



JICA Technical Cooperation

for

DSM / Energy Conservation in the Republic of Maldives



Manual
for
Official Recommended Electric Appliances
Approval Procedure

(First Draft)

March 2010

Table of Contents

1. INTRODUCTION	2
1.1 Background.....	2
1.2 Objective of Manual	2
1.3 Main Target	2
1.4 Intended Users	2
2 Application	3
2.1 Application Flowchart.....	3
2.2 Explanation of each Application Procedure	3
3 Evaluation	4
3.1 Target Electric Appliance.....	4
3.2 Evaluation Method.....	5
3.3 Evaluation Standard.....	5
3.4 Evaluation Standard Value	6
4 Others	7

<Annex>

Annex 1 : Application Form for Official Recommended Electric Appliance

Annex 2 : Sticker (Draft)

1. INTRODUCTION

1.1 Background

In order to mitigate the climate change and the carbon neutrality, the Government of Maldives (hereinafter referred to as “GOM”) is trying to put an effort on DSM/Energy conservation at the same time on diversifying and developing the energy resources.

Realizing this urgent need, the GOM, represented by Ministry of Housing, Transport and Environment (hereinafter referred to as “MHTE”), and Maldives Energy Authority (hereinafter referred to as “MEA”) submitted an official request for “Feasibility Study (F/S) for Application of Photovoltaic Power on Male’ and Hulhumale’ Island”. In response to this request, Japan International Cooperation Agency (hereinafter referred to as “JICA”) has initiated the development study from February, 2009 to December, 2009.

During the above study, it was confirmed that the DSM/Energy conservation measures should be conducted on a parallel with the introduction of the Photovoltaic Power. And it was also found that the GOM (MHTE and MEA) lacks enough capacity to promote the DSM/Energy conservation measures such as an energy management system and so on. Therefore GOM (MHTE and MEA) requested JICA to dispatch experts for assistance on the preparatory works of the necessary lectures and manuals to promote the DSM/Energy conservation measures as proposed under the F/S.

1.2 Objective of Manual

This Manual summarizes the target electric appliances, the application procedure, the specific procedure in the Ministry and the evaluation items, etc. in order to introduce the official recommended electric appliances on the home page of the Ministry in charge of energy conservation as one of enlightenment activities.

1.3 Main Target

The Main Target in this Manual is Residential Sector. Because this Official Recommended Activity will be conducted as one of the Enlightenment Activities and the Energy Conservation Condition in the Governmental and the Business Sector will be checked by the Energy Manager.

1.4 Intended Users

The intended users of this Manual are primarily the followings:

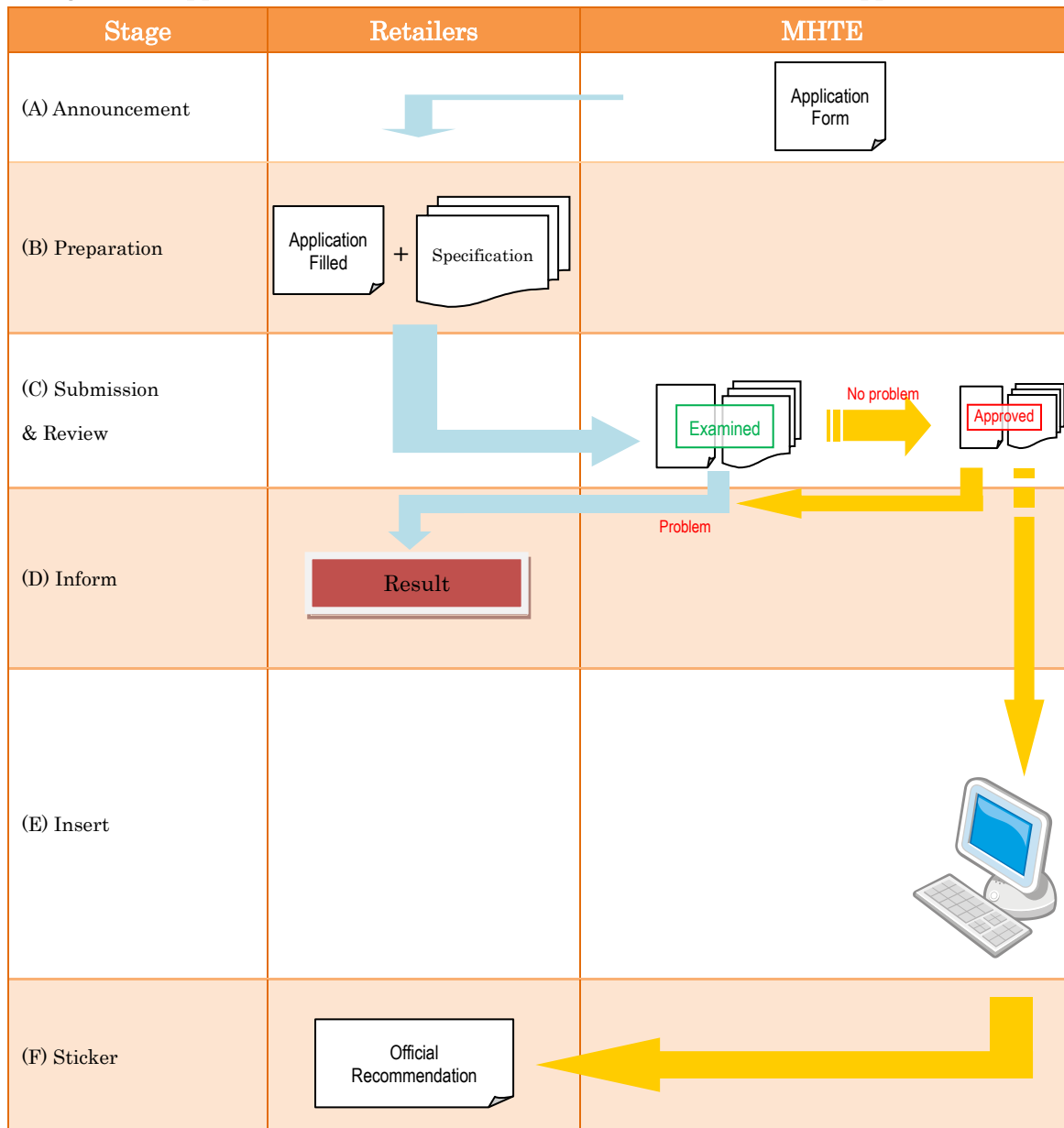
- Ministry of Housing, Transport and Environment (MHTE)

2 Application

2.1 Application Flowchart

The transaction from application to approval is shown in Figure 2-1. And the description for each step is mentioned in the following paragraphs.

Figure 2-1 Application flowchart for Official Recommended Electric Appliances



2.2 Explanation of each Application Procedure

(A) Announcement

MHTE will announce the starting of this system to retailers, explain about the merit of this system to them and ask them to submit the application.

(B) Preparation

The retailers who agree the MHTE explanation will fill in the application form.

(C) Submission & Review

The retailers will submit the application form with the specification of an electric appliance to “MHTE”. MHTE will review the contents of the application and evaluate if it can be approved or not.

(D) Inform

MHTE will inform the result of evaluating the application form to the retailers.

(E) Insert

If the application form can get the MTHE approval, MHTE will insert the electric appliance as the official recommended electric appliance on its home page.

(F) Sticker

MTHE will issue the sticker to the retailers as the evidence of the official recommended electric appliance and the retailers will put it on the official recommended electric appliance for selling.

3 Evaluation

3.1 Target Electric Appliance

The below three Electric Appliances are picked up as the Target Electric Appliances, because their electricity consumptions account for the large part of the electricity consumption in the Residential Sector as the Figure 3-1 shows. Water Pump and Electric fans are excluded, here, because the high effectiveness of the Energy Conservation would not be expected.

The first two Electric Appliances listed below are used necessarily in the Governmental and the Business Sector and the energy consumptions of two Electric Appliances account for the large part of the electricity consumption in these Sectors. Accordingly, the main Electric Appliances in the Governmental and the Business Sector also could be covered by this Manual.

<Residence>

① Air Conditioner (Room)

② Fluorescent

③ Refrigerator

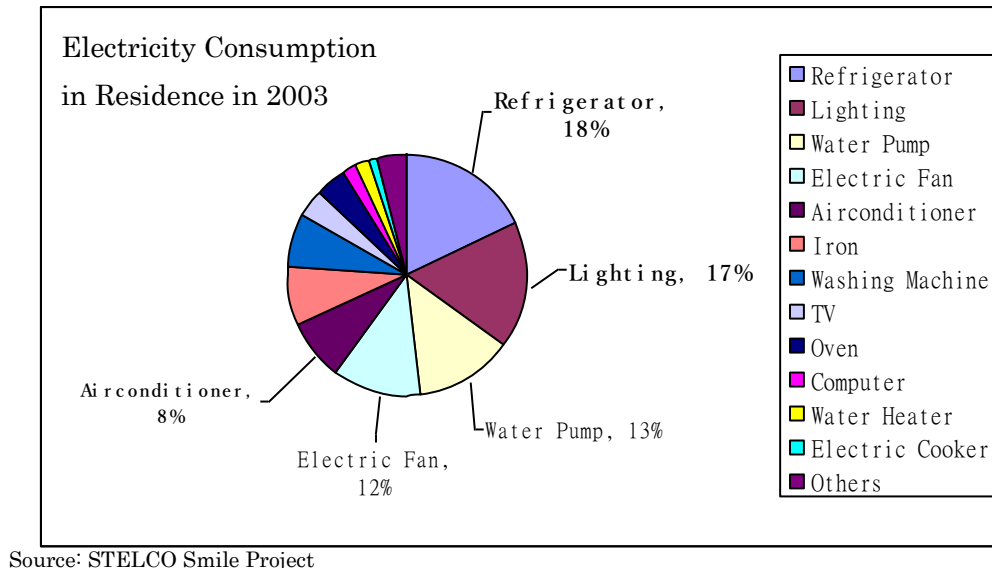


Figure 3-1 Breakdown of Electricity Consumption in Residence

3.2 Evaluation Method

The retailers should write down the product name, the manufacturer name, the product model number, the product country, the applied labeling system name in the product country and its level, etc. in the application form.

MHTE will check if the level of the electric appliance in the applied labeling system in each country is correct or not, and if that level achieve the standard which MHTE decides, MHTE will provide the approval to the electric appliance as the official recommended electric appliance, insert that information on the home page and issue the sticker as the certification.

3.3 Evaluation Standard

Concerning the evaluation standard, the labeling systems in other countries are applied in this manual. And the applied labeling systems are picked up from the countries which account for the large portion in the import of the target electric appliances in the Maldives. The Figure 3-2 shows the import conditions of the target electric appliances and the Table 3-1 shows the conditions of the applied labeling systems.

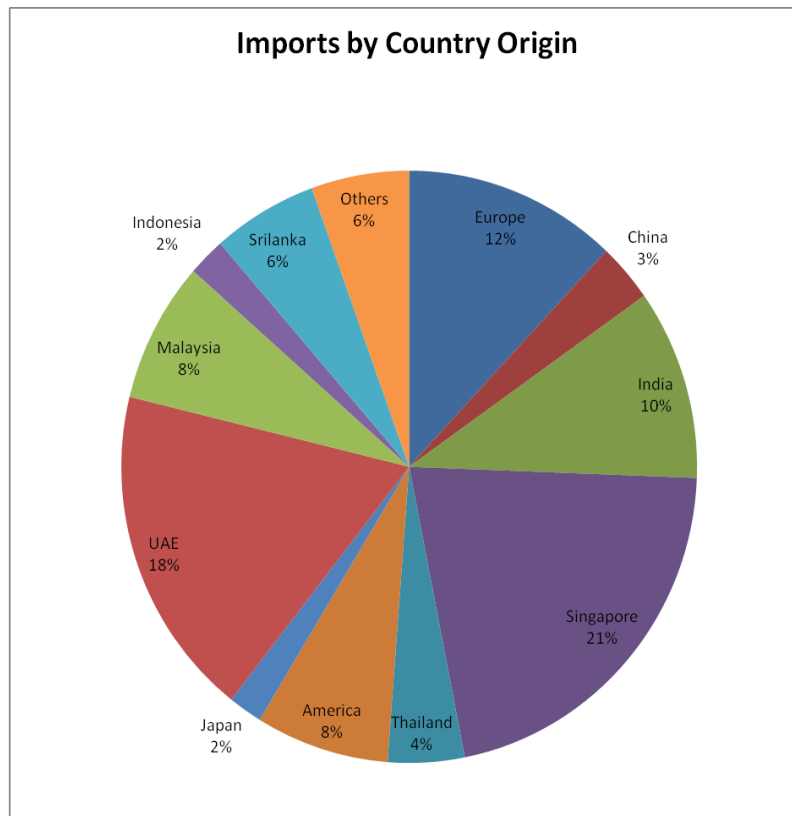


Figure 3-2 Import Conditions of the Target Electric Appliances

Table 3-1 Labeling System conditions in other countries in Target Electric Appliances

	US (Energy Label) Guide	EU (Energy Labeling)	Japan (Energy Saving Labeling Program)	Thailand (Green Label)	Singapore ()	China (Energy Consumption Efficiency Labeling Program)	Taiwan ()	India ()	(Energy program) Star
Air Conditioner (Room)	•	•	•			•	•		•
Fluorescent	•	•	•			•	•		•
Refrigerator	•	•	•	•		•	•		•

As of Mar. 2010

3.4 Evaluation Standard Value

The highest Standard Value should be applied in each labeling system in this Manual. Because the Energy Conservation is one of urgent needs in the Maldives and the Government of Maldives should recommend the electric appliances which contribute to conserve energy most.

Table 3-2 Standard Value in this Manual in each labeling system

Country	System Name	System Outline	Standard Value in this Manual	Remarks
US	Energy Guide Label	Indicating annual energy consumption on the graph which shows min & max annual energy consumption of the similar type in the market	High Rank in the top 25%	Federal Energy Management Program (FEMP) obligates government organizations to purchase the electric appliances belonged to the high rank in the top 25% in Energy Guide Label.
EU	Energy Labeling	Classifying level of energy consumption efficiency based on annual energy consumption	A class	Level is composed of 8 classes (A~G). Middle value is between "D" and "E". "A" is highest.
Japan	Energy Saving Labeling Program	Indicating Orange or Green logo based on the achievement to the target standards of energy efficiency	Green Mark	Orange means a product which doesn't achieve the target standards of energy efficiency, by contrast, green means a product achieves over 100% of the target standards.
Thailand	Green Label	Classifying level of energy consumption efficiency	5 class	Level is composed of 5 classes (1~5). Middle level of energy consumption efficiency in the market is "3" class. "5" is highest.
Singapore	Green Ticks	Classifying level of energy consumption efficiency based on annual energy consumption	4 ticks	Level is composed of 5 classes (0~4). Middle level of energy consumption efficiency in the market is "2" ticks. "4" is highest.
China	Energy Consumption Efficiency Labeling Program	Classifying level of energy consumption efficiency	1 class	Level is composed of 5 classes (1~5). Middle level of energy consumption efficiency is "3" class. "1" is highest.
Taiwan				
India	BEE star	Classifying level of energy consumption efficiency	5 Star	Level is composed of 5 classes (1~5). Middle level of energy consumption efficiency is "3" class. "5" is highest.
---	Energy Star program			

4 Others

- The issues which are not covered by this Manual

The possible cases and the measures are shown in the Table 4-1.

Table 4-1

Case	Measure
Not Target Electric Appliance	No acceptable basically
No Labeling System in Product Country	Requesting the evidence shows which level in the applied labeling system in this Manual.
Target Electric Appliance not covered in the Labeling System in this Manual	
Applied other Labeling System	

- The retailers will be responsible for accuracy of the application form and the specification.

Application Form for Official Recommended Electric Appliance

Category of Electric Appliance

Item	Specification
Product Name	
Manufacturer Name	
Model Number	
Product Country	

Category of Labeling System

Item	Specification
Labeling System Name	
Applied Country	
Level in that system	

- Please attach the specification with the application
- If your electric appliance is not applied by any labeling system, or if your electric appliance is not covered by the following labeling systems, please submit the evidence which shows the level of your electric appliance in the Energy Star Program or the following labeling systems you like.

<Applied Labeling Systems>

Energy Guide Label (US), Energy Labeling (EU), Energy Saving Labeling Program (Japan), Green Label (Thailand), Singapore (), Energy Consumption Efficiency Labeling Program (China), (Taiwan), (India), Energy Star Program

- The retailers will be responsible for accuracy of the application form and the specification.

Sticker (Draft)



Official Recommended
Electric Appliance

<Japan>



<対象機器>

エアコン、冷蔵庫、蛍光灯器具

<表示義務>

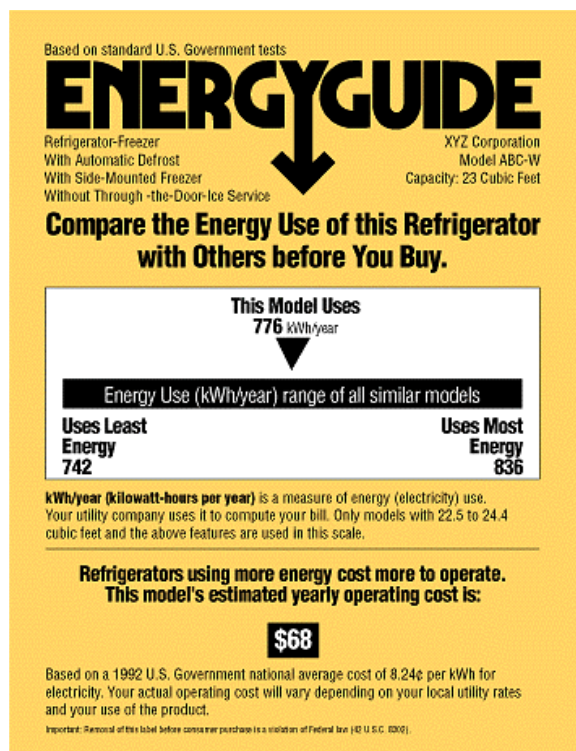
①省エネ性マーク

②省エネ基準達成率



<US>

エネルギーガイドラベルでは、同タイプの製品と年間エネルギー消費量を比較できる目盛りが表示される。また、市場に出荷されている製品の中でエネルギー消費効率の最小と最大の機種の数値が示されており、機種の区分（タイプや能力クラス）ごとに最大値・最小値が設定されている。目盛り上の矢印が当該モデルの相対位置を表示することにより、消費者は当該モデルの同区分内での比較・位置付けが分かるようになっている



<対象機器>

①冷蔵庫 / 冷凍冷蔵庫 / 冷凍庫

④ルームエアコン

⑨蛍光灯用安定器

⑩蛍光灯

<表示義務>

①当該機種のモデル番号・製造事業者名・機種区分

②製品の能力（capacity）

③使用時のエネルギーコスト

<EU>

EU では、EU 指令92/75/EEC において、特定の家庭用機種に対してエネルギー消費効率をA~G のクラスで示すラベルの表示義務制度を導入した。このラベリング制度は、エネルギー消費効率基準と同様にSAVE プログラムにおけるエネルギー消費機器の効率改善を目的とした制度各製品をエネルギー消費効率によってA~G の8 つにクラス分け、当該機種がそのどのランクに含まれるかを示している。

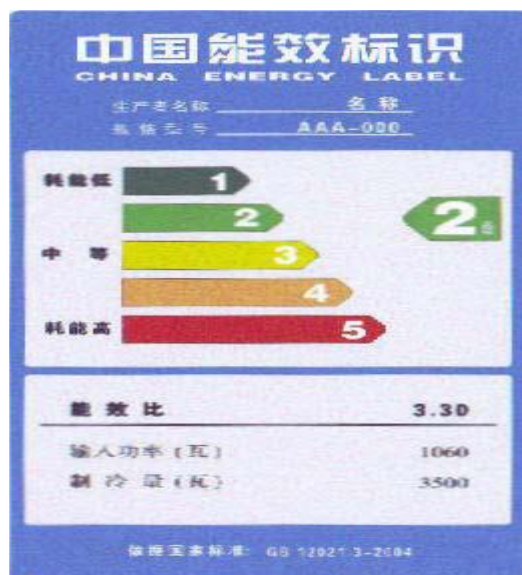
<Singapore>

<China>

中国では、1995 年には省エネルギー評価値を、2002 年以降には9 機種に対してエネルギー消費効率等級が定められており、共に国家標準化管理委員会が管理している。

ラベリング制度については、省エネルギーの可能性が大きく、かつ普及率の高い製品に対してエネルギー消費効率ラベリング制度（「エネルギー消費効率ラベル管理法」）が検討されている。同制度では、『中華人民共和国エネルギー消費効率ラベリング制度を実施する製品の目録』（『目録』と略称）を公布し、製品のエネルギー消費効率基準、実施規則、エネルギー消費効率ラベルの方式と規格を2005 年3 月までに策定する予定である。

なお、エネルギー消費効率等級の設定は、エネルギー消費効率の最も高い製品を1 級として順に級数を大きくする方式（



<対象機器>

製品 基準番号

冷蔵庫・冷凍庫・冷凍冷蔵庫 GB12021.2-2003

ルームエアコン GB12021.3-2004

二重電極蛍光灯 GB 19043-2003

<表示義務>

<Taiwan>



<India>