

The National Energy Efficiency and Conservation Program



Presented by

Francisco A. Benito – DOE Assistant Secretary





The Government of the
Philippine Republic



ENERGY INDEPENDENCE PACKAGE

5-Point Plan

1. Increase reserves of indigenous oil and gas
2. Aggressively develop renewable energy potential such as biomass, solar, wind and ocean resources
3. Increase the use of alternative fuels
4. Form strategic alliances with other countries
5. Strengthen & enhance energy efficiency and conservation programs

ENERGY INDEPENDENCE PACKAGE

(5) Strengthen Energy Efficiency & Conservation Programs

- **DOE to push for mandatory implementation of nationwide energy efficiency & conservation program**
 - **CNG for transport buses**
 - **Biofuels as mandatory fuel blends**
 - **Expand scope of energy labeling to other appliances, vehicles, electrical devices & equipment**
 - **Shift to energy efficient lighting in residential, commercial & industrial establishments**



Why do we want to make energy conservation a way of life?

- to cushion the impact of rising energy prices
- to reduce expenditures on fuel and electricity without sacrificing productivity
- to contribute to the protection of the environment



OBJECTIVE

To make energy efficiency and conservation (EE&C) a way of life

GOALS

- To improve utilization of all forms of energy
- To achieve an average annual energy savings of 23 MMBFOE (annual reduction of 12% in oil importations and forex savings of \$784Mn)
- To achieve an average annual 5,086 Gg CO₂ equivalent emissions avoidance



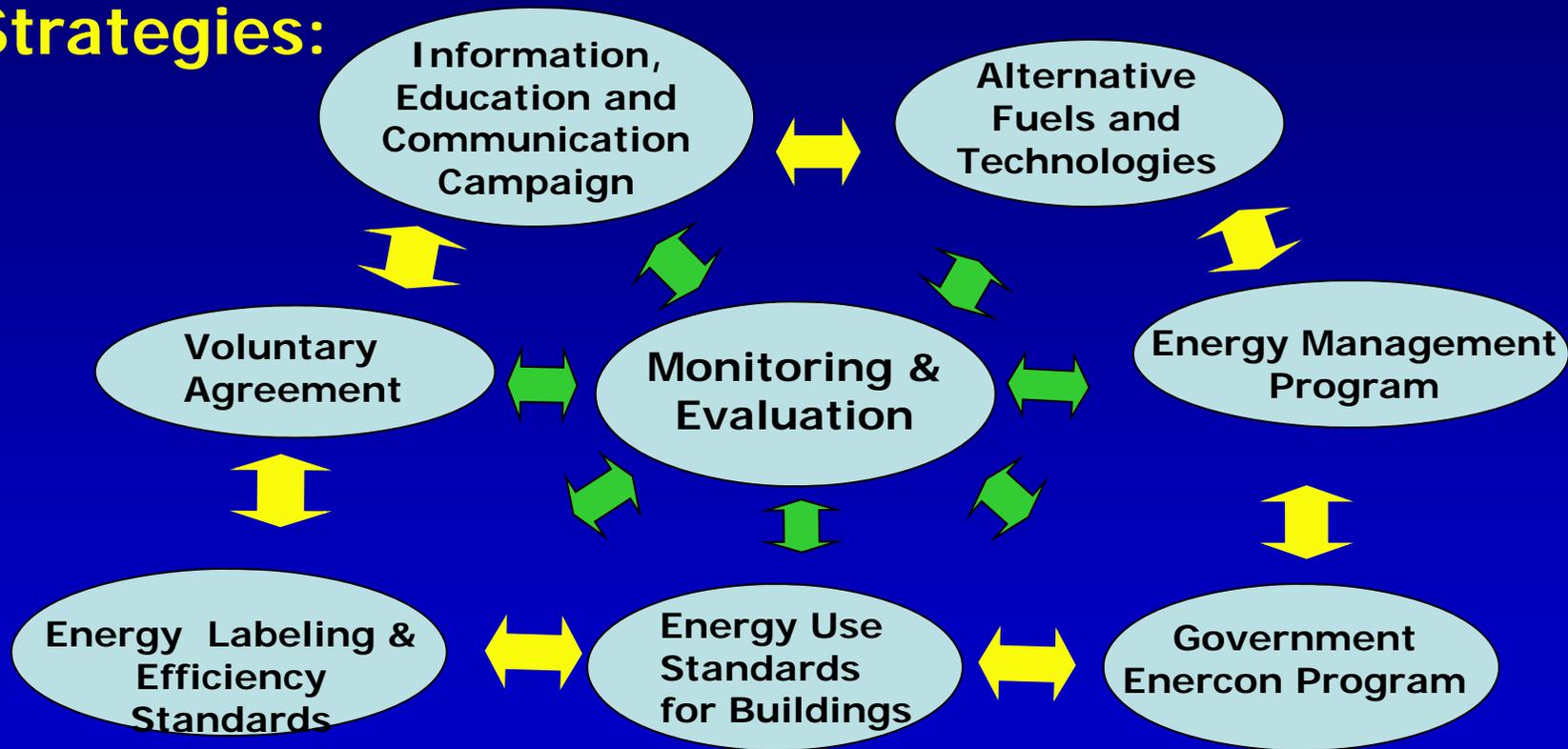
TWO-PRONGED PROGRAM

- *Fuel Efficiency and Conservation Program*
- *Electricity Efficiency and Conservation Program*



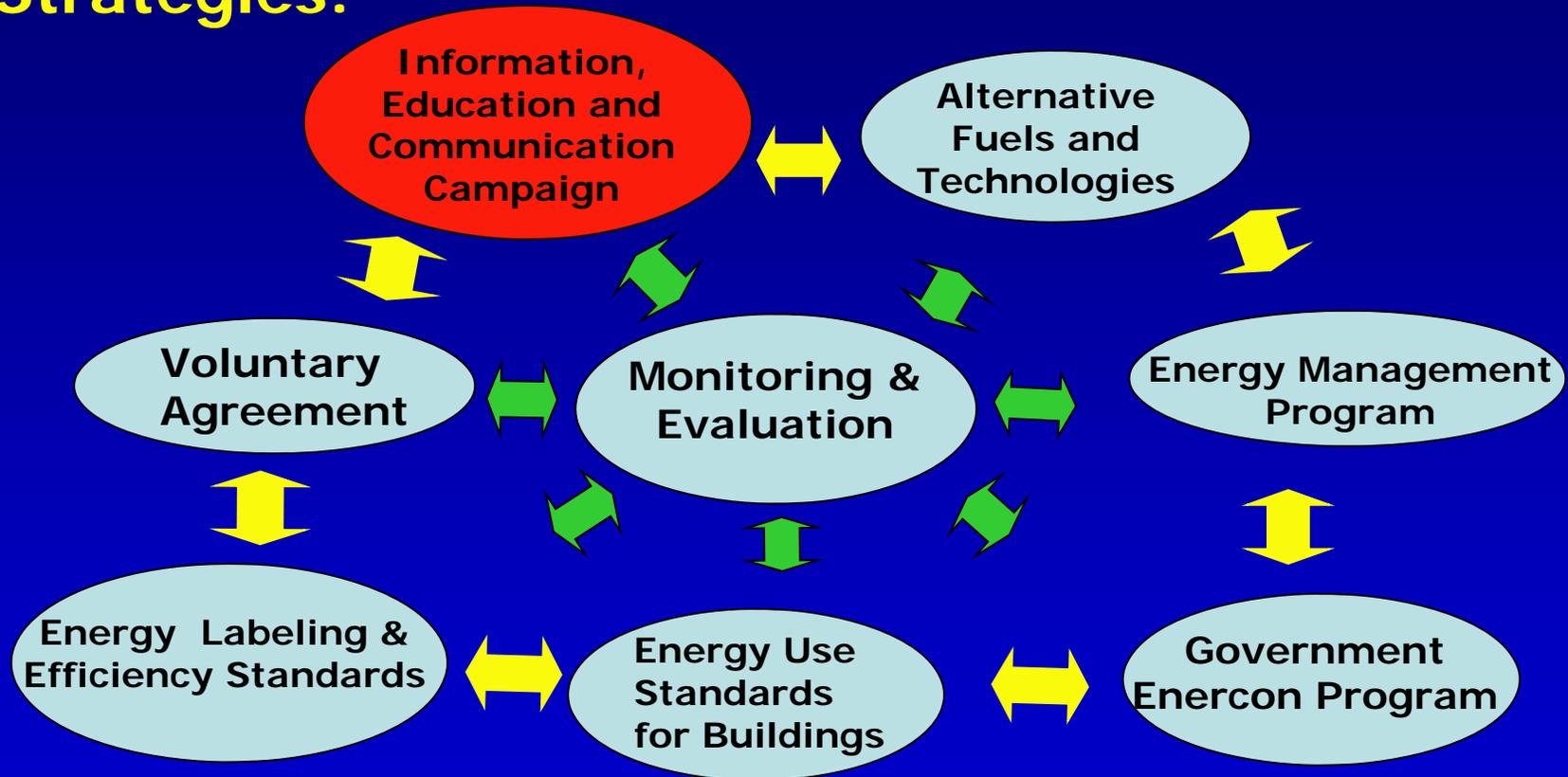
National Energy Efficiency and Conservation Program

Strategies:



National Energy Efficiency and Conservation Program

Strategies:



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

[Website on Energy Efficiency & Conservation](http://www.doe.gov.ph/necp/)

<http://www.doe.gov.ph/necp/>

The screenshot shows the homepage of the National Energy Efficiency and Conservation Program (NEECP) website. The header features the 'ec way of life' logo and the text 'NATIONAL ENERGY EFFICIENCY AND CONSERVATION PROGRAM'. Below the header, there are several sections:

- Welcome to the Philippine National Energy Efficiency and Conservation Program Website.**
- Want to know your AVOIDED FUEL EXPENSE? TRY OUR CALCULATOR! click here**
- Our Objective:** To make energy efficiency and conservation (EE&C) a way of life.
- Our Goals:** To improve utilization of all users through energy efficiency and conservation programs. To achieve an average annual energy savings of 23 MMBFCE and 5,096 Gg CO2 equivalent emissions avoidance.
- Energy Labeling & Efficiency Standards:** A list of certified products including Refrigerators, Room Air Conditioners, Ballast, and Compact Fluorescent Lamps.
- Programs:** Carless Day Program, Carpooling Program, Park and Walk Program, Park and Fly Program, and Park and Pick Program.



DEPARTMENT OF ENERGY



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Energy Efficiency & Conservation Logo



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Website & Logo Launch

<http://www.doe.gov.ph/necp/>



Official launching : Aug. 28,
2004

Pulong Bayan ni PGMA



DEPARTMENT OF ENERGY



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Road Transport Patrol

Seminar / Workshop on Fuel Conservation & Efficiency in Road Transport



- A campaign on the efficient use of fuel through proper vehicle maintenance, efficient driving and values formation among drivers
- Seminars
 - Sept. 7, 2004 - Bulwagan, LTO, Q. C.
 - Sept. 16, 2004 - Almendras Gymnasium, Davao City
 - March 15, 2005 – Cebu City
 - May 18, 2005 – Cagayan de Oro City



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Fuel Economy Run



- various types of vehicles are subjected to test runs under standard conditions
- results may be used by manufacturers as benchmarks for producing more energy efficient vehicles in the future
- empowers the consumer in choosing the more energy efficient brand or model of vehicle
- **Ma-a Shell Service Station, Davao City – September 17, 2004**
- **NLT2 – Shell Service Station, North Luzon Expressway (Southbound) – March 18, 2005**



Focal Person : Genevieve Almonares (EUMB-EECD)

INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Fuel Economy Run

- **Davao City, MAA Shell Station – September 17**

Results

Engine Make/Model	km/liter
Toyota Vios (1.3)/2004	25.12
Toyota Vios (1.3)	23.42
Toyota Vios (1.5)	20.67
Honda City (1.3)/2003	20.52
Honda City (1.3)	19.83
Toyota Altis (1.8)/2003	19.47
Toyota Vios (1.5)	18.79
Kia Pride (1.1)/CD5	18.03
Kia Rio (1.3)/2004	17.01
Honda City (1.3)/2003	16.21



Focal Person : Genevieve Almonares (EUMB-EECD)

INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Infomercials/Publications/Collaterals

Fuel Efficiency and Conservation

- Gas Drop Ad (TV & Cinema)
- GASFAR (Newspapers, Comics, Magazine, Radio)



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Infomercials/Publications/Collaterals

Fuel Efficiency and Conservation

- GASFAR – Philippine Daily Inquirer (daily from Aug. 7 to Sept. 6, 2004)
- For reprinting in the Philippine Daily Inquirer from February to March 2005.



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Infomercials/Publications/Collaterals

Fuel Efficiency and Conservation

- Fuel Tipid Tips (Newspapers, Brochures, Leaflets)
- Philippine Star c/o Shell (Aug. 13 – Sept. 3, 2004)



FUEL TIPID TIPS

- **Keep your engine properly tuned. Tuning a car can improve gas mileage up to 4 percent.**
- **Keep tires properly inflated to improve your gas mileage by more than 3 percent.**
- **Share a ride with others to reduce your fuel costs and the wear on your car.**

 A Partnership of
the Department of Energy and
Pilipinas Shell Petroleum Corporation



DEPARTMENT OF ENERGY



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Infomercials/Publications/Collaterals

Fuel Efficiency and Conservation

- Power of Choice Ad (Newspaper)
- Mediatron Traffic Advisory and EE&C Tips



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Infomercials/Publications/Collaterals

Fuel Efficiency and Conservation

- Mediatron Traffic Advisory and EE&C Tips – conducted meeting with Ayala Land Inc. last Aug. 18, 2004.



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Infomercials/Publications/Collaterals

Power Conservation and Demand Management

- Conservation Tips for Electricity (Regular & Tag-init) – re-aired over Channels 5, 9, 13 & 25 last Oct. 22 – Nov. 21, 2004.
- Electricity Saving Tips – Philippine Star (Sept. 1 – 30, 2004). For reprinting in the Philippine Star from February to March 2005.

ELECTRICITY SAVING TIPS

Defrost the refrigerator regularly. Thick frost in refrigerator will increase electricity



A public service message by



Consumption.

Department of Energy
Energy Efficiency and Conservation Division
Tel. No. (02) 840-2243, Trunkline (02) 840-1401 local 201 & 214
Enertext (2920) Website www.doe.gov.ph



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Infomercials/Publications/Collaterals

- Energy Conservation Tips Contest thru Enertxt
- On-the-spot Poster Making Contest
 - Manila – Dec. 7, 2004
 - Davao – October 6, 2005
 - Manila – December 8, 2005



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

Basketball Exhibition and Fuel Efficiency Seminar

Sept. 24, 2004 – 7:30 to 9 am

Pandacan Linear Park



VS.



Committee Chair : Dir. Zenaida Y. Monsada

INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

“UNDAS SA GAS”



- “pick-a-prize” promotional campaign in various gasoline stations during All Saints Day celebration
- Conducted on Oct. 26 – 29
 - Launched at Petron Service Station, Blue Wave, Macapagal Blvd.
 - Other stations
 - Petron (Buendia, Domestic Rd.)
 - Total (Sucat, Pulilan)
 - Shell (SLEX, Binan)

Committee Chair : Dir. Zenaida Y. Monsada



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN

“Holy Week Vehicle Maintenance and Check-up Activity”

North and South Luzon Expressway

March 23, 2005



DEPARTMENT OF ENERGY

Committee Chair : Dir. Zenaida Y. Monsada



INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN



Power Patrol Program



- awareness campaign on the judicious and efficient utilization of electricity considered as the main advocacy vehicle for the household, academe, commercial and industrial/ manufacturing sectors
- **September 22, 2004** at **POVEDA** in conjunction with “Park & Wait” Program
- **Seminar for Industrial Locators in Ecozones – November 5, 2004** Mactan Economic Zone, Cebu
- **Seminar on Energy Efficiency for Buildings in Southeast Asia – November 12, 2004** at **City Garden Hotel, Makati City**



Focal Person : Artemio Habitan (EUMB-EECD)

INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN



Power Patrol Program



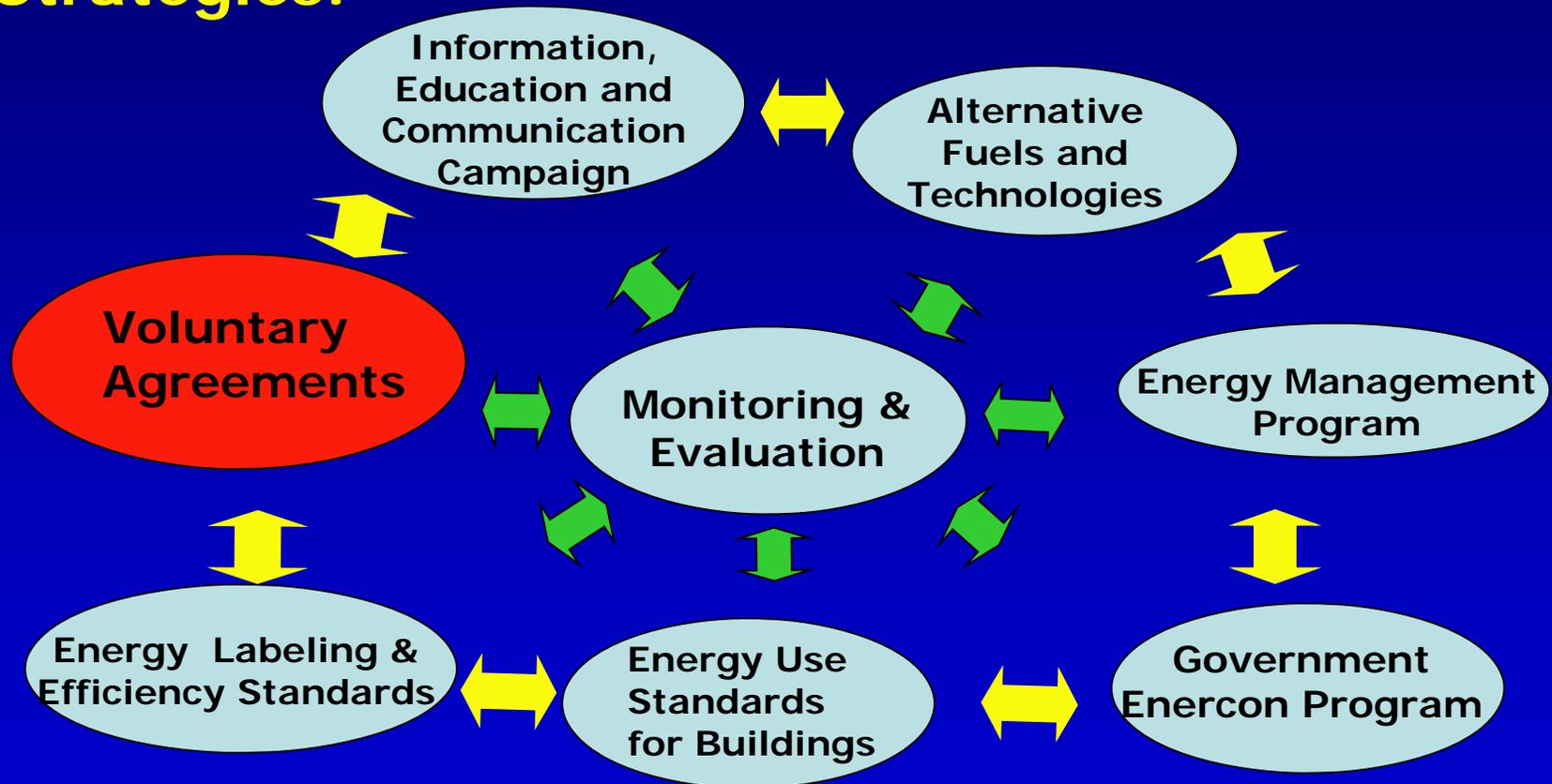
- **DOE-UNIDO: Industrial Energy Efficiency Training Seminar on January 17-18, 2005 at El Cielito Inn, Sta. Rosa, Laguna.**
- *In conjunction with the Launching of the Park and Wait (Anti-Idling Program) in Assumption College, Antipolo City on February 9, 2005.*
- *February 17, 2005 – 2nd Regional Consultative Workshop for ASEAN Energy Managers Accreditation System.*
- *April 20, 2005 – Power Patrol Seminar and Park and Wait Launching - Davao City*
- *June 22, 2005 – Power Patrol Seminar and Park and Wait Launching - Iloilo City*



Focal Person : Artemio Habitan (EUMB-EECD)

National Energy Efficiency and Conservation Program

Strategies:



VOLUNTARY AGREEMENT

Car Less Day

Don't be Careless, Go "Car-less"

- fuel conservation measure that encourages motorists to burn calories instead of fossil fuel, reduce traffic congestion and air pollution, and leave the car at home one day a week
- **Launchings on February 24, 2005 at Marikina City and on May 12, 2005 at Makati City.**

"MY CAR-LESS DAY IS
MONDAY"



CARLESS DAY PROGRAM

OF :



Department of Energy
Energy Efficiency and Conservation Division
Tel. No. (02) 840-2243, Trunkline (02) 840-1401 local 201 & 214
Enertext (2920) Website www.doe.gov.ph/necp/



Committee Chair : Asst. Dir. Mario Marasigan (EUMB)

VOLUNTARY AGREEMENT

Carpooling

- consists of three or more people that commute to work or other destinations in a private vehicle in which members work out their own arrangements on who drives and how often, schedules, and payments of gas and maintenance
 - Launchings on February 24, 2005 at Marikina City and on May 12, 2005 at Makati City.

"Ang-CASH TIPID"

CAR POOLING PROGRAM OF :



Department of Energy
Energy Efficiency and Conservation Division
Tel. No. (02) 840-2243, Trunkline (02) 840-1401 local 201 & 214
Enertext (2920) Website www.doe.gov.ph



Committee Chair : Asst. Dir. Mario Marasigan (EUMB)

VOLUNTARY AGREEMENT

Park & Wait (Anti-idling)

- encourages motorists to turn off their engines when parking
- **Launched on September 22, 2004 at POVEDA.**
- **Assumption College, Antipolo City – February 9, 2005**
- **Other schools – International School, British School, Japanese School, La Salle Univ., Miriam College, Ateneo de Manila University**



iDLiNG
iS A BAD HABiT

Breathe easier, turn off your engine.

PARK & WAIT PROGRAM OF



Department of Energy
Energy Efficiency and Conservation Division
Tel. No. (02) 840-2243, Trunkline (02) 840-1401 local 201 & 214
Enertext (2920) Website www.doe.gov.ph



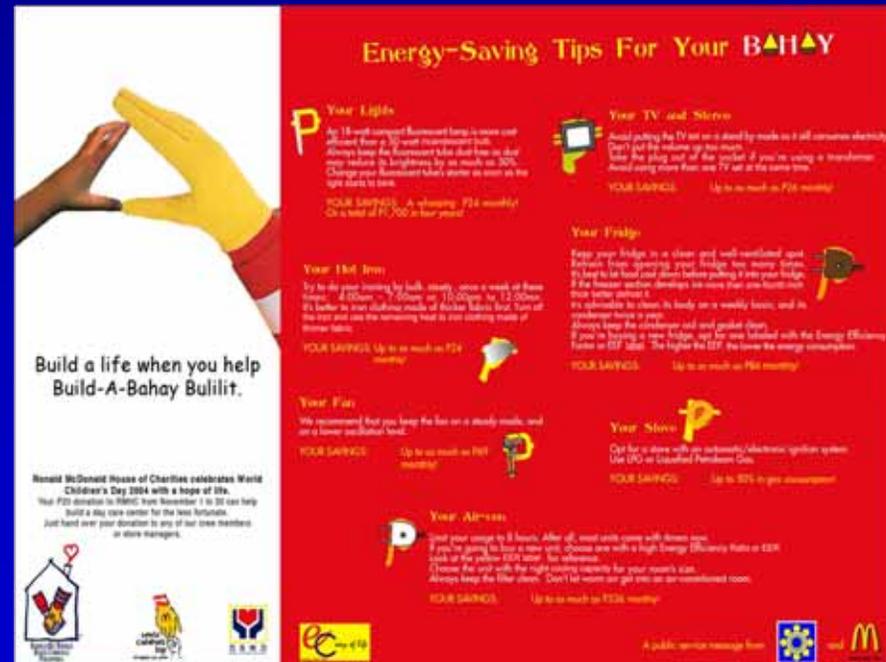
Committee Chair : Asst. Dir. Ramon Oca (ERDB)

VOLUNTARY AGREEMENT

Placemats Program

- encourages the leading food chains to use placemats with fuel efficiency and conservation, as well as power conservation and demand management themes

- McDonald's Makati Cinema Square – Sept. 21, 2004.
- Will re-issue additional copies on February to March 2005.



DEPARTMENT OF ENERGY

Committee Chair : Aurora Dionisio (AS-HRMD)



VOLUNTARY AGREEMENT

Placemates Program

Your house and greenhouse
We have all got to do our bit!

Imagine that this drawing is your house. Name the things that are using up energy in each room, and try to think of alternatives which use less energy.

Non-renewable energy
Present out of place

Point to an energy-consuming item in the drawing. How many of these items are you using? How many can you replace?

Building checklist (filling in the box)
Did you do energy-efficient things in a room?
(Check one in each column)

	Yes	Maybe	No
Do you have a water heater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a hot water tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a water heater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a hot water tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a water heater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a hot water tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The low energy house
Get a checklist and fill it in. It will be a good reminder when you think of energy-saving things to do.

WORD LIST
Use words from the list to name things in the drawing.

Pit-stop Maze

Things that use up energy and their alternatives:

Air conditioner	Electric fan
Refrigerator	Stove
Conventional oven	Micro-wave oven
Electric stove	Gas stove
Refrigerator	Coffee
Hot water	Electric fan
Electric water heater	Solar water heater
Electric garage door	Mechanical garage door
Television	Reading material

Can you add up to the list?

PANCAKE HOUSE

ec way of life



- Pancake House Paseo de Magallanes – Sept. 28, 2004
- McDonald's Greenbelt Drive-Thru Press Coverage - Oct. 7, 2004.
- Pizza Hut, Cubao – May 2005

Committee Chair : Aurora Dionisio (AS-HRMD)



VOLUNTARY AGREEMENT

Partnership for Energy Responsive Transport System (PERTS)

Park & Ride

- encourages the use of parking spaces where vehicle owners can leave their vehicles and then use the public transport system for their onward trips
 - Launched on November 17, 2004 in Park N Ride, Lawton, Manila
 - May 6, 2005 – MRT Gateway, Cubao
 - Nov. 11, 2005 – MRT North EDSA



**"Drive LESS,
arrive FRESH"**

PARK & RIDE PROGRAM OF :

 Department of Energy
Energy Efficiency and Conservation Division
Tel. No. (02) 840-2243, Trunkline (02) 840-1401 local 201 & 214
Enertext (2920) Website www.doe.gov.ph



Committee Chair : Vilma Hernandez (EUMB-EECD)

VOLUNTARY AGREEMENT

Partnership for Energy Responsive Transport System (PERTS)

Park & Walk

- encourages vehicle owners to park their vehicles and use bridgeways and walkpaths to move around commercial centers
- **Launched on Nov. 18, 2004 in Ayala Land, Inc., Makati City**
- **January 27, 2005 – Ayala Center, Cebu City**
- **March 11, 2005 – Robinsons Galleria, Ortigas Center**



PARK & WALK PROGRAM



Department of Energy
Energy Efficiency and Conservation Division
Tel. No. (02) 840-2243, Trunkline (02) 840-1401 local 201 & 214
Enertext (2920) Website www.doe.gov.ph



Committee Chair : Dir. Elizabeth G. Navalta

VOLUNTARY AGREEMENT

Partnership for Energy Responsive Transport System (PERTS)

Park & Pick

- encourages vehicles, particularly taxis, to park only at designated places or sites
- **Launched on Nov. 18, 2004 in Ayala Land, Inc., Makati City.**
- **January 27, 2005 – Ayala Center, Cebu City**
- **March 11, 2005 – Robinsons Galleria, Ortigas Center**



Committee Chair : Dir. Elizabeth G. Navalta

VOLUNTARY AGREEMENT

Partnership for Energy Responsive Transport System (PERTS)

Park2Fly

- encourages parking at facilities made available near or at the airport for domestic airline passengers.
 - **February 11, 2005 – Parañaque City**
 - **March 15, 2005 – Cebu City**
 - **April 19, 2005 – Davao City**

"Aim high for fuel
CONSERVATION"



PARK2FLY PROGRAM

OF :



Department of Energy
Energy Efficiency and Conservation Division
Tel. No. (02) 840-2243, Trunkline (02) 840-1401 local 201 & 214
Enertext (2920) Website www.doe.gov.ph



Committee Chair : Maximino Marquez (EUMB-EECD)

VOLUNTARY AGREEMENT

Partnership for Energy Responsive Companies (PERCS)



- encourages industrial and commercial establishments to voluntarily monitor their energy consumption and implement EE&C programs

Participating Companies

- DOLE Philippines Inc.
- Passi Ilo-Ilo Sugar Central Inc.
- Richmonde Hotel
- Manila Galleria Suites
- Corinthian Plaza Condominium
- Makati Prince Tower Condominium Corp.
- & 18 other establishments & ESCOs

- Promotion in Mactan Economic Zone, Cebu during Seminar for Industrial Locators in Ecozones last November 5, 2004.
- Promotion in CALABARZON areas during Training Seminar on Industrial Energy Efficiency last January 17-18, 2005.



Focal persons : Joan Sotello & Antonio Basco (EUMB-EECD)

VOLUNTARY AGREEMENT

Partnership for Energy Responsive Ecozones (PEREZ)



- a government-private sector partnership to encourage industrial ecozones to voluntarily monitor their energy consumption and implement EE&C programs

Participating Companies

- Microtel Inn & Suites
- SHI Mfg. & Services Philippines
- Integrated Device Technology
- Toshiba Information Eqpt. Phils. Inc.
- Pentax Luzon Philippines Inc.
- Hello Snack Foods Corp.

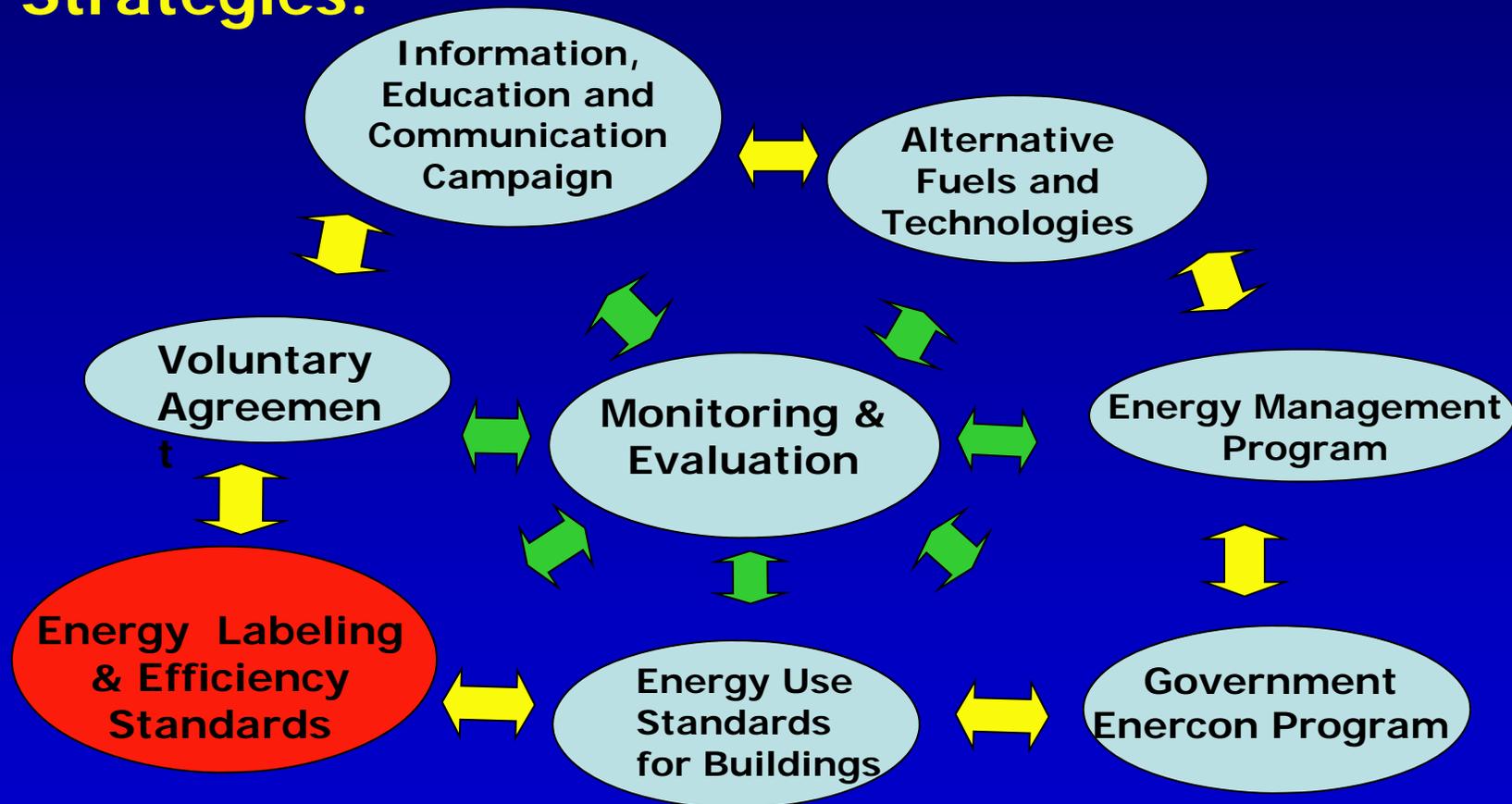
- Promotion in Mactan Economic Zone, Cebu during Seminar for Industrial Locators in Ecozones last November 5, 2004.
- Promotion in CALABARZON areas during Training Seminar on Industrial Energy Efficiency last January 17-18, 2005..



Focal persons : Joan Sotello & Antonio Basco (EUMB-EECD)

National Energy Efficiency and Conservation Program

Strategies:



ENERGY LABELING AND EFFICIENCY STANDARDS

Energy Standards & Labeling of Appliances/Equipment



The image shows a yellow Energy Guide label for Room Air Conditioners. At the top, it asks for the Name of Manufacturer, Brand, Model, Type, Cooling Capacity, Power Consumption, and Required Power. The central part features the 'ENERGY GUIDE' logo and 'ROOM AIR CONDITIONERS'. Below this is a box for the 'ENERGY EFFICIENCY RATIO' (EER). Text explains that higher EER means lower electricity cost and provides a field for the minimum EER standard. A calculation section shows: $\text{Rated Power (Watts/1000)} \times \text{Monthly Usage (hours)} \times \text{Power Rate (Pesos/kWh)} = \text{Cost of Operation (Pesos per 24h)}$. At the bottom, it includes logos for the Department of Energy and the Energy Commission, and a warning: 'REMOVAL OF THIS LABEL BEFORE CONSUMER PURCHASE IS A VIOLATION OF REPUBLIC ACT NO. 7394'. Contact information for the Department of Energy is also provided.

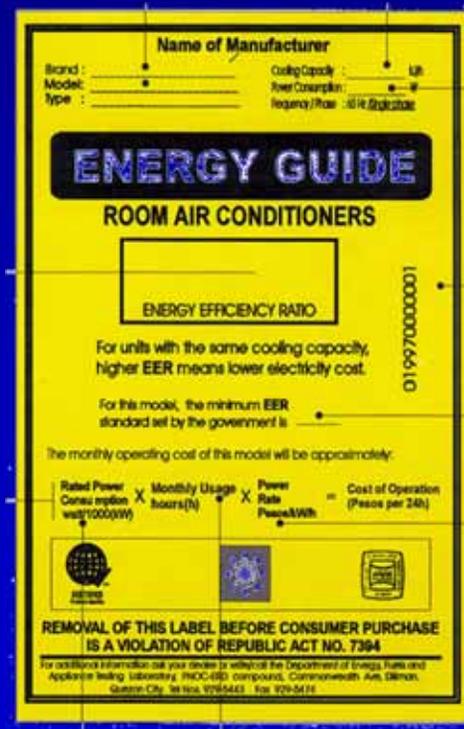
- aims to improve the efficiency and performance of appliances, equipment and other energy consuming devices
- requires the attachment of a label that would show the energy ratings of the product right at the point of sale
- empowers the consumer in choosing the more energy efficient brand or model



ENERGY LABELING AND EFFICIENCY STANDARDS

Energy Standards & Labeling of Appliances/Equipment

- **Palit-Ilaw**



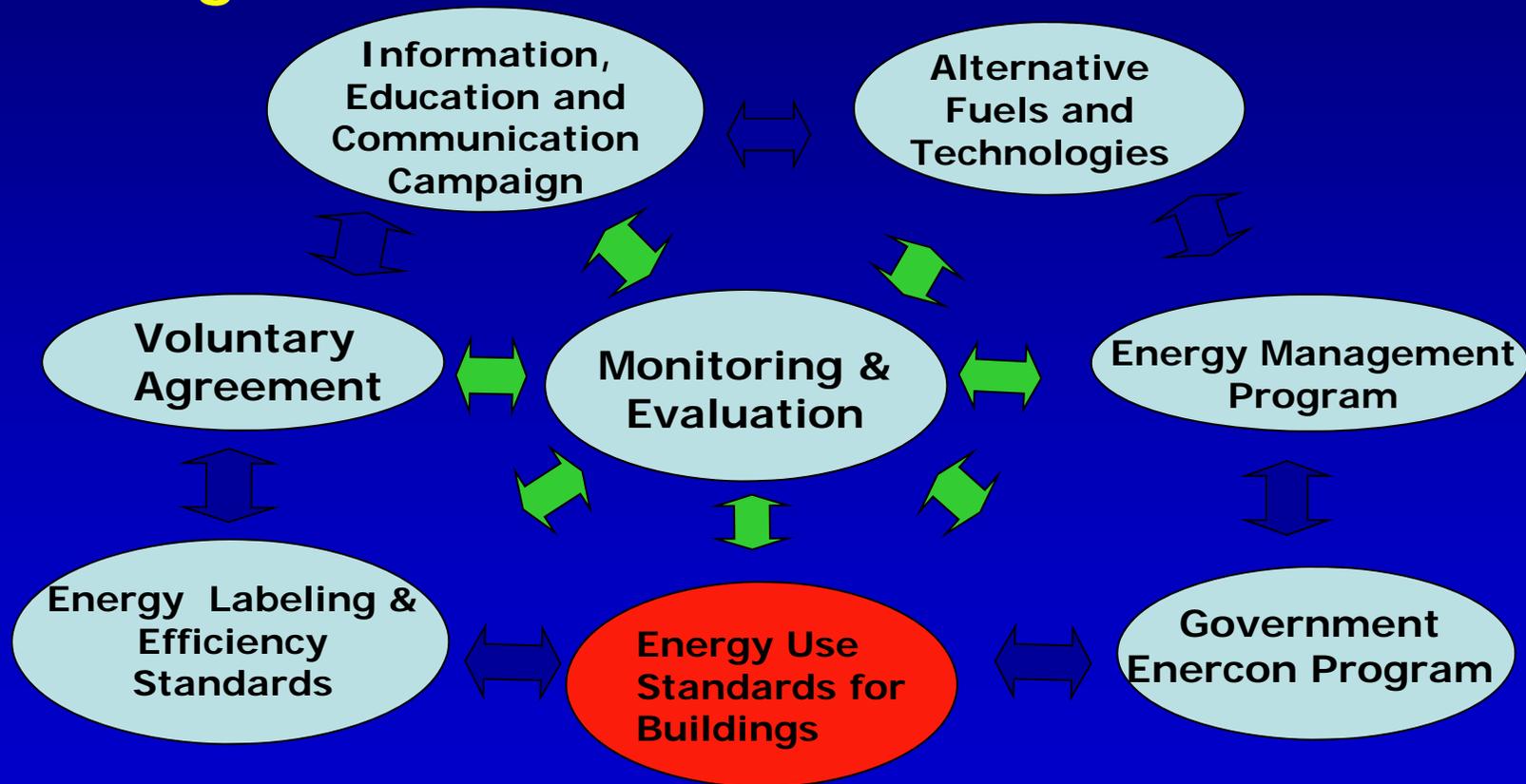
- DOE – October 4, 2004
- Glorietta, Makati – Nov. 10, 2004
- Cebu City – March 15, 2005
- Davao City – April 2005
- Cagayan de Oro – May 2005
- Iloilo – June 2005
- **DOE/UNDP/DENR approval of Project Documents on PELMATP – Dec. 23, 2004**
- **MOU Signing by 13 co-financiers re:PELMATP Project – January 24, 2005**



Committee Chair : Dir. Raquel S. Huliganga (ERTLS)

National Energy Efficiency and Conservation Program

Strategies:



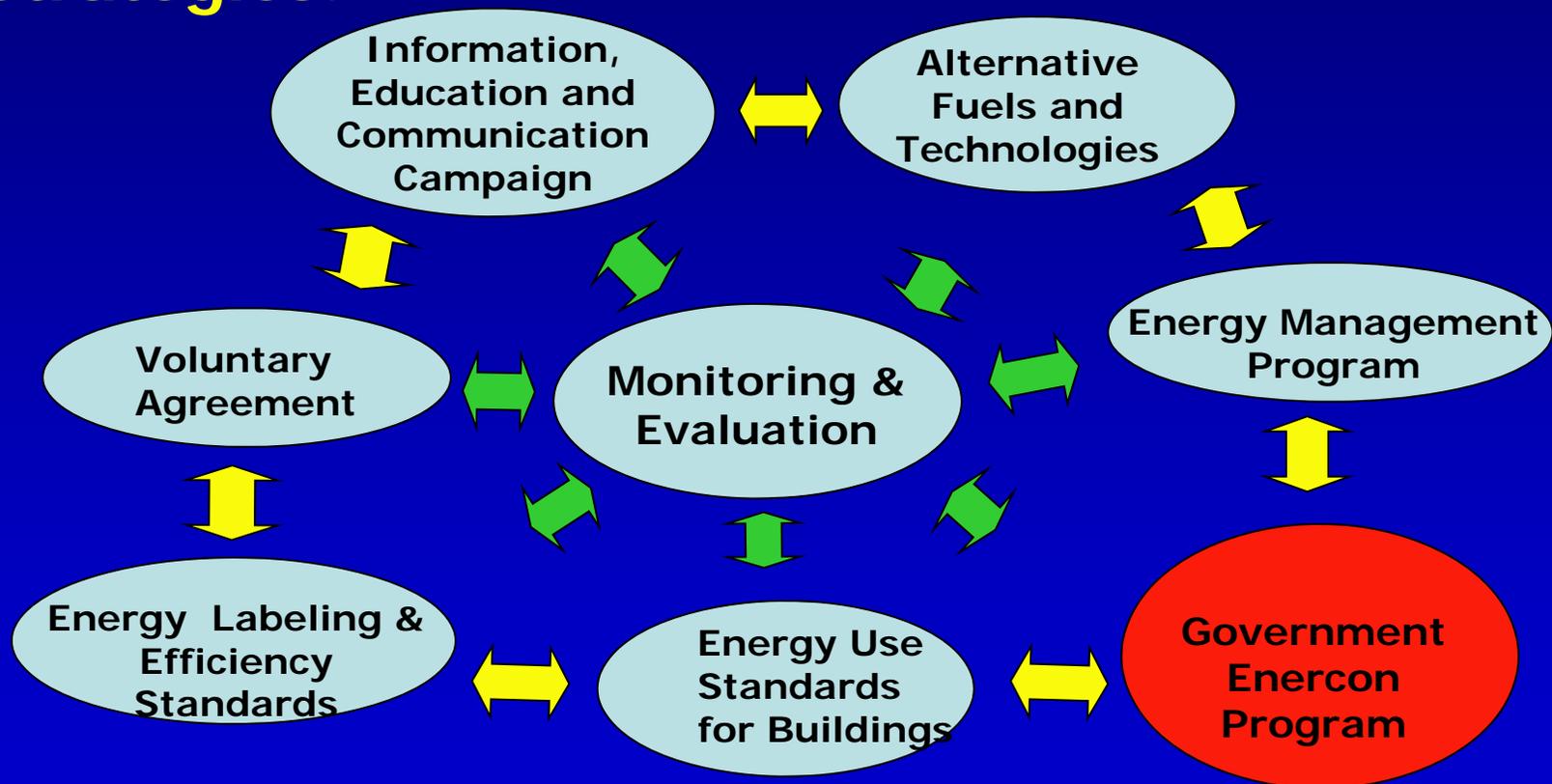
ENERGY USE STANDARDS FOR BUILDINGS

- Pledge of Commitment with LGUs on the adoption of the Guidelines for Energy Conserving Design of Buildings and Utility System.
 - Manila – November 23, 2004
 - Quezon City – December 15, 2004
 - Taguig – February 17, 2005
 - Makati City – May 12, 2005
 - Parañaque City – June 14, 2005
 - Mandaluyong City – August 16, 2005
 - Pasig City – October 18, 2005



National Energy Efficiency and Conservation Program

Strategies:



GOVERNMENT ENERCON PROGRAM

"Enercon sa Gobyerno Ginawa sa Pilipino"

- aims to integrate energy efficiency concepts into the procurement practices of government agencies, bureaus and offices
 - 10% reduction in electricity and fuel consumption
 - energy consumption monitoring
 - recognition program



GOVERNMENT ENERCON PROGRAM

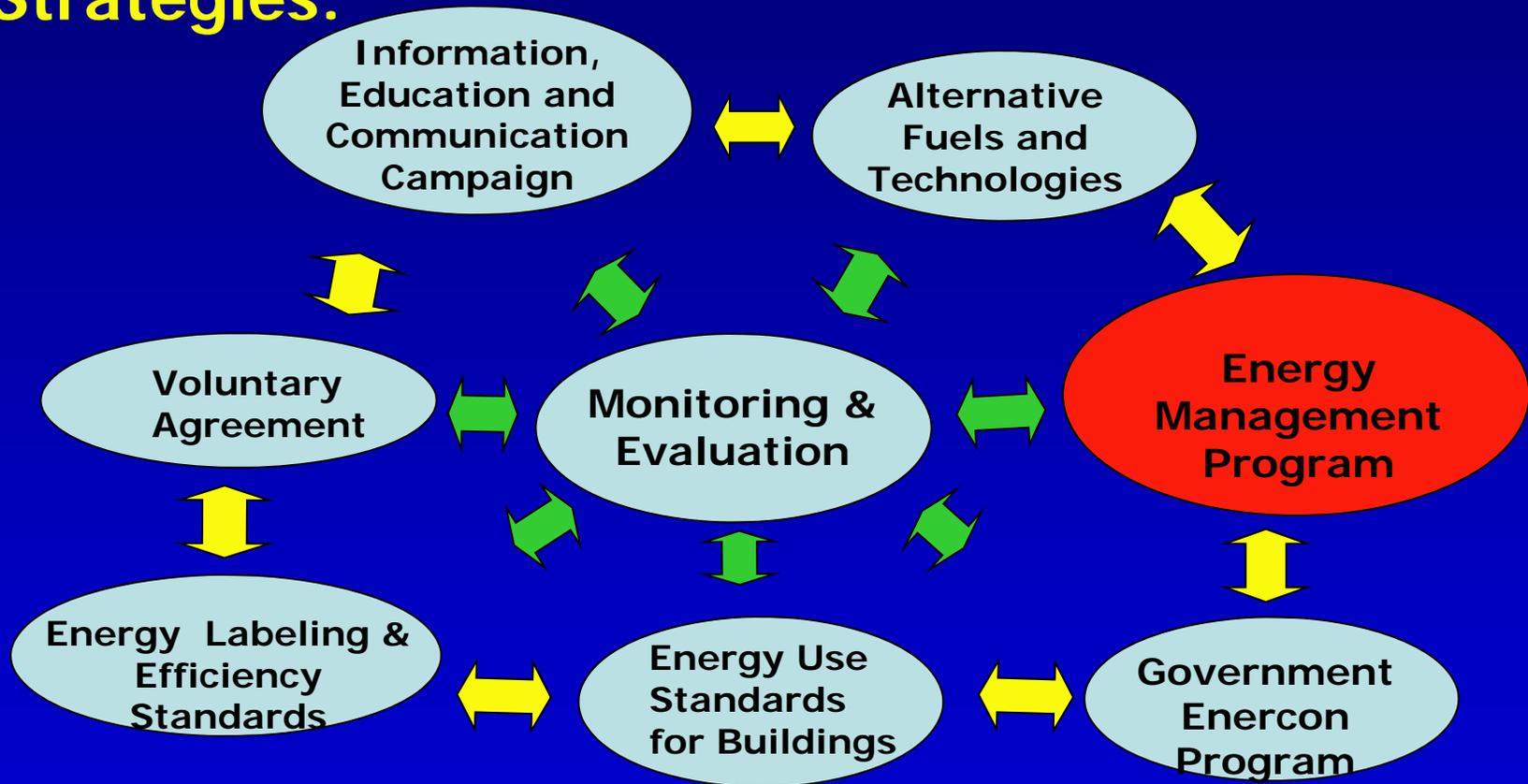
"Enercon sa Gobyerno Ginawa sa Pilipino"

- Administrative Order No. 103 on austerity measures and energy conservation.
- Administrative Order No. 110 "Directing the Institutionalization of a Government Energy Management Program" was approved on October 25, 2004.
- 1st Consultative Meeting on the Implementing Rules and Regulation (IRR) of A.O. 110 with DTI, COA and DBM on February 2005 at DOE.
- Orientation with government agencies re: IRR on March 31 at DOE.



National Energy Efficiency and Conservation Program

Strategies:



ENERGY MANAGEMENT PROGRAM

Conduct of Energy Audit



Energy audit services of the Department help companies or establishments determine their energy use patterns and identify energy conservation in all energy-consuming sectors (continuing program).



ENERGY MANAGEMENT PROGRAM

Supply Side Energy Efficiency

Heat Rate Improvement in Power Plants

- to bring the actual performance level of all NPC and IPP generating units close to their optimum performance levels



ENERGY MANAGEMENT PROGRAM

Recognition Programs

Don Emilio Abello Energy Efficiency Award

- Awarding of outstanding companies and energy managers who have undertaken or are responsible in implementing energy efficiency and conservation programs to achieve substantial savings in their energy consumption. The Awarding Ceremony was held on December 7, 2004 at Petron Mega Plaza, Makati City.

This recognition awards program posted an energy savings of 112.11 million liters of oil equivalent (MMLOE) with an equivalent peso savings of 1.22 billion.



ENERGY MANAGEMENT PROGRAM

Recognition Programs

ASEAN Best Practices Award in Building

- a regional competition that awards commercial companies which have voluntarily applied energy efficient concepts and technologies in their buildings in harmony with the overall energy efficiency agenda for the country and for the region.
- 6750 Office Tower won First Runner-up in the Retrofitted Building Category with estimated total energy savings of 334,805 kWh/year.



ENERGY MANAGEMENT PROGRAM

Systems Loss Reduction

- requires electric utilities to reduce systems losses to ensure that power rates reflect only actual consumption



ENERGY MANAGEMENT PROGRAM

Systems Loss Reduction

- Seminar Workshops for Electric Cooperatives
 - Luzon – Sept. 16–17, 2004
 - Visayas – Mindanao – Sept. 22–23, 2004
- MOU with Electric Cooperatives
- Pledge of Commitment to Reduce Systems Loss



ALTERNATIVE FUELS & TECHNOLOGIES

- Coco Methyl Ester (CME) Program
- Natural Gas Vehicle Program for Public Transport (NGVPPT)
- Ethanol



CONCLUSION

The government should
take the lead in energy
conservation!



THANK YOU

www.doe.gov.ph/neccp/



DEPARTMENT OF ENERGY

