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## **DEVELOPING A REGULATORY FRAMEWORK FOR MALDIVES ENERGY SECTOR**

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### **ENERGY EFFICIENCY STANDARDS AND LABELLING SCHEME FOR THE REPUBLIC OF MALDIVES**

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#### **CONSULTATION PAPER (Draft)**

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## ABBREVIATIONS

MEA	Maldives Energy Authority
MRF	Maldivian Rufiyaa

# ENERGY EFFICIENCY STANDARDS AND LABELLING SCHEME FOR THE REPUBLIC OF MALDIVES

## CONSULTATION PAPER

This paper is presented as the basis on which the stakeholders will be engaged in arriving at important decisions on the proposed Energy Efficiency Standards and Labelling Scheme for the Republic of Maldives. Decisions arrived in this consultation will be used for drafting regulations on energy efficiency standards and labelling.

### 1. INTRODUCTION

Energy supply of a country remains as one of the key drivers of economic development, as energy is one of the main contributors to economic output. Countries without its own energy resources are facing increased levels of vulnerability owing to the ever-increasing scarcity of traditional commercial sources of energy and resultant market volatility. The Republic of Maldives is facing the dual challenges of energy security and climate change both of which are deeply rooted in the energy supply dynamics.

Energy efficiency and conservation could be significant strategies to circumvent issues related to the dual challenges for energy constrained countries. Energy efficiency can be improved using three broad approaches. Firstly, better and efficient conversion technologies can be utilised to derive more useful energy from primary energy sources. Secondly, there can be many improvements made to the way how the useful energy is transmitted, stored and distributed to end-users. The most important approach is at the end-use level, where significant energy savings can be realised by curtailing unnecessary energy use, improving efficiency of equipment which provide the required service and adopting better practices. Energy efficiency standards and labelling of appliances is a long term programme which can gradually increase the efficiency of end-use appliances through a market transformation. The market transformation is usually attempted on many fronts, ranging from hard actions such as prohibition of inefficient appliances, to softer actions such as providing useful information to change consumer buying behaviour from simple, purchase-price based decision making to life cycle cost-based decision making. Energy labelling falls into the latter category of soft actions and is considered to be a very effective low cost approach to ensure efficient use of energy.

### 2. PURPOSE OF CONSULTATION

Maldives Energy Authority has decided to invite stakeholder representations on the design and implementation of energy efficiency standards and a labelling program for Maldives. Energy efficiency standards and a labelling programme require that certain conditions are made available so that the long term programme can take root as a well laid-out system. Stakeholder comments are expected to determine how such conditions can be made available. The representations shall be in **writing** and are expected only on the areas shown below.

- 2.1 Roles and responsibilities:** The programme will be owned by MEA, and will involve many other partner organisations such as Maldives Customs Service, Energy Utilities and Licensees. Interrelationships, roles and responsibilities of all present and future partners must be clearly defined.
- 2.2 Long term commitment:** In order to be successful, the labelling programme must receive unstinted support of all stakeholders well into the longer term. Structures and systems of the Republic of Maldives were examined and the best way to ensure longevity of the programme was understood to be through an introduction of a regulation.
- 2.3 Characterisation of markets:** The relatively small market size of the Republic of Maldives provides opportunities which are not available for larger volume markets. Similarly, there are constraints imposed by the smaller sized market. Hence the characteristics of the Maldivian market for appliances must be clearly documented. A survey of appliances available in the

market coupled with a continuous monitoring of imports is proposed as the methodology for market characterisation.

- 2.4 Dominant criteria for appliance selection:** Since a labelling programme can provide several benefits such as direct energy savings and differed generation investments, there is a necessity to identify the best criteria of prioritising appliances for labelling. The set of criteria which will derive the maximum economic benefit to the country will have to be agreed upon. It is proposed to evaluate each appliance on:
- a) Number in use and annual imports
  - b) Impact on electricity supply (kWh) and demand (kW)
  - c) Ease of implementation
- 2.5 Nature of the programme:** The labelling programme can be implemented at several levels of depth. At one extreme, the programme can rely entirely on energy performance standards set by other countries or agencies. At the other extreme, a fully fledged system including test facilities and laboratories can be established with a heavy involvement of the stakeholders. Decisions must be taken on the nature of the programme at the inception and the timeframes for evolution of the programme to a more involved system. Considering the need to implement the programme on an urgent basis, a less involved scheme which can benefit from energy performance tests on appliances previously conducted by recognised laboratories, translated into the MEA-specified approval formats, and certified by the relevant laboratory, is proposed.
- 2.6 Import control and fiscal incentives:** The programme can be designed to prohibit the import of severely inefficient appliances, by establishing a Minimum Energy Performance Standard (MEPS). Similarly, efficient appliances can be promoted by levying lower import duty and taxation compared with taxation of ordinary appliances. It is proposed to include such measures in the programme, initially by issuing energy labels for appliances which meet the MEPS and later through fiscal incentives for efficient appliances and prohibition of appliances which fail to meet MEPS.
- 2.7 Labelling roadmap:** The programme can be implemented either on a voluntary basis or a mandatory basis. It can also be initiated as a voluntary scheme and evolve into a mandatory scheme. A roadmap is required to be agreed upon to set timeframes for the evolution of the programme and also for introduction of new appliances into the programme. Agreement to the roadmap proposed in section 3.2 or any modifications there to, are requested.
- 2.8 Communication strategy:** Energy label, being a powerful tool to communicate the energy performance of an appliance need to be well thought out and designed, giving due recognition to cultural and social norms. Apart from such concerns, decisions must be taken on what genre of information is to be provided on the label. Following information are proposed to be included in the energy label.
- (a) Rated power (in Watt or other appropriate unit)
  - (b) Energy consumption per month and the likely duration of operation per day which is assumed for estimating monthly energy use by the product
  - (c) Actual power consumption (in Watt or other appropriate unit)
  - (d) Model number
  - (e) Brand name

### 3. THE PROPOSED APPROACH

A basic framework for implementation of the energy efficiency standards and labelling is proposed, giving due consideration to the apparent features of the Maldivian appliance markets. This proposed approach will have to be improved after the consultation, where less obvious features of the Maldivian appliance market will be identified by stakeholders privy to such in-depth understanding of the markets. The proposed approach involves 6 important elements as described below.

#### 3.1 Selection of appliances for labelling

It is understood that air conditioners, refrigerators, light sources and ceiling fans are seen as obvious high priority candidates for a labelling programme. At the next level of priority, water pumps and washing machines could be chosen for labelling. However, these decisions ought to be supported by careful evaluation of the possible impact each appliance can make after the programme implementation.

As a first step, a basic load research will have to be conducted in the target consumer segments, identifying the likely populations and usage patterns of each appliance at present and in future. Next, the expectations of the country must be clearly identified: whether energy savings, demand management or peak demand reduction are seen as the most desirous outcome of the programme. When the data from the load research is evaluated from the perspective of the expectations, a few priority appliances can be selected for implementation.

Each selected appliance will be subjected to a market characterisation study, to identify the level of penetration of different brands with different energy performance levels. The results will be compared with a top of the range product from a mature market, to estimate the likely benefits of the labelling programme. Similarly, the impact of establishing MEPS for each selected appliance can be estimated.

Giving due consideration to all of the above and the most important factor of ease of implementation, the appliances can be listed in a hierarchy for labelling programme.

#### 3.2 Preparation of labelling roadmap

Once the appliances are listed in a hierarchy for labelling, timeframe for implementation of the programme can be determined. Considering the market realities, the following milestones are proposed for the labelling roadmap.

- Establishment of MEPS (2012)
- Introduction of voluntary energy label for products surpassing MEPS (2013)
- Introduction of mandatory energy label (2015)
- Prohibition of products which fail to meet MEPS (2015)
- Introduction of fiscal incentives (2016)
- Revision of energy performance standards (at 2 year intervals)

After initiation, the programme will have several appliances in various milestones of the roadmap, and there is a strong possibility of reducing cycle times assigned for each phase, due to learning curve effects.

#### 3.3 Drafting of energy performance standards

Energy performance standards (EPS) for prioritised appliances can be derived by evaluating programmes conducted by other countries on similar appliances. It is advisable to filter in common attributes from popular labelling programmes for ease of comparison and translation of EPS for the proposed labelling programme. Each of the prioritised appliances will have an assigned EPS from which a MEPS too can be derived. It is recommended to launch the programme by differentiating between products which surpass MEPS and products which fail to meet MEPS. This differentiation can be realised by issuing labels only to the products which surpassed MEPS.

### 3.4 Drafting regulation on energy labelling

After completion of drafting EPS for the highest priority appliance and establishing a MEPS for the same, the regulation on energy labelling can be made effective. Along with the regulation, the features and appearance of the energy label will have to be published. It is advisable to publish an all encompassing regulation with a schedule of appliances where new appliances can be added by appending the appliances in the schedule of the regulation. The draft regulation presents these aspects in greater detail.

### 3.5 Communication

A carefully designed communication strategy will have to be used to communicate the various effects of the programme to stakeholders. This is especially important in the area of gaining vendor support for the programme. Adequate measures must be taken to avoid surprises to market players, by forewarning them of any impending impacts.

The launch of the label and early promotion of the label require considerable media space-time and such necessities are required to be built into the programme.

### 3.6 Revision of EPS and follow up

Once the pipeline of appliances progress in the programme, careful attention must be paid to post implementation activities. Special emphasis must be placed on market vigilance activities, to ensure full compliance. If full compliance is not visible and felt by the end users, especially at the early stages of the labelling programme, the end users tend not to be guided by the label. Such early problems have a lasting effect on the labelling programme and must be avoided at any cost by ensuring proper vigilance is maintained.

The EPS of a given appliance can be periodically revised to ensure better efficiency. These revisions can be used to introduce new features to the programme such as fiscal incentives for better products and prohibition of inefficient appliances.

## 4. SALIENT FEATURES OF THE REGULATION

An all encompassing regulation which can be used to implement the whole labelling programme is proposed, instead of individual regulations for a given appliance. Through this approach, it is expected that the long term support necessary for the programme is ensured. Accordingly, only the schedules which append the regulation will have to be updated when a new appliance is scheduled to be labelled. Salient features of the regulation are given below.

- 4.1 Citations:** The regulation, when required to be referred to, will be cited as given in this section of the regulation
- 4.2 Definitions:** Given the complex technical nature of the regulation, key terms and phrases are defined in this section
- 4.3 Scheduling of Appliances:** The methodology of deriving energy performance standards, setting of minimum energy performance standards, how the tests are to be carried out, the timeframes involved in the evolution of the labelling programme, how the revisions are to be effected and the mode of operation of market surveillance will be described in this section.
- 4.4 Product Certification:** The steps which are to be followed in getting a product registered when an appliance is scheduled for labelling is presented in this section. This section also

covers how the eventual product changes and modifications are catered to and the means of maintaining the product history.

- 4.5 Energy Label:** How the energy label is to be displayed on scheduled appliances are described here with references to the more detailed schedule presented on that behalf. A parametrically dimensioned graphic presentation of the label with detailed description of all elements and data fields in the label will be included in this section.
- 4.6 Prohibitions:** Prohibitions coming into effect with the enforcement of the regulation and specific effect on products which fail to meet the MEPS are described in this section. Other related occurrences such as matters arising out of import, storage and selling of non-labelled products when such products are scheduled, fraudulently affixing energy labels to products which does not carry a valid energy performance certificate are also dealt with in this section.
- 4.7 Consequences:** The consequences of offences under this regulation such as fines imposed, confiscation and disposal of offending consignments of products and the manner in which the cost of such actions are to be recovered from the offenders are presented in this section.
- 4.8 Schedule I –** Energy Performance Standards and the relationship of the label to be displayed in a particular product are tabled in this schedule. This schedule will automatically spell out the MEPS to be met by a product when an appliance is scheduled for labelling, and will be frequently revised to accommodate new products which are scheduled from time to time.
- Schedule II –** This schedule will present the test methods of a particular appliance acceptable for MEA and also provide a list of accredited laboratories and approved test facilities.
- 4.9 Schedule III –** The fees payable in registering a product and fines payable for any offences committed are listed in this schedule.