4	
USA	11		1978	No data supplied
USA		60	1992	
Vietnam		5	2011	Mandatory in 2013
Total	**185**	**303**		

Figure 38: Growth of Energy Labelling programs in the APEC region



4.2 Summary of Minimum Energy Performance Standards Programs

Minimum energy performance standards (MEPS) are currently operating, or planned to operate, in 16 economies in the APEC region. In addition, Japan's Top Runner program requires manufacturers and importers to meet sales-weighted target efficiency values for their sales, and for the purpose of this analysis has therefore been included.

Of these, information provided on the MEPS program in Malaysia was insufficient to include here. Since the MEPS programs in Chile and Indonesia are still in their infancy, they also were not able to provide sufficient information to be included in this analysis. The program in Vietnam is due to commence in 2013, but in this case they were able to provide information on the intended operation of their MV&E regime and have therefore been included.

As a result this survey covers 14 MEPS programs, which place mandatory performance requirements on a total of approximately 280 products and additional voluntary requirements on 11 products. In some cases, the use of voluntary MEPS is a transitional arrangement used to prepare suppliers and markets in advance of mandatory provisions.

As shown in Table 6, Figure 39 and Figure 40, MEPS programs in the APEC region vary considerably by age and product coverage, which demonstrates that there is considerable potential for the transfer of experience and expertise amongst economies. The region also spans major 'producer' economies that supply much of the world's demand for appliances and equipment, through to economies that are almost entirely reliant upon the import of products from neighbouring economies.

Table 6: Summary of MEPS in APEC economies

Economy	Mandatory Product Coverage	Voluntary Product Coverage	Date Started
Australia	16	1	1992
Canada	47		1995
Chile	2-3		2012-13
China PRC	46		1989
Indonesia	5		Under consideration
Japan	23		1999
Korea	30		1992
Malaysia	2	1	1996
Mexico	16		1995
New Zealand	20		2002
Peru		3	2009
Philippines	3		1992
Chinese Taipei	8		1999
Singapore	2		2011
Thailand		6	2010
US	50		1975
Vietnam	10		2013
	280	11	

Figure 39: Total number of MEPS programs by data implemented

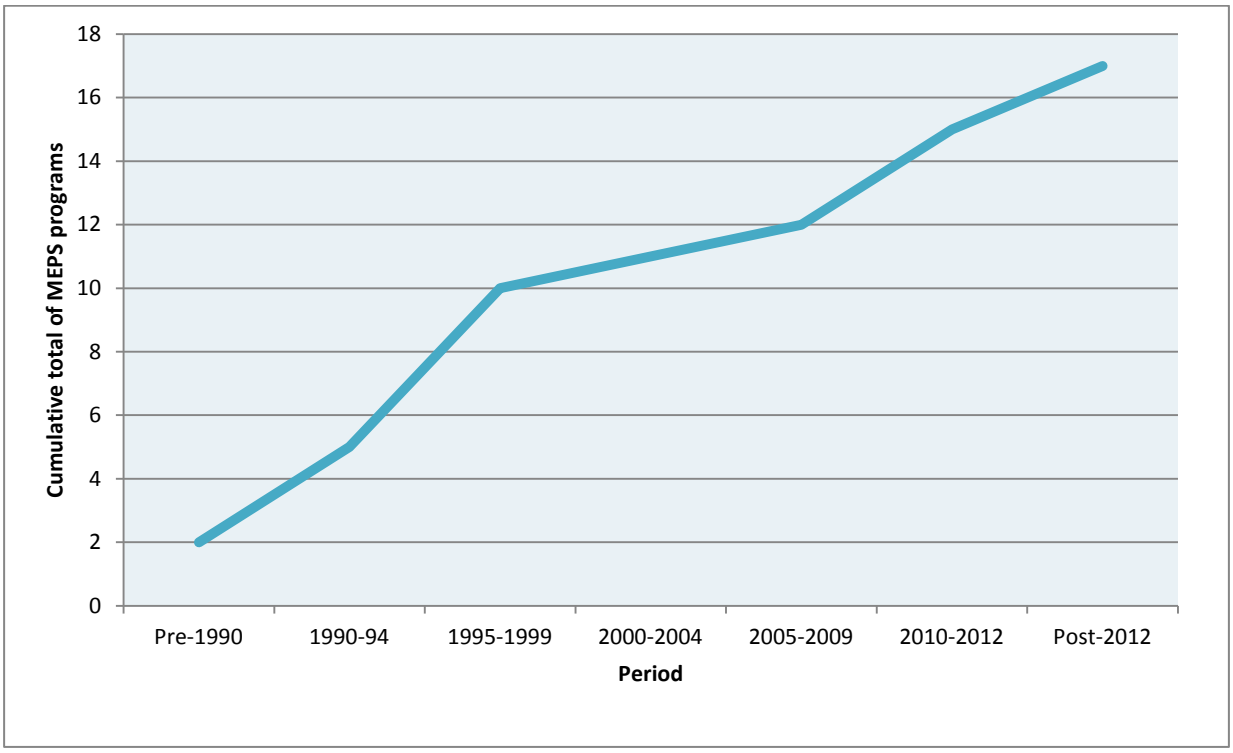
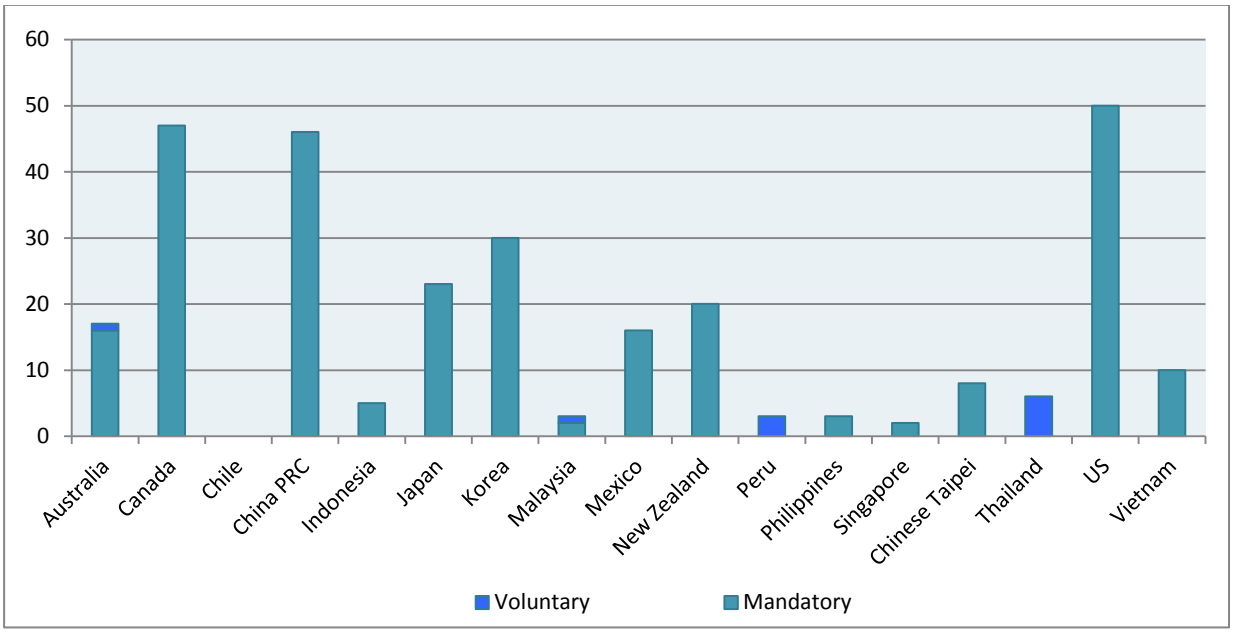


Figure 40: Number of products included in MEPS programs by economy



4.3 MV&E Requirements in Legal Frameworks

All programs were able to identify the government ministry, department or agency with overall responsibility for the operation of the energy labelling and MEPS program, and the equivalent organization responsible for ensuring compliance with program requirements. In approximately 25% of cases these are not the same entity. Closer inspection reveals that the relationship between the different organizations that share responsibility for elements of energy efficiency programs can be complex, and potentially confusing for stakeholders. The involvement of multiple departments and agencies increases the need for roles and responsibilities to be clearly defined to ensure proper oversight, particularly with respect to MV&E activities.

The majority of energy labelling and MEPS programs specify elements of the compliance regime in the legal or regulatory framework that governs the program. Some programs reported additional guidelines or administrative procedures that specify how the MV&E regime works and what is expected of participants.

Figure 41: MV&E requirements for Energy Labelling in legal frameworks

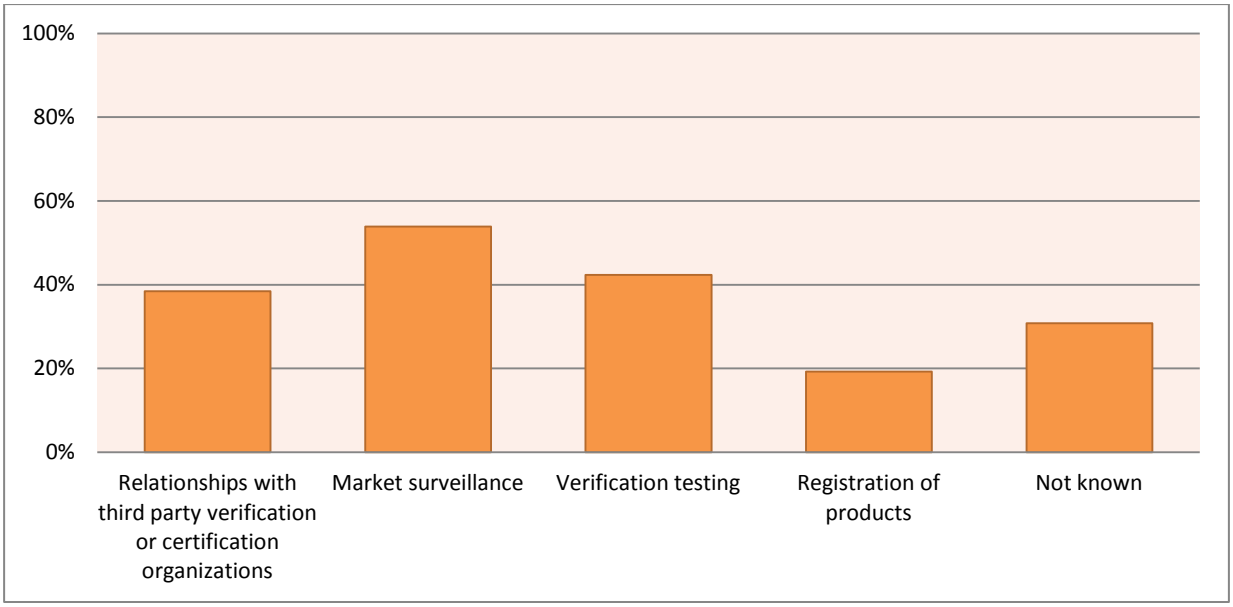
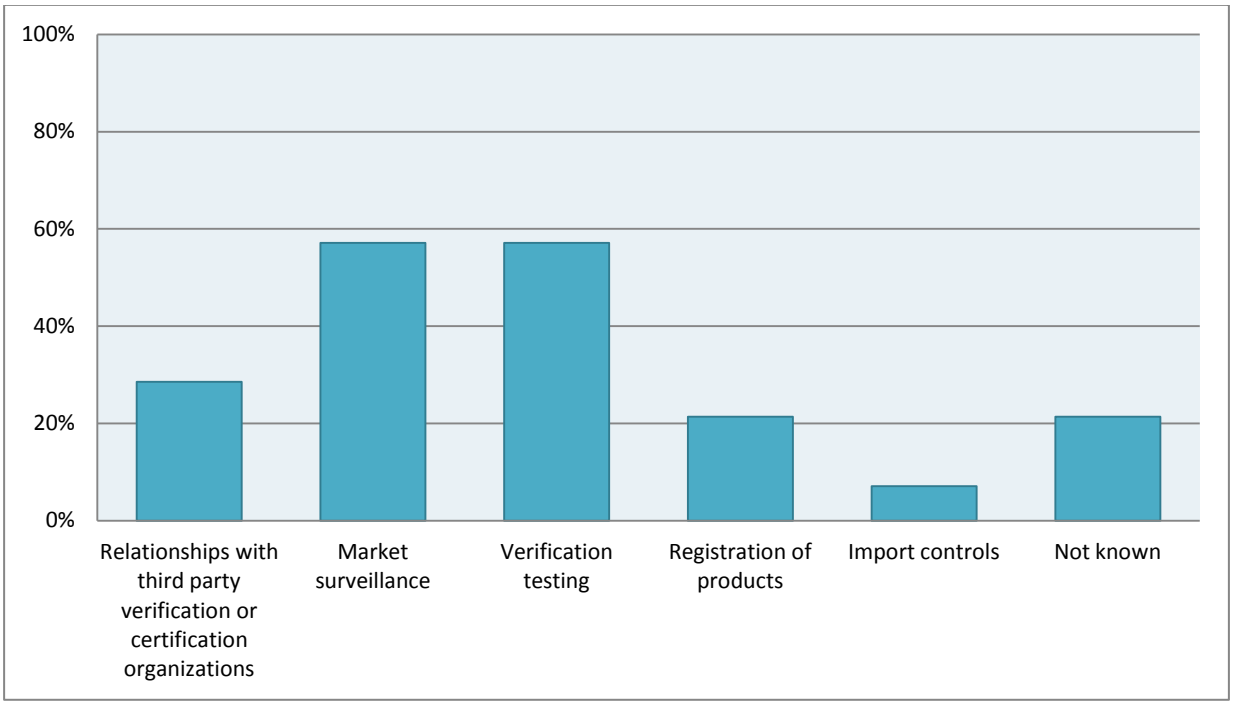


Figure 42: MV&E requirements for MEPS in legal frameworks



4.4 Information/Education for Stakeholders

Informing suppliers, retailers and other participants of their obligations is an important and cost-effective means of raising compliance rates. The large majority of programs reported that they are active in providing information and education on the requirements for suppliers participating in energy labelling and MEPS programs. Most programs use multiple channels to reach stakeholders, with online information being the most frequently used.

Figure 43: Provision of information to stakeholders on Energy Labelling

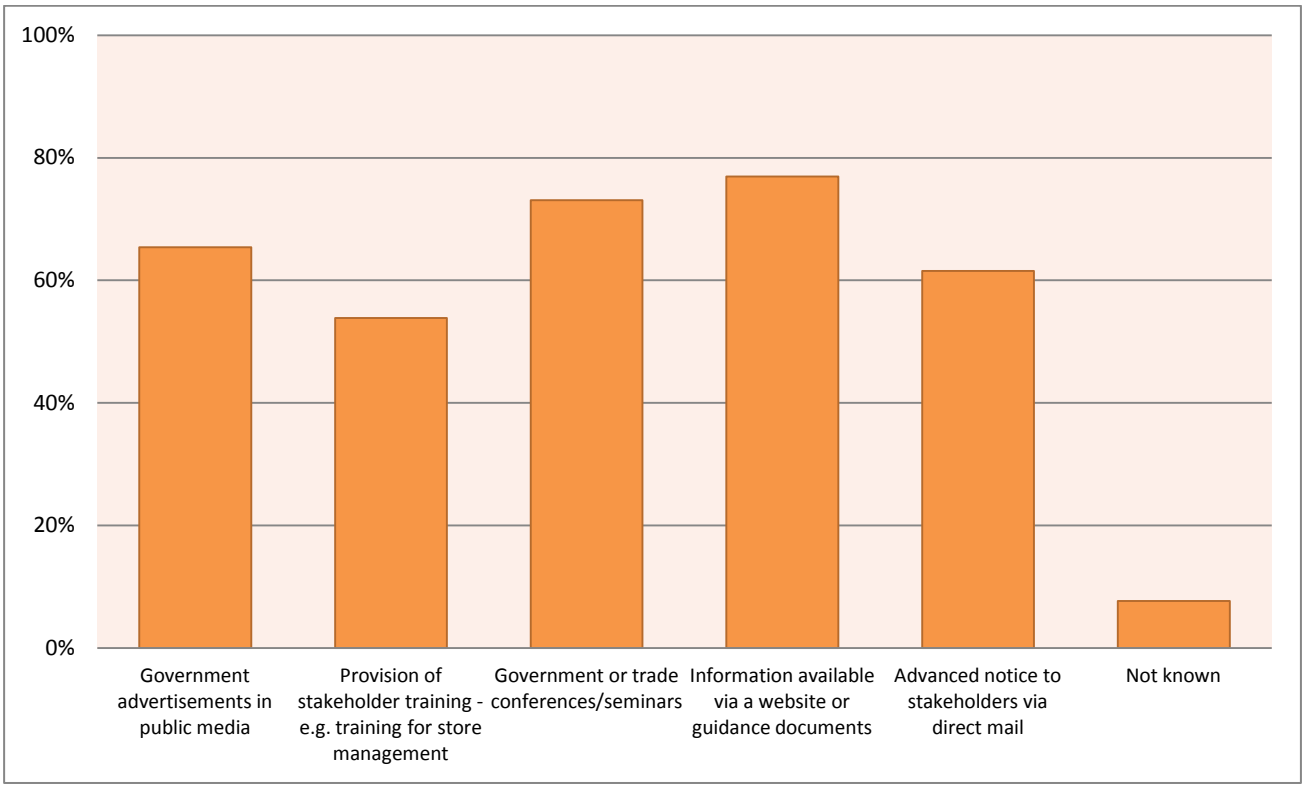
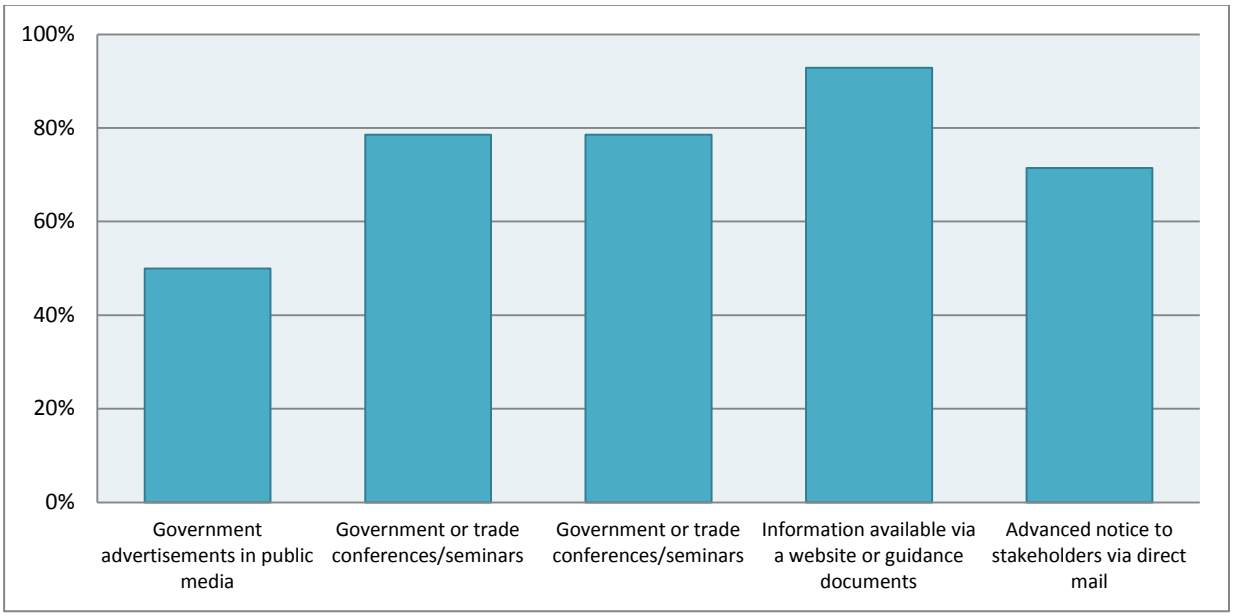


Figure 44: Provision of information to stakeholders on MEPS



4.4.1 Advanced Notice to Stakeholders

In order to prepare industry for impending regulation, most programs provide notice in advance of energy labelling or MEPS requirements coming into force. Since most stakeholders are usually involved in early consultation, the actual period in advance (whereby industry is aware of forthcoming policy measures) tends to be far longer than the formal notice period. Formally, most economies are required to announce their intentions between six to twelve months in advance, but including consultation, most stakeholders are involved in the development of proposals between two to five years before any requirements come into force.

For minor administrative changes to existing regulations, the period of notice is often less than twelve months. New, or changes to, voluntary labelling programs tend to have less lead-time than for mandatory programs, since industry has more flexibility in whether to join the program.

Figure 45: Period of advance notice for new Energy Labelling requirements

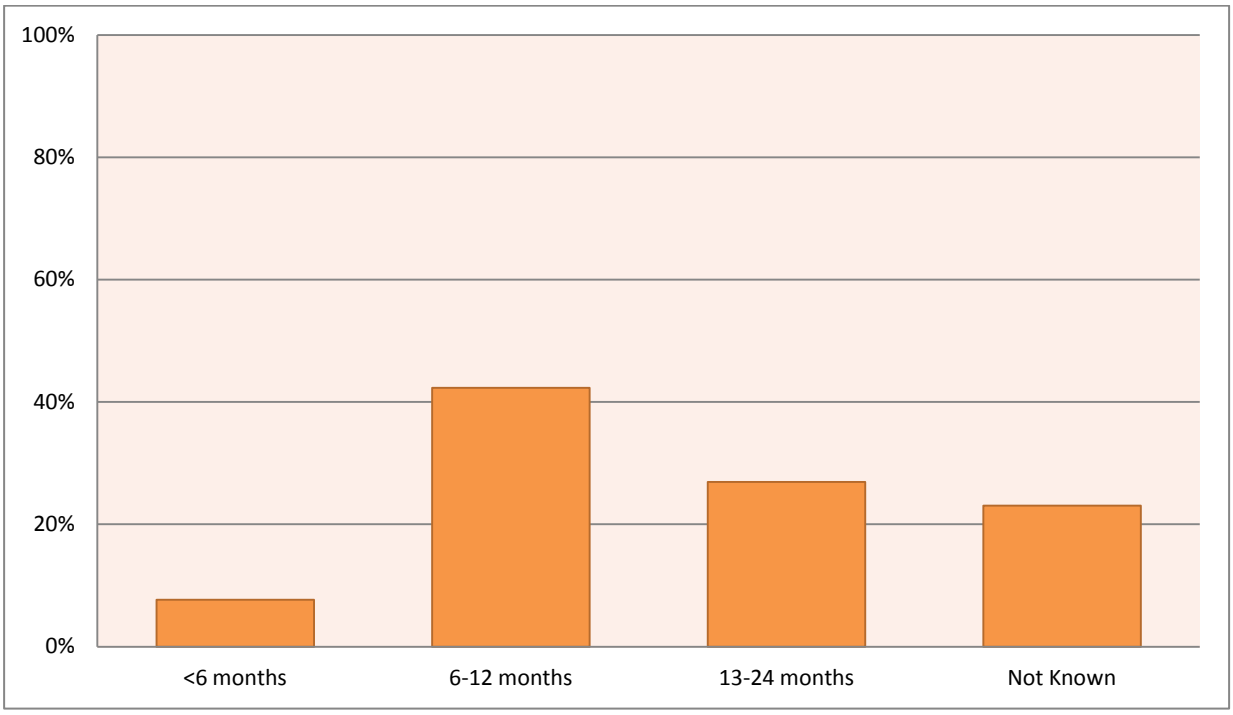
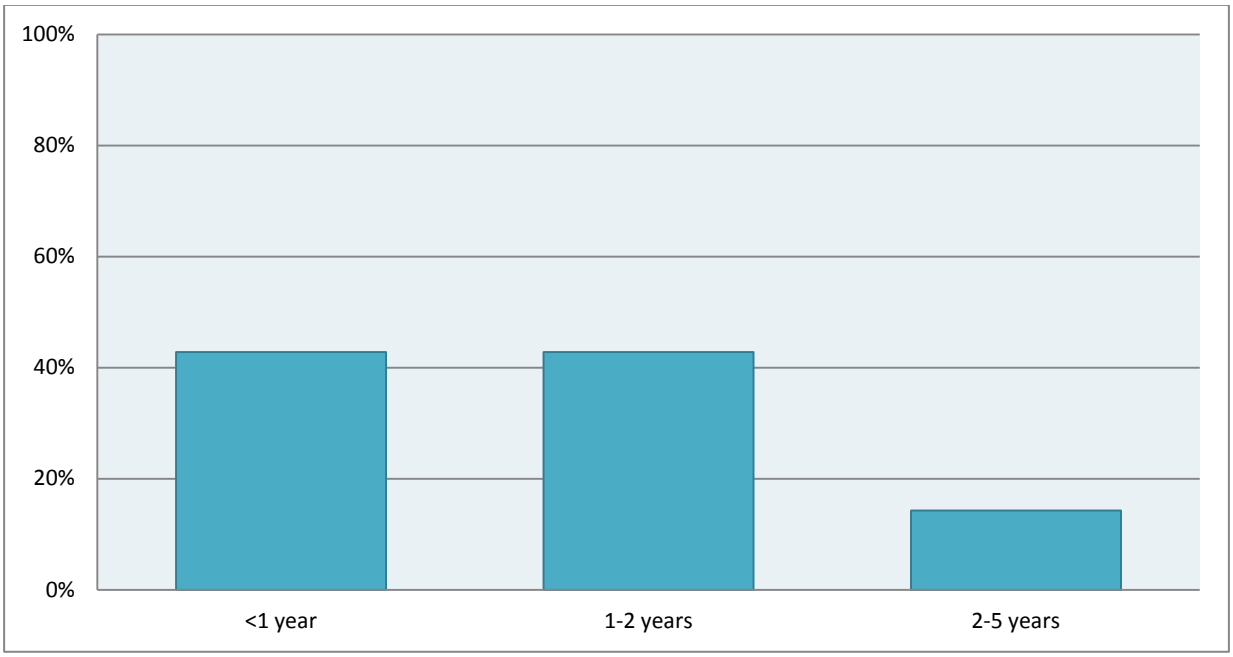


Figure 46: Period of advance notice for new MEPS requirements



4.4.2 Monitoring Industry Understanding of Program Requirements

Not all programs systematically monitor how well industry is aware of and understands program requirements, however the majority hold regular consultation events for this purpose. Around 14% have established formal advisory groups or liaison committees comprising representatives from industry that not only provide feedback but also communicate and consult back to industry. Over 20% of MEPS programs provide opportunities for one-on-one advice and information, either through site visits or call-lines.

Figure 47: Initiatives to monitor industry understanding of Energy Labelling program requirements

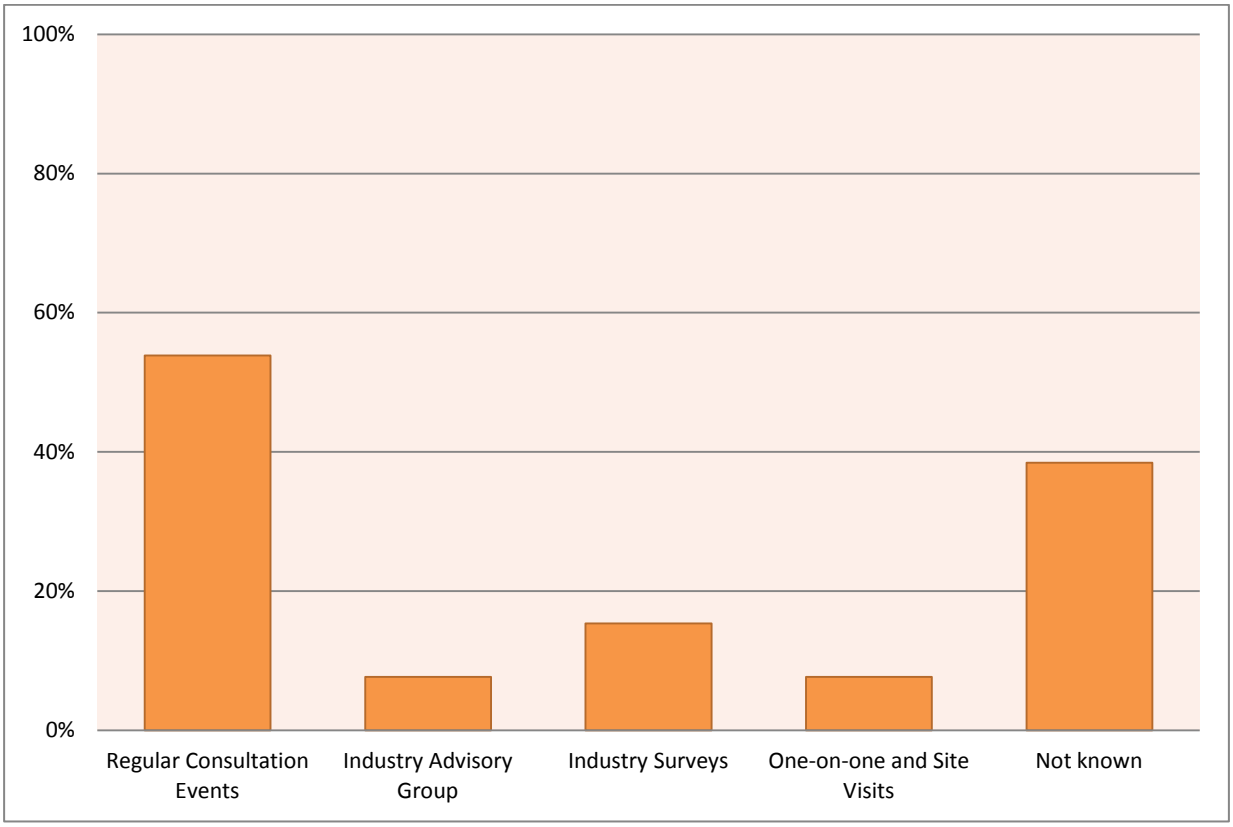
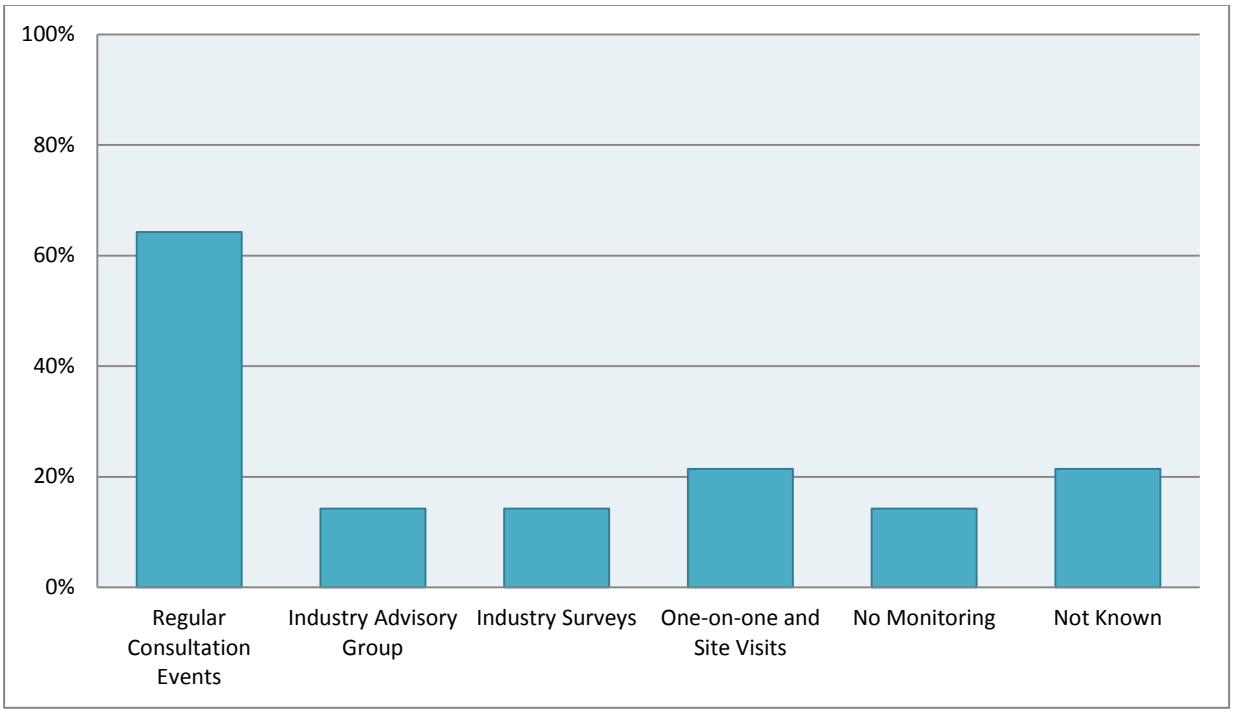


Figure 48: Initiatives to monitor industry understanding of MEPS program requirements



4.5 Program Entry Requirements

All programs have some requirements that must be met before products can be sold, or carry the energy label, within the relevant economy; and in many cases there are multiple requirements. Typically these relate to the provision of information about the product and its performance, either through a formal registration process or the lodgement of reports; and to the availability of supporting evidentiary documentation.

Figure 49: Entry requirements for Energy Labelling programs

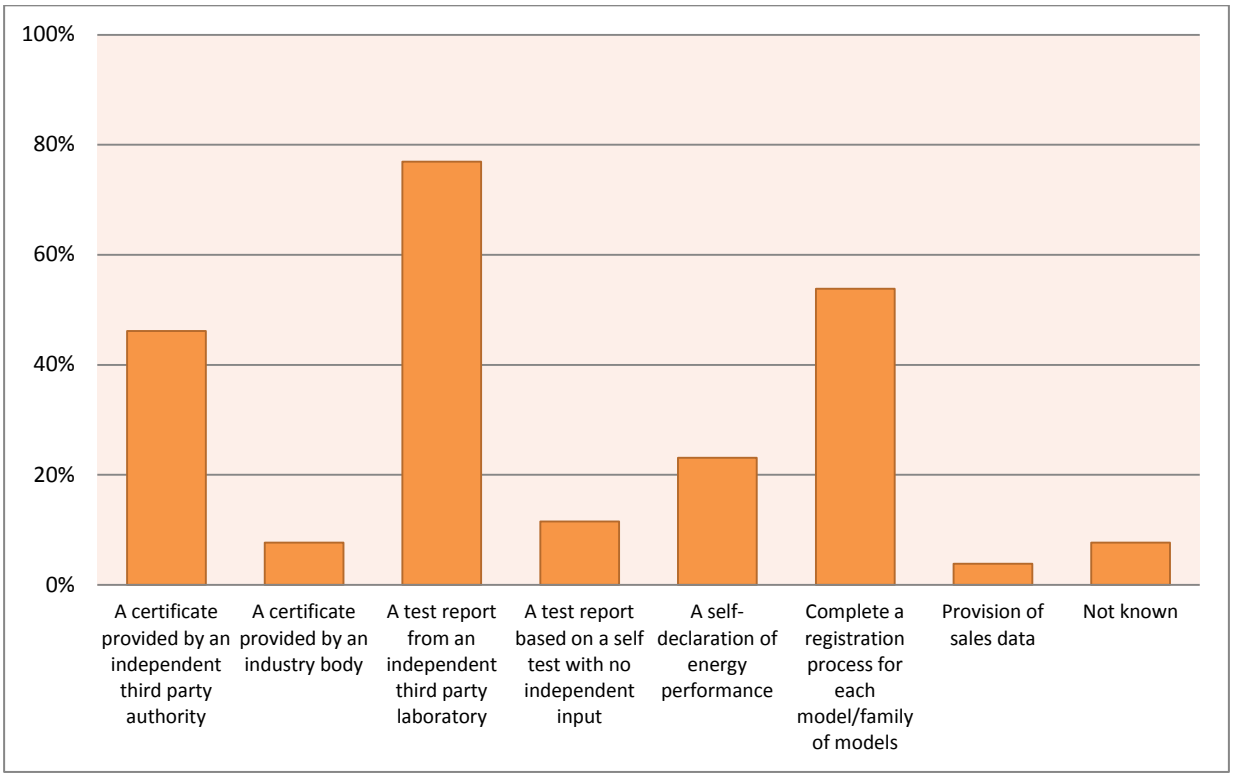
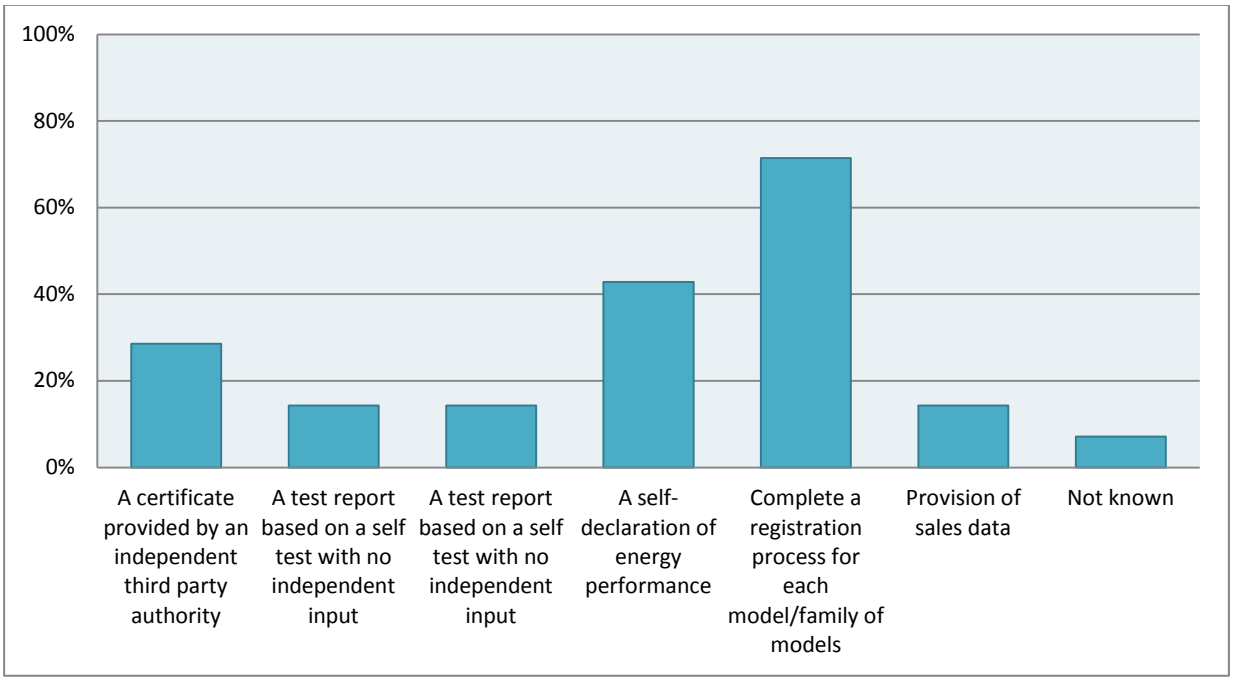


Figure 50: Entry requirements for MEPS programs



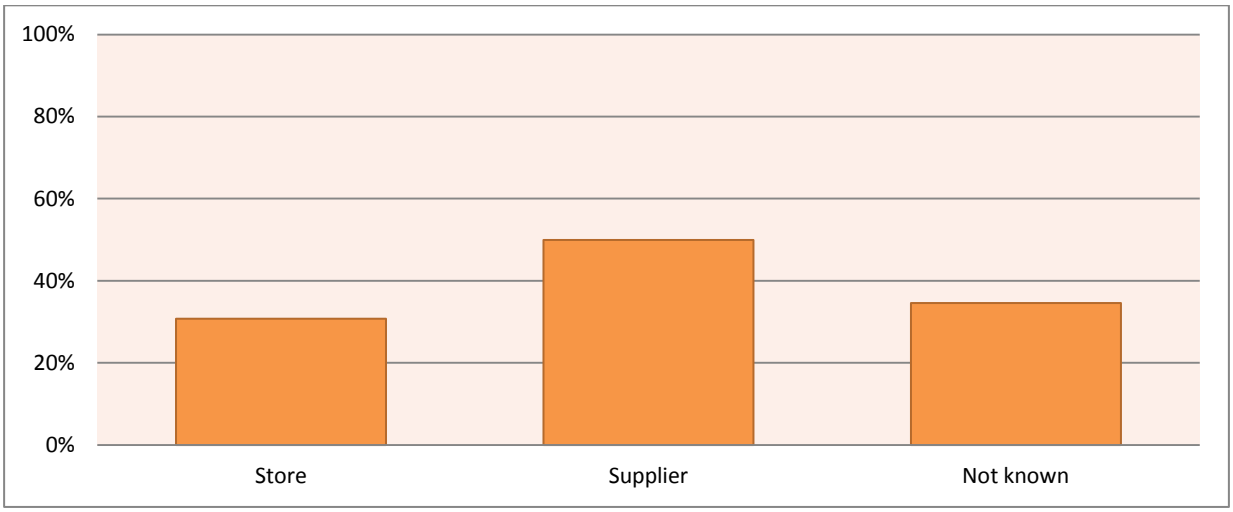
4.6 The Display of Energy Labels

All energy labelling programs have requirements regarding the design, format and application of their label. These aspects are referred to as "labelling display" or "the display of labels" in this report, in order to distinguish between measures to ensure that the label is correctly displayed and verification activities designed to ensure that the label correctly reflects the energy performance of that product.

4.6.1 Responsibility for Label Display

The responsibility to ensure that labels are correctly applied to appliances, are in the right location and contain the required information usually resides with the product supplier, however in some programs this responsibility is borne by the retailer. In a small number of cases, the responsibility is shared between the supplier and retailer. The fact that over 30% of respondents were not able to clearly define the responsible entity suggests the need for this to be clearly defined and communicated, so that where labels are not displayed correctly it is evident who is accountable.

Figure 51: Responsibility for label display



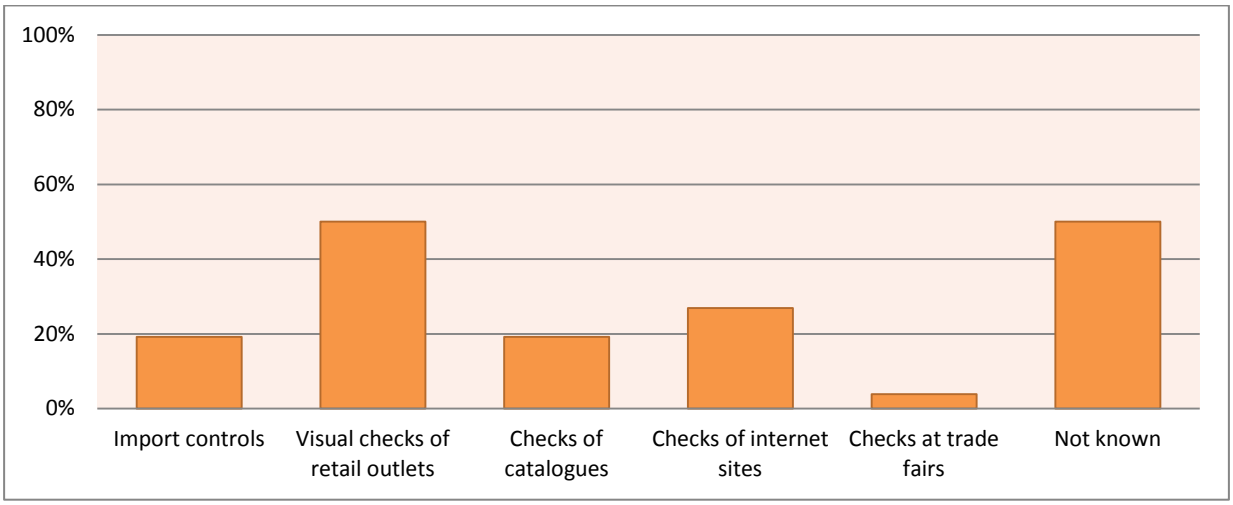
4.6.2 Monitoring Labelling Display at the Point of Sale

65% of all APEC energy labelling programs reported that they monitor the display of labels, although half of the programs did not provide information on how monitoring was done, and only 42% reported that surveys had been undertaken in the period 2008-2010.

Nearly all of these surveys are commissioned by the responsible government agency but are often undertaken by a contractor.

The inspection of labels in retail outlets is the most frequently used method of monitoring compliance with labelling display requirements, although checks of catalogues and on-line sites are also common.

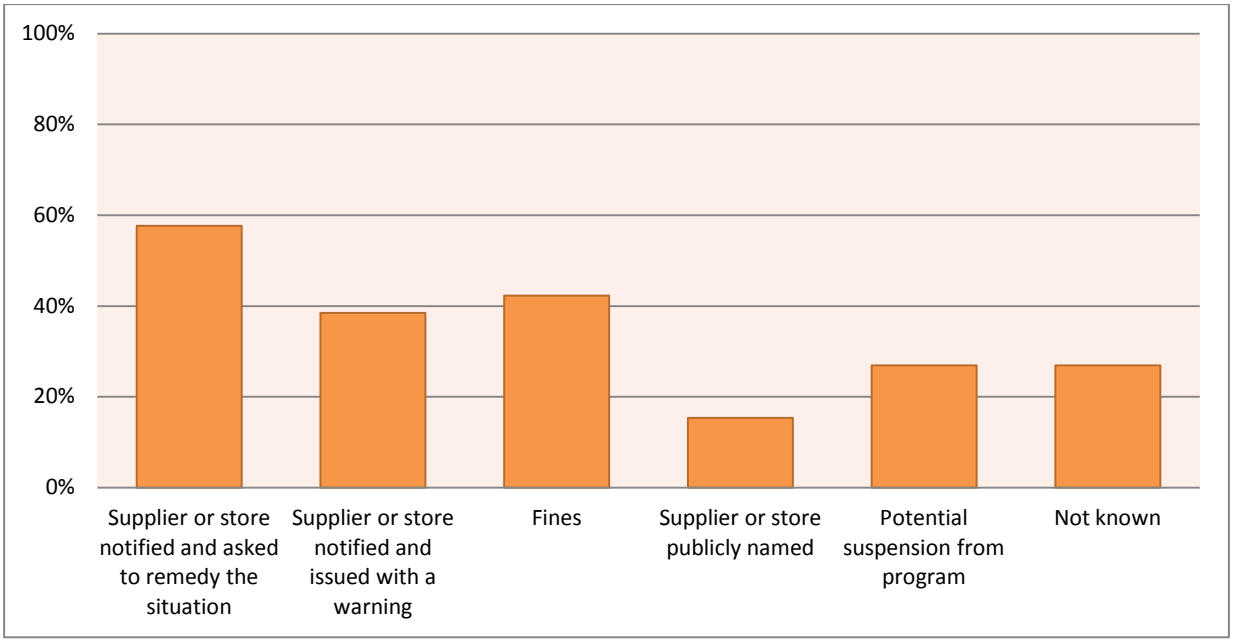
Figure 52: Method of monitoring labelling display



4.6.3 Enforcement Actions Able to be Taken for Incorrectly Labelled Products

Most programs have at their disposal a range of actions that can be taken when products are found to be incorrectly labelled. This enables programs to escalate their response depending on the severity of the offence and attitude of the offender(s).

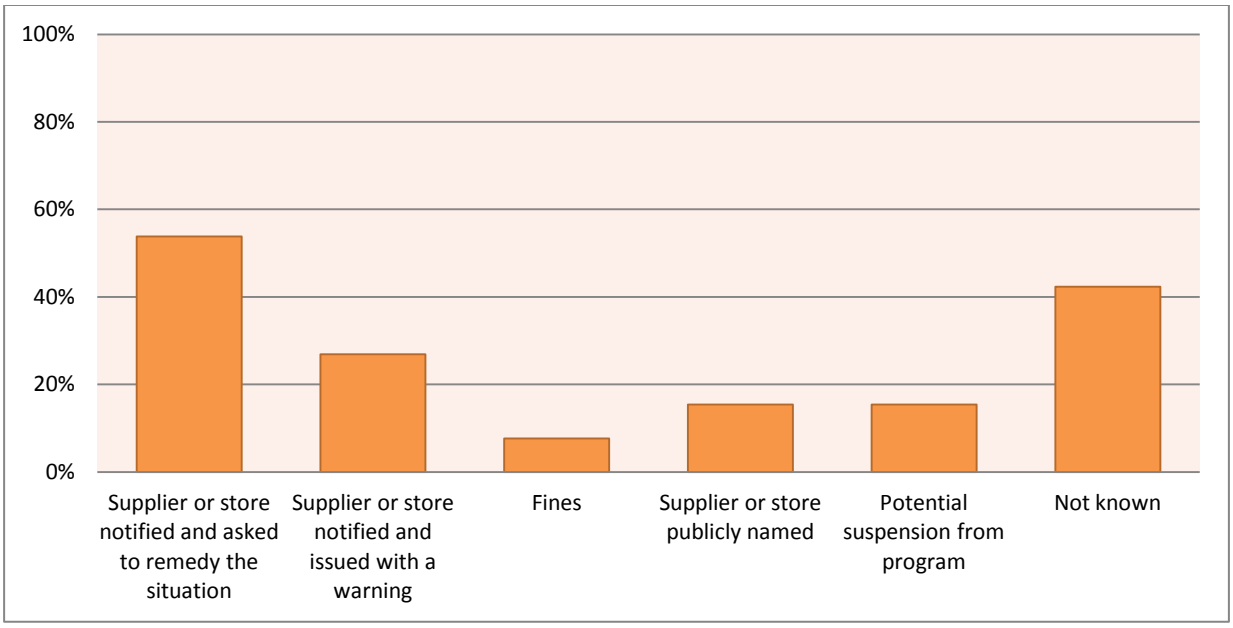
Figure 53: Range of potential actions taken where products found to be incorrectly labelled



A small proportion of these theoretical enforcement actions have actually been used by APEC economies in the period 2008-10, and most of these were at the less severe end of the range.

Of concern, 40% of economies reported that information on what actions had been taken was unavailable, which may be due to a lack of record-keeping or indicate that non-compliance had not been followed-up.

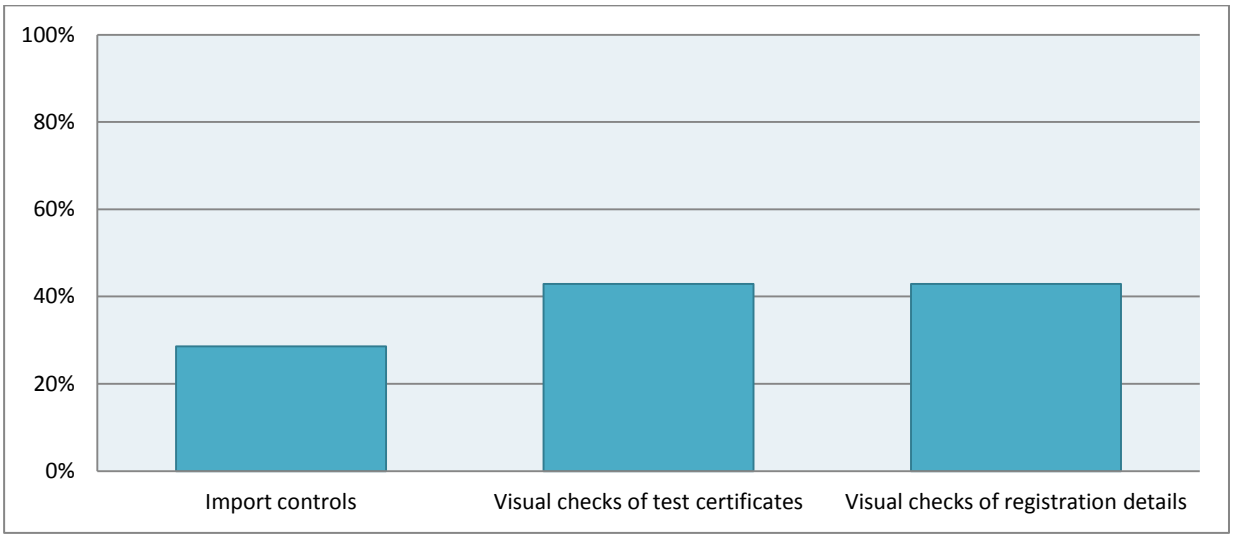
Figure 54: Occurrence of enforcement actions for labelling display



4.7 Checks to Ensure MEPS Requirements are Met

Over 85% of programs undertake checks to ensure that entry requirements for MEPS are being met, using either visual inspection of directly provided materials or through information provided at the point of entering an economy. It should be noted that some economies use import control procedures for specific products, rather than all of those included in the MEPS program.

Figure 55: Method of checks on MEPS entry requirements



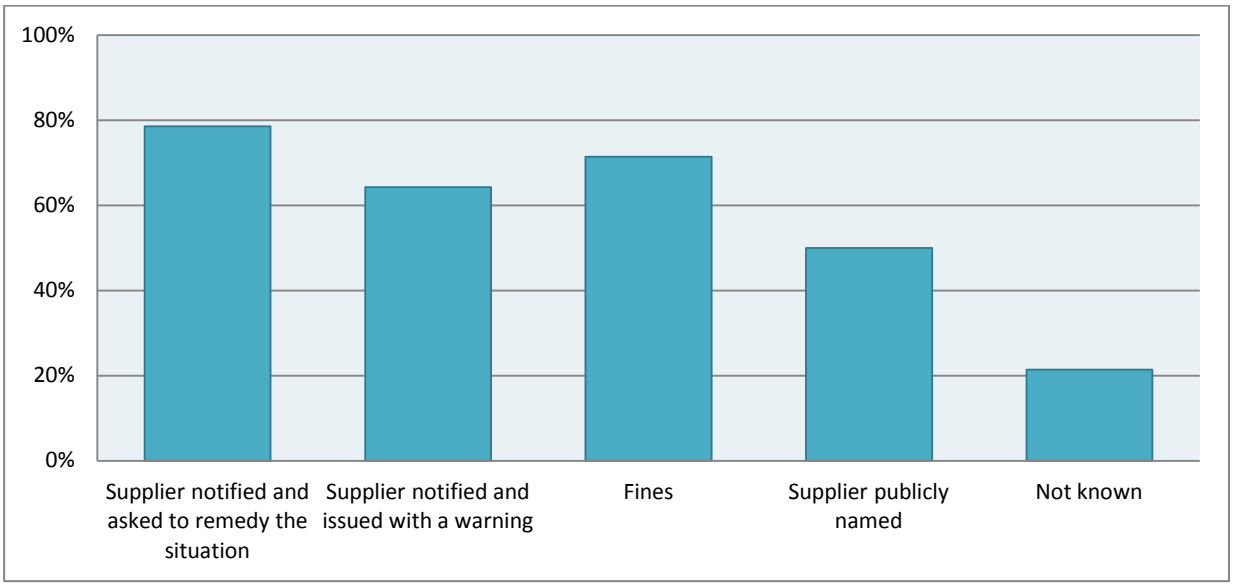
In 86% of APEC economies these checks are the responsibility of governments, or government agencies. 14% were unable to say who commissioned these checks.

65% of APEC economies reported that they had undertaken checks over the previous three years, however the remainder either had not undertaken any checks or were unable to provide any information.

4.7.1 Enforcement Actions Able to be Taken if MEPS Entry Conditions are not Met

Most APEC economies reported a range of actions that can be taken if products/suppliers do not meet the required entry conditions for MEPS. This is consistent with the ability to provide an escalating response depending on the severity of the offence and attitude of the offender(s). Of concern, 20% of economies were unable to state their potential range of actions.

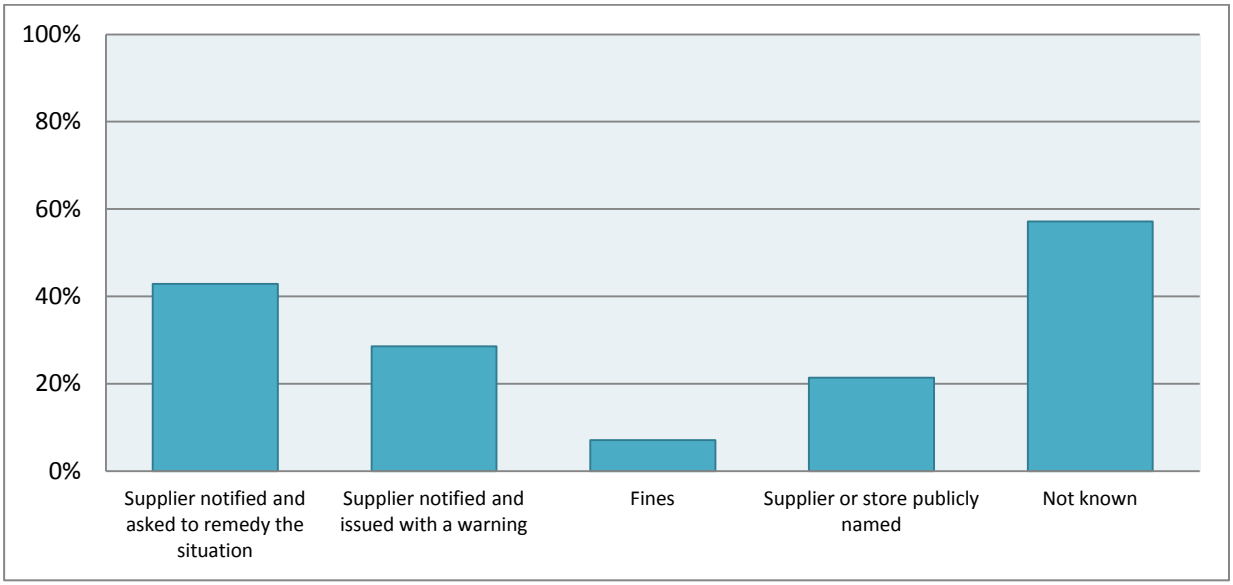
Figure 56: Potential enforcement actions taken if products/suppliers fail to meet entry conditions for MEPS



As with labelling entry requirements, a small proportion of these theoretical enforcement actions were actually used by APEC economies in the period from 2008-10, and most of the actions involved informal or formal notification.

Nearly 60% of economies – more than in the case of labelling – reported that they could not provide information on what actions had been taken. This indicates either a serious a lack of record-keeping or that instances of non-compliance had not been systematically followed-up.

Figure 57: Occurrence of enforcement actions taken if products/suppliers fail to meet entry conditions for MEPS



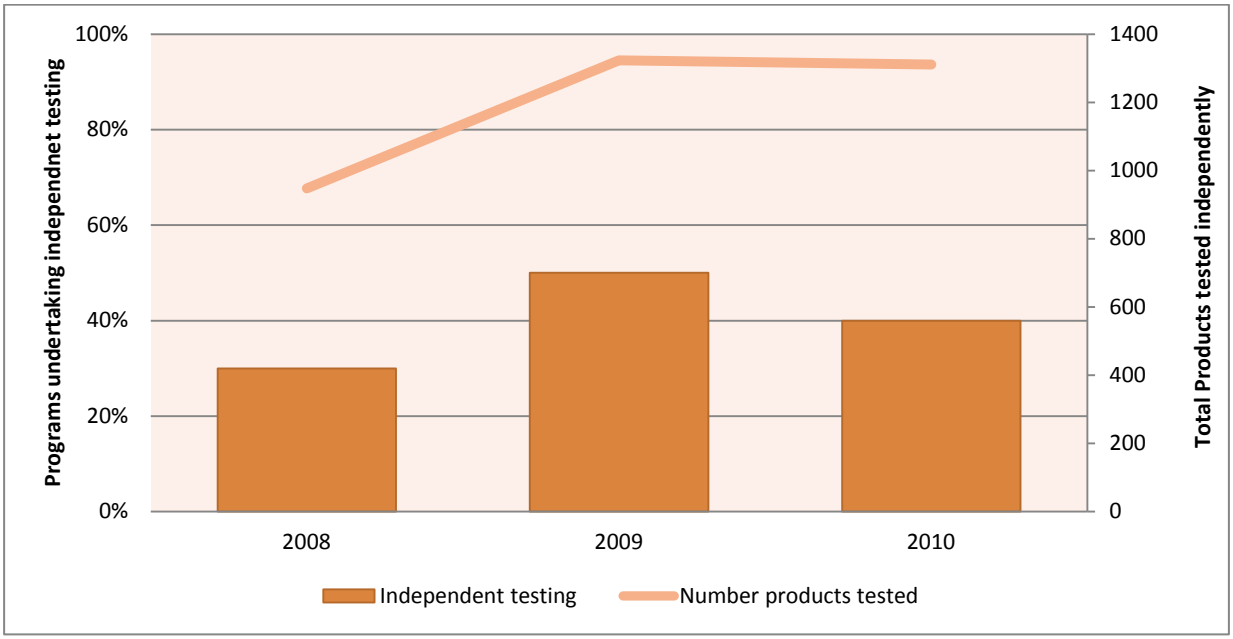
4.8 Third Party Verification and Certification

4.8.1 Third Party Verification and Certification in Energy Labelling Programs

Ten economies use a third party certification process to verify the performance of products covered by energy labelling. However, it should be noted that while the US Environmental Protection Agency uses a third party certification scheme within the Energy Star program for the products under its responsibility, this does not apply to products under the leadership of the US Department of Energy.

As shown in Figure 58, between 30%-50% of energy labelling programs that use third party certification also undertake independent verification tests. Between 2008 and 2010, a total of at least 3,500 independent tests were conducted by these programs.

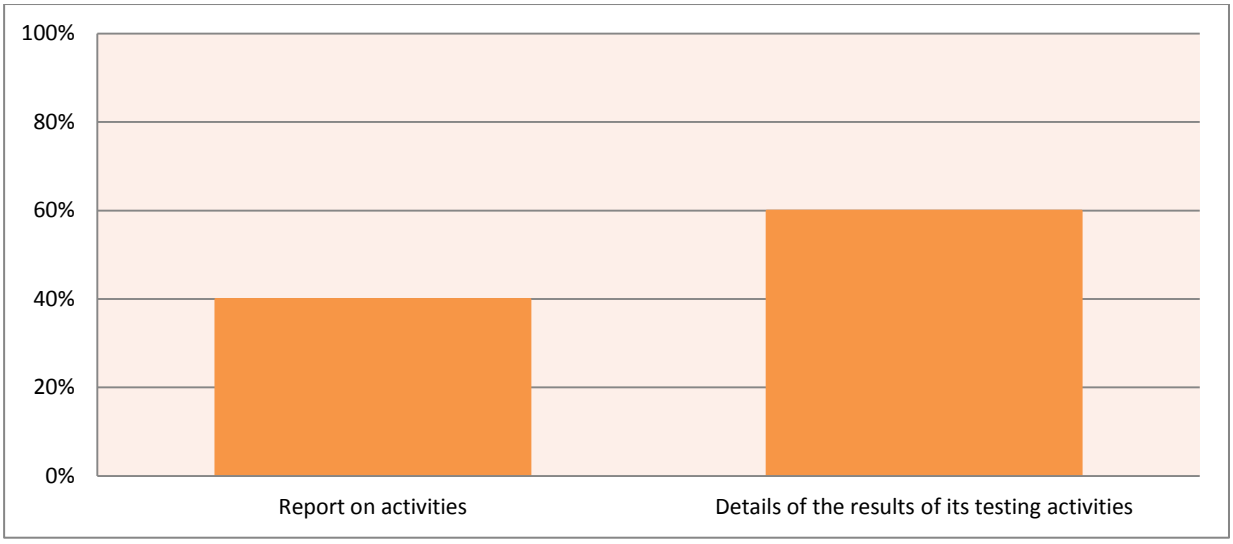
Figure 58: Energy Labelling programs: independent verification tests between 2008 and 2010



4.8.2 Information Provided by Third Party Certification Agencies

For programs that require third party certification, 60% are provided with information on the results of the testing undertaken by the certification agencies, and 40% are also provided with reports on their activities to ensure compliance.

Figure 59: Energy Labelling programs: information provided by third party certification agencies

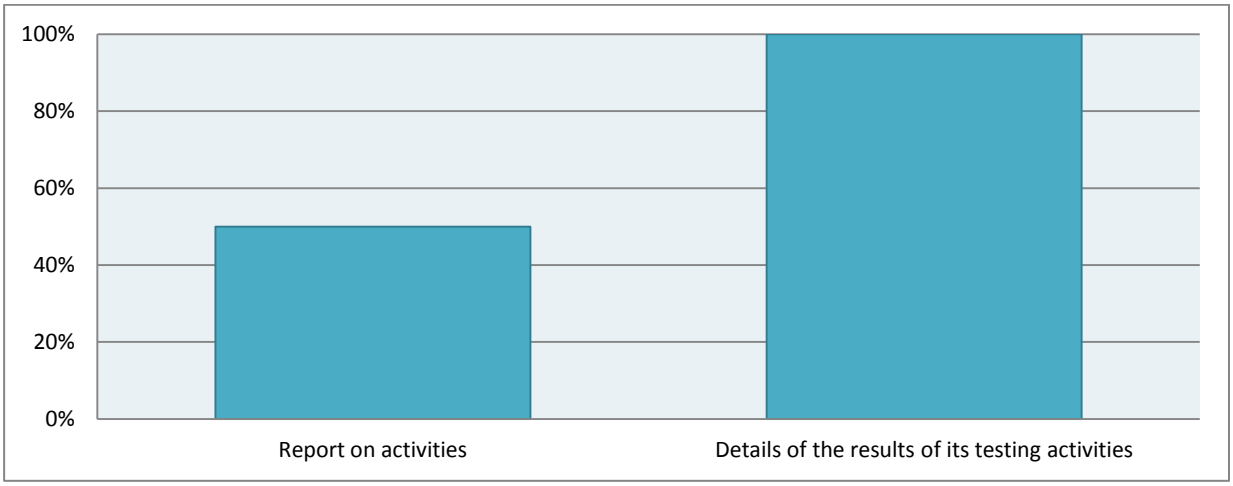


4.8.3 Third Party Verification and Certification in MEPS Programs

The following four economies use a third party certification process to verify the performance of products covered by MEPS: Canada, Chinese Taipei, Mexico, and the USA. However, it should be noted that the USA has a unique system since it recognises industry third party certification schemes, while also undertaking government verification ("assessment") testing.

All certification agencies provide APEC economies with information on the results of their testing processes, and half also provide reports on their activities to ensure compliance.

Figure 60: MEPS programs: information provided by third party certification agencies



4.9 Verification Testing

The 16 energy labelling and 10 MEPS programs within the APEC-surveyed economies that do not use a third party certification process rely exclusively upon post-market verification testing to ensure that products perform as claimed by suppliers.

The share of these programs that were able to provide information on the number of verification tests undertaken from 2008-2010 are shown in Figure 61 and Figure 62.

As can be seen from these figures, only around 50% of programs without third party certification processes were able to provide details of the numbers of products tested. This may indicate a lack of access to records, or that these records are not being kept, or that tests are not regularly conducted. In any of these cases, there is substantial opportunity for improvement.

Figure 61: Share of Energy Labelling programs identifying the number of verification tests undertaken, 2008-10

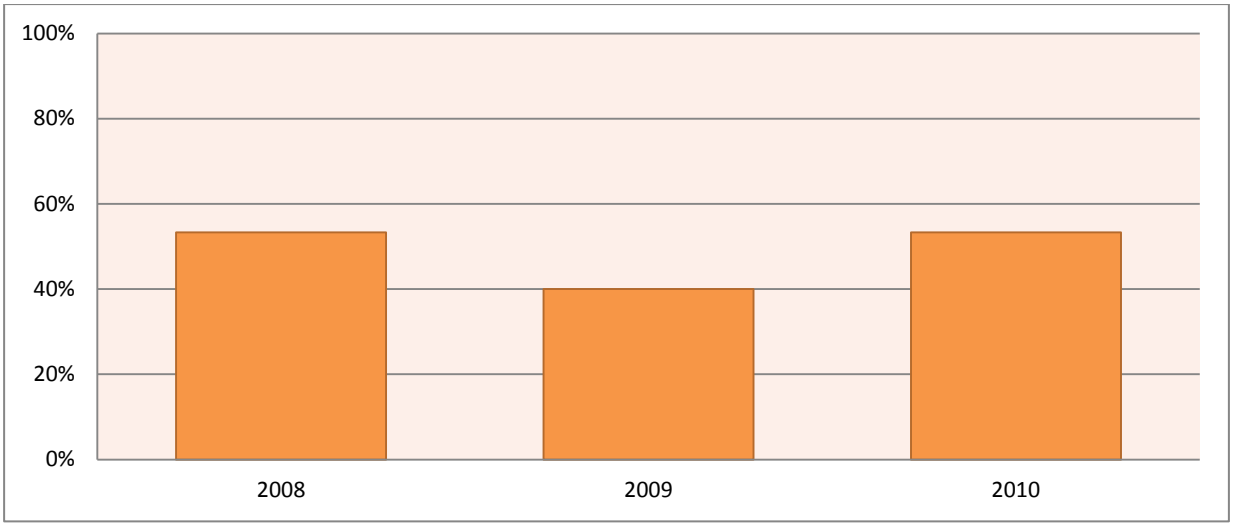
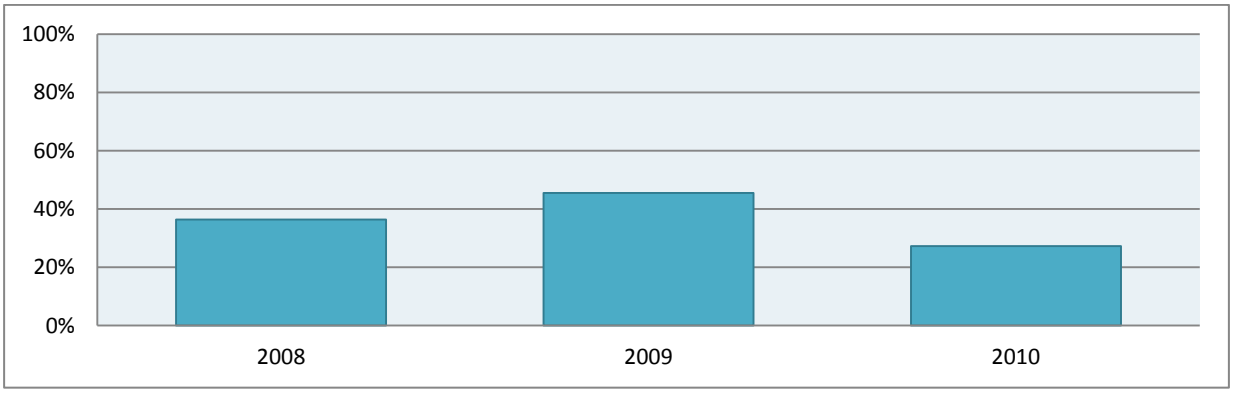


Figure 62: Share of MEPS programs providing number of verification tests undertaken



Responses indicate that a total of at least 3,926 verification tests were undertaken by energy labelling programs during this period, with the average number per reporting program increasing from 153 in 2008 to 210 in 2010.

For MEPS programs, a total of at least 1,756 verification tests were carried out during this period, with the average number per reporting program increasing from 137 in 2008 to 229 in 2010.

It should be noted that these numbers may include some duplicates, since tests for labelling compliance will usually also determine whether products are MEPS compliant.

4.9.1 Samples for Verification Testing

Typically, samples for verification tests are sourced from retailers, although for MEPS programs this is not always possible for commercial and industrial equipment, and samples may be sourced through an intermediary or directly from the supplier.

Figure 63: Source of samples for verification testing in Energy Labelling programs

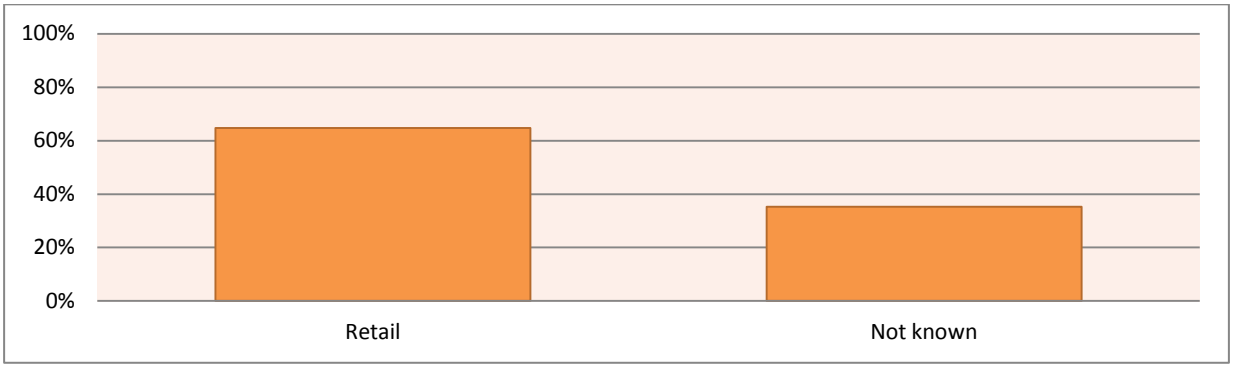
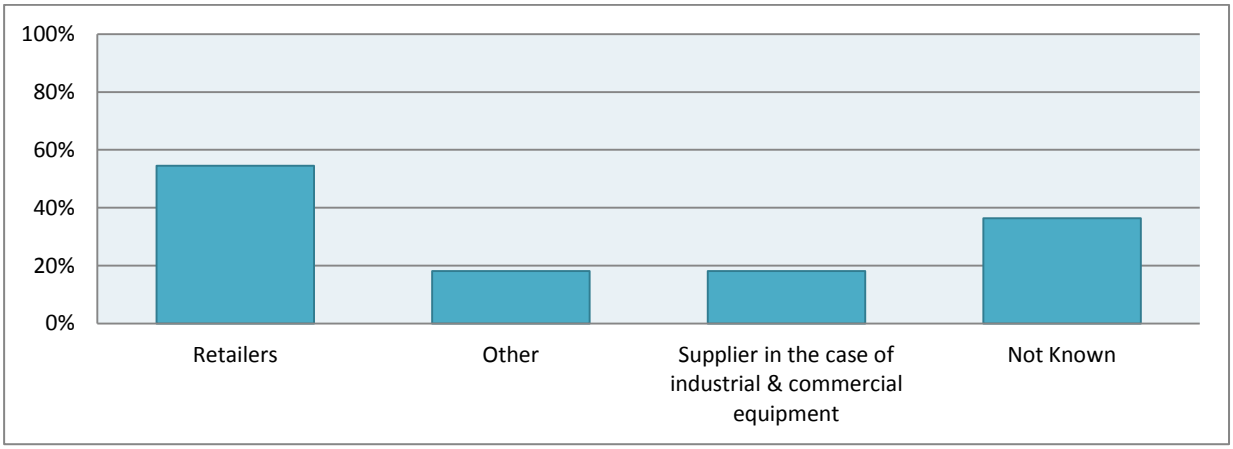


Figure 64: Source of samples for verification testing in MEPS programs



Generally, it is the responsibility of the government agency operating the energy labelling and MEPS programs, or their contractor, to identify models for verification testing. One program allows the manufacturer to select the test product.

A disturbingly large number of economies were not able to identify either where samples were sourced, or the entity responsible for the selection of test models.

Figure 65: The selection of models for testing in Energy Labelling programs

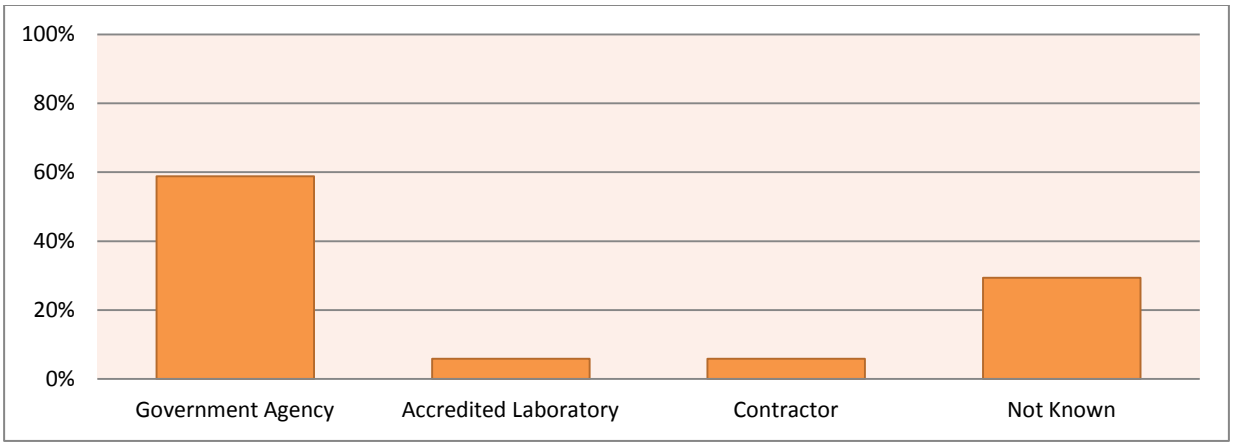
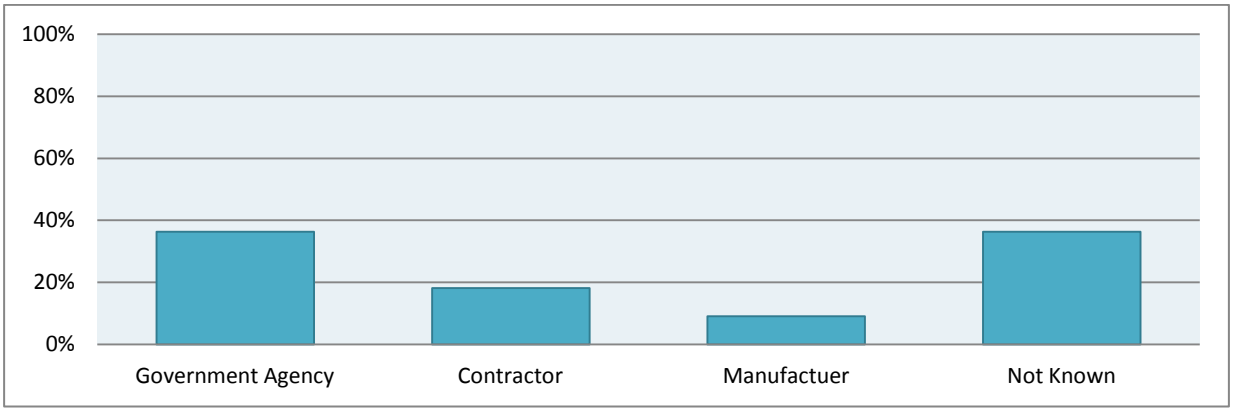


Figure 66: The selection of models for testing in MEPS programs



Products are typically selected for testing based on their significant market share or because they meet a number of criteria that identify them as being at risk of non-compliance, for example if a supplier has a poor record or if a consumer compliant or competitor information has been received. It is noticeable that 30% of respondents from energy labelling programs choose test products on the basis of a random sample, while less than 10% of MEPS programs choose test samples on this basis.

Figure 67: Basis of product selection for verification testing in Energy Labelling programs

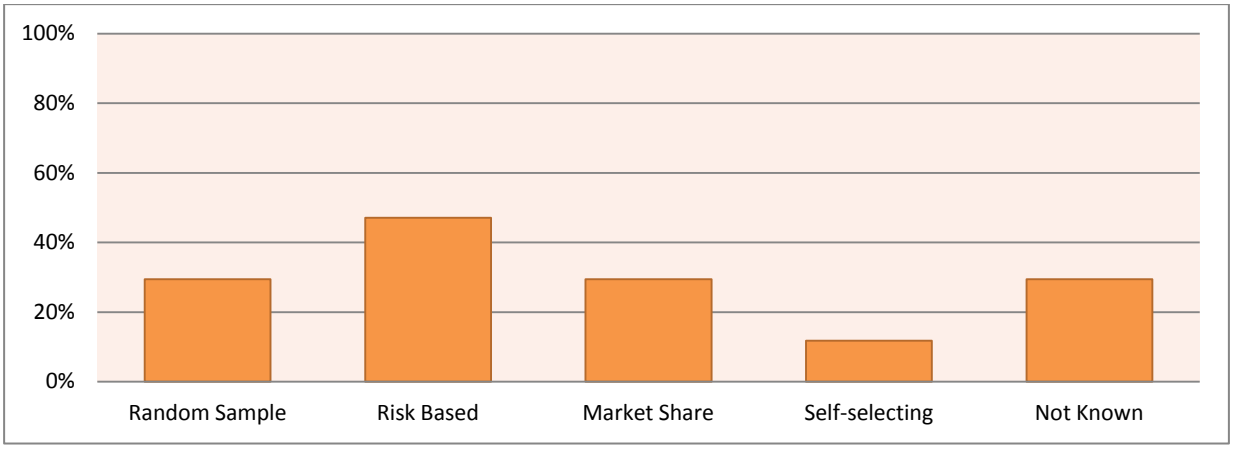
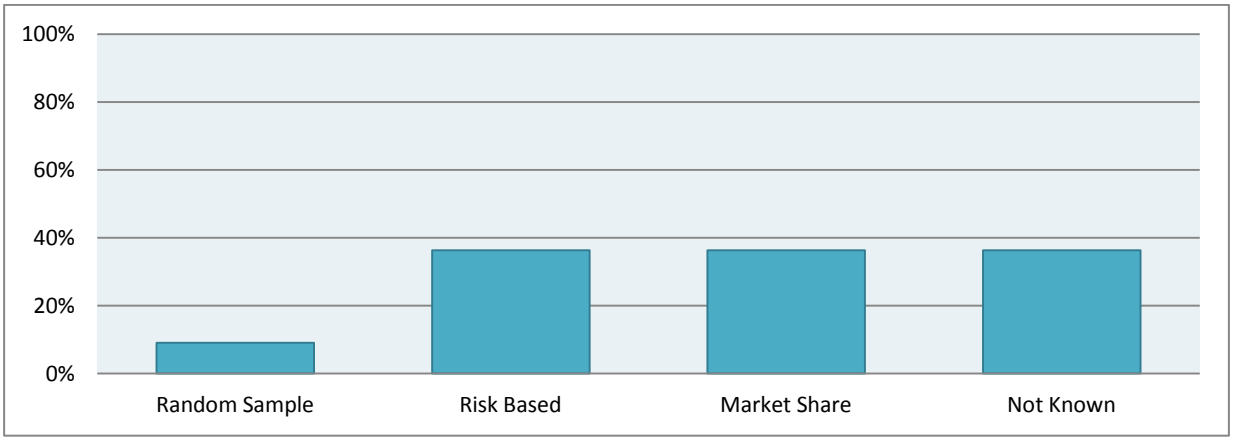


Figure 68: Basis of product selection for verification testing in MEPS programs



4.9.2 Number of Samples Used for Screen and Verification Testing

It is common for energy labelling and MEPS programs to undertake an initial screen test based on a smaller number of models, and only if this provides a negative result is a more thorough secondary verification test on several models commissioned. The exception to this is for various types of lamps where 10-20 samples of a model are typically tested.

Figure 69: Number of samples used for screen and verification testing in Energy Labelling programs

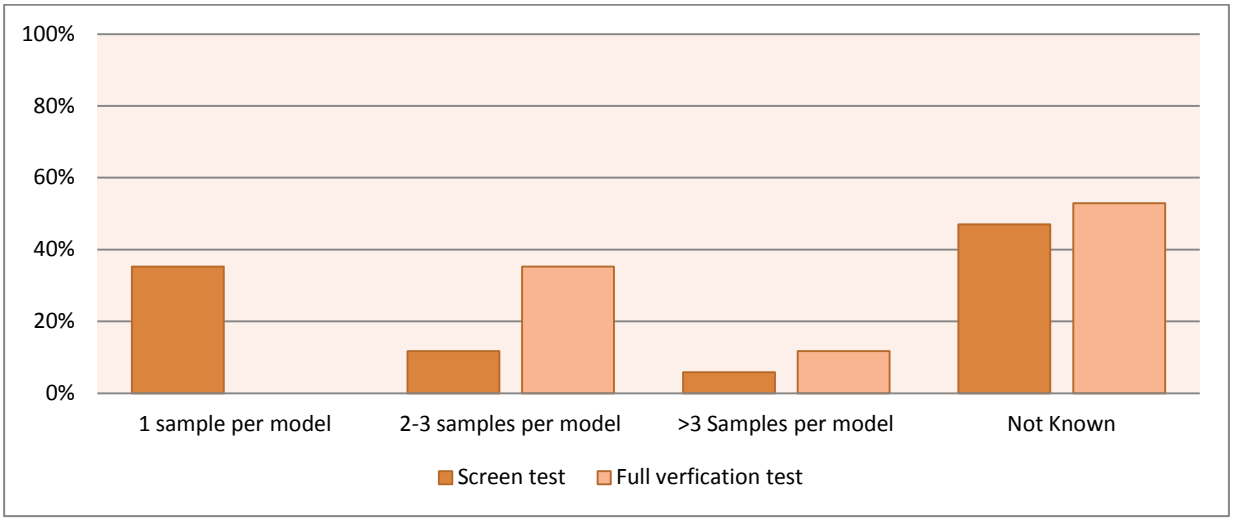
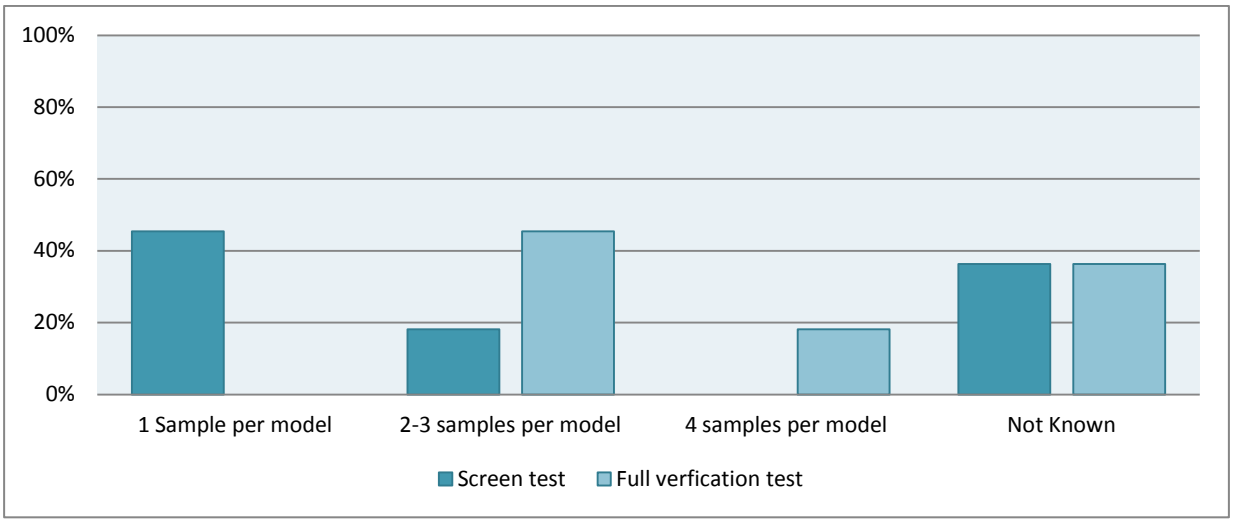


Figure 70: Number of samples used for screen and verification testing in MEPS programs



4.9.3 Enforcement Actions for Failed Verification Tests

APEC economies have a range of enforcement options available to them for failed verification tests, however there is a large disparity between the enforcement action that can be undertaken and those reported to have occurred between 2008 and 2010. Of particular concern is the large number of economies that were unable to provide or access information on the number of actions that have taken place.

Figure 71: Potential enforcement actions for failed verification tests in Energy Labelling programs

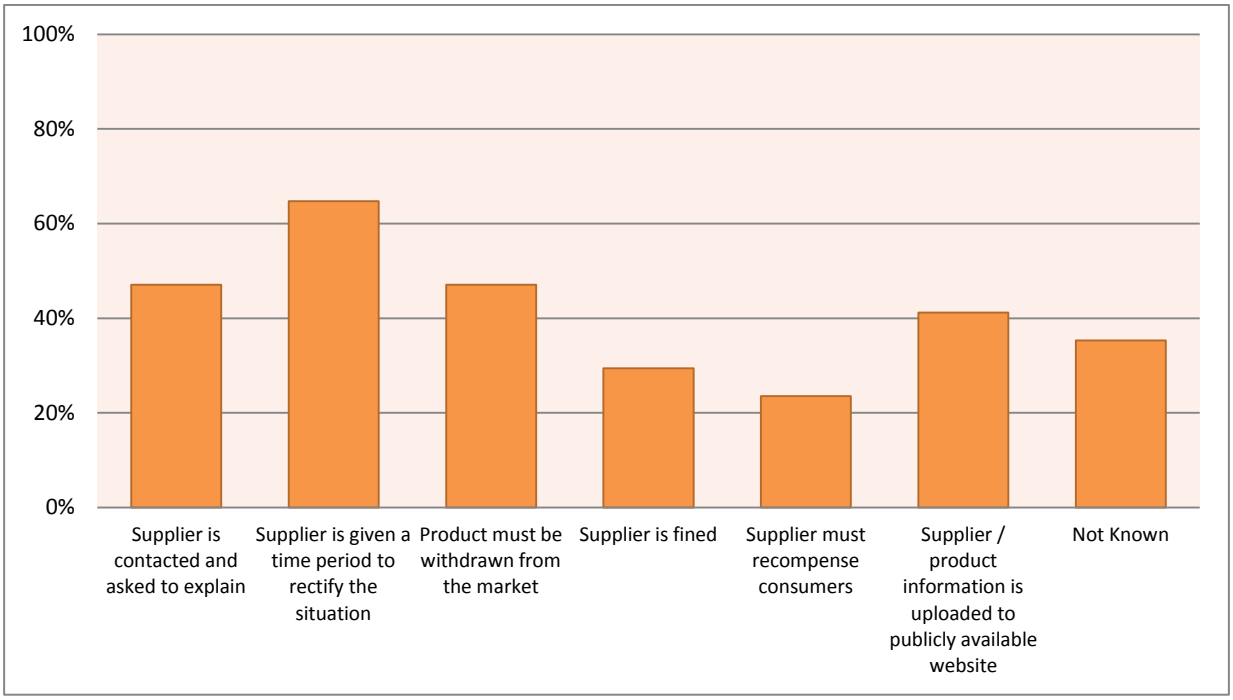


Figure 72: Occurrence of enforcement actions for failed verification tests in Energy Labelling programs

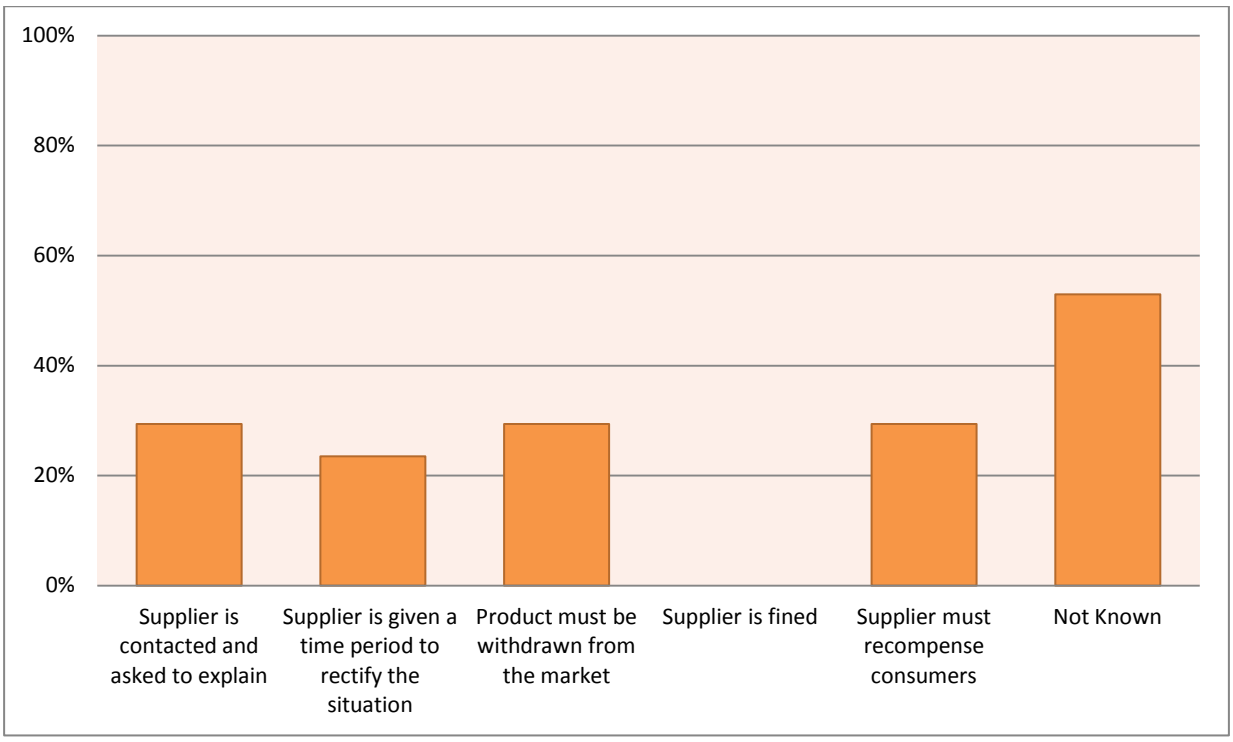


Figure 73: Potential enforcement actions for failed verification tests in MEPS programs

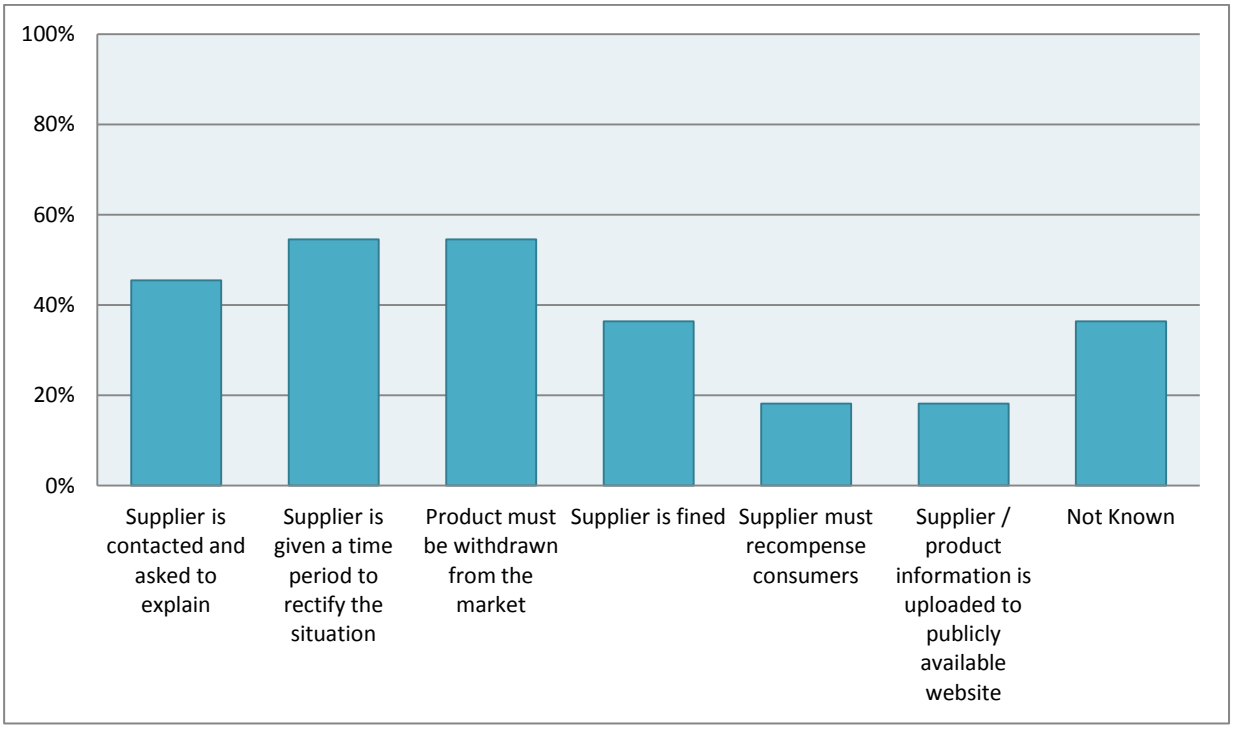
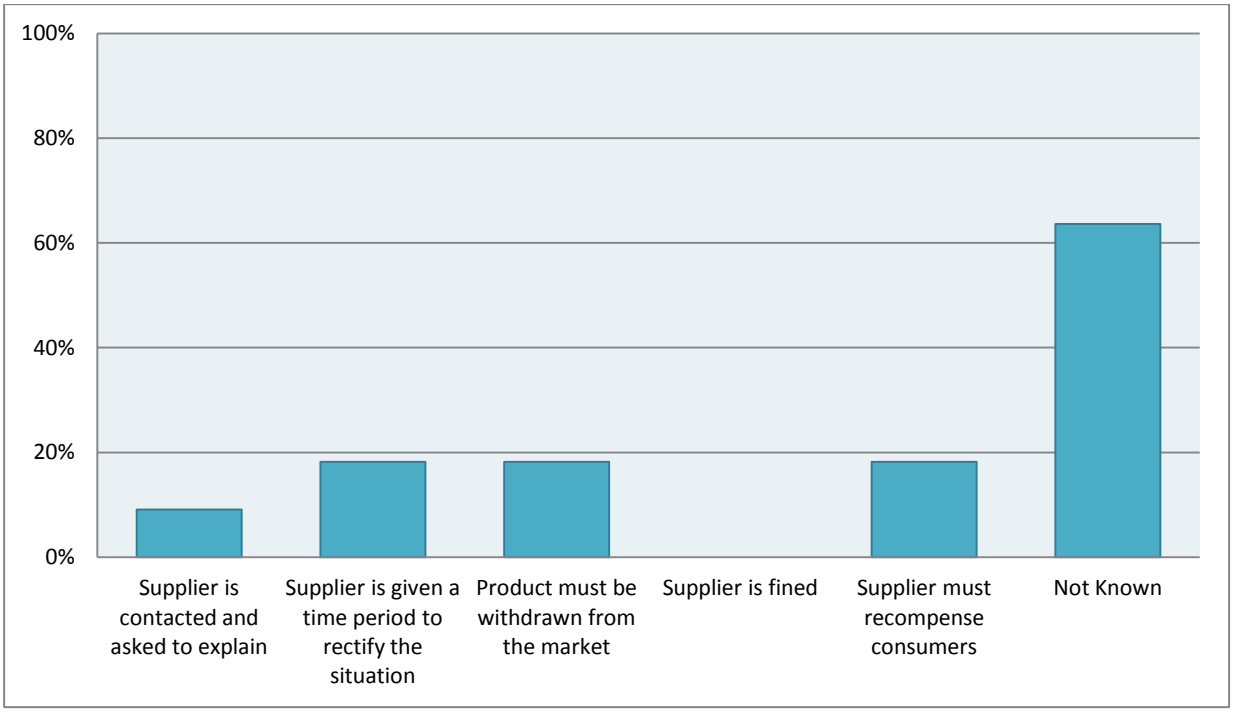


Figure 74: Occurrence of enforcement actions for failed verification tests in MEPS programs

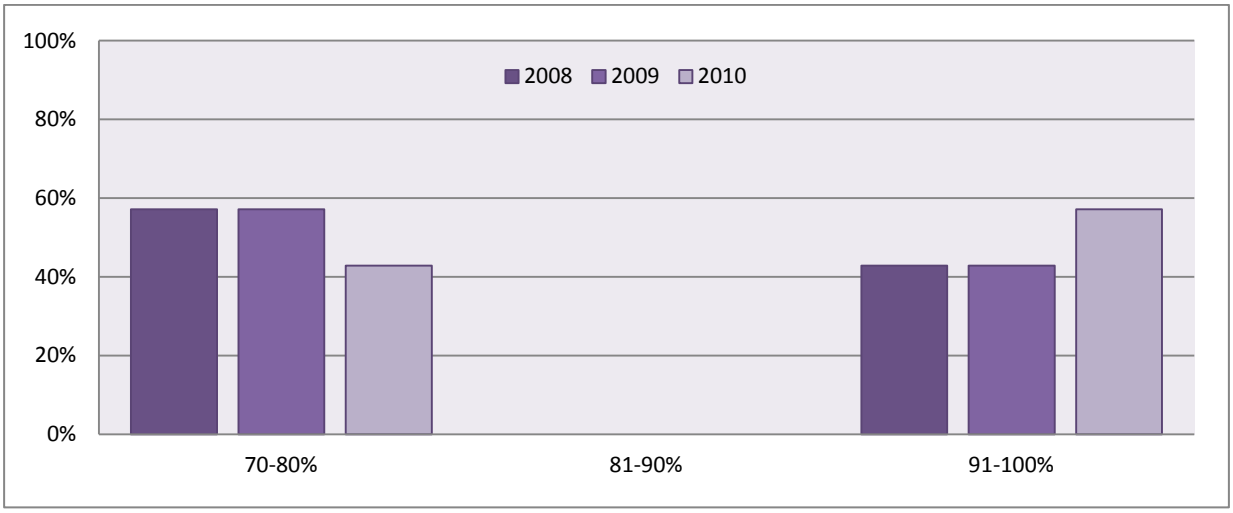


4.9.4 The Number of Passed Verification Tests

24% of energy labelling programs and 36% of surveyed MEPS programs were able to provide information on the percentage pass rate for verification tests conducted from 2008-2010. It was not possible to ascertain whether this information was not available for the remaining programs, or the respondents were unwilling to make this information public.

Based on the available responses, the spread of passed verification tests in both energy labelling and MEPS programs combined is shown in Figure 75.

Figure 75: Share of passed verification tests for Energy Labelling and MEPS combined, 2008-2010



4.10 Industry Attitudes to Compliance

Although most economies that were able to respond reported that industry had asked for increased attention to compliance issues, several noted that this often varied by product and industry. Since MEPS typically set the threshold for all of an economy's market, it is not surprising that a higher proportion of industry wishes to see the requirements enforced to create a level playing field.

Figure 76: Industry attitudes to compliance in Energy Labelling programs

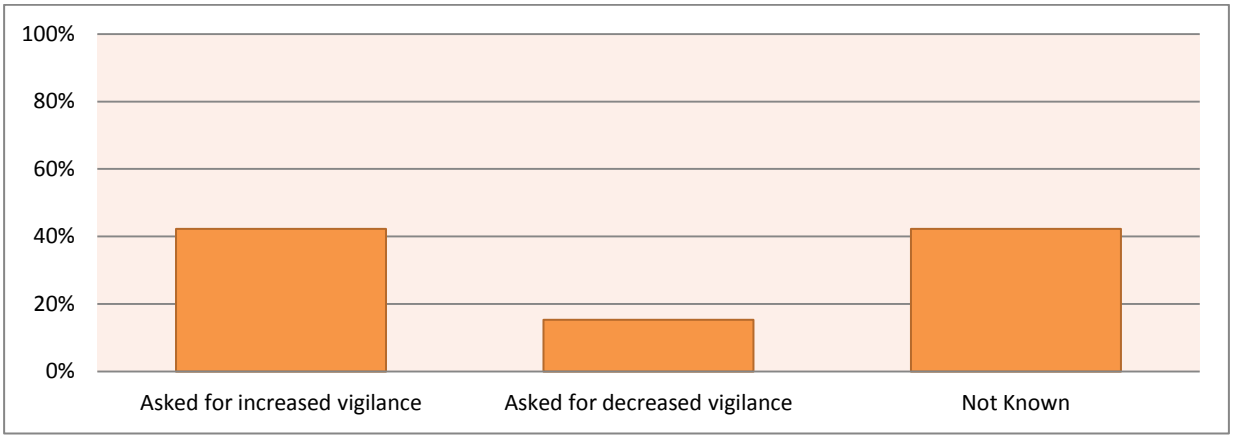
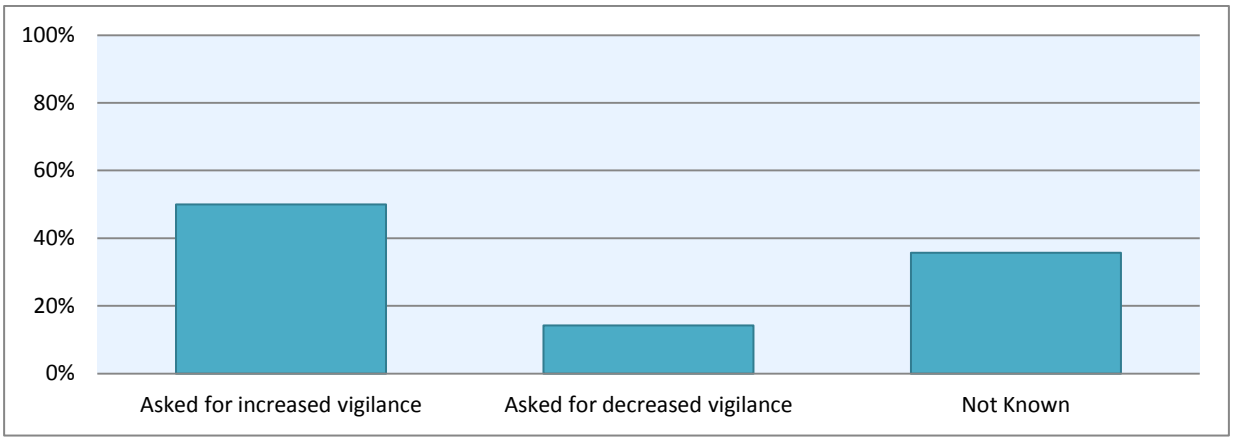


Figure 77: Industry attitudes to compliance in MEPS programs



The majority of economies reported that industry perceived the risks resulting from supplying non-compliant products outweighed any potential benefits.

Figure 78: Industry perceptions of risks in Energy Labelling programs

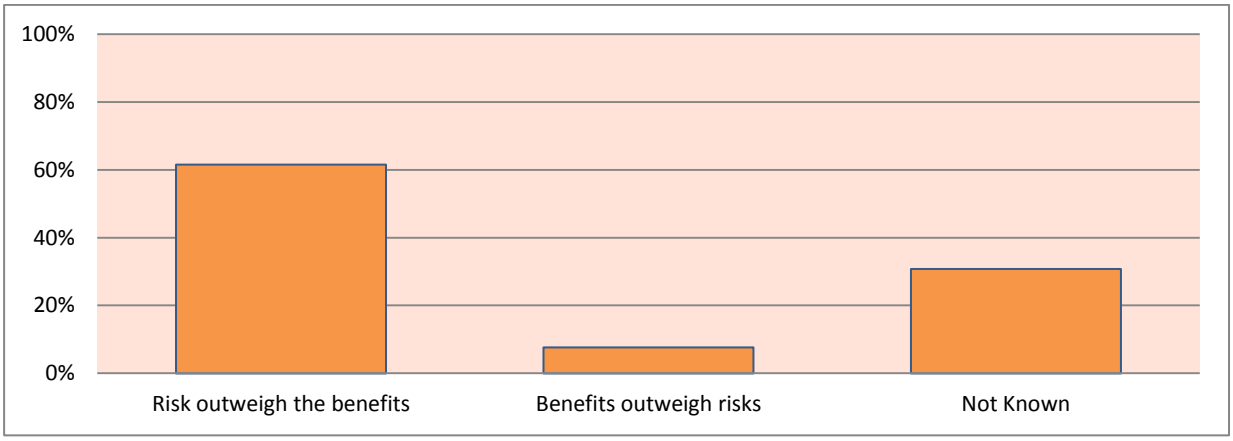
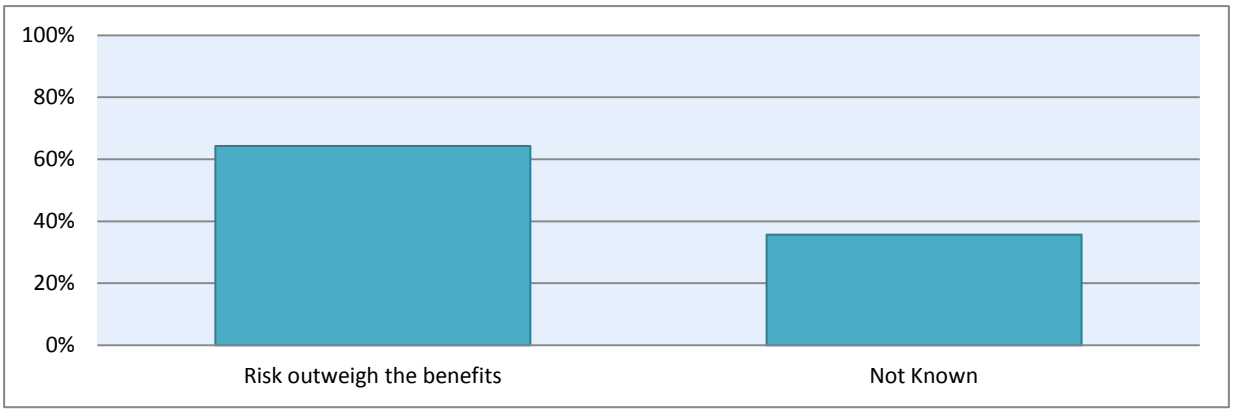


Figure 79: Industry perceptions of risks in MEPS programs



4.11 Public Access to Information

Nearly 80% of energy labelling programs provide lists of labelled products and public information on their performance through a website, compared to less than 60% of MEPS programs, although some MEPS programs noted that they hoped to add this feature in the near future.

Figure 80: Public access to information on products in Energy Labelling programs

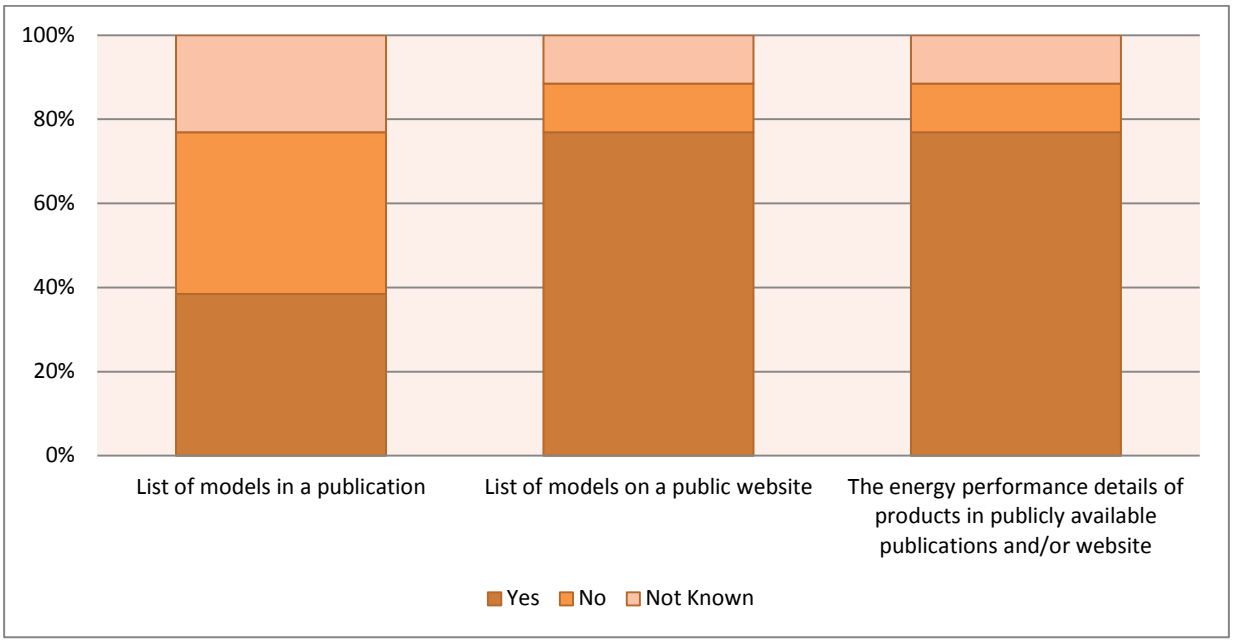
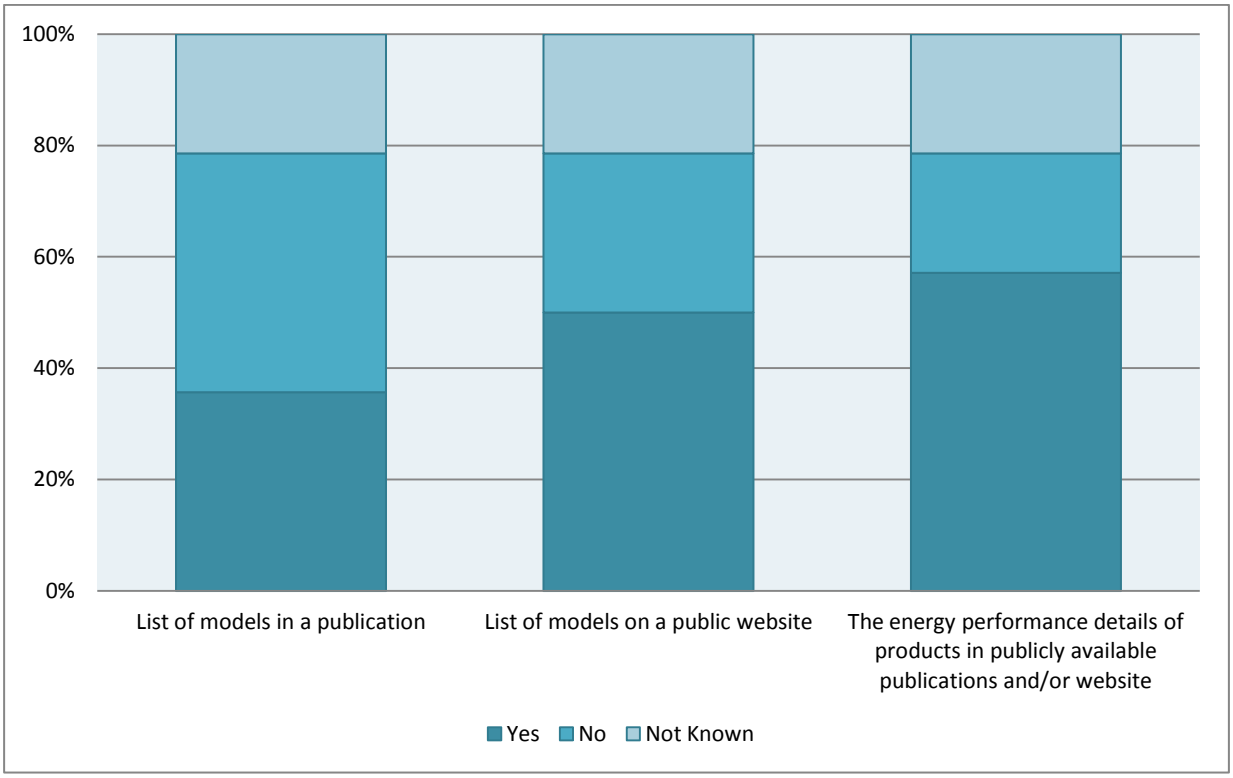


Figure 81: Public access to information on products in MEPS programs



Nearly 60% of all surveyed energy labelling and MEPS programs do not make information about their compliance activities or results available publicly.

Of those that do, the majority publicise the results of verification tests, however very few draw attention to the extent of their compliance activities (the number of surveys or tests conducted) as a means of raising public perception that non-compliance risks detection.

Figure 82: Public information on compliance activities and results in Energy Labelling programs

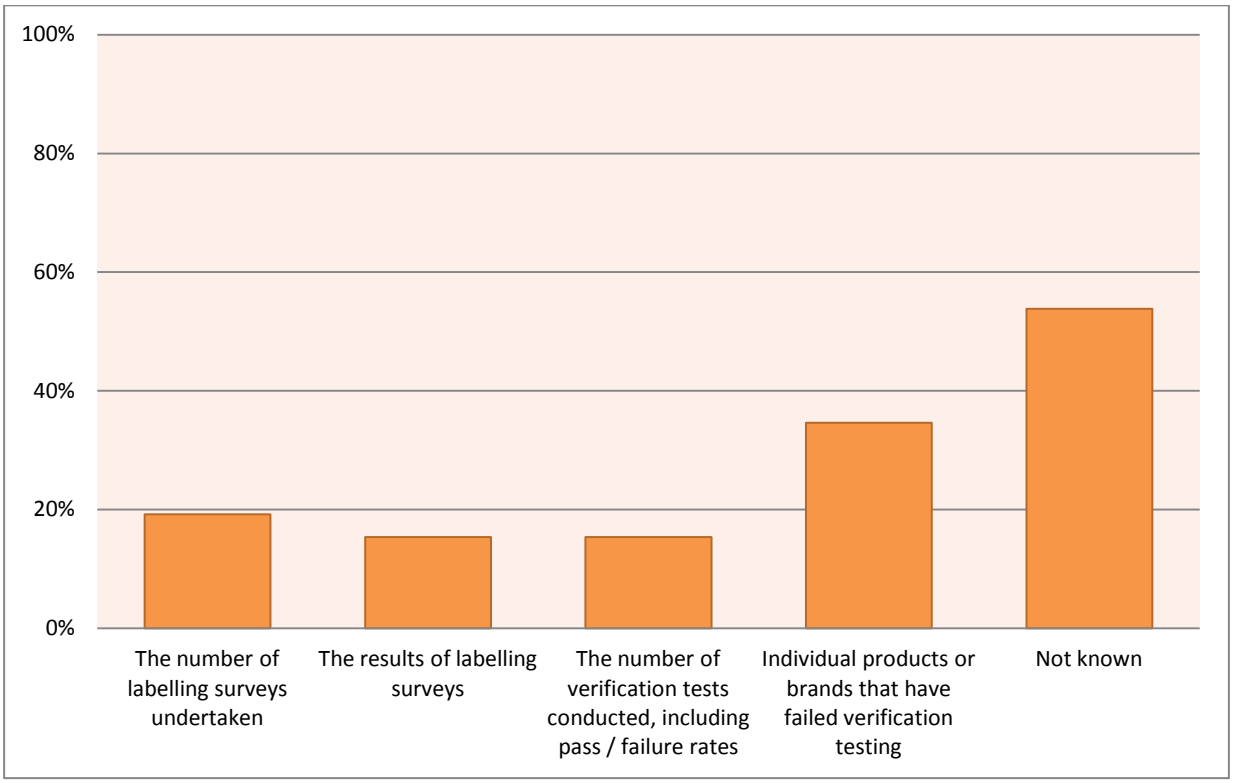
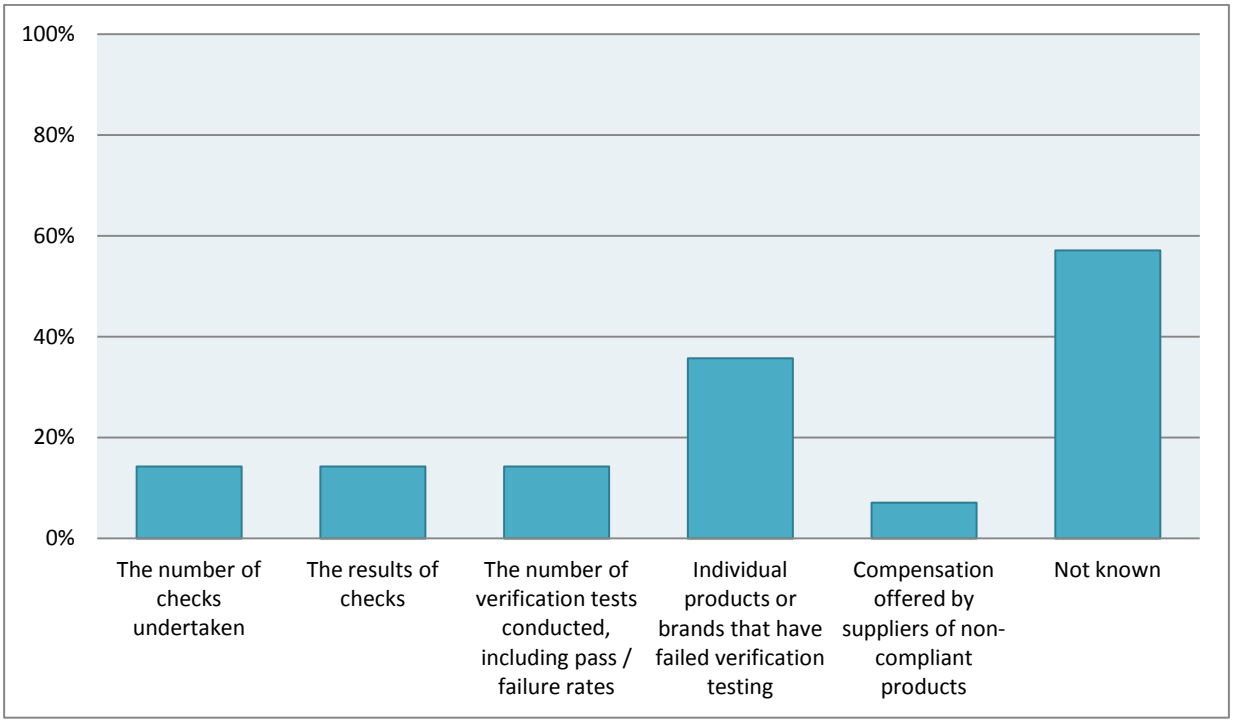


Figure 83: Public information on compliance activities and results in MEPS programs



Websites are the most popular means of communicating compliance activities and results amongst those MEPS programs that make this information public. Industry forums and annual reports are also used as channels for this information.

Figure 84: Channels for communication on compliance activities and results in Energy Labelling programs

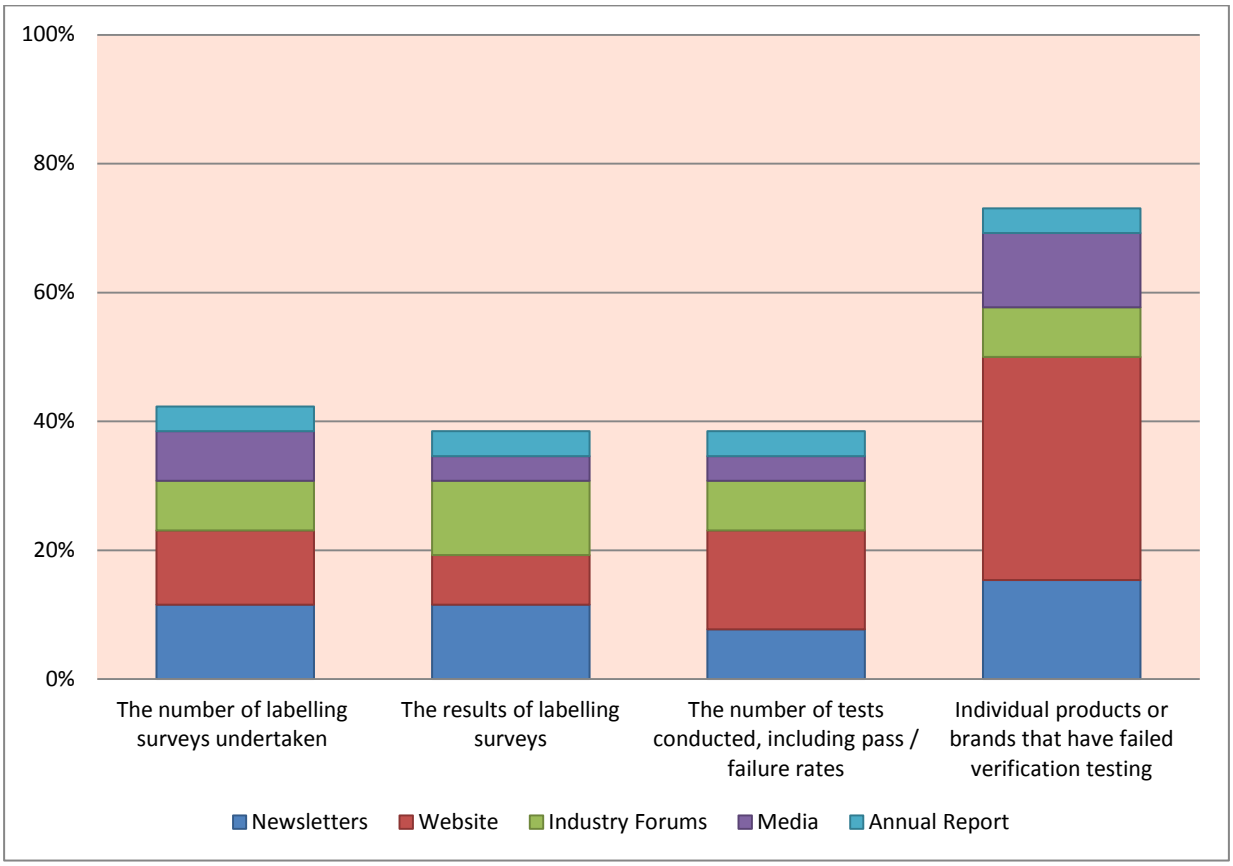
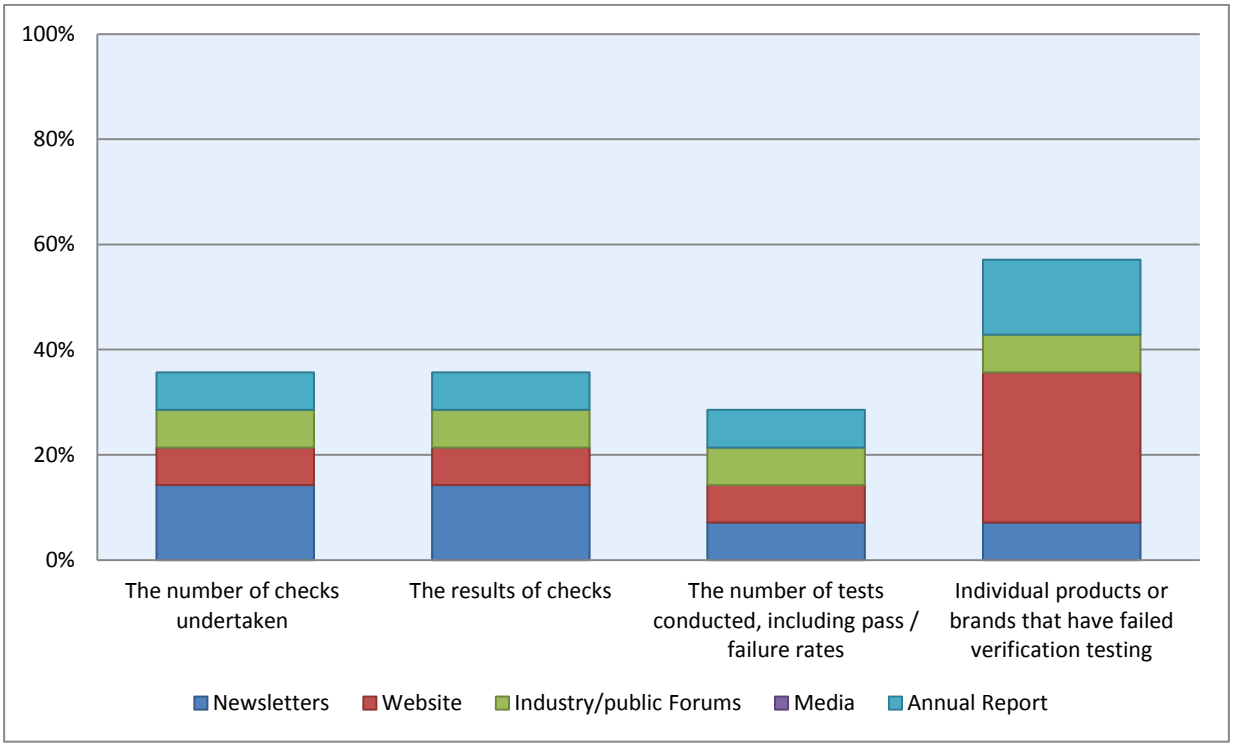


Figure 85: Channels for communication on compliance activities and results in MEPS programs



4.12 Overall Compliance Rates

Although a substantial number of programs were not able to provide information on the overall compliance rate for products within their program, of those that could, the majority indicated that it was greater than or equal to 90%. Compared to 2008, more programs were able to estimate the rate of compliance in their program in 2010.

Figure 86: Reported rate of compliance in Energy Labelling programs

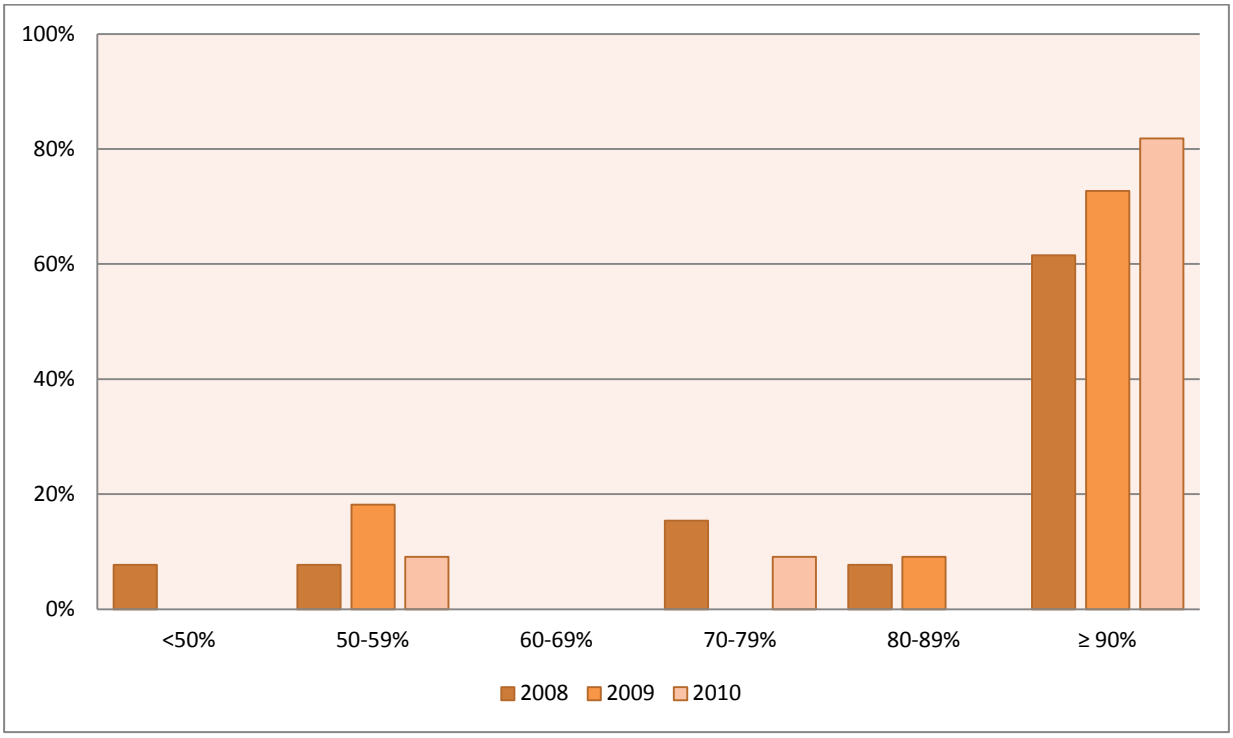
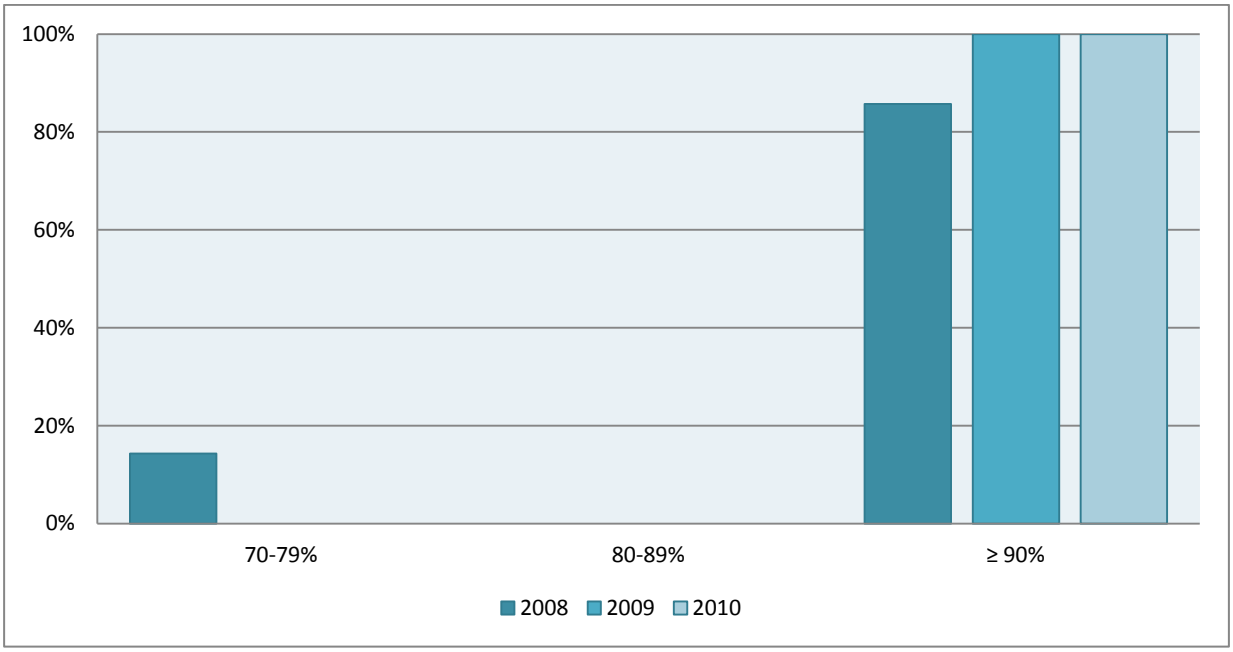


Figure 87: Reported rate of compliance in MEPS programs



4.13 Budgets for Compliance Activities

Only two economies provided information on the overall costs of their MV&E regime, with most indicating this information was not available. Some economies noted that this information was confidential.

5 Comparison with Previous Surveys

In recent years, a number of surveys have been undertaken on the MV&E regimes of national energy efficiency programs and their compliance activities, in addition to this APEC survey. Although there are differences in the range of information collected, there is sufficient overlap to enable a comparison of the results. This section highlights the areas of similarity and divergence between these surveys as a means of pinpointing potential areas for improvement.

The surveys considered here include the following:

- ATLETE survey of national legislation and conformity assessment for energy efficiency directives in European Member States. This survey, referred to in this report as the "EU survey" (ATLETE, 2010), built on earlier studies of MV&E practices (ANEC, 2007; Fraunhofer et al, 2009) in relation to the energy labelling directive (EC, 1992).
- *A Survey of Monitoring, Verification & Enforcement Regimes in Selected Countries,* undertaken in 2009-2010 and published in June 2010. This covers 14 countries including twelve G20 countries that operate standards and labelling programs as well as Chile and Tunisia. In this report this survey is referred to as the "G20 survey" (MEA/CLASP, 2010a).

Eight economies, identified in Table 7 by an asterisk, were included in both this APEC survey and the G20 survey, although the coverage of national energy efficiency programs differs slightly.

Table 7: Coverage of APEC Economies by S&L Programs and Previous Study

	Included in APEC Survey	Included in G20 Survey, 2010
Argentina		✓
Australia *	✓	✓
Canada *	✓	✓
Chile *	✓	✓
Germany		
Hong Kong, China	✓	
India		✓
Indonesia	✓	
Japan *	✓	✓
Malaysia	✓	
Mexico *	✓	✓
New Zealand	✓	
Peru	✓	
Philippines	✓	
People's Republic of China *	✓	✓
Republic of Korea *	✓	✓
Singapore	✓	
Chinese Taipei	✓	
Thailand	✓	
Tunisia		✓
United Kingdom		✓
United States *	✓	Partial
Vietnam	✓	

The findings of this comparison are described below.

5.1 MV&E Requirements in Legal Framework

Although the results of previous surveys are similar to those of this APEC survey with regard to the legal framework for MV&E, it is noticeable that the G20 survey found that many more programs had explicit references to other legislation for enforcement. These included consumer protection and environmental laws.

More energy efficiency programs in the APEC region appear to involve multiple government departments and agencies than elsewhere, which has the potential to add complexity to the management of these schemes and to confuse participants.

5.2 Information/Education for Stakeholders

Around 80% of programs included in all surveys reported that they provide information and education to improve stakeholder awareness of their obligations under mandatory or voluntary program rules, and to assist them in meeting their obligations.

A higher proportion of APEC economies appear to have processes for monitoring whether industry understands program requirements compared to those in the G20 survey. All use a similar array of channels to provide this information, although in APEC economies the use of site visits and one-on-one meetings is more common than in other regions.

The lead-times given to stakeholders prior to the implementation of new or revised energy labelling or MEPS requirements are very similar across all surveys.

5.3 Program Entry Conditions

The APEC survey revealed a slightly better understanding of entry requirements than the previous surveys, although all reported that the majority of programs had a series of well-defined conditions. Compared to the G20 survey, a higher proportion of programs in the APEC region require or allow products to be certified by a third party prior to participation.

5.4 Labelling Display

5.4.1 Checking Labelling Requirements

In the G20 survey, 90% of the labelling programs surveyed indicated that they monitored whether energy labels were correctly placed on eligible products, compared to 65% in the APEC survey of energy labelling programs.

As shown in Figure 88 and Figure 89, the methods used to check labelling compliance were similar in both the G20 and APEC survey. However, 63% of the programs in the G20 survey and 50% of the programs in the APEC survey did not provide information on how monitoring was done.

Figure 88: G20 survey - Method of monitoring labelling display

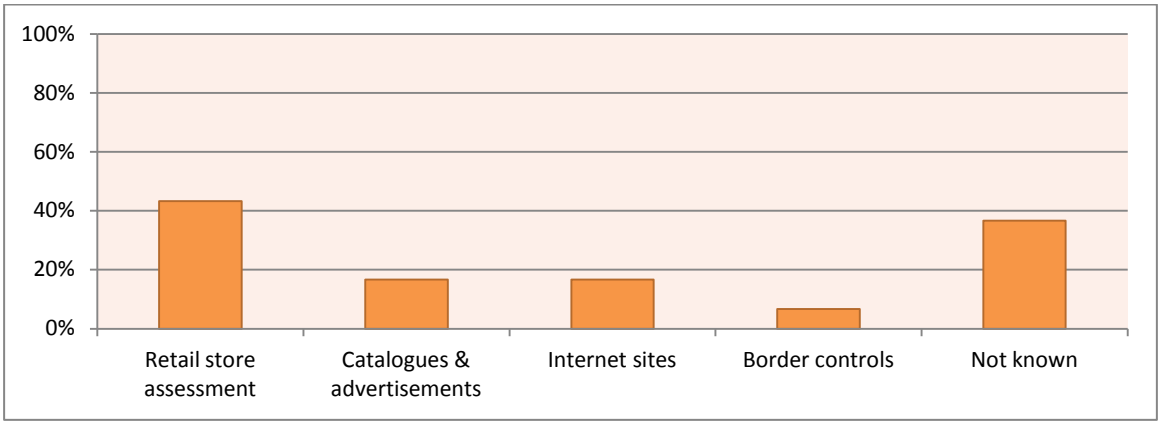
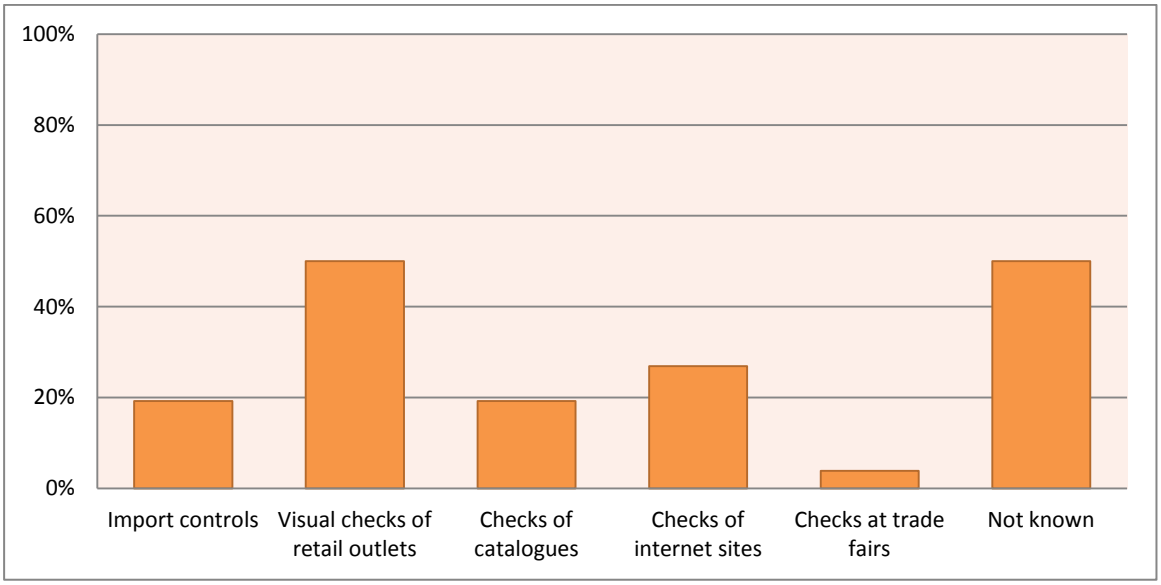


Figure 89: APEC survey - Method of monitoring labelling display



5.4.2 Enforcement Actions

All surveys indicate a similar range of potential actions that can be taken when labelling display transgressions are detected. However, there is a considerable divergence in the numbers of actions actually taken.

While nearly 60% of programs in the APEC survey were able to identify the number and type of enforcement actions taken to remedy labelling errors between 2008 and 2010, only 10% of labelling programs in the G20 survey were able to provide equivalent figures for the period 2006-2008.

5.5 Verification Processes

The G20 survey found that 13% of programs use a third party certification organization to undertake preliminary verification of product performance, while around 30% of programs in the APEC region use a similar process.

5.5.1 Quantities of Verification Tests by Responding Countries

The majority of respondents to all surveys indicated that they undertake product testing to check energy performance requirements or claims, although this figure is higher in the APEC and G20 surveys than for the EU survey.

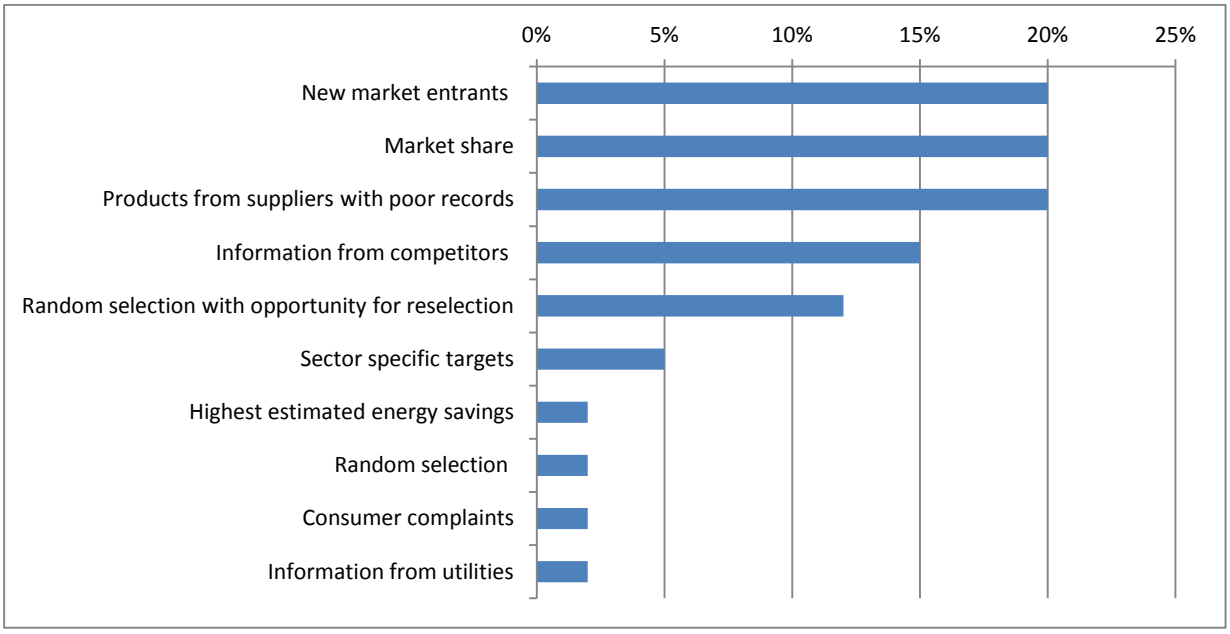
However, in both the APEC and G20 surveys the number of respondents able to provide information on the number of verification tests conducted is far lower. Where data was supplied, it is evident that there is a large variation in the number of verification tests completed by different economies – from below ten to several hundred per year.

In all surveys, the total number of verification tests reported each year is growing.

5.5.2 Model Sampling for Verification Tests

There is little variation between the criteria used for the selection of models for verification testing amongst the surveys, although in APEC economies there is a greater use of random sampling.

Figure 90: G20 survey - Product selection criteria for verification testing



5.5.3 Results of Verification Tests

It is difficult to compare the results for verification tests across the surveys because they: cover different products, may reflect different product selection processes, and may contain the results of initial screen tests and not those final verification tests. The small number of responses also hinders comparison.

Table 8 shows data for non-compliance rates from the G20 survey, and indicates a wide range of results. In comparison, the results of the APEC survey shown in Figure 91 have far less variation and generally higher rates of compliance. As noted previously, without understanding more about the basis of these figures, it is unwise to draw too many conclusions.

However, it should be noted that the reported overall compliance rate for labelling programs in the APEC survey (see Figure 92), shows a wider variation, similar to the results of the G20 survey.

Table 8: G20 survey - Share of verification tests producing a failure (responding countries)

Country	Australia	Canada	Mexico	Republic of Korea			United Kingdom			United States
Program	*M&L*	*M&L*	*M&L*	*M*	*ML*	*VL*	*M*	*ML*	*VL*	*VL*
2006	48%	20%	5%	12%	0%	4%	-	20-66%	-	0%
2007	33%	4%	5%	18%	6%	13%	19%	83%	-	10%
2008	40%	2%	5%	7%	3%	27%	-	54-100%	66%	-

Key: *M = MEPS* *M&L = MEPS and Labelling*
VL = Voluntary Labelling *ML = Mandatory Labelling*

Figure 91: APEC survey - Share of passed verification tests for Energy Labelling and MEPS combined, 2008-2010

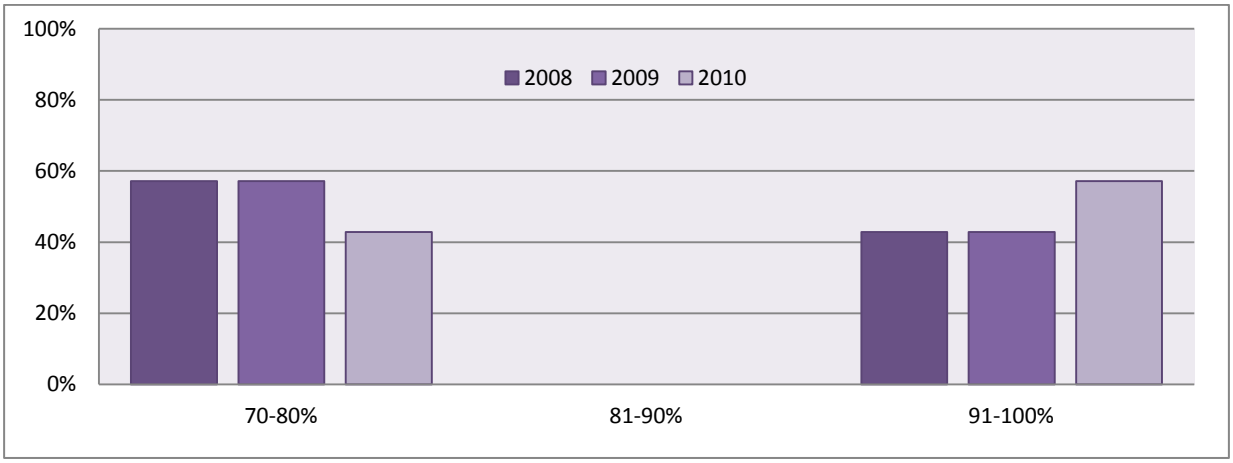
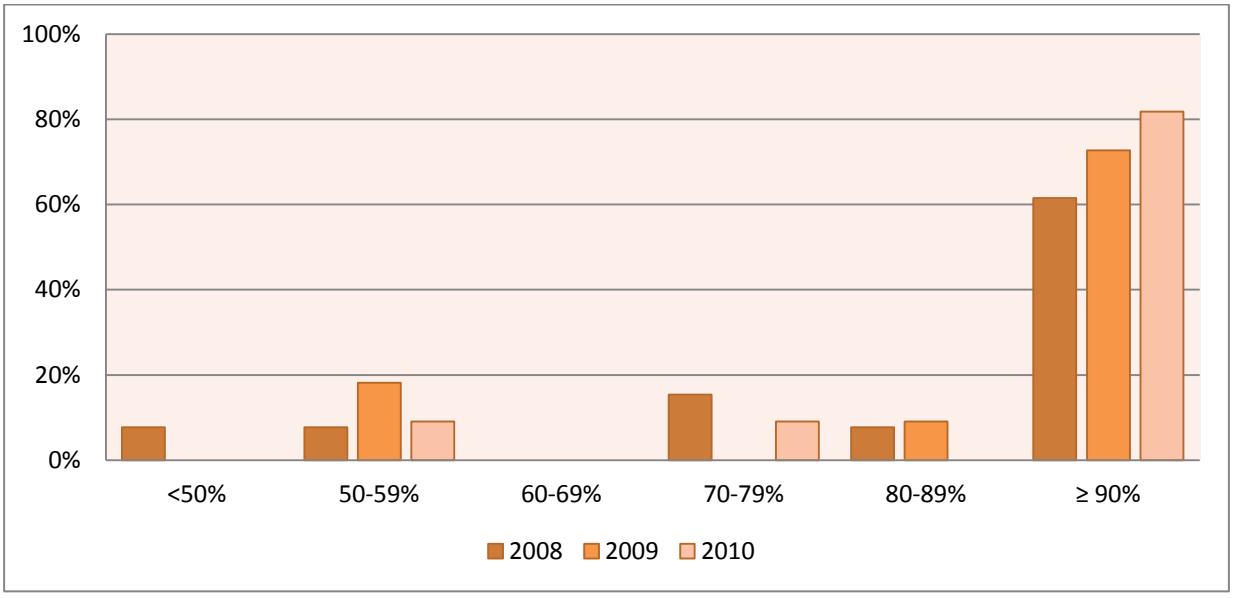


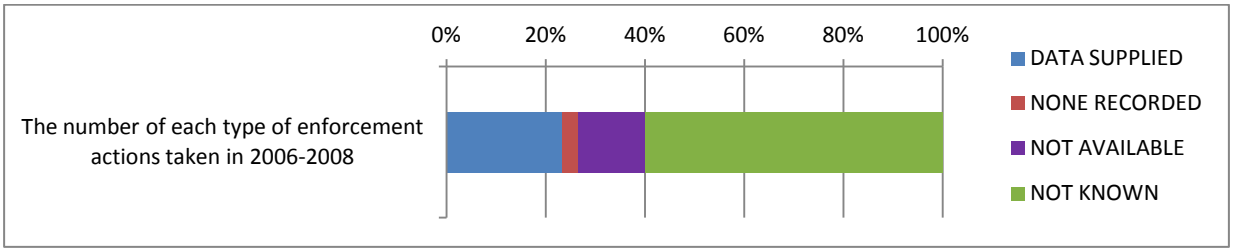
Figure 92: APEC survey - Reported rate of compliance in Energy Labelling programs, 2008-2010



5.5.4 Enforcement Actions

All surveys indicate that a similar range of enforcement actions are available to programs, but most programs are unable to indicate which of these actions have actually taken place in the recent past. In the G20 survey, only approximately 25% of respondents were able to identify the usage frequency of these sanctions over the past three years (Figure 93). The results of the APEC survey are better, with 50%-60% of respondents able to provide an answer, however this also suggests considerable room for improvement.

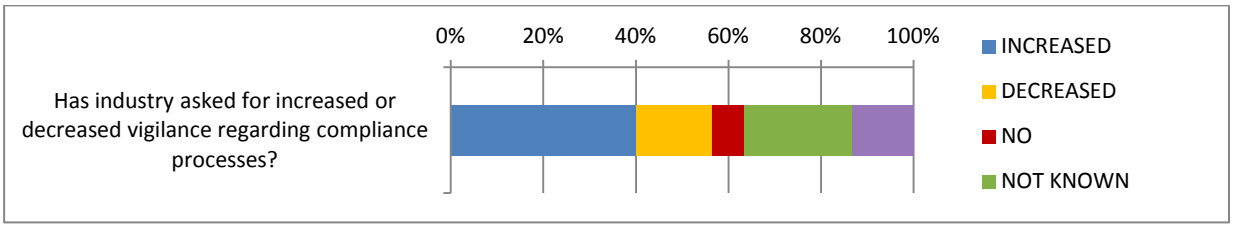
Figure 93: G20 survey - Frequency of enforcement actions taken following failed compliance tests, 2006-2008



5.6 Industry Perceptions of Compliance

While both the APEC and G20 survey indicate that around 40% of industry would like to see increased attention to compliance, they also suggest industry views are mixed and vary considerably between countries and by product.

Figure 94: G20 survey - Industry views on compliance processes



However, there is far greater agreement amongst respondents that industry considers that the risk of their products being found non-compliant outweighs any potential benefits.

5.7 Public Access to Information

5.7.1 Product Information

In the APEC region, nearly 80% of energy labelling programs provide lists of labelled products and public information on their performance through a website, while this applies to less than 60% of MEPS programs. Some MEPS programs noted however that they hoped to add this feature in the near future.

Although the results of the G20 survey appear lower, this combines information on labelling and MEPS programs, and therefore the findings of both surveys are reasonably similar (see Figure 95 and Figure 96).

Figure 95: APEC survey - Publication of product information

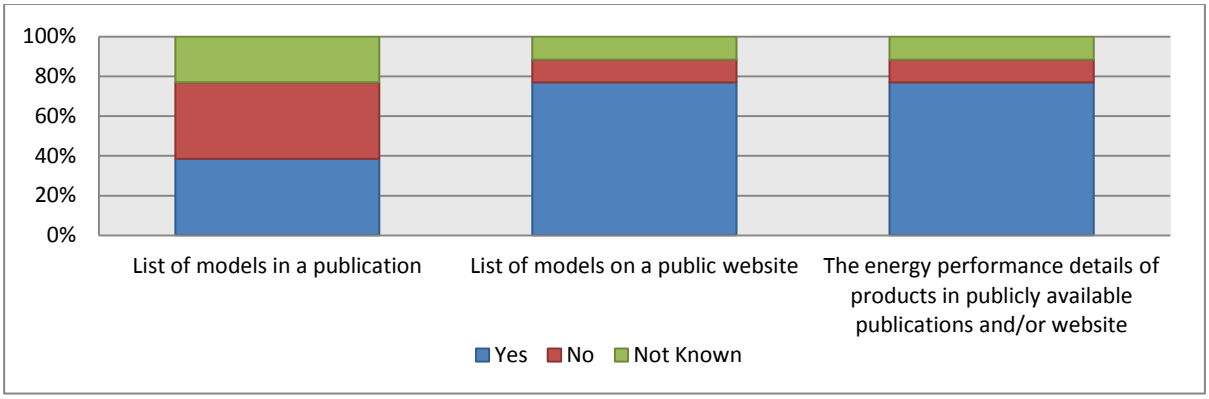
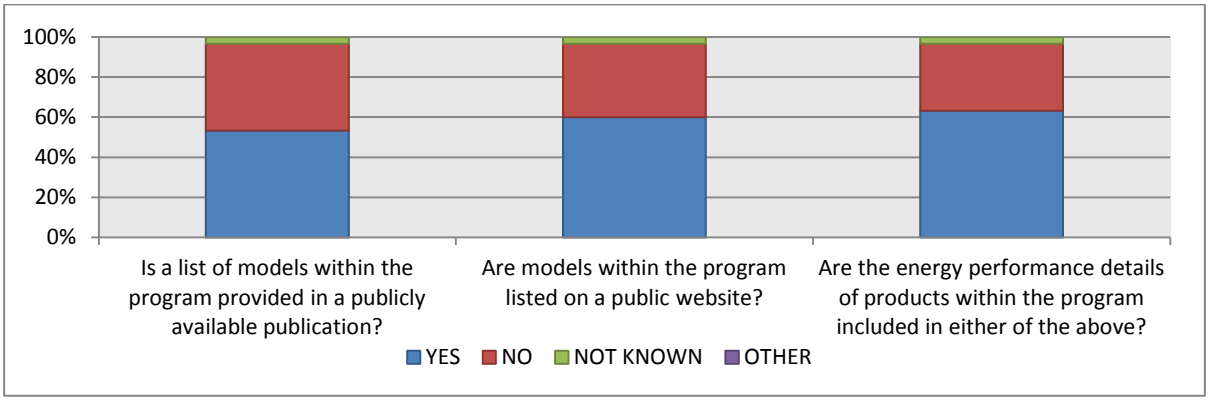


Figure 96: G20 survey - Publication of product information



5.7.2 Publication of Compliance Activities and Test Results

As shown in Figure 97 and Figure 98, a larger proportion of G20 survey respondents tended to make publicly available information about the number of verification tests conducted and their overall pass rates, compared to the respondents to the APEC survey.

However, APEC economies appear to more willing to publicly identify the details of individual products that have failed verifications tests, compared to countries participating in the G20 and EU surveys.

Figure 97: G20 survey - Public information on testing activities and results in energy efficiency programs

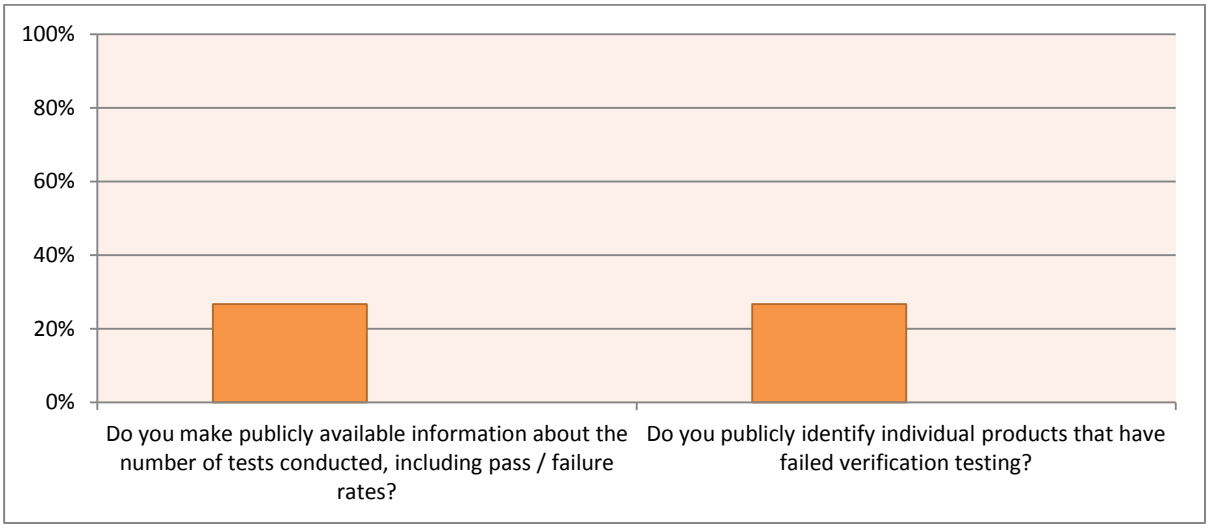
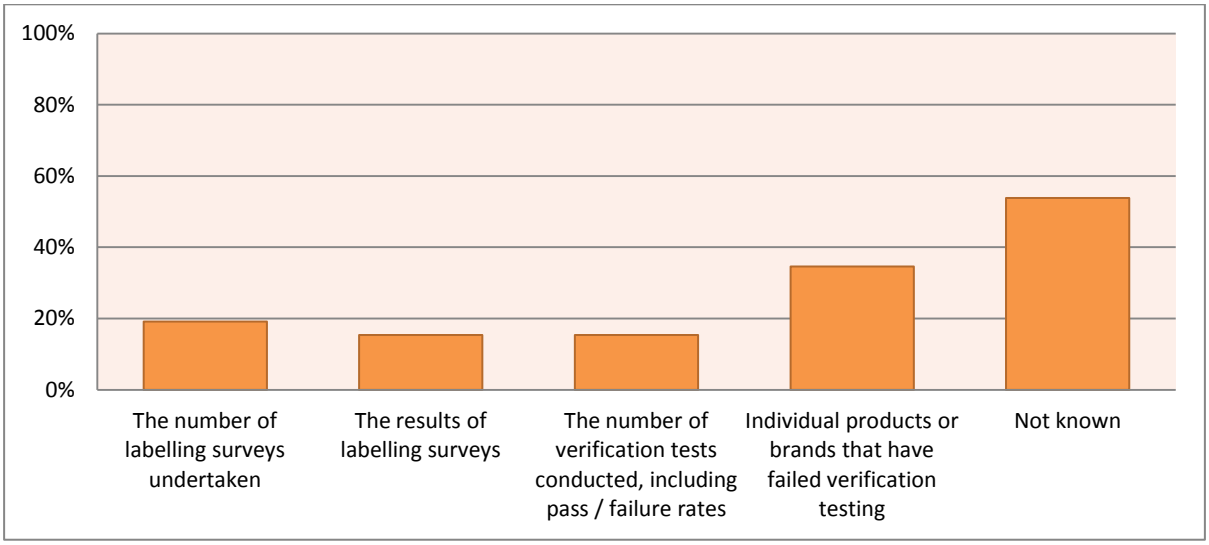


Figure 98: APEC survey - Public information on compliance activities and results in Energy Labelling programs



5.8 MV&E Budgets

Fewer programs in the APEC and EU surveys were able or willing to provide information on their overall budget for MV&E or expenditure on specific items, compared with the G20 survey where half of the countries provided information. We have not been able to identify any single explanation for this, although several APEC economies noted that this information was confidential, while others declared that the budgets were not known.

6 Conclusions and Observations

The APEC region includes a wide diversity of S&L energy efficiency programs: from those that have operated for several decades to those that are still being planned; from programs covering up to 50 product types to those spanning only one or two. It is also relevant to note that the region includes some of the world's largest manufacturers of appliances and equipment supplying the global market, as well as economies that have little or no local manufacturing and rely upon the import of products.

These factors suggest that there is considerable opportunity to develop regional initiatives that will improve the transfer of knowledge and experience amongst economies with respect to energy efficiency S&L programs and their MV&E regimes.

These conclusions and observations are intended to provide information on areas that appear to offer opportunities for improving the MV&E regimes in APEC economies. They are based on the APEC survey results evaluated against the yardstick provided by *Compliance Counts: A Practitioner's Guidebook on Best Practice Monitoring, Verification, and Enforcement for Appliance Standards & Labeling* (MEA/CLASP, 2010b).

6.1 Laws, Regulations and Program Rules

The legal framework for energy efficiency programs and the MV&E regime should: identify the key government departments and agencies involved; establish the core powers and authorities surrounding the program; and define the roles and responsibilities of stakeholders. Although legislation can also include a range of other topics which define the operation of the program in more detail, allowing sufficient flexibility in the administration of programs is also important. This allows programs to cope with changes in market conditions, technologies and the capacity of relevant agencies.

As a result, the framework for most effective programs is defined by a combination of legislation, regulations and program 'rules'. Program rules, sometimes referred to as guidelines, define how the program will actually operate and be administered and are more easily adjusted than laws. It is important that these rules are clearly stated and transparent, so that program staff and stakeholders understand how the program operates.

Most S&L programs in the APEC region appear to have an adequate legal basis, and the introduction of new or revised legislation is a major task. Nonetheless, economies need to ensure that their S&L programs have a sufficient mandate to operate effectively.

It is noticeable that in several APEC economies the responsibilities for elements of the S&L program are shared between a number of ministries, departments and other agencies, which can lead to a lack of leadership and inadequate management unless there is effective co-ordination.

A minority of S&L programs in this study were able to identify operational guidelines designed to communicate the main elements of the program's administrative and MV&E procedures. Although it is possible that these guidelines are available in native languages and not made available for the survey, the impression is that most programs do not provide this type of information. Publication of this material is a priority in order to decrease opportunities for misunderstandings and disputes, and facilitate compliance by ensuring that stakeholders are clear of their obligations.

6.2 Education and Information

Apart from the observation above regarding the apparent lack of guidelines on the operation of programs, all APEC economies are active in providing information to stakeholders in the program. In addition to the use of websites, newsletters and forums, some economies reported that they provided dedicated telephone services to answer questions.

Several economies have clearly developed close relations with industry in the APEC region, and the use of structured, regular meetings with industry representatives provides a useful means of promoting two-way dialogue. Site visits and one-on-one meetings are more common in the APEC region than in others, probably because some programs have elements designed to assist industry in order to improve production quality.

6.3 Program Entry Requirements

The majority of programs indicated that checks were conducted regularly to ensure that program entry requirements were adhered to. Several economies, which tend to be those that have large quantities of imported products such as Canada and Mexico, reported that they used border control processes to either ensure that importers are aware of their energy efficiency obligations, or as a means of collecting data on the performance of these products.

In Canada the documentation for importing products covered by their energy efficiency programs contains the information needed to meet program entry requirements, avoiding the need for separate registration or reporting. This reduces the transaction costs for product suppliers.

For programs that require all models to be registered prior to being sold, information provided by border authorities can provide a solution for imported products. However where no such arrangement exists or there are local suppliers, other methods will need to be employed to ensure all required products are registered. Typically, economies may undertake registration checks on products in stores or catalogues at the same time as checking labels, or encourage competitor companies to provide intelligence on products appearing in the marketplace that are not registered.

6.4 The Display of Energy Labels

While most programs undertake surveillance activities, there appears to be considerable variety in the extent of these monitoring activities. While a few countries provided evidence of comprehensive and well-planned market surveillance activities, the majority appear to have an irregular response.

Monitoring the correct display of energy labels in stores and other retail outlets is one of the most cost-effective MV&E activities, particularly in the formative years of a program when store visits can be a useful means of educating retailers. Checks will also need to be made when additional products from new suppliers are required to carry an energy label; but costs of these checks can be reduced if monitoring indicates a high degree of compliance.

With the emergence of internet-based sales, programs need to ensure that their requirements for the labelling of products on websites is clear and, where relevant, extend their surveillance to include retailer on-line sites.

The evidence from Australia is that the repeated monitoring of stores, followed by direct communication with stores and product suppliers found to be non-compliant, leads to a swift elevation in the levels of compliance. Where necessary and powers permit, the issuing of on-the-spot infringement notices or similar penalties have also been shown to be highly effective.

Recent reports from Europe and Australia have highlighted the problem of energy labels being partially or completely obscured by product sales materials. Programs need to address this issue in an appropriate manner depending upon their rules governing labelling display, however in most cases the covering of an energy label will constitute an offence (Come On Labelling, 2012).

6.5 Third Party Certification and Verification

The involvement of third-party certification agencies can greatly assist in the verification of performance of products, provided that these services operate within guidelines that ensure sufficient oversight. Such guidelines should specify issues such as, but not limited to: how samples

are selected for testing (to avoid 'golden' or biased sampling); processes to deal with the verification of existing and new models on the market; and the need to regularly report back to government on activities.

Where feasible, multiple certification agencies should be appointed. This appointment should be competitive, and allow governments to deselect certification agencies that fail to provide sufficiently robust verification services. In cases where it is not possible to appoint multiple agencies, then the operational guidelines will need to be more specific.

In several cases where there are existing third party certification services, there can be a presumption that these services are able to ensure compliance, however there appears to be insufficient information on the activities of these services provided to government to justify this claim. Although third party certification can greatly reduce the number of verification tests undertaken by governments, a sufficient number of independent tests are still required to ensure that these certification services are ensuring compliance.

The use of certification services provided by an industry association or similar body is rare, but schemes are in operation in the US which offer a potential model that other economies could follow. Where industry associations are able to provide robust certification services for their members, this could reduce the overall cost burden for governments, although as noted above it would not negate the need for independent testing.

6.6 Verification Testing

Given the wide diversity in the size and scope of S&L programs in the APEC region, it is not surprising that there is a corresponding variation in the number of verification tests conducted. Some programs undertake hundreds of tests each year, others test less than 10, while a further 50% of programs were not able to provide a quantifiable response.

The costs of verification testing are considerable for many types of appliances, although scarce resources can be better utilised if tests are well targeted (see section 6.6.2 below). Most APEC economies already use screen tests as a cost-effective way of reducing costs.

Access to sufficient competent independent laboratories is also a major factor limiting the ability to undertake verification tests in a number of countries, and this issue is discussed below.

6.6.1 Access, Capacity and Competency

It appears that all energy efficiency programs have some issues regarding access to test laboratories with adequate capacity and competency across the range of products covered by S&L programs in the region.

Programs that have been operating over many years within large economies have reported difficulty in finding laboratories able to test large commercial or industrial products such as commercial refrigerators and distribution transformers.

Emerging programs in smaller economies often experience a lack of local, independent test facilities with the capacity and competency to provide verification services. In addition, some economies report problems with poor test repeatability between independent and industry laboratories.

While these issues are not easily solved, there are a large number of competent laboratories within the APEC region, and experience from other regions suggests that there are opportunities for APEC economies to work collaboratively and imaginatively in order to improve the situation.

6.6.2 Selection of Test Samples

Generally most APEC economies use similar risk-based criteria to select models for testing, although there are instances where samples are chosen at random. Given the cost of verification testing, random sampling is unlikely to be as cost-effective as focussing on identifying models that have the

highest likelihood of failure and the potential to cause the most damage to the objectives of the program.

Some of the more established programs have learnt from experience how to identify products that are likely to be non-compliant. These include systems for encouraging peer review and competitor information. Information on products found to be non-compliant in other jurisdictions can also be useful, but requires close co-operation between those responsible for MV&E in different programs.

Whatever criteria are used for the selection of samples for testing, there is benefit in making these transparent to all stakeholders. This will not only avoid confusion and possible challenges, but will help to demonstrate to industry that there is a commitment to detecting non-compliance.

Once selected, the taking of samples from retail or wholesale outlets for testing is vastly preferable to the provision of products by suppliers, as the latter may lead to perceptions that 'golden samples' have been provided.

6.7 Enforcement

In the APEC surveys, as in previous surveys, there is evidence that attention to the maintenance of detailed records on instances of non-compliance, and the formal and informal enforcement actions resulting may not be as thorough as required by an effective MV&E regime.

The ability and willingness of governments to undertake enforcement actions can provide a highly effective deterrent, however all but informal enforcement actions (e.g. warning letters) require evidence of transgressions to demonstrate adherence to correct processes. Clear processes and meticulous record keeping is therefore vital if enforcement actions are going to be successfully pursued.

While it is hoped that low-level enforcement actions will lead to remedial actions on the part of companies that have transgressed, this cannot be presumed. This means that all instances of potential non-compliance must be treated with sufficient attention to detail so that, should the need arise, more serious enforcement actions can be taken.

Effective enforcement is not only about penalties. Early detection and a timely response to suspected instances of non-compliance are also important to minimise the impact of non-compliance.

6.8 Industry Attitudes

This survey appears to support the findings of previous surveys, indicating that the message from industry on whether more attention should be focussed on compliance is mixed, depending on the product (and industry) concerned.

However it is important for suppliers to compete on a level playing field, and this can only occur if suppliers of non-compliant products cannot undercut those who have invested in energy efficiency. With this in mind, most industry will see the need for an effective MV&E regime.

In many cases governments need to actively promote this message to industry – ensuring that the means for ensuring compliance are presented in ways that industry can accept.

6.9 Public Access to Information

The majority of programs in the APEC region provide information about the performance of products, particularly for labelled appliances.

Given the potential benefit of highlighting the risk to suppliers that non-compliant products will be detected, it is surprising that more programs in the APEC region do not give greater attention to publicising their MV&E activities. On the most basic levels this can include publishing lists of the market surveillance activities and testing carried out – thereby drawing attention to the fact that checks are performed. The results of these activities can also be made public, preferably by

identifying those brands that have been found to be compliant *as well as* those found to be non-compliant. Finally, lists of enforcement actions also help strengthen the perception that transgressions will be punished. These relatively simple activities are an important part of building a culture of compliance.

6.10 Budgets

Insufficient information was provided on MV&E expenditure and budgets to enable any analysis for the APEC region, and this may be because some economies view this information as confidential.

Previous analysis suggests that the costs of effective MV&E regimes represent less than 1% of the savings resulting from optimising compliance (4E, 2010), making this investment highly cost-effective. Nevertheless the resources required for MV&E, in terms of both staff time and expenditure, can be substantial and need to be reflected in program budgets. Including these as an identifiable budget item can help ensure that adequate management focus is given to this issue.

Economies should be aware that they have a wide range of choices in how they structure their MV&E regime, which will have considerable resource implications, as noted in the 'Compliance Counts' guidebook (MEA/CLASP, 2010b):

"All designs of compliance regimes that deliver equivalent rates of compliance are likely to have similar overall costs, however they distribute these costs differently amongst governments, industry and consumers. For example, the table below lists the three common processes for the provision of information on product performance; all of which play a substantial role in monitoring and enforcing the programme.

Since each of these allocate costs to stakeholders differently, a key factor in the choice of system is consideration of which is most equitable and feasible. Senior policy makers need to assess the pros and cons of each entry condition within their socio-economic context since there is no one-size-fits-all solution.

Where programmes are designed with low compliance costs to industry, governments need to ensure that they maintain the public funding necessary to ensure the integrity of the programme."

Figure 99: Distribution of costs and benefits in an adequate compliance regime (from MEA/CLASP (2010b))

Entry Condition	Distribution of Costs		
	Government/Programme	Industry Participant	Consumers
In-house testing, calculation or self declaration allowed	High cost in market surveillance & verification testing	Low compliance costs	None
Independent tests required	Medium cost in market surveillance & verification testing	Medium initial compliance costs	May fund compliance costs in price of equipment
Third-party verification and/or certification required	Low cost in market surveillance & verification testing	High initial compliance costs	May fund compliance costs in price of equipment

As shown in the '*Compliance Counts*' guidebook, activities such as facilitating compliance, responding to instances of non-compliance in a timely manner, pursuing enforcement, and publishing information require little expenditure but can have a major impact. Looking for ways to integrate with existing reporting requirements and combining surveillance activities with other agencies are examples of ways in which programs can reduce their investment while also achieving their objectives.

7 Recommendations

The following eight recommendations are drawn from a variety of sources, including the findings of this and previous surveys, the 39th APEC EGEE&C meeting held in Sydney and discussions with the energy efficiency community in the APEC region. They include proposals for individual S&L energy efficiency programs and also for opportunities to improve MV&E regimes through collaboration between economies in the APEC region.

These recommendations are designed to address shortcomings in MV&E process in the APEC region and assist in the development of a culture of compliance.

Recommendation 1 – Awareness Raising

In many economies, standards and labelling (S&L) energy efficiency programs represent the cornerstone of national policies designed to reduce energy consumption, tackle environmental issues such as climate change and improve energy security. They are proven to deliver the largest quantity of energy savings at the lowest cost compared to most other types of energy efficiency programs.

The ability to maintain and improve upon these achievements relies on the development of effective MV&E regimes, which in turn requires sustained investment in planning, establishing processes and training staff.

Governments and government agencies with responsibility for energy efficiency S&L programs need to be more aware of the importance of adequately supporting the establishment and operation of effective MV&E regimes – and therefore maintaining the integrity of their programs. Organizations such as APEC should play a lead role in bringing these issues to the attention of governments in the region.

Recommendation 2 – Planning and Resources

All S&L energy efficiency programs need to periodically review their MV&E enabling legislation, processes and activities to identify ways of making sustained improvements. Such reviews should take into account the views of key stakeholders and international experience where it will be seen that the most effective MV&E regimes are often achieved through focussing the responsibilities into a minimum number of government departments and agencies.

Since investment in MV&E is highly cost-effective, governments should invest sufficient funds in the development and on-going implementation of robust MV&E processes to ensure the integrity of their S&L programs. The budget for MV&E activities should include the provision of an adequate number of appropriately trained staff.

Recommendation 3 – Operational Guidelines

Providing transparent operational guidelines that detail the main elements of a program's administrative and MV&E procedures decreases the opportunities for misunderstandings and disputes, while facilitating compliance. Governments should ensure that S&L programs have developed such guidelines and made them available to stakeholders.

Recommendation 4 – Communication

Effective MV&E regimes in S&L programs, as in many other sectors, provide a credible deterrent to non-compliant behaviour by elevating the risk to suppliers that transgressions will be detected and penalised. Communications play a vital role in signalling the importance that governments place on compliance and making the risks obvious to stakeholders in S&L programs.

Governments need to consider how they can improve their communications with stakeholders and raise the profile of their MV&E activities and results.

Recommendation 5 – Access to Competent Laboratories

Access to competent testing facilities, both private and independent, is a key issue for most economies to address. In the APEC region there are a large number of test facilities with the ability to undertake tests on a wide range of energy-using products, and this gives rise to opportunities for more co-operative and creative approaches to accessing test resources on a regional basis.

These opportunities include:

- Providing better access to independent testing laboratories by maintaining a list of all independent test facilities throughout the APEC region, their location, capabilities and capacity. This resource would be valuable for programs that have insufficient access to independent testing facilities within their own economy, or wish to reduce costs by testing products in their country of origin.
- Developing an understanding of the competency of private test facilities in the APEC region by sharing information on local test facilities gathered by economies that indicate their level of proficiency. This may include those laboratories that: have taken part in round-robin tests; have had independent assessments of their facilities; have an established track record; or have been included on lists of recommendation. This will greatly assist economies deciding on which reports from overseas test laboratories require increased scrutiny to make a better-informed judgement.
- Improving the competency of regional laboratories by agreeing to undertake round robin testing for specified products in order to improve test methods and the performance of laboratories. This initiative could lead to mutual recognition arrangements between jurisdictions.

Each of these initiatives warrants further investigation, and should be developed under the proposal for a regional network (recommendation 8), or supported as individual APEC projects.

Recommendation 6 – Verification Testing

Currently verification testing is conducted by individual economies and programs without regard for what testing is being undertaken in other neighbouring economies. Considering that there are many common products traded within the APEC region, there would be benefits in a more co-ordinated approach to testing which include savings in costs and the gathering of market intelligence based on larger sample sizes.

Examples of the types of collaboration on verification testing that could be considered for the APEC region, and their advantages, include:

a) Focus on individual products:

An agreement between programs in different jurisdictions to undertake verification tests on the same category of product at a similar time within their own economies, and share results, to gain a greater insight into compliance issues relating to individual product types.

b) Focus on different products:

An agreement between programs in different jurisdictions to undertake verification tests on different categories of products over a designated period of time, and share results, in order to maximise coverage across a range of products.

c) Shared costs for testing programs:

An agreement between programs in different jurisdictions to undertake verification tests on the same type of products at a similar time and within the same laboratory(ies), and share results, to gain cost savings through economies of scale.

Further options for co-operation include:

a) Mutual recognition of test reports.

Where tests methodologies are technically equivalent, programs agree to allow suppliers to lodge the same test reports as evidence of compliance.

b) The sharing of test results and/or notification of enforcement actions

Where products have been proven to be non-compliant in one economy, this information may be used by other programs to justify increased scrutiny and improve the targeting of limited testing budgets.

These options warrant further consideration by governments, and could be developed under the proposal for a regional network (recommendation 8).

Recommendation 7 - Industry Engagement

Most industries support the objective of producing more efficient energy-using appliances and equipment, and the need for governments to ensure they operate within fair competitive markets. Without adequate MV&E regimes, appliance and equipment markets can become distorted by unscrupulous suppliers undercutting those that invest in the production of more efficient products.

Governments with responsibility for S&L programs need to engage with industry participants, not only to ensure that they understand their responsibilities, but also to work together to develop more effective MV&E regimes. Through constructive dialogue, industry can better understand the objectives of governments, and assist governments to find ways of reducing costs and increasing effectiveness.

For example, robust industry certification schemes and similar models may be of great benefit to some economies, but require co-operation between government and industry to be viable.

Governments should take steps to strengthen their engagement with industry and develop mechanisms to facilitate constructive dialogue on MV&E issues. Where appropriate, this could be supplemented by dialogue between governments and industry on a regional basis through APEC or similar organizations.

Recommendation 8 - Regional Network

To provide a focus for efforts to improve MV&E in the APEC region and to develop collaborative projects, economies should consider supporting the establishment of and participation in a forum on MV&E.

This would follow a similar model for a regional network of regulators and MV&E authorities that has been established in Europe to tackle many of the issues raised in this report.

If supported by sufficient APEC economies, it is recommended that a small group of volunteers should produce concrete proposals for the establishment of this network, including consideration of its relationship to APEC's EGEE&C working group, and other regional bodies.

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Appendix - Questionnaires

A. Survey of Compliance Mechanisms for Energy Efficiency Standards Programs (MEPS)

This is a survey of the mechanisms used in APEC economies to ensure compliance with energy efficiency standards requirements. It should be filled out by experts in your economy who are familiar with energy efficiency **standards (MEPS) programs.**

Please note that there is a SEPARATE survey of compliance mechanisms for **Energy Efficiency Labelling Programs.** We hope that experts in your economy can fill out both surveys

Please refer to the Glossary of Terms and the Guide to Questions (which were sent to you via e-mail) when completing the questionnaire.

We recommend that you prepare your answers to the surveys using the ***Guide to Questions*** prior to manually entering your responses online.

Thank you for volunteering to take part in this survey. If you have any queries or comments, please send them to **brittany.wilkerson@consumerexpertise.com.**

The Asia-Pacific Economic Cooperation (APEC) has commissioned Mark Ellis & Associates to undertake a survey of compliance processes in APEC economies and to develop best practice materials for discussion at a workshop in 2012.

Question 1

Please list the following information about yourself:

- Authority:
- Contact person:
- Position:
- Email address:
- Phone number:

POLICY MEASURE

Question 2

Indicate the following information about the **Energy Efficiency Standards** compliance (Monitoring, Verification & Enforcement) program in your economy:

- Program type (e.g. minimum energy efficiency performance standards):
- Mandatory or voluntary?
- Date started:
- Number of product types currently covered by the program:

MONITORING, VERIFICATION & ENFORCEMENT (MV&E) FRAMEWORK

Question 3

Please describe briefly the nature of mechanisms used in your economy to ensure compliance with energy efficiency standards (MEPS) requirements. More detailed questions will follow.

Question 4

For each program in your economy that is designed to promote compliance with energy efficiency standards requirements, please indicate the following information:

- What is the legal framework under which this program operates (e.g. Acts)?
- Which authority has overall responsibility for the program?
- Which authority / authorities have responsibility for compliance within the energy efficiency program?

Question 5

Does the legal framework establish any of the Monitoring, Verification, and Enforcement (MV&E) requirements listed below for the compliance program? Select all that apply.

- ❑ Relationships with third party verification or certification organizations, i.e. does the legislation require third party verification, and/or identify requirements for the qualification or selection of certification organizations?
- ❑ Market surveillance, i.e. whether the checking of Labelling in retail stores must be undertaken, or the results reported, or other monitoring activities required by law.
- ❑ Verification testing, i.e. does the legislation specify the process for verification testing?
- ❑ Other, please specify

STAKEHOLDER EDUCATION OF REQUIREMENTS

Question 6

Are any of the following used to ensure stakeholders are aware of their responsibilities? Select all that apply.

- ❑ Government advertisements in public media
- ❑ Provision of stakeholder training - e.g. training for store management
- ❑ Government or trade conferences/seminars
- ❑ Information available via a website or guidance documents
- ❑ Advanced notice to stakeholders via direct mail

Question 7

How far in advance of a change in legislative or program requirements are stakeholders given notice? (i.e. 6 months' notice)

Question 8

How do you monitor how well industry understands the requirements of the program?

PROGRAM ENTRY REQUIREMENTS FOR SUPPLIER'S PRODUCTS

Question 9

In order to join a program, or to be able to sell products, do suppliers / manufacturers have to provide any of the items listed below? Select all that apply.

- ☐ A certificate provided by an independent third party authority
- ☐ A certificate provided by an industry body
- ☐ A test report from an independent third party laboratory
- ☐ A test report based on a self test with no independent input
- ☐ A self-declaration of energy performance
- ☐ Complete a registration process for each model/family of models
- ☐ Other, please list other requirements for program entry relating to the energy performance of the appliance.

SURVEILLANCE PROCESSES

Question 10

Are checks undertaken to ensure that minimum energy efficiency standards are met?

- ○ Yes
- ○ No

Question 11

If you answered YES to the previous question, please indicate the method used:

- ☐ Import controls
- ☐ Visual checks of test certificates
- ☐ Visual checks of registration details
- ☐ Other, please specify

Question 12

If you answered YES to question 10, are these checks commissioned by a government agency?

- ○ Yes
- ○ No
- ○ Does not apply

Question 13

If you answered YES to question 10, are these checks initiated by a 3rd party (e.g. industry body)?

- ○ Yes
- ○ No
- ○ Does not apply

Question 14

If you answered YES to question 10, how many checks have been undertaken in the following years? Indicate the number of checks conducted and the approximate number of products covered.

- 2008
- 2009
- 2010

Question 15

Identify the approximate costs for MV&E activities on Energy Efficiency Standards in the years listed below if known.

- 2008
- 2009
- 2010

Question 16

Identify the actions usually taken if participating products within the scope are found to be non-compliant?

- ☐ Supplier notified and asked to remedy the situation
- ☐ Supplier notified and issued with a warning
- ☐ Fines
- ☐ Supplier publicly named
- ☐ No action
- ☐ Not known
- ☐ Other, please specify

Question 17

Indicate whether the actions listed below took place from 2008-2010. Select all that apply.

- ☐ Supplier notified and asked to remedy the situation
- ☐ Supplier notified and issued with a warning

- ☐ Fines
- ☐ Supplier or store publicly named
- ☐ No action
- ☐ Not known
- ☐ Other, please specify

_____

THIRD PARTY VERIFICATION & CERTIFICATION PROCESSES (INCLUDING PRIVATE, INDUSTRY ORGANIZATIONS)

Question 18

What processes are used to maintain the quality of third party certification agencies?

_____

_____

_____

_____

Question 19

Indicate whether certification agencies provide government with the following information. Select all that apply.

- ☐ Report on activities
- ☐ Details of the results of its testing activities

PROGRAM VERIFICATION TESTS (WHERE NO THIRD PARTY CERTIFICATION PROCESS EXISTS)

Question 20

Please describe the actions you take if you do not operate a 2-part verification process (i.e. single screen test and a verification test on multiple samples).

_____

_____

_____

_____

Question 21

Please indicate the approximate number of appliances tested in the following years:

- 2008
- 2009
- 2010

Question 22

Are the samples collected from retail?

- ○ Yes
- ○ No

- ○ Other, please list

Question 23

Indicate the number of samples per model that are tested.

- For a screen test
- For a full verification test

Question 24

Who selects the samples? (E.g. government agency or their contractor, manufacturer)

Question 25

Are manufacturers allowed to pick samples?

- ○ Yes
- ○ No

Question 26

What budget was allocated to "off the shelf" testing to verify compliance in the years listed below? (Indicate amount in US dollars).

- 2008
- 2009
- 2010

Question 27

How do you select products for testing? Is it by random sampling, risk based (e.g. market share, competitor information, new market entrants, poor supplier record), or other? Please describe.

Question 28

Please identify the actions that are taken when an appliance fails a verification test (e.g. a screening test and any other subsequent tests). Select all that apply.

- ☐ Supplier is contacted and asked to explain
- ☐ Supplier is given a time period to rectify the situation
- ☐ Product must be withdrawn from the market
- ☐ Supplier is fined
- ☐ Supplier must recompense consumers
- ☐ Supplier / product information is uploaded to publicly available website

Question 29

Please indicate the approximate % of appliances which passed full verification tests in the following years:

- 2008
- 2009
- 2010

Question 30

Please indicate the number of each type of action taken from 2008-2010.

- Supplier is contacted and asked to explain
- Supplier is given a time period to rectify the situation
- Product must be withdrawn from the market
- Supplier is fined
- Supplier must recompense consumers
- Other (please specify)

INDUSTRY PERCEPTIONS OF COMPLIANCE

Question 31

Has industry asked for increased or decreased vigilance regarding compliance processes?

- ○ Increased
- ○ Decreased

Question 32

In this program, do you think industry considers the risks (of being found to be non-compliant) outweigh the costs of compliance?

- ○ Yes
- ○ No

PUBLIC ACCESS TO REGISTERED PRODUCTS

Question 33

Is a list of models within the program provided in a publicly available publication?

- ○ Yes
- ○ No

Question 34

Are models within the program listed on a public website?

- ○ Yes
- ○ No

Question 35

Are the energy performance details of products within the program included on publicly available publications and/or websites?

- ○ Yes
- ○ No

PUBLISHING RESULTS OF MV&E ACTIVITIES

Question 36

Indicate whether you make the following information publicly available. Select all that apply.

- ☐ The number of checks undertaken
- ☐ The results of checks
- ☐ The number of verification tests conducted, including pass / failure rates
- ☐ Individual products or brands that have failed verification testing
- ☐ Other, please specify

Question 37

Indicate where you make the following information publicly available (if applicable). E.g. website, newsletter, media, public / industry forums.

- The number of checks undertaken .....
- The results of checks .....
- The number of tests conducted, including pass / failure rates .....
- Individual products or brands that have failed verification testing .....

Question 38

Indicate the overall compliance rate (in %) for the following years:

- 2008 .....
- 2009 .....
- 2010 .....

Question 39

Who assesses overall compliance rates?

Thank You

B. Survey of Compliance Mechanisms for Energy Efficiency Labelling Programs

This is a survey of the mechanisms used in APEC economies to ensure compliance with energy efficiency Labelling requirements. It should be filled out by experts in your economy who are familiar with energy efficiency **labelling programs.**

Please note that there is a SEPARATE survey of compliance mechanisms for **Minimum Energy Efficiency Performance Standards.** We hope that experts in your economy can fill out both surveys.

Please refer to the Glossary of Terms and the ***Guide to Questions*** (which were sent to you via e-mail) when completing the questionnaire.

We recommend that you prepare your answers to the surveys using the Guide to Questions prior to manually entering your responses online.

Thank you for volunteering to take part in this survey. If you have any queries or comments, please send them to **brittany.wilkerson@consumerexpertise.com.**

The Asia-Pacific Economic Cooperation (APEC) has commissioned Mark Ellis & Associates to undertake a survey of compliance processes in APEC economies and to develop best practice materials for discussion at a workshop.

Question 1

Please list the following information about yourself:

- Authority:
- Contact person:
- Position:
- Email address:
- Phone number:

POLICY MEASURE

Question 2

Indicate the following information about the compliance program in your economy:

- Program type (e.g. labelling, Energy Star):
- Mandatory or voluntary?
- Date started:
- Number of product types currently covered by the program:

MONITORING, VERIFICATION, & ENFORCEMENT (MV&E) FRAMEWORK

Question 3

Please describe briefly the nature of mechanisms used in your economy to ensure compliance with energy efficiency labelling requirements. More detailed questions will follow.

Question 4

For each program in your economy that is designed to promote compliance with energy efficiency labelling requirements, please indicate the following information:

- What is the legal framework under which this program operates (e.g. Acts)? .....
- Which authority has overall responsibility for the program? .....
- Which authority / authorities have responsibility for compliance within the energy efficiency program? .....

Question 5

Does the legal framework establish any of the Monitoring, Verification & Enforcement (MV&E) requirements listed below for the compliance program? Select all that apply.

- ❑ Relationships with third party verification or certification organizations, i.e. does the legislation require third party verification, and/or identify requirements for the qualification or selection of certification organizations?
- ❑ Market surveillance, i.e. whether the checking of labelling in retail stores must be undertaken, or the results reported, or other monitoring activities required by law.
- ❑ Verification testing, i.e. does the legislation specify the process for verification testing?
- ❑ Other, please specify

STAKEHOLDER EDUCATION OF REQUIREMENTS

Question 6

Are any of the following used to ensure stakeholders are aware of their responsibilities? Select all that apply.

- ❑ Government advertisements in public media
- ❑ Provision of stakeholder training - e.g. training for store management
- ❑ Government or trade conferences/seminars
- ❑ Information available via a website or guidance documents
- ❑ Advanced notice to stakeholders via direct mail

Question 7

How far in advance of a change in legislative or program requirements are stakeholders given notice? (i.e. 6 months' notice)

Question 8

How do you monitor how well industry understands the requirements of the program?

PROGRAM ENTRY REQUIREMENTS FOR SUPPLIER'S PRODUCTS

Question 9

In order to join a program, or to be able to sell products, do suppliers / manufacturers have to provide any of the items listed below? Select all that apply.

- ☐ A certificate provided by an independent third party authority
- ☐ A certificate provided by an industry body
- ☐ A test report from an independent third party laboratory
- ☐ A test report based on a self test with no independent input
- ☐ A self-declaration of energy performance
- ☐ Complete a registration process for each model/family of models
- ☐ Other, please list other requirements for program entry relating to the energy performance of the appliance.

SURVEILLANCE PROCESSES - LABELLING PROGRAMS ONLY

Question 10

Whose responsibility is it to ensure that products offered for sale are correctly labelled?

- ○ Store
- ○ Supplier

Question 11

Are surveys undertaken to check that energy efficiency labels are placed correctly on products at the point of sale?

- ○ Yes
- ○ No

Question 12

If you answered YES to the previous question, please indicate the method used:

- ☐ Import controls
- ☐ Visual checks of retail outlets
- ☐ Checks of catalogues

- ❑ Checks of internet sites
- ❑ Checks at trade fairs
- ❑ Other, please specify

_____

Question 13

If you answered YES to question 10, are these surveys commissioned by a government agency?

- ○ Yes
- ○ No
- ○ Does not apply

Question 14

If you answered YES to question 10, are these surveys initiated by a 3rd party (e.g. industry body)?

- ○ Yes
- ○ No
- ○ Does not apply

Question 15

If you answered YES to question 10, how many surveys have been undertaken in the following years? Indicate the number of surveys conducted and the approximate number of products covered.

- 2008
- 2009
- 2010

Question 16

Identify the approximate costs for labelling surveillance in the years listed below if known.

- 2008
- 2009
- 2010

Question 17

Identify the actions usually taken if participating products within the scope are found to be incorrectly labelled?

- ❑ Supplier or store notified and asked to remedy the situation
- ❑ Supplier or store notified and issued with a warning
- ❑ Fines
- ❑ Supplier or store publicly named
- ❑ Potential suspension from program
- ❑ No action
- ❑ Not known
- ❑ Other, please specify

_____

Question 18

Indicate whether the actions listed below took place from 2008-2010. Select all that apply.

- ☐ Supplier or store notified and asked to remedy the situation
- ☐ Supplier or store notified and issued with a warning
- ☐ Fines
- ☐ Supplier or store publicly named
- ☐ Potential suspension from program
- ☐ No action
- ☐ Not known
- ☐ Other, please specify

_____

THIRD PARTY VERIFICATION & CERTIFICATION PROCESSES (INCLUDING PRIVATE, INDUSTRY ORGANIZATIONS)

Question 19

What processes are used to maintain the quality of third party certification agencies?

_____

_____

_____

_____

Question 20

Does the program undertake independent verification on samples of products?

- ○ Yes
- ○ No

Question 21

If products are tested, please indicate the number of tests undertaken in the following years:

- 2008
- 2009
- 2010

Question 22

Indicate whether certification agencies provide government with the following information. Select all that apply.

- ☐ Report on activities
- ☐ Details of the results of its testing activities

PROGRAM VERIFICATION TESTS (WHERE NO THIRD PARTY CERTIFICATION PROCESS EXISTS)

Question 23

Please describe the actions you take if you do not operate a 2-part verification process (i.e. single screen test and a verification test on multiple samples).

Question 24

Please indicate the approximate number of appliances tested in the following years:

- 2008
- 2009
- 2010

Question 25

Are the samples collected from retail?

- Yes
- No
- Other, please list

Question 26

Indicate the number of samples per model that are tested.

- For a screen test
- For a full verification test

Question 27

Who selects the samples? (E.g. government agency or their contractor, manufacturer)

Question 28

Are manufacturers allowed to pick samples?

- Yes
- No

Question 29

What budget was allocated to "off the shelf" testing to verify compliance in the years listed below? (Indicate amount in US dollars).

- 2008
- 2009
- 2010

Question 30

How do you select products for testing? Is it by random sampling, risk based (e.g. market share, competitor information, new market entrants, poor supplier record), or other? Please describe.

Question 31

Please identify the actions that are taken when an appliance fails a verification test (e.g. a screening test and any other subsequent tests). Select all that apply.

- ☐ Supplier is contacted and asked to explain
- ☐ Supplier is given a time period to rectify the situation
- ☐ Product must be withdrawn from the market
- ☐ Supplier is fined
- ☐ Supplier must recompense consumers
- ☐ Supplier / product information is uploaded to publicly available website

Question 32

Please indicate the approximate % of appliances which passed full verification tests in the following years:

- 2008
- 2009
- 2010

Question 33

Please indicate the number of each type of action taken from 2008-2010.

- Supplier is contacted and asked to explain
- Supplier is given a time period to rectify the situation
- Product must be withdrawn from the market
- Supplier is fined
- Supplier must recompense consumers
- Other (please specify)

INDUSTRY PERCEPTIONS OF COMPLIANCE

Question 34

Has industry asked for increased or decreased vigilance regarding compliance processes?

- ○ Increased
- ○ Decreased

Question 35

In this program, do you think industry considers the risks (of being found to be non-compliant) outweigh the costs of compliance?

- ○ Yes
- ○ No

PUBLIC ACCESS TO REGISTERED PRODUCTS

Question 36

Is a list of models within the program provided in a publicly available publication?

- ○ Yes
- ○ No

Question 37

Are models within the program listed on a public website?

- ○ Yes
- ○ No

Question 38

Are the energy performance details of products within the program included on publicly available publications and/or websites?

- ○ Yes
- ○ No

PUBLISHING RESULTS OF MV&E ACTIVITIES

Question 39

Indicate whether you make the following information publicly available. Select all that apply.

- ☐ The number of labelling surveys undertaken
- ☐ The results of labelling surveys
- ☐ The number of verification tests conducted, including pass / failure rates
- ☐ Individual products or brands that have failed verification testing
- ☐ Other, please specify

_____

Question 40

Indicate where you make the following information publicly available (if applicable). E.g. website, newsletter, media, public / industry forums.

- The number of labelling surveys undertaken .....
- The results of labelling surveys .....
- The number of tests conducted, including pass / failure rates .....
- Individual products or brands that have failed .....

verification testing

Question 41

Indicate the overall compliance rate (in %) for the following years:

- 2008 .....
- 2009 .....
- 2010 .....

Question 42

Who assesses overall compliance rates?

Thank You

Survey of Market Compliance Mechanisms for Energy Efficiency Programs in APEC economies

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Produced by

Mark Ellis & Associates
PO Box 109
Wagstaffe, NSW 2257
Australia
Tel: (61) 43602 931
Email: mark@energyellis.com

For

Asia Pacific Economic Cooperation Secretariat35 Heng Mui Keng Terrace
Singapore 119616
Tel: (65) 68919 600
Fax: (65) 68919 690
Email: info@apec.org
Website: www.apec .org

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