

ENERGY FORUM – MINDANAO

Waterfront Hotel, Davao City

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ENERGY EFFICIENCY & ALTERNATIVE FUELS



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Part I

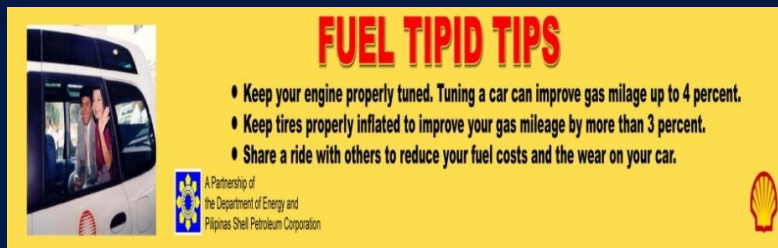
NATIONAL ENERGY EFFICIENCY AND CONSERVATION PROGRAM (NEECP)



National Energy Efficiency and Conservation Program (NEECP)

- Launched on 24 August 2004 to make energy efficiency & conservation as a way of life.


1. Fuel Efficiency & Conservation Program



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
Philippine Shell Petroleum Corporation



2. Electricity Efficiency & Conservation Program



BRIGHT NOW!
DO RIGHT. BE BRIGHT.



Information, Education & Communication (IEC) Campaign

NATIONAL TRAINING-WORKSHOPS

- > Introduce the concept of Energy Management System using the ASEAN - developed Energy Management Handbook, among others.**



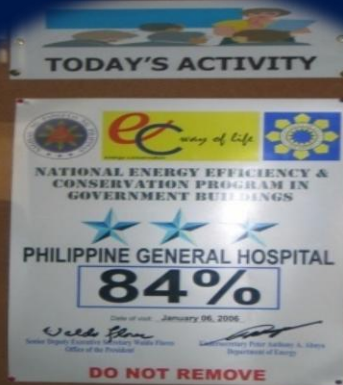
Recognition Award

Don Emilio Abello Energy Efficiency Award
Started in 1982, in recognition of the founder of
the Enercon Movement Mr. Emilio Abello



Government Energy Management Program

Spot Check and Posting of Grades in Government Building in compliance with Presidential directives (AO 103) – which states that all Government buildings have to reduce electricity and fuel consumption by 10%.



Philippine Energy Efficiency Project (PEEP)

- ◆ **Objective:** To demonstrate the societal benefits of implementing pertinent energy efficiency projects in the commercial, residential & public sectors.

Efficient Lighting Initiative

- Retrofit of Gov't Office Buildings
- National Residential Lighting Program
- Public Lighting Retrofit Program
- EE Testing & Lamp Waste Management

Efficiency Initiatives in Buildings & Industries



- Efficient Building Rating System

Communication & Social Mobilization

- Communication for Efficient Lighting
- Promoting Efficiency in Everyday Life

Philippine Energy Efficiency Project (PEEP)

Key Project Target Outputs

- 
- 
- ✓ Retrofit of lighting systems in **175 government buildings**
 - ✓ **Nationwide distribution** of 8.6 million compact fluorescent lamps (CFLs)
 - ✓ **Retrofit of Public Lighting Systems**
 - ✓ Rating scheme for **Green Buildings**
 - ✓ Installation of **Energy Efficiency Testing and Lamp Waste Management Facilities**
 - ✓ **Communication and Social Mobilization Programs**

Project Quantification

- Reduce peak demand by about 430 MW
- Deferred power generation investment of \$430 million
- Carbon Dioxide (CO₂) Emission Reduction of 161.50 kTons

Development Study on Energy Efficiency and Conservation for the Philippines

- ◎ **Objective:** To institutionalize EE&C measures by providing concept design for the Energy Efficiency and Conservation (EnerCon) Bill and its organizational structure and measures.



Industrial Energy Efficiency Project

- **Objective:** To introduce ISO 50001 Energy Management Standard along with system optimization approach for improvement of industrial energy efficiency.

Major Components:

Energy
Management

System
Optimization

Enhancement
of Financing
Support



National Energy Efficiency and Conservation Program Actual Savings, in MMBFOE

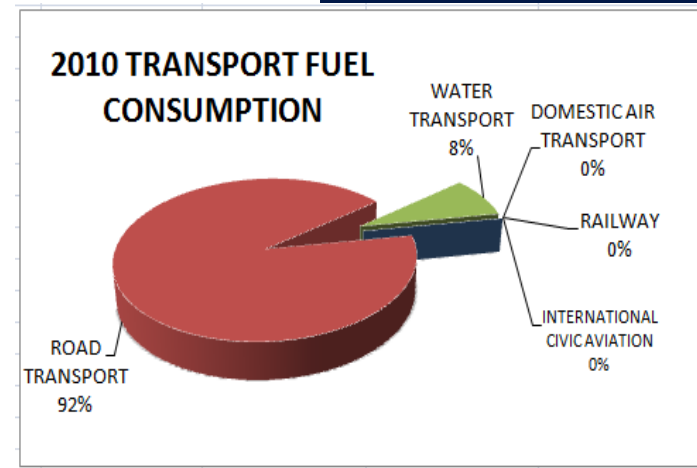
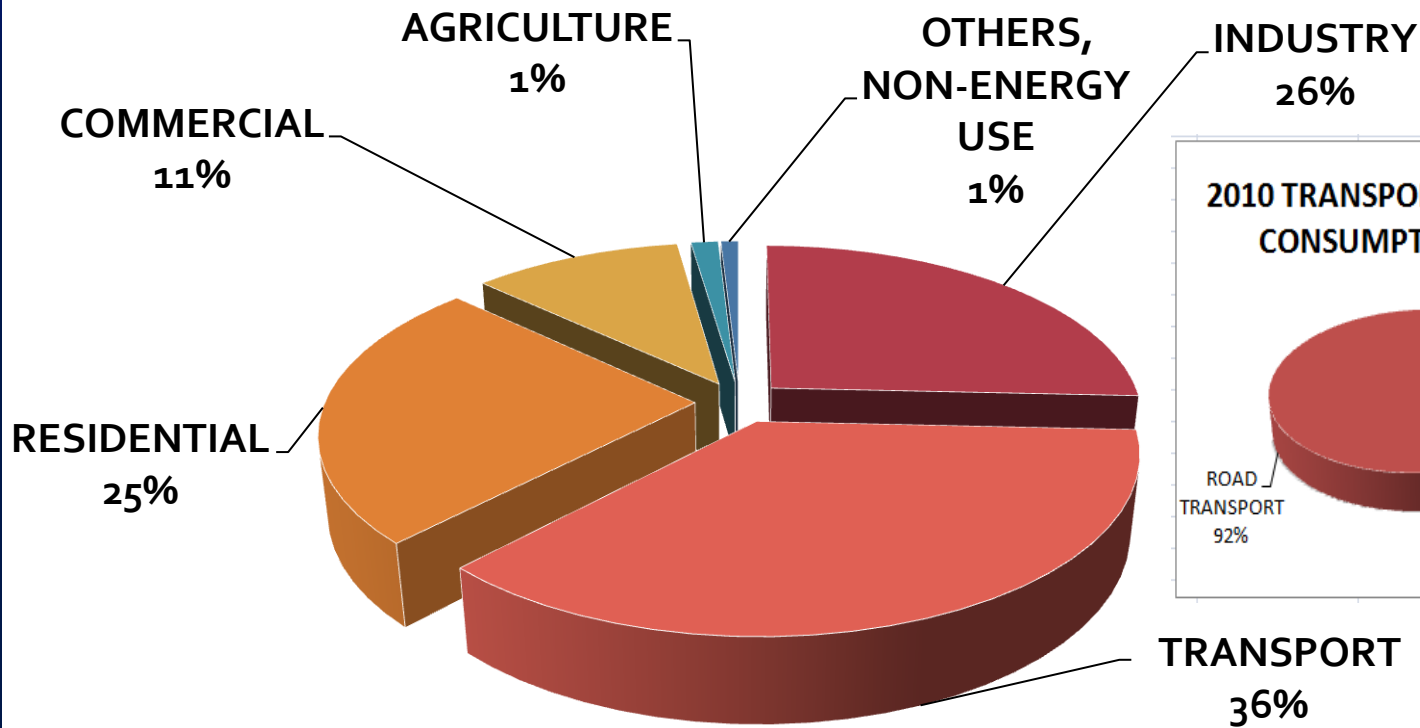
Programs	2009	2010
Information, Education and Communication (IEC) Campaign	3.47	3.45
Voluntary Agreements	5.47	3.60
Energy Standards and Labelling	10.98	14.27
Government Energy Management Program (GEMP)	0.22	0.22
Energy Management Program	2.46	3.26
TOTAL	22.60	24.80

Part II

ALTERNATIVE FUELS & ENERGY TECHNOLOGY PROGRAM



Sector Final Energy Demand (2010)



Alternative Fuels & Energy Technology under Fueling Sustainable Transport Program

Achieving energy independence and fuel diversification while meeting environmental challenges through the utilization of alternative fuels



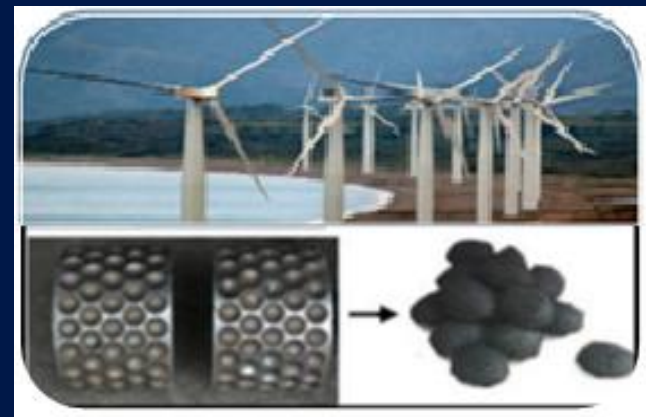
Compressed Natural Gas (CNG)



Auto-LPG for Taxis & Jeepneys



Electric Vehicles (EVs)



CDM, CCT & Other Emerging Tech

Natural Gas Vehicle Program for Public Transport (NGVPPT) – EO 290

INCENTIVES

- Income tax holiday
- Zero rate of duty on Imported NGVs, engines and other related equipment parts and components.
- Issuance by LTO of Certificates of Compliance with Emission Standards to NGVs
- Preferential and exclusive franchises from the LTFRB for NGVs to newly opened routes
- Accelerated issuance of ECC by DENR for NGV facilities and refueling stations
- Affordable and commercially tenable financial packages from GFIs
- Manpower development and capability building through training and technology transfer programs
- Attractive CNG price of Php 14.52 per Nm³ (DLE-Diesel Liter Equivalent) good for 7 years

Natural Gas Vehicle Program for Public Transport (NGVPPT)



Status:

- 1 Mother Station located at Tabangao, Batangas.
- 1 Daughter Station located at Mamplasan, Binan, Laguna.
- 61 CNG buses in the country with 41 buses commercially operating.
- 7 Accredited CNG Bus Operators.
- 49 PNS Standards for Natural Gas.
- On-going discussions on the construction of another daughter station.

Auto LPG Program



Status:

- ✓ 19,052 converted taxis
(out of total 32, 423 LTFRB registered taxis as of June 2011)
- ✓ 216 LPG refueling stations
- ✓ 31 accredited Auto-LPG conversion shops
- ✓ Promulgated 5 PNS standards for LPG

Countries using Auto-LPG :

- ✓ Poland – 2, 170,000 auto-LPG Vehicles
6,050 LPG refueling stations
- ✓ Turkey – highest % in the world, (37% of its passenger cars run on auto LPG exceeding gasoline consumption
8,500 autoLPG stations
- ✓ Unites States - 200,000 auto-LPG Vehicles
2,600 LPG refueling stations

Other countries:

China, Hongkong, Japan, Australia, Canada, Italy, France, Netherlands, Russia, Croatia, Algeria, Belguin and many more

Auto-LPG as Alternative Fuel

Auto-LPG for Taxis and Jeepneys



Auto LPG Program



- ✓ 2 repowered Auto-LPG jeepney demo units
- ✓ MOU between DOE and Transport Groups on the “Adopt an Eco-Jeepney Program” on March 18, 2011
- ✓ Conducted Comparative Test Analysis between a Repowered Auto-LPG Jeepney and a Diesel-fed Jeepney at UP-VRTL

Electric Vehicles

Status:

Estimated 623 EVs
demonstrated nationwide:

- Davao City
- Makati City
- Dumaguete City
- Taguig City
- Cavite
- Puerto Princesa,
Palawan
- Mandaluyong City
- Surigao



Electric Vehicles



Electric vehicles costs:

- Php 150,000 to 250,000 for E-Trikes
- Php 600,000 to 700,000 for E-Jeeps

➤ Environmental Benefits:

- ZERO emissions because it emits no pollutants from the tailpipe
- Less NOISE which enhances comfort

➤ Technological Benefits:

- has few moving parts
- Charging can be done overnight when electricity demand is low.



Electric Vehicles

Promotion and Demonstration of EVs in Major Cities



Makati City



Taguig City



Mandaluyong City

Electric Vehicles

Provincial Fleets

Puerto Princesa



Cavite



Dumaguete



Surigao

Davao City



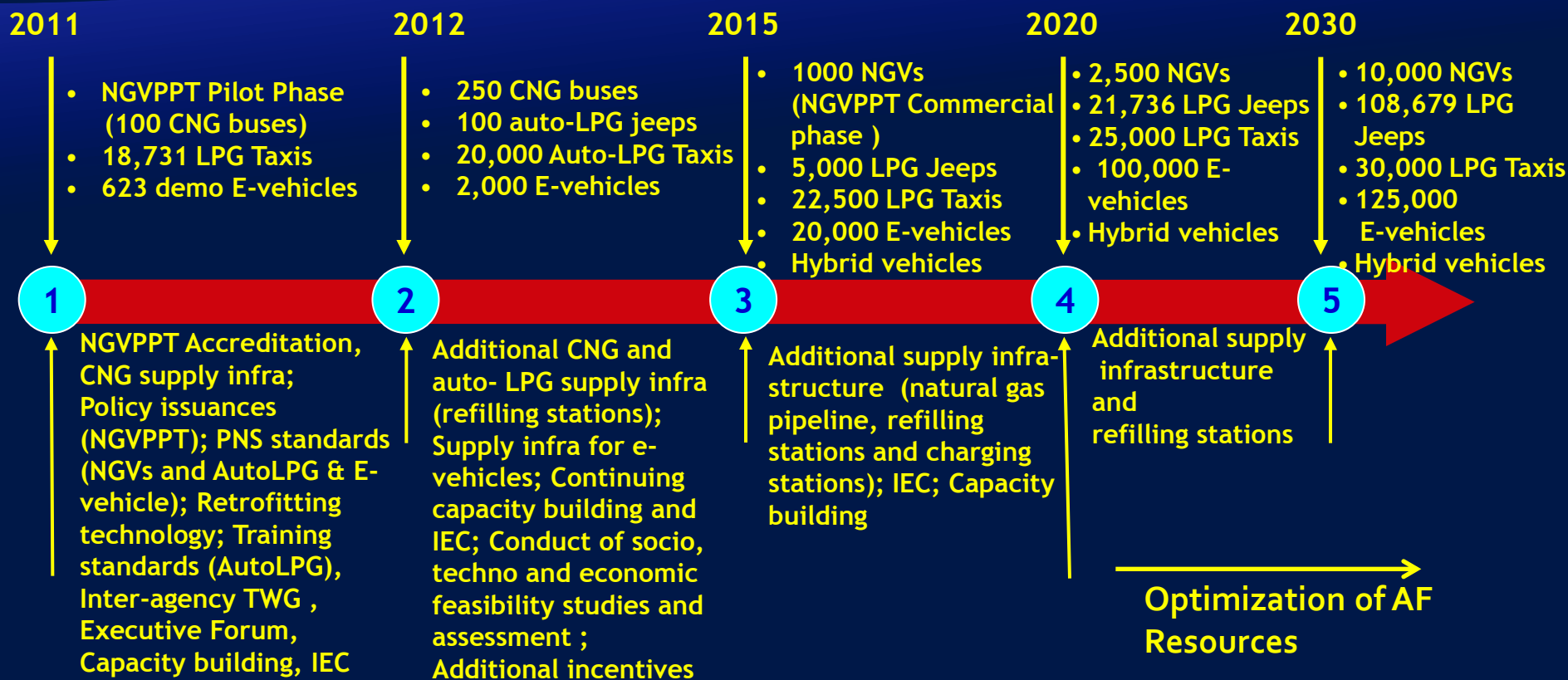
Infra/Services in Region XI

COMPANY	LOCATION	REMARKS
PRYCE GASES, INC	Pryce Business Park JP Laurel Ave., Davao City	Accredited Auto- LPG Conversion Shop
DC ELECTRIC VEHICLE CORP.	Km. 10, Imstrade Compound Sasa, Davao City	Electric Vehicle Manufacturer

ALTERNATIVE FUELS & EMERGING TRANSPORT TECHNOLOGY ROADMAP

ENSURING STABLE SUPPLY OF ENERGY

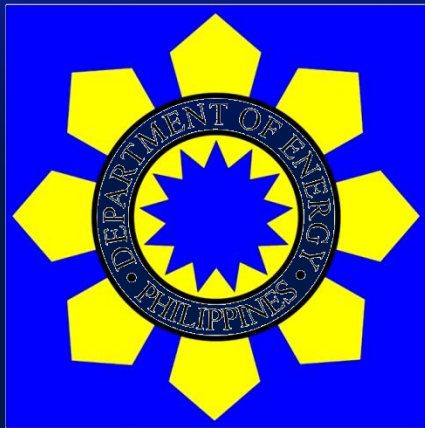
Accelerate the implementation of Alternative Fuels Program



Approximate Fuel Displacement:
Diesel (million liters)
Gasoline (million liters)
CO₂ reduction (Tons CO₂)

	2011	2012	2015	2020	2030
Diesel (million liters)	8	21	142	471	2,156
Gasoline (million liters)	176	178	210	270	438
CO ₂ reduction (Tons CO ₂)	124,543	137,063	317,050	771,995	2,715,926

BRIGHT NOW!
DO RIGHT. BE BRIGHT.



GO! Clean and Green...



www.doe.gov.ph

Auto LPG Program

Conversion Cost

- Php 24,000-28,000 for carburetor type
- Php 28,000-30,000 for EFI type
- Php 38,000-50,000 for Sequential Gas Injector (SGI)

Available Technology

1. Original Equipment Manufactured
2. Conversion
3. Repowering

Auto LPG re-fuelling

An LPG re-fuelling point can be as simple as this

