FAST TRACKING THE IMPLEMENTATION OF MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS) AND MANDATORY APPLIANCE LABELLING IN SOUTH AFRICA: LESSONS LEARNT FROM THE VOLUNTARY APPLIANCE LABELLING

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ABSTRACT

In most economies, the voluntary appliance labelling paves a way for the mandatory minimum energy efficiency performance standards (MEPS) and labelling program. Usually, the lessons learnt from the voluntary program are used to improve the mandatory program. Similar to most countries, South Africa started with the voluntary appliance labelling program in 2005 with the aim of preparing the South African market for the mandatory program. In communication with the Department of Energy, the voluntary appliance labelling was not a success mainly due to lack of incentives. This paper discusses the some of the lessons learnt from the voluntary appliance labelling to suggest ways in which the implementation of MEPS can be fast tracked.

1. INTRODUCTION

The Department of Energy (the former Department of Minerals and Energy) has recognised that energy efficiency is one of the most cost effective measures of meeting its energy development goals – increasing energy security, reducing energy related GHG emissions and improving economic competitiveness [2][3]. In an endeavour to promote energy efficiency, South Africa released its first Energy Efficiency Strategy in 2005. The strategy outlined the energy efficiency measures that can be implemented to reduce energy demand across all sectors of the economy by 12% in 2015. Each sector had a set of proposed interventions that can be implemented to achieve energy demand reduction in the various sectors. In the residential sector which is the second largest electricity consuming sector, there were five measures proposed to reduce the energy demand. The five energy efficiency interventions were – establishing standards for housing, establishing efficiency standards and labelling of household appliances, implementing efficient lighting program, introducing standards for non-electric appliance and developing fuel standards.

Most of these programs or interventions are still in initial stages of implementation. Of these five interventions, the only program that has so far been implemented successfully, although its sustainability is not well documented is the efficient lighting program which is run by Eskom. Some performance standards for non-electric appliances such as paraffin stoves have been developed and the earliest was introduced in 2007 [7]. The standard addressed safety and performance of the wick paraffin heaters and stoves. The establishment of efficiency standards and labelling for household appliances is envisaged for implementation in 2013.

Even at its inception, the Energy Efficiency Strategy of 2005 recognised that mandatory energy efficiency standards are important and plays an integral role of the energy efficiency strategy.

> "*Mandatory energy efficiency standards will be an important and integral part of the Strategy.*" "*Mandatory appliance labelling for household appliances forms an important element of the Strategy and will be promoted and implemented.*" [2]

Before progressing far, it is crucial to understand the terms "minimum energy efficiency standards" and mandatory appliance labelling and the benefits that South Africa will reap from the program. Appliance labelling is a system which allows consumers to compare the energy efficiency of the products they wish to purchase [9].

Labelling only provides consumers with energy efficiency related information but does not force the manufacturing of energy efficient appliances or motivate the removal of inefficient appliances from the market. Consumers can still buy inefficient appliances based on their preferences. Labelling is effective as an energy saving intervention if it influences consumer appliance choice. When the legislation of the country enforces appliance labelling, then the labelling is said to be mandatory. According to [3] energy efficiency standards are a set of procedures and regulations that prescribe the minimum energy performance of manufactured appliances. Standards setting cannot apply to all appliances but one can still compare the energy performance of different models in the market through appliance labelling. Unlike labelling, standards can impact on appliance energy efficiency even if consumers are unaware that the program exists. Energy labels can stand alone or complements the standards. In South Africa, the government is running the mandatory labelling and minimum energy efficiency performance programs in parallel. In this case the labels will be complementing the standards. MEPS and mandatory appliance labelling will benefit South Africa by:

1. Prohibiting the dumping of inefficient appliances in the market by its trading partners, as is the case in Nigerian market [10].

2. The capital investment required for the energy supply infrastructure is reduced and the money can be used to advance other goals of development.
3. Enhancing consumer's welfare
4. Meeting climate change and environmental goals

Although mandatory appliance labelling was seen as important, the government still opted for voluntary labelling due to: lack of necessary legislation for mandatory program at the time, it was felt that the market (industry and consumers) needed a signal to start preparing for mandatory regulations and appliance labelling was not given a particular time frame in which it will be implemented. Most countries start their labelling programs with voluntary labelling and the lessons drawn from the voluntary labelling are usually applied on the mandatory labelling. Likewise, in South Africa, there were some lessons that were drawn from the voluntary labelling program. This paper discusses those lessons from DOE perspective, retailer's perspective and consumers' perspective based on author's analysis of retailers' responses.

The remainder of the paper is as follows: Section 2 discusses the progress that South Africa has made so far with regards to efficiency standards and appliance labelling programs in the residential sector. Section 3, presents the views from the Department of Energy's on voluntary appliance labelling and the analysis of retailers' response hence highlighting the lessons learnt from the voluntary labelling. Section 4 discusses how the lessons from the voluntary labelling can be applied to the mandatory standards and labelling to fast track and improve its chances of success. Section 5 gives conclusions and remarks.

2. PROGRESS THUS FAR

Since 2005, South Africa has been progressively working hard to try and implement the mandatory efficiency standards and appliance labelling. This can be seen through the progress on policy documents, acts and legislatures that have been drafted since the first Energy Efficiency Strategy. These documents are the Energy Act of 2008 (Act 34 of 2008) which gives the Minister of Energy the authority to implement the mandatory appliance labelling, the energy efficiency standards for electrical appliances in the residential sector (SANS 941) and the development of the joint strategy between Department of Trade and Industry (DTI) and Department of Energy (DOE) to phase-out inefficient appliances from the market. With the review of the National Energy Efficiency Strategy in 2008 by the Department of Energy (DoE) and the tabling of the Industrial Policy Action Plan 2 by the Department of Trade and Industry (DTI) in 2010, it was agreed by the two ministries to develop a joint strategy to phase out energy inefficient appliances, lighting and equipment in South African market [8][3]. MEPS was earmarked as a government priority in the draft National Climate Change Response Paper (2010). The first edition of the standards (SANS 941) for energy efficiency for electrical and electronic apparatus was published in the last quarter of 2011 for comment. The standard covers energy efficiency requirements, measurement methods and energy efficiency labelling of electrical and electronic apparatus.

In communication with the Department of Energy, it was gathered that the regulations (the legislation) that will guide the implementation of MEPS and mandatory appliance labelling is already drafted and ready although it has not been published to the public.

SABS together with DOE chose twelve residential appliances that will be included in the first phase of the MEPS and mandatory appliance labelling. These appliances are domestic refrigerators (fridges, freezers and their combination), washing machines (top and front load), tumble driers and their combination, room air conditioners, dishwashers, ovens and hot plates, electric heaters and electric water heaters 2010 [9] and their penetration levels in South African residential sector are shown in Figures 1, 2 and 3.

Figure 1 shows that the first two figures it is clear that appliance ownership increases with increasing income. The penetration levels of electric stoves, refrigerator and top loading machine are increasing in each year (see Figure 2). Based on Figure 3, refrigerator, electric stoves and top loading washers are one of the best candidates for phase 1 of MEPS program as they have high penetration levels and growth rates.

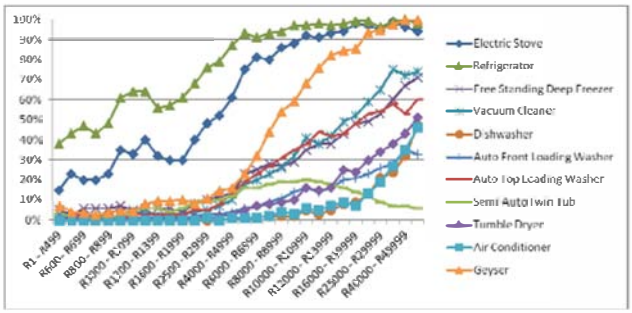

Figure 1: Appliance ownership based on continuous income [11]

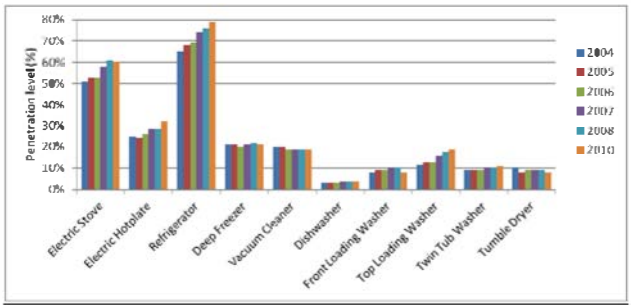

Figure 2: Ownership levels of the chosen appliances since 2004 till 2010 [11]

3. A GLIMPSE ON THE VOLUNTARY APPLIANCE LABELLING

Similar to most countries, South Africa started with the voluntary appliance labelling. Usually the lessons learnt from the labelling are applied to mandatory labelling when it is started. In communication with the Department of Energy, the voluntary labelling program was not successful due lack of dedicated testing facilities and incentives to the manufacturers, retailers and consumers. Based on the information that was gathered from the sales department in Tafelberg furnishers in Diep Rivier branch, it seems like many people are not aware that they can get energy efficient fridges. Many people who buy fridges from this shop were mainly concerned about the size of the fridge, the cost, model type and not on whether it is energy efficient or not. Therefore on the consumer's side one can conclude that the South African consumers are not aware of the energy labels.

4. SUGGESTIONS ON HOW TO FAST TRACK MEPS

For the standard and labelling program to be successfully implemented, there are four types of resources that needs to be devoted to it. These resources are classified into capacity, financial, legal and physical resources. The provision of the above resources should be coupled with a strong political will to support the program, which is evidently available in South Africa. This section starts by discussing what resources are already in place for the standards and labelling (S&L) program to be implemented successfully. Then it suggests improvements on available resources and thirdly it suggests ways and strategies that need to be followed to avail the required resources so that the implementation of the program can be fast tracked.

4.1 RESOURCES THAT ARE ALREADY IN PLACE

The legal and capacity are partially available to start implementing the program. On the legal framework, the legislation indentifies DOE and DTI as the two agencies that have the legal authority to implement the standards and labelling (S&L) program. DOE and DTI will be implanting the program with support from other institutions such as SANEDI's energy efficiency centre, National Regulator for Compulsory Specification (NRCS), South African Bureau of Standards (SABS), South African National Accreditation System (SANAS) and the private sector.

Legislation (policies that will guide this program is already drafted. Capacity wise, there are areas where South Africa is fully capacitated but there are areas also where capacity building is also needed. South Africa has a well-developed system of standards and codes of practice and the country is well capacitated in this respect. For example SANS 941, which is specific to electrical appliances, is already developed. There is limited capacity on the technical side of things. South Africa still lacks technical expertise to check the accuracy of the claimed energy performance shown on the appliances [5]. It is stressed by [11] that if standards and labels are designed effectively they will bring benefits, it they are not designed well they have a potential to disrupt trade, add costs and can even limit choice. The designing of the program is highly important, therefore appropriate personnel to design the program is as important as are the four resources. Even if the capacity to design the program is not available now, it is relatively easy to find as long as one has people who understands the program can be found.

4.2 RESOURCES THAT ARE NEEDED

The physical and financial (in the form of incentives) resources that are required to run the program are still lacking. South Africa still lacks modern testing facilities to check the accuracy of the claimed energy performance shown on the appliances [5]. Internationally, it has been proven that the success of S&L program depends on the complementary policies. In this paper, the complementary policies are discovered to be financial in nature. These should be in the form of financial incentives for manufacturerers, retailers and consumers. In communication with the Department of Energy, it was discovered that lack of incentives for manufacturers, retailers and consumers was the main reason why the voluntary labelling was not a success.

In communication with the sales department of Tafelberg furnishers in Diep Rivier Branch, it was discovered that many customers do not use energy efficiency performance as one of the criteria for buying refrigerators. Many customers (although an exact number could not be established) that visited the branch to buy refrigerators never asked whether the refrigerator was energy efficient or whether it is labelled so that they can choose based on the energy labels. It is therefore clear that consumers are not aware of energy efficiency labels. In this communication, it was gathered that the sales representatives do not influence customers to buy energy efficient appliances. The energy efficiency/label information will only be given if the customer asks about it. This goes back to DOE's views that the voluntary labelling was not a success due to lack of incentives to the stakeholders. If sales representative are given some form of incentive to sell labelled appliances, informing the customer about the appliance would be one of their mechanisms to influence the choice of customers.

4.3 RESOURCES NEEDED TO FAST TRACK MEPS

The modern testing facilities need to be built. These facilities are very costly and sometimes they can hamper the implementation of the program. Given the financial burden that the building of these facilities can cause, South African has three options to take in order to fast track the implementation of its MEPS program. Firstly, South Africa can choose to go for regional co-operation,

where this resource can be shared by a number of countries in the South African Development Community (SADC) region. Although seeking regional co-operation can lower the overall cost of the program, this route can slower the implementation, if many countries in the region are still behind with their MEPS programs. Secondly, the government can depend on the testing capability outside the country by involving its trading partners while waiting to build their own testing facilities. Thirdly, South Africa can also use the NRCS's testing facilities while they are still waiting to build bigger and dedicated testing facilities.

Despite the fact that South Africa has capacity on some other aspects such as standards and policy development, South African government and institutions still needs to be capacitated in terms of testing capabilities. Although raising awareness in not seen as one of the resource that MEPS requires, this is as important as the program itself. Therefore, a comprehensive nation-wide (industry and consumer) educational and a communication campaign must be built also.

4.3.1 PROPOSED INCENTIVES FOR MANUFACTURERS, CONSUMERS AND RETAILERS

The success of the most S&L programs in the world is attributed to complementary programs that provide incentives and financing for manufacturers, consumers and retailers. On the manufacturers' side these have to be in a form of low interest loans, competitions and incentive payments, on the consumers' side these are in the form of credits and discounts and on retailers' sides this is in the form of sales rewards.

4.3.1.1 Manufacturers Incentives

Manufacturers can be incentivised to manufacture super efficient appliances by offering them some financial and sales boost packages in the form of competition. For example, pay some incentive money to a company that will produce the super efficient refrigerator or pay manufacturers so that they can reduce wholesale price.

4.3.1.2 Retailers Incentives

Sales representatives have substantial influence on consumer choice. Incentives that encourage sales representatives to sell efficient appliances can motivate sales representatives to influence consumers to buy efficient appliances.

4.3.1.3 Consumers Incentives

Consumers can be incentivised through rebates and discounts. Some examples of rebates in South Africa are the ESKOM SWH and heat pump rebate systems. Rebates have to be applied in wisely. Rebates are most effective if they are used to solve peak load problems. If rebates are applied to all appliances, this will encourage buying and have a potential of causing more electricity consumption. An example where rebates can be applied and have a significant energy demand reduction impact are on refrigeration. Many households own refrigerators, therefore favourable refrigeration rebates can remove inefficient refrigerators in the market in 5 years.

6 CONCLUSION

Although the decision to buy an appliance lies with an individual appliance, if South Africa can run a well-designed and managed standards and labelling program, the electricity savings may start to be realisable in 10 – 20 years given the fact that the life span of most appliances is 15 years. The learning from the voluntary appliance labelling shows that incentives should be prioritised as complementary packages to manufacturers, customers and retailers so that MEPS can be fast tracked.

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