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# **A Market Assessment Study on Energy Efficient Lighting Products in Philippine Urban Centers**

**Arthur Andersen, Inc.**

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**Our vision**

Our vision is to be the partner for success in the new economy.

**Our mission**

Our mission is to build relationships and develop innovative solutions which help dynamic people and organizations create and realize value.

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## Executive Summary

The local CFL market has gone through big changes since the mid-1990s. The unknown and expensive CFL has evolved to a popular and readily accessible lighting product for households as well as for commercial and industrial firms.

The CFL's dramatic transformation is attributed partly to changes in the business environment. First, the country has built adequate energy and power resources, due partly to the deregulation and liberalization in the electric power industry. Second, while it recently grappled with a politico-economic crisis, the country has implemented business and institutional reforms that will enable it to recover from the crisis. Third, the market benefited from low-cost CFL imports and the emergence of informal channels.

Today, the local CFL market may be described as follows:

- ◆ *CFL products.* The local market is crowded with over 50 different CFL brands and variants offered through various channels and outlets.
- ◆ *Price reduction.* GE and Philips have introduced CFL variants at PhP 160 apiece while other brands offer low-cost CFLs at buy-one-take-one for PhP 99 and 3-for-PhP100 bargains.
- ◆ *Degree of knowledge.* Over a majority of households are familiar with CFLs due partly to the influx of low-cost CFLs in the various areas of the local market.
- ◆ *Market penetration.* CFLs have caught up with incandescent lamps in the local market, reaching 64 percent of the target households and 77 percent of the large firms.
- ◆ *New manufacturers.* Most of the CFLs in the local market are imported, primarily from low-cost Asian producers, as Philips closed its local plant in 1999.
- ◆ *New establishments (suppliers).* At least 50 CFL importers are supplying the local market through numerous supermarkets, hardware stores, and informal retail outlets such as sidewalk stalls and vendors.
- ◆ *Number of products tested.* The Department of Trade and Industry (DTI) has issued Import Commodity Clearances or ICCs to only 18 CFL importers compared to at least 50 CFL brands sold in the local market. ELI initially identified CFL models from five brands – General Electric, Maxlite, National, Osram, and Philips – which meet the ELI quality requirements.

The other efficient lighting products such as fluorescent lamps and electronic ballasts are in a similar situation as CFLs in the Philippine market.

Many developments in the last two to four years hastened the growth of CFL and other efficient lighting products in the local market. The next two to four years will be an opportune period to firm up the on-going market transformation. The success of any program will depend on how much it understands the key features and peculiarities of the local market and how its components align and dovetail with the relevant activities in the country's energy and economic development strategy.

Salient Features of the Philippine CFL Market, 2000

FEATURE	
<i>Number of lamps</i>	: Over 50 brands
<i>Price reduction</i>	: PhP 160 for popular brands, 3-for PhP 100 for other brands
<i>Degree of knowledge</i>	: About 3 out of 4 households are familiar
<i>Market penetration</i>	: About 64 percent of households and 77 percent of large firms
<i>New manufacturers</i>	: None
<i>New establishments</i>	: At least 50 importers
<i>Number of products tested</i>	: At least 18 CFL importers tested and accepted. At least five models qualified in ELI-Philippines.

The success factors include the following:

- ◆ *Explain clearly the economic benefits to customers.* One imperative for success is to explain and demonstrate to customers in very clear terms the economic benefits of switching from incandescent lamps to CFLs (or to other high efficiency lighting products).
- ◆ *Market all the benefits of CFLs.* Besides reducing electricity consumption and the electricity bill, CFL has other benefits. It can be repositioned as an energy-saving, resource-conserving, and environment-friendly product.
- ◆ *Make sure the product is easy to find.* Increased CFL imports and the emergence of sidewalk vendors and door-to-door peddlers bring CFLs closer to the customers, particularly households in the C, D, and E market segments.
- ◆ *Engage other stakeholders in the market.* Filipino NGOs, consumer groups, and cause-oriented groups that relate to energy and environment should be invited to support the market transformation program.
- ◆ *Promote optimum mix of lighting technology.* To further improve energy efficiency in the local market, the opportunity today may be more on implementing the right household, commercial and industrial lighting design, i.e., combinations of CFLs, fluorescent lamps, and other lighting products.
- ◆ *Recognize the market segments and their purchasing power or ability to pay.* About 298 thousand or four percent of urban households belong to the AB market segment. They are keen on quality CFL and can afford to buy the popular and expensive CFLs. About 2.3 million or one-third of the urban households belong to the middle class. They are less keen on quality and are inclined to look for low-cost CFLs. Majority of the urban households belong to either D or E market segments. Since they have very limited budgets, they buy the most affordable lighting available, which could be incandescent lamps or cheap CFLs.
- ◆ *Recognize the market's basic needs and preferences.* The urban households have a common basic need and preference for CFL lighting. But the AB, C, D, and E market segments have different brand preferences, which depend largely on their purchasing power or ability to pay. The affluent households prefer the popular and expensive brands because these can guarantee quality and high standards of performance. The less affluent households, particularly those in the D and E market segments have less stringent quality standards and are ready to give up on less important measures of performance.

Put together, the success of a CFL (and efficient lighting, in general) market transformation program will depend on how its components blend together with the other transformation activities going on in the local market.

## Introduction

This report assesses the current market situation of energy efficient lamps, and *compact fluorescent lamps* or CFLs in particular, in the Metro Manila, Calabarzon, Cebu City, and Cagayan de Oro.

This report consists of several sections. The first section explains the general approach in gathering the market data of CFLs. The second section summarizes previous studies done on CFLs and lighting products in the Philippines and other developing countries. The third section presents the key findings on the current situation of CFLs in the local market. The key findings focused on current and potential CFL users in the residential and commercial/industrial sectors. The last section assesses the prospects for CFL growth considering the current market trends and possible market transformation measures.

## General Approach

This market assessment study used both primary and secondary data. The study involved the conduct of a primary survey of residential and commercial/ industrial users of lighting products and CFLs in particular. The residential customer survey covered respondents from Metro Manila, Calabarzon, Cebu City, and Cagayan de Oro while the commercial/ industrial customer survey focused on large companies based in Metro Manila.

The survey focused on the respondents' current awareness of energy efficiency and CFLs, their perceptions on CFLs, and reasons for their purchases (or non-purchase) of CFLs during the 1999-2000 period.

The customer survey is complemented by interviews with trade allies, i.e., manufacturers and distributors, to get their views on the various factors, particularly barriers, affecting the growth of the CFL industry and their own organizations. Regular meetings were held with the client to exchange notes and insights on different aspects of the local CFL market.

Project documents and materials related on CFL market development in the Philippines and other countries were reviewed to gather inputs on the appropriate elements and mechanisms to promote the market development of CFLs and other lighting products.

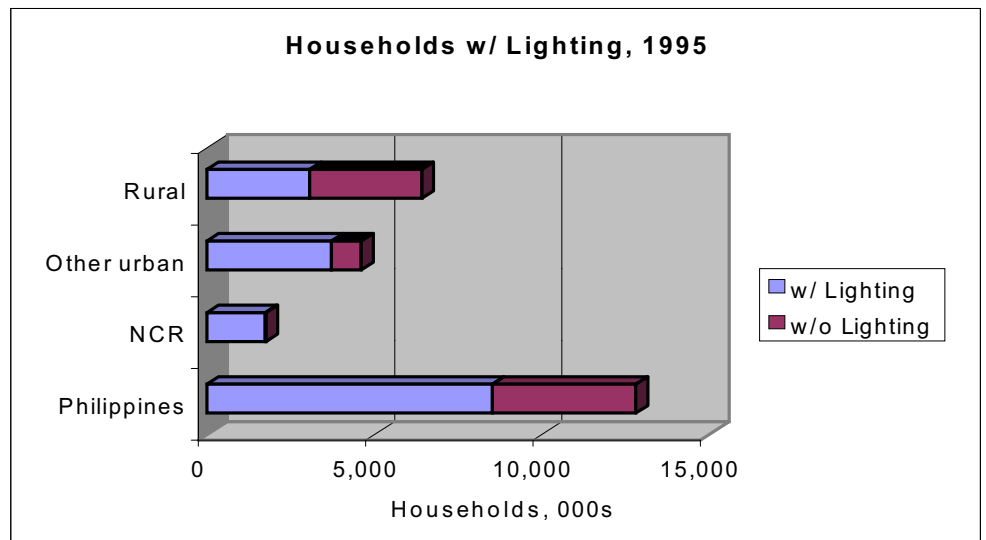
## Survey of Related Literature

### *The DOE Report, 1995*

The DEPARTMENT OF ENERGY conducted and prepared the *1995 Household Energy Consumption Survey* that described the profile of the local lighting market.

The Philippines had over 12.8 million households in 1995. About 8.5 million or two-thirds of the total number of households had electricity and lighting services (see Chart 1). Most of the households in the National Capital Region (NCR) and other urban areas had electricity and lighting. But in the rural areas, over 3.0 million or half of the households had no lighting.

Chart 1. Distribution of Households with Lighting, 1995

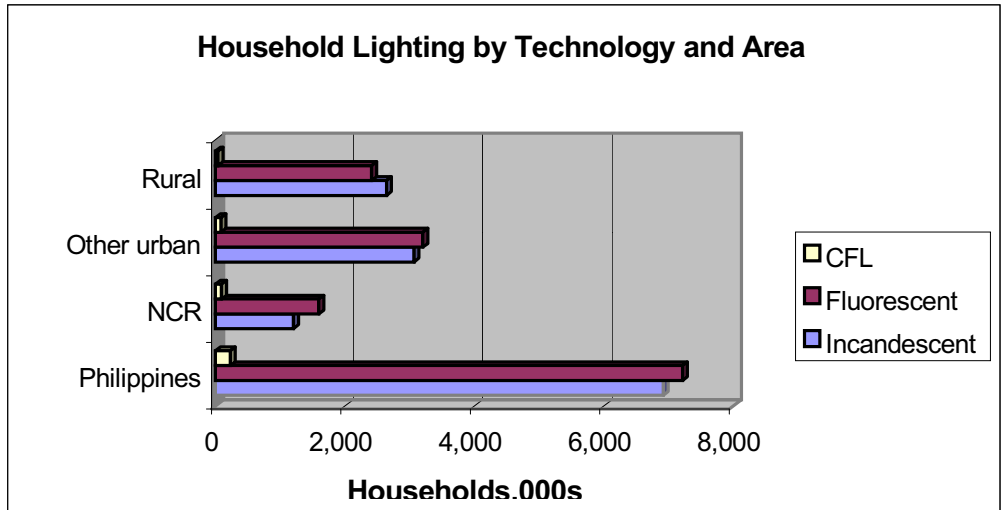


BASIC DATA: 1995 HOUSEHOLD ENERGY CONSUMPTION SURVEY, DOE

During the mid-1990s, Filipino households primarily used incandescent and fluorescent lamps for lighting. In the NCR, 9 out of every 10 households used fluorescent lamps and 2 out of every 3 households had incandescent lamps (see Chart 2). In contrast, in the rural areas, there were relatively more households that used incandescent lamps than households that used fluorescent lamps. Incandescent lamps were cheaper and more affordable compared to fluorescent lamps.

In contrast, slightly over 220 thousand or 2.7 percent of the total number of households with lighting had CFLs for household lighting. CFLs combine the efficiency of fluorescent lamps and the convenience of standard incandescent lamps. More importantly, they are energy-efficient alternatives to the less efficient incandescent lamps.

Chart 2. Distribution of Lighting Technology by Area in 000s, 1995

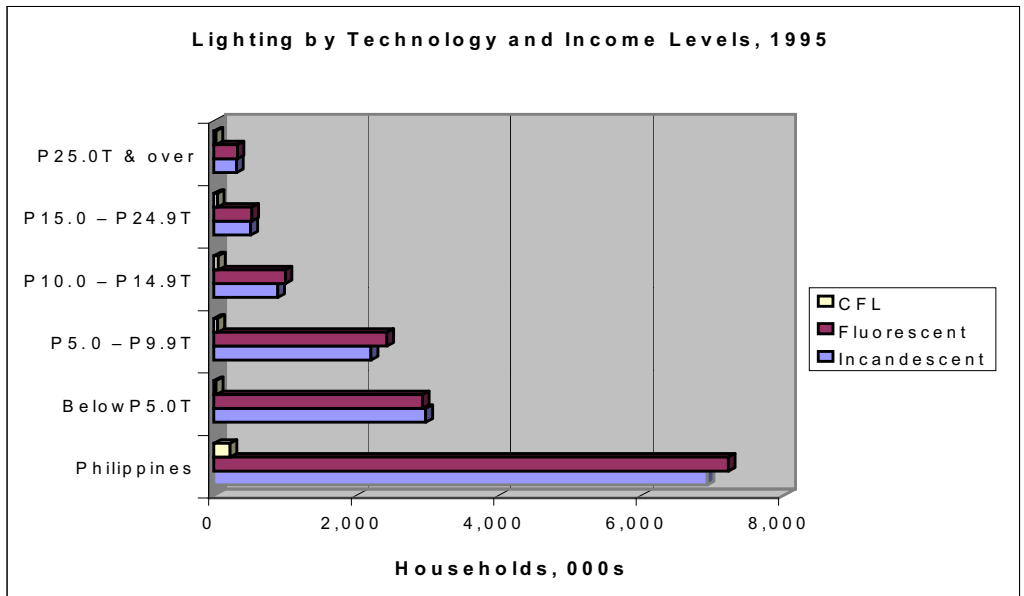


BASIC DATA: 1995 HOUSEHOLD ENERGY CONSUMPTION SURVEY, DOE

However, CFLs had a very small market uptake in 1995. The NCR had 95 thousand or 41 percent of the total households that used CFLs. Another 90 thousand CFL users were in the other urban areas while the remaining 44 thousand CFL users were spread out in the rural areas. While over 69 percent of households in the urban and rural areas had incandescent or fluorescent lamps, only five percent of the households at best, had CFLs. Indeed, compared to the standard lamps, CFL was in a nascent stage of development in the local market.

There were no significant differences in the penetration levels of incandescent and fluorescent lamps at different income levels. Among households with monthly incomes below PhP 5 thousand, the penetration levels of incandescent and fluorescent lamps were 79 percent and 78 percent, respectively. For the more affluent households, those with monthly incomes of at least PhP 25 thousand, the corresponding penetration levels were 88 percent and 91 percent, respectively. The low variances indicate lighting is a basic need to both the poor and rich households.

Chart 3. Distribution of Lighting Technology by Monthly Income Class, 1995



BASIC DATA: 1995 HOUSEHOLD ENERGY CONSUMPTION SURVEY, DOE

*The WB-ASTAE Report, 1996*

In 1996, the World Bank-Asia Alternative Energy (WB-ASTAE) supported the conduct and preparation of *Compact Fluorescent Lamps in the Philippines: A Technical Performance and Market Assessment*. The report corroborated the results of the earlier household energy consumption study. Moreover, the new study incorporated an assessment of the local commercial/ industrial sector as a CFL market and offered recommendations for a CFL strategy in the country.

For the residential sector, the WB-ASTAE study estimated a less than 8 percent market penetration for CFLs. The study covered the service territory of MANILA ELECTRIC COMPANY (MERALCO), which consisted primarily of the cities and municipalities in the NCR. The WB-ASTAE estimate was higher than the DOE estimate of over 5 percent for the NCR households.

Notwithstanding the higher figure, the WB-ASTAE report cited the lack of awareness of CFLs and the high prices of CFLs as major deterrents to the growth of the local CFL market. About 80 percent of potential household customers were not familiar with CFLs. Moreover, the price of over PhP 300 per CFL unit was considerably high compared to just less than PhP 20 per incandescent lamp. The high CFL price was a major obstacle to middle- and low-income households.

The situation was different for the commercial/ industrial sector. The WB-ASTAE study reported that 71 percent of the potential commercial/ industrial customers were aware of CFLs. Moreover, half of the commercial/ industrial customers with potential CFL applications were using CFLs. However, there were about 40 percent of the commercial/ industrial customers that were still using incandescent lamps and no CFLs at all.

Put together, the DOE and AB-ASTAE reports indicated growth opportunities for the CFL market, which was at its infancy during the mid-1990s. They recognized that the strategy for CFL growth must be able to address, among others, the lack of familiarity of potential customers, particularly in the residential sector, and the relatively high prices of CFLs vis-à-vis the prices of standard lamps.

# Key Findings

## A. Urban Households Market

### *CFLs Offered in the Local Market*

Half a decade ago, there were a few CFL brands offered in the local market. These included, among others, Chiyoda, General Electric, National, Osram, Philips, Sylvania, and Toshiba (WB-ASTAE, 1996).

At present, the local market is crowded with various brands and variants of CFLs. A survey of households and various outlets of CFLs in the NCR, and the cities of Cagayan de Oro and Cebu in southern Philippines yielded over 50 different brands of CFLs (see Photo Set 1 and Table 1). The NCR has at least four dozen CFL brands while Cebu and Cagayan de Oro have two and one dozen brands, respectively. Interestingly, there are brands that are found only in specific areas.

### *CFL Prices in the Local Market*

The unfettered growth of CFLs in the local market results in fierce price competition among CFL suppliers. For instance, the popular Philips *Ecotone* 11W is available at modern supermarkets for over PhP 300 apiece. But in ordinary hardware stores and sidewalk stores, there are copies or unauthorized Philips *Ecotone* 18W that are offered at only PhP 60 apiece. Street vendors offer a lower price of PhP 50 apiece.

Even cheaper CFL variants are available from ordinary hardware stores, sidewalk stores, or street vendors. These retail outlets offer the *Ecotone* variants of less popular brands at a bargain price of 3-for-PhP 100. The less popular brands, e.g., Lion and Diamond, even have similar packaging for their *Ecotone* variants as the Philips *Ecotone* variant.

Recently, popular brands launched cheaper CFL variants. For instance, Philips launched *Essential* 14W, which sells at PhP 160 apiece compared to the current Philips *Ecotone* 11W that sells at over PhP 300 apiece. At first glance, the customer may wonder why a Philips 11W CFL costs more than a Philips 14W CFL. A closer look shows that the Philips *Ecotone* 11W is advertised to last for six years while the cheaper Philips *Essential* 14W is expected to last for only two years. General Electric also launched its *Economizer* variant. An *Economizer* 18W sells for PhP 160 apiece compared to the *Watt-Miser* 11W that fetches over PhP 240 apiece. The former has a lamp life of 3,000 hours while the latter lasts up to 5,000 hours.

The proliferation of CFL brands and the ensuing price competition yield mixed results in the market. The sheer number of CFLs, including popular and new brands and variants that claim similar lighting characteristics, confuses those buyers who are keen at getting quality CFLs at reasonable prices. On the other hand, more buyers have access to a variety of CFLs, including popular brands and new brands at more affordable prices.

INSERT PHOTO SET 1 HERE

Table 1. CFLs in the Local Market

Brand	Market Center			Brand	Market Center		
	MM	Cebu	CDO		MM	Cebu	CDO
Apollo	X			National	X		
CAT		X		NEC	X		
Cata	X	X		Neoball	X		
Chiyoda	X	X		Neolite		X	
Clear 2000		X	X	Neolux		X	
Datji		X		OMNI	X	X	X
Delta	X			Osram	X	X	X
CNK	X			Philippines	X		
Dynamic	X		X	Philips	X	X	X
Edison	X			Pollux		X	
Fillux	X			Qiyam	X		
Fuh Mama	X		X	Radium Ralux	X		
Galaxy	X			Starlight	X		
GE	X	X	X	Sunlight	X	X	X
GEs	X			Sunlux		X	
Hengxing	X	X		Sunshine	X	X	
Hitachi	X		X	Sylvania	X	X	
Kengo	X			Toshiba	X		X
Jiadian		X	X	Tungsrarn	X		
Juren	X			Ultra	X		
Liberty		X		Viva			X
Lucky Light	X	X		WST	X		
Luxing	X			Xin-Xing	X		X
Luxtram		X		Xellux	X		
Maxilite	X	X	X	Yang Guam	X		
Megaman	X	X	X	Yasai	X		
Mercury	X			Yasaki	X	X	
Mitsubishi	X						

SOURCE: AA SURVEY

Table 2. Selected CFLs and Prices

CFL Brand	Price Range
CATA	PhP 35 – 150
<i>Diamond</i>	3-for-PhP100
<i>Lion</i>	3-for- PhP100
<i>Philips</i>	PhP 35 – 390*
<i>Xin-Xing</i>	PhP 20 – 80

\* PRICE RANGE INCLUDES BOTH LEGITIMATE AND UNAUTHORIZED PHILIPS CFLS.

SOURCE: AA SURVEY AND ANALYSIS

### *CFL Retail Outlets*

During the mid-1990s, consumers had to visit modern supermarkets and selected hardware stores to buy CFLs. Today, the modern supermarkets and hardware stores offer a wide choice of popular CFL brands and variants. Moreover, even regular supermarkets and hardware stores carry CFL products in their shelves.

There are traditional supermarkets and hardware stores as well as informal retail outlets that distribute CFLs, particularly the low-cost CFL brands and variants. The informal outlets include small sidewalk stalls, street vendors, and door-to-door vendors of CFLs.

Many of the informal outlets of CFLs conduct their trade in major market centers and areas of high pedestrian traffic. Some informal outlets locate and ply their trade near shopping complexes and supermarkets where they compete directly with the more organized retail outlets. Meanwhile, street vendors target the areas with high pedestrian traffic like markets, bus stations, and FX taxis/ jeepney parks (see Photo Sets 2 and 3).

For instance, the EDSA Central is a major market center along EDSA and Shaw-Crossing. It is a dry goods and wet market. But it is bounded by major shopping centers such as the Uniwide Store at United Street, the Shangri-La Plaza and SM Megamall across Shaw Boulevard, and Star Mall (formerly Manuela Shopping Complex) across EDSA.

EDSA Central is also a major transit area, hosting a key MetroStar station and bus stop for commuters along EDSA as well as terminal stations/ parks for FX taxis and jeepneys going to Antipolo, Cainta, and other towns east of Metro Manila.

There are about a dozen sidewalk stores and vendors of CFLs at the EDSA Central that complement and compete with the formal retail outlets of CFLs, i.e., the supermarkets and modern hardware stores at the surrounding shopping complexes. While the formal retail outlets at the major shopping centers offer a wide range of popular CFLs like General Electric, Osram, and Philips, the sidewalk stores and vendors peddle less popular brands such as Apollo, CATA, CNK, Diamond, Lion, Xin-Xing, and the popular *Ecotone* variant of Philips.

At EDSA Central, informal retail outlets thrive along with formal retail outlets. To some extent, this dual CFL market benefits consumers in terms of a wider range of CFL brands and prices. In a survey, about four out of every five households indicate ready access to CFL products. Moreover, about one-fourth of households that recently purchased CFLs indicated they got their CFLs from informal retail outlets.

The informal retail outlets are common in market centers. Selected market centers with informal retail outlets of CFLs are summarized below (see Table 3).

- The Blumentritt market is a dry & wet market along Rizal Avenue and accessible through the Light Railway Transit (LRT), FX taxis, and jeepneys. An old commercial district, street vendors co-exist with old hardware stores, offering both popular and low-cost CFL brands.
- The Quiapo market hosts a dry goods section, a wet market, and several electronics stores. Market stalls and street vendors offer, among others, Diamond, Lion, and Philips CFLs at a bargain price of 3-for-PhP 100.
- The Divisoria market hosts dry goods stalls, bazaars and shops. It is a favorite destination of wholesalers and bargain hunters because of very low prices. It is accessible through buses, FX taxis, jeepneys, and the PNR train that goes to provinces outside Metro Manila. Divisoria is a major transshipment area for dry goods. Divisoria has a section of street vendors, who peddle CATA, CNK, Diamond, Lion, and Philips CFLs at very low prices.

INSERT PHOTO SET 2 HERE

INSERT PHOTO SET 3 HERE

Table 3. Selected Retail Outlets for CFLs

	<b>EDSA CENTRAL</b>	<b>BLUMENTRITT</b>
AREA	Pasig City	Manila
ACCESSIBILITY	Buses, Metrostar (MRT), and FX taxis/ jeepneys	LRT, FX taxis/ jeepneys
KEY MARKET CENTERS	EDSA Central, SM Megamall, Robinsons, & Shangri-La Plaza	Dry & wet markets
CFL OUTLETS	Market stalls Street vendors	15 hardware stores Vendors
CFL BRANDS (PRICE RANGE)	Philips (P50, 160++), Apollo, CATA, Diamond, Lion, CNK, (3-for-P100)	Philips (P200-245+), Chiyoda (P120), CNK, Commander, Energy, & National (below P100)

	<b>QUIAPO</b>	<b>DIVISORIA</b>
AREA	Manila	Manila
ACCESSIBILITY	FX taxis/ jeepneys	Buses, FX taxis/ jeepneys, PNR train
KEY MARKET CENTERS	Quiapo dry and wet markets plus electronics stores	Divisoria textile market (dry goods) stalls, bazaars and shops
CFL OUTLETS	Market stalls Street vendors	1 hardware store Street vendors
CFL BRANDS (PRICE RANGE)	Philips, Diamond, Juren, Lion, Sunlight, U-well (3-for-P100)	Philips (3-for-P120), CATA, CNK, Diamond, Lion, U-well (3-for-P100)

SOURCE: AA SURVEY AND ANALYSIS

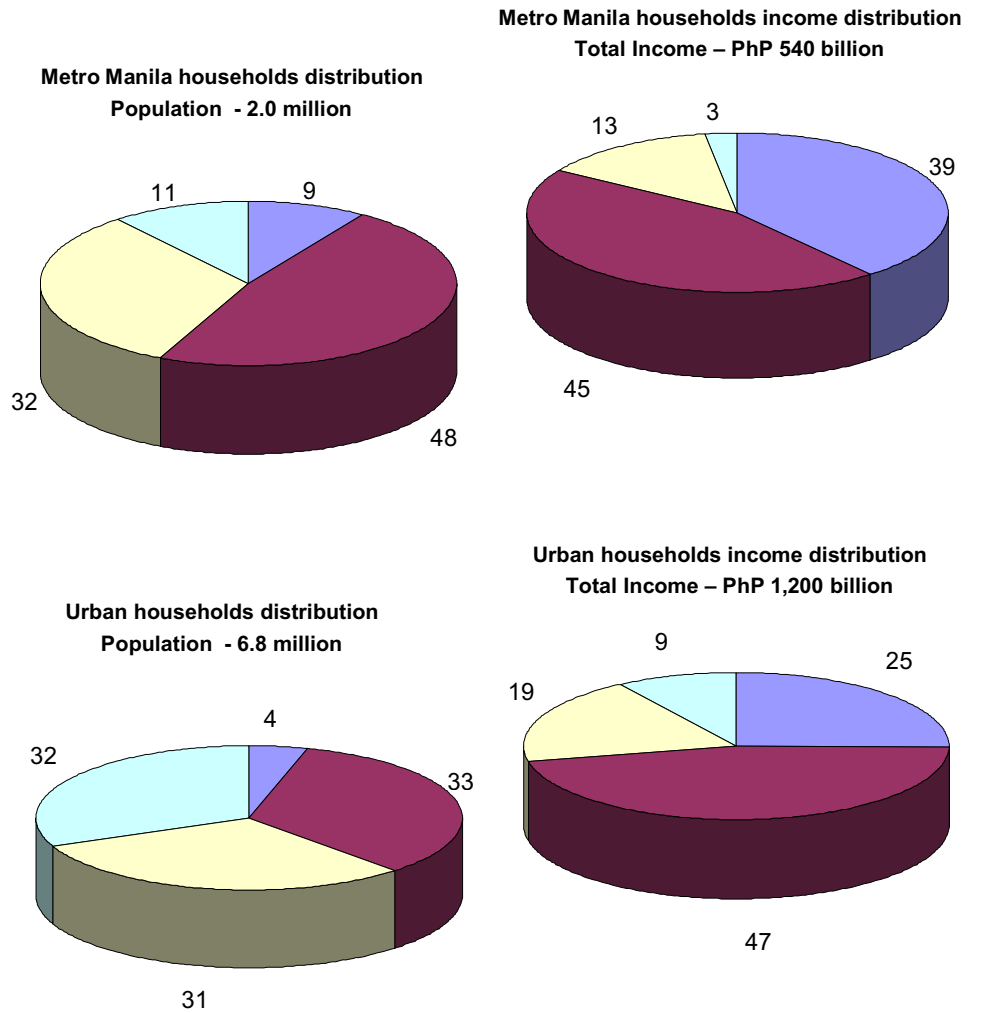
#### *The Metro Manila Households*

Metro Manila is a major urban center and host to about two million households or 14 percent of the country's household population (see Chart 4). It is the country's commercial, financial, and industrial capital and home of many of the country's rich households. In a 1997 survey, Metro Manila's households accounted for PhP 540 billion or almost one-third of the total income of all households in the country.

About 183 thousand or nine percent of Metro Manila's households belonged to the affluent AB market segment while 952 thousand or almost half are middle class households from the C market segment. The less affluent D and E market segments accounted for 32 percent and 11 percent of Metro Manila's households. [The broad characteristics and distribution of AB, C, D, and E market segments are shown in the Appendix.]

Metro Manila hosts many of the more affluent households. Over half of the country's AB households and one-third of the middle class households are in Metro Manila. This resulted in a concentration of income and purchasing power in Metro Manila. Metro Manila's AB and C households added up to 1.1 million or eight percent of the country's households. However, these affluent households accounted for over one-fourth of the country's household income.

Chart 4. The Metro Manila and Urban Households Market



SOURCE: AA ANALYSIS

*The Urban Area Households*

The number of urban households in the country has reached 6.8 million or almost half of the country’s households. These households accounted for PhP 1.2 trillion or 70 percent of the total income of the country’s households.

The urban areas hosted 298 thousand or 90 percent of the country’s AB households and 2.3 million or 77 percent of the country’s middle class households. The incomes of AB and C households in the urban areas added up to PhP 860 billion or half of the country’s household income.

Metro Manila is a major component of the country’s urban sector. It accounts for one-third of the urban household population and one-half of the total income of the urban households. The rest of the urban households and their corresponding incomes are spread out in many cities across the country.

### *Awareness of Energy Efficiency and CFLs*

Almost all of the households in Metro Manila and in the three other areas, i.e., Calabarzon, Cebu City, and Cagayan de Oro City, readily see the importance of *energy efficiency* in their lighting and home appliances.

While they recognize and agree to the importance of energy efficiency, not as many households think that they are very aware of energy efficient products. About two out of every three households think that are very familiar with energy efficient products.

When presented with specific examples of energy efficient products like the CFLs, there are fewer households that express familiarity with the products. In Metro Manila, for instance, about one out of every four households readily admits it does not have enough information to make educated choices in the purchase of lighting products.

In Calabarzon, a suburban area just outside of the NCR and host to many industrial and residential communities, relatively many more households think that they are not familiar with lighting products. The Calabarzon has a fast-growing residential community due to in-migration of the families of industrial workers. By contrast, most of the households in Cebu City and Cagayan de Oro City believe they have adequate information to make educated choices in the purchase of lighting products (see Table 4).

On balance, many more households are familiar with CFLs today. In 1996, the WB-ASTAE report cited that four out of every five residential customers were unfamiliar with CFLs.

Table 4. Consumer Awareness on CFLs

<i>Do you have enough information on energy efficient lighting products (CFLs) to make educated choices when buying new lamps?</i>	Percentage of Respondents		
	Yes	No	Don't know
Metro Manila	75	22	4
Calabarzon	45	51	4
Cebu City	95	5	-
Cagayan de Oro	98	2	-

SOURCE: AA SURVEY AND ANALYSIS

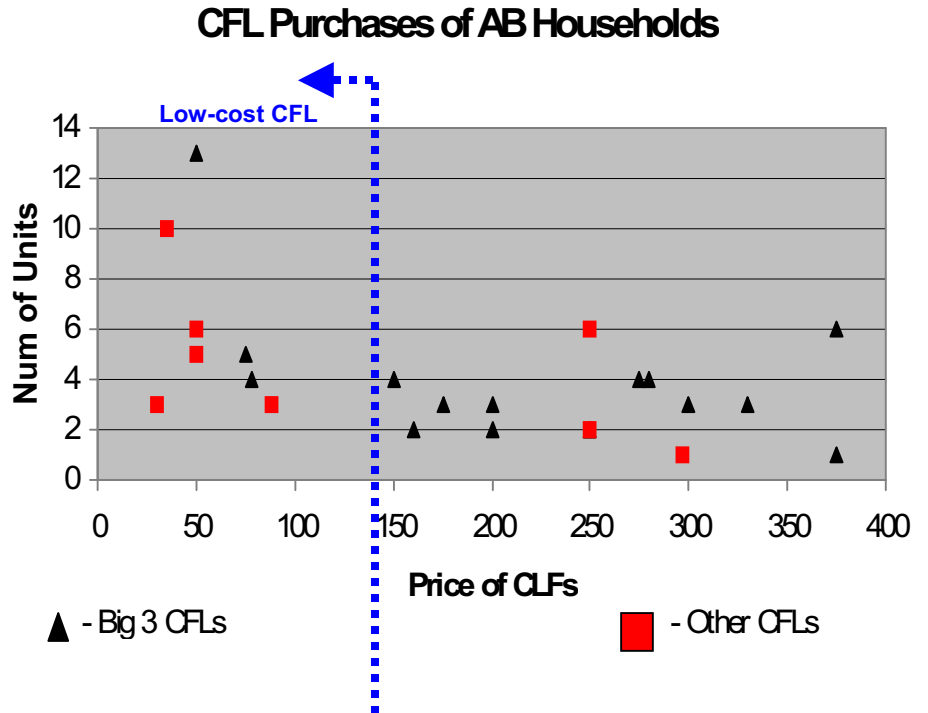
### *CFL Purchases of Metro Manila Households*

The CFL purchases of Metro Manila households are influenced by the availability of CFL brands and variants, the prices of CFLs, and the purchasing power of the households, among others. The pattern of household CFL purchases is indicated in Charts 5, 6 and 7, and is summarized below.

- The AB households generally buy the popular CFLs of the Big 3, i.e., General Electric (GE), Osram, and Philips. The Big 3 CFLs are perceived to have good quality and are expensive. The low-cost authorized variants GE *Economiser* and Philips *Essential* have a suggested retail price (SRP) of PhP 160 apiece. The AB households buy about three pieces of Big 3 CFLs at an average price of PhP 220 apiece. Some AB households prefer other expensive CFLs. Indeed, the AB households are the primary market for CFLs because of their high purchasing power and preference for quality.

Interestingly, some AB households try out the low-cost CFL variants. (That is, they buy low-cost CFLs in addition to the Big 3 CFLs that they buy.) These include other CFLs and copies of the Big 3 CFLs, particularly Philips. AB households pay about PhP 110 apiece for these other CFLs.

Chart 5. CFL Purchases of AB Households



SOURCE: AA SURVEY AND ANALYSIS

- The C or middle class households also buy Big 3 CFLs. However, they buy only two CFLs on average and at a lower average price of PhP 200 apiece. Unlike the more affluent AB households, the middle class households are less keen on paying more for quality CFLs. They are more inclined to try out the low-cost CFLs, including the less popular CFLs and unauthorized copies of the popular brands. On average, the middle class households pay slightly over PhP 100 apiece for other CFLs.
- The D and E households buy the Big 3 CFLs. But a relatively big portion of these CFLs are unauthorized copies that are sold at low prices. The D and E households buy Big 3 CFLs at an average price of PhP 152 apiece, which is below the SRP of Big 3 CFLs. Hence, many of the CFLs acquired by D and E households are cheap copies of Big 3 CFLs.

The D and E households have relatively more purchases of other CFLs compared with those of the other market segments. This indicates the D and E households' propensity for low-cost CFLs. The less affluent households pay an average price of PhP 67 apiece for other CFLs.

- Put together, the households from different market segments have similar inclinations to buy CFLs. Similarly, they are familiar with the Big 3 CFLs, the other CFLs, and their relative prices. Hence, the observed pattern of purchases stem more from the households' purchasing power or ability to pay the purchased CFLs. While most recognize and perhaps wish to get quality CFLs, Metro Manila households buy the CFLs they can afford.

Chart 6. CFL Purchases of C Households

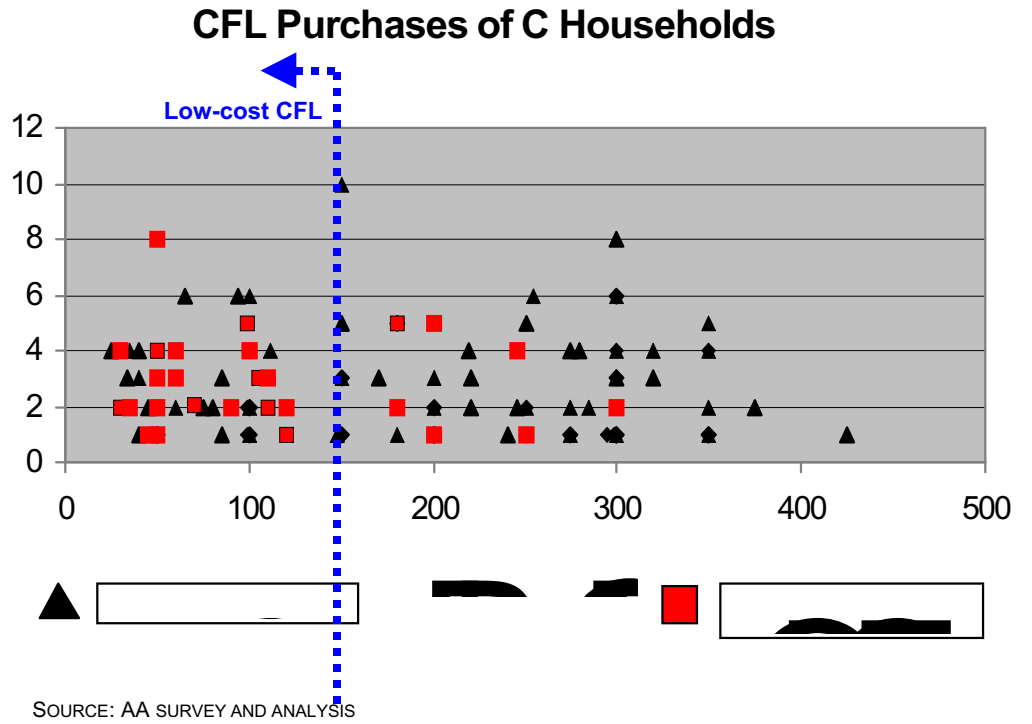
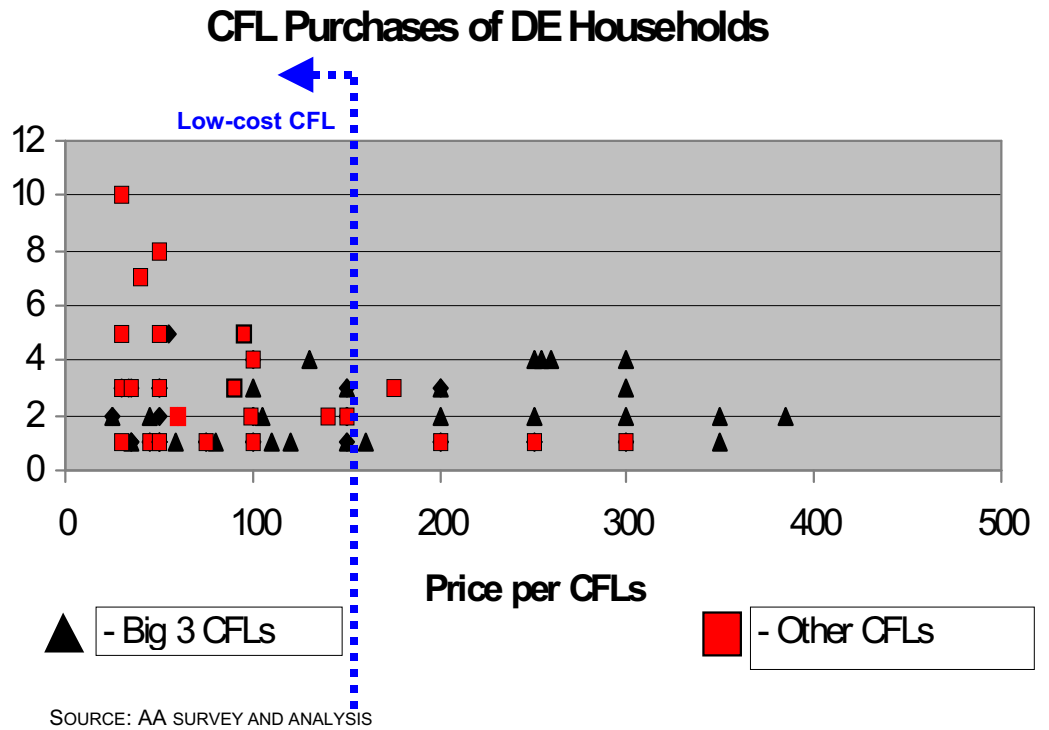


Chart 7. CFL Purchases of DE Households



In 1999, Metro Manila households purchased about 1.6 million units of CFLs. This volume translates to PhP 264 million or US\$ 6.28 million. The middle-income households were the biggest buyers of CFLs, accounting for 889 thousand or over half of the total volume of purchased CFLs. The DE and E households purchased 397 thousand units while the affluent households accounted for only 338 thousand units. In terms of value, however, the D and E households had PhP 46 million while the AB households had PhP 64 million in CFL purchases.

Table 5. CFL Purchases of Metro Manila Households in 1999

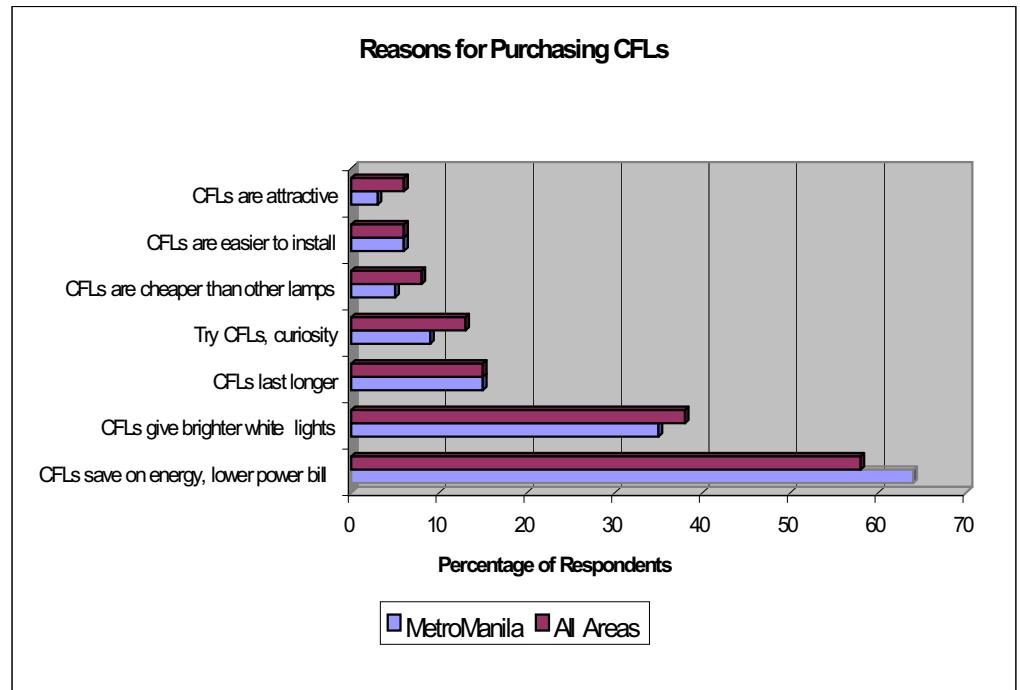
Market Segment	Volume, 000s	Price, PhP	PhP Million	US\$ Million
AB	338	188	64	1.51
C	889	173	154	3.66
DE	397	117	46	1.11
All	1,625	162	264	6.28

SOURCE: AA SURVEY AND ANALYSIS

*Preferences of Households*

What makes CFLs saleable? Households that purchased CFLs in 1999-2000 indicated, among others, their reasons for purchasing CFLs: lower electricity consumption, brighter white light, curiosity, and longer lamp life (see Chart 8).

Chart 8. Reasons for Purchasing CFLs



SOURCE: AA SURVEY AND ANALYSIS

Lower electricity consumption and energy saving are CFL's primary selling points. Many CFL manufacturers label their CFLs as either "Energy Savers" or "Energy Saving Lamps", and the labels even have bigger and attractive designs than the brand names. Local suppliers and vendors also advertise their CFL products as energy saving lamps. CFLs are popularly known as energy savers.

Before, CFL proponents explained that low electricity consumption could offset the high initial lamp cost. Today, more low-cost CFLs are offered in the local market. Hence, given a standard lamp and a CFL of comparable price, the household consumer would readily choose the CFL because of its advertised low electric consumption and energy saving features. The availability of low cost CFLs in the local market puts to fore the economic advantage of CFLs over standard lamps. Households, particularly the C, D, and E households, find lower electricity consumption as a clear rationale for their CFL purchases.

Households also recognize the functional and aesthetic features of CFLs. These features are enhanced by the compact sizes and lower prices of the CFL. Compared to the standard lamps, the small, modern, and cheap CFLs give even brighter white lights. Thus, with today's CFLs, brighter light comes in compact and cheap.

Another selling point of CFLs is its longer lamp life. For households that are used to standard incandescent lamps that last for several months, a CFL lamp that lasts for one to two years is definitely a performer. Many households expressed satisfaction on CFLs that last three to four years, not knowing that CFLs in industrial countries have "standard lives" of five to six years.

Another reason identified by households is curiosity. This reason is not associated with the cost and performance characteristics of CFLs. It indicates the Filipino households' propensity to check out emerging products. Households like to test the efficiency, bright lighting, and long life of CFLs.

Other reasons identified by households include cheaper lamps, easy to install lamps, attractive shape, space saver, modern lamps, and safety.

On the other hand, households that did not purchase any CFL in 1999-2000 identified the following reasons:

- Presently installed lamps are still working and satisfactory.
- CFLs are expensive and entail additional expenses.
- Lack of knowledge on CFLs.
- CFLs are dim and less bright.
- CFLs are not readily available and do not last long.

About half of the households that did not purchase CFLs in 1999-2000 did not have any complaint or adverse comment on CFLs. These households have lights and lamps that are in good operating condition and, hence, need neither replacement nor retrofitting. Moreover, some of the respondents indicated that they have shifted to linear fluorescent lamps instead of incandescent lamps for lighting.

But the other half that did not purchase CFLs present more challenges. These households have unfavorable experiences and perceptions about CFLs. Nonetheless, there may be a need for an information and education campaign to clarify and rectify the present perceptions of these prospective households.

*Current Household Perceptions on CFLs*

The results of a household survey of CFLs are summarized in Table 6 and discussed below.

- Many households have positive sentiments on the physical characteristics of CFLs. About 75 percent of the household survey respondents agree that CFLs bring about substantial energy savings and yield a brighter white light compared to the standard lamps. These are the essential features of the CFLs.

Besides the prices, household consumers look for measures to compare different lighting products and brands. Households associate CFLs with, among others, the lower wattage and the equivalent number of lamps when compared with standard lamps.

Table 6. Household Perceptions on CFLs

Perception	Percentage of Respondents		
	True	False	Don't know
<i>CFLs use less electricity than standard lamps</i>	75	7	18
<i>CFLs give a brighter light</i>	73	17	10
<i>High efficiency lamps (CFLs) are expensive</i>	69	21	10
<i>CFLs cost the same to operate as standard bulbs</i>	18	67	15
<i>CFLs are not worth the investment</i>	22	63	15
<i>CFLs are better for the environment</i>	67	6	27
<i>CFLs are dangerous to your health</i>	9	52	40

SOURCE: AA SURVEY AND ANALYSIS

- Households have mixed perceptions on the cost and investment aspects of CFLs. On one hand, some seven out of every 10 households still believe that CFLs are expensive vis-à-vis the incandescent lamps. In the mid-1990s, CFL cost about PhP 300 or eight to 10 times the price of an incandescent lamp. The DOE and WB-ASTAE reports cited the high prices of CFLs as a major deterrent to the increase in CFL sales, particularly to the middle- and low-income households.

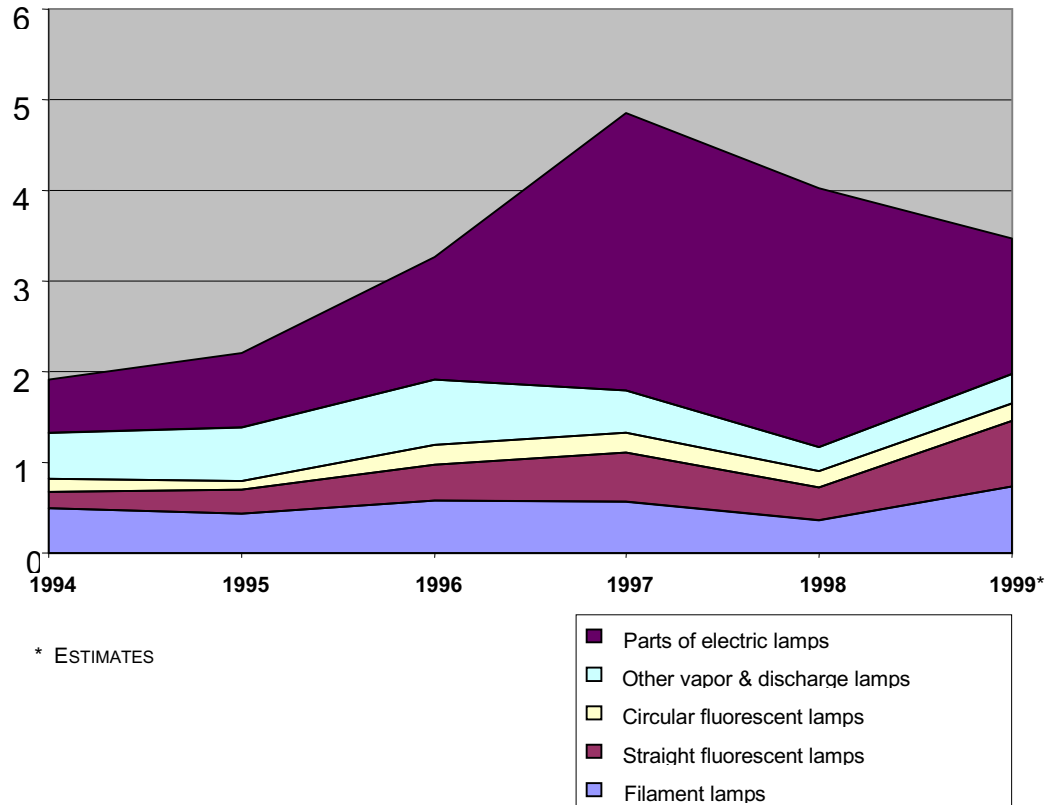
On the other hand, about two out of every three households recognize that CFLs and incandescent lamps do not have the same operating costs. As indicated earlier, many households believe that CFLs use less electricity than the incandescent lamps do. The low operating costs of CFLs can compensate for their high initial costs. Thus, many households disagree that CFLs are not worth the investment.

- Besides the cost and performance characteristics, CFLs have other good features that can be leveraged to increase its market attractiveness. For instance, about three out of every 10 households are not aware of the CFL benefits to health and environment. Because of energy efficiency, CFLs help reduce energy and power consumption. Hence, CFL usage contributes in reducing the depletion of energy resources and slowing down heat losses to the environment.

Today, many companies and organizations go beyond their profit motives and incorporate programs that address social, economic and global concerns. Market studies indicate that customers are willing to pay more for products and services that contribute to broader economic, environmental, and socio-cultural concerns. Moreover, corporations and organizations adopt cause-related marketing (CRM) to enhance the value of their brands and products. The energy efficient CFLs can adopt CRM and highlight their contributions to health and environment.

The households' perception on expensive CFLs is being tempered by the emergence of low-cost CFLs in recent years. The cheap CFLs in the market today result primarily from imported CFLs. Lighting product imports, including CFLs, doubled from \$19 million in 1994 to \$40 million in 1998 before dropping to \$34 million in 1999. The fast growth came from straight fluorescent lamps, which increased by four-folds in five years, and parts of electric lamps, which surged to \$28 million in 1998. The country's lighting products came primarily from China (see Chart 9).

Chart 9. Import of Lamps and Lighting Products, US\$ Millions



BASIC DATA: NATIONAL STATISTICS OFFICE

Cheap CFL imports, in turn, stem partly from the development of electronic CFLs and partly from the labor-rich developing Asian countries like Indonesia and China. Because of their abundant and low-cost workers, Indonesia and China are very competitive production locations for labor-intensive, low technology manufactures, including garments, electronics and lighting products. Other developing countries like the Philippines can take advantage of low-cost manufactured imports from these countries.

In 1999, the manufacturer of the popular Philips lighting products closed its local plant and focused on distributing imported CFL and lighting products to the local market. In response to regional and global investment and trade arrangements, multinational firms are now consolidating and rationalizing their operations in the Asian region.

The CFL imports bring about both benefits and risks to the local market. On one hand, the middle- and low-income households gain access to various CFL products, including the affordable or low-cost variants. On the other hand, because of the proliferation of low-cost CFL imports, the households face greater risks of getting low-quality and unreliable CFL products.

Most of the CFLs in the local market are imported, primarily from low-cost Asian producers. The Government, through the Department of Trade and Industry (DTI) issues clearances to prospective importers to ensure the entry and distribution of safe and quality goods into the local market.

According to official trade publications, there are 18 traders granted Import Commodity Clearances (ICCs) for CFL imports in 1999 and 2000 (see Table 7). Interestingly, in a survey, households identified more than 50 CFL brands offered in the local market. The figures indicate that importers of at least 30 CFL brands have not yet received their ICCs. Or worse, some CFL importers who were not granted ICCs for failure to meet the product safety and quality requirements may be peddling their unreliable and sub-standard CFLs in the local market. Based on a household survey, close to one million units or 60 percent of the total volume CFLs purchased by Metro Manila households in 1999 may not have the ICCs.

Table 7. CFL Importers Granted with ICCs in 1999 and 2000

Company	Brand
Action Semiconductor (Asia) Corp.	Centre
Bequillo Marketing	Pollux
Décor Contemporary	Century-Eurolux
Esquire Development	Megaman
General Electric Phil., Inc.	GE
Givory Electrical Supply	GES
Great M Enterprises	Sunlight 2000
LG Trading	SEE
Nanyang Hongji Ind'l Corp.	MTA
New Millennium Enterprises	Liberty
Osram	Osram
Philips International & Lighting	Philips
Pilot Marketing & Development Corp.	Jiadian
Richmarsh Industrial Trade Corp.	Fuze (Beyond)
Switch Sales Inc.	Pollux
Yatai International Corp.	Maxlite
Yatai International Corp.	Omni
Yek Yue Merchandising, Inc.	National

BASIC DATA: DTI.

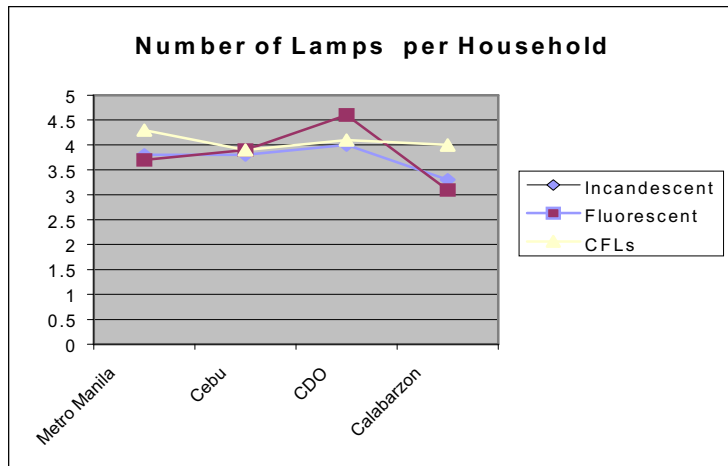
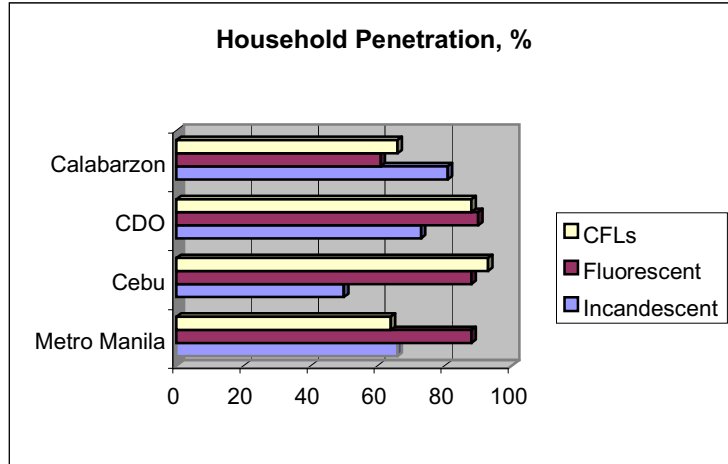
The issue facing the industry shifts from the high prices of CFLs to the availability of quality CFLs at competitive or fair prices. With a myriad of CFLs not carrying ICC labels, households are vulnerable to fake, substandard, and unreliable CFLs. While they readily get access to cheap CFLs, households may not always get the expected quality, utility, or value for their money. Hence, it will be very helpful for both Government and non-government organizations (NGOs) to improve or develop better mechanisms that will protect households from unscrupulous traders. Moreover, they need programs that will provide reliable information to households so they can buy the right CFLs at the right prices.

The decision to invest in CFLs considers, among others, the relative prices and operating costs of CFLs and standard lamps. Recent price and cost trends favor CFLs over the standard lamps. Specifically, the surge in CFL imports and subsequent proliferation of low-cost CFLs in the market bring to fore the low-cost operation and maintenance of CFLs. As CFL prices decline and become comparable with those of standard lamps, households readily see the attractiveness --efficiency or low maintenance cost --of CFLs.

*Distribution and Usage of CFLs*

In recent years, Filipino households use a mix of CFLs, fluorescent, and incandescent lamps for lighting. In Metro Manila, most of the households use fluorescent lamps and two-thirds of the households have incandescent lamps. However, very much unlike the mid-1990s when only about five to eight percent of the households owned CFLs, there are today almost as many CFL users as incandescent lamp users among Metro Manila households. Indeed, the CFL usage increased dramatically and CFL became a common fixture in Metro Manila homes (see Chart 10.)

Chart 10. Distribution and Usage of Lighting Products by Area, 2000



SOURCE: AA SURVEY AND ANALYSIS

Outside of Metro Manila, the cities of Cebu and Cagayan de Oro (CDO) showed more impressive CFL growth. These cities have higher levels of CFL penetrations, i.e., the percentages of total households that are using CFLs, than Metro Manila has. In addition, these cities have more CFL users than incandescent lamp users.

In contrast, Calabarzon, still has more incandescent lamp users than either CFL or fluorescent lamp users. Calabarzon is a fast-growing suburban region south of Metro Manila and host to a growing number of industrial and residential communities.

Today, Metro Manila households have more CFLs than either incandescent or fluorescent lamps. On the average, a Metro Manila household has 4.3 CFLs, 3.8 incandescent lamps, and 3.7 fluorescent lamps. A similar pattern is seen in the other areas.

Indeed, the local CFL market has evolved dramatically in the last five years. In the urban areas, the CFL users already outnumber the incandescent lamp users. But there are still growth opportunities in less urban areas like Calabarzon where there are many more incandescent lamp users.

#### *ELI-Qualified CFLs*

In the Philippine market, the early ELI-qualifiers are the Osram *Du Lux* models, the Philips *Ecotone* models, and the Maxlite CFL models. Other manufacturers and distributors of CFL products have applied for and are awaiting results of their ELI-qualification.

ELI has set stringent technical specifications for products that will carry the ELI Quality Mark—the highest symbol of quality for energy efficient products. Not all of the CFL models offered by popular brands meet the ELI requirements. GE and Philips launched in 2000 the *Economiser* and *Essential* models in the local market. While they fall short of the ELI requirements because of their shorter lamp lives, *Economiser* and *Essential* CFLs drew the attention of the household market and gained market shares.

Similarly, many of the CFLs offered in the local market fall short of the stringent ELI quality requirements. Partial results of a study indicated that many CFL models decline in lumen maintenance and even cease to light up after 2000 hours of operation. Because of the stringent requirements and the high cost to meet these requirements, only about ten to fourteen percent of the CFLs purchased by households up to the first semester of 2000 are ELI-qualified.

## **B. Commercial and Industrial Firms**

### *Commercial and Industrial Usage of Lighting*

Large commercial and industrial firms use a mix of lighting technologies for their facilities and offices. Almost all of the commercial and industrial firms use fluorescent lamps. About three-fourths of the firms have CFLs. Many firms are shifting from incandescent lamps to the more efficient CFLs and fluorescent lamps. There are relatively more firms that use CFLs than firms that have incandescent lamps. Still, there is room for CFL growth as the rest of the firms shift from using incandescent lamps (see Table 8).

Table 8. Commercial and Industrial Usage of Lighting Products, 2000

	Lighting Technology Used		
	Fluorescent	Incandescent	CFLs
Users, as % of all firms	100	65	77
Average number of lamps	400	91	94

SOURCE: AA SURVEY AND ANALYSIS

Today, large firms primarily use fluorescent lamps and complement them by either CFLs or incandescent lamps for specific areas. On the average, large firms use 400 fluorescent lamps and slightly over 90 CFLs and incandescent lamps.

Commercial and industrial firms use other lamps and lighting products. Most of the large firms have ballasts, primarily for their fluorescent lamps. Some large firms also use halogens and high-intensity discharge (HID) lamps like the mercury vapor, and the low-pressure and high-pressure sodium lamps that can have higher efficacies (or lumens per watt) than fluorescent lamps. About 16 percent of the large firms have halogens while 11 percent use HID lamps for lighting applications. Finally, over one-third of the firms use luminaires for lighting to improve on their lighting systems.

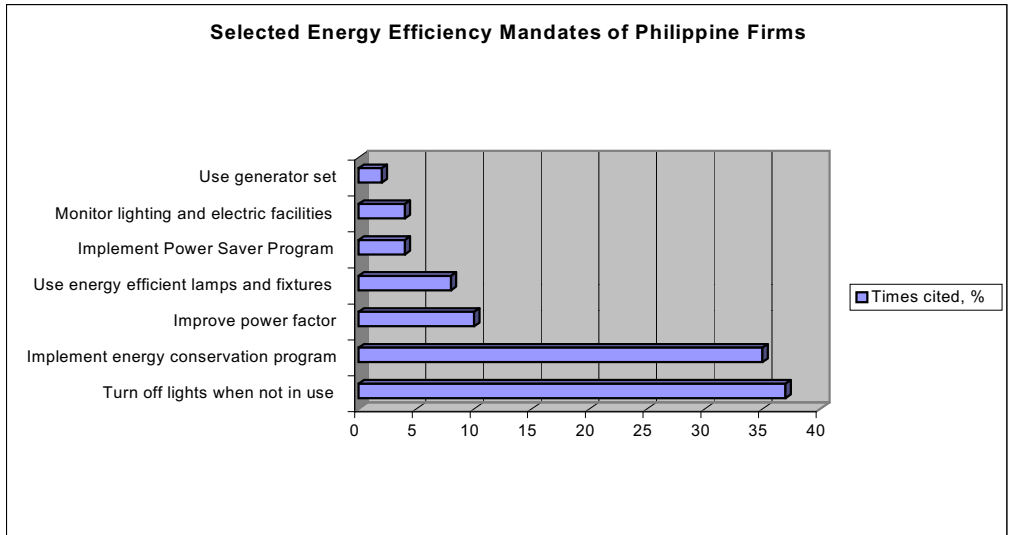
*Energy Efficiency Mandates and CFLs*

Over half of the country's large firms indicate they have operational mandates to reduce energy operating costs through energy efficiency. Over one-third of the firms have neither the mandate nor people to carry out energy efficiency programs.

Philippine enterprises refer to two general mandates on energy efficiency. The popular mandate is turning off lights that are not in use. Over one-third of the large firms adopt this practice (see Chart 11) for energy efficiency. Another popular and related mandate is energy conservation, which was started during the country's oil and power crises. A small percentage of large firms identified the improvement of the organization's power factor (10 percent) and the use of energy efficient lamps and fixtures (8 percent). The last two are associated with the large firms' use of fluorescent lamps, ballasts, and other lighting products.

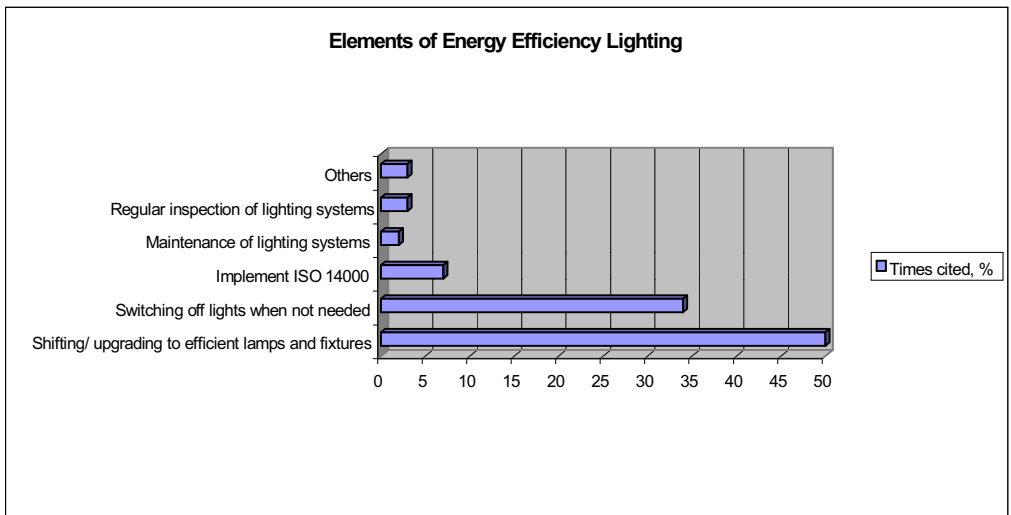
Many of the large Philippine firms are aware of energy efficiency lighting concepts. Large firms can have several energy efficient lighting practices. Half of the country's commercial and industrial firms with energy efficiency mandates associate energy efficient lighting with shifting or upgrading to more efficient lamps and fixtures (see Chart 12).

Chart 11. Selected Energy Efficiency Mandates of Philippine Firms



SOURCE: AA SURVEY AND ANALYSIS

Chart 12. Elements of Energy Efficient Lighting



SOURCE: AA SURVEY AND ANALYSIS

Households improve lighting efficiency by shifting to fluorescent lamps and CFLs. By contrast, the large firms have lighting systems that include hundreds of lamps and other lighting products such as ballasts and luminaires. Thus, large firms go beyond simple replacement of old lamps with new and efficient lamps. Some large firms change their fluorescent lamps, the most popular lighting technology for commercial and industrial lighting, from the pre-heat to the rapid-start or instant-start lamp types, and from the wide T12 tube to the narrow T8 tube models (the narrower T5 tube models are still at the experimental stage). Similarly, some large firms change from electromagnetic to electronic ballasts to improve on the power factors of the lighting systems. Other large firms, particularly those in modern commercial buildings, use luminaires for lighting applications.

While they have various ways to improve their lighting efficiencies, few large firms retrofit and renovate their current systems with efficient products even before the current systems complete their useful lives.

One-third of the firms identify the practice of switching off lights that are not in use. A small percentage of the firms identify the implementation of ISO 14000 as well as the regular inspection and maintenance of lighting systems. Hence, there are still opportunities for improving energy efficiency among Philippine firms through the appreciation of and practice of energy efficient systems.

#### *Efficient Lamps for Replacement and Retrofitting*

Majority of the large firms consider energy efficiency as a criterion in the specifications for replacing old and used lamps and lighting fixtures. These specifications include, among others, the following:

- ◆ Use efficient fluorescent lamps because of their lower consumption
- ◆ Use high-power electronic ballasts in place of electromagnetic ballasts for lower energy consumption
- ◆ Use fluorescent lamps with low wattage in place of incandescent lamps
- ◆ Use CFLs with low wattage in place of incandescent lamps
- ◆ Use CFLs in place of linear fluorescent lamps
- ◆ Use lamps that last longer, i.e., over 2 years

From the specifications, large firms indicate a strong preference for fluorescent lamps and high power electronic ballasts to achieve energy efficiency. Some large firms also indicate the use of CFLs over incandescent lamps and over fluorescent lamps.

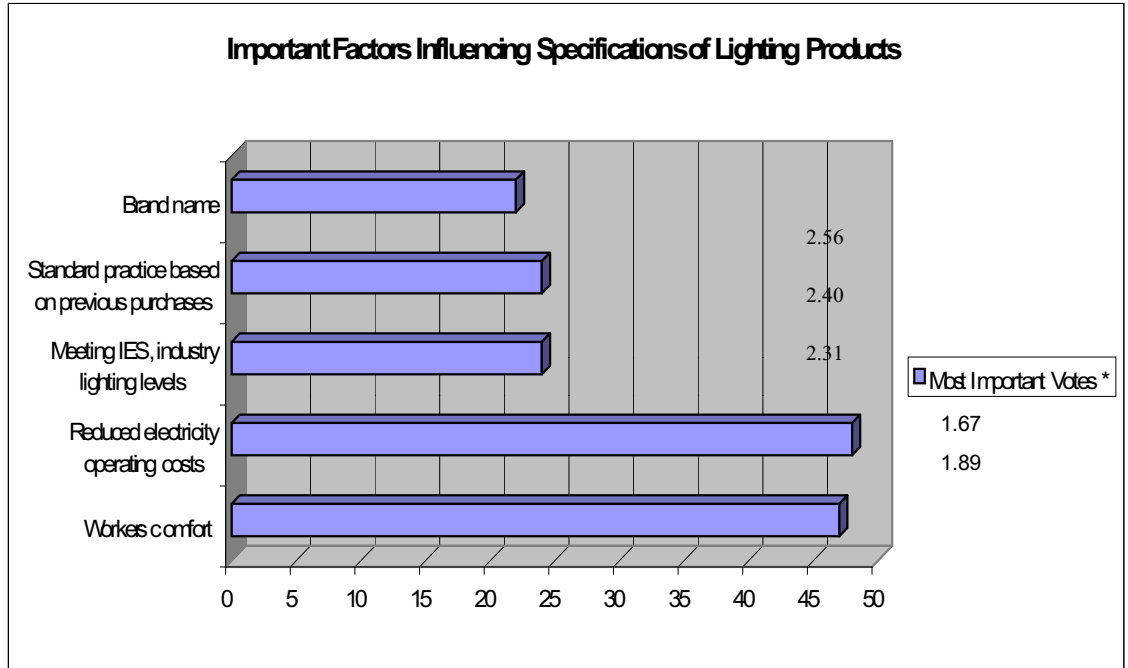
In contrast, there are large firms that do not consider energy efficiency as a criterion in purchasing new replacement lamps. These firms purchase either the cheapest lamp available in the market or exactly the same type of lamp that will be replaced. This is partly to avoid mismatches between different types of fluorescent lamps and ballasts. (The new electronic ballasts support instant-start lamps but not the preheat and rapid-start lamps. The old electromagnetic ballasts support pre-heat and rapid-start lamps but not the instant start lamps.)

More importantly, there are firms that cannot see the potential savings from the use of energy efficient lighting products. Rather than checking the potential savings, firms immediately see the high initial cost of energy efficient CFLs, fluorescent lamps, and high power factor electronic ballasts. This is indicated by the big percentage of firms that neither replace nor retrofit their lighting systems with energy efficient lighting products.

*Important Factors Affecting Purchases of Efficient Lighting Products*

Philippine enterprises prioritize tangible benefits when purchasing lighting products and fixtures. Almost half of the firms ranked both workers' comfort and reduced electricity-operating costs as the most important factors influencing their specifications for lighting products (see Chart 13).

Chart 13. Important Factors Influencing Specifications of Lighting Products



SOURCE: AA SURVEY AND ANALYSIS

The remaining three factors, i.e., meeting IES, standard practices, and brand name, garnered almost similar fewer votes and lower scores from the firms. While these three factors reflect the quality and best practices for lighting products, the firms seem to recognize and put a premium on the factors that directly benefit their workers and financials.

Considering the tight economic and market conditions, firms adopt simpler and less costly approaches of energy efficient lighting. During better times, firms may shift to modern ways of practicing energy efficiency.

*Purchases of Lighting Products*

During the first half of 2000, commercial and industrial firms purchased lighting products for either replacement or retrofitting of their lighting systems. About 89 percent of the large firms purchased, on average, 255 fluorescent lamps, making it the most popular lighting technology among commercial and industrial firms (see Table 9). About 62 percent of the firms bought CFLs and 59 percent purchased incandescent lamps for commercial and industrial applications. The large firms also purchased halogens (13 percent), HID lamps (7 percent), and luminaires (10 percent).

Table 9. Commercial and Industrial Purchases of Lighting Products, 2000

	Lighting Technology Used		
	Fluorescent	Incandescent	CFLs
<i>Purchasers, as % of all firms</i>	89	59	62
<i>Average number of lamps purchased</i>	255	179	65

SOURCE: AA SURVEY AND ANALYSIS

Metro Manila is the center of commercial and industrial activities in the country. Meralco, the dominant distributor in the country, serves about 285 thousand commercial establishments and 13 thousand industrial establishments in Metro Manila and its surrounding provinces. These establishments account for over five million lamps or 42 percent of the total fluorescent lamp sales in the country. The T12 lamps are still prevalent with at least 80 percent of the market although the new T8s are gaining acceptability in the market. Moreover, electromagnetic ballasts predominate over the new but expensive electronic ballasts in the local market.

#### *Information and Education Campaigns on Energy Efficiency*

The primary sources of awareness on lighting products are the broadcast and print media advertisements, and direct marketing. Over half of the commercial and industrial firms get information on lighting products from these agents. The other sources of information are suppliers and sales representatives, trade shows and conferences, and the electrical hardware stores.

Many corporations are not aware of energy efficiency programs carried out by the Government, the utilities, and non-government organizations (NGOs). Among the firms that are aware, few are able to participate in the programs. In a survey, Philippine firms identified the following energy efficiency programs:

- ◆ DOE Energy Conservation Program
- ◆ DOE Energy Efficiency Testing
- ◆ DOE DSM, Power Patrol
- ◆ Daylight Saving Time
- ◆ IIEE Seminars
- ◆ Meralco Advisory Program on Energy Conservation
- ◆ Meralco Power Factory Improvement
- ◆ Safety and Energy Saving of the Safety Organization of the Philippines.

As a result of these programs, some firms have carried out activities related to becoming more aware of and implementing energy efficiency activities in their organizations. These firms identified, among others, the following activities:

- ◆ Posting energy conservation notices at office departments
- ◆ Conducting routine checks to switch off unnecessary lights
- ◆ Attending seminars and training programs on CRT/PERT, energy saving, power control, etc.
- ◆ Observing Daylight Saving Time
- ◆ Observing and implementing DOE recommendations on energy saving programs
- ◆ Shifting from incandescent lamps to fluorescent lamps
- ◆ Cleaning lamps and fixtures regularly.

### Important Barriers to Efficient Lighting Programs

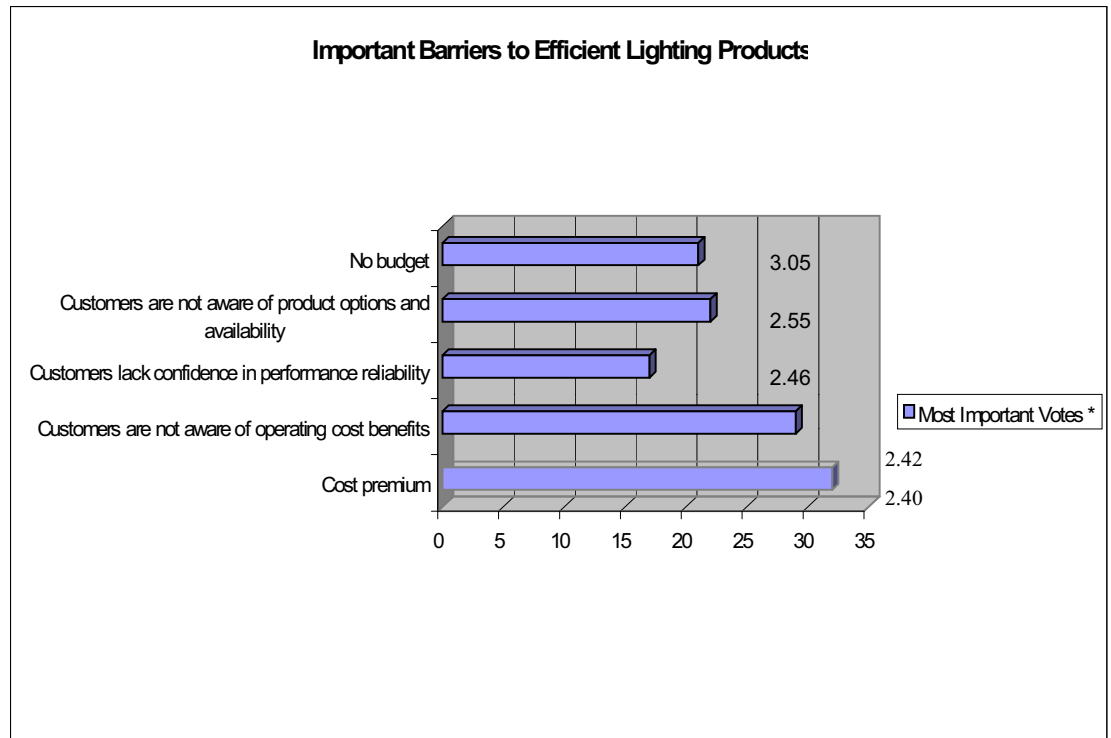
Large commercial and industrial firms identify two major barriers to the purchase and widespread adoption of energy efficient lighting products. These are the cost premium and lack of awareness of operating cost benefits. Firms are not too keen on spending extra money for new lighting systems and the benefits of operating the new systems. The two barriers are related and may be viewed as components of an investment decision. While they shell out extra money for lighting, firms do not seem to see the extra revenue or return from the investment. As such, firms simply decide not to put up the extra money and to settle with the cheapest lamps available or the lamp similar to the old lamp that will be replaced (see Chart 14).

The next two barriers refer to the perceived lack of awareness and unreliable performance of efficient lighting products. For instance, the shifts from pre-heat lamps to instant-start fluorescent lamps and from electromagnetic to electronic ballasts are hampered by earlier mismatches experienced by firms. Another barrier is the influx of many imported brands and variants of CFLs and other lighting products. Given the breadth of lighting products available at various prices, customers raise concerns on which specific product variant will yield a consistent and reliable performance.

“No budget” had the lowest number of votes among the barriers. By the relatively low votes, large firms indicate that budget is not an important barrier. Large firms often have the resources for attractive projects, including efficient lighting projects, should they show good yields.

The generally low scores may indicate that large firms do not see serious barriers to the development of energy efficient lighting products. This is corroborated by the high penetration levels of fluorescent lamps and CFLs into the large commercial and industrial firms.

Chart 14. Important Barriers to Efficient Lighting Products

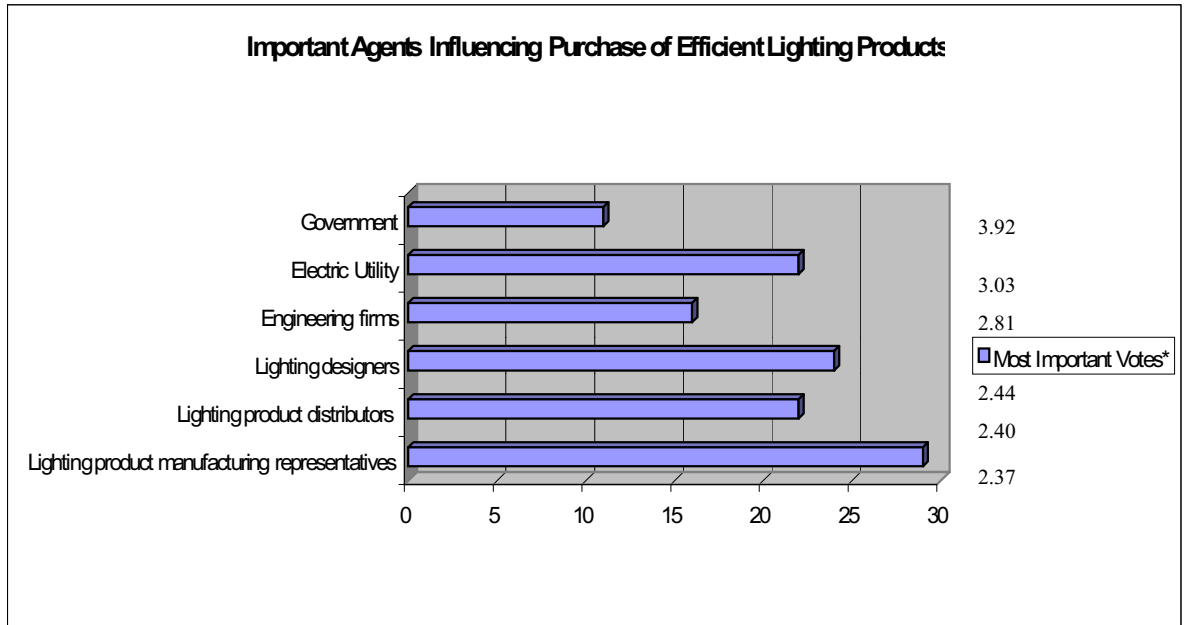


SOURCE: AA SURVEY AND ANALYSIS

### Important Agents of Efficient Lighting Programs

Commercial and industrial firms identified important agents that may catalyze the growth of efficient lighting products. At the top of the list are the suppliers of efficient lighting products. Local manufacturers and distributors, including the importers, can ensure the reliable supply of good quality CFL and efficient lighting products at competitive or affordable prices (see Chart 15).

Chart 15. Important Agents Influencing Purchase of Efficient Lighting Products



Source: AA survey and analysis

With a more liberal trade regime, the local manufacturers and distributors, in collaboration with the Government and private sector allies, may work out schemes that will guarantee the supply of quality but low cost lighting products and components thereof to the local market.

Coordination with other agents will be helpful. The lighting designers and engineering firms, for instance, can objectively assess the appropriate lighting designs for commercial and industrial firms and the suitable lighting products and fixtures for the local market.

Electric utilities and the Government, though at the bottom of the list, can help in promoting the growth of the local efficient lighting industry. Electric utilities, for instance, can expand into non-electrified municipalities and towns outside of Metro Manila. On the other hand, the Government has launched the electrification program *O-Ilaw* (formerly *Energy Resources for the Alleviation of Poverty* or *ERAP*) to improve access to electricity and lighting in the rural areas. Both Government and private sector can take advantage of the increase in generating capacity and the surge in CFL and efficient lighting products supply. Moreover, the Government can provide incentives for the private sector to participate in the electricity retailing and the efficient lighting industry.

## Prospects and Options for Market Growth

### *The Market Environment*

The local CFL market has gone through big changes since the mid-1990s. During its nascent stage, CFLs were unknown and very expensive, especially for households. The Philippines was recovering from the power crisis. The country needed reforms and programs to effectively address the growing power demand with the scarce resources on hand. Hence, there was a very clear need for CFLs and other energy efficient products.

Today, the business environment for CFLs has changed. First, the country has adequate energy and power resources, due partly to the deregulation and liberalization in the electric power industry. A more dynamic environment is expected to evolve with the impending passage of the *Omnibus Power Bill* and the subsequent restructuring and privatization of the local electric power industry. Second, while it just came out of the Asian financial crisis, the Mindanao crisis, and the recent politico-economic crisis that sent the economy in a tailspin, the country has instituted business and institutional reforms that will enable the country to weather, turnaround, and recover from the crisis. Third, there is already a competitive CFL market with many players that supply various CFLs to the local market. The local market benefited from imports as technological advances and low-cost labor made available cheaper CFLs, and the emergence of informal channels for distributing CFLs to more market segments.

### *The CFL and Efficient Lighting Products Market*

The salient features of the local CFL market are summarized in Table 10 and described as follows:

- ◆ *CFL products.* The local market is crowded with various CFL brands and variants. A survey of households and various outlets of CFLs in the NCR and the cities of Cagayan de Oro and Cebu in southern Philippines yielded over 50 different brands of CFLs. During the mid-1990s, there were less than a dozen CFL brands.
- ◆ *Price reduction.* The Big 3 CFL suppliers have introduced low-cost variants in the local market. The suggested retail price (SRP) for GE Economiser and Philips Essential is PhP 160 apiece. Despite the introduction of new variants, the less popular brands offer low-cost CFLs at bargain prices, i.e., buy-one-take-one for PhP 99 or 3-for-PhP100. With the significant reduction in prices, CFLs have become accessible to middle- and low-income households.
- ◆ *Degree of knowledge.* The local market is generally familiar with energy efficiency and products such as CFLs. In Metro Manila, about three out of every four households express familiarity with CFLs. The increased awareness stems partly from the influx of low-cost CFLs in the various areas of the local market.
- ◆ *Market Penetration.* In Metro Manila, about 64 percent of the target households have CFLs. CFL penetration has caught up with incandescent lamps' 66 percent but still far behind fluorescent lamps' 88 percent. CFL penetration has improved significantly in the last half decade due partly to the influx of low-cost CFLs.

In the commercial and industrial sector, about 77 percent of the large firms have CFLs, surpassing the 65 percent penetration of incandescent lamps. Almost all of the commercial and industrial firms use fluorescent lamps. Large firms primarily use fluorescent lamps and complement them by either CFLs or incandescent lamps in specific areas.

Table 10. Salient Features of the Philippine CFL Market, 2000

FEATURE	
<i>Number of lamps</i>	: Over 50 brands
<i>Price reduction</i>	: PhP 160 for popular brands, 3-for PhP 100 for other brands
<i>Degree of knowledge</i>	: About 3 out of 4 households are familiar
<i>Market penetration</i>	: About 64 percent of households and 77 percent of large firms
<i>New manufacturers</i>	: None
<i>New establishments</i>	: At least 50 importers
<i>Number of products tested</i>	: At least 18 CFL importers tested and accepted. At least five models qualified in ELI-Philippines.

- ◆ *New manufacturers.* In 1999, the local manufacturer of the popular Philips lighting products closed its local plant and focused on distributing imported CFL and lighting products to the local market. Today, most of the CFLs in the local market are imported, primarily from low-cost Asian producers.
- ◆ *New establishments (suppliers).* While there is no major local manufacturer, the number of CFL suppliers significantly increased. A household survey identified more than 50 CFL brands offered in the local market. The number indicates at least 50 importers of CFLs. There are also supermarkets and hardware stores that distribute and sell CFLs.
- ◆ *Number of products tested. Importers need to get Import.* Commodity Clearances (ICCs) for CFLs before these can be distributed or sold in the local market. For 1999-2000, the Department of Trade and Industry (DTI), however, has issued ICCs to 18 CFL importers. The rest of the CFLs without ICCs are either (a) waiting for their ICCs; (b) failed to comply with ICC requirements; or (c) never applied for ICCs at all.

The early ELI-qualifiers are selected CFL models from General Electric, Maxlite, National, Osram, and Philips. Other manufacturers and distributors of CFL products have applied for and are awaiting results of their ELI-qualification.

The other efficient lighting products such as fluorescent lamps and electronic ballasts are in a similar situation as CFLs in the Philippine market.

#### *Key Considerations for Market Development*

Many developments in the last two to four years hastened the growth of CFL in the local market. The next two to four years will be an opportune period to firm up the on-going CFL market transformation. The success of any program will depend on how much it understands the key features and peculiarities of the local market and how its components align and dovetail with the relevant activities in the country's energy and economic development strategy.

Success factors may include the following:

- ◆ *Explain clearly the economic benefits to customers.* One imperative for success is to explain and demonstrate to customers in very clear terms the economic benefits of switching from incandescent lamps to CFLs (or to other high efficiency lighting products). Majority of Filipino households purchased CFLs because of the economic benefits – CFL usage will lead to lower electricity consumption, bigger energy savings, and lower electricity bills.

To appreciate the economic benefits (and costs) of CFLs, prospective customers need to know the electricity prices, costs of CFLs and incandescent lamps, and hours of operations. It is easier to demonstrate the economic benefits today because the prices of CFLs have declined considerably and are now comparable to the prices of incandescent lamps.

- ◆ *Market all the benefits of CFLs.* CFL use has multi-faceted benefits. Besides reducing electricity consumption and the electricity bill, the use of CFLs may slow down energy resource depletion, reduce gas emissions, and slow down the greenhouse effect. CFL can be repositioned as an energy-saving, resource-conserving, and environment-friendly product. Leveraging on these potential benefits, CFLs may attract customers and members of cause-oriented groups on energy, environment, and sustainable development. Experience from other countries indicate that customers are willing to spend more and support programs that contribute to national interests.
- ◆ *Make sure the product is easy to find.* CFLs are easier to find today than in earlier years. Increased CFL imports and the emergence of sidewalk vendors and door-to-door peddlers bring CFLs closer to the customers, particularly households in the C, D, and E market segments. It may be helpful to recognize and perhaps mobilize these many small players in some components of the market transformation program. For instance, educating these groups on CFLs and supplying them with safe and quality CFLs will make them better agents of CFLs in their respective areas.
- ◆ *Engage other stakeholders in the market.* There are many Filipino NGOs, consumer groups, and cause-oriented groups that relate to energy and environment. It may help to understand the missions and roles of these groups and to bring them in as supporters of the market transformation program.

Most of the CFLs offered in the local market are imported. The local manufacturer of Philips lighting products closed down its plant in 1999 and is now distributing low cost CFL imports. Considering recent trends in lighting technology and manufacturing sectors in the Asian region, imports will be the primary source of competitively priced CFLs and other lighting products.

Mainland China is one of the main sources of low-cost CFLs for the region. With its domestic market, Chinese manufacturers have the economies of scale to produce CFLs at competitive prices. ELI proponents supported the development of the Chinese CFL industry, which will very likely be a major base for CFL manufacturing in the Asian region. ELI may consider, in coordination with its China partners, the accreditation of Chinese manufacturers that produce good quality CFLs at competitive prices so these producers could export to Asian neighbors. This regional cooperation will assist those countries with small markets for a competitive domestic CFL industry.

- ◆ *Promote optimum mix of lighting technology.* CFLs are logical substitutes for inefficient incandescent lamps. However, many households seem to have shifted already from incandescent lamps to more efficient fluorescent lamps. Many of those who did not purchase CFLs indicated that their present lights (many of which are fluorescent) are working well. Meanwhile, commercial and industrial firms use incandescent, fluorescent, and CFL technologies for various lighting applications. To further improve energy efficiency in the local market, the opportunity today may be more on implementing the right household, commercial and industrial lighting design, i.e., combinations of CFLs, fluorescent lamps, and other lighting products.

- ◆ *Recognize the market segments and their purchasing power or ability to pay.* About 298 thousand or four percent of urban households belong to the AB market segment. These affluent households have a wide range of CFLs to choose from. They are keen on quality CFL and can afford to buy the popular and expensive CFLs. About 2.3 million or one-third of the urban households belong to the middle class. They are less keen on quality and are inclined to look for low-cost CFLs. They pay an average of PhP 173 apiece for CFLs.

Majority of the urban households belong to either D or E market segments. These poor households do not earn enough for their food, clothing, and other basic needs. They have limited budgets for less basic needs like CFLs. Thus, they buy the most affordable lighting available, which could be an incandescent or a cheap CFL. They pay an average of PhP 117 apiece for CFLs, lower than the prices of low-cost but popular CFL brands. They choose and buy the cheaper CFLs because these are what their low incomes could afford to buy. While they are big in numbers, the D and E market segments do not have much in purchasing power.

- ◆ *Recognize the market's basic needs and preferences.* Marketing campaigns and programs need to read the market's basic needs and preferences. For instance, lighting is a basic household need, which is provided either by incandescent lamps or CFLs. Many households prefer the CFLs over comparable incandescent lamps because of low electricity consumption and bright white lighting. The urban households have a common basic need and preference for CFL lighting. But the AB, C, D, and E market segments have different brand preferences, depending largely on their purchasing power or ability to pay.

The affluent households prefer the popular and expensive brands because these can guarantee quality and high standards of performance. The less affluent households, particularly those in the D and E market segments have less stringent quality standards and are ready to give up on less important measures of performance. For instance, many urban households expressed satisfaction over their CFL's lamp life of just over two years, not knowing that good quality CFLs could last much longer. Also, some households hardly notice (or do not mind) that their lamps may have reduced lumens per watt after two years.

The less affluent households are more inclined to buy low-cost CFLs, many of which are likely to have low quality. Considering a saturated AB market segment, the less affluent households are the sources of growth in the local CFL market. CFL suppliers are keen in attracting households from the C, D and E market segments to buy their products. A critical factor is making CFLs affordable to households from the C, D and E market segments.

Popular brands recently launched their latest CFL variants. These variants retain the basic CFL features but they last only 3,000 hours or two years and, most importantly, they are cheaper than current popular variants.

Put together, the success of a CFL (and efficient lighting, in general) market transformation program will depend on how its components blend together with the other transformation activities going on in the local market.

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