

**DEVELOPMENTS IN THE
PHILIPPINE ENERGY SECTOR**
A Vision for the Future of Philippine Energy

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Department of Energy



22 August 2002

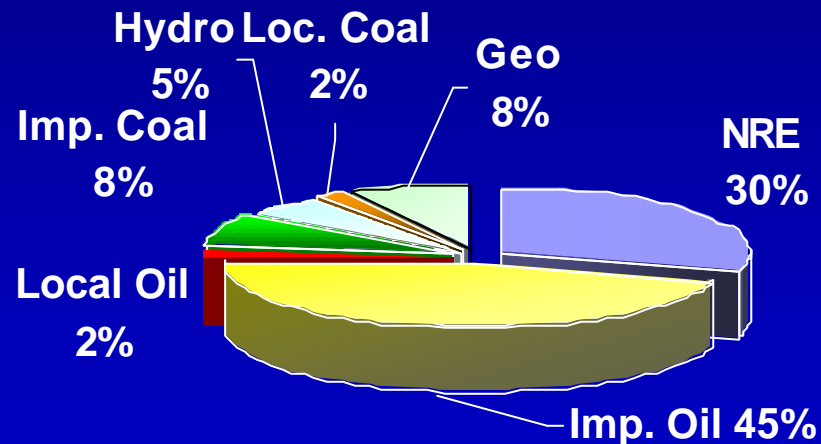
OVERVIEW OF THE PHILIPPINE ENERGY SECTOR



INDUSTRY BACKGROUND

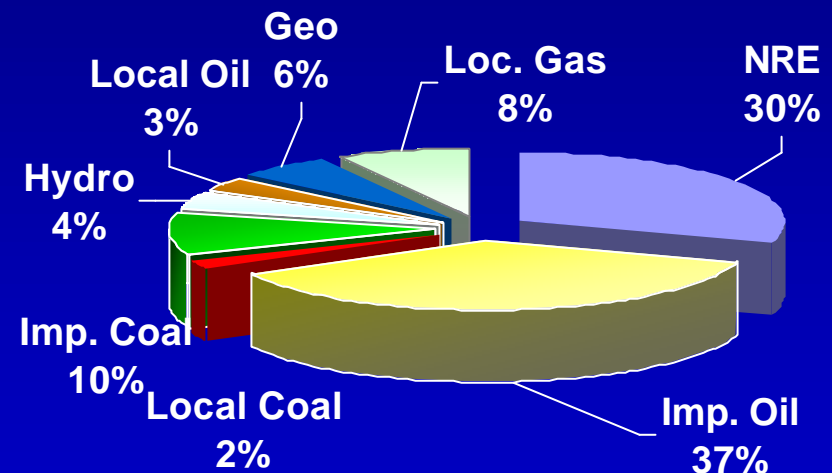
Overview of Philippine Energy Sector

Primary Energy Mix Y2000



Total Energy: 243.4 MMBFOE
Indigenous Energy Level: 45%

Primary Energy Mix Y2002



Total Energy: 266.9 MMBFOE
Indigenous Energy Level: 52%



PETROLEUM SECTOR

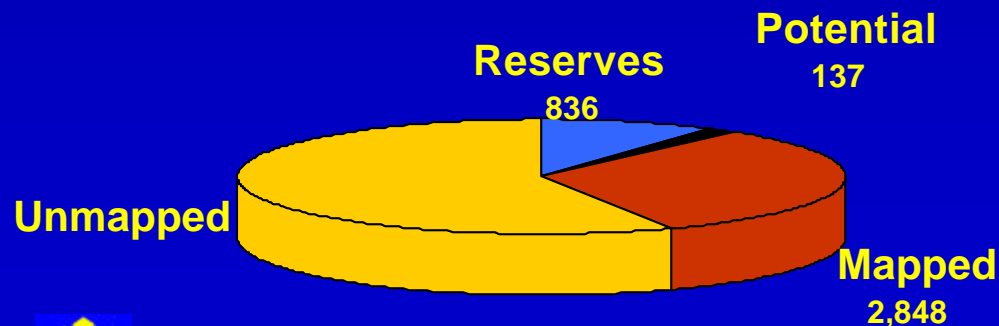


UPSTREAM DEVELOPMENTS

Vast Potential in Hydrocarbons

- Recent studies show hydrocarbon resource potentials larger than previously projected
- 16 sedimentary basins representing an area of over 700,000 sq.km.

Total Resources (million bbl o.e.)



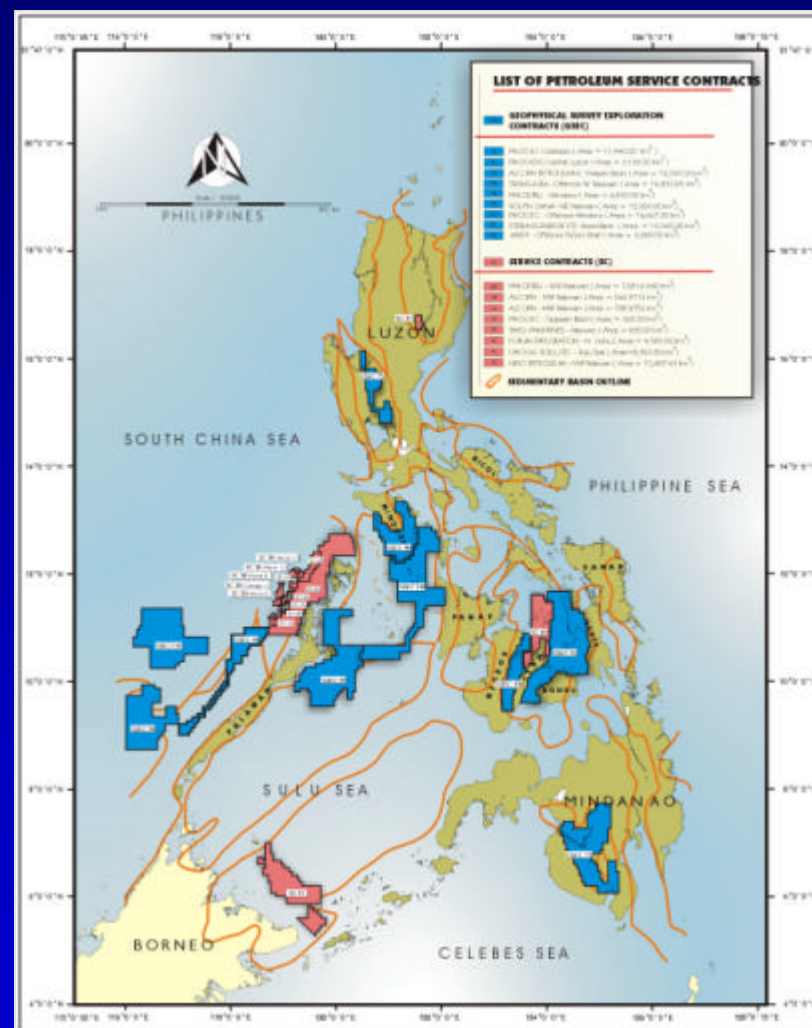
Sedimentary Basins



UPSTREAM OIL & GAS SECTOR

Petroleum Contracts

- Total Service Contracts awarded, 7
- Geophysical Survey and Exploration Contracts (GSEC) – 9
- Farm-in of Shell into South China Resources, Inc. for an offshore oil exploration project in Northeast Palawan covered by GSEC-99
- Awarded GSEC 101 in June '02 to Sterling Energy Limited Partnership
 - ◆ Covers 1,036,00 ha. near Reed Bank offshore Philippines
 - ◆ First foreign exploration in the last 4 years
- Recently awarded GSEC to Japan Petroleum Exploration Co., Ltd. (JAPEX)
 - ◆ Covers 328,000 ha. Offshore of Tañon Strait



UPSTREAM DEVELOPMENTS

Malampaya Developments

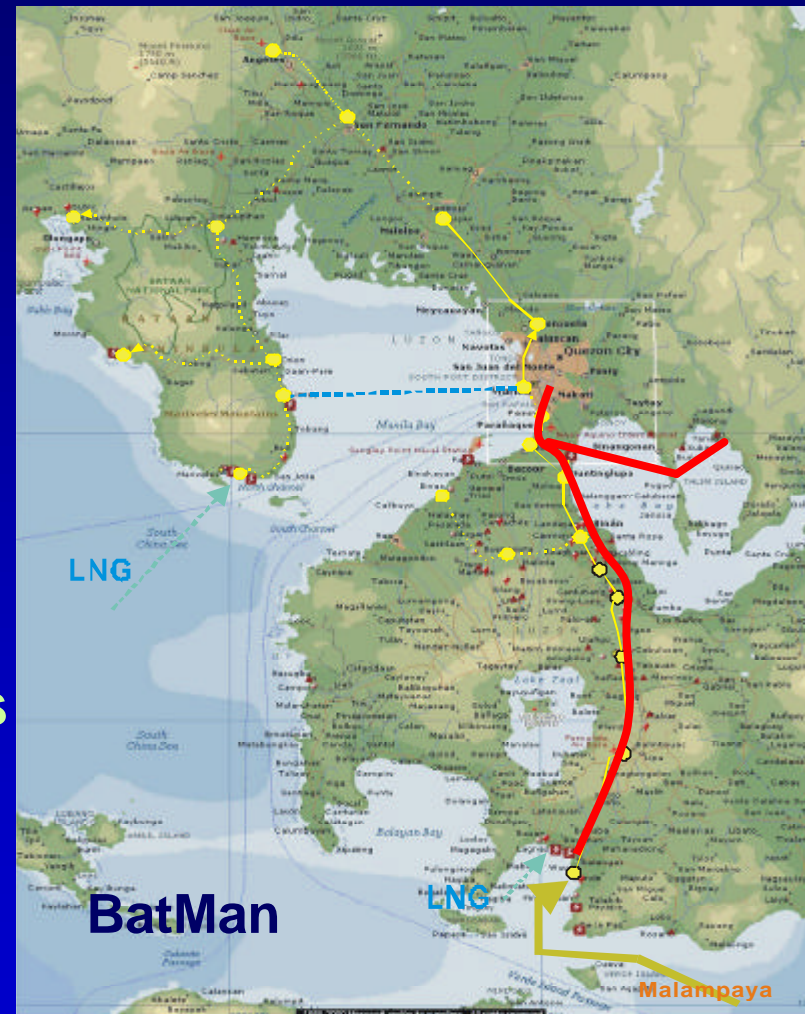
- Malampaya Deep Water-Gas-to-Power Project **now operational** supplying fuel to:
 - Ilijan (1,200 MW)
 - Sta. Rita (1,000 MW)
 - San Lorenzo (500 MW to commence 1st Q2002)
- Malampaya Oil Rim Find
 - Yield increased to **23,000 barrels/day**
 - Test results under study for EWT2



DOWNSTREAM OIL & GAS SECTOR

Proposed Natural Gas Pipeline

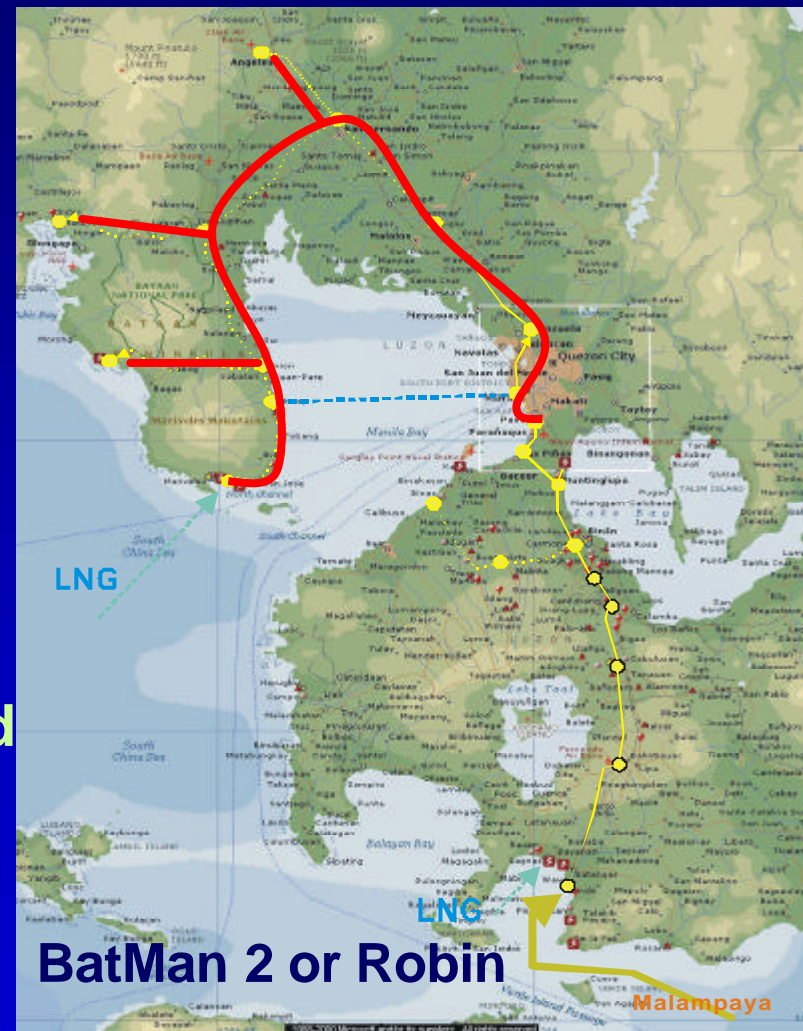
- **Batangas-Manila (BatMan)**
- **Pipeline to connect Manila with the Malampaya Nat Gas Reserve**
- **Multiple parties interested**
- **Numerous feasibility studies conducted**
- **Consortium still being eyed**



DOWNSTREAM OIL & GAS SECTOR

Proposed Natural Gas Pipeline

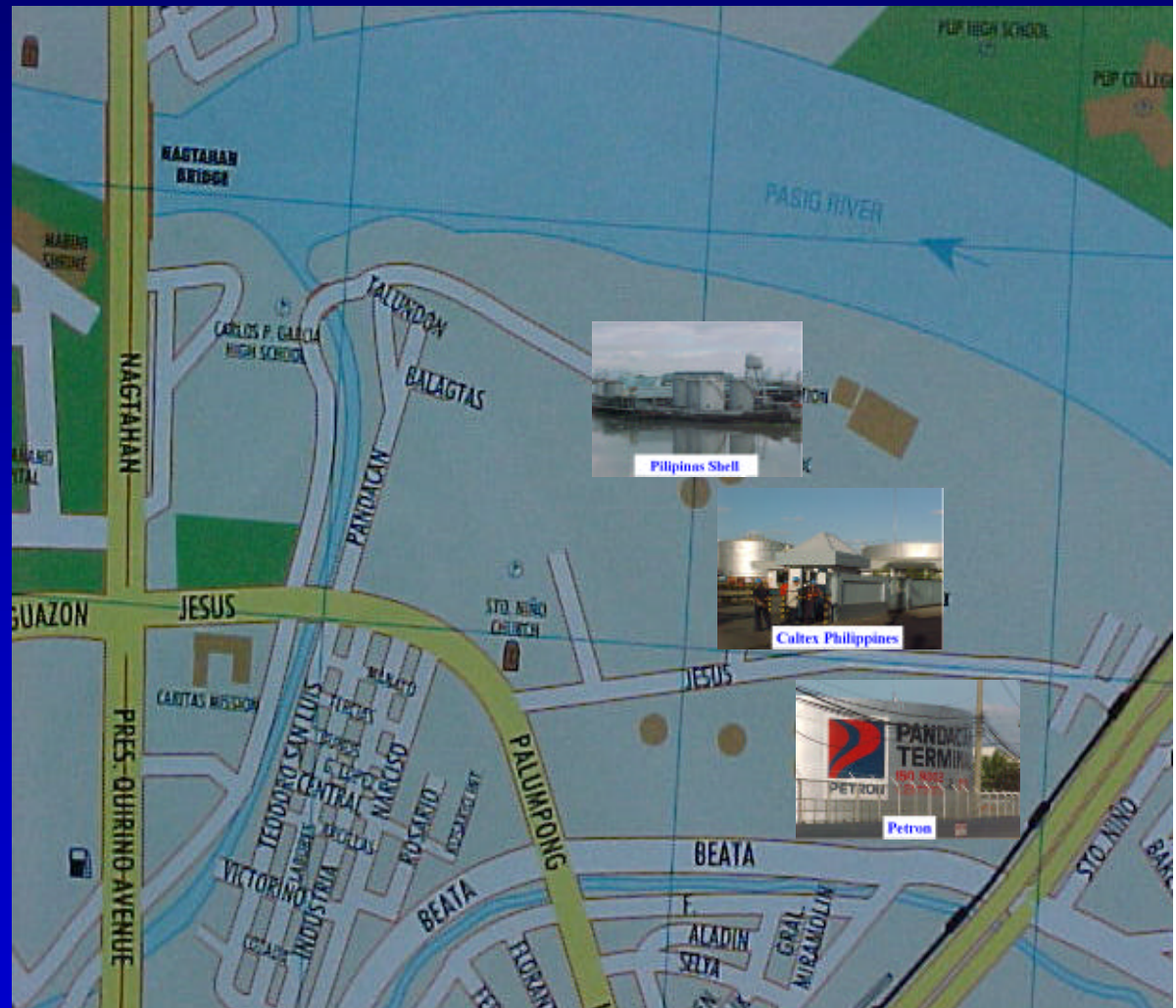
- **Bataan-Manila 2 (BatMan 2)**
- **To receive LNG importation and supply industrial ecozones in Subic & Clark**
- **Potentially to supply fuel in Central Luzon and petrochemical plants located in the area**
- **Proposed site for LNG Terminal**



DOWNSTREAM OIL INDUSTRY

Pandacan Oil Depot

- MOU among the City Government of Manila, Caltex, Petron, Shell and the DOE signed last 26 June 2002
- Big 3 agreed to scale down area of operation to widen buffer zone to the surrounding residential community
- Joint operation of integrated facilities
- Creation of a *Green Buffer Zone*



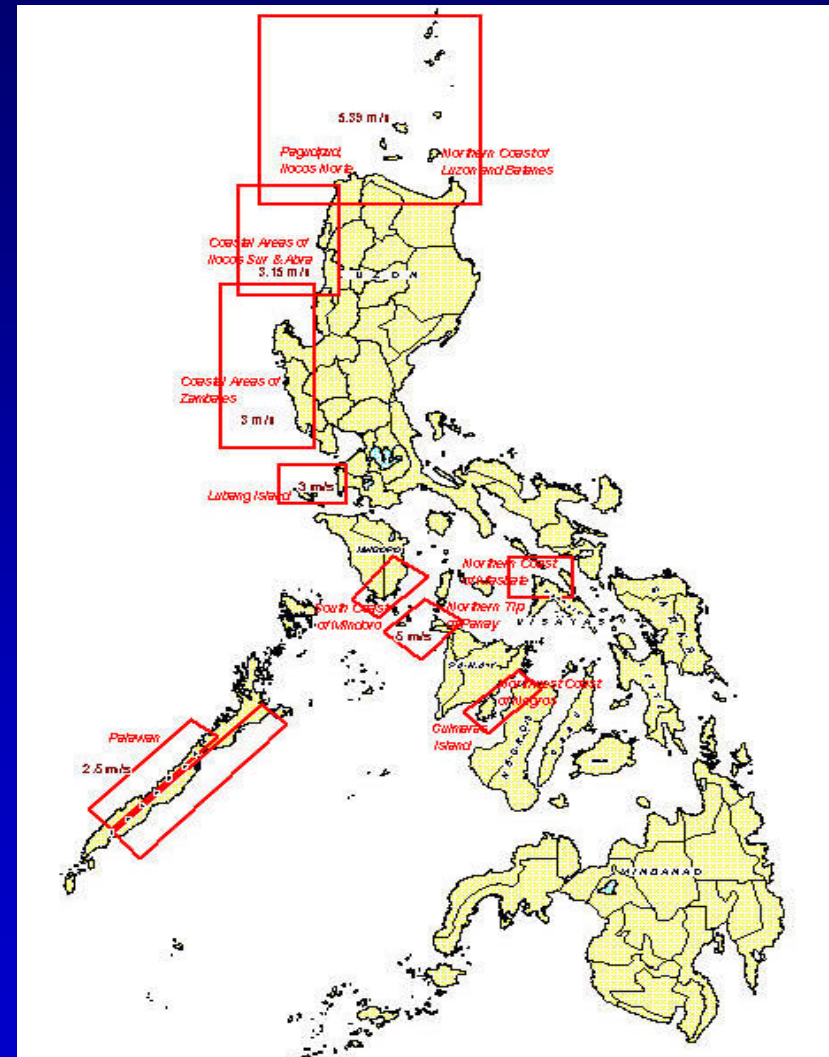
OTHER DEVELOPMENTS



RENEWABLE ENERGY

Wind Energy Potentials

- Potential development in **ocean, solar and wind (OSW) energy**
- Philippine wind energy potential could be **as much as 70,000 MW**
- Significant progress in wind farms:
 - ◆ 40MW wind farm project in Burgos, Ilocos Norte by PNOC-EDC
 - ◆ 25 MW wind farm project in Bangui Bay, Ilocos by Northwind Power funded by DANIDA
 - ◆ Most popular OSW inquiries with DOE



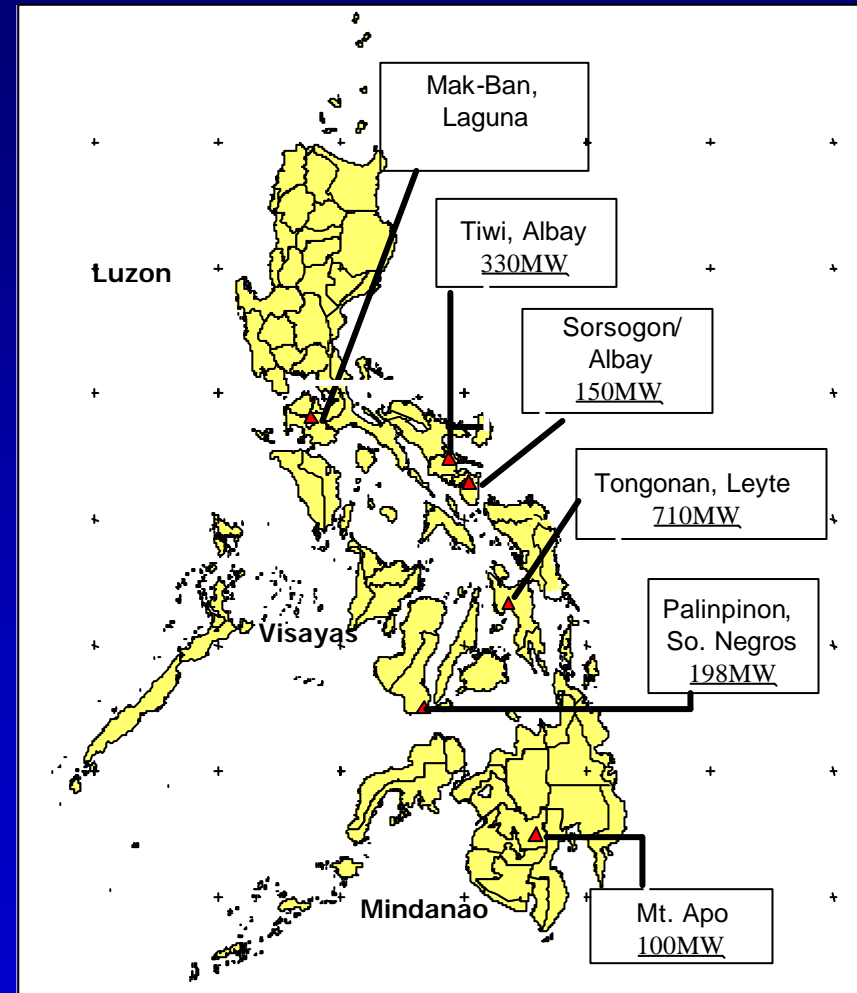
RENEWABLE ENERGY

Geothermal Power

- Installed capacity of **1,931 MW**
- **2nd largest user of geothermal energy resources** for power generation
- Potential of **730 MW from 11 explored** prospect areas



Malitbog Facility in Leyte: Largest Geothermal Power Plant in the World



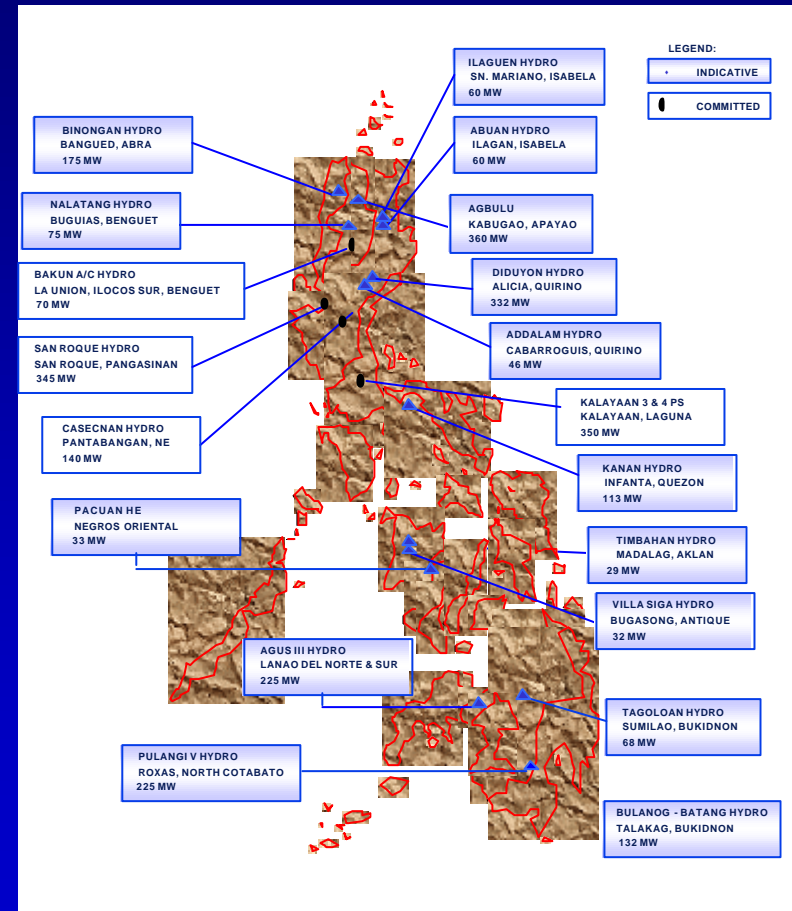
RENEWABLE ENERGY

Hydropower Development

- Development of additional **1,299 MW** for the period 2002-2011
- Installed capacity anticipated to increase to **3,820 MW** by 2011



Projected Hydro Power Plants



RENEWABLE ENERGY

Upcoming Policies

- Priority dispatch of small renewable energy under WESM Rules
- Allocate a minimum amount of generation capacity from renewable energy
- Promotion of **Green Renewable IPPs (GRIPPs)**
- Introduce **Green Pricing Program** mechanism to promote consumer choice of power supply



ALTERNATIVE FUELS

Upcoming Policies

Promotion of as alternative transport fuels :

- Compressed Natural Gas (CNG) in Luzon
- LPG in the Visayas
- Coco-diesel in Mindanao



PHILIPPINE ENERGY PLAN



MACRO-ECONOMIC GOALS

- **Economic Growth**
- **Poverty Alleviation**
- **Market-based Industry**

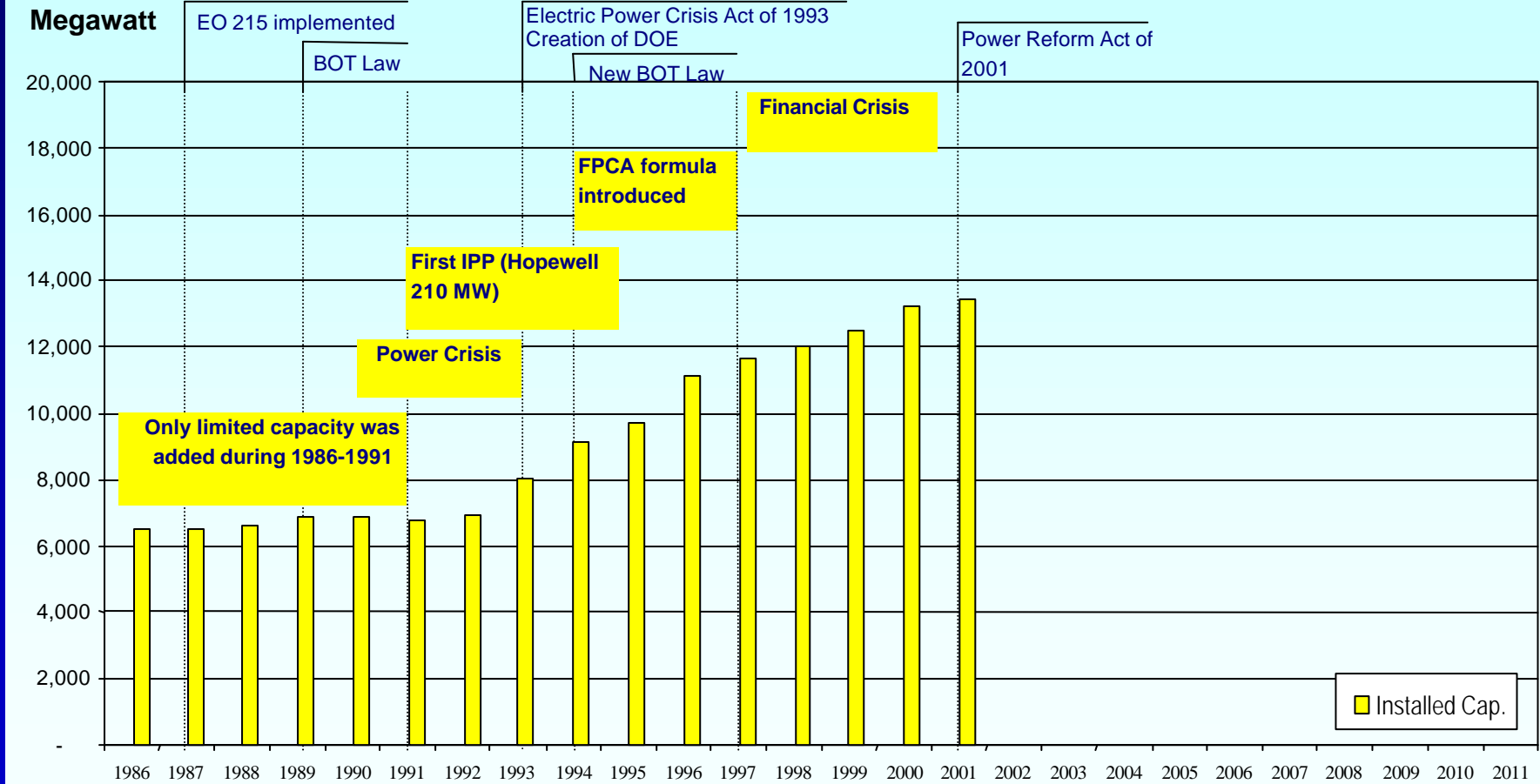


POWER DEVELOPMENT PLAN



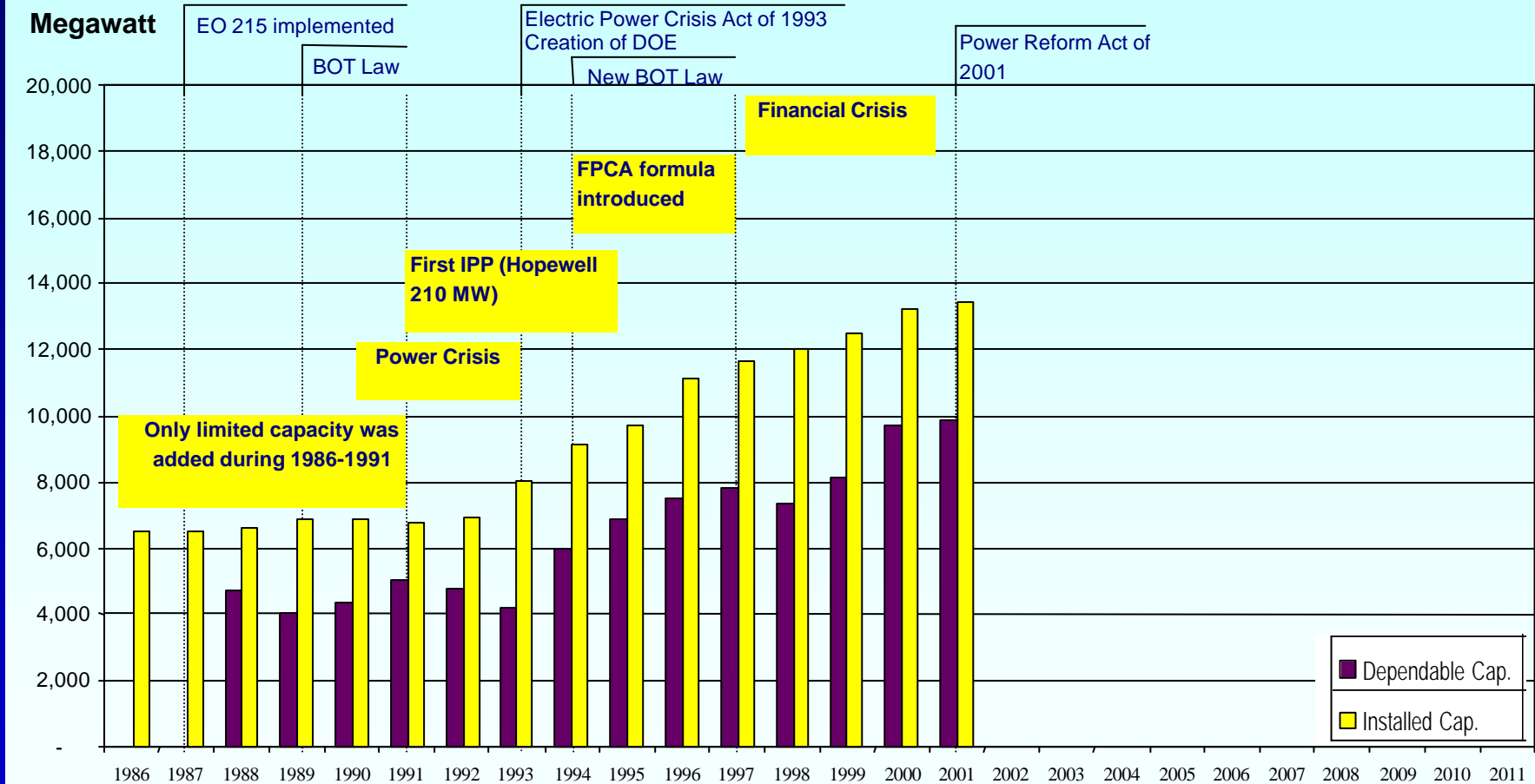
ELECTRICITY DEMAND AND SUPPLY PROFILE

Actual vs. Forecast Demand



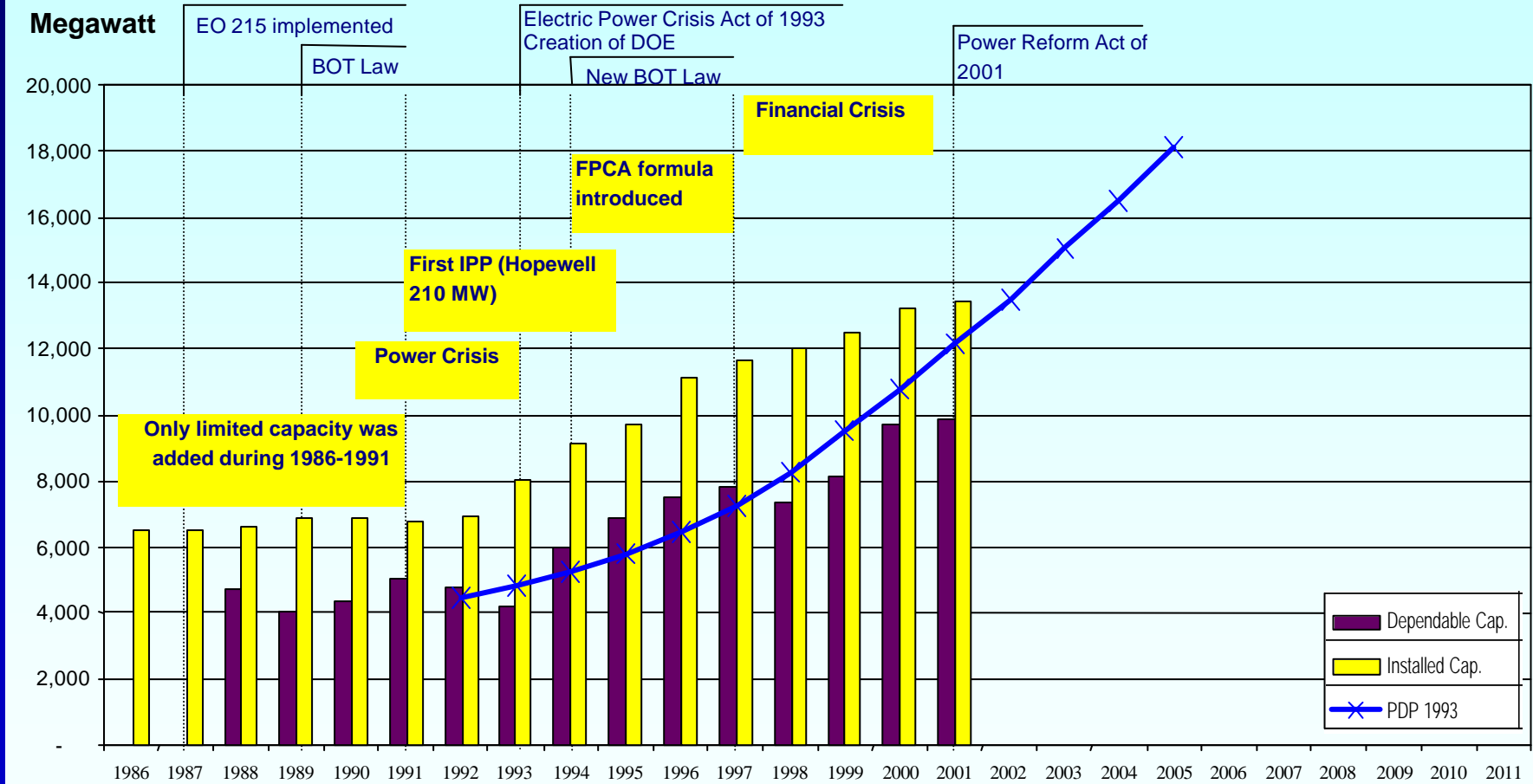
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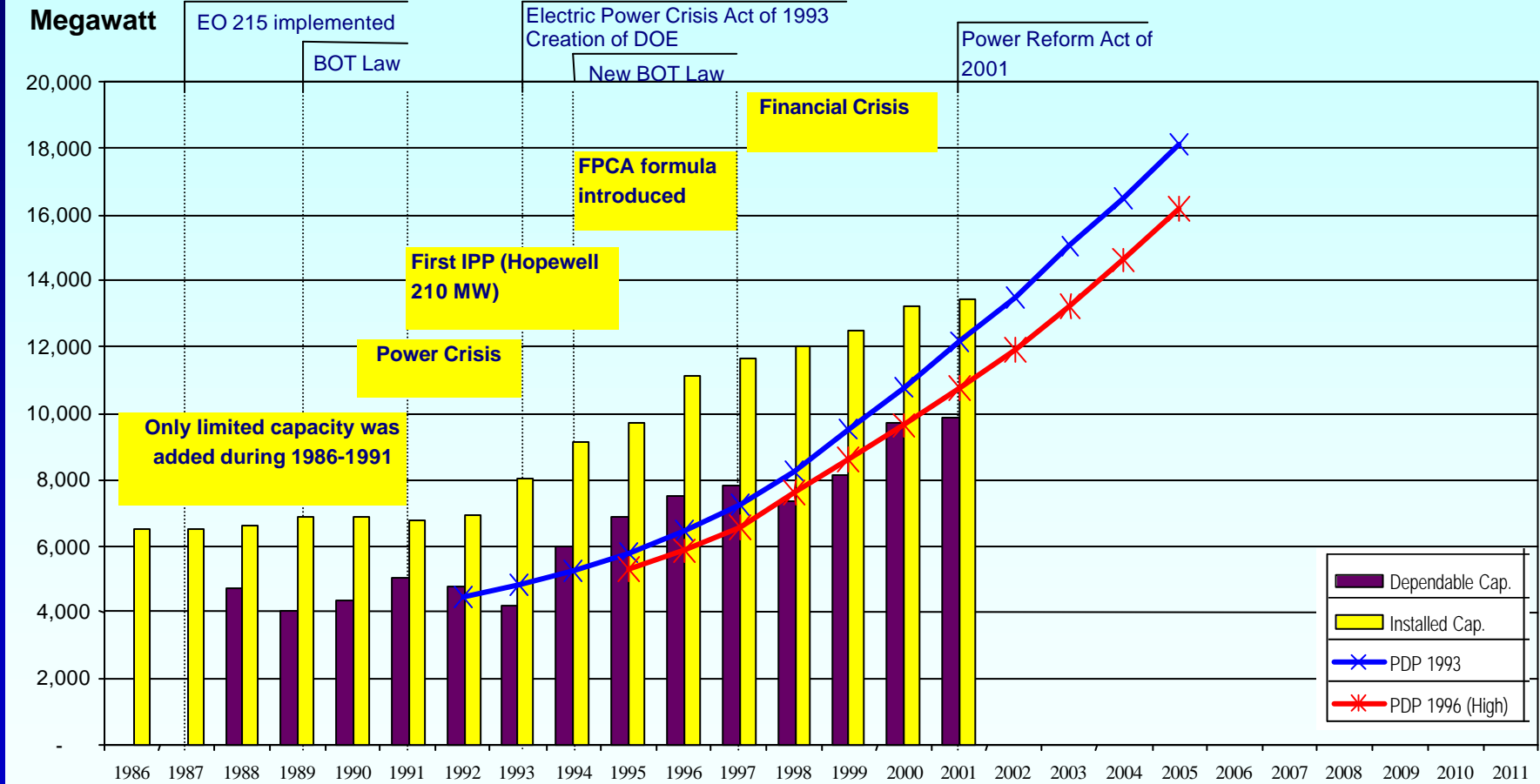
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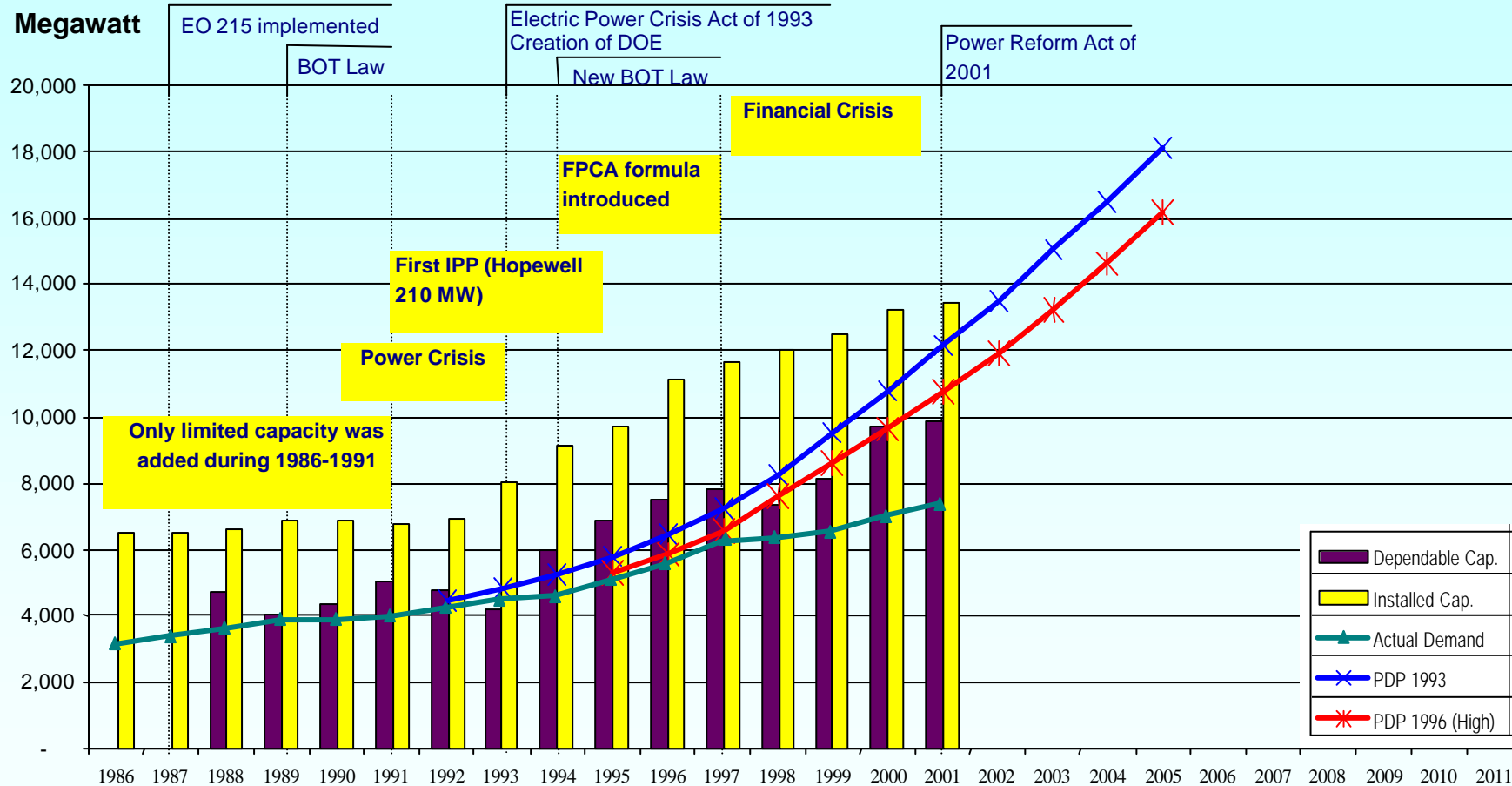
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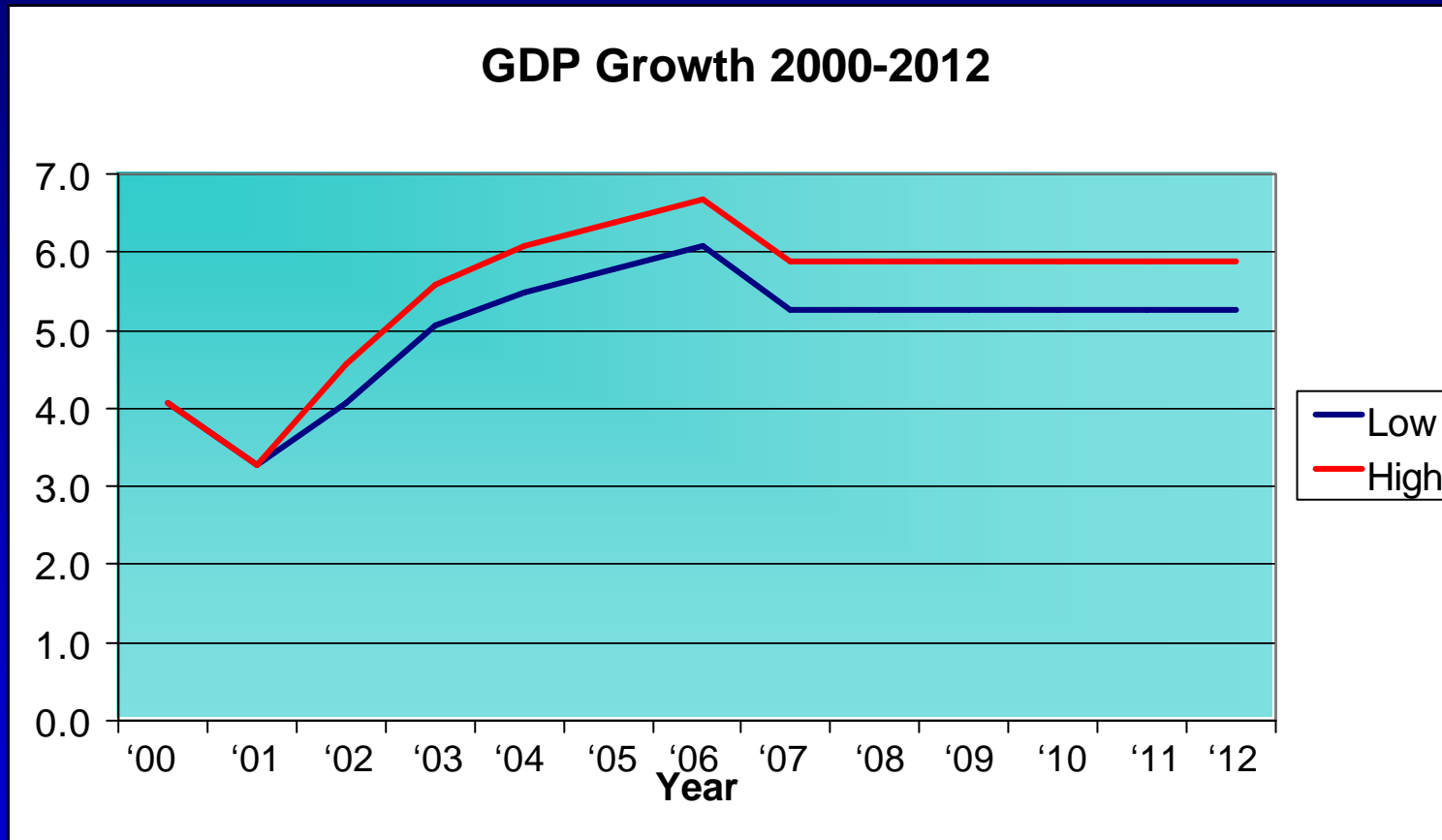


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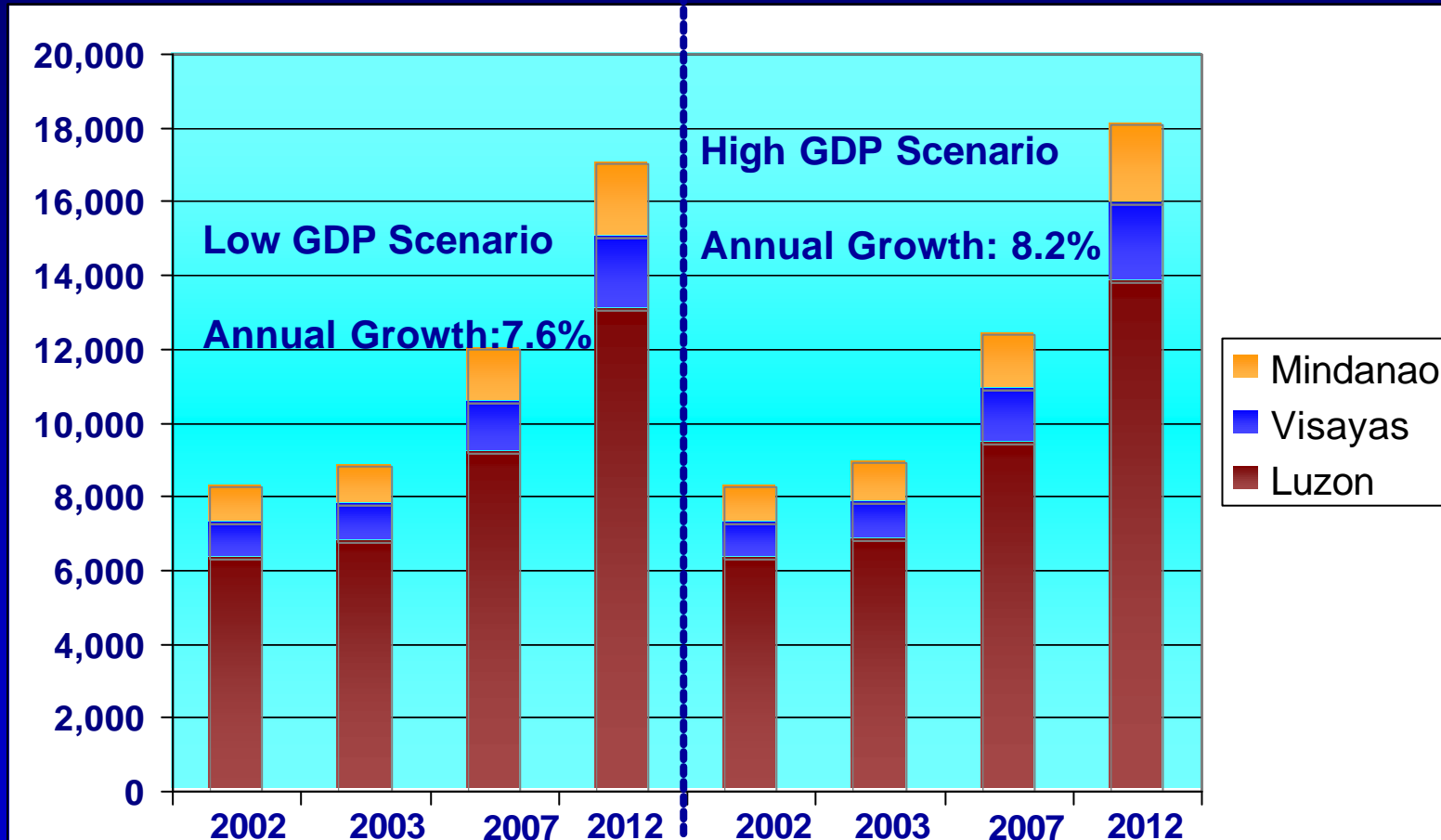
Actual vs. Forecast Demand



Energy Demand-Supply Outlook Macro-Economic Parameters



SYSTEM PEAK DEMAND FORECAST



INSTALLED GENERATING CAPACITY

In MW, as of June 2002

Fuel Type	Luzon	Visayas	Mindanao	TOTAL
Oil-Thermal	650	-	109	759
Diesel	911	492	438	1,840
Gas Turbine	930	-	-	930
Coal	3,758	205	-	3,963
Hydro	1,510	12	997	2,518
Geothermal	907	919	104	1,931
Natural Gas	2,263	-	-	2,263
TOTAL	10,929	1,604	1,647	14,204



INTERCONNECTION PROJECTS

LEYTE-CEBU (1997-2004)
Capacity: 400 MW
Voltage: 230 KV

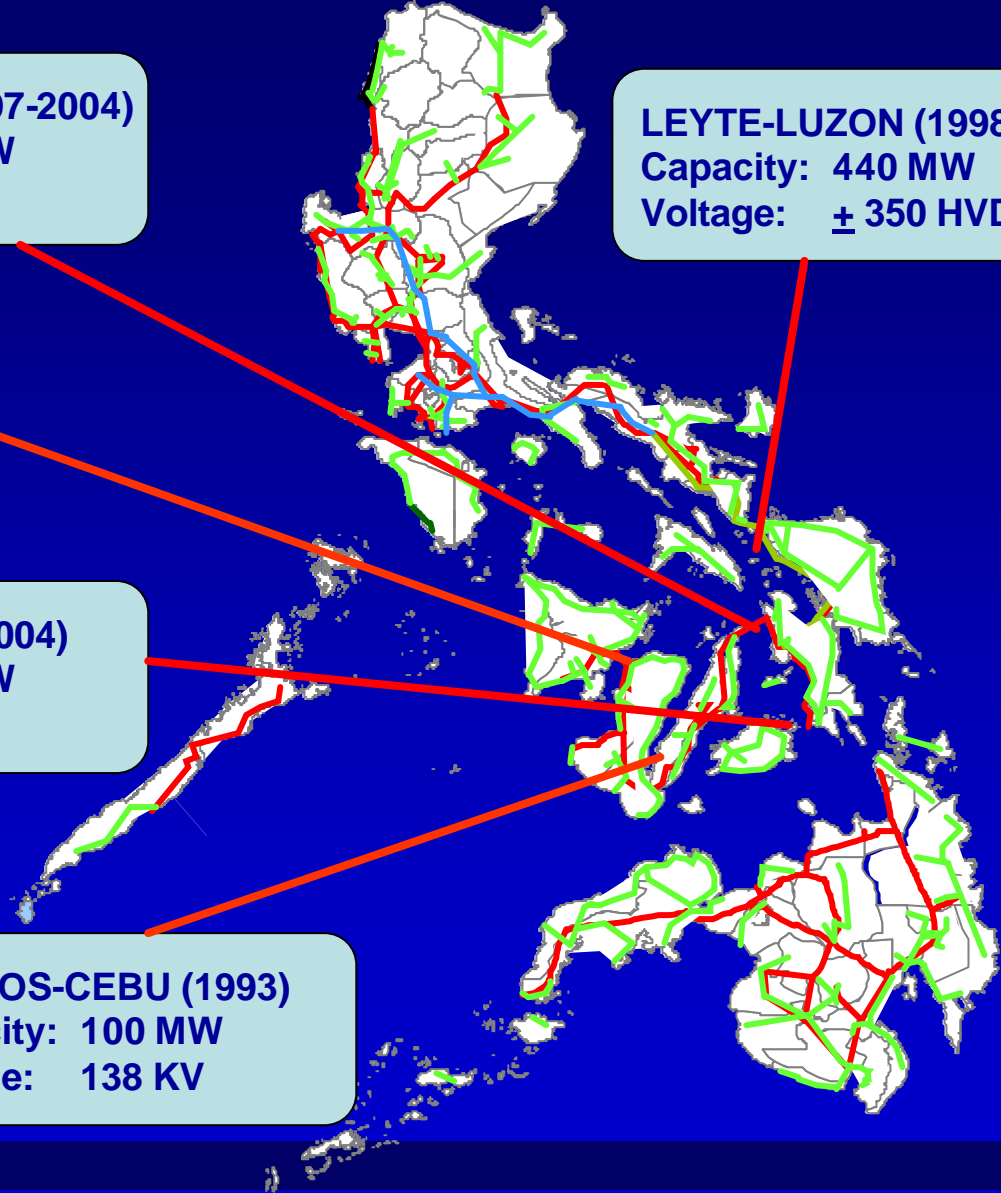
LEYTE-LUZON (1998)
Capacity: 440 MW
Voltage: \pm 350 HVDC

NEGROS-PANAY (1990)
Capacity: 100 MW
Voltage: 138 KV

LEYTE-BOHOL (2004)
Capacity: 100 MW
Voltage: 138 KV

— 230 kV
— 550 kV
— 69 kV

NEGROS-CEBU (1993)
Capacity: 100 MW
Voltage: 138 KV



CAPACITY ADDITIONS

In MW, TOTAL PHILIPPINES

YEAR	COMMITTED	INDICATIVE	
		BASELOAD	INTERMEDIATE
2004	430	-	-
2005	385	-	300
2006	200	-	50
2007	-	150	-
2008	-	250	-
2009	-	1,050	100
2010	-	1,700	-
2011	-	1,450	-
2012	-	800	-
TOTAL	1,015	5,400	450



INDIGENOUS RESOURCES FOR ADDITIONAL GENERATION CAPACITIES

In MW, 2003 – 2012

PLANTS	LUZON	VISAYAS	MINDANAO	COUNTRY
Nat Gas	-	-	-	-
Geothermal	310	700	120	1,130
NRE	587	50	-	637
Coal	380	400	400	1,180
Hydro	1,611	94	806	2,511
TOTAL	2,888	1,244	1,326	5,458



ENERGY SECTOR REFORM

R.A. 9136 provides for the:

- **Creation of National Transmission Company (“TRANSCO”)**
- **Creation of Power Sector Asset and Liabilities Management Corporation (“PSALM”)**
- **Creation of new Energy Regulatory Commission (“ERC”)**
- **Creation of Wholesale Electricity Spot Market (“WESM”)**
- **Privatization of the National Power Corporation (“NPC”)**
- **Open Access subject to Pre-Conditions**



ENERGY SECTOR REFORM

- **Promulgation of Distribution Code in Dec. 2001**
- **Promulgation of Grid Code in Dec. 2001**
- **Approval of the Implementing Rules and Regulations (“IRR”) on 27 February 2002**
- **Signing of EO 100 on Tax Equalization of Indigenous Source of Energy on 03 May 2002**
- **Unbundling of NPC Rates on 26 June 2002**
- **Promulgation of WESM Rules on 28 June 2002**



ENERGY SECTOR REFORM

- **Promulgation of Interim Rules & Regulations for downstream natural gas**
- **Department Circular on penalties for LPG violators**
- **Proposed Department Circular on penalties for delayed IPO by oil majors**
- **Proposed EO for loan condonation of Electric Cooperatives (ECs)**
- **Proposed Investment Management Contracts (IMC) for ECs**



ENERGY SECTOR GOAL

- **Stable & secure energy supply**
- **Wider access to energy supply**
- **Fair & reasonable energy prices**
- **Clean & efficient energy fuels & infrastructures**
- **Enhanced consumer welfare & protection**
- **Technology transfer & manpower development**
- **Job creation from energy activities**



THANK YOU!

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