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## Energy Efficiency

Total GHG emissions are the product of population, economic activity per capita, energy use per unit of economic activity, and the intensity of energy use. Reducing economic activity to limit GHG emission is obviously unacceptable even to developed countries, let alone the developing or poor countries. Technological improvements are therefore being looked into as they can play an important role in reducing carbon emissions and in lowering the cost of those emission reductions. On the other hand, carbon intensity of energy can be reduced by substituting fossil fuels with renewable energy sources and through increases in energy efficiency.

The Department is fostering government-private sector partnership for the development and deployment of energy-efficient technologies and enhancement of energy conservation and management practices through its Energy Efficiency Program.

Furthermore, energy efficiency can reduce energy demand, lessen the environmental stress due to energy production and use, and will lead to competitive yet affordable production costs of goods and services. Improvement in energy use in major energy-consuming sectors would result in the deferment or the need for new power generation facilities, and eventually reduce greenhouse gas emissions and other pollutants resulting from energy production and utilization.

The energy efficiency program is focused on the major energy-intensive sectors. The major users of electricity are industrial sector (29.12%), residential (28.6%), and commercial (21%) while losses are at 15.2%. For the oil-consuming sectors, the biggest is power (37%), industrial (23%), and transport (13%).

### Education/Training and Information Dissemination

The Department on its own or in cooperation with the private sector conducts short courses on energy management under its Energy Management Training Program. The ultimate objective of the program is to institutionalize energy management and conservation in all energy-consuming sectors, such as schools, commercial and industrial establishments.

The information dissemination program includes distribution of technical publications, brochures, posters and stickers to promote energy conservation awareness. The Department also published building energy use guidelines and energy conservation series. Energy management videotapes are also maintained to showcase success stories in the implementation of energy conserving measures in equipment use and building operations.

### **Power Patrol**

In the wake of the power crisis in 1993, then President Fidel V. Ramos signed Executive Order No. 123 on 8 September 1993, "Institutionalizing the Committee on Power Conservation and Demand Management" and launched the information campaign dubbed as "Power Patrol" nationwide in January 1994. The campaign was to promote wise and efficient use of electricity using the tri-media of print, radio and television. It targets at least 10% reduction in power demand in the household, commercial and industrial sectors.

The program is disseminated through the conduct of regional and city launchings and conferences where regional and local chapters are formed to monitor and implement power conservation measures. An important feature of this campaign in the school/household sector is the teaching of electric meter reading and efficiency in electricity use to the Grades 5 & 6 students. They are given report cards to fill in their 9-week household electricity consumption and encouraged to implement power conservation measures within their households to lower electricity consumption without sacrificing productivity.

On the other hand, seminars on energy efficiency improvement are conducted for the commercial/industrial sector where energy conserving measures for equipment operation and technologies are discussed.

### **Road Transport Patrol**

Recognizing the fact that the transportation sector also consumes a lot of energy, a similar information campaign known as "Road Transport Patrol" was formally launched in April 1998 through Executive Order No. 472 - Institutionalizing the Committee on Fuel Conservation and Efficiency in Road Transport on 25 March 1998. Just like the Power Patrol, it aims to disseminate information on efficient utilization of fuel through the local chapters created for the purpose. The program, which targets a 5% fuel reduction by road transport users, will realize at least 800 MBFOE energy savings by the year 2000 and aggregate savings of 16.5 MMBFOE by 2009.

The Department is also conducting a study on Natural Gas Utilization in Transport to address the air degradation problem due to the use of conventional transport fuels like gasoline and diesel. The study is looking into the potential of compressed natural gas (CNG) as an alternative fuel to diesel in the transport sector to alleviate pollution problems in the metropolis.

### **Energy Utilization Monitoring and Evaluation**

The Department monitors, analyses, and evaluates the reports on energy consumption and production statistics of industrial, commercial, and transport establishments. Companies consuming more than one million fuel oil equivalent liters per year are required to submit quarterly energy consumption reports while those consuming more than two million FOEL are further required to submit annual energy conservation program and energy efficiency targets. This is to determine how the energy utilization performance and energy conservation activities of these companies, including programs and investments, have been implemented and improved over the years and how

these compare with the sectoral industry performance. A computerized database system is used to facilitate storage, retrieval and analysis of these energy consumption reports that become the basis for setting utilization standards. Monitoring visits are also conducted to verify data reported by the companies and to assist them in filling up the required reports.

### **Don Emilio Abello Award**

During the annual National Energy Week celebration, which is observed on the first week of December, all companies who have submitted energy consumption reports are evaluated to determine the recipients of the Don Emilio Abello Awards. The Awards are given to 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. These companies and energy managers serve as role models for ensuring productive and efficient use of energy.

Between 1992 and 1999, the combined savings of the awardees have reached PHP 3.4 billion. Last year alone, the total savings of the 20 companies cited reached PHP 550 million. Today, with world oil prices on a strong upswing once again, these companies are reaping the benefits of being insistent, and consistent, in avoiding wasteful use of energy. Savings of this magnitude could spell the difference for ensuring corporate survival especially at a time when companies are just emerging from the debilitating effects of the Asian financial crisis.

### **Energy Audit**

The Department provides advisory services such as energy audits to energy-intensive industries and establishments. This activity will help companies determine their energy use patterns and identify energy efficiency opportunities that will yield savings for them once these are implemented.

Depending on the complexity of the operating facilities and the needs of the company, either a boiler efficiency test, preliminary or detailed audit, or electrical system audit is conducted as well as a project engineering work to pursue a specific energy saving recommendation is undertaken.

The establishment of energy service companies (ESCOs) and other similar private groups are envisioned to increase opportunities for companies who would want to achieve energy efficiency but do not have the financial resources for the up front investment to achieve the same.

The energy efficiency measures and projects identified in these audits are expected to generate cumulative potential energy savings of 28.3 MMBFOE.

### **Energy Labeling and Efficiency Standards**

The energy efficiency standards for room air-conditioners (RACs), refrigerators/freezers and lamp ballast are currently enforced jointly by the Bureau of Product Standards (BPS) and the Association of Home Appliance Manufacturers (AHAM) to reduce energy consumption in the residential sector. The Department through its Fuels and Appliance Testing Laboratory implements the energy labeling and undertakes energy performance testing and certification of specific household appliances and energy equipment in the implementation of the energy standards and labeling program.

Last year, refrigerators and fluorescent lamp ballast were added to the energy labeling program of the Department dramatically expanding the coverage of the Government's effort to transform industries and Filipino homes into more energy-efficient units. The program entails investing in new technology and facilities and in revising and raising standards yet again. Still government and industry have all committed to the program. This is indeed a strong show of faith in the ability and unwavering commitment to provide only the best possible products and services to consumers. Labeling provides consumers the ability to choose what could give them the best value for their money; for choosing appliances that will generate savings for them, and equally important, empowering them to help in the global effort to mitigate adverse effects on the environment of wasteful use of energy.

**Room Air-conditioners**

The energy labeling program for window-type RACs was launched in October 1993. The label shows the Energy Efficiency Ratio or EER of the unit, which allow consumers to compare the efficiency and cost of operation of the different RAC models. The EER implementation schedule is shown in Table 8.

Studies conducted by the Department indicate that the RAC labeling program resu

