# Energy Efficiency (EE) on Refrigeration and Air Conditioning (RAC) Sector Regulations Development Options for Papua New Guinea

## Deliverable 3 – Monitoring, Verification and Enforcement (Third progress report)

## THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO)

MVE Report

**Final**

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ECONOLER

# ABBREVIATIONS

| | |
|---|---|
| CCDA | Climate Change Development and Authority |
| CCMA | Climate Change Management Act |
| CEPA | Conservation Environment and Protection Authority |
| CTCN | Climate Technology Centre and Network |
| DPCI | Provincial Delegations of Commerce and Industry |
| ECOWAS | Economic Community of West African States |
| EE | Energy Efficiency |
| EEC | Energy efficiency class |
| EU | European Union |
| GHG | Greenhouse gas |
| ILAC | International Laboratory Accreditation Cooperation |
| MEP | Ministry (Department) of Energy and Petroleum |
| MEPS | Minimum energy performances standard |
| MVE | Monitoring, verification and enforcement (protocol) |
| NDE | National Designated Entity |
| NISIT | National Institute of Standards & Industrial Technology. |
| PICT | Pacific Islands Countries and Territories |
| RAC | Refrigerant and Air Condition |
| SGD | Single Goods Declaration |
| UNFCCC | United Nations Framework Convention on Climate Change |

# EXECUTIVE SUMMARY

Ac The monitoring, verification and enforcement (MVE) protocol activities are part of the compliance verification processes. They are intended to ensure products' compliance with the standards and regulations and are essential to the national energy-efficiency strategy. They also directly support the MEPS and energy labels of the countries. The activities included in these measures are:

- Monitoring (tracking the market);
- Verification of compliance;
- The actions and sanctions (to ensure that the law is enforced).

This report outlines the administrative regulations that the labelling program manager and other stakeholders can use as the basis for carrying out a detailed and precise process to monitor the electric appliance market in developing countries, such as PNG. Such a process can also be carried out in the form of guides to be regularly updated for the benefit of government stakeholders in charge of implementing the energy labelling program. One of the guides could target distributors, a second could target importers, and a third could target manufacturers. This report describes the main topics that need to be covered in the awareness-raising and information dissemination documents and comprises three main sections:

- Description of the verification mechanisms for monitoring the electric appliance market;
- Description of the verification procedure to which the main actors in the supply chain are subject;
- Suggestions on sanctions against non-compliance with the established consumption regulations.

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# INTRODUCTION

According to the Government of Papua New Guinea (PNG), the speed of recent economic development in PNG has led to significant increases in energy access and energy demand. In the Papua New Guinea Development Strategic Plan, 2010–2030 (PNGDSP), the PNG Government estimates that the peak demand for electricity in 2021 will be about 700 MW and it will increase to over 1,400 MW by 2030.[1] Meeting this demand will require substantial new power generation resources, but they will not be enough. They will need to be combined with energy efficiency (EE) measures to decrease the country's energy intensity. Consequently, as with many developing countries around the world, it is essential for PNG to improve EE.

In fact, access to electricity in PNG almost tripled in 7 years from 19.5 percent of the population in 2010 to 54.4% of the population in 2017.[2] The difference is even more significant for the rural population (11.8% in 2010 to 50.4% in 2017). This increasing demand augmented not only the country's reliance on energy imports, but also the shortage of power and the country's energy bill. Improving EE is thus a potential measure to alleviate this situation. Since about one half of the electricity produced in PNG comes from non-renewable sources, there could be significant benefits of adopting EE measures, such as standards and labelling (S&L) programs. The potential benefits that can be generated by the implementation of a S&L program in PNG are the following:

- Diesel imports reduction due to lowered energy demand;
- Energy bills reduction for consumers;
- Infrastructure costs avoided and reduced capital and maintenance costs;
- Livelihood improvement through access to better-quality products;
- Energy-efficient products by ensuring that PICTs do not have to accept inefficient products banned from sale elsewhere;
- Emissions reductions.

The National Designated Entity (NDE) of PNG has submitted a request for technical assistance (TA) to the Climate Technology Centre and Network (CTCN), which is the operational arm of the United Nations Framework Convention on Climate Change (UNFCCC) Technology Mechanism and is co-hosted by the United Nations Environment (UNEP) in collaboration with the United Nations Industrial Development Organization (UNIDO). The CTCN hired Econoler to offer TA to the PNG Climate Change Development and Authority (CCDA) for the implementation of best policy and regulatory practices for both minimum energy performances standards (MEPS) and energy labelling in PNG for air-conditioning (AC) appliances.

This CTCN project is funded by UNIDO. This timely project is directly based on the recent efforts carried out by the Pacific Appliance Labelling and Standards (PALS) program, which is being led by the

[1] Government of Papua New Guinea, Department of National Planning and Monitoring. 2010. "Papua New Guinea Development Strategic Plan, 2010 – 2030". Port Moresby.
[2] The World Bank, Access to electricity (% of population) – Papua New Guinea, https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=PG. Consulted on December 17, 2019.

Secretariat of the Pacific Community (SPC) and the Renewable Energy and Energy Efficiency Partnership (REEEP).

The objectives of the current CTCN project are as follows:

- To establish a rationale for selecting four priority types of equipment and a regulatory approach;
- To assist CCDA in drafting the necessary legislative text framework for implementing the MEPS for the target equipment and the regulations governing the performance-testing standards;
- To develop an appropriate monitoring, verification and enforcement (MVE) protocol;
- To hold two half-day workshops aimed at raising awareness among market actors about the importance of MEPS and energy labels and collect their comments;
- To develop three training sessions for the main PNG stakeholders.

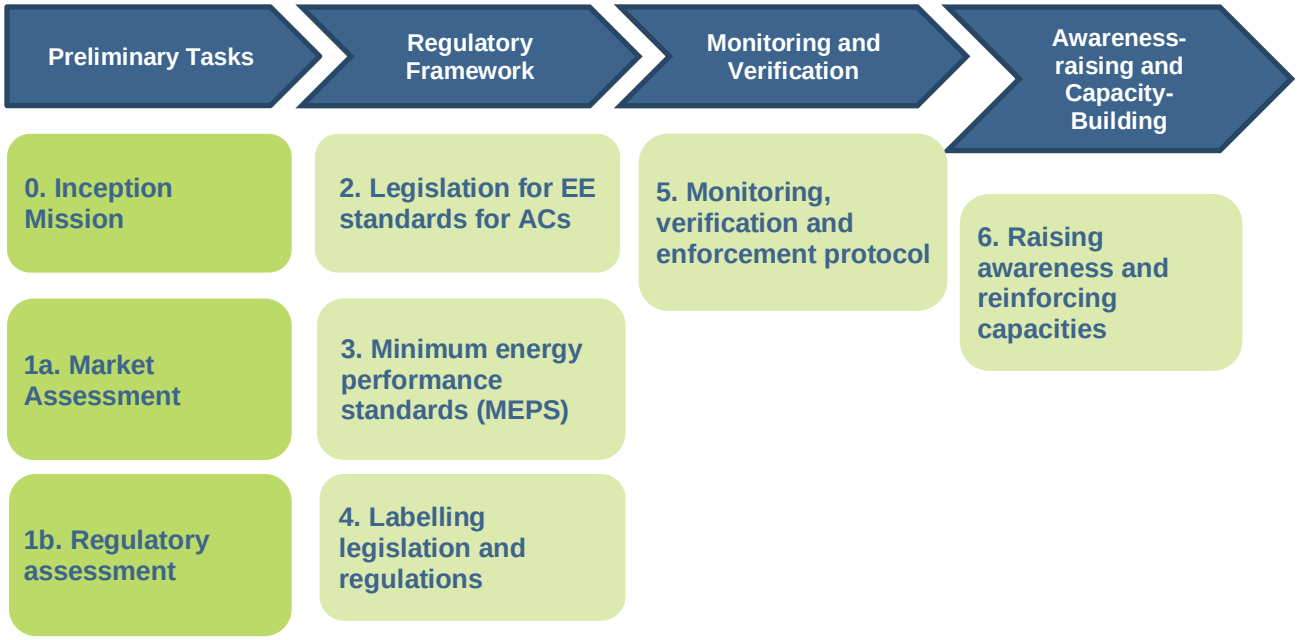


**Figure 1: Overview of Project Activities**

During the Inception Meeting, a discussion took place between the Econoler team and the CCDA to discuss the main project objectives and ensure that the project is properly understood, accepted, and implemented by all stakeholders.

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- Description of the verification mechanisms for monitoring the electric appliance market;
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### Maintaining the Success of the Standards and Labelling Programs

Achieving a high level of compliance by establishing and enforcing the standards and labels generally offers advantages for all stakeholders as well as the environment. Thanks to these advantages, sector actors can expect to operate in a fair and honest market that fosters investments and technological innovation. Also, consumers can benefit from reduced energy costs and the government can achieve the main objectives of economic and environmental policies.

There are several good reasons for carefully and properly managing compliance with the energy standards and labels, including the following ones:

- High compliance levels with the standards protect government investments by reinforcing the credibility of their voluntary and prescriptive energy labels.
- A lack of capability to solve the issues of non-compliance with the standards can lead to serious long-term negative consequences caused by diminished consumer confidence. Cases of non-compliance mean that though consumers pay for energy performance, they do not benefit from it; this could seriously undermine program credibility. Once credibility is compromised, considerable effort will be needed to re-establish trust.
- Improving compliance rates tends to further advance the key results of standards and labelling programs, generate more energy savings and reduce greenhouse gas (GHG) emissions. These objectives are defined in existing S&L programs, but they may only be achieved through compliance activities.

Figure 2 below illustrates the benefits and risks associated with compliance activities.

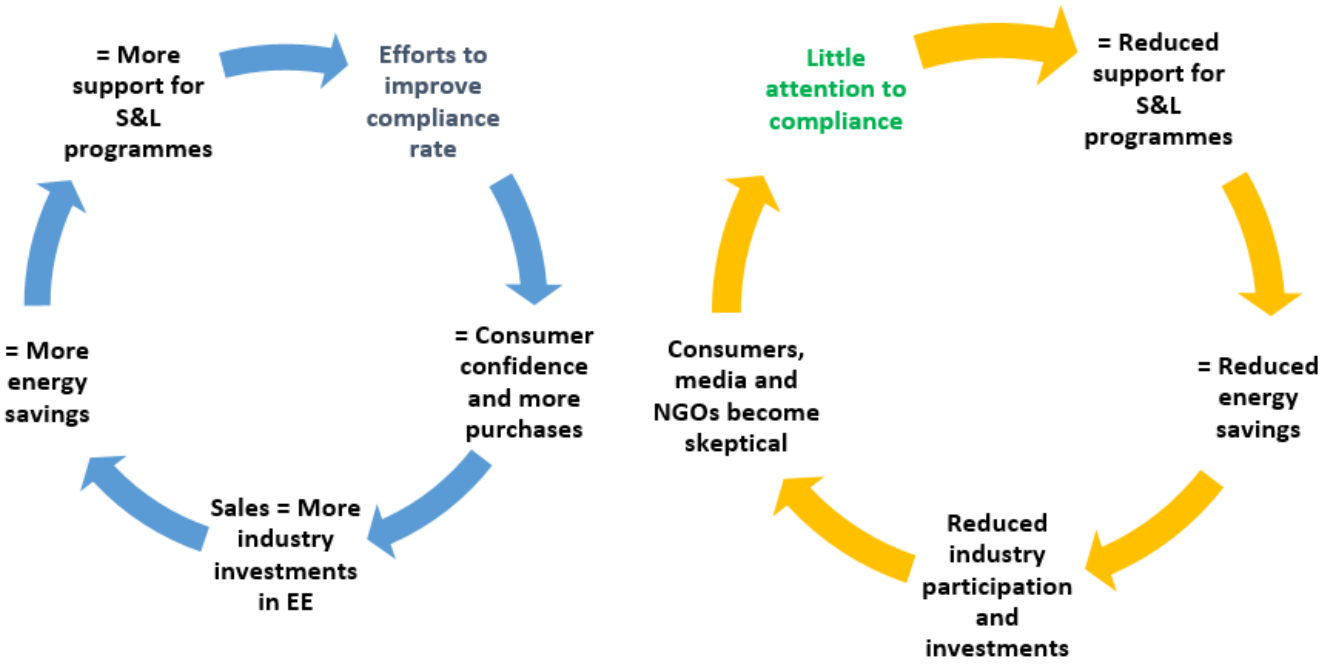


**Figure 2: Compliance Cycles**[3]

[3] According to CLASP 2010. S&L stands for standards and labelling.

# 1 MECHANISMS TO BE IMPLEMENTED FOR ELECTRIC APPLIANCE MARKET MONITORING ACTIVITIES

Ensuring uniform application of new regulations such as energy-intensive appliance labels requires the implementation of a robust legal and regulatory framework, along with application procedures. This is particularly true when verifying compliance, a process which demands robust and well-designed procedures, as well as the use of adequate human and financial resources. It is therefore vital to establish a solid legal framework to monitor energy labels in the electric appliance market and introduce minimum energy performance standards (MEPS).

Monitoring activities must be applied continuously to prevent non-compliant products from threatening the credibility and effectiveness of energy efficiency programmes and policies. Hence, it is advisable to establish a database of products introduced on the market and a registry of monitoring activities to track both efforts dedicated to market monitoring and progress in implementing the regulations. Collaboration and information-sharing agreements between the various national actors involved in the programme could be considered.

## 1.1 Regulatory Framework

In general, for S&L there is a primary law that provides the framework for introducing three elements – energy performance test procedures (issued by standardisation bodies), product categories and efficiency metrics (issued by regulators and/or standardisation bodies), and performance thresholds (issued by regulators). PNG should thus adopt a regulatory framework as shown in Figure 3.

First, an overarching energy efficiency law (EEL) that would stipulate that MEPS and energy performance labelling can be introduced for equipment that consumes electricity, natural gas or petroleum products, coal or renewable energy. EEL would be adopted and give the power to Ministry/Department of Energy and Petroleum (MEP)[4] and the Ministry/Department of Commerce to adopt regulations by decree for MEPS and labelling respectively, on the proviso they involve other concerned ministries/departments as required. Then, a joint application decree (AD) on MEPS and labelling should be adopted (or two separate decrees). Finally, varions regulations specifying the values of threshold for energy performance and the EE classes for different types of products (e.g. ACs, refrigeratotors, etc.) should be adopted.

[4] In PNG, the composition of the Cabinet comprises Ministries and Departments, as it is sometimes conflated; for instance, the National Energy Policy 2016-2020 mentions both the ‘Ministry’ and the ‘Department’ of ‘Energy and Petroleum’.

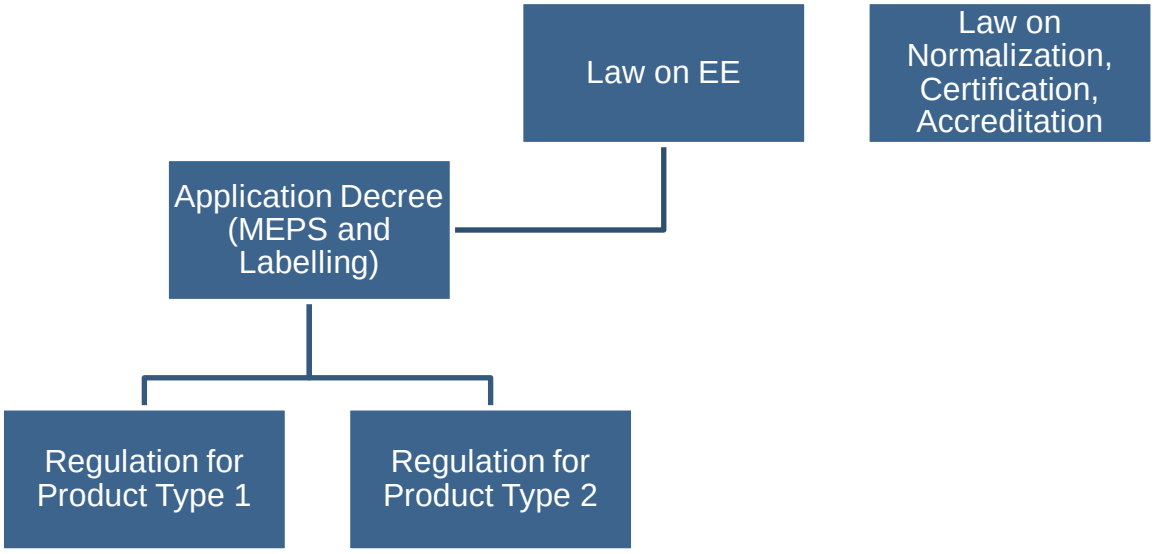


**Figure 3 : Regulatory Framework for S&L**

## 1.2 Customs Formalities

Two main inspection points exist before introducing an appliance on a market, upstream and downstream to appliance entry within a given territory (Figure 4).

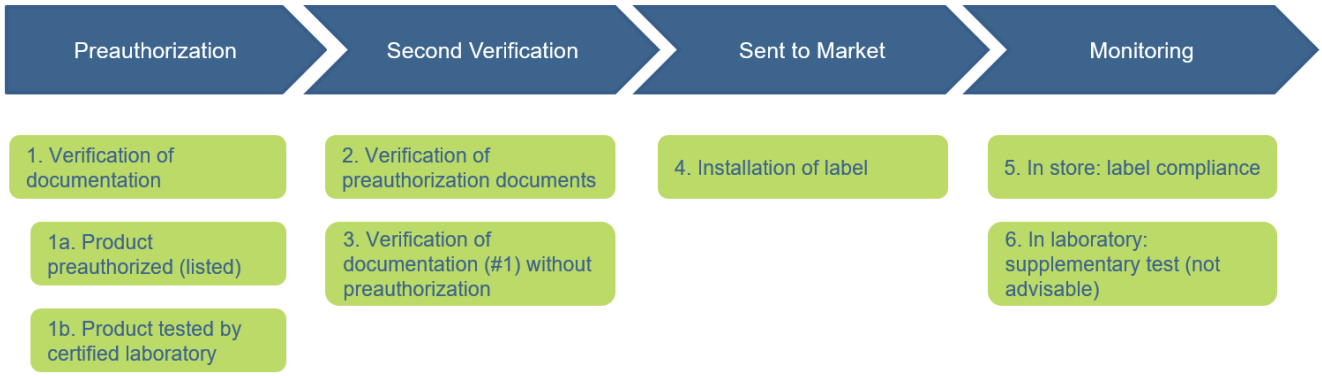


**Figure 4: Overall MVE Process Scheme**

### 1.2.1 First Inspection Point

The first inspection point occurs at the level of documentation prior to importing appliances. This verification is made using specifications provided by manufacturers and all other technical documentation required by applicable product regulations (for example, a test report for a specific

product, generated by an accredited third-party laboratory recognized by the programme manager, can be required, as is the case for domestic refrigerators). Hence, importers will be required to provide customs, or the designated competent authority, with a specifications sheet and technical documentation on imported appliances that are subject to energy labels and MEPS.

On one hand, the specification sheet or the energy efficiency report[5] must provide the necessary information to prepare energy labels or attestations of product compliance in relation to minimum energy performance requirements. On the other hand, the technical documentation must include:

- The name and address of the supplier;
- The general description of the appliance model;
- The serial numbers of the main components to easily identify the appliance with certainty;
- The test reports including energy performance test results that outline the calculation methods used as well as the energy performance test standards used, in accordance with effective regulations.

If an importer that has already imported a product plans on importing an additional lot of the same product that has already been granted market authorization, the customs agency or the designated competent authority may verify the tracking number of the imported product and take one of the following decisions:

- Not requiring a new inspection;
- Requesting a summary inspection of technical specifications to ensure that the main product characteristics affecting energy consumption are in line with the formerly imported lot.

The customs agency or the designated competent authority could also call on the programme manager or a designated technician hired by the programme manager to carry out summary inspections and approve imports.

At this stage, the programme manager would provide a preauthorization letter for the second lot of the same imported product. However, the decision to inspect whether the imported model is truly compliant upon preauthorization remains with the customs agency or designated competent authority.

It should be noted that the importer can assume the risk of importing appliances without preverification. In such a situation, the importer must directly go through a second inspection point.

[5] To consult the EU example: http://eepliant.eu/images/Documents/Guidelines/Best_Practice_Guidelines_EEPLIANT_v3.pdf.

### 1.2.2 Second Inspection Point

The second inspection point is carried out when the appliance enters the territory through customs or the designated competent authority and comprises many tasks:

- Inspect preauthorization documents for the appliances preauthorized for import;
- Inspect documents similarly to the process described for the first inspection point for all appliances that have not been preauthorized. Authorized inspection agents could be assigned to conduct verifications on the technical specifications of products at the customs warehouse;
- Visually inspect the nameplates of appliances or main components, as well as determine conformity between the documents submitted to customs and the information indicated on the appliances. This inspection will allow customs to verify conformity between the characteristics contained in the customs clearance documentation and the information indicated on the appliances and packaging;
- As the last step of the inspection, draw samples which consists of conducting energy performance trials and tests in compliance with the technical regulations in effect for the imported product. Test samples shall be drawn by authorized inspection agents.

## 1.3 Electric Appliance Market Clearance Approval Procedure

A new law on energy efficiency in PNG should state the following:

1. The product manufacturer or importer must respect all obligations and dispositions outlined in the applicable regulations when introducing a product on the market.
2. Energy-intensive appliances and equipment intended to be sold in the national territory must respect the minimum energy performance and energy labelling requirements of the applicable effective regulations set forward in this project.

The market clearance approval procedure of a product subject to an energy label or MEPS comprises many steps, the basic prerequisite of which is the availability of appliance energy performance data.

### 1.3.1 Approval Procedure Steps

#### Step 1: Performance Test

Each product model subject to a prescriptive energy label or MEPS must undergo tests and trials whose results attest to its energy performance in compliance with the dispositions of regulations prior to being introduced on the market.

Therefore, the following procedure could be required:

- Product suppliers are responsible for having products tested, either in a third-party laboratory recognized and designated by the programme manager, or through their own means and in accordance with the requirements set forth for the given product in order to obtain the necessary authorization for market clearance.

If the energy performance of products must be tested by authorized third-party laboratories:

- The programme manager could permit the use of accredited international or regional laboratories upon programme launch while awaiting the development of national testing capacity, albeit the likelihood of such a development is pretty low over the next decade. Thereafter, a decision will be made as to whether accredited international or regional laboratories shall continue to be allowed or, on the contrary, the use of national laboratories will be required;
- The supplier submits to the programme manager the name of the laboratory where the energy performance tests were or will be carried out, as well as documents attesting that the given laboratory is well qualified to conduct energy performance tests on the type of imported appliance;
- The programme manager verifies the information on the capacity and accreditation of the laboratory and confirms whether said laboratory is approved as designated for such tests. A list of designated laboratories should be published online;
- The supplier assumes the costs of having energy performance tests conducted on products by authorized laboratories prior to market introduction;
- Product test results conducted by foreign accredited and designated laboratories should be accepted upon programme launch. A good international practice is to accept test results from laboratories accredited by the International Laboratory Accreditation Cooperation (ILAC)[6] for each target product;
- The importer of a new model for the first time must have the product tested by a government designated laboratory even if another importer has already imported the same model. This disposition avoids penalizing first-time importers to the benefit of importers who adopt a wait-and-see position.

### Assessment of Test Costs

Although prices may vary from one laboratory to another, here follows an overview of the cost for testing the energy performance of certain equipment:

- Lamp (6 units): USD 600;
- Refrigerator/freezer: USD 900 to 1,700;
- Air conditioner: USD 1,200 to 2,500.

## Step 2: Submission of Test Results

The supplier will submit the test report (self-declared or issued by the authorized third-party laboratory) as well as all product technical documentation to the programme manager for examination and verification.

For national laboratories, the laboratory could be required by regulatory obligation to simultaneously send the results to both the programme manager and the client to avoid document falsification. This type of obligation applies only to national laboratories because it is more difficult for a country to require a foreign laboratory to send a copy of client test results.

[6] The ILAC is an international cooperation comprised of accredited laboratories and inspection organizations and created more than 30 years ago with the aim of contributing to the elimination of technical trade barriers.

The programme manager can verify the coherence of claimed consumption with values from similar products. An appliance with a very high level of energy efficiency could call for more detailed verifications. Furthermore, if foreign test laboratories make product test results publicly available,[7] the programme manager could verify the authenticity of the test and compare received paper documentation with the online data. The manager then approves the product, adds it to the list of approved products and updates the list for customs.

### Step 3: Appliance Energy Performance Verification and Determination

The manager verifies the compliance and conformity of test results with effective regulations and appliance technical specifications respectively.

The manager then compares test results with the national database (if one exists, otherwise create one) to ensure that the latter does not contradict the test results of similar models from other importers.

Finally, the programme manager verifies the energy efficiency class (EEC) of the appliance to be affixed upon the equipment to accurately reflect the energy performance test results.

The tests must be carried out according to the effective test procedures by a local or foreign laboratory.

### Step 4: Supplier Notification of Results

If the tested appliance complies with requirements, the manager emits a preauthorization to the product supplier (manufacturer or importer) confirming product compliance with effective energy regulations.

This energy preauthorization confirms acceptance of either the information to be displayed on the energy label or the energy performance level of the appliance.

To obtain market clearance, the supplier will transmit the energy preauthorization to the competent authorities (the Ministry of Commerce, customs, etc.) who will verify that the product complies with all effective regulatory requirements.

Thereafter, the supplier may begin the import process of the product or launch it on the market if the product is manufactured locally.

Upon unloading imported products, the importer submits the import documentation containing the energy preauthorization to customs.

The competent authorities (customs, Ministry of Commerce) verify that the lots of imported products correspond to the brands and models indicated in the energy preauthorization. They then allow the approved products to be distributed and marketed.

Importers may submit, at their own expense, as many test results as there are programme manager-recognized laboratories. Since importers provide these results, they rarely contest the results, not to mention that the energy efficiency classes are publicly available and importers know, in principle, the

[7] Certain laboratories publish test results on the Internet. See, for example, http://www.iecee.org/ (payant), or http://www.ecodesign-fridges.eu/Pages/documents.aspx, or http://www.eurovent-certification.com/fr/Produits_certifies/Acces_par_marque.php?rub=04&srub=03&ssrub=&lg=fr, or http://www.atlete.eu/index.php?option=com_content&view=article&id=120&Itemid=117.

class assigned to the tested product before providing the information to the labelling programme manager.

For exceptional circumstances, there might be conflicting information in the national database, for example when two importers have had the same model tested by different third-party laboratories and the results and energy classes of which differ.

It must be noted that the level of manufacturing tolerance and precision of measurements can lead to different conclusions for different samples of the same product model.

Such a situation can lead to two identical models with two different EECs as a result of the two different tests, thereby creating conflict in the national database. It is therefore recommended that the superior class be assigned in the database in such cases, while taking into account a maximum admissible variation between the two test results. For example, if the lot with the superior EEC is five percent[8] more efficient than the lot with the inferior EEC, a superior EEC may be assigned to the inferior lot.

The accredited laboratory transmits the test results to the programme manager who will provide the classification and the list of authorized models to customs. The verification report must contain the energy performance of the appliance and results must be affixed thereon. It is recommended that the test results be used as the basis for classification.

Contestation

As mentioned, importers may not contest classification results if the latter are issued by a certified laboratory. In fact, EECs are determined by regulations (which may not be contested) and the standardized test procedures of such laboratories may not be interfered with. However, importers may at their expense request that a laboratory conduct another test and the product will not be released on the market before obtaining the results thereof.

Importers may nevertheless contest the results of a test conducted during a spontaneous verification. The absence of labels is the most frequent anomaly or infraction of distributors/importers.

### Step 5: Supplier Printing and Displaying Labels

The supplier has the labels printed and the distributor or retailer must affix them upon appliances in-store. For appliances still in stock, labels and specification sheets are displayed in transparent sleeves affixed to appliance packaging (with labels clearly visible), and these sleeves must be given to the client. The classification of the tested product and the information displayed on the label must be visible on the packaging.

Suppliers are responsible for producing labels. They must also affix them upon products or deliver them in sleeves to distributors who then affix the labels on the products they plan on displaying in their exhibition rooms (labels do not need to be affixed to products that remain packaged so long as the labels are affixed to the product boxes). However, suppliers can ask manufacturers to carry out these tasks before packaging to facilitate the process.

[8] This five percent value is a prudent choice. See Presutto (2011), Document de synthèse sur les procédures de test des appareils électroménagers et les bonnes pratiques, *Come on Labels*, p.11, Table 2.

The Ministry of Energy and the Ministry of Commerce shall periodically emit, through inter-ministerial decrees, directives on the production and displaying of labels. Suppliers will have to ensure that they possess the most recent energy labelling regulations.

### 1.3.2 Market Monitoring Through Sampling

Market monitoring through sampling is generally carried out to verify the compliance of products launched on the market with effective energy efficiency regulatory requirements. This is not standard procedure because if initial inspection is properly conducted upon importing products, the need to conduct retail market inspections becomes less significant. It is somewhat superimposed on the MVE process; hence the importance of designing and implementing a product compliance system that limits fraud and non-compliance.

In fact, any product that does not appear in the programme manager database is necessarily an illegal import, and it thus not necessary to proceed with a test before confiscating an appliance or prohibiting its sale. Conversely, fraud in laboratory test results whereby documents are falsified is rare.

It is important to note that it is rare for countries with energy labelling programmes to systematically and periodically carry out this type of verification given the costs thereof and the limited budgets of government agencies for such tests.

With limited budget resources, inspection agencies favour using budget allocations for other types of tests such as testing health and safety of products instead of testing one product characteristic that poses lesser risk to the consumer, such as energy consumption.

Furthermore, market inspections through sampling may concern monitoring and verifying the requirements of a label (and the presence of the correct label) targeting distributors and retailers. By not calling on the service of a laboratory, retail inspectors (usually working for the Ministry of Commerce) can carry out such inspections at little cost.

In either case, sampling is defined according to the four following criteria:

- Sampling frequency;
- Sample size;
- Compliance and sample acceptability conditions and regulations;
- Actions to carry out if the sample is deemed defective (or non-compliant with specifications).

These criteria are generally static or dynamic, which allows adapting verification activities in accordance with the concerned market actors and their respect of regulations. Contrary to the static method, the dynamic method implies not only higher inspection frequency and more restrictive rules when a product is launched or when successive defects are detected, but also a more ad hoc inspection when a process is completely controlled or has historically demonstrated acceptable compliance.

Moreover, the sample size may be established according to one of the three following elements:

- Statistic analysis;
- Past experience or certain market growth;
- Complaints from consumers or other importers.

However, samples, and by extension sampling, are generally determined by the budgetary constraints of the organisation in charge of MVE.

For this reason, it is important to provide the inspection agency with adequate human, technical, and financial resources to conduct necessary inspections and allow it to benefit from the energy and economic benefits of the energy labelling programme and minimum energy performance standards.

# 2 APPLIANCE INSPECTION PROCESS

This process occurs throughout the distribution chain. The goal of the inspection is to confirm whether a supplier complies with the obligations of the framework decree on minimum energy performance and energy labelling applicable to electric appliances and equipment, as well as with the associated decree texts and labelling standards. The entire inspection and verification system rests upon these regulations and the respect granted thereto. To be effective, these regulations must be precise and comprehensive.

This section describes the compliance mechanisms that ensure respect of established regulations. These procedures apply to situations whereby appliances have been made available to consumers, in other words after the import inspection procedures outlined in the previous subsections. It is recommended that the verification of appliances already available on the market fall under the purview of the Ministry/Department in charge of Industry and Commerce or, more precisely, the structure in charge of MVE.

The proposed approach to implement the energy labelling and MEPS compliance verification scheme essentially rests upon the overarching law on the safety of equipment and services. This legal disposition enables the acceleration of the energy labelling and MEPS programme implementation process in the country without having to adopt a specific law on verification modalities, inspections, and applicable sanctions in case of non-compliance with effective regulations.

In fact, a rapidly operationalized legal disposition would greatly facilitate the energy labelling and MEPS implementation process, as well as expected programme results.

## 2.1 Inspection Procedure Approach

The measures outlined in this procedure permit onsite inspections. This task is generally the responsibility of the Ministry/Department in charge of Commerce which is responsible for inspecting the compliance of products with regulations relative to fraud and competition.

Verifying energy labels should be carried out in stores in accordance with the same procedure for each visit to render inspection results comparable.

The elements to be verified onsite are the following:

- The details displayed on energy labels affixed to products featured on the showroom floors of distributors or importers are those as defined by the energy label standard applicable to a given product, as is the case with refrigerators.
  - The name of the supplier and the brand name;
  - The model reference number established by the supplier, in other words the serial number, usually alphanumeric, which serves to identify a specific model;
  - The EEC;
  - The annual energy consumption of the appliance;
  - The energy efficiency index;
  - The freezing and refrigeration capacity.

- The presence of the energy label and specifications sheet on the product delivered to the consumer, as well as on the packaging;
- The presence of an image of the energy label in-store and in all paper advertising (pamphlets, catalogs, etc.) or electronic advertising (Internet, emails, e-catalogs, etc.);
- Inspection of product energy performance through sampling and testing;
- Inspection of the technical documentation held by the importer.

Inspection activities and the processes to follow should be clear to be able to apply the different regulatory texts that frame the energy labelling and MEPS for each product type.

The latter allow inspection agents, which should be sworn by a relevant authority (e.g. Department of Commerce and Inustry) to proceed with all necessary inspections and verifications.

In case of violation, the sworn-in inspection agents prepare official violation reports and the files of contraveners are sent to the competent structure which brings suit or applies the sanctions set out by law.

## 2.2 Implementation Process

The implementation of an energy labelling standard must undergo a series of indispensable actions. Many aspects of compliance monitoring and verification are encountered prior and pursuant to implementing the MVE process.

### Prior to Implementing the Inspection and Verification Process

The following actions must be carried out:

- Elaborate laws and regulatory texts to institute energy labelling standards;
- Define the institutional framework and all relevant mechanisms to monitor and apply the laws and regulatory texts;
- Establish material and human resources, as well as define the various roles of:
  - Public and private actors and how they operate;
  - Various actors and how they interact with one another.
- Train and raise awareness among the different resources;
- Establish all interdepartmental procedures relative to monitoring, inspecting and applying the standard.

### During the Inspection and Verification Process

The following actions must be carried out:

- Verify compliance at all stages of the electronic equipment and appliance distribution chain:
  - Establishing a complaint call centre or direct phone lines or online service to allow individuals to report cases of non-compliance to MVE authorities (i.e. the UN RAPEX system).
- Apply sanctions.

**Pursuant to the Inspection and Verification Process**

The following actions must be carried out:

- Continue the process and factor in new appliances;
- Adapt standards to new technologies;
- Make revisions based on the reality in the field;
- It is important that clients incapable of seeing the product and label have access to this essential information before purchase. Online and mail order sales may be treated similarly to workshop inspections. A list of information to be verified is included in the enforcement actions relative to a given product.

### 2.2.1 Institutional Framework Implementation

The institutional framework supporting the programme must be well defined to avoid project failure. This project mainly concerns the Ministry of Energy and Petroleum and the Ministry for Commerce. These two ministries should therefore actively participate in the programme pilot phase.

Furthermore, one of the articles of the (eventual) labelling and MEPS decree text should propose the creation of a committee that would be comprised of the various interveners. This committee, presided by the government authority in charge of energy, could comprise:

- The government authority in charge of industry;
- The government authority in charge of commerce;
- The government authority in charge of finance;
- National Institute of Standards & Industrial Technology (NISIT);
- The laboratory in charge of inspecting and testing appliances (if applicable).

This National Appliance and Equipment Energy Performance Committee shall be responsible for:

- Proposing and periodically updating the list of equipment subject to specific energy performance and labelling requirements;
- Proposing and coordinating the implementation of an action plan to monitor the application of regulatory requirements for equipment subject to regulations;
- Monitoring the implementation process of regulations and proposing eventual modifications and improvements if necessary;
- Evaluating the technical, social, economic, energy, and environmental consequences of instituting the decree and associated texts and proposing an eventual review for modifications or improvements.

The respective duties of actors and their interactions should be well defined to permit proper programme execution.

## 2.3 Procedure Details

The site visit procedure should comprise three stages: preparation; inspection; and follow-up.

### Preparation

Since it is impossible to verify all businesses and products on the market, the Ministry of Commerce should, prior to visiting sites, prepare a work plan outlining the number of annual visits, types of stores to be visited (by distribution channel, region, etc.), and the appliances to be inspected. This plan should be prepared by the relevant authority while taking into consideration the available human and financial resources to perform the visits. Selecting specific appliances might be necessary due to lack of resources. The criteria used to select priority appliances to be inspected could include:

- Equipment subject to recently adopted regulations;
- Appliances that were deemed problematic in the course of previous market monitoring activities;
- Products with strong market penetration;
- Products with very high and very low EECs;
- Electric appliances whose purchase prices are very low or very high;
- Equipment enabling substantial energy savings at the national level (i.e. household cooling; lighting, etc.).

### Inspection

Selected stores will be visited without prior notice. However, to reinforce the impact of these visits, a general information letter could be sent to the national association of retailers, or concerned industry association, to inform it of site visits scheduled in the ensuing months to verify proper energy label display. This letter could also warn that the following (or similar) reasons for not labelling a product shall not be accepted:

- The establishment claims not to have received the labels from suppliers;
- The establishment did not affix the label at the front of the appliance to avoid modifying its appearance.

### Follow-up

The results of site visits must be analyzed and evaluated to conclude whether to apply sanctions or not. The nature of these sanctions shall depend on national legislation, but actions must be taken to ensure suppliers and distributors respect their obligations. The effectiveness of verifications shall be strengthened in the long term if results are presented to inspected stores. For example, if a store is part of a retail chain, the feedback could be provided to both the store and head office. Those stores that comply with the standards will be reassured by the MVE mechanisms implemented by the government, and contraveners shall consequently be sanctioned. Stores that do not perfectly comply will know that they must improve. The information contained in the feedback to these stores could include a notice of an upcoming site visit. A tracking system of complaints from consumers, market actors, and civil society[9] should also be developed.

[9] In India, the Organisation Bénévole d'Intérêt pour l'Education du consommateur (Consumer Education and Interest Volunteer Association) helps consumers to make well-informed purchase decisions. It is one of the first organisations to independently evaluate the performance compact fluorescent lamps (CFLs). In 2009, it led a global evaluation of the leading CFL brands on their quality and mercury content. Results brought to light a difference in CFL quality between two periods: before and after the Bureau of Indian Standards (BIS) issued standards for CFLs. The organisation presented these

### 2.3.1 Labelling Verification Procedure

Given the role of the Ministry/Department of Commerce in verification activities, its inspection agents will randomly choose samples of distributors to be inspected. This activity must, however, target major distributors to maximise the number of products covered per visit. In other words, distributors may be assigned statistical weight according to import volume. Furthermore, other criteria could be factored in (see Subsection 1.2.2 for a presentation on general sampling criteria). For example, smaller-scale distributors, believing they are shielded from the MVE process, might be tempted to not apply the labels. The frequency of visits will be high the first year and diminish in ensuing years, except for contraveners who will be subject to frequent visits or distributors whose practices warrant further inspection.

A review of exhibited appliances and their reference numbers in the imports database can serve as a reference. It is the duty of Ministry/Department of Commerce agents to apply the sanctions established by law in case of violation (absence of a label, label not corresponding to the exhibited model, misleading advertising, etc.). Also, the first sanction applied could be a verbal warning.

The inspection agents of the Ministry/Department of Commerce can maintain a list of contraveners to prioritize them in subsequent inspections. Ideally, a secure database should contain this information.

### 2.3.2 Verification of Specification Sheets Provided to Consumers

This verification shall be carried out while visiting the sites of importers and distributors. The Ministry of Commerce agents will ask to inspect certain non-exhibited appliances to determine if they are furnished with specification sheets and energy labels or if the latter are held by the distributors for remittance to purchasers. The absence of these sheets and labels is punishable by fine, as set out in the regulations. In fact, possession of material that does not comply with the effective regulations is considered as an import violation and is prohibited.

### 2.3.3 Energy Label Position Verification

Energy labels can be verified during visits to importer warehouses or distributor points of sale. Verification can also be conducted in-store to inspect the presence of labels. In this case, the Ministry of Commerce agents shall verify if the label is positioned where required by regulations. For instance, energy labels on inspected appliances must be affixed as follows:

- For refrigerators, freezers, and combined units, labels must be positioned on the front exterior or the upper part of each appliance;
- For air conditioners, labels must be affixed on the front exterior or the upper part of the appliance (i.e. the evaporator).

Moreover, a comprehensive database (ideally digital) containing all inspection results could be created under a single-window commerce transaction state programme. This database would need to be accessible by all institutions responsible for MVE. The database would serve as a means of communication between inspection agencies, customs, and the competent authorities. The inspection

conclusions to the public and informed the BIS and manufacturers of non-compliant products. (*En-lighten:* http://www.consumer-voice.org/Comparative-Product-Testing.aspx).

results contained in the database should be used to adjust monitoring activity plans and questionnaire content. In fact, if the area inspected reveals numerous cases of fraud, future monitoring of said area would need to be increased.

The absence of energy labels could indicate that the importer did not provide documents. Incomplete or inaccurate information could signify that the importer failed to forward the laboratory test data.

### 2.3.4 Verification of Energy Efficiency Levels of Appliances on the Market

The objective of this verification, using samples and tests, is to identify models that have undergone modifications and that do not correspond to the performance tests carried out by a designated laboratory upon market launch. Ministry/Department of Commerce agents will have to make efforts to administer and plan the logistics of the sampling and verification programme, notably:

- Inspection preparation;
- Travel (rolling stock);
- Work material;
- Duration of each activity on the site;
- Transport of samples to test laboratories;
- Analysis of results and actions to be taken, as the case may be.

In practice, these inspection activities are costly because of the laboratory test costs and are not carried out unless the administrator strongly believes the concerned importer or distributor aims to break the law. To reduce inspection costs, it will be agreed that if an enterprise is faulted, it must assume the costs of the laboratory tests. In case of the contrary, the administration shall pay for the tests.

### 2.3.5 Inspection of Technical Documentation Held by Importers

Technical documentation can be systematically verified by Ministry of Commerce agents during the first implementation year of the labelling programme to ensure that all stakeholders have properly assimilated and applied the dispositions of the effective regulations. If importers cannot provide the required documentation, they are at risk of being fined by virtue of said regulations.

To inspect documents, the following tasks are to be carried out:

- Read the reports;
- Share information and analysis results;
- Prepare an official report if documents do not comply with regulatory texts.

### 2.3.6 False Advertising

If the Ministry of Commerce becomes aware of false advertising, either in magazines, public exhibitions, or all other means of communication, contraveners can be sued in accordance with the dispositions outlined in Law n$^{o}$ 31-08 enacting consumer protection measures.

# 3 PENALTIES AND OTHER MEASURES TO ENFORCE THE ENERGY LABELLING STANDARD

This section presents the application process of the framework decree on the minimum energy performance and energy labelling of energy-using appliances and equipment, as well as the sanctions in case of non-compliance.

## 3.1 Implementation

To ensure implementation of the energy labelling and minimum energy performance of appliances, a national inspection entity must be designated. This entity should dispose of the material, human, financial, and organisational resources necessary to monitor the various entry points of merchandise into the country and the implementation of periodical monitoring and verification of appliances. This entity is also in charge of ensuring that all interveners in the market supply chain respect their obligations. Duties include verifications before an appliance is introduced in the chain as well as preparing and adopting robust texts enabling sanctions in case of non-compliance with established regulations. It will be important to regularly monitor the state of the market to effect corrective measures as necessary.

## 3.2 Penalties

It is clear that in the absence of adapted sanctions, actors in the supply chain will not feel the necessity of complying with the regulations on the purchase and sale of energy efficient products.

An eventual law on energy efficiency should prescribes punitive fine ranging from PGK 3,400 to 34,100 for all who do not comply with regulatory requirements. Sanctions vary according to the severity of infractions, many of which have been established and are presented in the following table.

**Table 1: Possible Sanctions**

| Actors | Description of Non-Compliance | Possible Sanctions |
|---|---|---|
| Importers | Absence of either energy label or documentation on the product or packaging. | › Verbal warning and demand for compliance.<br>› In case of repeat offence, initiate an EE test procedure and punitive fine. |
| Retailers and Sellers | Absence of either energy label or documentation on the product or packaging. | › Verbal warning and demand for compliance.<br>› Punitive fine.<br>› In case of repeat offence, initiate an EE test procedure and publish non-compliance in the local newspaper (*public sham*ing). |
| Importers | Non-compliant energy label (positioning, type, EEC number). | › Verbal warning and demand for compliance.<br>› Punitive fine.<br>› In case of repeat offence, inspect all appliances and issue fine. |
| Retailers and Sellers | | › Verbal warning and demand for compliance.<br>› Punitive fine.<br>› In case of repeat offence, initiate an EE test procedure and publish non-compliance in the local newspaper (*public sham*ing). |
| Importers | Energy label does not correspond to appliance documentation. | › First offence: Punitive fine.<br>› Initiate EE test procedure.<br>› In case of repeat offence, issue supplementary fine. |
| Retailers and Sellers | | › First offence: Punitive fine.<br>› Initiate EE test procedure.<br>› In case of repeat offence, issue supplementary fine and publish non-compliance in the local newspaper (*public sham*ing). |
| Importers | Falsification of test results. | › First offence: Punitive fine.<br>› Demand for compliance and initiate EE test procedure.<br>› In case of repeat offence, issue supplementary fine. |
| Retailers and Sellers | | › First offence: Punitive fine.<br>› Demand for compliance and initiate EE test procedure.<br>› In case of repeat offence, issue supplementary fine. |

After issuing possible sanctions due to non-compliance or the actor implicated, other more severe sanctions may be considered. This is the case of punishments foreseen for repeat offences accompanied by a manifest will toward falsification. In such circumstances, sanctions could consist of the following:

- Imprisonment pursuant to trials whereby defendants could defend themselves against accusations;
- Sanctions issued to temporarily ban operations, even indefinitely, as a function of repeat offences and gravity of fraud committed;
- Withdrawal of permit or authorisation to operate import activities or sell in the PNG territory.

# 4 EXISTING MARKET MONITORING PROCEDURES ON COMPLIANCE WITH SAFETY STANDARDS

This section requires more information from the PNG government.

## 4.1 Legal and Institutional Frameworks

### 4.1.1 Legal Framework

The Independent Consumer and Competition Commission (ICCC) aims to protect consumers and works to reduce the sale of unsafe consumer products that may cause injury, harm or death to consumers (particularly children). Safety surveys are conducted regularly throughout Papua New Guinea to remove potentially harmful products. Surveys are conducted during October/November each year. Consumers can report concerns about products to the ICCC for them to review and potentially remove from the market. The ICCC has entered into a Memorandum of Understanding with customs authorities to inform them about unsafe products so they can be monitored and confiscated at points of entry into the country. The ICCC also consults with other international agency partners such as the Australian Consumer and Competition Commission, the Product Safety Consultative Committee (of the states, territories and Commonwealth of Australia and New Zealand) and other regulatory bodies and organisations in other countries on product safety issues, and other matters affecting consumers.

In accordance with the dispositions in the EEL on the safety of products and services in PNG, a national market monitoring system has been implemented in the Ministry in charge of Industry and Commerce.

This national market monitoring system protects consumers from risks linked to the use of industrial non-food processing and non-pharmaceutical products on the national market. It also serves to preserve the interests of the various economic actors (manufacturers, importers, distributors) by ensuring conditions that foster loyal competition in the local market by both monitoring compliance with obligations incumbent upon each and resorting to sanctions that could go as far as destroying fraudulent products.

Therefore, economic actors are required to offer on the market only products that meet the mandatory prescriptive requirements.

### 4.1.2 Institutional Framework

The structure of the national market monitoring system depends on the Department of National Planning and Monitoring (DNPM) of PNG. It is comprised of:

- A centralized unit: key central agency advising Government on matters relating to strategic development; development policy; development planning and programming; foreign aid coordination and management; and monitoring and evaluation of national development projects and programmes;
- External units: to be determined.
- Accredited compliance assessment organisations (accredited laboratories) to test and analyse products sampled during inspections.

The mission of the centralized unit is to:

- Elaborate the legal arsenal necessary to monitor the national market;
- Coordinate national market monitoring efforts;
- Ensure that industrial products are safe when made available on the national market;
- Inspect industrial products subject to PNG technical regulations (mandatory standards, technical regulations, etc.);
- Cooperate with other national authorities such as: the Customs authority; ministerial agencies involved in the inspection process; and the NISIT;
- Ensure the implementation of agreements related to compliance evaluation.

# CONCLUSION

The report presented herein concerns the implementation of electric appliance market monitoring mechanisms (or MVE) pursuant to the establishment of the MEPS and energy labelling programme. Market monitoring consists of ensuring that appliances introduced onto the market are labelled in accordance with programme directives and meet the minimum energy performance requirements.

The success of MVE mechanisms requires an adapted regulatory framework and a long-term political commitment to ensure that products comply with established standards and that the public trusts the programme, and to optimise the energy savings potential of energy efficiency programmes. It is clear that PNG will need political leadership to support both of these requirements.

The entities that will participate in this verification are the inspectors (agents of the Ministry/Department of Commerce), customs agencies, and the concerned state authorities. The state authorities are responsible for establishing a periodical action plan based on reports on the state of the market provide by the inspectors.

The processes to monitor the various actors in the appliance supply chain is also described herein. These actors are, in order: manufacturers and importers; distributors; sellers and retailers as well as consumers. For each actor, the same verification process shall be applied, notably:

- Verification of the presence of a compliant energy label;
- Verification that the energy efficiency information conforms to the information on the label;
- Verification that the appliance energy efficiency conforms to the declaration in the technical documentation provided by the manufacturer (there will, however, be no verifications of the consumer).

Furthermore, many measures and sanctions are herein suggested in the case of non-respect of MEPS and labelling instructions. These measures are more or less important depending on where an appliance is in the supply chain and could range from a simple warning to a trial culminating in community service or even incarceration.

Given the importance of standards and energy labelling in developing energy efficiency in a country, these can be perceived as a technical or commercial barrier. Nonetheless, these energy performance measures represent very advantageous GHG emission reductions and very beneficial energy savings. Regardless of the investments these regulations require, it is possible to state that these are inferior to the value of energy savings hereto promoted.


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