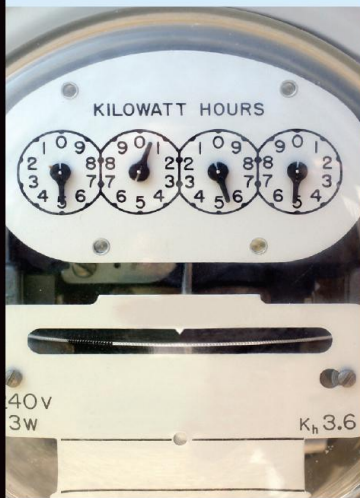


# A Survey of Monitoring, Verification and Enforcement Regimes and Activities in selected countries

FINAL REPORT



JUNE 2010

By  
**Mark Ellis & Associates**  
in Partnership with  
the Collaborative Labeling & Appliance  
Standards Program (CLASP)



**This report has been produced for the Collaborative  
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**Disclaimer**

The authors have made their best endeavours to ensure the accuracy and reliability of the data used herein, however make no warranties as to the accuracy of data herein nor accept any liability for any action taken or decision made based on the contents of this report.



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# Executive Summary

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National energy efficiency standards and labelling (S&L) programs form an important element of most national energy efficiency policy portfolios. S&L programs are expanding in scope in response to the need for improved energy efficiency and the reduction of greenhouse gas emissions.

The study described in this paper focuses on the potential to improve the outcomes of S&L programs through ensuring that products within the scope of S&L programs adhere to the stated rules of these programs. This subject is often referred to as 'compliance' although it can also be broken down in a number of processes involving monitoring, verification and enforcement (MV&E).

There are numerous benefits associated with improving compliance rates in addition to increased energy savings and reduction in greenhouse gas emissions. High compliance rates in S&L programs safeguard the investment made by governments in building consumers' confidence in their voluntary and mandatory energy labels, as well as the investment made by suppliers of energy efficient products. Conversely, there is also a risk that high rates of non-compliance will erode confidence in S&L programs and energy efficiency programs generally, which can have severe long term consequences for efforts to achieve climate change policy objectives.

To highlight the strengths and weaknesses in MV&E processes amongst S&L programs, the Collaborative Labelling and Appliance Standards Program (CLASP), with funding from Climate Works Foundation, initiated this survey spanning 14 countries. These included 30 mandatory and voluntary appliance S&L programs in Argentina, Australia, Canada, Chile, China, Germany, India, Italy, Japan, Mexico, South Korea, Tunisia, United Kingdom and USA.

The key findings from this survey are:

- The majority of programs appear to have adequate legal basis to support compliance activities, although vigilance is needed to ensure that definitions remain relevant to current markets.
- The majority of programs also have in place appropriate MV&E processes, although some enforcement procedures appear insufficiently flexible to be easily applied.
- All respondents were able to clearly identify the entity or entities responsible for MV&E, and many noted that enforcement powers were included within the legal framework for the program.
- While the legal and administrative frameworks underpinning programs identify appropriate procedures in most cases, it is apparent that there is considerable variation in the extent to which MV&E activities are carried out in practice.
- As described by respondents, most programs have the capacity and processes for enforcement action. However, very few were able to provide detailed records of enforcement actions that had been undertaken in the recent past. The reasons for this are speculative, however it suggests that either there are few accessible records of these activities, or they occur very infrequently.
- Few programs appear to have defined budget allocations and forward plans for MV&E activities; without these, there is a risk that MV&E activities may be viewed as discretionary and compete with resources for other aspects of program management.
- Some comments from respondents indicate programmatic evaluations take little regard of compliance rates and therefore may be inaccurate.

- There is considerable variation in MV&E structures used in different energy efficiency S&L programs and many examples of interesting approaches. For example a few programs have integrated border controls within their MV&E process, and most programs are coming to terms with the challenges of distance selling.

Based on responses from program administrators, the major recommendations are:

- In order to ensure MV&E are undertaken in practice, governments should require the regular production of forward plans for MV&E activities and appropriate budgeting. Consideration should also be given to whether these requirements are included within enabling legislation for through administrative arrangements.
- Ensuring that participants are aware of their obligations within S&L programs is an important first step to facilitating compliance and underpins any future enforcement actions. Well targeted information provision and regular surveys of industry awareness warrants increased attention by governments.
- The lack of readily available records on MV&E surveillance and verification activities suggests that there is more that can be done to publicize whatever compliance processes are undertaken and their results. Governments should maintain records of MV&E surveillance and verification activities and make them publically available in order to highlight the risks of non-compliance.
- Similarly, governments should keep better records of enforcement actions and make them publically available in order to make stakeholders aware of the range and frequency of enforcement activities.
- Ensuring that all products within the scope of mandatory S&L programs meet program requirements is a complex and on-going task that involves several related processes. While there are different approaches to how this is achieved, the effectiveness of a program's compliance regime would likely be improved considerably with the availability of a centralised listing of product models that are part of program. Such information can be gained through the use of market entry conditions involving registration or certification processes, and be used to increase the effectiveness of market surveillance checks.
- While it is recognized that it may be appropriate that responsibility for day-to-day MV&E activities is shared amongst staff, it is important that their activities are co-ordinated and recorded. Governments should ensure clear lines of responsibility for MV&E activities within each S&L program.
- Where responsibility for MV&E is devolved to an entity other than that with primary responsibility for the program there may be issues of co-ordination. When responsibility is split, Governments should ensure that responsibilities are clearly identified.
- To improve the accuracy of evaluations, governments should take account of compliance rates within program assessments.
- There are considerable opportunities to rapidly improve compliance regimes through the sharing of experiences and approaches between programs. Governments should therefore devote more attention to establishing links with other S&L programs and exploring the transfer of expertise and information.

The results of this survey were found to be consistent with recent surveys on compliance activities undertaken in Europe (Fraunhofer et al, 2009; ATLETE, 2009).

The results of this survey indicate considerable potential to improve the MV&E structures and practices surrounding S&L type energy efficiency programs. With this would come greater



certainty of outcomes and increased energy and greenhouse gas savings. Just as importantly, attending to issues of compliance is vital to maintaining confidence in these programs by participants and consumers, and therefore to maintain and raise future participation levels. Given the increasing importance of these programs within national energy and climate policies, the modest levels of investment required to improve MV&E practices are a prerequisite to ensuring the outcomes desired by governments.

# 1 INTRODUCTION

## 1.1 WHAT IS COMPLIANCE AND WHY IS IT IMPORTANT

National energy efficiency standards and labelling (S&L) programs form an important element of most national energy efficiency policy portfolios and are widely recognized to have made a significant contribution to improved energy efficiency and the reduction of greenhouse gas emissions (IEA, 2007). As greater emphasis is placed on energy efficiency within national energy and climate policies, S&L programs have expanded in scope to cover an increasing range of products and continue to be adopted by more countries and regions (IEA, 2009).

The extent to which S&L programs, like any other type of policy measure, are successful in delivering the predicted savings in energy and greenhouse gas emissions depends upon a wide range of factors including the design, stringency and implementation of these policy measures. The study described in this paper focuses on one of these critical factors – the potential to improve outcomes through ensuring that products within the scope of S&L programs adhere to the stated rules of these programs. This subject is often referred to as ‘compliance’ although it can also be broken down in a number of processes involving monitoring, verification and enforcement (MV&E).

In this context, monitoring refers to the gathering of information required to demonstrate the adherence to the rules of an S&L program, verification includes the processes to ensure that product performance is actually as claimed by a supplier, and enforcement refers to the identifying non-compliance and implementing a range of sanctions that may be applied in these cases.

There are numerous benefits of improving compliance rates, not least the impact on increased energy savings and reduction in greenhouse gas emissions as a result of products meeting the performance criteria set by S&L programs.

High compliance rates in S&L programs safeguard the investment made by governments in building consumer’s confidence in their voluntary and mandatory energy labels, as well as the investment made by suppliers of energy efficient products.

Conversely, there is also a risk that unacceptably high rates of non-compliance may erode confidence in S&L programs and energy efficiency programs in general, which would have severe long term consequences for efforts to achieve climate change policy objectives.

These and other benefits from improved compliance are discussed elsewhere (including by Ellis et al, 2009) and are not expanded on further in this report, which records the findings of a study undertaken during the late 2009 and early 2010 into the MV&E infrastructure and processes used by S&L programs in a number of selected countries.

This study has been initiated by the Collaborative Labelling and Appliance Standards Program (CLASP).

## 1.2 REFINING THE RESEARCH QUESTION

The primary aim of this project is to develop a better understanding of the strengths and weaknesses of the MV&E processes currently used by both mandatory and voluntary national S&L programs across different countries and regions.

A methodology to establish the most effective compliance processes might begin by comparing the reported rates of compliance from existing S&L programs. Having identified those with high rates of compliance, further investigation into the features of these programs may reveal some common practices.

However, information on compliance rates in S&L programs is patchy at best which means that there is no ability to identify a direct relationship between existing processes and levels of compliance. Nor is there an agreed standard or optimal structure yet developed to act as a benchmark against which to measure MV&E activities, although it is hoped that this work will contribute towards a better understanding of what is 'best practice' in MV&E regimes.

Therefore this study seeks to compare the different MV&E approaches and levels of activity across a range of similar programs. It has focused on those issues and processes that are considered particularly important, either within general compliance theory or are widely accepted with respect to S&L programs. These are discussed below.

Those involved in compliance across many fields point towards the importance of establishing a 'compliance regime' that raises the perceived risks of non-compliance to the extent that actors perceive it to be in their best interests to be compliant.

Therefore heightening the perception of risk is an important object of effective compliance regimes. According to Zaelke et al (2005): *"Deterrence theory.....maintains that there must be a credible likelihood of detecting violations, swift, certain, and appropriate sanctions upon detection; and a perception among the regulated firms that these detection and sanction elements are present."*

The concept of a regime is important since the term encompasses more than a set of unrelated actions but an interrelated governance structure comprising a legal framework, monitoring and verification processes, and enforcement actions acting consistently to provide a coherent system.

Compliance theory also emphasizes the role of building a 'culture of compliance' through involving all stakeholders. For example, Mazur (2008) demonstrates that by informing the public of the environmental performance of the regulated community and enforcement actions taken, they are engaged in compliance promotion and non-compliance detection, leading to an increase in compliance as a result of an increase in the perceived risks of non-compliance.

*It has been said of compliance at the national level that, "20 percent of the regulated population will automatically comply with any regulation, 5 percent will attempt to evade it, and the remaining 75 percent will comply as long as they think that the 5 percent will be caught and punished."*

(Zaelke, 2005)

There are many components to an effective compliance regime, including those identified above. Some elements are frequently underestimated, for example, assisting compliance through educational processes to ensure that the target audience is aware of their obligations. Given that the aim of a compliance regime is to raise perceptions of risk, the role of publicizing MV&E actions has great importance. Making stakeholders aware of the monitoring and market surveillance activities that are undertaken, notifying suppliers or retailers of the results, regularly listing enforcement actions – these are amongst the many ways to make MV&E more visible and therefore increase perceptions of risk.

Many of these key elements in an effective regime are included in the following recommendations made by the IEA to G8 leaders in 2008:

*"Governments should ensure that both voluntary and mandatory energy efficiency policies are adequately monitored, enforced and evaluated so as to ensure maximum compliance. At a minimum, this should include:*

*Considering and planning for optimal compliance, monitoring and evaluation procedures at the time new policies and measures are formulated;*

*Establishing legal and institutional infrastructure for ensuring compliance with energy efficiency requirements;*

*Ensuring transparent and fair procedures for assessing compliance, including specification of the methods, frequency and scope of monitoring activities;*

*Ensuring regular and public reporting of monitoring activities, including instances of non-compliance;*

*Establishing and implementing a suite of enforcement actions commensurate with the scale of noncompliance and the value of lost energy savings”*

(OECD/IEA, 2008)

The points raised here point towards a list of core elements that provide the context for this project to compare the approaches used by 30 similar energy efficiency programs in 14 countries.

## 2 AIM AND OBJECTIVES

The primary aim of this project is to develop an understanding of the strengths and weaknesses of the infrastructure and capacity used by both mandatory and voluntary national S&L programs. This was done by collecting information on the institutional powers, staffing, allocation of resources, MV&E processes and the provision of public information in each program. It was decided to use the opportunity to collect information on the level of MV&E activity undertaken in each country, even though it was already suspected that many programs would be unable to provide all the information requested.

Key survey objectives included:

1. To collect accurate information from responsible parties within target countries about the methods and measured performance of compliance of the energy efficiency programs for appliance and end-use equipment that they develop and implement.
2. To develop an improved understanding of current practice in the area of compliance regimes.
3. To assess the current status of compliance and compliance regimes in target countries.

It is intended that the results of this survey will stimulate governments and policy-makers to improve their capacity and practices in respect to energy efficiency MV&E for the appliance and equipment sector in order to increase energy and CO<sub>2</sub><sup>e</sup> savings from these programs.

## 3 METHODOLOGY

The project used a survey process based on a questionnaire designed to capture separate information for each type of S&L program (Minimum Energy Performance standards [MEPS], mandatory and voluntary labelling) where programs are individually administered. However, where multiple programs are administered by the same government department or agency, these bodies often find it impossible to break down the responses by individual program type<sup>1</sup>.

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<sup>1</sup> In any event, often the MV&E processes used by multiple programs within a country are similar.

Particular attention was given to ensure that the survey was sufficiently generic so as to be applicable to the different program designs and terminology used in each country. Despite attempts to use generic language and provide guidance, many questions can be interpreted differently due to different practices, languages, and terminologies used by individual programs or countries. In addition, it should be noted that not all of the 66 questions were applicable to every program.

The questionnaire was provided to known government employees involved in the management of S&L programs who were offered the opportunity to respond by phone in order to save time (by clarifying queries in relation to the response immediately) or electronically. A phone response also allowed the consultants to ensure greater consistency in interpreting the questions.

Over 50% of respondents chose to complete the survey without assistance, primarily due to their limited capacity to communicate in English or a desire to conduct the survey according to their own time schedule. In fact, almost every survey completed without assistance was done so by a country that did not speak English as a first language. Survey response modes are shown in Table 1.

Table 1: Survey response modes

Country	Independent or email survey completion	Telephone survey response
Argentina	✓	
Australia		✓
Canada		✓
Chile	✓	
China		✓
Germany	✓	
India	✓	
Italy	✓	
Japan	✓	
Mexico	✓	
South Korea	✓	✓
Tunisia		✓
United Kingdom		✓
USA		✓

Distribution of the questionnaire and the collection of responses ran from October 2009 to February 2010.

Since the aim was to collect a diversity of responses from different regions, G20 countries<sup>2</sup> were the primary target for the survey. As it was not possible to obtain responses from

<sup>2</sup> G20 countries include: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, Republic of Korea, Turkey, United Kingdom, United States of America

France, Indonesia, Russia, Saudi Arabia, South Africa or Turkey, programs from Tunisia and Chile were added during the course of the project.

The inclusion of more countries from Europe was also considered. However, it was decided instead to co-ordinate with a concurrent survey of EU Member States being run by the ATLETE project (ATLETE, 2009; 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). While there are differences between the foci of the European and CLASP surveys, there are sufficient similarities to be able to use the results to make valuable comparisons.

The findings reported in this paper summarize the responses from the 30 programs spanning 14 countries identified in Table 2. The remaining G20 countries not on this list either did not have an active S&L program or were not able to provide a survey response in time for this report. It should also be noted that not all respondents were able to provide answers to all the questions, either because the information was not available, unknown or not applicable. In many instances, the processes and activities of different S&L programs within one country are indivisible where responses were provided that combined different programs. These are indicated in the report.

Table 2: Countries and S&L programs included in the CLASP survey results

Country	ISO Abbreviations	MEPS	Mandatory Labelling	Voluntary Labelling
Argentina	AR	✓	✓	
Australia	AU	✓	✓	
Canada	CA	✓	✓	✓
Chile	CL		✓	
China	CN	✓	✓	
Germany	DE	✓	✓	
India	IN		✓	✓
Italy	IT	✓	✓	
Japan	JP	✓ <sup>(1)</sup>		✓
Mexico	MX	✓	✓	
South Korea	KR	✓	✓	✓
Tunisia	TN	✓	✓	
United Kingdom	UK	✓	✓	✓
USA	US		✓	✓

*Note (1): This program is Top Runner which is not a minimum energy performance standard but is classified with MEPS for this study.*

## 4 SUMMARY OF FINDINGS

The following section describes the major findings of the survey based on responses received to the questionnaire, augmented in some cases by responses to questions of clarification or supporting information provided to the researchers. Reference is also made to the results of studies undertaken in Europe, as highlighted in the previous section.

### 4.1 POLICY MEASURES AND MONITORING, VERIFICATION AND ENFORCEMENT FRAMEWORKS

Almost all S&L programs have a foundation in law that provides the operating environment and relevant powers and authorities, whether these programs are mandatory or voluntary (see Table 3). A more detailed description of the legal framework for each program is provided in Table 4. The detailed provisions within these legal instruments vary according to the design of each program.

Table 3: Legal status of S&L programs

	AR	AU	CA	CL	CN	DE	IN	IT	JP	MX	KR	TN	UK	US
Mandatory Labelling & MEPS	NL	SL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
Voluntary Labelling			AA				NL		NL		NL		NL	NL

*Key: NL = national law; SL = state law; AA = Administrative arrangement*

With respect to MV&E processes, the ‘rules’ of individual programs are divided between stipulations identified in legislation and those contained in administrative guidelines or similar documents. Exactly how requirements are distributed between legislation and more informal documents is particular to each individual program. However in most cases, framework legislation places requirements on product suppliers to provide specified information on product energy performance and usually provides the powers to undertake enforcement actions. In some countries, the legislation also describes the triggers for verification testing and the range of sanctions that may be imposed. Appeal processes may also be included in legislation.

The differences in approach are illustrated by the fact that legislation in six European countries<sup>3</sup> (with respect to energy labelling) makes no mention of the institution that should perform appliance tests, while five others<sup>4</sup> stipulate that tests must be performed by accredited laboratories (ATLETE, 2010). This study also highlights the need to clearly define responsibilities in legislation, citing some instances where product importers are not explicitly covered by the requirement to provide accurate performance information.

Several countries highlighted that penalties with respect to non-compliance in energy labelling fell under existing but separate consumer protection law, and this aspect was therefore excluded from the legislation authorizing the energy efficiency program. The ALLETE survey of EU Members also noted that many countries used consumer protection or other laws to enforce the Energy Labelling Directive (see Figure 1).

Similarly, some countries also noted that MV&E processes were influenced by other regulations. For example, the response from Germany highlighted the importance of the

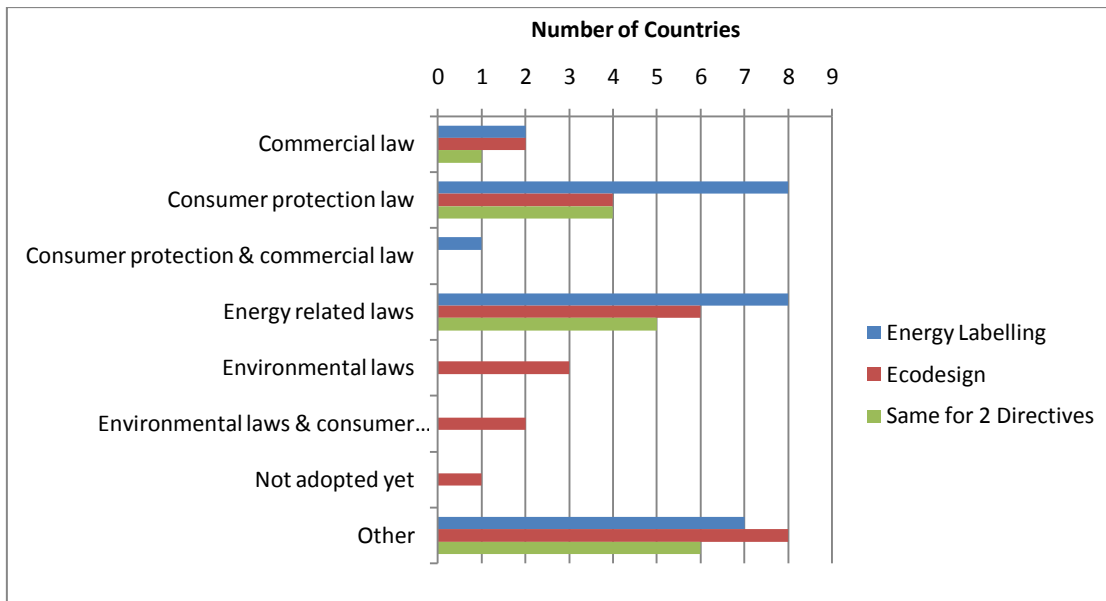
<sup>3</sup> Cyprus, Czech Republic, Estonia, Slovenia, Sweden and the UK.

<sup>4</sup> Denmark, Germany, Greece, Hungary and Italy.

European regulation (No. 765/2008) which provides an overview of accreditation and market surveillance undertaken within the EU, “requiring that there is an accreditation body or equivalent with distinguished tasks organising for (not 'doing'):

- *specific market surveillance activities;*
- *control of non-conforming products within the market;*
- *information sharing for Member States and the public; and*
- *ensuring correct implementation of the CE mark.”*

Figure 1: Type of legislation chosen to transpose the EU Directives (ATLETE 2010)



Framework legislation is generally used to describe the activities that shall be undertaken to ensure compliance when a third party is centrally involved in implementing the MV&E regime. This applies where independent certification authorities are involved in the verification process, and in Europe where responsibility for MV&E implementation is devolved to the Member States.

For example, the Ecodesign Framework Directive in Europe (2005/32/EC) requires Member States to put in place a Market Surveillance Authority (MSA), which has powers to carry out checks on products, request relevant information from manufacturers and ensure the withdrawal from the market of non compliant products. It also requires that penalties shall be “effective, proportionate and dissuasive, taking into account the extent of non compliance and the number of units of non-complying products placed on the Community market”.

In Mexico, the “Ley Federal Sobre Metrología y Normalización” establishes the roles and responsibilities for public and private organizations within the MV&E regime. These include the primary calibration laboratory (National Metrology Center), accreditation entities, and certification organizations.

In Canada the Energy Efficiency Act (1992) and the Energy Efficiency Regulations (1995) specify the use of an energy efficient verification mark from a certification organization accredited by the Standards Council of Canada (SCC) which must be carried by all products manufactured or entering Canada.

In summary, the CLASP survey found that, in general, the legislation underpinning energy efficiency programs, considered alongside program specific administrative guidelines, appear



to provide adequate support for MV&E processes. Given that elements of the MV&E regime are split between legislation and additional guidelines, there is a risk that requirements for participants may not be transparent and therefore programs need to ensure that steps are taken to ensure clarity.

All CLASP survey participants clearly identified the authority or bodies responsible for compliance in relation to energy efficiency programs, which in several cases is different from the agency with overall responsibility for the program (see Table 4).

Particular examples include the different roles of Commonwealth and State governments in Australia, and the USA, where the Federal Trade Commission has responsibility for mandatory energy labelling but the Department of Energy has responsibility for MV&E. In Germany and Spain, regional governments are responsible for market surveillance and enforcement for EU Energy Directives. Other countries with centralised government structures also have different agencies responsible for compliance. For example, responsibility for compliance with the mandatory labelling program in Argentina resides with the Secretariat of Commerce, while overall management is provided by the Secretariat of Energy.

In some cases the delineations of responsibility may be constitutional, while in other cases they may reflect a desire to reduce any potential conflict of interest by keeping the compliance monitoring and reporting functions at arms-length to program implementation.

While this survey did not delve into the effectiveness of these types of arrangements, there is clearly a need for a high level of attention to co-ordination in these instances to ensure that compliance activities remain appropriate to the scale, scope and objectives of the energy efficiency program. The European survey found that Member States did not generally find co-ordination between different authorities to be problematic. However, France did highlight the challenge in identifying those responsible for market surveillance (ATLETE, 2010).

Responsibility for enforcement (as opposed to wider MV&E responsibilities) often resides with authorities with concerns broader than just energy efficiency – related to consumer protection or electrical safety, for example. This also raises issues of co-ordination, particularly in setting an appropriate line where remediation activities undertaken by the program cease and the case is taken over by the enforcement authority for more stringent types of sanctions. Where legal sanctions are invoked, co-ordination between agencies is also important to ensure that due process has been undertaken by the program, and the correct records kept.

Table 4: National legislation for S&L Programs, authorities responsible for S&L programs and compliance activities

		MEPS	Mandatory Labels	Voluntary Labels
Argentina	<i>Legal framework for program</i>	Resolution 396/2009 - Secretaria de Energia	Resolution No. 319/1999 of the Secretariat of Industry, Commerce and Mines	Not applicable
	<i>Authority with overall responsibility</i>	Secretariat of Commerce	Secretariat of Energy	
	<i>Authority responsible for compliance</i>	Secretariat of Commerce	Secretariat of Commerce	
Australia	<i>Legal framework for program</i>	State and territory laws mandate MEPS and mandatory labelling.		Not applicable
	<i>Authority with overall responsibility</i>	The federal government manages most tasks and projects with state and territory Regulators involved in a cooperative model of management. A trust fund has been created to share funding the program where all jurisdictions contribute on a populational basis and all jurisdictions participate in a committee managing the program by consensus.		
	<i>Authority responsible for compliance</i>	All jurisdictions share these responsibilities with the Federal agency project managing all compliance matters for consistency sake		
Canada	<i>Legal framework for program</i>	Energy Efficiency Act (1992, amended 2009); Energy Efficiency Regulations (1995)		Administrative Agreement with U.S. EPA and DOE
	<i>Authority with overall responsibility</i>	NRCan, OEE		NRCan, OEE; EPA and DOE (U.S.)
	<i>Authority responsible for compliance</i>	NRCan, OEE		NRCan, OEE; EPA and DOE (U.S.)
Chile	<i>Legal framework for program</i>	Not applicable	Law 18.410 Organic Law of the Superintendence of Electricity and Fuels, Decree #298 that regulates the certification process of products that employ electricity and fuels. Ministerial resolutions that establish the compulsory certification and labelling of these products.	Not applicable
	<i>Authority with overall responsibility</i>		Superintendence of Electricity and Fuels. From 2010 onwards, the responsibility for the program is the Ministry of Energy.	

	<i>Authority responsible for compliance</i>		Superintendence of Electricity and Fuels (SEC)	
China	<i>Legal framework for program</i>	Energy Conservation Law	Energy Conservation Law	Not applicable
	<i>Authority with overall responsibility</i>	CNIS	CNIS	
	<i>Authority responsible for compliance</i>	CNIS, Administration of Quality, Supervision, Inspection and Quarantine	CNIS, Administration of Quality, Supervision, Inspection and Quarantine	
Germany	<i>Legal framework for program</i>	Energiebetriebsproduktegesetz (EBPG)(Energy Operation Product Law)	Energieverbrauchskennzeichnungsgesetz (EnVKG) (Energy Consumption Marking Law) + Energieverbrauchskennzeichnungsverordnung (EnVKV) (Energy Consumption Marking Regulation)	Not applicable
	<i>Authority with overall responsibility</i>	Fed. Ministry of Economics + Technology	Fed. Ministry of Economics + Technology	
	<i>Authority responsible for compliance</i>	Bundesländer (Federal states of Germany)	Bundesländer (Federal states of Germany)	
India	<i>Legal framework for program</i>	Not applicable	Energy Conservation Act 2001	Energy Conservation Act 2001
	<i>Authority with overall responsibility</i>		Bureau of Energy Efficiency	Bureau of Energy Efficiency
	<i>Authority responsible for compliance</i>		Bureau of Energy Efficiency	Bureau of Energy Efficiency
Italy	<i>Legal framework for program</i>	Dir 92/75/CEE (labeling); Dir 2005/32/CE (ECODESIGN); 2003 council decision		Not applicable
	<i>Authority with overall responsibility</i>	Economic Development Ministry		
	<i>Authority responsible for compliance</i>	Not Known		
Japan	<i>Legal framework for program</i>	<i>NB: Top Runner Program:</i> Act Concerning the Rational Use of Energy	Not applicable	Act Concerning the Rational Use of Energy
	<i>Authority with overall responsibility</i>	Ministry of Economy, Trade and Industry		Ministry of Economy, Trade and Industry
	<i>Authority responsible for compliance</i>	Ministry of Economy, Trade and Industry		Ministry of Economy, Trade and Industry
Mexico	<i>Legal framework for program</i>	LEY FEDERAL SOBRE METROLOGÍA Y NORMALIZACIÓN		Not applicable
	<i>Authority with overall responsibility</i>	ANCE/CONUEE		
	<i>Authority responsible for compliance</i>	Ministry of Economy		

Korea	<i>Legal framework for program</i>	Rational Energy Utilization Act		Rational Energy Utilization Act
	<i>Authority with overall responsibility</i>	Korea Energy Management Corporation(KEMCO)		Korea Energy Management Corporation(KEMCO)
	<i>Authority responsible for compliance</i>	Korea Energy Management Corporation(KEMCO)		Korea Energy Management Corporation(KEMCO)
Tunisia	<i>Legal framework for program</i>	Law 2004-72, The Decree 2004-2145, Order of the Ministers of Industry and Energy and Commerce of September 10, 2004, Order of the Minister of Industry, Energy and Small and Medium Enterprises and the Minister of Trade and Handicraft of April 21, 2009		Not applicable
	<i>Authority with overall responsibility</i>	ANME		
	<i>Authority responsible for compliance</i>	Ministry of Trade		
UK	<i>Legal framework for program</i>	2005/32/EC Framework Directive and amending Directive 2008/28/EC plus Implementing Measures enacted as Regulations directly by the European Commission on a product by product basis	92-75-EC Framework Directive (currently under revision), plus 11 implementing directives, for each product type in program. (94/2/EEC,95/12/EC, 96/89/EC, 2003/66/EC, 95/12/EC, 96/89/EC, 95/13/EC, 96/60/EC, 97/17/EC, 99/9/EC, 98/11/EEC, 2002/31/EC, 2002/40/EC) All are transposed into equivalent UK Regulations	2001/469/EC covers EU implementation of Energy Star. This is transposed into equivalent UK Regulations
	<i>Authority with overall responsibility</i>	DEFRA	DEFRA	DEFRA
	<i>Authority responsible for compliance</i>	MSA	MSA and TSO	DEFRA
USA	<i>Legal framework for program</i>	Not available	Energy Policy and Conservation Act	the Energy Star program was established by EPA in 1992, under authority of the Clean Air Act Section 103(g), among others
	<i>Authority with overall responsibility</i>		FTC has the responsibility to issue labelling requirements. Conservations, standards and testing procedures (MEPS) are the responsibility of DoE	US EPA and US DOE
	<i>Authority responsible for compliance</i>		FTC has responsibility for labelling and DoE has responsibility for for compliance with Conservation Standards / MEPS	US EPA and US DOE

## 4.2 RESOURCE ALLOCATION

Half of the respondents in the CLASP survey were able to provide information on the total financial resources allocated by energy efficiency programs to compliance activities, as shown in Table 5, and it was apparent that many programs lack an itemized budget for compliance activities. Where there exists a split in responsibilities between agencies (as discussed in the previous section), financial allocations may not be fully transparent. However, the inability of many programs to access even limited data suggests that budgets for MV&E, even where they exist, are often not readily available.

Without clear budget allocations, programs may find it difficult to take a strategic approach to compliance activities, and some responses suggested that little consideration had been given to the development of plans for MV&E activities.

However, in some instances there was demonstrated commitment despite a lack of itemized budget. For example, Natural Resources Canada (NRCan) was unable to provide a breakdown of annual resources for compliance activities but provided information confirming a five year, USD31m investment into their ecoENERGY Efficiency Initiative, through which energy efficiency standards for a number of products have been or will be introduced or raised. Funding from this program is committed to their compliance program including independent testing, marketplace audits and regular communications with dealers and importers (NRCan, 2009).

Few countries were able to identify the quantity of program staff time devoted to compliance. Clearly many program staff undertake multiple responsibilities and compliance activities may be part of several people's jobs. As a result, the total amount of staff time devoted to this topic may not be transparent or obvious.

Many programs use external personnel for aspects of this compliance work, in which case they pay for services rather than employ staff directly. This may further obscure the number of people devoted to MV&E.

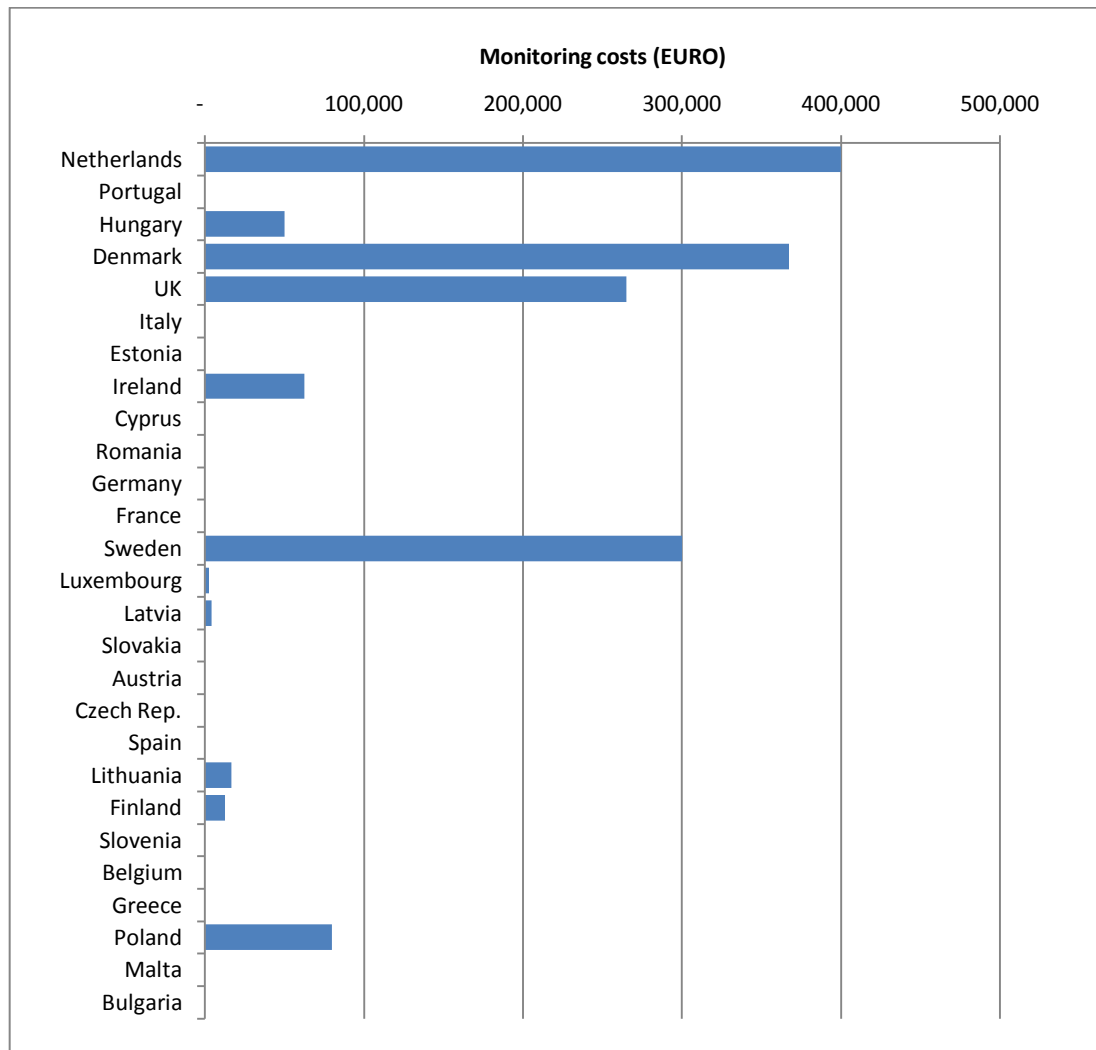
Table 5: Annual financial and staff resource allocation for compliance activities (responding countries)

Country	AU	CA	JP	IN	MX	KR	UK
Program	<i>M&amp;L</i>	<i>M&amp;L</i>	<i>TR &amp; VL</i>	<i>ML &amp; VL</i>	<i>M&amp;L</i>	<i>M&amp;L, VL</i>	<i>M&amp;L</i>
USD (000's)	950	500-750	2,180	n.a.	184	642	600-1500
Person/yr	n.a.	0.2	10	>4	n.a.	5.3	n.a.

Key: *M* = MEPS *M&L* = MEPS and Labelling *TR* = Top Runner  
*VL* = Voluntary Labelling *ML* = Mandatory Labelling *n.a.* = not available

Similarly, results from the 2009 and 2010 surveys of European Member States showed that many countries were unable to identify costs associated with MV&E activities, and that that expenditure varied considerably amongst those that could (Fraunhofer et al, 2009; ATLETE, 2010). Figure 2 summarizes the information provided on the costs of monitoring compliance with the European energy label.

Figure 2: Annual costs incurred by EU Members States in monitoring retailer compliance with Energy Labelling Directive (Fraunhofer, 2009)



As with the CLASP survey, many European countries found it difficult to identify numbers of staff devoted to the MV&E issue, and data provided showed a high proportion of part time staff (see Table 6). In addition, the European surveys have highlighted the issue of too few staff targeted at MV&E, competing priorities and limitations imposed by constrained financial resources (Fraunhofer et al, 2009; ATLETE, 2010).

Table 6: Staff involved with Energy Labelling and Ecodesign (ATLETE, 2010)

	Enforcement Authority Staff on Energy Labelling	Enforcement Authority Total Staff	Other
<b>Austria</b>	Declared confidential	Declared confidential	
<b>Belgium</b>	N/A	100 (field inspectors)	
<b>Bulgaria</b>	N/A	178 (total) incl. 134 (market surveillance)	
<b>Cyprus</b>	N/A	N/A	1 part time (Ministry – energy labelling) 1 part time (Ministry - Ecodesign)
<b>Czech Republic</b>	2 part time	N/A	
<b>Denmark</b>	5-6 part time	N/A	
<b>Estonia</b>	2 part time	N/A	
<b>Finland</b>	1 full time, 1 part time, 3 field inspectors	N/A	1 full time + 1 part time (Ecodesign) 1 part time (Ministry)
<b>France</b>	N/A	N/A	1 part time (Ministry of Environment) 1 part time (energy agency)
<b>Germany</b>	Regional government responsibility	N/A	1 part time (Ministry of Economics)
<b>Greece</b>	5 part time	N/A	
<b>Hungary</b>	30 part time	100 (total staff)	
<b>Italy</b>	N/A	N/A	
<b>Latvia</b>	1 full time, 2 part time	100 (total staff) 30 (electrical appliances)	
<b>Lithuania</b>	11 part time	N/A	
<b>Luxembourg</b>	N/A	N/A	
<b>Malta</b>	N/A	35 (total staff) 4 (market surveillance)	
<b>Netherlands</b>	4 full time	N/A	1 part time (energy agency)
<b>Poland</b>	N/A	N/A	
<b>Portugal</b>	N/A	600 (total staff) 350 (market surveillance)	
<b>Romania</b>	N/A	60 (total staff) 40 (inspectors)	
<b>Slovakia</b>	10 part time	N/A	
<b>Slovenia</b>	N/A		
<b>Spain</b>	Regional government responsibility	N/A	1 full time equivalent (energy agency)
<b>Sweden</b>	3 full time	N/A	6 full time on Ecodesign
<b>UK</b>	6 full time (also Ecodesign)	N/A	

*N/A = answer not available*

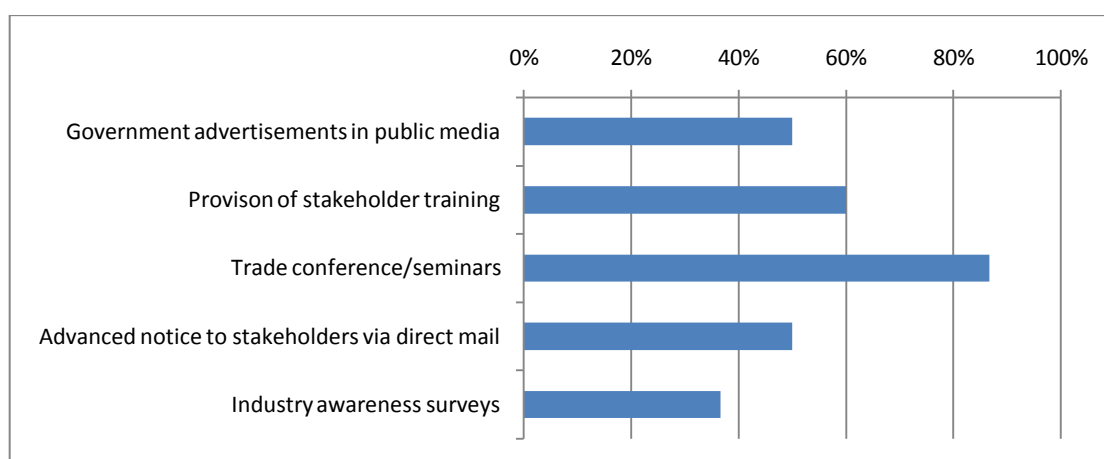
### 4.3 STAKEHOLDER EDUCATION

Over 80% of surveyed programs provide information and education to improve stakeholder awareness of their obligations under the mandatory or voluntary program rules and to assist them meet their obligations (see Figure 3). Most commonly this is via trade conferences or seminars, but also includes a range of other educational opportunities such as public adverts, direct mail and specific training activities. Many countries indicated that the precise educational method used depends upon the type of stakeholders to be reached and the product.

Less than 40% of survey participants conduct surveys to determine whether industry actually understands program requirements or to determine whether the information provided through stakeholder education activities is effective.

A consistent finding of the European surveys led to the recommendation to *“involve sellers through training/information campaigns on energy labelling purposes and requirements”* ATLETE (2010).

Figure 3: Methods of stakeholder education



\* Note: most programs may apply more than one action therefore the total exceeds 100%.

The lead-times given to stakeholders to enable them to adjust to new requirements varies from two weeks to two years depending on whether the lead-time is for a minor administrative change to an existing program or the introduction of a significant and new program. Lead-times for major new programs are often coupled with the implementation of a consultation strategy where stakeholders are involved in the development of requirements for new categories of products. Some of the voluntary programs have shorter lead-times but several have similar lead times to regulations. The US Energy Star program noted that: *“A specification for a product new to Energy Star has an open stakeholder process that takes about 9 months to 2-3 years. For a revision of specification for a product already in Energy Star is about 18 months”*.

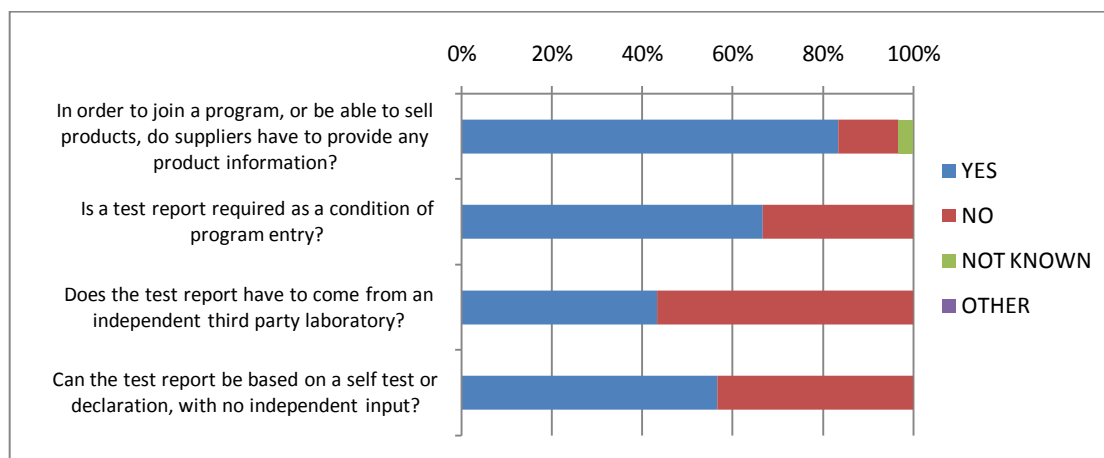
### 4.4 PROGRAM ENTRY CONDITIONS

Over 80% of countries surveyed have some form of compulsory entry condition for the S&L programs they implement. That is, product suppliers must provide specific information or make a declaration about their product’s energy performance in order for the product to be included in the national program. For example, in Canada suppliers must ensure that an energy efficient verification mark from a certification organization, accredited by the Standards Council of Canada (SCC), is on a product before it can be sold. Similarly, Chile



requires suppliers to certificate their products through a third party certification institution prior to entering the market. In Australia, all products within the scope of mandatory S&L programs must register the details of all models prior to be sold.

Figure 4: Entry conditions required by surveyed S&L programs



There is considerable variation between programs in how entry conditions are satisfied. Two-thirds of programs surveyed require a test report to be supplied as part of the entry conditions and about three-quarters of these must come from an independent third party laboratory. Other programs allow information from a range of sources including self-declarations (requiring no independent input) that may be derived from in-house testing or, in relatively few instances, from calculations.

As is the case in Canada, and will be required for products under the European Ecodesign Directive, verification marks on products are required to signify that the product has been tested. Even where test reports are not required to be lodged as a condition of participation, suppliers are usually obliged to produce this type of information as justification upon request, such as in the UK. In some instances, manufacturers must allow the inspection and testing of their own factories as part of the quality assurance process, such as in Korea.

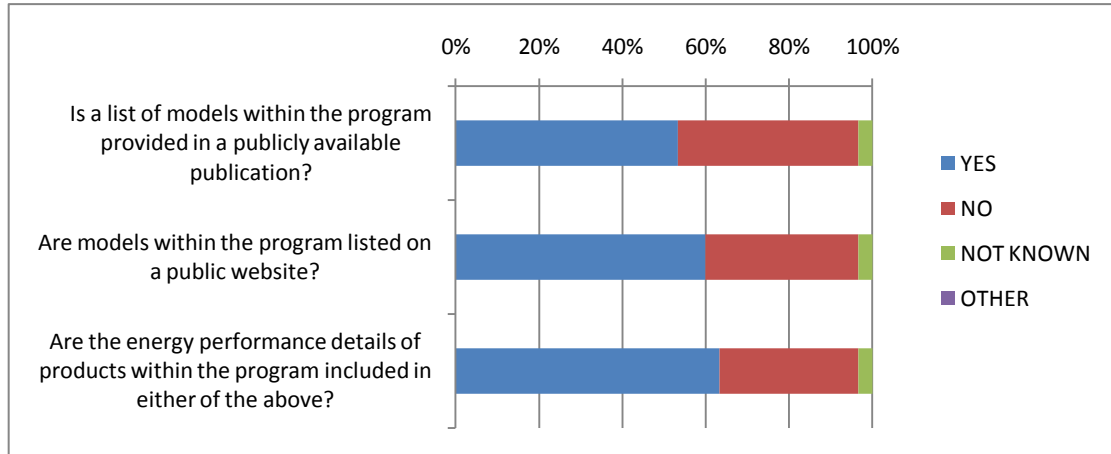
The majority of programs use the information provided by suppliers in communications with consumers, to help them identify which individual product models are covered and their energy performance (see Section 4.5 below).

Where programs have no centralised process of collecting energy performance details for individual products, the opportunity to provide this information to consumers will be unavailable, and market monitoring may be hampered. A centralised list of products that have satisfied entry conditions makes the task of checking compliance easier for program administrators. For example, claims of unregistered or uncertified products seen in the marketplace can be verified quickly and inexpensively and assist in the identification of products worth closer inspection and possibly verification testing.

#### 4.5 PUBLIC ACCESS TO INFORMATION

Approximately 60% of surveyed programs maintain a publicly available list of participating products. These lists are available either on line and/or in a printed publication. Just over 60% of all programs include energy performance information in this material available to the public.

Figure 5: Publication of product information



#### 4.6 MARKET SURVEILLANCE ACTIVITIES

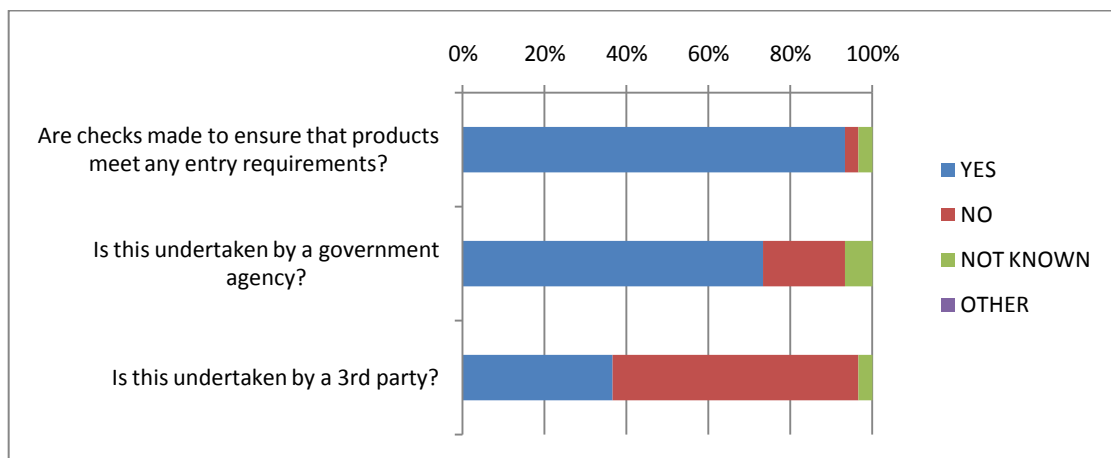
Market surveillance includes those activities undertaken to monitor compliance with program entry conditions and labelling requirements once products are in the marketplace. In this study Market Surveillance is considered a separate process from verification testing within the scope of MV&E.

Surveillance activities act as the precursor to verification testing and possible subsequent enforcement by identifying potentially non-compliant products and so ensuring that higher cost verification testing can be organized in a cost effective manner.

Of the programs surveyed, over 90% conduct surveillance activities to check that participating products meet entry conditions (see Figure 6). The most common reasons for undertaking surveillance include:

- To check that entry conditions (e.g. certification or registration) have been met by all products within the scope of the program;
- To check that rules regarding the display of labels are being adhered to.

Figure 6: Market surveillance activities undertaken by S&L programs



Market surveillance tends to be carried out by government agencies, although this may not be the energy efficiency agency responsible for the S&L program. For example Border Control Authorities undertake surveillance in some countries, as do consumer protection

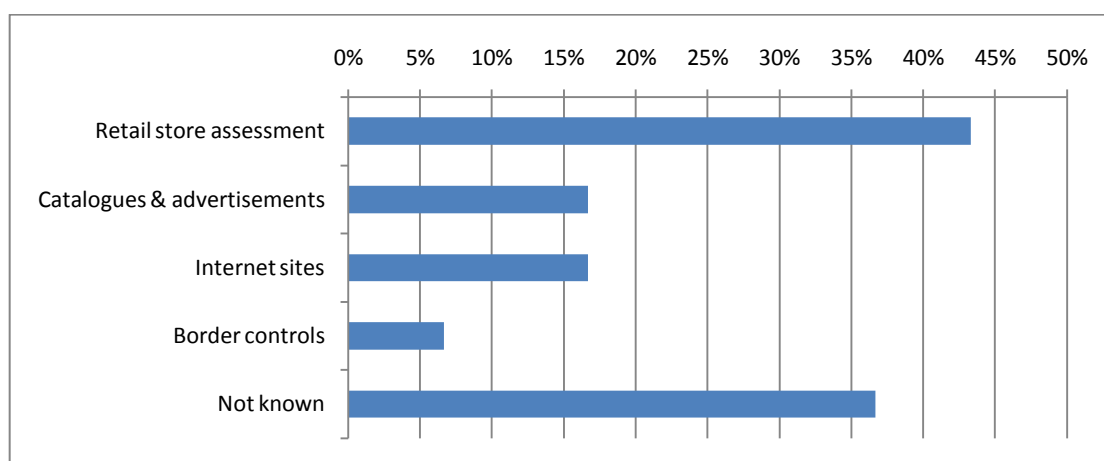
and electrical safety authorities. Just over 35% of countries use non-governmental bodies to undertake surveillance; approximately 20% use a combination of governmental and third party services.

As an example of the use of a third-party contractor, Australia has recently signed contract with the Australian Refrigeration Council Ltd (ARC) to provide 12 trained investigators to undertake market surveillance activities throughout Australia over the next three years (E3, 2009).

The most common surveillance method used is via visual checks at retail outlets, often used in conjunction with information obtained through other sources, such as certification and registration processes or provided by border controls (see Figure 7).

Given that many of the products included within the scope of S&L programs are internationally traded, it is surprising that only three programs (Australia’s MEPS program<sup>5</sup>, Canada’s Standards and Labelling Program and Chile’s Energy Efficiency Labelling Program) mentioned the use of border controls as part of their surveillance processes.

Figure 7: Method of undertaking market surveillance



\* Note: most programs may apply more than one action therefore the total exceeds 100%.

Very few programs indicated that current surveillance activities include the monitoring of marketing catalogues. As larger proportions of products are offered for sale from Internet sites, particularly in the non-domestic sector, the need to monitor these channels is becoming increasingly important. Some countries have indicated that Internet sites are currently included in their monitoring processes (for example, the USA’s Energy Star program include monitoring of internet sites as part of their routine surveillance activities). However, it may be an area where programs require updated authorization or a clarification of existing powers.

The high level of ‘Not Known’ in Figure 7 is of major concern, as it indicates that at least 35% of programs appear to have a poor understanding of which surveillance activities are carried out. It may also suggest that little market surveillance activity is undertaken in practice in these programs, or that it is sporadic.

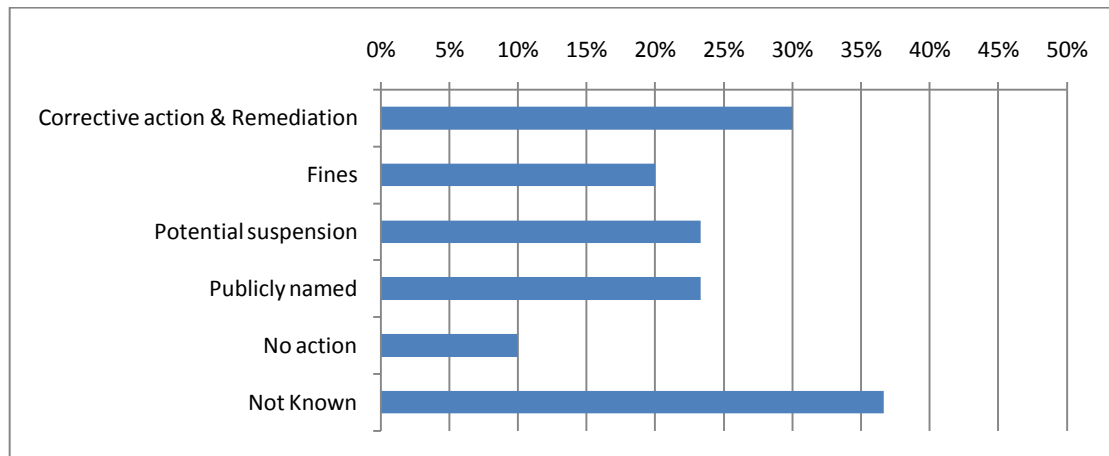
#### 4.6.1 Checking entry requirements

When products are found to have not met entry requirements, over 50% of programs have a variety of remedial or enforcement procedures that are or can be taken. These tend to involve a staged response, commencing with initial warnings and requests for corrective action, followed by the threat of sanctions. When remedial action is not taken satisfactorily,

<sup>5</sup> For some products only.

programs have recourse to take several actions, including combinations of fines, withdrawal of the product from the market and/or publicly identifying the non-compliant supplier (see Figure 8).

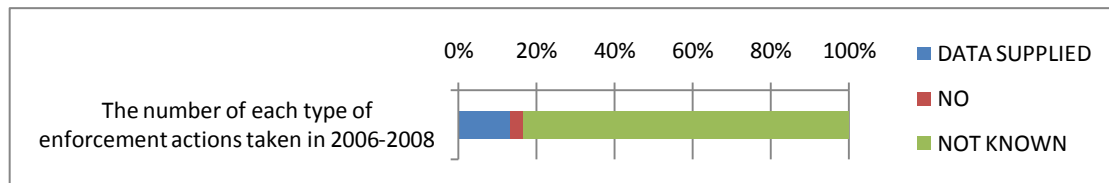
Figure 8: Actions taken in response to incidence of non-compliance with entry conditions



\* Note: Most programs apply more than one action therefore the total exceeds 100%.

Despite more than half of the programs surveyed listing at least one action taken when unregistered products were found, only 13% were able to provide information about the number of actions taken to enforce entry conditions in recent years (2006, 2007 and 2008). 3% were able to report that no such actions took place, while the remaining 80% were unable to answer because the information was not collected or available (see Figure 9).

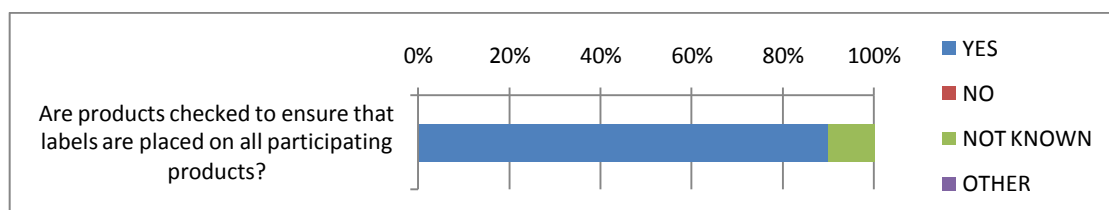
Figure 9: Actions taken to enforce entry conditions, 2006-2008



#### 4.6.2 Checking labelling requirements

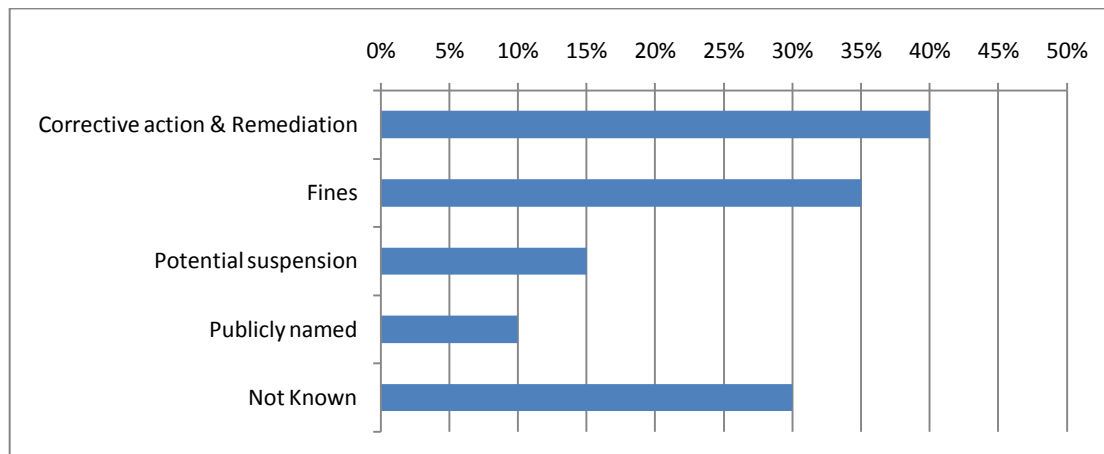
90% of the 20 labelling programs surveyed indicated that they monitored whether energy labels were correctly placed on eligible products. It should be noted that the body responsible for placing labels on products varies by program. For example, participating manufacturers in the Energy Star program are required to place labels on the products, while it is the retailer's responsibility in Europe.

Figure 10: Monitoring of the use of energy labels



70% of labelling programs surveyed indicated that any labelling transgressions detected were acted upon. The initial response in 40% of programs includes warnings and requests for corrective action. When these are unheeded, programs tend to use fines, removal from the market (or program) and public identification as further sanctions (see Figure 11).

Figure 11: Actions taken in response to incidence of non-compliance with labelling requirements



*\* Note almost half of survey participants did not answer this question and of those that did, most programs may apply more than one action therefore the total exceeds 100%.*

Only 10% of labelling programs were able to provide figures on the number of actions taken between 2006 and 2008 against products that were found to be unlabelled. The large majority of programs reported that they had no information on the numbers of actions taken, although Argentina indicated that this information could be accessed by application to the Department of Commerce, though it was not publically available. Several programs which used the services of certification authorities indicated that they were not provided with indications of the numbers of actions taken by these bodies.

While most programs undertake surveillance activities, there appears to be a 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 be irregular. A number of countries, particularly the UK, indicated that plans are underway to develop more comprehensive monitoring processes, which suggests that the situation is improving.

Once offences have been detected, remedial action is clearly an appropriate first response and is likely to prove effective in the majority of cases, particularly where the offence was due to ignorance of the requirements rather than intentional avoidance. However, it is of concern that very few programs were able to readily access records of responses as this indicates, at best, an inability to spot repeat offenders, and therefore target future enforcement action.

These market surveillance results are highly consistent with the findings in Europe. As shown in Figure 12, nearly 80% of Member States check labelling requirements through store checks, although fewer undertake checks on catalogue sales and Internet sites (see Figure 13).

Figure 12: Method of surveillance for labels in shops by EU Member States (ATLETE, 2010)

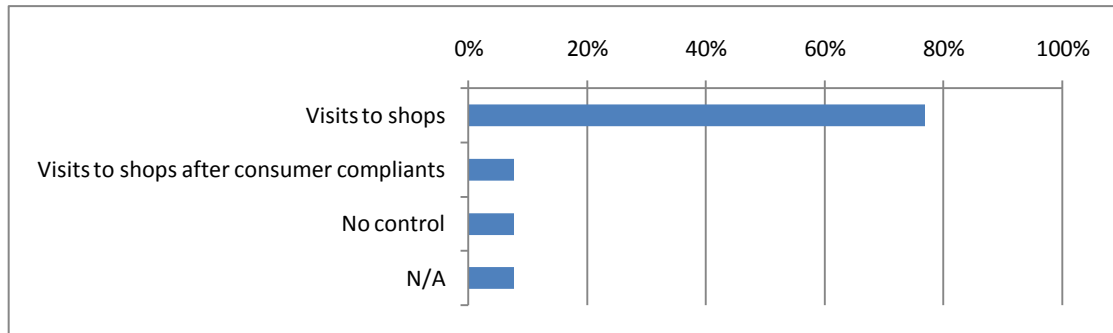
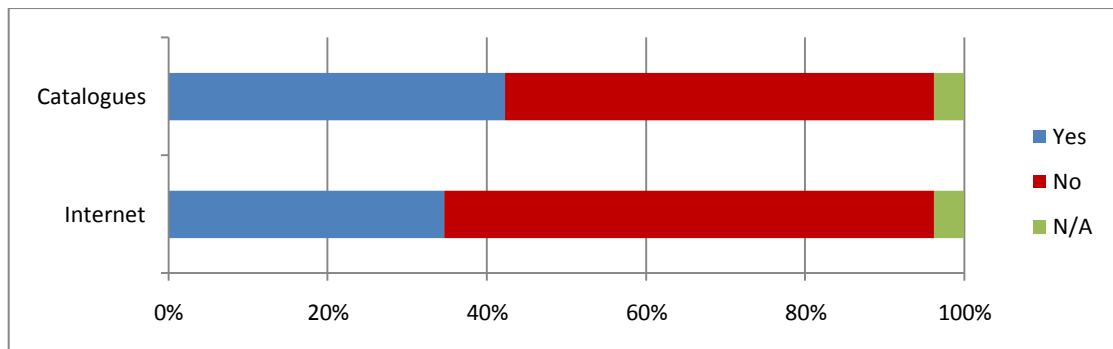
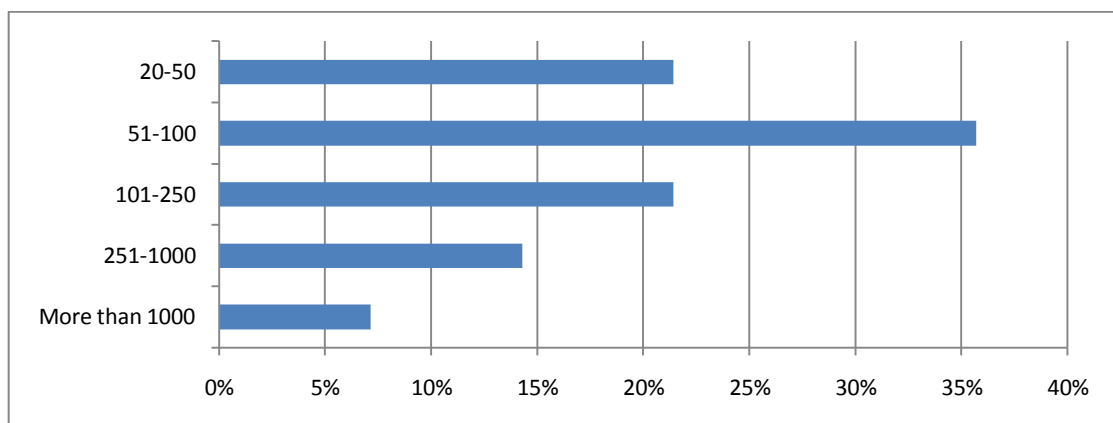


Figure 13: Monitoring of compliance in catalogues and Internet offers by EU Member States (ATLETE, 2010)



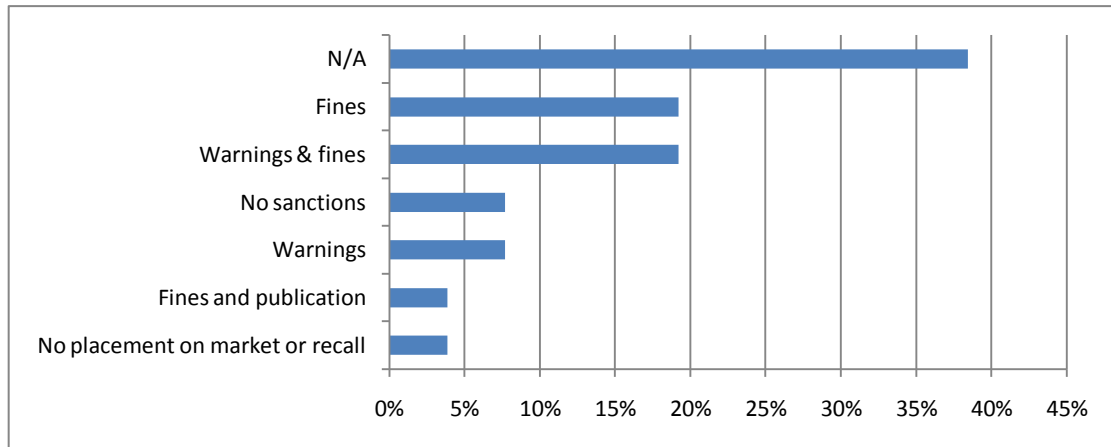
Several countries reported that annual checks were undertaken regularly, including the Netherlands, Romania, Finland, Bulgaria, Estonia, Sweden, Austria, Denmark, Latvia, Lithuania and the UK. The number of shops visited annually during market surveillance varies considerably from 20 to over 1,000, as shown in Figure 14.

Figure 14: Number of shops monitored per year by EU Member States (ATLETE, 2010)



Just over 60% of Member States indicated they can apply a range of sanctions to non-compliant retailers, comprising a similar range of options as found in this survey (see Figure 15).

Figure 15: Type of sanctions in case of retailers' non compliance by EU Member States (ATLETE, 2010)



## 4.7 VERIFICATION PROCESSES

### 4.7.1 Quantities of Verification Tests by Responding Countries

Over 80% of programs reported that they undertake product testing to check energy performance requirements or claims. In the majority of programs, government agencies are responsible for undertaking verification tests. However, 13% of programs use a separate entity, such as a certification organization. It is typical in these cases that programs do not have access to the results of verification tests.

Figure 16: Programs undertaking verification tests

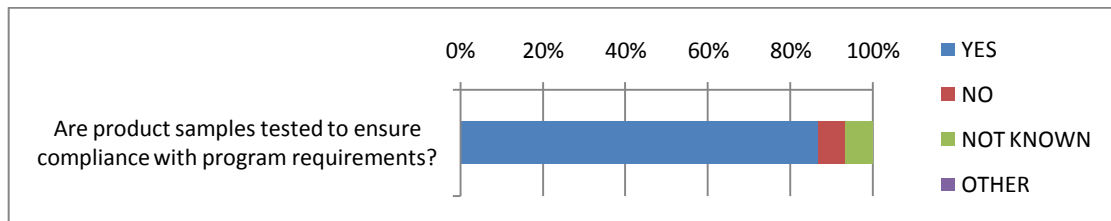
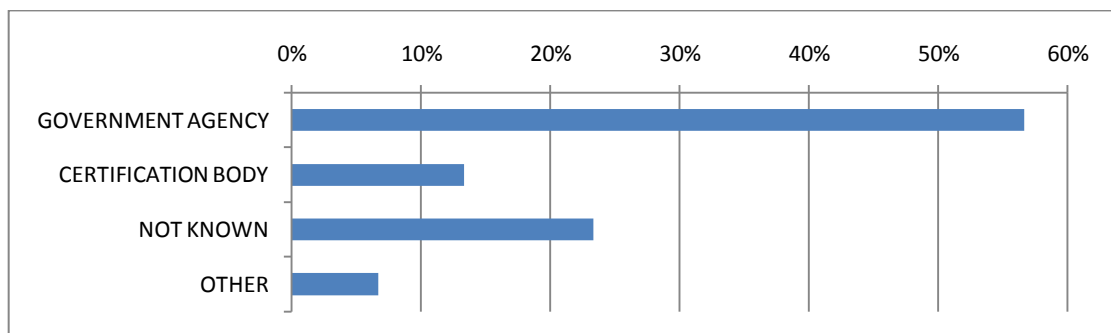


Figure 17: Organization undertaking verification testing



Only 50% of programs provided figures on the number of tests undertaken in recent years (shown in Table 7). Where data was supplied, the number of verification tests completed over the past three years by different programs varies, although there is a significant increase - of almost 40% - over the three-year period between 2006 and 2008. It should be noted that most of this can be attributed to the testing conducted in the UK in 2008.

Table 7: Number of products tested for compliance by year (responding countries)

Country	AU	CN	IN	JP	MX	KR			UK			US
Program	M&L	M&L	ML&VL	TR	M&L	M	ML	VL	M	ML	VL	VL
2006	58	54	0	0	91	180	84	160	0	13	75	36
2007	113	73	7	0	132	228	88	135	100	18	0	11
2008	88	124	n/a	24	108	142	93	82	0	300	82	n/a

Key: M = MEPS  
 VL = Voluntary Labelling  
 M&L = MEPS and Labelling  
 ML = Mandatory Labelling  
 TR = Top Runner

In Europe, just over 50% of Member States reported that they undertake verification tests, although tests are undertaken by other organizations such as consumer organizations in some cases (ATLETE, 2010). The stated reasons for not undertaking more testing include:

- High cost (6 countries);
- Compliance not a priority issue (3 countries);
- Lack of laboratory facilities (3 countries).

#### 4.7.2 Expenditure on Verification Tests

The programmatic expenditure on tests shown in Table 8 exhibits a wide distribution, although the total amount of funding spent on off-the-shelf testing of appliances amongst respondents has increased from USD900,000 to over USD2m in the period 2006-2008, representing an increase of 130% (see Figure 18).

Table 8: Approximate annual expenditure on verification tests (USD '000s) (responding countries)

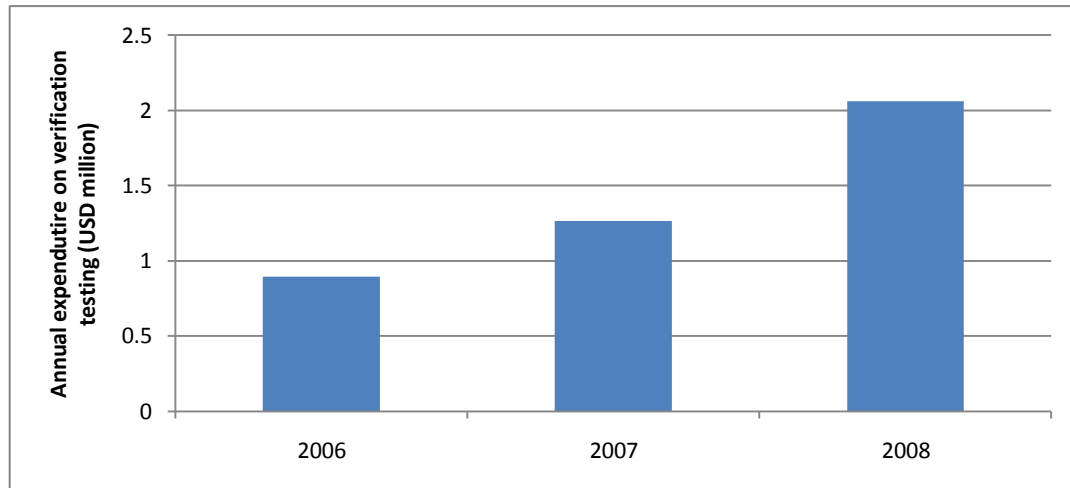
Country	AU	IN	JP	MX	KR	UK	US
Program	M&L	VL	TR	M&L	M&L	M&L	VL
2006	\$350	\$0	\$0	\$56	\$390	n.a.	\$100
2007	\$450	\$91	\$0	\$80	\$400	\$140	\$100
2008	\$550	\$251	\$100	\$65	\$335	\$570	\$100

Key: M = MEPS  
 VL = Voluntary Labelling  
 M&L = MEPS and Labelling  
 ML = Mandatory Labelling  
 TR = Top Runner

During the same period, the average annual expenditure on verification testing per country by national programs has risen from USD130,000 to USD295,000. This illustrates the growing importance given to compliance by program administrators.



Figure 18: Annual total funding spent on off-the-shelf testing (USD) (eleven responding programs)



The expenditure on verification testing also varies widely amongst EU Member States, as noted in the 2009 survey:

*“There are very large differences in resources used for market surveillance between Member States. The Netherlands and Denmark e.g. spend about 300,000 Euro annually, while a number of countries do not spend anything at all. Similarly, some countries make 60-70 tests annually while others do not make any tests. It is, however, difficult to assess and compare Member States’ market surveillance activities since the degree to which Member States test appliances with the objective of measuring compliance of a product against several Directives (several requirements) varies strongly.” (Fraunhofer et al, 2009)*

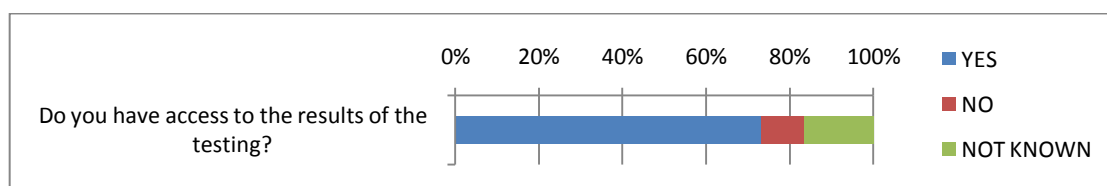
The average cost per test calculated from the CLASP survey responses vary from USD600 to USD4,000 and higher. However, this variation is to be expected since it reflects not only the range of product types tested (from external power supply to commercial refrigerators) but also the different national cost structure.

Large variations in test costs are also found in Europe, with figures per unit test of €500 and €640 reported in Finland and Estonia respectively, and between 2,000 and 6,000 in the Netherlands. The most expensive tests appear to be in the UK where costs of between €11,000-16,000 were reported (ATLETE, 2010).

#### 4.7.3 The Results of Verification Tests

Almost three quarters (73%) of program administrators have access to the results of testing. Those that don’t (including Argentina’s mandatory labelling and Germany’s mandatory labelling and standards programs) cite confidentiality agreements between testing contractors and manufacturers or lack of legal obligation as the reasons for their limited access to test results. In the case of Chile, the government can order disclosure of results where it deems necessary.

Figure 19: Access to testing results



57% of programs surveyed could not, or did not, provide figures for numbers of appliances that passed or failed verification tests.

Of the programs that did provide data on pass/fail numbers, the reported failure rate from compliance tests is extremely varied, ranging from 0% to 100%, as shown in Table 9. Considerable care needs to be given to the interpretation of these results, and in particular it cannot be inferred that these figures are indicative of the performance of the stock of products in any country. The reasons for this include:

- This data provided may contain the results of initial screen tests and not those of final verification tests. It is usual for the number of products failing a screen test to be greater than those failing a final compliance testing process;
- As found in the survey, most countries use a process to target verification tests at products with a higher than average risk of failure. Where a high rate of non-compliance is found, this may therefore reflect the effective targeting of non-compliant products in the marketplace;
- Low rates of non-compliance may also be due to the approach taken in some programs where suppliers are given the opportunity to take corrective action before a test is deemed to have 'failed.'

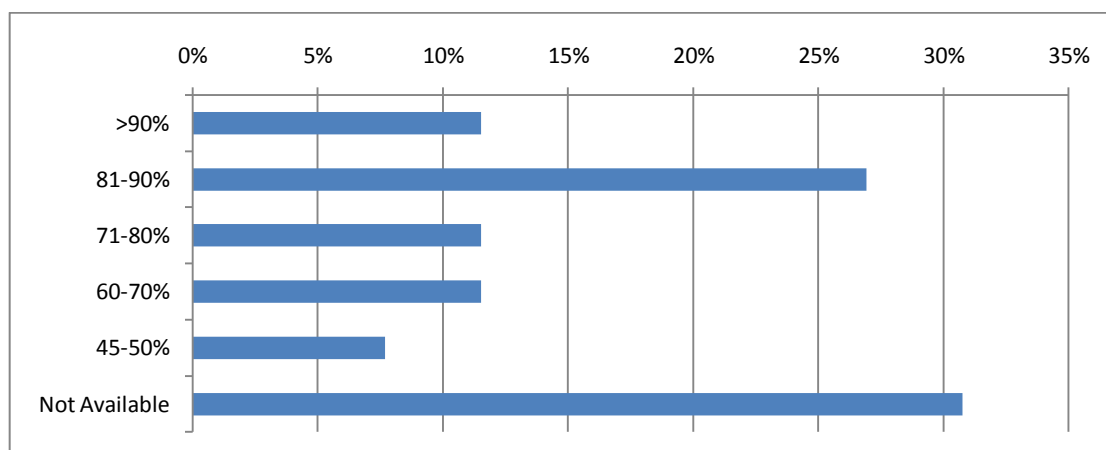
Table 9: Share of verification tests producing a failure (responding countries)

Country	AU	CN	MX	KR			UK			US
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

European surveys provide no directly comparable results. However, Figure 20 shows the level of compliance by retailers with respect to the Energy Labelling Directive.

Figure 20: European retailer's compliance with Energy Labelling Directive (ATLETE, 2010)



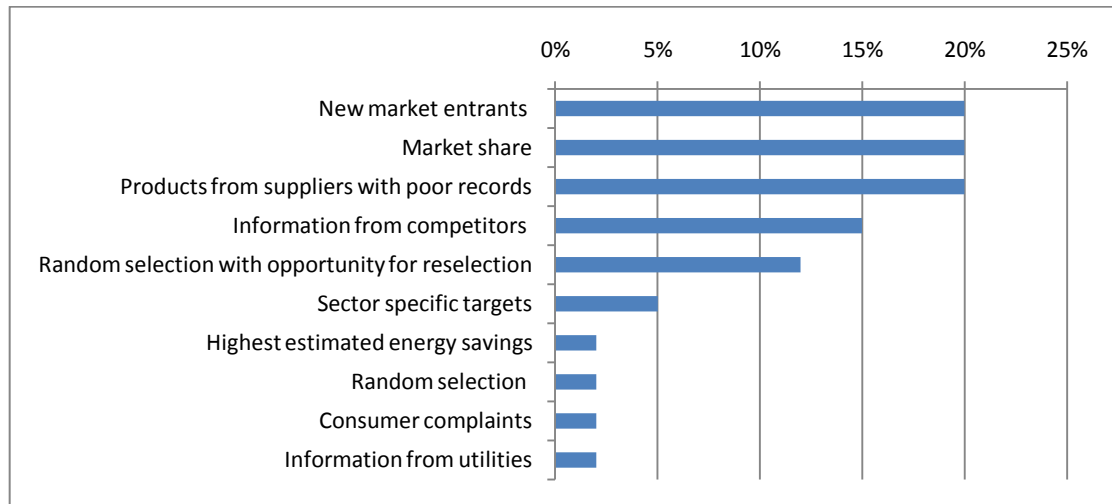
As well as the high proportion of programs that are unable to provide results, the other striking similarity with the results of the CLASP survey is the wide range of compliance rates.

#### 4.7.4 Model Sampling for Verification Tests

The majority of programs test between one and five samples per product, depending on the product. For example, it is fairly typical for one sample of a major appliance like a refrigerator to be tested initially and if it fails then two subsequent samples may be tested. However, with smaller products such as light bulbs prone to variability, a larger sample of five or more may be tested in first round testing.

Respondents showed that products are selected for testing for a variety of reasons including those identified in Figure 21.

Figure 21: Product selection criteria for verification testing



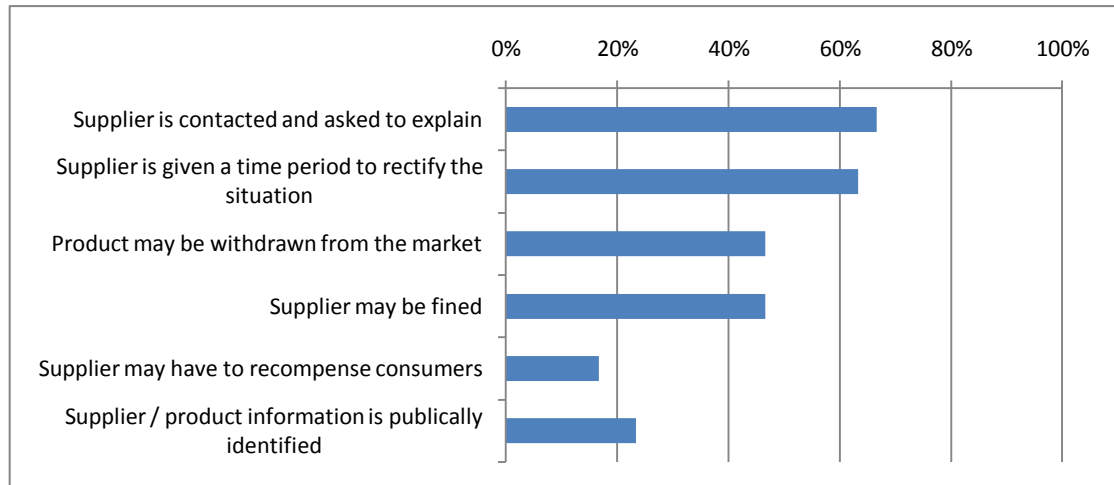
\* Note: Most programs apply more than one criterion therefore the total exceeds 100%.

Samples for testing are generally collected from retail outlets with a minority being provided directly by manufacturers (less than 12%). Models are generally selected by government representatives or laboratory or contractor staff, with only one program allowing selection by the manufacturer (in the Mexican mandatory labelling and MEPS program). It is specified that manufacturers are not allowed to choose samples in half of all programs surveyed.

#### 4.7.5 Enforcement Actions

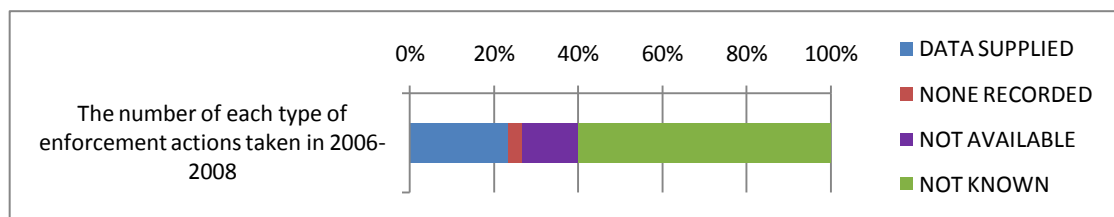
Not all respondents were able to explain what happens when a product failed a verification test. However, the 65% of programs that could do so use a process involving several potential responses. As indicated in Figure 22, the most common initial response is to seek an explanation from the supplier, who is asked to provide a remedy. Usually only when this fails are more drastic actions implemented, such as fines, or removal from the program.

Figure 22: Responses to failed compliance tests



When asked about the usage frequency of these sanctions over the past three years, only approximately 25% of respondents were able to provide an answer (see Figure 23). This level of response does not appear to match the failure rates indicated in Table 9, suggesting either that the records of enforcement actions are not readily accessible, or that many instances of non-compliance are not being pursued by appropriate remediation or sanctions.

Figure 23: Frequency of enforcement actions taken following failed compliance tests, 2006-2008



In Europe, Member States have a similar range of sanctions that may be applied when instances of non-compliance are detected. Generally warnings and fines are considered the most effective remedies. However, some countries consider fines alone as insufficient to improve compliance, particularly in relation to multinational companies. Sweden, in particular, considers that public disclosure is the most effective sanction.

The range of possible fines that can be imposed by EU Member States for non-compliance is shown in Table 10. It should be noted that the process involved in fining companies for non-compliance varies between countries, and where this involves a court case, fines are seldom pursued.

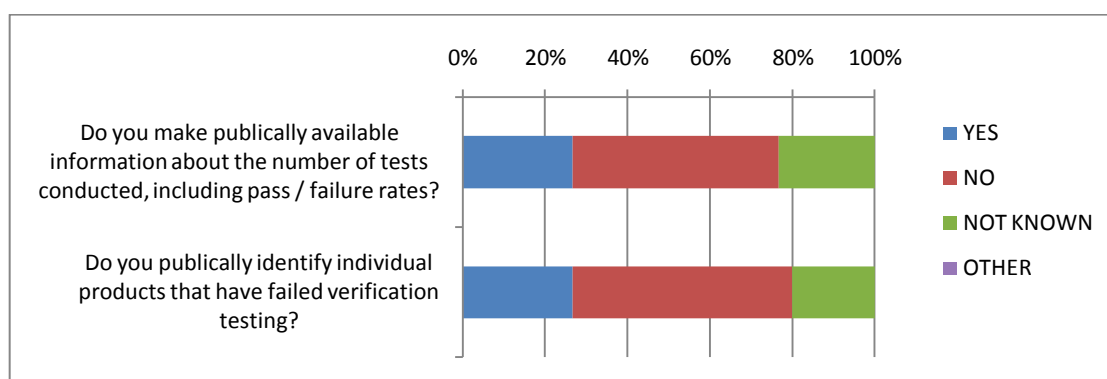
Table 10: Range of amounts of fines able to be used in EU Countries (ATLETE, 2010)

Country	Fine (EURO)
Austria	Up to €25,435
Belgium	€25 (Warning) to €30,000
Bulgaria	€150 to €1,500
Cyprus	€8,500 to €17,000
Germany	€50,000
Greece	€2,000 to €15,000
Hungary	€400-€500

Latvia	€700 to €1,400
Malta	€446 to €23,294
Poland	Not exceeding 15% manufacturers' turnover
Portugal	€75 to €2,992
Slovakia	€166,000
Netherlands	€450,000
UK	€5,600

Over 25% of respondents to the CLASP survey make general information about the results of verification tests publicly available, as shown in Figure 24. These same countries tend to also publicly identify the products that have failed verification tests.

Figure 24: Public disclosure of test results

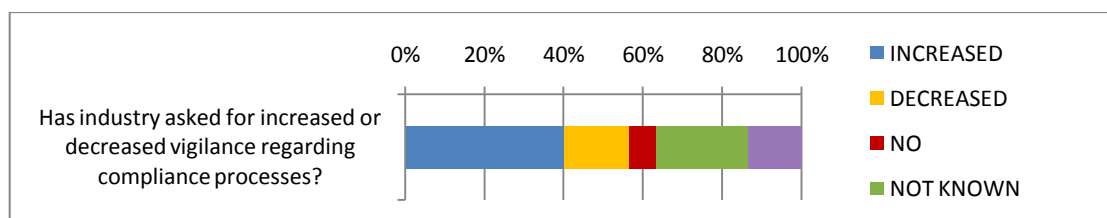


Amongst EU Member States, a similar proportion of countries make test results public (19%)(ATLETE, 2010), although there is some indication that more countries are considering this option as part of their processes to enforce the Ecodesign Directive.

#### 4.8 INDUSTRY PERCEPTIONS OF COMPLIANCE

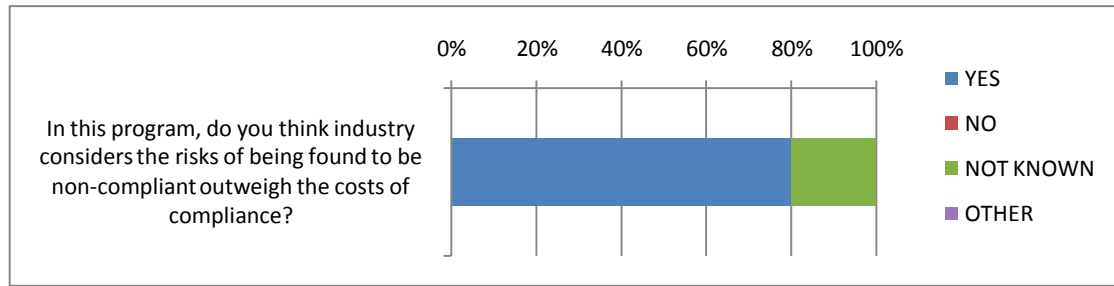
As indicated by Figure 25, there appears to be little agreement amongst industry on whether it wishes to see increased or decreased compliance, with industry views varying considerably between countries and by product.

Figure 25: Industry views on compliance processes



However, there is almost universal agreement amongst respondents that industry considers that the risks of their products being found to be non-compliant outweigh the costs of meeting program requirements (see Figure 26). If this is an accurate reflection of industry perceptions, then it suggests that the current range of compliance regimes in place are working well. However, to gain a better understanding of these important issues, further direct interrogation of industry participants is needed.

Figure 26: The risks of non-compliance



#### 4.9 PROGRAM COVERAGE AND OVERALL COMPLIANCE RATES

The number of individual product models included in surveyed programs ranged from 4,000 to over 600,000. Only about one-third of participants were able to provide sales figures for products included in their programs.

Some respondents were able to provide very detailed information on the market share and numbers of products included within their program, while others had little data. Given that this sort of information is vital to understanding the potential impact of any program, it is of concern if this information is not readily available.

About 45% of all respondents make an assessment of overall compliance rates with all programmatic requirements (Figure 27). Amongst these, most held the view that compliance rates were increasing (Figure 28).

Figure 27: Assessment of overall programmatic compliance rates

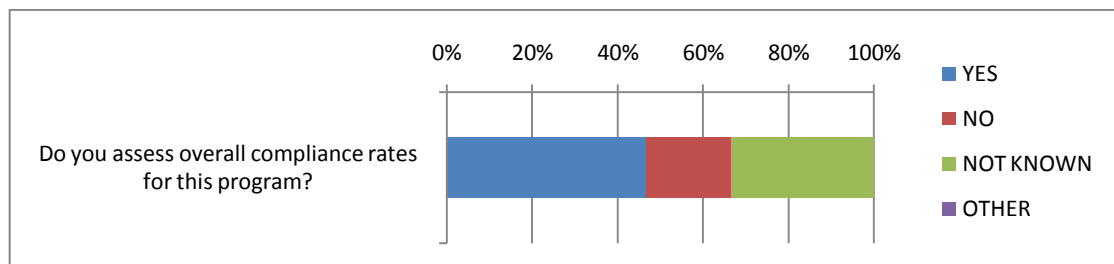
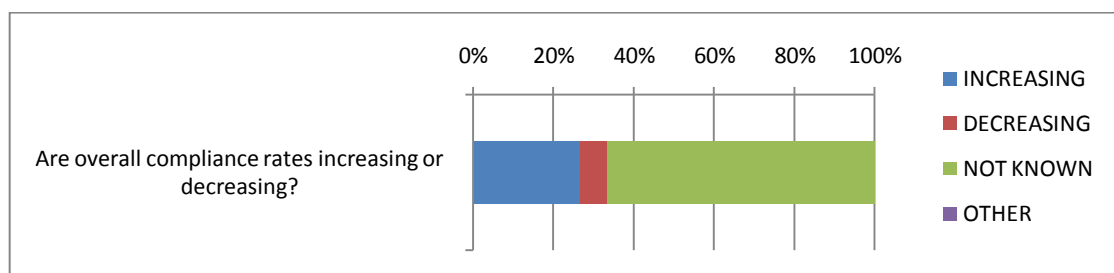


Figure 28: Increasing or decreasing compliance rates



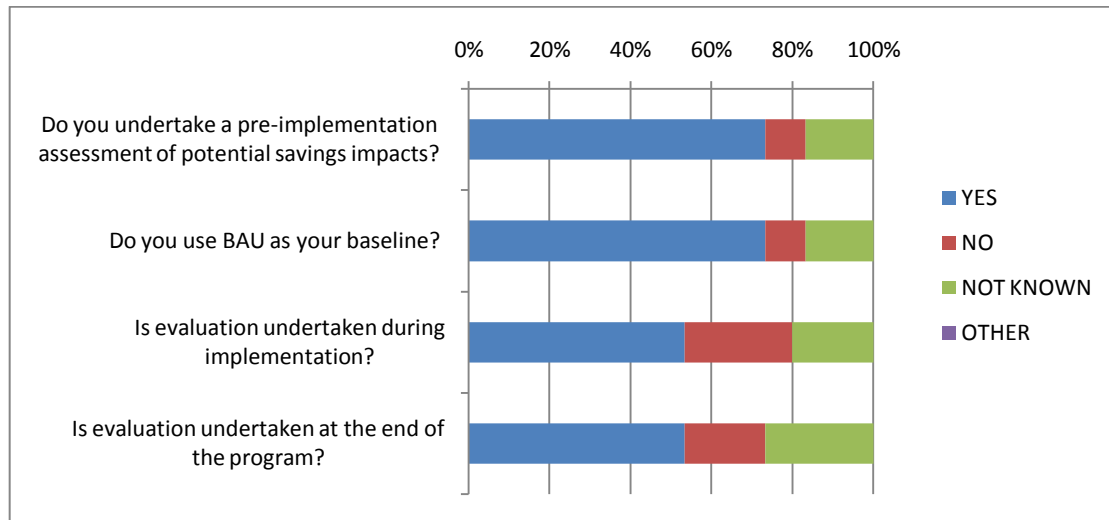
Of those programs that calculate overall compliance rates, more than half were assessed by government agencies, which used test results/reports and market studies to assess overall compliance.

#### 4.10 EVALUATION PROCESSES

Over 70% of programs conduct a pre-implementation (ex-ante) assessment of potential program savings (Figure 29). Notably this includes almost all mandatory programs, which is probably explained by national governance requirements for new regulations. Over three

quarters of program evaluations used an estimate of 'business as usual' as part of their baseline pre-implementation assessment.

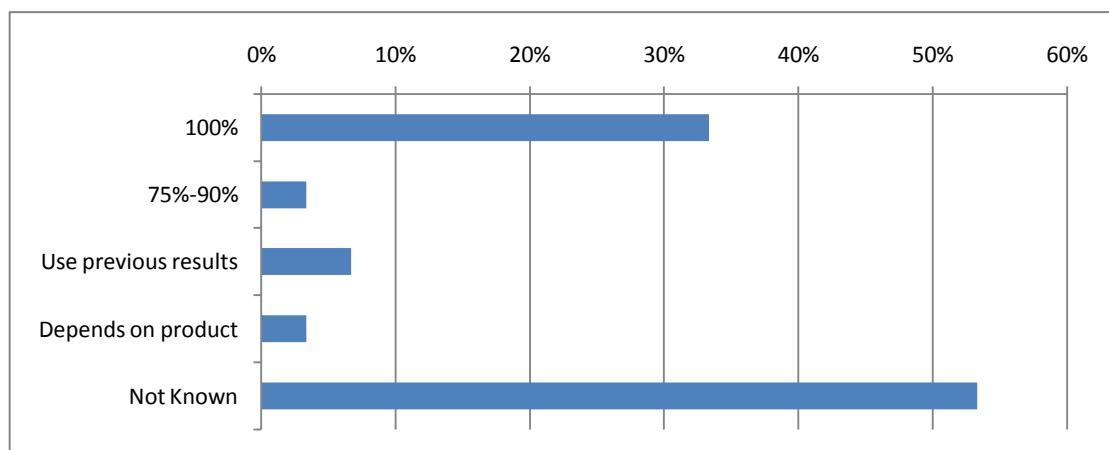
Figure 29: Evaluation processes



Just over 50% of programs conduct evaluation during and post-implementation. It was found to be less common for voluntary programs to undertake a post-implementation evaluation.

Less than half of the respondents were able to say what levels of compliance were assumed within program evaluation. However, 100% compliance was the most commonly assumed rate amongst those that knew. Several respondents typically used lower compliance rates in the range from 75% to 90%. One respondent noted that different compliance rates are assumed for different products and two noted that the previous years' rate was used.

Figure 30: Rates of compliance used in program evaluation



## 5 KEY FINDINGS & RECOMMENDATIONS

The following conclusions have been drawn based on the information gathered from survey respondents. It should be noted that the aim of this report is to highlight the strengths and weaknesses in MV&E processes amongst S&L programs, and to provide constructive ideas on where and how improvements can be made. In doing so, the difficulties faced by program administrators in implementing comprehensive MV&E processes are recognized, particularly those associated with a lack of financial and human resources and competing priorities for time and resources.

### 5.1 KEY FINDINGS

The key findings from this survey are:

- The majority of programs appear to have adequate legal basis to support compliance activities, although vigilance is needed to ensure that definitions remain relevant to current markets.
- The majority of programs also have in place appropriate MV&E processes, although some enforcement procedures appear insufficiently flexible to be easily applied.
- All respondents were able to clearly identify the entity or entities responsible for MV&E, and many noted that enforcement powers were included within the legal framework for the program.
- While the legal and administrative frameworks underpinning programs identify appropriate procedures in most cases, it is apparent that there is considerable variation in the extent to which MV&E activities are carried out in practice.
- As described by respondents, most programs have the capacity and processes for enforcement action. However, very few were able to provide detailed records of enforcement actions that had been undertaken in the recent past. The reasons for this are speculative, however it suggests that either there are few accessible records of these activities, or they occur very infrequently.
- Few programs appear to have defined budget allocations and forward plans for MV&E activities; without these, there is a risk that MV&E activities may be viewed as discretionary and compete with resources for other aspects of program management.
- Some comments from respondents indicate programmatic evaluations take little regard of compliance rates and therefore may be inaccurate.
- There is considerable variation in MV&E structures used in different energy efficiency S&L programs and many examples of interesting approaches. For example a few programs have integrated border controls within their MV&E process, and most programs are coming to terms with the challenges of distance selling.

### 5.2 RECOMMENDATIONS

Based on responses from program administrators, the major recommendations are:

- In order to ensure MV&E are undertaken in practice, governments should require the regular production of forward plans for MV&E activities and appropriate budgeting. Consideration should also be given to whether these requirements are included within enabling legislation for through administrative arrangements.
- Ensuring that participants are aware of their obligations within S&L programs is an important first step to facilitating compliance and underpins any future enforcement



actions. Well targeted information provision and regular surveys of industry awareness warrants increased attention by governments.

- The lack of readily available records on MV&E surveillance and verification activities suggests that there is more that can be done to publicize whatever compliance processes are undertaken and their results. Governments should maintain records of MV&E surveillance and verification activities and make them publically available in order to highlight the risks of non-compliance.
- Similarly, governments should keep better records of enforcement actions and make them publically available in order to make stakeholders aware of the range and frequency of enforcement activities.
- Ensuring that all products within the scope of mandatory S&L programs meet program requirements is a complex and on-going task that involves several related processes. While there are different approaches to how this is achieved, the effectiveness of a program's compliance regime would likely be improved considerably with the availability of a centralised listing of product models that are part of program. Such information can be gained through the use of market entry conditions involving registration or certification processes, and be used to increase the effectiveness of market surveillance checks.
- While it is recognized that it may be appropriate that responsibility for day-to-day MV&E activities is shared amongst staff, it is important that their activities are co-ordinated and recorded. Governments should ensure clear lines of responsibility for MV&E activities within each S&L program.
- Where responsibility for MV&E is devolved to an entity other than that with primary responsibility for the program there may be issues of co-ordination. When responsibility is split, Governments should ensure that responsibilities are clearly identified.
- To improve the accuracy of evaluations, governments should take account of compliance rates within program assessments.
- There are considerable opportunities to rapidly improve compliance regimes through the sharing of experiences and approaches between programs. Governments should therefore devote more attention to establishing links with other S&L programs and exploring the transfer of expertise and information.

The results of this survey were found to be consistent with recent surveys on compliance activities undertaken in Europe (Fraunhofer et al, 2009; ATLETE, 2010).

The results of this survey indicate considerable potential to improve the MV&E structures and practices surrounding S&L energy efficiency programs. With this would come greater certainty of outcomes and increased energy and greenhouse gas savings. Just as importantly, attending to issues of compliance is vital to maintaining confidence in these programs by participants and consumers, and therefore to maintain and raise future participation levels. Given the increasing importance of these programs within national energy and climate policies, the modest levels of investment required to improve MV&E practices are a pre-requisite to ensuring their desired outcomes.

## 6 ACRONYMS

<b>CE</b>	Conformity Mark on products in the European Economic Area
<b>EU</b>	European Union
<b>G8</b>	Group of Eight – Canada, France, Germany, Italy, Japan, Russia, United Kingdom and United States of America
<b>G20</b>	Group of Twenty Finance Ministers and Central Bank Governors – Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, United Kingdom, United States of America and the European Union.
<b>MV&amp;E</b>	Monitoring Verification and Enforcement
<b>S &amp; L</b>	Standards and Labelling
<b>UK</b>	United Kingdom
<b>USA</b>	United States of America

## 7 GLOSSARY

The following terms are used in this report.

<b>Certification</b>	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.
<b>Check Testing</b>	Taking a sample of products either from the factory floor or from the point of sale for independent laboratory testing.
<b>Compliance</b>	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're not legally binding).
<b>Compliance Regime</b>	A comprehensive set of program specific processes purposefully established to check conformity with <u>all</u> program requirements, including facilitation and education; monitoring; market surveillance and verification; enforcement and reporting. Also including methodologies 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 willful non-compliance unacceptable.
<b>Energy Performance</b>	The characteristics of a product in respect to the energy or power it consumes under certain conditions.
<b>Enforcement</b>	The actions taken by an authority in response to incidents of non-compliance with the rules of a program.
<b>Entry Conditions</b>	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
<b>Entry Requirements</b>	See "Entry Conditions"
<b>Greenhouse Gas</b>	Gases in the atmosphere that absorb and emit radiation within the thermal infrared range forming the fundamental cause of the greenhouse effect. The main greenhouse gases in the Earth's atmosphere are water vapor, carbon dioxide (CO <sub>2</sub> <sup>e</sup> ), methane, nitrous oxide and ozone.
<b>Import Controls</b>	The incorporation of national boarder 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).
<b>Mandatory Program</b>	An energy efficiency program in which participation is compulsory. There is no choice for suppliers about whether they participate.

<b>Market Surveillance</b>	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.
<b>Model</b>	A specific unit or variety of a product.
<b>Monitor</b>	Observe and check that program requirements are being met, either as a one-off or systematically, over a period of time.
<b>Non-Compliance</b>	Any instance deemed by the 'compliance regime' to be discordant with requirements of a program.
<b>Product</b>	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.
<b>Public Reporting</b>	Sharing the outcomes of monitoring, verification and enforcement activities with all, or selected external parties.
<b>Retailer</b>	The organisation or outlet that sells a product or service to the end consumer. S&L Programs may differ in whether they define wholesale and trade suppliers as retailers.
<b>Self-Certification</b>	See "Self-Declaration"
<b>Self-Declaration</b>	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.
<b>Supplier</b>	Defined as a manufacturer, importer or wholesaler of appliances or products included in an energy efficiency program.
<b>Test</b>	A laboratory procedure to determine one or more characteristics of a given product, according to a specified methodology.
<b>Test Report</b>	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.
<b>Verification Testing</b>	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'.
<b>Verification Mark</b>	A visible indicator that is placed on an appliance to signify that it has been it meets relevant national standards (and potential conforms to other requirements).
<b>Voluntary Program</b>	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.

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# APPENDIX: Survey

Survey of energy Efficiency Compliance Activities	
Contact Details	Program One
Authority	
Contact person	
Position	
Email	
Phone	
<b>1. Policy measure</b>	
1A Program type (e.g. labeling, MEPS, Energy Star)	
1B Program name	
1C Mandatory or voluntary?	
<b>2. MV&amp;E Framework</b>	
2A What is the legal framework under which this program sits (e.g. Acts)	
2B Which authority has overall responsibility for the program?	
2C Which authority / authorities have responsibility for compliance with the program?	
2D What MV&E requirements are made by the framework?	
2E What resources are allocated to the following activities:	
Stakeholder education	\$ / staff time
Registration processes	\$ / staff time
Market surveillance	\$ / staff time
Verification testing	\$ / staff time
Evaluations	\$ / staff time
<b>3. Stakeholder education of requirements</b>	
3A Government advertisements in public media	YES / NO
3B Provision of stakeholder training - e.g. training for store management	YES / NO
3C Government or trade conferences/seminars	YES / NO
3D Advanced notice to stakeholders via direct mail	YES / NO
3E How far in advance of a change in legislative or program requirements are stakeholders given notice? (i.e. 6 months notice, 2 months notice)	Months
3F Do you survey industry on their understanding of the requirements of the program?	YES / NO
<b>4. Program entry requirements for supplier's</b>	
4A In order to join a program, or be able to sell products, do suppliers / manufacturers have to provide any product information?	YES / NO
4B Is a test report required as a condition of program entry?	YES / NO
4C Does the test report have to come from an independent third party laboratory?	YES / NO
4D Can the test report be based on a self test or declaration, with no independent input?	YES / NO
4E Are there other requirements for program entry relating to the energy performance of the appliance?	YES / NO
4F If so, please list.	
<b>5. Public access to registered products</b>	
5A Is a list of models within the program provided in a publicly available publication?	YES / NO
5B Are models within the program listed on a public website?	YES / NO
5C Are the energy performance details of products within the program included in either of the above?	YES / NO
<b>6. Surveillance processes</b>	
6A Are checks made to ensure that products meet any entry requirements?	YES / NO
6B If you have answered YES to 6A, please indicate the method used:	
6C Is this undertaken by a government agency?	YES / NO
6D Is this undertaken by a 3rd party (e.g.. Industry body)?	YES / NO
6E If appliances are found which are not registered, what action is taken? Please indicate:	

6F	Please indicate the approximate number of actions identified in 6E which took place in the following years: 2006 2007 2008	
6G	Are products checked to ensure that labels are placed on all participating products? If not a 'label' program, go to section 7.	YES / NO
6H	What actions are taken if participating products within the scope are found not to be labeled?	
6I	Please indicate the number of actions identified above which took place in the following years: 2006 2007 2008	
<b>7. Verification processes</b>		
7A	Are product samples tested to ensure compliance with program requirements?	YES / NO
7B	If so, by whom? E.g. government agency, industry association, consumer group, environmental agencies, energy advocacy groups, other?	
7C	If products are tested, please indicate the number of test undertaken in the following years: 2006 2007 2008	
7D	How many samples per model are tested?	
7E	Are the samples collected from retail?	YES / NO
7F	Who selects the samples? (e.g. gov. agency or their contractor, manufacturer)	
7G	Are manufacturers allowed to pick samples?	YES / NO
7H	Do you have access to the results of the testing?	YES / NO
7I	If NO, why not?	
7J	How do you select products for testing, risk based (e.g. market share, competitor information, new market entrants, poor supplier record), random or other? Please describe	
7K	Please indicate the approximate number of appliances which passed or failed compliance tests. 2006 2007 2008	
7L	How much money was spent in the following years on "off the shelf" testing to verify compliance? 2006 2007 2008	\$0 \$0 \$0
7M	Do you have information about how the results are used?	
7N	If NO why not?	
7O	If YES, please indicate what actions are taken when an appliance fails a compliance test: 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 publically available website - please list Other: please indicate	YES / NO YES / NO YES / NO YES / NO YES / NO
7P	Please indicate the number of each type of actions taken in 2006-2008 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	2006 / 2007 / 2008 / / / / / / / /

	Supplier must recompense consumers	/	/
	Other: please indicate	/	/
7Q	Do you make publically available information about the number of tests conducted, including pass / failure rates?	YES	NO
7R	Do you publically identify individual products that have failed verification testing?	YES	NO
7S	If so, where? E.g. website, newsletter, media, public / industry forums		
<b>8. Industry perceptions of compliance</b>			
8A	Has industry asked for increased or decreased vigilance regarding compliance processes?	increased / decreased	
8B	In this program, do you think industry considers the risks of being found to be non-compliant outweigh the costs of compliance?		
<b>9. Compliance rates - for the overall program</b>			
9A	How many individual product models are included in the overall program (i.e. not testing, verification or compliance parts of a program but the whole program) ?		
9B	What is the approximate number of annual sales of products included in the program?		
9C	What is the number of annual sales of these products outside of the program?		
9D	Do you assess overall compliance rates for this program? (not just performance testing but everything, e.g. including labelling, processes, performance etc)	YES	NO
9E	Are overall compliance rates increasing or decreasing?		
9F	What was the overall compliance rate (in %) for the following years:		
	2006		
	2007		
	2008		
9G	Who assesses overall compliance rates?		
9H	What is the assessment based on? (e.g. type of process, include references where relevant)		
<b>10. Evaluation process (for the program, not regulation or authority etc)</b>			
10A	Do you undertake a pre-implementation assessment of potential savings impacts?	YES	NO
10B	Do you use BAU as your baseline?	YES	NO
10C	Is evaluation undertaken during implementation?	YES	NO
10D	Is evaluation undertaken at the end of the program?	YES	NO
10E	What are the assumed compliance rates used in your evaluation?		