

## **HUMAN SETTLEMENT COUNTRY PROFILE**

### **PHILIPPINES**

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**Decision-Making:** The Philippines has promoted the development of sustainable human settlements primarily through the implementation of the Global Strategy for Shelter, and more specifically through the following initiatives: a) preparation of a revised National Plan of Action for 1994-1995; b) enhancing the roles of government, private sector, scientific community, and NGOs; c) focusing on shelter-related issues including urban management, energy, transport, poverty alleviation, health, and the environment; d) expanding the role of women in shelter policies; e) establishing a National database on shelter and services; f) addressing constraints in shelter production; and g) improving overall performance of shelters. In terms of planning for the development of human settlements, several policy guidelines were formulated to create a more humane and livable settlements. The Medium-Term Philippine Development Plan 2001-2004 included the Housing chapter entitled Enhancing Shelter Security. The MTPDP-Shelter outlined the continuing National Shelter Program's major policies, strategies, targets, legislative agenda for the medium-term for the housing and urban development sector.

In 2000, the National Urban Policy Agenda (NUPA) was completed. It contains broad policy sectors in the formulation and implementation of comprehensive plans, policies, programs and projects such as in the area of urban land use and housing. The NUPA likewise provided inputs in the formulation of the National Urban and Development Housing Framework, which contained the strategy for the development of environmentally sound and sustaining human settlements.

The National Urban Development and Housing Framework (NUDHF) 1999-2004 has identified the following policy strategies to address these concerns:

- a) Limit government's activities to (i) providing and ensuring that enough affordable land is available for housing purposes, (ii) ensuring that major infra and utility support are provided to recognized housing development areas; (iii) supporting housing finance systems, and (iv) providing mortgage guarantees.
- b) Split direct public resources 80/20 percent in favor of socialized housing. Promote rental housing options for the lowest 30 percent of income earners and provide incentives for the private sector to go into rental housing programs.
- c) Localize and decentralize urban and shelter policy. Initiate proactive local urban planning and decentralize housing delivery systems as a means to ensure more equitable distribution of shelter assistance.
- d) Favor community-led, self-help approaches to housing, including utilization of the Community Mortgage Program and other community-based or cooperative arrangements as well as non-traditional housing technology.
- e) Institutionalize maximum multi-sectoral participation, including venues for civil society, the private sector, NGOs, LGUs, and others, in formulating shelter policy.
- f) Give primary consideration to upgrading informal settlements. If relocation cannot be avoided, the resettlement area should be situated within the same city (in-city relocation) and relocation must be carried out to approved resettlement guidelines under the Urban Development and Housing Act.

More specifically, on the issue of providing security of tenure to informal settlers, the government's assistance comprise the following forms of interventions:

- a) Core housing which entails the acquisition and development of raw land and the construction of housing units;
- b) Sites and services development through the acquisition and development of raw land into serviced home lots;

- c) Resettlement assistance program for LGUs to assist local authorities to undertake resettlement of households in unsafe circumstances or right-of-ways (RoWs);
- d) Slum upgrading which involves the acquisition and on-site improvement occupied lands through the provision of roads, alleys, basic water and power services; and
- e) Medium-rise public and private housing which involves the construction of 3 to 5-storey buildings in the city as a joint-venture with the National Housing Authority (NHA) and/or private sector.

Another major document that espouses and supports this thrust is the National Framework for Physical Planning (NFPP). The NFPP contains policy guidelines for settlements planning that embraces approaches that favor effective integration of activities within and among settlements, allowing efficient production and movement of people and commodities through the provision of appropriate land, infrastructure and facilities. Likewise, it espouses policies that would provide access of the population to housing, education, health care, recreation, transportation and communication, sanitation, and basic utilities such as water, power, waste disposal and other services.

In pursuit of sustainable energy production and utilization, the Department of Energy (DOE) oversees the exploration, development and production of local energy sources and promotion and commercialization of new and renewable sources of energy to achieve the country's long-term self-sufficiency objective while implementing environmental safety and protection measures in all development projects. Further, on the energy sector's primordial objective of attaining sustainable, stable, secure, sufficient, accessible and reasonably-priced energy, the Philippine Energy Plan (PEP) was developed and updated by the Department of Energy (DOE). The 2004-2013 PEP Update affirms the energy sector's commitment to the macroeconomic goals of the Arroyo administration to promote balanced economic growth, alleviate poverty and foster a market-based industry.

### **Programmes and Projects:**

A. Providing Adequate Shelter for All: The UNFPA-supported "Population Policy Operations Project (PPOP)" implemented through the POPCOM. One of the areas identified to ensure operationalization and synchronization of policies was migration and urbanization. Several activities were undertaken by the project in relation with migration and urbanization such as the creation of an organizing committee on urbanization; the mobilization of a sectoral task force on migration and urbanization; the collection of and analysis of existing policies and studies on migration and urbanization; and the incorporation of population as a key consideration in land use planning.

Country initiatives focus on two major programmes: unsustainable patterns of production and consumption and developing national policies and strategies to encourage changes in unsustainable consumption patterns. New concepts on the production of low-cost housing were developed, paving the way to the development and accreditation of new technologies. Proponents were also encouraged to undertake research and development of new technologies for housing construction to make housing more affordable to a larger segment of the society.

The Community Mortgage Program (CMP) may be considered as the most successful government program for informal settlers in the country. It was established in 1999 and involves the organization of communities of informal settlers for land acquisition, land development and home improvement. The CMP and its associated initiatives (Slum Upgrading, Community Land Acquisition Support Program, Group Land Acquisition and Development (GLAD) and Cooperative Housing) are usually directed toward the resolution of land acquisition and tenure

issues. The National Housing Authority (NHA), local governments and NGOs act as conduits between the community association or cooperative on the one hand, and the financing institutions, such as the National Home Mortgage and Finance Corporation (NHMFC), Home Development Mutual Fund and other government and non-government institutions, on the other.

The implementation of the CMP at the community level and the ability to offer security of tenure to low-income families are often cited as the factors that have made CMP successful (ADB, October 2001). CMP is able to reach the target poor households, although on a limited scale, mainly because of its relatively small budget. Its subsidized loans made it an affordable program for the poor. For an undeveloped lot, beneficiaries can avail of a loan of P 30,000 at a highly subsidized interest rate 6.0 percent. For a developed lot, the maximum loan amount is P 45,000 also at 6.0 percent interest. In both cases, the loan repayment term is a maximum of 25 years. In the period 1993-1998, CMP accounted for an estimated 60 percent of “completed units of assistance” targeted by the National Shelter Program (NSP). For the period January 2001-August 2003, CMP benefited 49,635 households with an aggregate amount of P 1.784 billion.

CMP performance indicates its potential for reaching a large number of informal settlers who are in need of housing assistance. Compared with other Government housing programs, CMP has assisted the greatest number of families in the shortest period of time with the smallest loan fund utilization. The average loan amount was P 27,946 per family. The average monthly loan amortization of P 185 makes it the most affordable program for land acquisition needs of the poor (Table 1).

Table 1: Average Loan Package of Housing Programs

Government Housing Program	Average Loan Package (in pesos)
CMP	27,000
NHA-Resettlement	75,000
GLAD	77,414
HDMF-Unified Home Lending Program	140,090
HDMF-Expanded Home Lending Program	161,610
Special Projects	176,980
Retail Home Lending	180,000 and above

As of June 2000, the CMP collection efficiency ratio was 73.9 percent. In 2003, CMP collection efficiency ration averaged 72-80 percent. In terms of collection efficiency, CMP continues to perform better than the Unified Home Lending Program and other socialized housing programs, including those under the NHA whose CER averaged only 35 percent.

When President Arroyo launched the Strong Republic Housing Program on July 24, 2003 to refocus the National Shelter Program and give priority attention to the informal settlers, the CMP has remained as the main component of the Program.

The Strong Republic Housing Program (NSP) aims to provide shelter security for the poor and vulnerable groups. The Program essentially fast-tracked Presidential proclamations of idle government lands for socialized housing and established one-stop coordination centers (i.e. Kaagapay Centers) in proclaimed sites.

**B. Improving Human Settlement Management:** Philippines launched the Social Reform Agenda (SRA) on June 4, 1995 to enable people to have access to opportunities for undertaking sustainable livelihoods espoused under the agenda for change. The SRA is an integrated set of major reforms to enable the citizens to: a) meet their basic human needs and live decent lives; b)

widen their share of resources from which they can earn a living or increase the fruits of their labour; and c) enable them to effectively participate in the decision-making process that affects their rights, interests, and welfare. These reforms are perceived to enhance democratic processes. The SRA is composed of social reform packages providing programmes and services for marginalized sectors of society in the country's 20 poorest provinces. The enhancement of the SRA resulted in sharper definition of the social equity, economic, ecological, and democratizing components of the various flagship programmes. Increased participation by civil society and major groups has been promoted. To date a total of 34 provinces (43%), 9 cities (13%) and 274 municipalities (18%) have sectoral representatives in such local bodies.

To further institutionalize the Social Reform Agenda (SRA), the Social Reform and Poverty Alleviation Act was passed in 1997. This created the National Anti-Poverty Commission (NAPC) the lead agency for anti-poverty policymaking, advocacy and monitoring. The role of the civil society basic sectors, which included the urban poor with its shelter agenda, was strengthened and mainstreamed.

Under the Arroyo Administration, the Kapit-Bisig Laban sa Kahirapan (Linking Arms Against Poverty Program) Program was launched as the country's focused, accelerated, convergent and strategic program to reduce poverty. In KALAHARI, socialized is a major part of the human development services component.

Efforts to converge government and civil society activities to improve human settlements management saw the establishment of the Philippine Urban Forum (PUF) as a venue aimed at enhancing poverty alleviation and good urban governance.

The sector has also tapped Official Development Assistance (ODA) sources to support efforts to improve access to housing and urban development services. The ADB-assisted Development of Poor Urban Communities Sector Project (DPUCSP) is a \$54 million project that provides funds for LGUs outside Metro Manila for housing finance, urban development, and enterprise development.

To complement government efforts, the private sector and NGO have implemented urban development related projects such as: (i) the ADB-assisted Private Sector Partnerships for Urban Poverty Reduction in Metro Manila Project of the Philippine Business for Social Progress (PBSP); and (ii) the World Bank-supported Upscaling Urban Poor Community Renewal Scheme Project of the Partnership of Philippine Support Service Agencies (PHILSSA). These initiatives are aimed at developing various approaches for on-site community upgrading and urban renewal.

C. Promoting Sustainable Land-Use Planning and Management: Under the auspices of the DA, the membership of the Technical Committee on Land Use Matters (TeCLUM) has been expanded to include other attached agencies of the department. The TeCLUM formulated a mechanism for the improvement of ongoing review of applications for land conversion. In the Philippines, a National Land Use Act (NLUA) has been drafted in line with the goal of strengthening the existing process of identifying, determining, and evaluating alternative land use patterns to guide and enable appropriate land management and development. The Act was certified as priority environmental legislation and is currently being discussed in both houses of Congress. In the interim, strategies to implement measures on the rational conversion of agricultural lands are being developed.

The Philippines, through the Department of Agriculture (DA), implements the Key Production Area (KPA) Development approach to sustainable agriculture. The KPA approach is premised on

the need to optimize the use of limited land and water to provide for the food requirements of the growing population and foster “export winners” within the context of equitable and sustainable development. It encourages farmers and fisherfolk to produce specific products suitable to the land, water resources, and climate of specific areas in the country. The integration of environmental concerns is being implemented through policies and programmes harnessing appropriate, cost efficient and environment-friendly strategies and technologies to satisfactorily meet both long-term economic and ecological needs. The country has adopted an ecological approach to crop cultivation through the following: Integrated Pest Management (IPM) which was introduced in 1993. The programme, known as “Kasaganaan Sakahan at Kalikasan” or “KASAKALIKASAN” represents the government’s commitment towards promoting sustainable agriculture and rural development; Soil conversion and management. Appropriate land use management systems and soil conservation techniques have been developed to minimize land degradation, indiscriminate conversion, and consequent deterioration of land productivity.

In 1993, the ARC framework was launched. This is DAR’s contribution to the human settlement development in the country by improving the land tenure of agrarian reform beneficiaries (ARBs), providing the support services and build-up capability of ARBs in coordination with other CARP implementing agencies (CIAs) and the foreign donor community.

Assistance given to ARBs by Foreign Assisted Projects includes physical and non-physical infrastructure support service designed to lay the foundation for a sustainable growth in the ARCs with focus on the development of the social and economic well being of the farmers. The FAPS intervention has six common major components:

1. Physical Infrastructure
2. Community and Institutional Development
3. Agricultural Productivity and Rural Enterprise Development
4. Basic Social Services
5. Gender and Development
6. Land Tenure Improvement

The implementation of these components places the well-being of the ARBs at the center of development concerns and with these in place, the productive potential of ARBs can be unleashed to serve not only the interests of the ARCs but the areas adjacent to these communities as well.

In 1997, the Department of Agriculture pursuant to RA 8435, known as Agriculture and Fisheries Modernization Act of 1997, identified Strategic Agricultural and Fisheries Development Zones (SAFDZs) to ensure that all sectors of the economy and all regions of the country shall be given optimum opportunity to develop through the rational and sustainable use of resources peculiar to each area in order to maximize agricultural productivity, promote efficiency and equity and accelerate the modernization of the agriculture and fisheries sectors of the country. It also implements programs on appropriate land use management systems, soil conservation and management to promote rural development and sustainable agriculture. It has developed soil conservation techniques to minimize land degradation and consequent deterioration of land productivity.

D. Promoting the Integrated Provision of Environmental Infrastructure: water, sanitation, drainage and solid waste management: The Housing and Urban Development Coordinating Council (HUDCC), the lead agency for shelter and urban development concerns, is embarking on a proposed Urban Shelter and Community Infrastructure Project (USCIP) with World Bank assistance as a Learning and Innovation Loan. The \$5 million USCIP seeks to pilot-test the

upgrading and development of community infrastructures: access road, water, power, sanitation, etc. in unserved informal settlements in 5 provinces in the country including Metro Manila.

See also under Freshwater and Sanitation Profiles.

E. Promoting Sustainable Energy and Transport Systems in Human Settlements: The New and Renewable Energy (NRE) Programme consists of major locally-funded and multilateral assisted projects and activities and currently supports the 100% barangay (village) electrification and the addition of about 600MW grid-connected NRE-based power capacity in the medium term. NRE Systems (NRES) total 298 demonstration projects under the Affiliated Non-Conventional Energy Center (ANEC) Programme. Other demonstration projects also installed include the solar home systems, photovoltaic (PV) streetlights, PV refrigerators, PV water pumping stations, biogas systems, micro-hydro systems and windmills for water pumping. The Area-Based Energy Technology (ABET) conducted consultations in the provinces of Ifugao, Apayao, Abra, Batanes and Biliran to raise awareness of the local people on the techno-economic viability of NRES. The Malampaya Deep Water Gas-to-Power project achieved a historic milestone and engineering feat with the completion and tow-out of the 95,000-ton concrete gravity structure (CGS) from the Subic Bay Freeport to Palawan. Higher production from geothermal facilities could be attributed to the completion of the Leyte-Luzon interconnection project, commissioning of the 48.25 MW Mindanao II geothermal plant and the stability of existing geothermal facilities in the country. The commissioning of Bakun I hydro power plant increased the share of hydro in the generation mix. The Water Inventory Project was conducted in 1995 and involved the identification and assessment of 25 mini-hydro sited in the country.

The Metro Manila Air Quality Improvement Sector Development Program, a loan project funded by the Asian Development Bank (ADB), with a duration from 1999 to 2002, aims to promote policy reforms to improve air quality through the abatement of mobile and stationary sources of air pollution. It focuses on the Metro Manila air shed, the location of the main concentration of air pollution. The program has the following objectives: Mitigate air pollution from mobile sources; Mitigate air pollution from stationary sources; Improve fuel quality; Reduce emissions from vehicular use; Reduce traffic congestion and improve traffic flow; Strengthen ambient air quality monitoring, evaluation and reporting; Intensify public awareness; Monitor coordination and implementation of Air Quality Action Plan; Strengthen capacity of institutions involved. Further, government's efforts in improving air quality through the abatement of mobile and stationary sources of pollution is stipulated in R.A. 8749 or the "Philippine Clean Air Act of 1999".

F. Promoting Human Settlement Planning and Management in Disaster-Prone Areas: Management of hazards, disasters and risks is also among the areas of concern. The establishment and operation of centralized waste handling is in progress. This is complemented by the development of training modules in the field. Other on-going R&D activities include: the development of efficient and clean technologies to reduce industrial wastes (such as the development of appropriate methods for water pollution control); utilization of renewable energy sources; strengthening of solid waste management; and air pollution quality. Private firms are increasingly adopting voluntary environmental guidelines such as the Philippine Business Charter for Sustainable Development (PBCSD), Responsible Care Programme or the International Standards Organization ISO 14000, and standards set by the Department of Environment and Natural Resources (DENR). The local chemical industry, for instance, has adopted the Responsible Care Programme as a means of minimizing risks and potential adverse effects associated with their operations. The recent adoption of the programme by the chemical Industries Association of the Philippines, also known as the "Samahan sa Pilipinas ng mga

Industriyang Kimika (SPIK)”, is a commitment to continually improve their respective companies’ performance regarding health, safety, and environmental aspects of their operations.

The Core Shelter Assistance Project is one of the interventions under the Disaster Preparedness and Mitigation Program of the Department of Social Welfare and Development. It aims to provide disaster victims, especially the poor, with structurally-sound core shelters. It involves, among others, the formation of work teams of five families per group which will pool their labor and resources for the construction of their houses.

**Project Components:**

1. Social Preparation/Community Organization
2. Food for Work
3. Technical Assistance in House Construction
4. Financial/Cash Grant

G. Promoting Sustainable Construction Activities: No information available.

H. Promoting Human Resource Development and Capacity-Building for Human Settlement Development: No information available.

**Status:** The MDG targets significant improvement in the lives of at least 100 million slum dwellers to be achieved by 2015.

In the Philippines, the present environmental conditions in urban settlements are alarming. It is characterized by poor quality housing, overcrowding, inadequate access to basic services, insecure tenure and increased risks to public health. The lack of tenure itself delays connection to municipal infrastructure services, leading to suppressed property values, underutilized capital assets, poor living conditions, and high incidence of illness. Data shows that the Philippines is one of the most highly urbanized countries in the developing world, with an average annual urban growth rate of 5.14 percent between 1960-1995. Its urban population increased from 8 million in 1960 to 39 million (or 7.5 million households) in 2000. At present, about 52 percent of the total population live in urban areas. There is an estimated 1.4 million informal settler households nationwide, which accounts for nearly one-fifth of the urban population.

Hence, improving access to affordable shelter and formal land tenure will enhance the living conditions in informal settlements and contribute immensely to the goal of poverty eradication.

*Social Reform Act:* Two years after the initial implementation, the SRA was expanded to include an ecosystem perspective, emphasizing four dimensions of poverty where reform can have the greatest impact: On social equity, by providing the poorest of the poor with access to basic services for survival; on economic prosperity, by ensuring that the basic sectors have access to productive assets that allow them to contribute to National growth; on ecological security, by incorporating the parameters of sustainable development in the management and utilization of natural resources; and on responsible and responsive governance, by making structures and processes democratic to allow the meaningful participation of key stakeholders in policy and decision-making. The National Anti-Poverty Summit drew-up poverty reduction targets at the regional level to achieve a national target of 30% by 1998. It also resolved to expand the coverage of the SRA from an initial concentration on 20 priority provinces to an additional 57 provinces and 65 cities.

*Shelter:* The improved overall performance of the shelter sector is characterized by the following:

a) increased access by the poor to land, finance, infrastructures, and building materials; b) strengthened capability of local authorities for improved management; c) regularized and upgraded slums and squatter settlements; d) improved rural living conditions; and e) private sector involvement in shelter and service production for the middle and lower income groups.

*Energy:* In terms of the power generation mix, the share of indigenous energy showed an increasing trend primarily due to the higher share of geothermal energy (25% in 2000 from 21% in 1998). The share of geothermal energy rose from 8,914 gigawatt-hours (GWh) in 1998 to 11,445 GWh in 2000. Hydro's contribution also increased from 5,066 GWh in 1998 to 7,152 GWh in 2000. As a result, the share of indigenous energy to the total generation mix expanded from 38.9 percent in 1998 to 46.9 percent in 2000. New and Renewable Energy Systems (NRES) contributed 30% to the country's energy consumption. As exploration and development works progress in the Malampaya gas-to-power project, the DOE assessed more natural gas supply and demand prospects.

**Capacity Building, Education, Training and Awareness-Raising:** The recently completed USAID-funded "Philippine Renewable Energy project" introduced and conducted appreciation trainings on the software HOMER and VIPOR which are basically simulation models for the conduct of NRE-based village electrification projects. The ADB-ADTA Project also involves the conduct of trainings for key stakeholders on rural electrification and NRE in aspects such as NRE technologies, project management, policy development, sustainable development, community organizing and NRE system repair and maintenance.

**Information:** The PNOC/Winrock/US NRE Laboratory (NREL) activity developed the Philippine Wind Atlas useful in developing wind projects. Similar activities under USAID's PREP, implemented by NREL, have developed a database on solar, biomass and micro-hydro resources. The planned UNDP-GEF Project shall establish the Market Service Center that will manage all available NRE information in the country and to provide support to private entities in developing NRE Projects. From 1992-2000, the combined savings of the Don Emilio Abello awardees have reached PhP3.48B. The award is 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. Also, the DOE has two major campaigns in energy efficiency: the Power Conservation and Demand Management (Power Patrol) and the Fuel Conservation and Efficiency in Road Transport (Road Transport Patrol).

POPCOM developed the framework for the National Population Database Information System (NPDIS), which forms part of the POPCOM Information System. The NPDIS will track down and monitor the progress of its demographic and socio-economic indicators of the International Conference and Population and Development (ICPD); policy, program and project implementation including the accounting of population program expenditures and analysis of these data and information to recommend appropriate policy and program reforms.

The Department of Energy on the other hand has the following information systems initiatives:

1. Renewable Energy

- a) Geothermal: Geoscientific investigation continued in the different parts of the country. A collaborative undertaking with the Department of Tourism (DOT) and the Philippine Institute of Traditional and Alternative Health Care (PITAHC), a subsidiary of the

Department of Health (DOH), for a project on Health Tourism was initiated in 2001. The project provides an opportunity for the promotion of geothermal resources for spa resort development. Initial results of the evaluation shortlisted prospects in mainland Palawan, Coron, Pangasinan and Batangas as promising sites. In addition, the promotion of the geothermal potential of the country is likely with the success of the Regional Geothermal Database Compilation Project of the Coordinating Committee on Coastal and Offshore Geoscience (CCOP) in East and Southeast Asia.

To further promote geothermal energy development, a geothermal bid round is likewise envisioned for the sector. The geothermal bid round, just like the PCR-1, is a competitive public contracting system which intends to improve and streamline the procedural requirements for service contract applications and in the process encourage investors to look into geothermal exploration and development in the Philippines.

- b) Hydropower: For the promotion of hydropower projects, several activities were undertaken including the conduct of feasibility studies on the 29-MW Timbaban hydropower project in Aklan (Panay) and the 18-MW Catuiran hydropower project in Mindoro. On the other hand, the development of this resource in the countryside was given impetus with the assistance of the Japan International Cooperation Agency's (JICA) contribution of two micro-hydropower projects in Kalinga. The identification of 40 potential micro-hydropower sites in Northern Luzon was also funded by JICA.
- c) Biomass, Solar and Wind: The National Renewable Energy Laboratory (NREL) of the US Department of Energy conducted an assessment study on the Philippines' biomass, solar and wind resource potential. The NREL study presents the biomass, solar and wind resource analysis and mapping results for the Philippines. The maps identifying these resources were created using a Geographic Information System (GIS) – based program developed by NREL. The mapping program, which combines high-resolution terrain data and formatted meteorological data, is designed to highlight areas possessing a favorable resource where specific energy projects are likely to be feasible. The entire Philippines archipelago was mapped as part of this study. This is the first detailed national-scale energy resource atlas for a developing country, and one of the first in the world.

## 2. Fossil Fuels

- a) Oil and Gas: In March 2002, the DOE completed the PhilPRA Project Study with the assistance of the Norwegian Agency for Development Cooperation (NORAD). The study produced an updated map of the 16 sedimentary basins in the country and established an inventory of the country's petroleum resources – oil, natural gas and condensate – totaling about 9.0 trillion BFOE.

As a result of this study, two Geophysical Survey Exploration Contracts (GSECs) were awarded in the middle of the year, namely GSEC 101 to UK-based Sterling Energy Ltd. Partnership in June 2002, and GSEC 102 to Japan Petroleum Exploration Co. Ltd., Company (JAPEX) in July.

The Philippine Petroleum Exploration Investment Promotion (PhilPRO) constitutes the second phase of the PhilPRA project. The PhilPRO involves the promotion through international road shows of the PhilPRA results to interested foreign oil companies for possible investments. Among the results of the PhilPRA project are various technical maps that will aid investors in selecting areas for investments.

The DOE has likewise continuously improving and updating its website ([www.doe.gov.ph](http://www.doe.gov.ph)) to keep the various energy publics updated on the sectoral developments and project implementation status. The DOE website has links to its attached agencies, namely: the Philippine National Oil Company (PNOC) and subsidiaries, the National Power Corporation – Strategic Power Utilities Group (NPC-SPUG), National Electrification Administration (NEA), Energy Regulatory Commission (ERC), Power Sector Assets and Liabilities Management Corporation (PSALM), and the National Transmission Company (TRANSCO) for specific details and project development.

**Research and Technologies:** Aggressive research and exploration initiatives were undertaken to harness the country's indigenous resources. Developing indigenous and renewable energy sources for energy self-sufficiency is a continuing task in the energy sector. Data from the Philippine Atmospheric, Geophysical and Astronomical Organization (PAGASA) showed that the national average mean wind power density is about 31 watts per square meter ( $W/m^2$ ). A wind resource analysis and mapping study showed that the country has over 10,000 square km of windy land areas with good to excellent wind resource for utility-scale operations and village power applications, particularly in the northern and central regions. A pilot project entitled "Study on Natural Gas Utilization in Transport" looks into the use of natural gas as an alternative fuel to diesel for the transport sector. Jointly conducted by the DOE, Department of Science and Technology (DOST), and PNOC, the project has successfully converted an Isuzu diesel vehicle to use compressed natural gas (CNG) for fuel. The country's first CNG station was commissioned last March 2000 in PNOC-EC's gas power plant compound in Echague, Isabela. The government, through DOE, continues to finance the implementation and strengthening of UP Solar Laboratory and the UPLB Biomass Laboratory to further enhance the capacity of NRE sector in NRE system local manufacturing and fabrication through conduct of performance testing and evaluation. The proposed UNDP-GEF Full Project shall also assist the private enterprises in manufacturing and packaging NRE products and systems.

**Financing:** The energy sector offers a wide array of investment opportunities for private sector participation. For the 2004 Plan Update, investment requirement for the implementation of various energy programs and projects over the ten-year planning period is estimated at Php 1.4 trillion.

**Cooperation:** GOP, through DOE, undertakes various bilateral and multilateral cooperation activities in the field of NRE. Ongoing cooperation includes agreement with government of UK, India and Hawaii which focus on NRE promotion and technology transfer. DOE is also an active participant to NRE TWG of ASEAN and APEC. Technical Cooperation/Assistance Programs on mini and micro-hydropower development were secured from the PG-SEP, UNDP, and JICA Program. The DOE implements energy conservation and efficiency projects such as conduct of workshops and research with the New Energy and Industrial Technology Development Organization (NEDO), US Department of Business, Economic Development and Tourism, and the U.S. Asia Environmental Partnership Program (USAEP).

Further, the DOE actively participated in various international cooperation activities aimed at sharing of knowledge and experiences as well as transfer of technologies. The areas of cooperation include energy security, energy pricing and energy sector reforms, among others, to wit:

- APEC Energy Cooperation

APEC Energy Cooperation is a collaboration of the 21 member economies comprising the Asia Pacific Economic Cooperation (APEC) which is primarily consisted of two (2) major undertakings, namely the APEC Energy Minister's Meeting (EMM) and the APEC Energy Working Group (EWG). The APEC-EMM provides political guidance and momentum for the APEC EWG in the implementation of measures consistent with the goals set by the APEC Leaders. On the other hand, APEC EWG is a voluntary, consensus-based regional fora, established in recognition that energy is an essential input to economic activity and a major component of international trade.

- ASEAN Energy Cooperation

ASEAN Energy Cooperation is comprised of 10 ASEAN countries which aim to strengthen the region's capability in addressing global and regional issues on energy by enhancing the coordination of energy strategies of the member countries. This initiative is guided by the Governing Council composed of the Senior Officials on energy of the ASEAN countries and a representative from ASEAN secretariat.

- Asia Cooperation Dialogue

Asia Cooperation Dialogue (ACD) is initiated by Thailand which officially took off during the inaugural ACD Foreign Ministers Retreat in Cham-am, Thailand in June 2002. It is composed of 17 member countries with the following objectives: (i) to provide a non-institutionalized arrangement for the exchange of ideas and experiences intend to create synergy among bilateral, multilateral, sub-regional and regional strategic partnerships in areas of common interest; (ii) to improve national and regional capabilities to make Asia a strong partner for other regions; and (iii) to serve as a forum for Asian countries to exchange views on international trend and development.

- Bilateral Cooperation on Energy with Australia, Brunei, Iran, Japan, Korea, Malaysia, Germany, Romania, Russia, Spain, Bharain, Saudi Arabia, United States of America and Kazakhstan

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