



Energy Efficiency in the Philippines



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Outline of Presentation

**PART I. ENERGY DEMAND SCENARIO
AND ENERGY REFORM AGENDA**

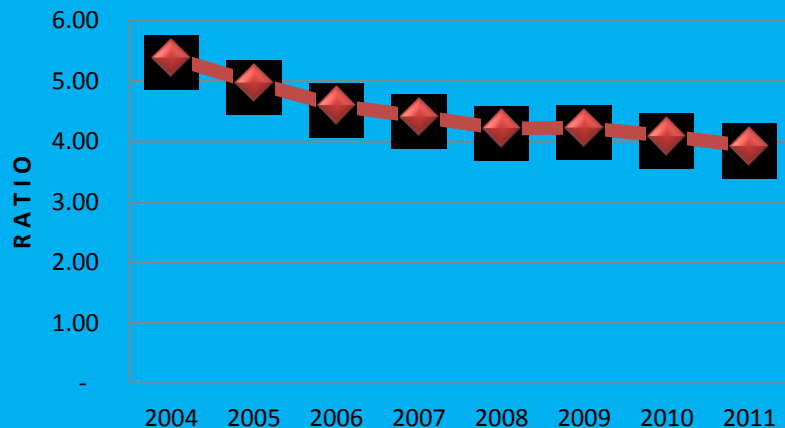
**PART II. THE ENERGY EFFICIENCY AND
CONSERVATION POLICIES**

**PART III. THE NATIONAL ENERGY EFFICIENCY
AND CONSERVATION PROGRAM (NEECP)**

PART I. ENERGY DEMAND SCENARIO

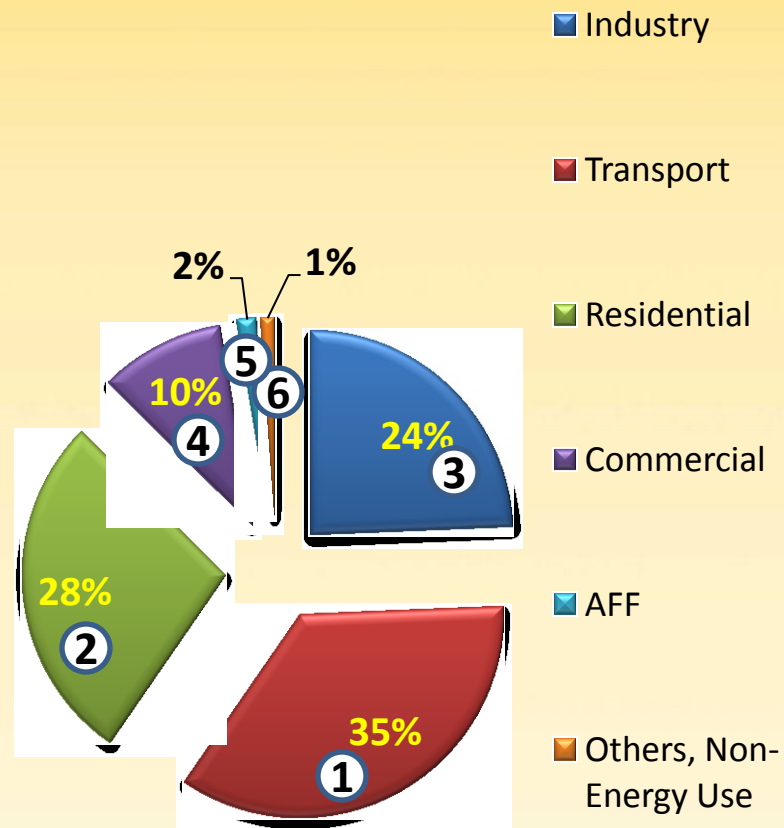
Historical Energy Intensity

(Energy to GDP Ratio)



Year	2004	2005	2006	2007	2008	2009	2010	2011
Energy to GDP Ratio =	5.39	4.97	4.60	4.41	4.21	4.23	4.09	3.92

Energy Demand Consumption Percent Share per Sector (Average for FY 2005 to FY2011)



Energy Efficiency and Conservation Policies

ADMINISTRATIVE ORDER NO. 110 - DIRECTING THE INSTITUTIONALIZATION OF A GOVERNMENT ENERGY MANAGEMENT PROGRAM (GEMP)

The Government shall aim to reduce its monthly consumption of electricity (in kilowatt-hours) and petroleum products (in liters) by at least ten percent (10%)

EXECUTIVE ORDER NO. 123 (September 8, 1993) INSTITUTIONALIZING THE COMMITTEE ON POWER CONSERVATION AND DEMAND MANAGEMENT

The Committee on Power Conservation and Demand Management, hereinafter referred to as the Committee, is hereby established as a regular and permanent body with the Chairman of the Council of Advisers on Energy Affairs as its Chairman and at least one representative from each of the following agencies as members: Department of Energy; Department of Education, Culture, and Sports; Department of Trade and Industry; Department of Interior and Local Government; Department of Labour and Employment; Metro Manila Authority; National Power Corporation; Philippine National Oil Corporation and the National Electrification Administration.

EXECUTIVE ORDER NO. 472 – Institutionalizing the **Committee on Fuel conservation and Efficiency in Road Transport** signed on 25 March 1998. It aims to disseminate information on efficiency utilization of fuel through the local chapters created for the purpose. The program targets a 10% reduction in fuel consumption.

DEPARTMENT CIRCULAR – 93-03-05

To all Industrial, Commercial and Transport Sectors: Establishments consuming 1 million LOE annually are required to submit Quarterly Energy Consumption Report (QECR) to DOE. In addition, establishments consuming 2 million LOE, apart from the QECR are required to submit an Annual Energy Conservation Program Report (AECPR).

Energy Efficiency and Conservation Bills filed in the Senate

SENATE BILL NO. : 3321

Introduced by: HON. SERGIO R. OSMEÑA

ENERGY EFFICIENCY AND CONSERVATION ACT OF 2012

(Filed November 5, 2012)

“AN ACT INSTITUTIONALIZING ENERGY EFFICIENCY AND CONSERVATION, ENHANCING THE EFFICIENT USE OF ENERGY, AND GRANTING INCENTIVES TO ENERGY EFFICIENCY AND CONSERVATION PROJECTS, AND FOR OTHER PURPOSES”.

SENATE BILL NO. :2027

Introduced by: HON. EDGARDO J. ANGARA

ENERGY EFFICIENCY AND CONSERVATION ACT OF 2010

AN ACT PROMOTING THE ENHANCEMENT OF ENERGY EFFICIENCY AND CONSERVATION THROUGH THE DEVELOPMENT OF ENERGY EFFICIENT TECHNOLOGIES, STRENGTHENING ORGANIZATIONAL RELATIONSHIPS AND REINFORCEMENT OF RELATED LAWS AND OTHER STATUTORY PROVISIONS ON ENERGY.

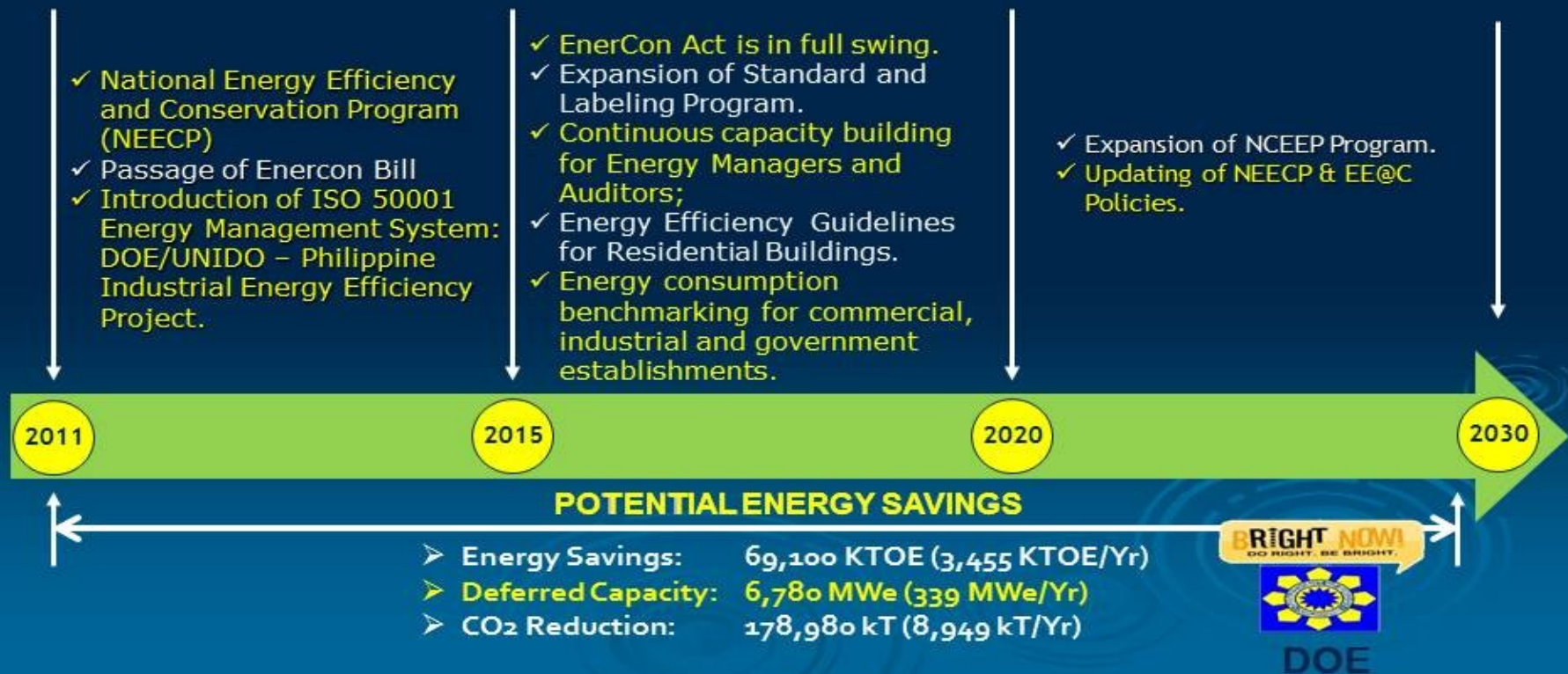
SENATE BILL NO.: 1602

Introduced by: HON. MIRIAM DEFENSOR SANTIAGO

AN ACT TO SUPPORT THE RESEARCH AND DEVELOPMENT OF NEW INDUSTRIAL PROCESSES AND TECHNOLOGIES THAT OPTIMIZE ENERGY EFFICIENCY AND ENVIRONMENTAL PERFORMANCE, UTILIZE DIVERSE SOURCES OF ENERGY , AND INCREASE ECONOMIC COMPETITIVENESS.

Energy Efficiency and Conservation Roadmap (2011-2030)

Goal: Energy savings equal to 10% of the annual final Energy Demand Outlook (2011-2030)



NATIONAL ENERGY EFFICIENCY AND CONSERVATION PROGRAM (NEECP)

- Information, Education and Communication Campaign
- Standards and Labeling for Household Appliances
- Fuel Economy Run
- Government Energy Management Program (GEMP)
- Energy Management / Energy audit / ESCO Accreditation
- Recognition Award
- Voluntary Agreement Program
- Philippine Energy Efficiency Project (PEEP)
- Philippine Industrial Energy Efficiency Project (PIEEP)

2-PRONGED PROGRAM



Power Conservation
and Demand
Management
Program



Fuel Efficiency &
Conservation
Program

Average Annual Energy Saving	25.57 MMBFOE
Average Annual Deferred MW Capacity	339 MWe
Average Annual CO2 Reduction	8,949,063 tCO2

Information, Education and Communication (IEC) Campaign



Tri-Media



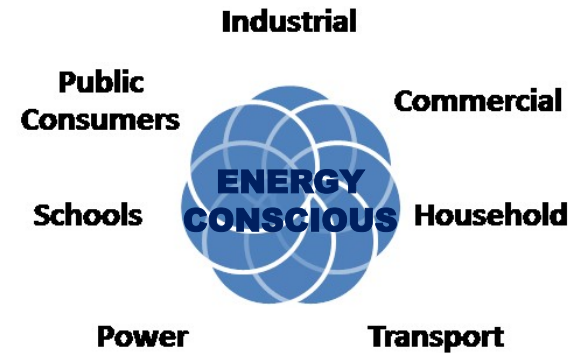
Seminars/Training-Workshops



EE&C Promotional Materials



Program Launching



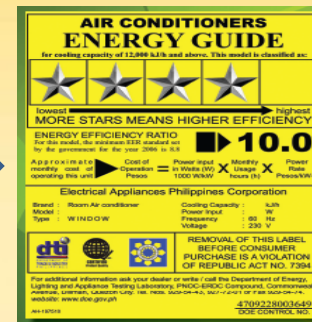
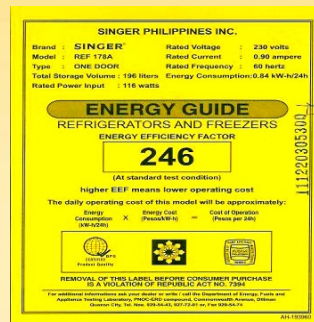
Standards and Labeling Program for Household Appliances

Compact Fluorescent
Lamp (CFL)

Ballasts

Window-Type Air
Conditioning Unit

Refrigerator and
Freezer



EXPANDED COVERAGE :

Audio-Video
Equipment

Bigger Size
Refrigerators

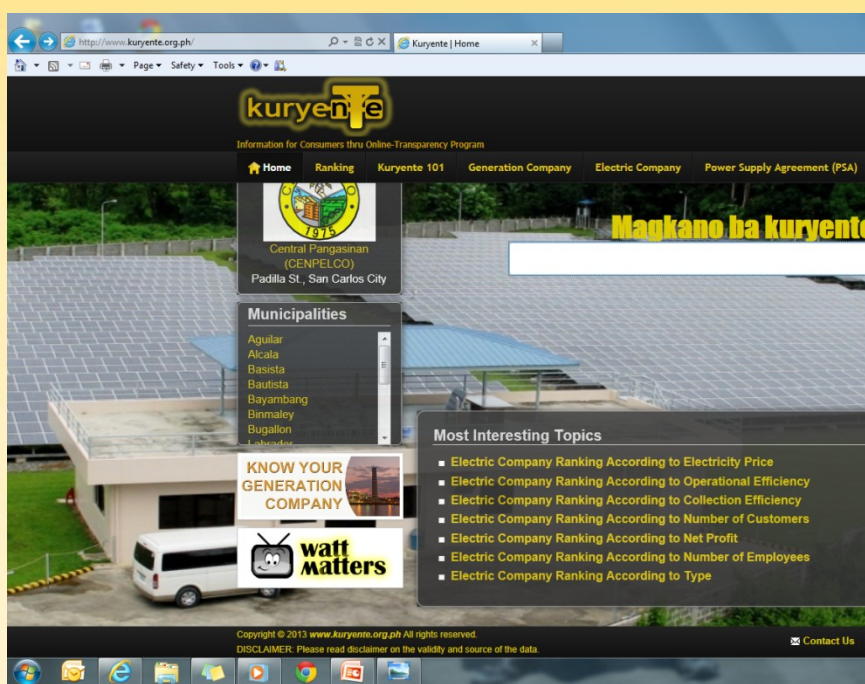
Washers and Driers

Fuel Economy Run

- ✓ To establish Fuel Mileage Rating;
- ✓ To label brand new models of passengers cars and light duty vehicles; and
- ✓ To empower consumers in choosing the most efficient vehicles sold in the market.



Information, Education and Communication (IEC) Campaign



Promotion of energy efficient Home Appliances through social internet media.

<http://kuryente.org.ph>
<http://wattmatters.org.ph>



AIR CONDITIONER

REFRIGERATOR

FREEZER

AUDIO/VIDEO

HOUSEHOLD FAN

COOKING LINE

DOMESTIC

LAUNDRY

LAPTOP



AIR CONDITIONER

REFRIGERATOR

FREEZER

AUDIO/VIDEO

HOUSEHOLD FAN

COOKING LINE

DOMESTIC APPLIANCES

LAUNDRY

LAPTOP

Model	Type	Brand	Category	Energy Efficiency
RAS-10RC	SPLIT	hitachi	AIR CONDITIONER	11
KSM100BIE	SPLIT	kolin	AIR CONDITIONER	11
SAP-KC96P	SPLIT	sanyo	AIR CONDITIONER	10
KAG-160RS	WINDOW	kolin	AIR CONDITIONER	12
CW-C104VPH	WINDOW	panasonic	AIR CONDITIONER	12
CW-XC104VPH	WINDOW	panasonic	AIR CONDITIONER	12

Model	Category	Energy Efficiency Rating	Cooling Capacity (kJ/hr)	Energy Consumption
RAS-10RC	AIR CONDITIONER	11	10,600	6 kWh for 6 hours
KSM100BIE	AIR CONDITIONER	11	9,500	5 kWh for 6 hours
SAP-KC96P	AIR CONDITIONER	10	9,800	6 kWh for 6 hours
KAG-160RS	AIR CONDITIONER	12	14,800	7 kWh for 6 hours
CW-C104VPH	AIR CONDITIONER	12	11,000	6 kWh for 6 hours
CW-XC104VPH	AIR CONDITIONER	12	9,000	6 kWh for 6 hours
RA-10MA	AIR CONDITIONER	12	11,600	6 kWh for 6 hours
KAG120RS	AIR CONDITIONER	12	11,200	6 kWh for 6 hours
CW-SC84JPH	AIR CONDITIONER	12	7,420	4 kWh for 6 hours
RA-08RC	AIR CONDITIONER	12	8,600	4 kWh for 6 hours
AED07KL	AIR CONDITIONER	11	7,800	4 kWh for 6 hours
AED09KL	AIR CONDITIONER	11	9,800	5 kWh for 6 hours
AED12KL	AIR CONDITIONER	11	13,500	7 kWh for 6 hours
LA100TB	AIR CONDITIONER	11	8,900	5 kWh for 6 hours

Government Energy Management Program (GEMP)

Aimed at reducing the monthly consumption of electricity and transport petroleum products by all government offices by at least 10%

Savings from Sept 2005 to Mar 2013:

Php 2 Billion (US\$ 45 Million)

- PhP 1.7 Billion on electricity
- PhP 274 Million on Fuel



Energy Management Services / Energy Audit / ESCOs

Energy audit services of the Department help companies & establishments determine their energy use patterns and identify energy conservation opportunities, measures and energy cost-reduction projects



Recognition Award

DON EMILIO ABELLO ENERGY EFFICIENCY AWARD

Annual recognition given to companies with significant energy savings achieved thru the implementation of EE&C technologies & measures



FY 2012 Generated Saving:

56 million liters of oil equivalent (MMLOE) and monetary savings of Php 2.2 billion (US\$ 50 million) and more than 90 million kilograms of avoided CO₂ emissions from 43 commercial and industrial establishments

Voluntary Agreements

❖ Partnership with industrial, commercial, residential, transport, government and other sectors in the promotion and implementation of EE&C technologies and measures

1. Clean Fleet Management Program. (i.e. PBE-CAIAsia)
2. Partnership with Academic Institutions at Buildings on Energy Management
3. Inter-agency Cooperation (i.e. DOE-CCC-DBM-BPI)
4. International EE&C Cooperation (UNIDO, ACE, JICA)



Philippine Energy Efficiency Project (PEEP)

- ❑ Energy development project being implemented by the Department of Energy (DOE) with funding support from the Asian Development Bank (ADB)
- ❑ US\$ 46.5M total budget.
 - ❖ US\$ 31.1M Loan
 - ❖ US\$ 1.5M Grant
 - ❖ US\$ 13.9M GOP Counterpart
- ❑ Project Duration : 2009 - 2013



Project Components

EFFICIENT LIGHTING INITIATIVE

- Lighting Retrofit in Government Buildings
- National Residential Lighting Program
- Public Lighting Retrofit
- EE Testing & Lamp Waste Management

EFFICIENT BUILDING INITIATIVE

- Green Building Rating System incorporating Green Building Concepts

COMMUNICATION & SOCIAL MOBILIZATION

- Communication for Energy Efficient Lighting
- Promoting Efficiency in Everyday Life



Quantifiable Benefits of PEEP

	Savings/Avoidance
➤ Annual Energy Savings	319 GWh
➤ Capacity Savings	242 MWe
➤ Annual tCO ₂ emission reduction	172,427 tCO ₂
➤ Total Project Cost	US\$ 46.5 M

Project Contracts (PC)	Deliverables
2 Lots : Supply, Delivery and Distribution of CFLs	8.6 Million CFLs distributed nationwide
1 Lot: Public Lighting Retrofit using HPS Lamps	Burnham and Wright Parks in Baguio City, and Street Lights in Cagayan De Oro City
2 Lots: Traffic Lighting Retrofit using LED Lights	261 Traffic Light Intersections using LED Lights in MM
3 Lots : Lighting Retrofit in Government Buildings	150 Government Buildings using T5 FL
1 Lot : Public Lighting Retrofit in Metro Manila using LED Lamps	1,484 LED Lamps
2 Lots : Incandescent Bulb Disposal (Total of more than 2 Million pieces)	> 2 Million pieces of IBs
1 Lot: LED Lighting using Solar Home System	223 Household Beneficiaries (Davao Del Norte, Palawan, Antique, Aklan)
1 Lot : Green Building Rating SYstem	BERDE Rating System; 45 buildings rated
4 Lots : Appliance Testing Equipment ; Lamp Waste Management Facility	3 Equipment and 1 LWM facility in conjunction with EPR
2 Lots : IECs on Communication for Energy Efficient Lighting and Promotion of Efficiency in Everyday Life	MTVs, billboards, flyers, brochures, tri-media placements; educational modules and meta-charts to 7,470 schools

Philippine Industrial Energy Efficiency Project (PIEEP)

(Project Period: 1 December 2011 to 1 May 2017)

UNIDO - GEF	Financing Grant	US\$3,166,065
National Commercial Banks	Co-financing	US\$20,000,000
Department of Energy	Co-financing	US\$4,000,000
Total Project Costs	Financing + Co-financing	US\$27,166,065

PROJECTED SAVINGS:	TOTAL GHG EMISSION REDUCTION = 1.4M tCO₂e
Steam = 6,071,000GJ	Electricity = 969,203 tCO ₂ e
Energy = 2,057,755 MWh	Fuel = 489,930 tCO ₂ e

Project Objective:

To introduce ISO 50001 Energy Management System Framework along with system optimization approach for improvement of industrial energy efficiency in the Philippines.

Implementing Agencies: DOE, DTI-BPS, UNIDO-GEF

Cooperating Banks: LBP, DBP, & BPI





BRIGHT NOW!

DO RIGHT. BE BRIGHT.



THANK YOU...!

www.doe.gov.ph