

Renewable Resources and Energy in the Philippines



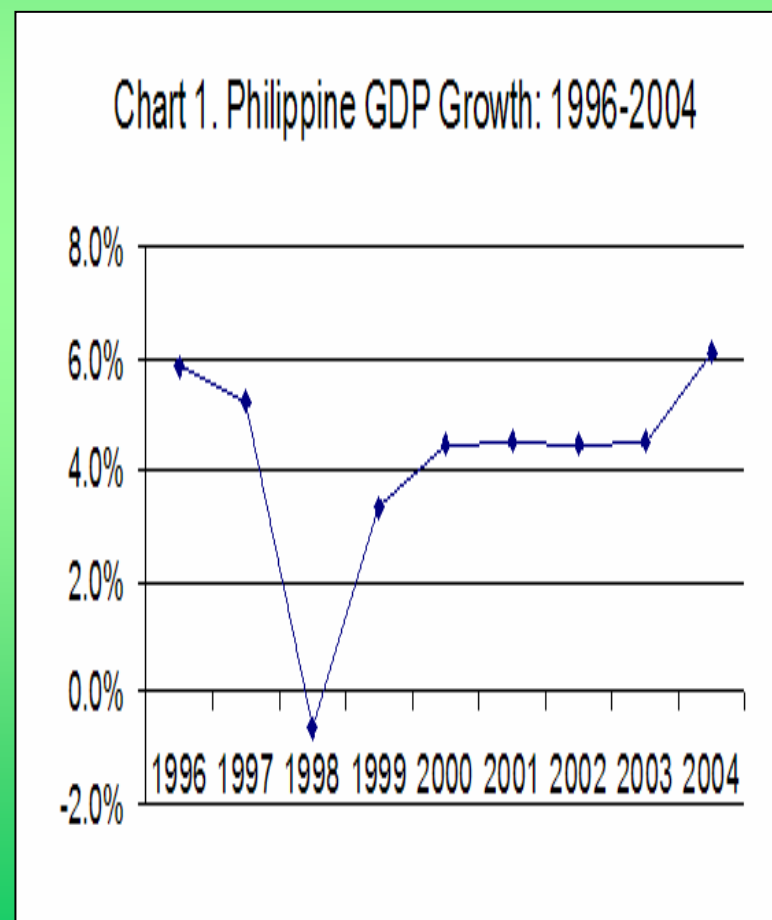
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President/Founding Member

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Introduction

- GDP in the Philippines grew 4.7% in 2003
- 6.1% in 2004 reaching the highest in 15 years
- Renewable Resources and Energy Programs play a vital role in the economic growth and development





Renewable Resources and Energy

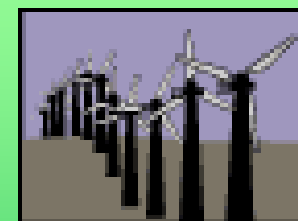


- Donor organizations, (like the World Bank, the Asian Development Bank, InWent of Germany, UNIDO, UNEP, UNDP) have renewable resources and energy in their platform programs
- Rapid population growth rate has profound impacts on the economic and environment development, which in turn affects poverty in the country



Renewable Resources and Energy

- ***Renewable Resources and Energy*** need to be priority issues in the economic development
- There are about eighty four million Filipinos now – thus the medium term planning has to consider the following issues





Renewable Resources and Energy

- The *per capita energy consumption* across the country is rising
- There is a *gap in the demand and supply of energy, particularly on the renewable resources*
- The country faces *problems in rural and urban electrification* and a sizeable segment of the population will need traditional and non-traditional biomass-based energy sources



Renewable Resources and Energy

- The Philippines used to be more than 60 percent dependent on crude oil as a primary source of energy, but this has been brought down "to just 37 percent because it has been using indigenous sources of power that are abundant in the country such as geothermal, natural gas, wind and now ethanol
- It is now importing less than 40 percent for energy but for cars it is still importing 99 percent for gasoline and diesel so it is still very dependent on importation

Source: The Visayan Daily Star





Renewable Resources and Energy

- The legislative body has crafted a renewable resources and energy bill mandating the use of bio-ethanol as transport fuel
- The bill calls for mandating the use of a minimum of 5 % bio-ethanol with all gasoline for motor fuel within 2 years from the passage of the bill into a law, and 10 % by the end of the 4th year.



Renewable Resources and Energy

- The bill will also mandate the use of bio-ethanol as a gasoline mix in order for it to succeed as the country's answer to the rising costs of imported fuel.
- Last May 30, 2005 -- President Gloria Macapagal Arroyo launched the national bio-ethanol program of the Philippines at rites in San Carlos City to mark the signing of contracts for a P1.5 billion ethanol and power generation plant, which will be the first in the country

Source: The Visayan Daily Star



- San Carlos Bionergy Inc. will build, own and operate the integrated 100,000 liter ethanol distillery and 9 MW power cogeneration plant in the San Carlos Agro-Industrial Economic Zone
- Five megawatts of the power produced will be sold, while 4 percent will be used for the operation of the plant
- The by-products of the ethanol will be used to produce carbon dioxide for beverages
- A memorandum of support and cooperation between the San Carlos City government and San Carlos Bionergy Inc. for the construction and operation of the pioneering integrated mill was signed in the presence of the President

Source: The Visayan Daily Star



- A cane supply agreement between Valmayor Hermanos Ledesma-Gamboa and the GH Farmworkers Multipurpose Coop for the supply of 200,000 tons of the 300,000 tons needed by San Carlos Bionergy Inc. was also signed
- San Carlos Bionergy Inc. will supply Petron with 25 million liters of ethanol a year, and with the Victorias-Manapla-Cadiz Rural Electric Service Cooperative to provide it with 5 megawatts of the power it produces
- The pioneering plant will sell its entire annual production of 30 million liters of ethanol to Petron to be used as an additive to transport fuel. Petron is prepared to buy more ethanol should other plants be put up.
- The San Carlos Bionergy Inc. aside from producing ethanol will generate 9 megawatts of power a day, of which 5 to 6 megawatts will be sold to VRESCO

Source: The Visayan Daily Star





- Sugarcane has been identified as the least costly to convert to ethanol
- 200,000 has. of new areas nationwide have been identified to expand sugarcane production to meet the expected demand of ethanol
- The San Carlos venture is a recipe for success for the ethanol program, hopefully others will follow
- The San Carlos ethanol and energy plant has the potential to become the largest producer of organic fertilizer in the country, using vinasse with mud press and bagasillo, which can reduce fertilizer costs by around half.
- It can also be the largest producers of CO₂ in the country, a gas used for carbonation and refrigeration

Source: The Visayan Daily Star

Renewable Resources and Energy

- National Development Company will embark on a second ethanol project to complement the first ethanol project
- It assist the government's *National Fuel Ethanol Program* by providing equity investments to investors
- The 2nd ethanol project will cover 20,000 hectares of public agricultural land ; NDC will put up 30% of the equity, while the rest would be financed by loans (source:Philippine Star,June 6,2005)



Renewable Resources and Energy

- Chemrez, a wholly-owned Filipino firm put up the country's first biod-diesel-dedicated manufacturing plant in Asia worth P2.2 billion(US\$4million+-) first phase will be completed by March 2006; and expand later on
- Would produce 60,000MT per annum initially and expand to 1.2 million liters to 5 million liters
- Currently distributes bio-diesel to 3 of the country's small oil players
- It is made from tran-esterified coconut oil(CME)
- Selling price is P125/liter (US\$4+-) and should decrease if the government will impose oil firms to use at least 5 % blend of bio-coco-diesel in their diesel products

source:Philippine Star, December 3, 2005





Main Constraints/ Problems

- ✓ Governments Policies
- ✓ Lack of Funds
- ✓ Raising Awarenesss
- ✓ Capacity-Building
- ✓ Capital Intensive
- ✓ Integrated Programs
- ✓ Transfer of Techonologies





Renewable Energy Programs Being Developed

- ✓ Solar thermal
- ✓ Wind energy
- ✓ Photovoltaic
- ✓ Biomass
- ✓ Geothermal
- ✓ Small hydro power
- ✓ Energy from waste
- ✓ others





Asian Development Bank's PREGA

The Netherlands Cooperation Fund on Promotion of Renewable Energy, Energy Efficiency and Greenhouse Gas Abatement - - PREGA

Overview

✓ The main objective of PREGA is to promote investments in renewable energy, energy efficiency and greenhouse gas abatement technologies in developing member countries that will

- ✓ Increase access to energy services by the poor
- ✓ Realize other strategic development objectives





- ✓ Help reduce greenhouse gas emissions
- ✓ To achieve this, PREGA will
- ✓ Develop capacities of national policymakers, technical experts, and staff of financing institutions for promoting renewable energy, energy efficiency and greenhouse gas abatement
- ✓ Support policy, regulatory, and institutional reforms, including removal of energy pricing distortions
- ✓ Facilitate access to private sector financing



PREGA covers these 15 developing member countries:





Challenges

- ❖ Provide energy to large population in the developing countries
- ❖ Simultaneously reducing greenhouse gases emissions but addressing barriers
- ❖ Conform to the Kyoto Protocol and other international programs





☐ **Philippines: Undertaking elaborate studies to assess the potential of wind, solar and other Renewable Energy forms.**

Present programs include:

- Southeast Asia's first power-generating 25-megawatt wind farm in Bangui Bay northwest tip of Luzon island costing US\$ 38 million using 15 wind turbines. It lies on a 4 kilometer-stretch of shoreline
- 15,100 Photovoltaic Solar Home Systems (SHS) in 8 regions in the Philippines. This is sponsored by the Netherlands government with a financial grant of EURO 5.591 million



□ Philippines:

- **Photovoltaic solar home systems** worth about US\$1 million undertaken by Mirant Philippines together with the USAID for 1,300 homes in 42 community centers in Mindanao. This will also include 84 solar-powered streetlight
- **Bioenergy using bagasse** in the Visayas Island. It is a 30-MW power plant using bagasses, a sugar cane by-product.
- **The ADB PREGA** will undertake feasibility studies similar to the other least developed countries



Conclusions and Recommendations

- ❖ increase access to energy services by the poor
- ❖ realize other strategic development objectives
- ❖ to encourage investments in renewable energy, energy efficiency and greenhouse gas abatement technologies in developing member countries
- ❖ help reduce greenhouse gas emissions



Conclusions and Recommendations

- ❖ develop capacities of national policymakers, technical experts, and staff of financing institutions for promoting renewable energy, energy efficiency and greenhouse gas abatement
- ❖ support policy, regulatory, and institutional reforms, including removal of energy pricing distortions
- ❖ facilitate access to private sector financing

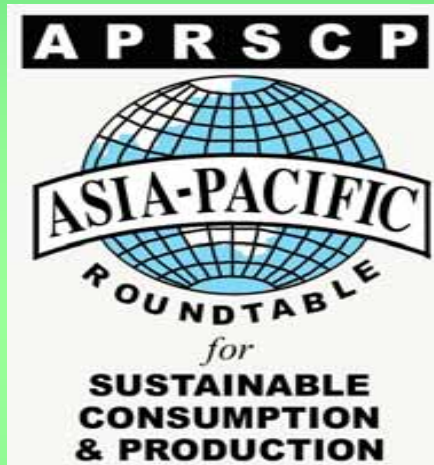


(l-r seated)Christine T. Whitman, former Adm. US-EPA; Jocelyn Dow Director, Env & Dev; H.E. Mr. Ryutaro Hashimoto, former Prime Minister of Japan; UNSG Kofi Annan; Dr. Olivia laO' Castillo, Chair-APRSCP ; Judith Rees, Dep-Dir, London School of Eco & Pol Sci; (l-r-back) Gérard Payen, Former Snr Exe-VP, Suez, Paris; H.E. Mr. Mahmoud Abou Zeid, Min of Irrigation & Water Resources of Egypt; H.E. Mr. Ronnie Kasrils, Min for Water Affairs & Forestry of South Africa; Margaret Catley-Carlson, Chair of Global Water Partnership (GWP); Antônio da Costa Miranda Neto, Dir, Brazil International (ASSEMAE); Ms. Uschi Eid, Parliamentary Sec of the Fed Min for Eco Cooperation & Dev of Germany; Mr. David Boys, Utilities & Pension Funds, Public Services Int; Eric Odada, Dir-Dept of Geology, Univ of Nairobi, Nairobi; Manuel Dengo, Sec of the SG Adv Brd on Water & Sanitation; Under-Sec-Gen for Eco & Soc Affairs, Mr. José Antonio Ocampo; Yordan Uzunov, Former Dep Min of Environment, Bulgaria





Thank you very much!



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