Country Report for Federated States of Micronesia

Technical Analysis of Appliance Markets to Support the Pacific Appliance Labelling and Standards (PALS) Programme

Prepared for

Renewable Energy and Energy Efficiency Partnership (REEEP)

By

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1 ACKNOWLEDGMENTS

The Technical Analysis of Appliance Markets to Support the Pacific Appliance Labeling and Standards (PALS) Programme covers 17 Pacific Island Countries and Territories (PICTs). The report and research were conducted by Mr. Sommai Phon-Amnuaisuk and Mr. David Morgado from the International Institute for Energy Conservation (IIEC). It was prepared for the Renewable Energy and Energy Efficiency Partnership (REEEP) with overall guidance from Mr. Tom Thorsch Krader.

The IIEC would like to show its appreciation for the kind support and contributions from the PALS country focal point (Mr. Hubert Yamada) and the Statistics Office of the Federated States of Micronesia (FSM).
2 INTRODUCTION

2.1 Country Background

Table 2.1 – General Information on the Federated States of Micronesia

<table>
<thead>
<tr>
<th>Neighbouring Countries</th>
<th>Marshall Islands, Hawaii (US), Guam (US), Nauru, Palau, Papua New Guinea, Mariana Islands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital City</td>
<td>Palikir</td>
</tr>
<tr>
<td>Currency</td>
<td>US dollar (US$)</td>
</tr>
<tr>
<td>Population Size (habitants)</td>
<td>107,008 (2000 Census); 108,100 (2008 estimate)</td>
</tr>
<tr>
<td>Number of Households</td>
<td>15,723 (2000 Census)</td>
</tr>
<tr>
<td>Electrification Rate (%)</td>
<td>46% (2000 Census)</td>
</tr>
<tr>
<td>Status of S&amp;L Scheme</td>
<td>No S&amp;L Programme in place or under development</td>
</tr>
</tbody>
</table>

Source: FSM Statistics Office; SPC, 2011

2.2 Objective

The objective of this study is to analyse the characteristics of major appliance and lighting products and markets in the Federated States of Micronesia (FSM), in order to inform and support decision making on the most effective Standards & Labelling (S&L) strategy for FSM.

The study focuses on the following electrical appliances:

- Refrigerators
- Freezers
- Air Conditioners
- Lamps – including incandescent, linear fluorescent and compact fluorescent
- Televisions
- Other relevant products.
3 FINDINGS

3.1 Import Statistics

The electrical appliance information presented in this section is based on customs data provided by the FSM Statistics Office and covers the most common electrical appliances in the country.

The Figures below show the total annual import value (US$) of each type of electrical appliance imported into FSM from 2007 to 2011 as well as the respective share of import value according to country of origin. There is neither import unit data nor country of origin data for all electrical appliances and no import data on electric water heaters. The FSM Statistics Office indicated that the customs data from 2008 to 2011 is provisional.

An on-site survey was conducted to complement the import statistics and enable a better assessment of the most suitable S&L programme for FSM (see section 3.2 and 3.3).

3.1.1 Refrigerators and Freezers

The import value of refrigerators gradually increased from 2007 to 2010 by approximately US$277,000 and then fell significantly by US$223,000 from 2010 to 2011. The freezer import value varied slightly ranging from approximately US$109,000 in 2007 to US$62,000 in 2011 (Figure 3.1). The difference in annual values could be due to bulk purchase of electrical appliances by local wholesalers, retailers or private companies (e.g. hotel sector) in a given year or interpretation of international harmonized system codes¹ used to identify the type of electrical appliances by the national customs department.

![Figure 3.1 - Import Value (US$) per Year for Freezers and Refrigerators](image)

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¹ See methodology and harmonized system codes section in main report.
3.1.2 Air Conditioners

Since 2008, the import value of air-conditioners (all sizes) increased steadily from approximately US$349,000 in 2008 to US$578,000 in 2011 (Figure 3.2).

![Figure 3.2 – Import Value (US$) per Year for Air Conditioners (All Sizes)](image)

3.1.3 Domestic Dish Washing and Washing Machines

The import value of both domestic dish washing and washing machines rose from 2007 to 2009. Thereafter, the dish washing import value fell from US$34,000 in 2009 to only US$2,000 in 2011, while the washing machine import value remained at the US$235,000 mark from 2009 to 2011. This potentially indicates a very small number of dish washing machines were imported into FSM in 2011 (Figure 3.3).

![Figure 3.3 – Import Value (US$) per Year for Domestic Dish Washing and Washing Machines](image)
3.1.4 Electric Fans

The import value of electric fans fluctuated significantly from 2007 to 2011, reaching its highest value in 2009 with just over US$200,000. The lowest import value was reached in 2008 with US$87,000 (Figure 3.4).

![Electric Fans](image)

**Figure 3.4 – Import Value (US$) per Year for Electric Fans**

3.1.5 Lighting Appliances

The import value of incandescent lamps decreased from 2007 to 2008 from approximately US$66,000 to US$11,000, respectively (Figure 3.18). The import value of fluorescent lamps increased during the same period by US$30,000. These values might indicate the following: a gradual phase-out of incandescent lamps in favour of fluorescent lamps, cheaper incandescent lamps imported from other countries, exchange rates and/or interpretation of international harmonized system codes used to identify the type of electrical appliances by the national customs department.

![Incandescent and Fluorescent Lamps](image)

**Figure 3.5 – Import Value (US$) per Year for Incandescent and Fluorescent Lamps**
Currently, there is no international harmonized system code for Compact Fluorescent Lamps (CFLs) and therefore it is not possible to determine the market uptake of these energy efficient lighting appliances against i.e. incandescent lamps. It might be advantageous, under the PALS Programme to identify a single harmonized system code for CFLs in the Pacific region for future analysis.

### 3.1.6 Televisions

The import value of televisions gradually increased from 2007 to 2009, reaching its highest value in 2009 with US$133,000, after which it decreased slightly in 2010 to approximately US$113,000.

![Figure 3.6 – Import Value (US$) per Year for Televisions](image)

### 3.2 Market Characteristics

The FSM are divided into four states - Yap, Chuuk, Pohnpei, and Kosrae. It was only possible to conduct one electric appliance survey of six major retailer/wholesaler shops in the State of Chuuk (second largest based on population size). The surveys for the other three states were not received by project completion deadline.

Therefore the data gathered in this section covers only Chuuk State and cannot be considered representative of the whole country. This section includes information on appliance brands, country of manufacture and origin, and complements existing customs data presented in Section 3.1. Note that the information of electrical appliance brands and country of manufacture is not comprehensive. The country of manufacture of certain appliances is not easily identifiable and in some cases could only be identified through the product’s user manual.

<p>| <strong>Table 3.1 – Brand and countries of manufacture of most common electrical appliances in Chuuk State</strong> |</p>
<table>
<thead>
<tr>
<th><strong>Electrical Appliance</strong></th>
<th><strong>Brand</strong></th>
<th><strong>Countries of Origin</strong></th>
<th><strong>Countries of Manufacture</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Conditioners (all sizes)</strong></td>
<td>Toshiba, Sanyo, Comfort Aire, Perfect Air, Grec, A Cooler Air, Fujitsu, Koopel, Trane, Heil</td>
<td>Thailand (e.g. Toshiba), US (e.g. Sanyo), Japan</td>
<td>Thailand, US, China, Taiwan, Japan</td>
</tr>
<tr>
<td><strong>Domestic Washing Machines</strong></td>
<td>Takashimaya, Avanti, GE</td>
<td>Singapore, US, China</td>
<td>Singapore, China, US</td>
</tr>
</tbody>
</table>
Table 3.1 indicates a mix of US and Asian brands. Based on the survey, most appliances seem to be sourced from US, followed by China, Taiwan and Japan.

### 3.3 Energy Labels

As explained above this section covers only one of the four states of FSM - Chuuk State. The objective of the survey was to compile information on the proportion of energy labels for each type of electrical appliance and the respective country of origin of these labels. Table 3.2 only provides information on the electrical appliances which had affixed any type of energy label.

**Table 3.2 – Proportion of Electrical Appliances with Energy Labels**

<table>
<thead>
<tr>
<th>Electrical Appliance</th>
<th>% with Energy Labels</th>
<th>Types of Energy Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Conditioners (All Sizes)</td>
<td>26% - 50%</td>
<td>100% with US Energy Label</td>
</tr>
<tr>
<td>Compact Fluorescent Lighting</td>
<td>0% – 25%</td>
<td>75% with Chinese Energy Label and 25% with US Energy Star</td>
</tr>
<tr>
<td>Domestic Washing Machines</td>
<td>25%</td>
<td>75% with US Energy Label and 25% with Chinese Energy Label</td>
</tr>
<tr>
<td>Freezers</td>
<td>0% – 25%</td>
<td>100% with US Energy Labels</td>
</tr>
<tr>
<td>Refrigerators</td>
<td>0% – 25%</td>
<td>50% with US Energy Label and 50% with Chinese Energy Labels</td>
</tr>
<tr>
<td>Televisions</td>
<td>25%</td>
<td>75% with US Energy Label and 25% with Chinese Energy Label</td>
</tr>
</tbody>
</table>

The share of electrical appliances with energy labels in FSM is relatively low (<25%) indicating a clear need for an effective S&L Programme. Typically, in the Pacific region, the share of refrigerators and freezers with any kind of energy label is above 50%. The table above provides a qualitative indication of the market share of appliances sourced from US and China. Overall, the majority of the electrical appliances seem to be imported from the US but there is a significant
share of appliances from Asia, in particular China as shown by the percentage of Chinese Energy Labels in refrigerators, televisions and CFLs.

3.4 Information Gaps

This section summarizes the identified information gaps on electrical appliances in FSM. The data presented in this report is based exclusively one on-site survey of major wholesalers and retailers shops in one of the four states of FSM. This report does not cover electrical appliances imported privately.

As highlighted in Section 3.1, there is no data on the country of origin of the electrical appliances imported into FSM. The customs data gathered by the Statistics Office should be further improved to enable data compilation on the country of origin of all electrical appliances.

In addition, there is a need for improvement in customs data compilation across the Pacific region, to differentiate between linear and compact fluorescent lamps. This would enable a better evaluation of the market uptake of CFLs in FSM and comparison incandescent lamps imports.
4 CONCLUSION

Based on the limited data above, it is likely that the majority of the electrical appliances in FSM are imported from the United States. However, this recommendation would benefit from additional validation through compilation of the country of origin of electrical appliances by the customs/statistics office in FSM.

It was also noted that there is a significant number of electrical appliances imported from Asia, particularly from China. Therefore, the development of a S&L programme for FSM needs to take into account market demand and supply trends, as well as a range of other factors bearing on the design and effectiveness of S&L programmes. Furthermore, it should allow for the energy efficient appliances to enter the market at an affordable price, irrespective of origin or manufacture.

Finally, in order to further improve customs data compilation and analysis of market penetration of CFLs, in FSM and the Pacific Region, a single harmonized system code for the Pacific region should be discussed and established to enable a clear evaluation of the market uptake of CFLs in the future.
## 5 Annex – Country Data Sheets

### Table 5.1 – Import Value (US$) Per Year

<table>
<thead>
<tr>
<th>Electrical Appliance</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Linear) Fluorescent Lamps</td>
<td>21,477</td>
<td>16,344</td>
<td>29,047</td>
<td>31,273</td>
<td>27,777</td>
</tr>
<tr>
<td>Air Conditioners (all sizes)</td>
<td>367,412</td>
<td>348,519</td>
<td>394,629</td>
<td>473,796</td>
<td>577,645</td>
</tr>
<tr>
<td>Domestic Dish Washers</td>
<td>1,860</td>
<td>7,849</td>
<td>34,413</td>
<td>12,952</td>
<td>2,242</td>
</tr>
<tr>
<td>Domestic Washing Machines</td>
<td>187,955</td>
<td>194,587</td>
<td>234,551</td>
<td>234,321</td>
<td>237,314</td>
</tr>
<tr>
<td>Electric Fans</td>
<td>113,412</td>
<td>87,214</td>
<td>204,967</td>
<td>107,033</td>
<td>180,951</td>
</tr>
<tr>
<td>Freezers</td>
<td>109,006</td>
<td>75,770</td>
<td>98,822</td>
<td>78,382</td>
<td>62,227</td>
</tr>
<tr>
<td>Incandescent Lighting</td>
<td>66,033</td>
<td>11,303</td>
<td>10,708</td>
<td>23,377</td>
<td>12,060</td>
</tr>
<tr>
<td>Refrigerators</td>
<td>281,152</td>
<td>345,832</td>
<td>384,678</td>
<td>558,274</td>
<td>335,528</td>
</tr>
<tr>
<td>Televisions</td>
<td>111,712</td>
<td>125,087</td>
<td>132,505</td>
<td>113,336</td>
<td>126,714</td>
</tr>
</tbody>
</table>

Note – Large difference between annual values might indicate bulk purchase of appliances by wholesalers, retailers or private companies, assuming no change in customs department interpretation of harmonized system codes. The (⁻) sign indicated information was not available.
6 REFERENCES
