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Regional Conference on Energy Efficiency Standards and Labeling

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INTRODUCTION

Philippine Energy Sector

OBJECTIVE:

- ensure competitive, affordable, and reasonably priced energy supply
- socially and environmentally capable energy infrastructures.

INTRODUCTION

Philippine Energy Sector

POLICIES AND STRATEGIES

- promotion of energy conservation programs and energy efficient technologies
- reduce system losses

INTRODUCTION

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The programs which the Department of Energy aggressively promotes on energy efficiency and conservation include :

- Power Conservation and Demand Management Program (Power Patrol),
- Fuel Conservation and Efficiency in Road Transport (Road Transport Patrol),
- Demand-Side Management Program (DSM),
- Government Enercon Program,

INTRODUCTION

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The programs which the Department of Energy aggressively promotes on energy efficiency and conservation include :

- The Best Practices on Energy Efficiency in Buildings, the Don Emilio Abello Award (DEAA) for Energy Efficiency,
- The Technology Transfer for Energy Management (TTEM) Program,
- energy standards and labeling program for appliances and lighting products.

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For energy standards and labeling program the annual savings for year 1999 and 2000 and projected savings for year 2001 to 2004 in million barrels of fuel oil equivalent (MMBFOE) are as follows:

Energy Labeling and Standard	1999	2000	2001	2002	2003	2004
a. Room Air-conditioners	0.351	0.444	0.551	0.673	0.814	0.977
b. Refrigerators and Freezers	0.000	0.069	0.141	0.216	0.296	0.379
c. Fluorescent Lamp and Ballast	0.000	0.000	0.000	0.024	0.049	0.076
d. Industrial Fans and Blowers	0.000	0.000	0.000	0.000	0.064	0.130

INTRODUCTION

Minimum Energy Performance Standard (MEPS)

- started in 1980
- Implemented per Batas Pambansa Blg. 73 which aimed to institutionalize energy conservation practices in all sectors

PRESENT STATUS OF IMPLEMENTATION

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At present, the program covers three products, namely :

- room air conditioners,
- refrigerators and
- compact fluorescent lamps

PRESENT STATUS OF IMPLEMENTATION

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Other products being considered for inclusion in the energy labeling program are:

- fluorescent lamp ballasts
- electric motors and
- industrial fans and blowers

ENERGY LABELING OF RACs

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Brief Description:

- To comply with a set of minimum energy efficiency standards
- Energy label to display cooling capacity, power consumption and energy efficiency ratio (EER).
- Tested periodically in a government-recognized laboratory for validation

ENERGY LABELING OF RACs

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Benefits:

- aim to weed out inefficient units in the market
- gives buyers the ability to choose the best value for their money
- allows buyers to compare different brands models

ENERGY LABELING OF RACs

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Benefits:

- reduced energy consumption which translates to savings
- foreign exchange savings from reduced fuel importation and deferred construction of power plants.
- contributes to climate change mitigation through reduced emissions.

ENERGY LABELING OF RACs

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Program Implementators:

DOE-EUMB - testing of samples of Room Air conditioners through its Fuel and Appliance Testing Laboratory (FATL)

DTI-BPS - enforce the standards and certifies Room Air conditioners

A**HAM** - coordinates with DTI and DOE in the promotion of the labeling program

ENERGY LABELING OF RACs

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Status :

- on going since 1993
- FATL serves as the official testing laboratory
- as of March 2001 there are 240 various brand and models of certified window-type air conditioners
- energy labeling of split-type air conditioners starts July 01, 2001

ENERGY LABELING OF RACs

The energy efficiency standards for room air conditioners as per PNS 396-1:1998 for year 1995 to 2002 are as follows:

Classification of RAC's in terms of cooling capacity In kilojoules per hour, kJ/hr	Minimum Energy Efficiency Ratio							
	1995	1996	1997	1998	1999	2000	2001	2002
1) RAC's with cooling capacity below 12,000 kJ/hr	8.3	8.3	8.3	8.7	8.7	8.7	9.1	9.1
2) RAC's with cooling capacity equal to and above 12,000 kJ/hr	7.4	7.8	7.8	7.8	8.2	8.2	8.2	8.6

ENERGY LABELING OF RACs

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Success Indicators:

- substantial compliance to energy standards
- improvement in average energy efficiency
- 93% market compliance to energy label requirements
- in 2000, the average energy efficiency ratio of RAC products sold was 10.1 for below 12,000 kJ/h and 9.6 for above 12,000 kJ/h

ENERGY LABELING OF RACs

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Success factors:

- The major stakeholders have been involved from the start of program development up to implementation
- Teamwork and transparency
- Continuous training and external exposure of DOE and DTI staff
- Availability of acceptable testing laboratories

ENERGY LABELING OF RACs

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Issues and concerns:

- strengthen government capability in testing and certification
- more efficient service from government
- improvement of government R & D facilities
- upgrading of gov't testing laboratories to cope up with globalization

ENERGY LABELING OF REFS & FREEZERS

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Brief description:

- energy label on all refrigerator with capacity ranging from 142 liters (5 cubic feet) to 227 liters (8 cubic feet) prior to release in the market
- energy label shows energy efficiency rating, total storage volume, and energy consumption in kilowatt hours per day of operation

ENERGY LABELING OF REFS & FREEZERS

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Benefits:

- energy label guides the buyers in selecting the size of refrigerator for their particular needs
- allows buyer to compare different brands and models based on energy efficiency and energy consumption

ENERGY LABELING OF REFS & FREEZERS

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Program Implementators:

DOE-EUMB - testing of samples of Refs and Freezers through its Fuel and Appliance Testing Laboratory (FATL)

DTI-BPS - enforce the standards and certifies Refs and Freezers

A**HAM** - coordinates with DTI and DOE in the promotion of the labeling program

ENERGY LABELING OF REFS & FREEZERS

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Status:

- launched in December 1999
- mandatory attachment of energy labels started in August 2000.
- End of February 2001, 79 various brands and models of refrigerators have been certified (68 models are locals and 11 models are imported)

ENERGY LABELING OF CFLs

Brief Description:

- PNS 603-2:1991 requires testing of CFLs to verify claims for performance which include:
  - rated voltage
  - rated wattage
  - lumen maintenance and,
  - average lamp life

ENERGY LABELING OF CFLs

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Brief Description:

- Samples are tested at FATL for lumen maintenance (light output deterioration) and wattage rating

- Safety test on the other hand, are done at the BPS Testing Center

ENERGY LABELING OF CFLs

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Brief Description:

- After complying with the standard safety and performance requirements, BPS issues the PS Mark or import commodity clearance
- Self-ballasted lamps that do not have the appropriate quality mark are not allowed to be sold in the market

ENERGY LABELING OF CFLs

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Status :

- As of January 2001, a total of 48 various brands and wattages of self-ballasted lamps have been certified.

- Laboratory tests showed that some CFLs, particularly those that are being sold without the appropriate product mark, fail even before reaching 2,000 hours of burning life.

ENERGY LABELING OF FL BALLASTS

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Background :

- A ballast is a device designed to operate a fluorescent lamp by providing a starting voltage and current, and limiting the current from reaching a level high enough to destroy the lamp during normal operation.

- The ballast actually consumes about 25 to 30 percent (up to 50 in some cases of the energy consumption of the lighting fixture)

ENERGY LABELING OF FL BALLASTS

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Background :

- Based on a study conducted by FATL in 1987, the power consumed by the ballast for a 20-watt lamp ranges from 10 to 12 watts, while for a 40-watt lamp, it ranges from 10 to 20 watts.
- Ballast energy consumption could be reduced by up to 50%
- the low loss ballast w/c are currently in market consumed only about 6 watts for a 40 watt lamp

ENERGY LABELING OF FL BALLASTS

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Brief description :

- The proposed program would require manufacturers to attach an energy label which would show the amount of ballast loss (power consumption).

Preheat Ballast Power Loss

Ballast Rating	Class A	Class B	Class C	Class D
1 x 18/20W	Up to 7W	Above 7W	Above 8W	Above 10W
1 x 36/40W		up to 8W	up to 10W	up to 12W

ENERGY LABELING OF FL BALLASTS

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Brief description :

Rapid Start Ballast Power Loss

Ballast Rating	Class A	Class B	Class C	Class D
1 x 18/20W	Up to 12W	Above 12W	Above 13W	Above 15W
1 x 36/40W		up to 13W	up to 15W	up to 18W
2 x 36/40W	Up to 17W	Above 17W up to 18W	Above 18W up to 20W	Above 20W up to 30W

ENERGY LABELING OF FL BALLAST

Status :

- Year 2000, BPS approved the energy labeling requirements for electromagnetic ballasts
- voluntary labeling program until January 2002

PRODUCT CERTIFICATION & ENFORCEMENT

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The BPS operates two schemes for product certification namely:

- The Philippine Standard (PS) Quality and/or Safety Certification Mark Scheme and

- The Import Commodity Clearance Scheme (ICC).

CONCLUSION

- The Philippines faces good prospects on MEPS implementation.
- Part of the DOE's proposed legislative agenda is "An Act to Institutionalized Energy Conservation and Enhance Efficient Use of Energy (Energy Conservation Act)":
  - enhance the implementation and coordination of the government's programs for energy conservation and efficient use of energy
  - renew and strengthen efforts in energy conservation

CONCLUSION

- provide continuity to programs the country has developed in the field of energy management.

- Moreover, currently implemented in the Philippines on a voluntary basis is the Efficient Lighting Initiative (ELI) administered by the International Finance Corporation (IFC) and funded by the Global Environmental Facility (GEF). The program seeks a massive market transformation towards energy efficient lighting.

ENERGY LABELING PROGRAM

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Product Description	MEPS Year Started	Energy Label Year Started	Performance Testing		REFERENCES
			Year Started	Characteristics	
On-going programs					
1. Room Airconditioners					
1.1 window-type	M - 1993	M - 1993	M - 1993	Cooling capacity	PNS 396-1:1998
<12,000 kJ/hr	M - 1994	M - 1994	M - 1994	Power input	
=> 12,000 kJ/hr				Energy efficiency Ratio	PNS 240:1998/ ISO 5151:1994
1.2 split system	M - 2002	M - 2002	M - 2002		

ENERGY LABELING PROGRAM

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Product Description	MEPS Year Started	Energy Label Year Started	Performance Testing		REFERENCES
			Year Started	Characteristics	
On-going programs					
2. Refrigerator & Freezers					
2.1 142 to 227 liters (5 cu. ft to 8 cu. ft) 2.2 other capacities	Uc	M - 2000 Uc	M - 2000 Uc	Storage temperature @ 18°C and 43°C Ambient Temperature, power input, energy efficiency factor and storage volume	PNS 1475/ISO 7371:1995 PNS 1774/ISO 5155 PNS 1476/ISO 8187 PNS 1477/ISO 8561 PNS 396-2:1997 Amd. 1:2000

ENERGY LABELING PROGRAM

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Product Description	MEPS Year Started	Energy Label Year Started	Performance Testing		REFERENCES
			Year Started	Characteristics	
On-going programs					
3. Fluorescent Lamp Ballast					
3.1 Electromagnetic	M-2002	V-2001 M - 2002	M-1985	Ballast's loss, power factor, and other electrical characteristics	PNS 12-3:1999 PNS 02:1994/IEC 81:1987 PNS 12-2:1996/ Amd. 01&02:1997 PNS 1261:1998/IEC 901:1996 PNS 12-1:1996/ Amd. 01 & 02:1997

ENERGY LABELING PROGRAM

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Product Description	MEPS Year Started	Energy Label Year Started	Performance Testing		REFERENCES
			Year Started	Characteristics	
On-going programs					
3. Fluorescent Lamp Ballast					
3.2 Electronic Ballast		Uc	M-1994	Power input, power factor, and other electrical characteristics	PNS 135-2:1993 /IEC 60929 PNS 135-1:1993/ IEC 60928

ENERGY LABELING PROGRAM

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Product Description	MEPS Year Started	Energy Label Year Started	Performance Testing		REFERENCES
			Year Started	Characteristics	
On-going programs					
4. Compact Fluorescent Lamps					
4.1 Integral (self-ballasted) and modular type	Uc	Uc	M-1999	Lumen maintenance, failures of up to 2,000 hours, power input, lamp current and power factor	PNS 603-2:1993 PNS 1261:1995/ IEC 901:1996

ENERGY LABELING PROGRAM

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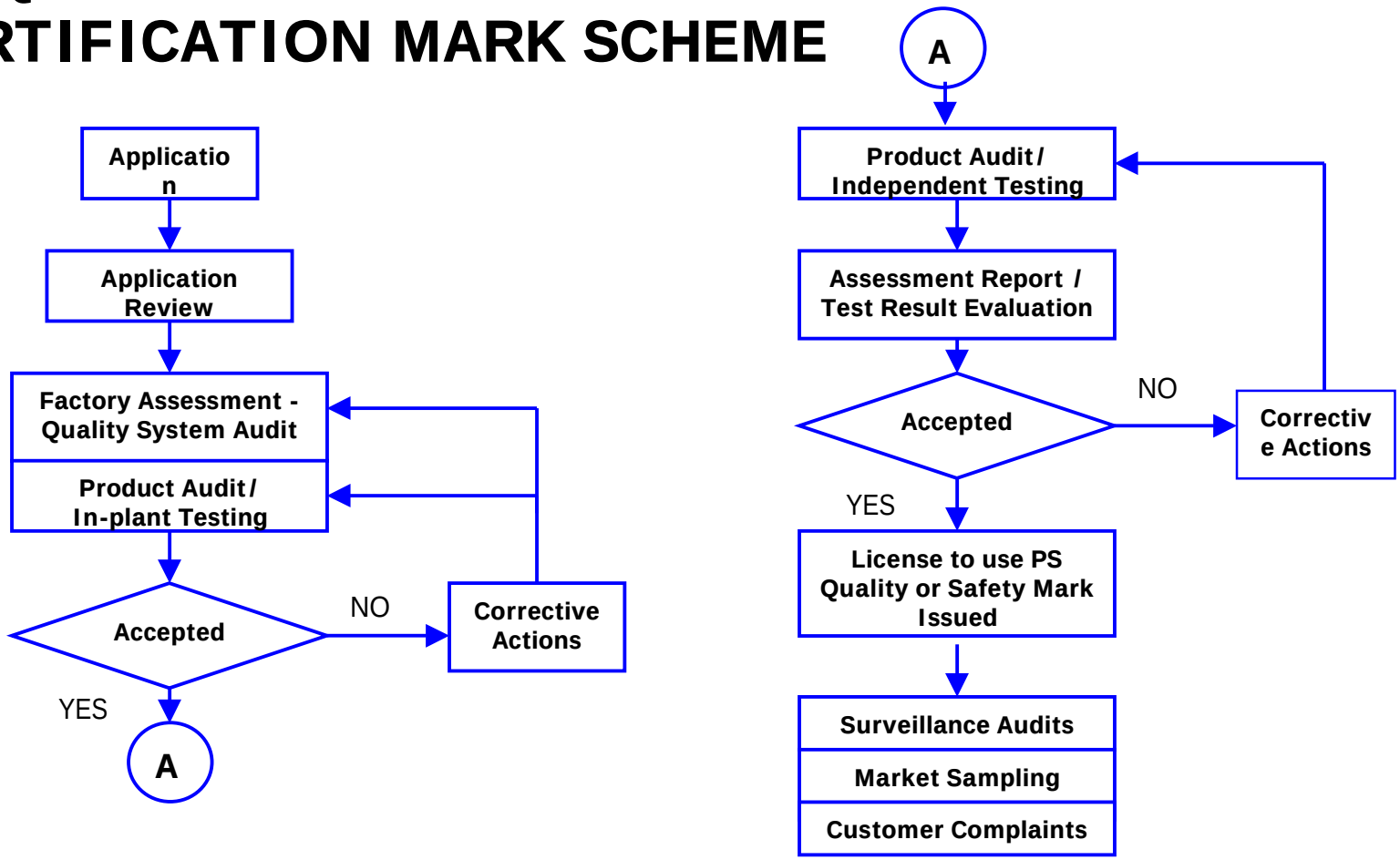
Product Description	MEPS Year Started	Energy Label Year Started	Performance Testing		REFERENCES
			Year Started	Characteristics	
Future Programs					
5. Safety of household and similar electrical appliances particular requirements for fans	Uc		M- 1993		PNS IEC 60335-2-80:2000
6. Industrial Fans and Blowers			Uc Target 2003	Speed, power input, temperature rise, and other electrical tests	PNS 1481:1998/ ISO 5801:1997

FLOWCHART

PS QUALITY AND/OR SAFETY CERTIFICATION MARK SCHEME



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FLOWCHART

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ICC CERTIFICATION MARK SCHEME