Evaluation of Compliance Framework of Labeling Program in India

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ABSTRACT

Globally, Standards and Labeling (S&L) programs have proven to be highly effective in stimulating the development of cost-effective, energy-efficient technologies, offer enormous carbon reduction potential, save consumers money and reduce power demand. Monitoring, verification and enforcement (MVE) is an integral part of S&L programmes as it ensures the integrity of these programmes by minimising non-compliance cost. India's labeling program is based on self-declaration of the energy efficiency rating by manufacturers as per the prescribed standards. To ensure that product declaration of manufacturers are compliant with these requirements, the Bureau of Energy Efficiency (BEE) responsible for MV&E, conducts a range of activities such as market surveillance, verification testing, maintaining a product registry as per the provisions of the Energy Conservation Act 2001.

A comprehensive evaluation of BEE's MVE framework identified several gaps and a need to strengthen the procedure and process to put in place a robust compliance mechanism drawing upon the experience of a large number of existing S&L programs across the world. Some of these key inter-related elements that need to be addressed by all effective MV&E regimes includes a)mechanism to facilitate compliance b) market surveillance c) verification testing; d) enforcement e) communication, reporting, feedback, complaint redressal mechanism amongst others.

BEE undertook several concrete measures such as establishing sampling criteria for verification testing, a web-based algorithm for sampling plan, publicly sharing the results of non-compliance, a major national retailer-training program and a mobile application for consumer outreach etc. In doing so, BEE took a leap towards improving compliance rates and in turn improve key outcomes from S&L programmes, safeguard the investment made by governments by building up the credibility of their energy labels; build consumer confidence and enhance credibility as well as safeguard the investment made by compliant industry.

Keywords- standards and labeling, monitoring, verification, enforcement, compliance

Introduction

Energy efficiency standards and labelling (S&L) programs operate in more than 80 countries around the world, covering more than 50 different types of appliances and equipment in the commercial, industrial and residential sectors. S&L programmes refer to market interventions that aim to encourage the sale of electrical appliances and equipment using less energy than might have otherwise been promoted. They represent a cost effective way to overcome market failures in the sale of energy efficient appliances and equipment[1]. These programs act as the cornerstone of most national energy efficiency and climate change mitigation programs[2] and have the potential to greatly reduce the energy consumption of appliances and equipment resulting in CO_2 reductions. Apart from carbon reduction, these programs offer several co-benefits ranging from fostering innovation, market

[1] https://www.iea.org/publications/freepublications/publication/monitoring.pdf
[2] http://superefficient.org/Research/PublicationLibrary/2016/IEA-4E-Achievements-of-national-EESL-programs-report-2016

transformation, air quality improvements, employment creation to helping the economies to contribute to the sustainable development goals.

Monitoring, verification and enforcement (MVE) is an integral part of S&L programs as it ensures the integrity of these programs by minimising non-compliance cost[3]. It is a key element in improving the outcome of S&L programmes and ensures efficient utilisation of resources. The International Energy Agency (IEA) estimates that a quarter of all realizable energy savings and consequent greenhouse gas emission reductions can be lost without robust MVE regime[4]. Therefore, effective compliance strategies are vital to achieve energy savings and carbon emissions reductions from S&L programs.

MVE regime encompasses wide range of actions and each country should develop a compliance framework taking into consideration it's objectives, resources, legal framework, technical capacity, and other country specific factors. Compliance mechanisms are designed to ensure that the set requirements of S&L programs are adhered to by all relevant participants. It is important to identify all potential areas of non-compliance, and then development of planned, adequately resourced, and well communicated MV&E regime[5].

Achieving high rates of compliance has overall benefits for all stakeholders in the S&L process, as well as for the environment. Industry participants operate in a fair market that encourages investment, technological innovation and leads to greater participation; builds trust of consumers by realising the benefits from reduced energy costs thereby increasing their confidence in the program[6]. Policymakers can assess the effectiveness of the programs, make improvements in polices and achieve key environmental policy objectives through a robust compliance mechanism.

S&L Program in India

The Government of India set up Bureau of Energy Efficiency (BEE) in March 2002 under the provisions of the Energy Conservation Act (EC Act), 2001 with the primary objective of promoting efficient use of energy and energy conservation. The EC Act identifies S&L as one of the key thrust areas for improving energy efficiency of appliances and equipment. Launched on May, 2006, the key objective of the labeling program is to provide the consumers an informed choice about the energy saving and thereby the cost saving potential of appliances and equipment. There are two types of labels- comparative and endorsement. Most of the products are under comparative labeling ranging from 1 to 5 star; higher the star rating, higher the efficiency. Figure 1 below shows an example of a comparative label. One star of comparative label is considered as minimum energy performance standard (MEPS). Of the total energy savings reported for 2006-14 by BEE, 77% of the savings are attributable to the labeling program[7], making it the flagship program of BEE.

[3] https://www.iea.org/publications/freepublications/publication/monitoring.pdf
[4] Survey of Market Compliance Mechanisms for Energy Efficiency Programs in East Asia and the Pacific, 2011
[5] Compliance counts: A practitioner's guidebook on Best Practice Monitoring, Verification and Enforcement for Appliance Standards and Labeling
[6] Compliance counts: A practitioner's guidebook on Best Practice Monitoring, Verification and Enforcement for Appliance Standards and Labeling
[7] Draft National Electricity Plan, Vol. 1, Central Electricity Authority, December 2016

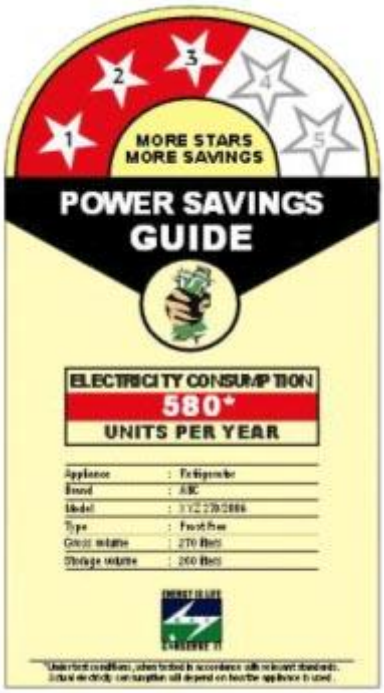


Figure 1: Comparative label of India's labeling program

BEE is responsible to ensure that the labeled products are compliant with the latest provisions of the EC Act and other relevant legislation and regulations relating to the labeling program. Manufacturers apply to BEE for registration of their products with relevant documents as prescribed in the respective product schedule and/or regulations along with the test reports of the product from a nationally accredited lab[8], which could be manufacturer's own lab or third party lab. BEE also accepts test reports from other countries test labs which have mutual recognition agreement with India. After a thorough scrutiny of all the information submitted by the manufacturer as per the regulation/schedule of the relevant product, BEE provides permission to the manufacturer for affixing BEE's label on their products. The manufacturers print the label as per the design specifications provided in the regulation and submit it to BEE for approval. As the registration under the program is based on self-declaration of the energy efficiency rating by manufacturers, importer or dealer; it is essential that BEE carries out activities related to monitoring and verification to ensure that the registered products comply with the declared energy performance values.

BEE, with assistance from CLASP, conducted a comprehensive evaluation of MV&E regime of its labeling program to identify gaps and barriers to strengthen the program as per the best international practices. It emerged that several measures were needed to strengthen the MV&E regime and establish a robust compliance mechanism. MV&E includes several inter-related elements, starting with an established legal framework, market surveillance, verification testing, enforcement and communication, reporting and feedback as shown in Figure 2. BEE took several concrete steps to improve the compliance framework, which are discussed in this paper. The paper also identifies others measures for further improvement for MV&E for S&L program in India.

[8] National Accreditation Board for Testing and Calibration Laboratories (NABL) is the national accreditation body for test labs in India

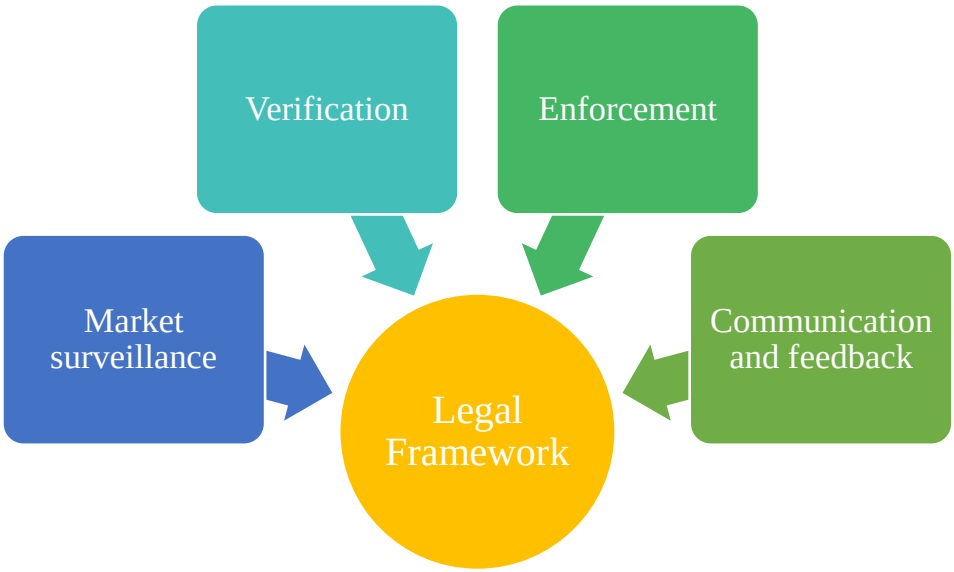


Figure 2: Inter-related elements of an MVE regime

1. Legal Framework

Compliance regimes need to be supported by a clear and strong legislative framework. Government of India's EC Act, 2001 provides the legal framework, institutional arrangement and regulatory mechanism for development and implementation of labeling program at both central and state level.

The Act describes powers of the Bureau to carry out verification, enforcement and issue directions to the agencies at state level to enforce compliance. The Act empowers state governments to designate an agency as 'SDA' or state designated agencies to enforce provisions for efficient use of energy and its conservation within the state which includes market surveillance, monitoring and enforcement of the labeling program. The Act also describes the procedure for market surveillance and empowers SDAs to appoint inspectors to conduct inspection for market surveillance activities. The act also defines the role and responsibilities of key institutions and stakeholders including BEE, SDA and manufacturers/importers to support the implementation of labeling program.

Regulations for respective product categories also establish the powers of BEE to monitor and enforce the labeling program. They describe the legal responsibilities of government agencies, appliance manufacturers, importers, retailers and test laboratories.

2. Market Surveillance

Market surveillance is the process of checking that the products in the market are labeled correctly before they are offered for sale to consumers. The primary aim of market surveillance is to ensure a high degree of compliance with the labeling program. It is a useful activity as there is a significant amount of declared information that can be checked in retail environment such as position, size, display, correctness and validity of label on labeled products.

Recognizing the market surveillance to be a weak area and following up on guidelines and procedure for improving it, CLASP supported BEE in development of an operations manual for streamlining the administration and implementation processes of S&L program. The manual lays out a stepwise procedure and guidelines for market surveillance. BEE or its designated agency may carry out market surveillance *suo moto* or based on complaints from the consumers. It should be carried out at retailers or dealers stores or warehouses using targeted sampling to ensure cost effectiveness and should also include the catalogues and websites of manufacturers and retailers. As per the guidelines, a surveillance plan specifying the expected number of visits, the target types of stores to be visited (by distribution channel, region, etc.) and products to be checked has to be prepared before

surveillance. The guidelines include procedure for preparation, inspection, assessment of results and feedback to the stores.

3. Verification Testing

Verification testing is the process of determining whether the declared energy performance of registered products is accurate. It is the cornerstone of compliance procedure, and serves as an important tool to establish the compliance of products.

As the cost of verification testing are significant; it is important to carry out targeted sampling for effective utilisation of resources. It emerged from the MVE evaluation, that there is a need to establish criteria for verification testing and CLASP supported BEE in development of sample selection criteria which include-

- New models in the market
- Models with higher than average risk of failure to meet energy performance claims such as brands with a history of non-compliance or based on feedback/intelligence from the competitors or consumers,
- Models that have the greatest potential impact on the energy and greenhouse savings of the such as models with high market share or very high claimed performance
- Models with high sales volume

Each of these criteria is assigned a weightage based on their relevance and CLASP helped BEE to develop an algorithm based on these criteria. The algorithm is integrated with web portal of BEE and would help in automatic selection of samples for verification testing.

BEE carries out verification testing as per the relevant product regulation in an independent third party NABL accredited labs to ensure that the products comply with the claimed energy efficiency performance. The products are purchased from the authorised dealers or retailers in the market. Models that fail initial tests undergo a second round of testing at the manufacturers' cost. The second test is carried out on two samples and if one or both the samples fail, the BEE and its designated agencies will proceed with enforcement actions. The detailed guidelines have been provided in the operations manual. Figure 3 illustrates the process of verification testing by BEE.

Monitoring and compliance is often limited by the availability of test laboratories with the capacity or the equipment to conduct the tests required. BEE has carried out extensive capacity building of test labs by providing funding support for development of new facilities and training of testing personnel, resulting in increase in adequate testing capacity in India.

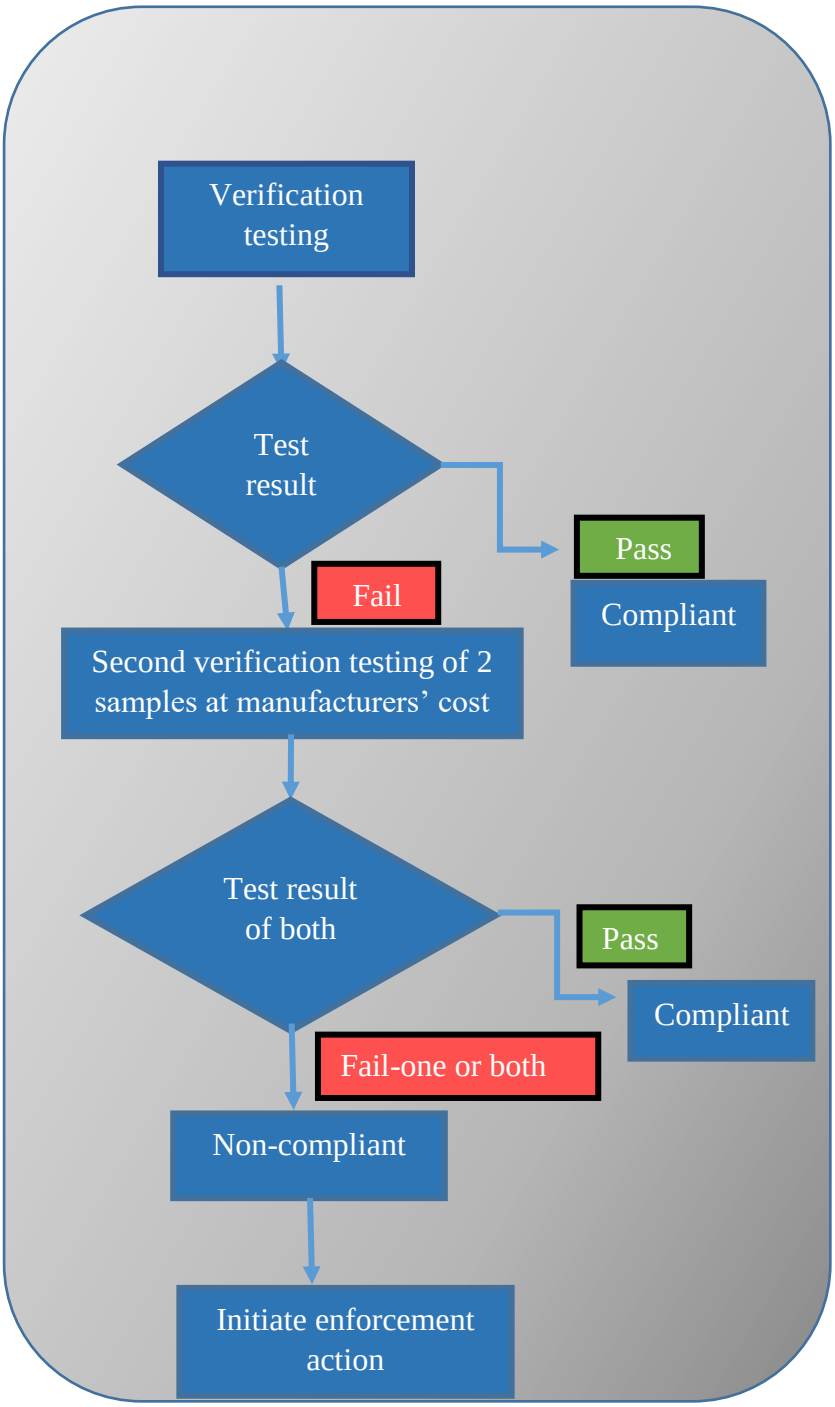


Figure 3: Verification testing process at BEE

Verification testing has been carried out by BEE several times in the past for air conditioners, storage water heaters, television, frost free refrigerator, and distribution transformers. Products, which had failed the testing and were found to be non-compliant were posted on BEE's website[9] and published in national and regional daily newspapers.

BEE also uses challenge-testing to inform their compliance programme. This type of verification testing occurs when a third party (either a programme participant or an independent stakeholder) lodges a written complaint of non-compliance against a programme participant's product. The complainant must submit an affidavit stating that should their challenge, or complaint, be proved false, they will

[9] https://beestarlabel.com/Lab/TesteresultofEquipment2

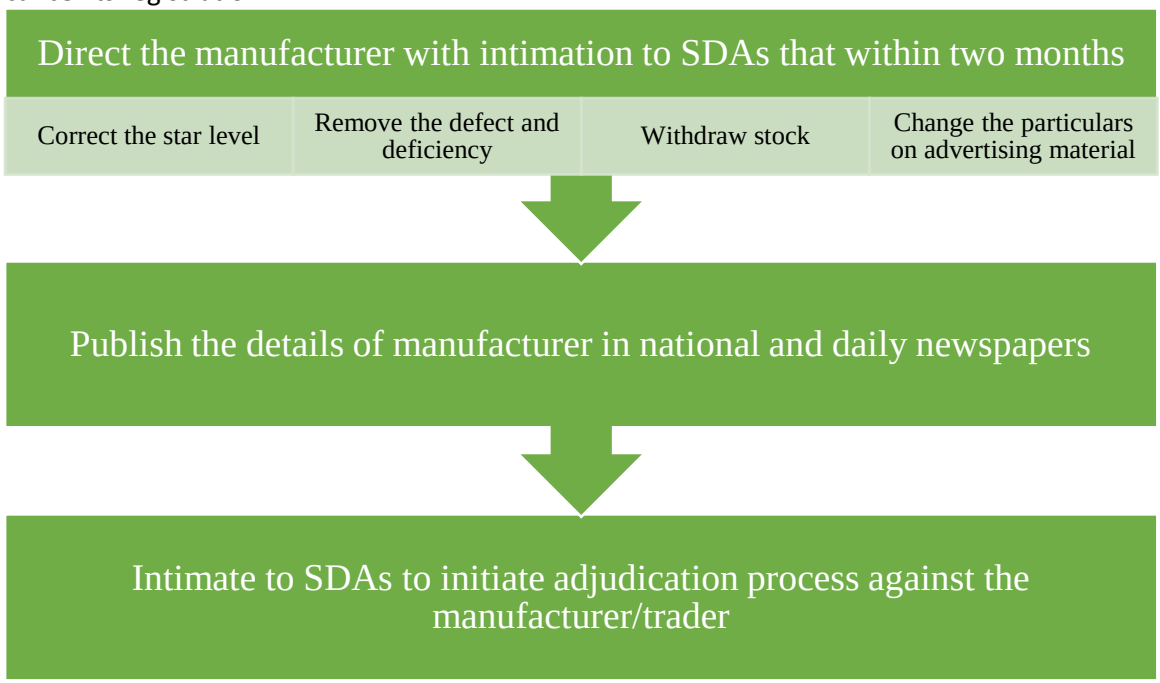
cover all costs related to the testing exercise (the cost of samples, testing charges and the transportation cost) within one month from the date of receipt of the test report. The competitor is notified of the complaint and subsequent verification testing, and alerted that should the results prove the product is non-compliant they will be liable to cover the costs of testing. The Bureau then carries out challenge-testing of the product in question in an independent laboratory.

4. Enforcement

Enforcement comprises of series of actions taken by an authority in response to non-compliance with the EC Act and rules of a programme[10]. The ability and willingness of governments to undertake enforcement actions can provide a highly effective deterrent from non-compliance. All programmes should develop an enforcement strategy that includes a range of structured enforcement responses that can be implemented depending on the type of non-compliance.

India has a legal framework in place for enforcement of non-compliance under the EC Act. The Act provides the powers to the Bureau and state designated agencies for enforcement of penalties/actions in case of non-compliance.

As per the Energy Conservation Act, 2001 If the model under second round of verification testing fails, then the Bureau under intimation to all the SDAs, can direct the manufacturers to correct the star level displayed on the label of the product or remove the defects and deficiencies found during testing from the existing and new stock within two months. The manufacturer will also have to withdraw non-compliant products from the market and change the particulars displayed on advertising material. BEE has to publish the details of the failed model and manufacturer in national or regional daily newspaper for the benefit of the consumers within two months of date of intimation. The enforcement actions are described below in figure 4. After completion of two months period, manufacturer submits a report on the actions taken to comply with the BEE's directions. If the manufacturer still does not comply with the request of the Bureau, then the Act allows Bureau to cancel its registration.



[10] Compliance counts: A practitioner's guidebook on Best Practice Monitoring, Verification and Enforcement for Appliance Standards and Labeling

Figure 4: Enforcement actions on non-compliance

BEE has to intimate to the concerned State Designated Agencies to initiate further adjudication proceedings against the manufacturer as per the Act. For adjudging, the state commission shall appoint any of its members to be an adjudicating officer for holding an inquiry as may be prescribed by the central government, after giving any person concerned a reasonable opportunity of being heard for imposing any penalty. The act also mentions that the defaulter shall be liable to a penalty of upto ten lakh rupees for non-compliance and, in the case of continuing failure, an additional penalty which may extend to ten thousand rupees for every day during which time such failure continues.

On intimation by the Bureau, in case of non-compliance by permittee, SDA shall monitor and report to the Bureau on corrective actions taken by the permittee within stipulated time. In addition, SDA shall ensure that such products are not sold within the state. SDA will also recommend to all state government departments including state undertakings to disqualify such appliances/equipment for public procurement. In order to have smooth and successful functioning of the enforcement activities in the state, SDAs may also constitute a state level implementation committee.

5. Communication, Reporting and Feedback

Programmes should develop strategies and procedures that identify the type of information, which should be made available to different stakeholder groups from MV&E activities. Communicating information on compliance and enforcement activities and their outcomes is important, as it illustrates to industry and consumers that programme compliance is taken seriously and that appropriate action will be taken on non-compliance[11].

BEE has taken several tangible steps for robust communication and outreach activities. BEE has a product registration database for S&L program on its website, which contains list of all registered models, as well as their energy performance details and key features[12]. Recently, BEE also provided annual energy savings for each star rating band of all the appliance under labeling program on its website[13]. BEE also releases periodic advertisements in newspapers and television as well as alert on its website on inclusion of new products under labeling program, revisions or transition to mandatory phase, energy saving tips or any other relevant information[14].

BEE is carrying out pan India training program for retailers for their capacity building as retailers are the first point of contact for consumers and can influence their purchase decision towards efficient products. Also, retailers have legal obligations to ensure that the products which are mandatorily regulated by BEE under labeling program must display correct label at point of sale. Therefore, it is vital for them to be aware of the requirements and review the label on the products before they are offered for sale.

CLASP supported BEE in development of a mobile application to compare labeled products based on their key features and monetary savings over a period. The app allows users to provide feedback and report non-compliant or mislabled products. BEE also released several advertisements in national and regional newspapers for outreach and dissemination of the app[15]. For transparency and ensuring clear direction for its stakeholders, BEE has made public a section of the operational manual, which deals with the registration process, roles and responsibility of stakeholders[16].

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[11] Compliance counts: A practitioner's guidebook on Best Practice Monitoring, Verification and Enforcement for Appliance Standards and Labeling

[12] https://beestarlabel.com/Home/Searchcompare

[13] https://beestarlabel.com/Home/EnergySavings

[14] http://pib.nic.in/newsite/PrintRelease.aspx?relid=149154

[15] https://beeindia.gov.in/sites/default/files/Mobile%20Apps%20Advt.%2033x25%20%28English%29.compressed.pdf

[16] https://www.beestarlabel.com/Content/Files/Scheme%20of%20energy%20efficiency%20labelling.pdf

By publishing the details of non-compliant models and manufacturers on its website and in leading national and regional daily newspapers[17], BEE ensured that the consumers are provided with information on products/manufacturers which do not comply with the requirements laid out in the regulation.

Recommendations for Further Strengthening of MV&E

BEE's labeling program has come a long way and BEE has gained credibility among stakeholders over the years. BEE has taken several steps for improving its MVE regime, which have led to increase in transparency and accountability of the program among stakeholders and built the trust of consumers. Despite the success achieved by the program, there are some key aspects which could be further improved to realise the full potential of the labeling program. To further strengthen the compliance framework and to enhance the credibility of the labeling program which guarantees that the appliances and equipment under the labeling program are as energy efficient as claimed by manufacturers, following key measures are proposed:

1. Planning and Resources

To enable sustained improvements in the S&L scheme, BEE should have a continuous and sound planning and allocate funds for implementation of robust MV&E activities. Adequate financial and human resources are vital to ensure compliance of labeled appliances and ensure the success of S&L programs. There should be separate budget for MV&E activities, which should include the provision of an adequate number of inspectors for ensuring compliance, market surveillance and verification testing. For example, Thailand has yearly budget of ~166,000 USD for random checking[18]. BEE collects labeling fee from manufacturers for registration of their products, which varies for different products. A proportion of the funds collected from the labeling fees could be used for MV&E related activities and capacity building and training of inspectors, test labs and designated agencies.

2. Improved Central and State Level Co-ordination

SDAs are the nodal agencies at the state level responsible for market surveillance and enforcement of the labeling program. Typically, SDAs are existing Government agencies such as state renewable energy development agency or the state electrical inspectorate with the additional task of S&L program implementation and their accountability to BEE is also not clearly laid out. SDAs typically have multiple responsibilities at the state level and they often do not have a supporting mandate or resources to be able to enforce the S&L program. Several SDAs do not have the adequate human and technical capacity and BEE is the only central body to implement the program.

Another key gap is that the lack of understanding on the part of the SDAs to carry out compliance related activities and lack of co-ordination between BEE and SDA. Capacity-building or training programme should be organised for the SDAs on implementation and enforcement of the labeling program. This will help to develop process and eliminate ambiguity, which in turn will help to achieve the desired objectives.

3. Operational Guidelines

[17] https://beestarlabel.com/Lab/TesteresultofEquipment2

[18] http://www.lites.asia/files/otherfiles/0000/0381/lites.asia_Bangkok_2015_MVE_Thailand_EGAT.pdf

Operational guidelines that detail the main elements of an MV&E procedures increase transparency and facilitate compliance. BEE has developed an operations manual, which contains guidelines for administration and implementation of S&L program and also has well established guidance for monitoring and verification, however, it does not yet lay out the penal enforcement for BEE or its designated agencies. There should be clear guidelines on enforcement actions which should be made available to key stakeholders.

4. Market Surveillance

BEE has established a clear and concise process for market surveillance. However, there is a need to conduct comprehensive and frequent market surveillance activities to ensure compliance. Australia carries out regular market surveillance of stores, followed by direct communication with stores and product suppliers found to be non-compliant, leading to elevation in the levels of compliance[19]. With the emergence of internet-based sales, it is also important to check that the labeling requirements are clearly provided on manufacturers and retailers websites for registered products.

5. Verification Testing

BEE has taken several measures to strengthen its verification testing such as defining the selection criteria, developing an algorithm, establishing the process for verification testing and carrying out the tests. However, BEE could further improve the scope by expanding product categories for which it carries out verification testing. BEE should also increase the frequency and number of products to be tested. It would be ideal to have separate specific testing budget like Australia and United Kingdom, which have the most established verification testing program.

6. Regional Network

Working towards regional harmonization, India could play a leadership role in supporting a regional MV&E framework for appropriate products. Considering that there are many common products traded within the region, there would be benefits in a more co-ordinated approach to testing which results in cost savings and market intelligence gathering across the region. Collaboration on verification testing could include mutual recognition of test reports, where tests methodologies are technically equivalent, countries under the network could accept the same test reports as evidence of compliance. Also, the countries can share the market surveillance process and outcomes, results of verification testing and notification of enforcement actions amongst others. Where products have been proven to be non-compliant in one economy, this information may be used by other programs to justify increased scrutiny and improve the targeting of limited testing budgets. This will contribute in enhancing trade and market transformation across economies.

The European Ecopliant project is an example of this. Ecopliant, the European Ecodesign Compliance Project, was initiated to strengthen MV&E across Europe, in the cost effective manner with the Ecodesign Directive[20]. It proposed best practices for cost-effective coordination of MVE activities, including a web-based database that allows various authorities in Europe to share market surveillance data, verification testing results, and enforcement actions. Ecopliant enables a market surveillance authority that is considering inspecting a given model to learn whether another country has inspected that model, and whether it was found compliant or non-compliant. There are 37 registered Ecopliant users from 18 member states and holds data for approximately 200 products in the database. The European Commission is currently considering how and whether to formally adopt

[19] http://www.energyrating.gov.au/sites/new.energyrating/files/documents/Jul%202015%20-%20Jun%202016%20Market%20Surveillance%20%28002%29_0.pdf
[20] www.ecopliant.eu

this database. It has resulted in adoption of best practices among member states, greater compliance due to increased market surveillance and increased awareness of compliance activities among industry and consumers.

Conclusion

Developing and maintaining a strong compliance regime may appear resource intensive, however the investment in compliance and enforcement regimes has a major impact on the success of the S&L programmes. A robust MVE can safeguard the investment made by governments by building the credibility of their energy labels; build consumer confidence and safeguard the investment made by compliant industry. BEE undertook several concrete measures such as establishing sampling criteria for verification testing, a web-based algorithm for sampling plan, publicly sharing the results of non-compliance, a major national retailer-training program and a mobile application for consumer outreach etc. In doing so, BEE took a leap towards improving compliance rates and in turn improve key outcomes from S&L program. However, there are several measures, which if undertaken can increase the effectiveness of labeling program. India's S&L program is a successful program and has resulted in two third of energy savings in India, and with continuous improvements the MVE regime can be further strengthened and realise the savings from the labeling program.

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