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THE PHILIPPINE POWER SECTOR

"*Three Years of Reforms*"

26 October 2004

Secretary Vincent S. Pérez
Department of Energy

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POWER SECTOR REFORMS

Republic Act 9136 - Electric Power Industry Reform Act (EPIRA)

- Landmark legislation took effect on 26 June 2001
- Provides for the:
  - Privatization of the National Power Corporation ("NPC")
  - Creation of Transmission Company ("TRANSCO")
  - Creation of Power Sector Asset and Liabilities Management Corporation ("PSALM")
  - Creation of Energy Regulatory Commission ("ERC")
  - Creation of Wholesale Electricity Spot Market ("WESM")
  - Establishment of Open Access for competitive consumers

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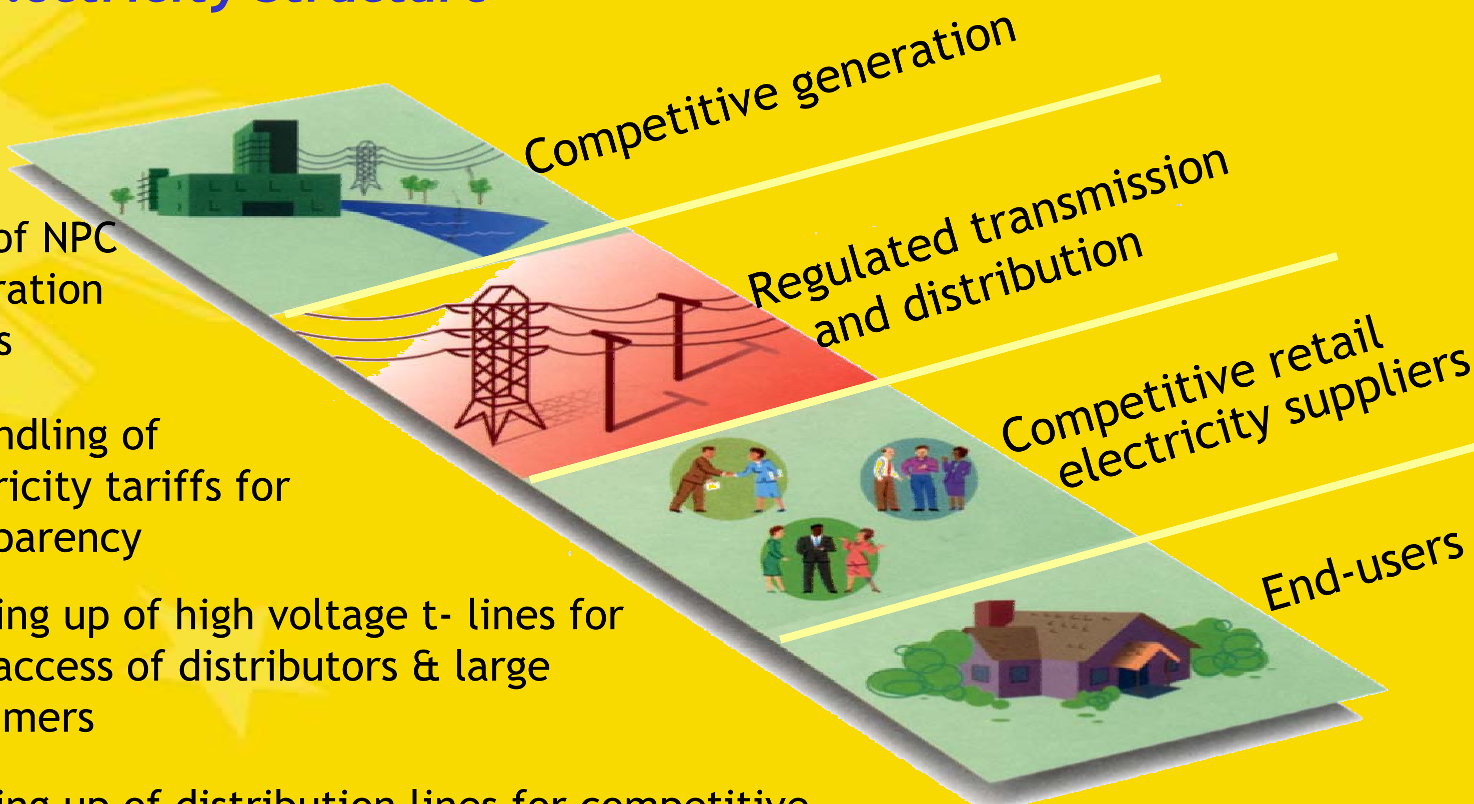
POWER SECTOR REFORMS

New Electricity Structure



- Sale of NPC generation assets
- Unbundling of electricity tariffs for transparency
- Opening up of high voltage t- lines for easy access of distributors & large consumers
- Opening up of distribution lines for competitive consumers

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Reforms Underway

Competitive generation

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POWER SECTOR REFORMS UNDERWAY

Generation: Reflecting True Cost of Power

- Reflecting true cost of power to attract new investment in the power generation sector
  - The ERC issued in Sept. 2004, provisional authority to increase NPC rate by an average of P0.98 / kWh
  - New Effective NPC Generation Rates per Grid
    - **Luzon** **P 3.8054 / kWh ≅ $0.067 / kWh**
    - **Visayas** **P 3.0374 / kWh ≅ $0.054 / kWh**
    - **Mindanao** **P 2.0700 / kWh ≅ $0.037 / kWh**

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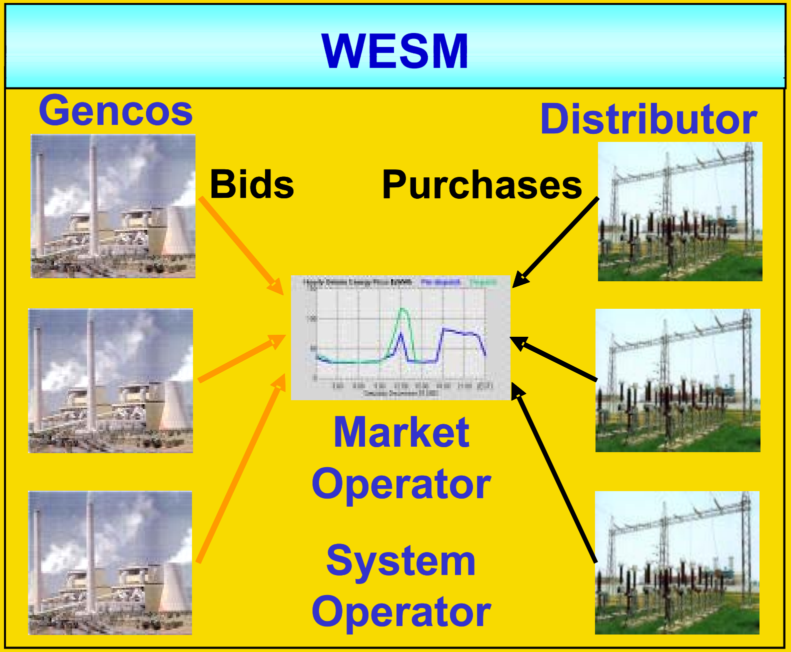
POWER SECTOR REFORMS UNDERWAY

Competition in the Wholesale Generation

- Wholesale Electricity Spot Market (WESM)
  - ABB Software undergoing Site Acceptance Test by Dec. 2004
  - Registration process for WESM participants by Dec. 2004
  - Market trials as early as Feb. 2005
  - Commercial operation in Luzon to commence by end- 2005



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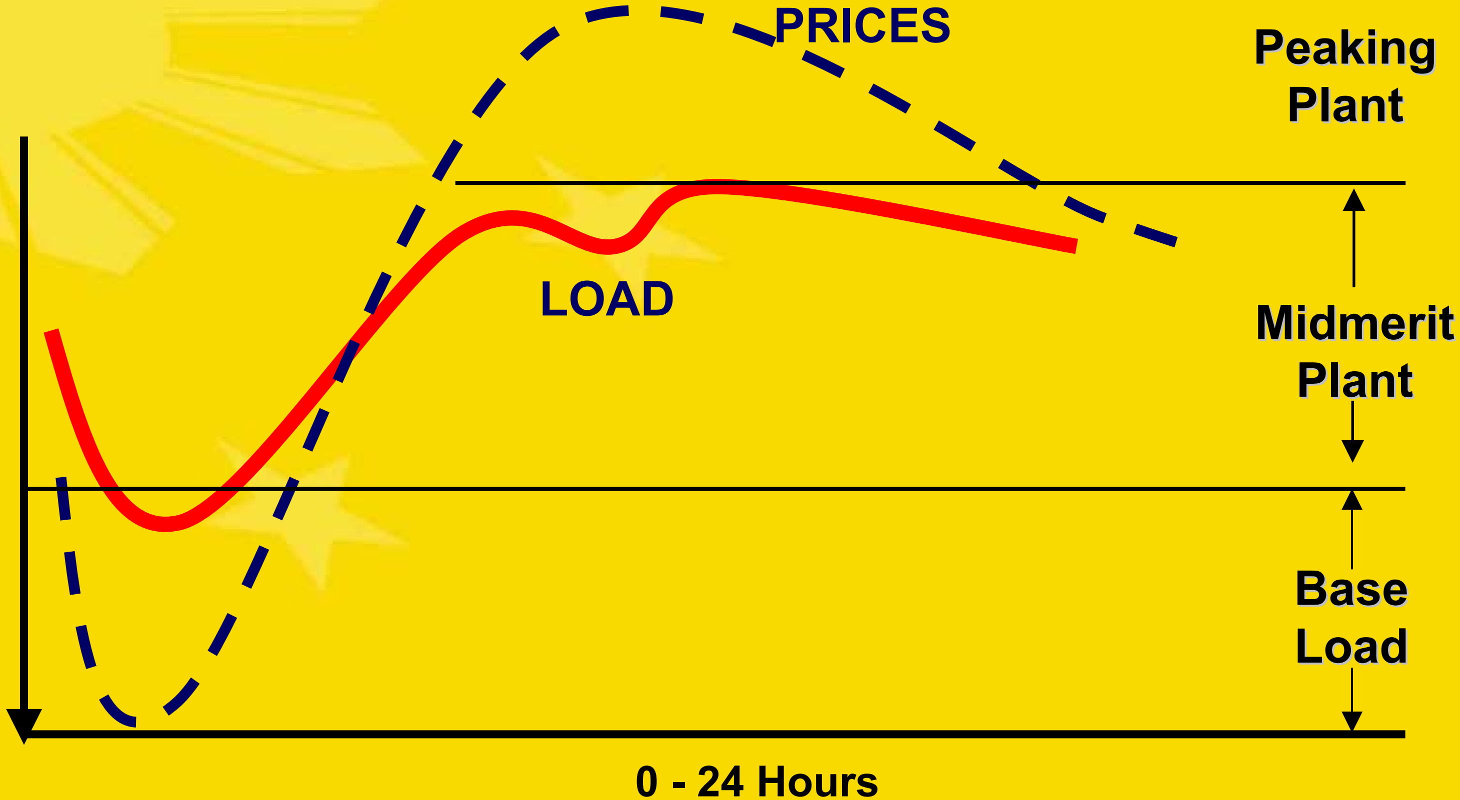
POWER SECTOR REFORMS UNDERWAY

Expected Shape of WESM Prices with TOU



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Regulated Transmission and Distribution

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POWER SECTOR REFORMS UNDERWAY

Improving TransCo's Reliability

- Transmission Operation
  - New digital control centers in Diliman and Cebu
  - First ASEAN utility to be ISO 9000 certified
  - System interruptions reduced by 50% since May 2003
  - No Luzon Grid blackout since May '02
- Transmission projects necessary to address transmission constraints specifically from the supply in South Luzon to the growth areas of Metro Manila & within Visayas

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POWER SECTOR REFORMS UNDERWAY

Improving TransCo's Reliability

- Grid Code promulgated in Dec. 2001
- TransCo operating as a separate entity since March 2003
- Transmission Development Plan
  - Reviewed independently by DOE, ERC & 3rd Party
- Introduction of performance-based rate methodology (PBR)
  - PBR for TransCo promulgated by ERC in May 2003
    - Based on maximum annual revenue
    - Patterned after PBR regime in State of Victoria & UK

POWER SECTOR REFORMS UNDERWAY

Making Distribution Utilities More Efficient

- Distribution Code promulgated in Dec. 2001
- Formulation of PBR for private distribution utilities
  - Based on maximum annual price caps
  - ERC targets to finalize DWRG before end-2004
- Adoption of new Systems Loss Cap for private distribution utilities
- Generation Rate Adjustment Mechanism (GRAM)
  - Approved in February 2003; Adjustments subject to review every 90 days
  - Automatic pass through beginning November 2004 per ERC guidelines issued on 13 October 2004

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POWER SECTOR REFORMS UNDERWAY

Making Electric Cooperatives More Efficient

- Institutionalization of the 180-day Performance Improvement & Rehabilitation Enhancement Programs
- Systems Loss national average from 15.63% in 2002 reduced to 15.08% in 2003
  - Aklan showed remarkable improvement with almost 8% reduction in systems loss
  - Masbate marked 6.30% improvement
  - Rule of thumb: 1% reduction in systems loss ≅ P 360 Mn savings
- Challenge to the electric coops to further reduce systems loss to a single digit national average before 2010

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POWER SECTOR REFORMS UNDERWAY

Cross Subsidy Removal

- 3 types of Cross-Subsidies
  - Inter-Regional (Between Various Grids)
    - Fully phased-out by the ERC unbundling decision of NPC on 26 June 2002 (P0.07/kWh)
  - Intra-Regional (Within a Grid)
  - Inter-Class (Between Classes of Customers)

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POWER SECTOR REFORMS UNDERWAY

Cross Subsidy Removal

Intra-Regional Cross Subsidy Removal (P/kWh)

- **Reduction by 1/3 of the original subsidy, beginning October 2003**

Customer Classification	Original Subsidy	Revised Subsidy	Oct. 2005
Small Utilities	0.5009	0.3339	0
Other Utilities	0.5009	0.3339	0
Non - Utilities	0.5009	0.3339	0
MERALCO	0.5033	0.3355	0
Steel Industries	0.3629	0.2419	0
Government Agencies	0.3627	0.24	0

- **Timeline**

Oct. 2003	Oct. 2004	Oct. 2005
Reduction by 1/3 of subsidy	Reduction by another 1/3 of subsidy	Zero subsidy

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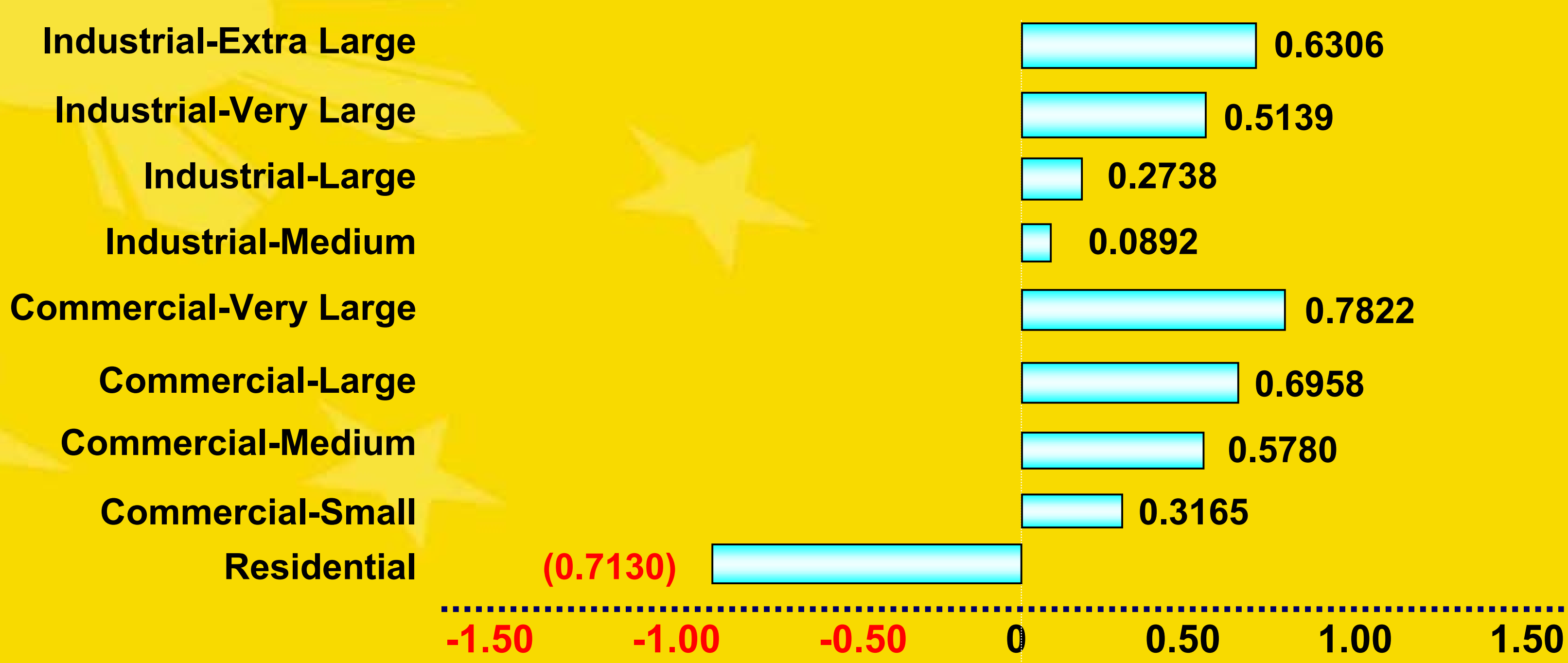
POWER SECTOR REFORMS UNDERWAY

Cross Subsidy Removal

- Meralco Inter-Class Cross Subsidies (P/kWh)



To be removed by ERC 40% in October 2004 & 60% by October 2005

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POWER SECTOR REFORMS UNDERWAY

Cross Subsidy Removal

- MERALCO Inter-Class Cross-Subsidy Removal (P/kWh)

Customer Class	Oct. 2004	Oct. 2005	Cumulative Effect
Industrial (Medium)	(0.0357)	(0.0535)	(0.0892)
Industrial (Large)	(0.1095)	(0.1643)	(0.2738)
Industrial (Extra Large)	(0.2522)	(0.3784)	(0.6306)

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Retail Competition

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POWER SECTOR REFORMS UNDERWAY

Moving Towards Retail Competition

- Retail Competition and Open Access
  - Scheduled by ERC to commence by July 2006 in Luzon Grid with contestable market composed of end-users with 1MW monthly average peak demand
  - Threshold level for contestable market in Luzon grid to be reduced to 750kW by July 2008 with supply aggregators allowed
  - Visayas and Mindanao Grid to be determined separately
- Business Separation and Supply Licensing Guidelines to be finalized by 2005

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POWER SECTOR PRIVATIZATION

TransCo Privatization

- Transmission assets
  - Privatization via concession of 25 years, renewable for another 25 years
  - Award of concession to be undertaken through competitive bidding among 4 qualified bidders

POWER SECTOR PRIVATIZATION

Genco Privatization

- Generation assets
  - Privatization of at least 70% of NPC generation assets in Luzon & Visayas by end 2005
  - PSALM already privatized 4 hydro plants
    - 3.5 MW Talomo HEP
    - 1.6 MW Agusan HEP
    - 1.8 MW Barit HEP
    - 0.4 MW Cawayan HEP

POWER SECTOR PRIVATIZATION

NPC-SPUG Privatization

- First pilot privatization targeted by Q1 2005
- Complete privatization of the 14 first wave SPUG areas by December 2005
  - **Marinduque ***
  - **Romblon ***
  - **Tablas Island, Romblon ***
  - Catanduanes
  - Occidental Mindoro
  - Bantayan Island, Cebu
  - Oriental Mindoro
  - Siquijor
  - Palawan
  - Camotes Island, Cebu
  - Masbate
  - Basilan
  - Sulu
  - Tawi-Tawi

*** For Signing 27 October 2004**

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POWER SECTOR PRIVATIZATION

Genco Privatization

Accelerated Genco Privatization Schedule

2004	Sep	
2004	Oct	210 MW Navotas I[3]; 600 MW Masinloc[4]; 1.2 MW Loboc[1]
2004	Nov	
2004	Dec	620 MW Limay/ Bataan Thermal Site[3]
2005	Jan	200 MW Manila Thermal[2]
2005	Feb	54 MW Cebu II[2]
2005	Mar	114.7 MW Iligan I &II[2]; 100 MW Pantabangan[1]; 12 MW Masiway[1]
2005	Apr	850 MW Sucat[2]
2005	May	600 MW Calaca[4]; 22.3 MW Gen.San[3]
2005	Jun	75 MW Ambuklao / 100 MW Binga[1]
2005	Jul	275 MW Tiwi /410 MW Makban[5]; 110 MW Pinamucan / 36.5 MW Panay I[2]
2005	Aug	150 MW Bacman[5]
2005	Sep	108 MW Aplaya[3]
2005	Oct	192.5 MW Palinpinon[5]
2005	Nov	112.5 MW Tongonan[5]; 22 MW Bohol[2]
2005	Dec	
2006	Jan	
2006	Feb	
2006	Mar	0.8 MW Amlan[1]; 360 MW Magat[1]
2006	Apr	246 MW Angat[1]

Fuel Types:

1 Hydro
2 Bunker
3 Diesel
4 Coal
5 Geothermal

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End-Users

POWER SECTOR REFORMS UNDERWAY

Consumer Protection

- Consumer Protection
  - Immediate implementation of the P0.30/kWh Mandated Rate Reduction for Residential Consumers
  - Magna Carta for Residential Consumers
  - Continuous implementation of lifeline rate for marginalized residential consumers
  - Refund of meter deposits mandated

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POWER SECTOR REFORMS UNDERWAY

Consumer Protection

- Lifeline customers will continue to enjoy the following discounts to cushion the full impact of tariff increases:

Estimated for Luzon MERALCO customers

Monthly Consumption	Lifeline Discounts
0 - 50 kwh/month	50% discount
51- 70 kwh/month	35% discount
71 -100 kwh/month	20% discount

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POWER REFORMS WELL UNDERWAY

Moving Forward

Feb. 2005

Suppliers' Guidelines

June 30, 2005

- Issuance of Guidelines on Metering Service Providers (for WESM)
- Code of Conduct for Retail Competition Players

Sept. 2005

Issuance of Guidelines on Uniform Business Practices

End of 2005

- Privatization of at least 70% of the total capacity of generating assets of NPC in Luzon & Visayas
- WESM Commercial Operation in Luzon

Installation of appropriate meters by TransCo/Meter Service Provider to comply with the WESM Rules

January 2006

Transfer of remaining 24 NPC-IPP contracts to IPP Administrators

June 30, 2006

Total phase-out of Intra-Regional Grid Cross-Subsidy & the Inter-Class Cross Subsidy

July 1, 2006

Commencement of Retail Competition & Open Access in Luzon for end users with at least 1 MW demand (Private Utilities' franchise areas)

July 1, 2007

Commencement of Retail Competition & Open Access in Luzon for end users with at least 1 MW demand (ECs' franchise areas)

July 1, 2008

Reduction of threshold level in the Luzon grid to at least 750 kW; aggregators may come in.

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Power Supply-Demand

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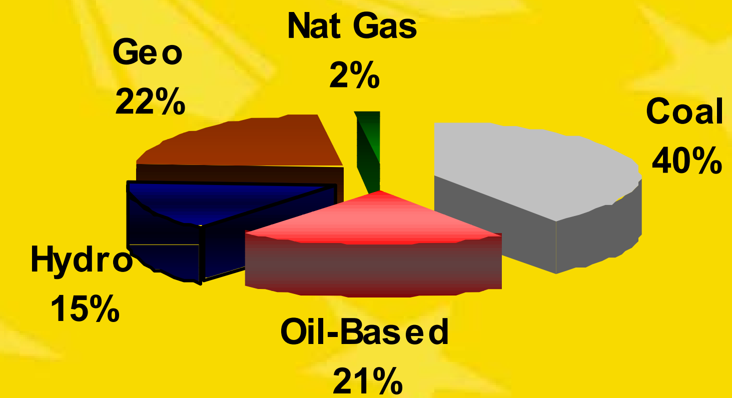
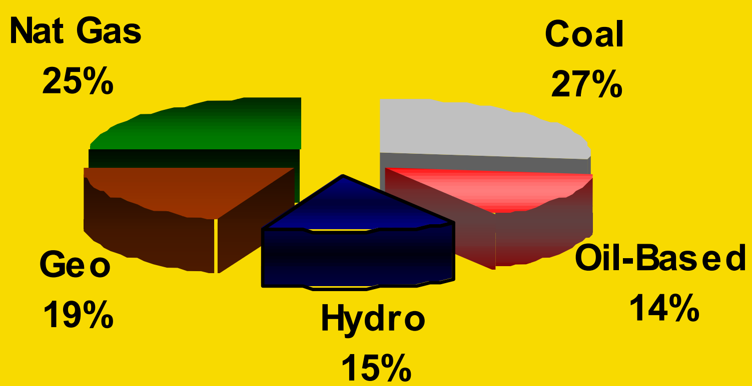
POWER DEMAND-SUPPLY SCENARIO

Power Mix, Actual 2003 vs. 2002

2001



2003



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POWER DEMAND-SUPPLY SCENARIO

Actual 2003 Highlights

System Peak Demand (in MW)

	2003 Actual	2003 Forecast	2002 Actual	% Increase 2003 vs. 2002
Luzon	6,149	6,454	5,823	5.60
Visayas	924	1,006	903	2.33
Mindanao	1,131	1,049	995	13.67
Philippines	8,204	8,508	7,721	6.26

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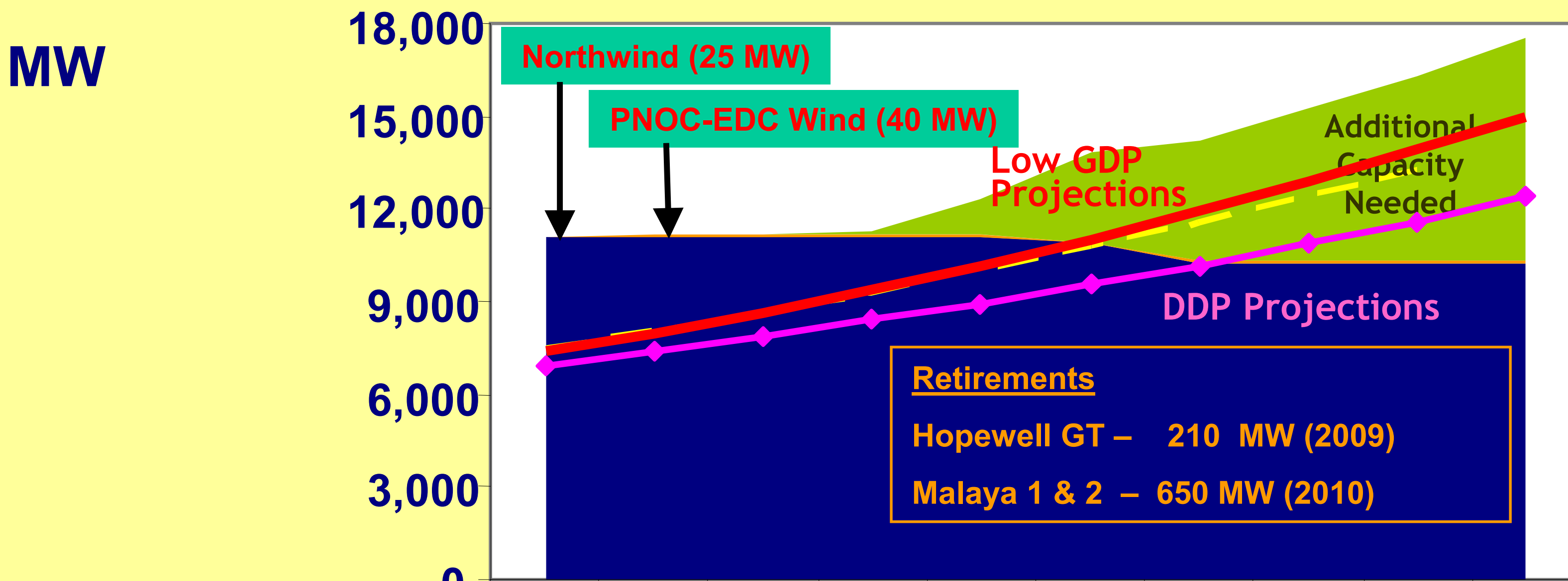
POWER DEMAND-SUPPLY SCENARIO

Luzon: Consolidated DDP vs. Low GDP Assumptions, 2005-2014



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Required Capacity Additions	0	0	0	150	1,050	1,650	1,050	1,050	1,050	1,200
Committeed Capacity	25	40	0	0	0	0	0	0	0	0
Existing Capacity	11,086	11,086	11,086	11,086	11,086	10,876	10,226	10,226	10,226	10,226
Peak Demand(PDP 2004 DDP)	6,953	7,397	7,878	8,395	8,948	9,545	10,181	10,870	11,602	12,387
Peak Demand(PDP 2004 Low GDP)	7,343	7,964	8,635	9,372	10,171	11,018	11,917	12,871	13,884	14,959
Peak Demand(PDP 2003)	7,473	8,076	8,662	9,323	10,036	10,786	11,575	12,406	13,280	

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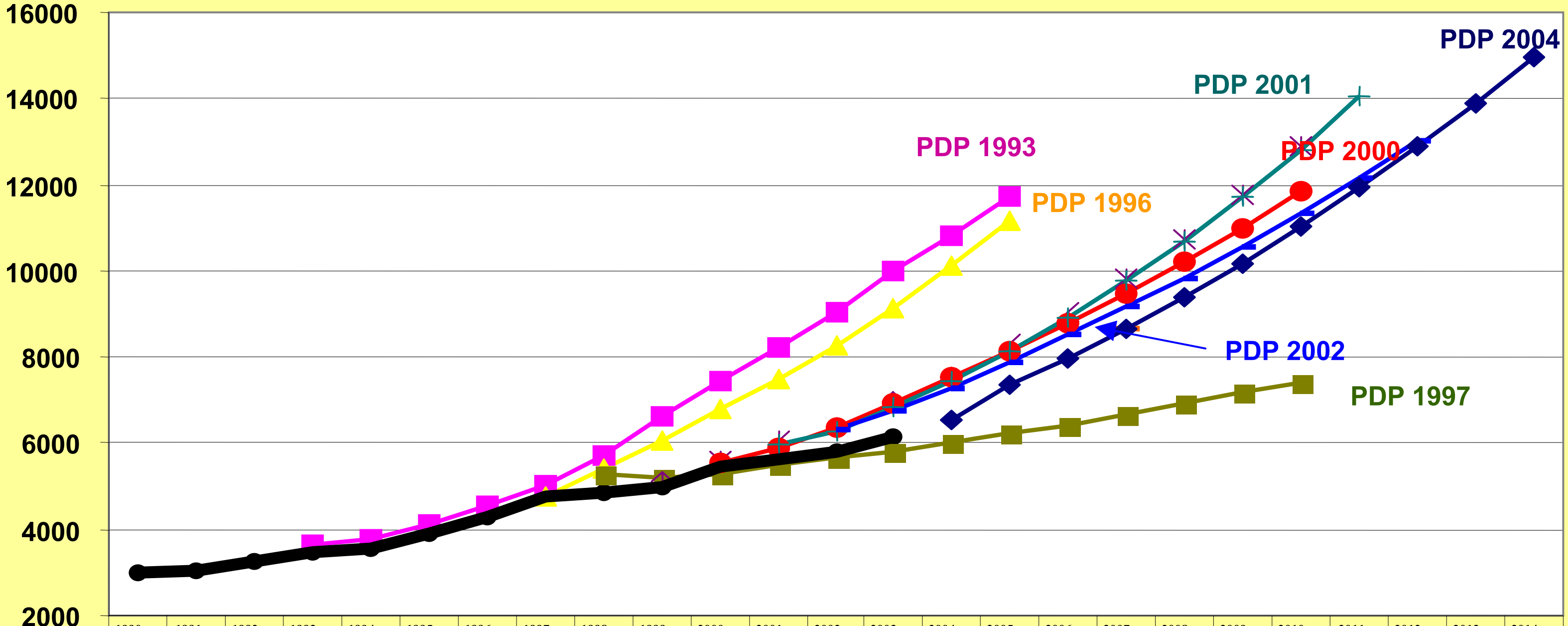
POWER DEMAND-SUPPLY SCENARIO

Luzon: Peak Demand Forecasts, 2005-2014



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Actual	2973	3045	3250	3473	3561	3920	4306	4773	4863	4986	5450	5646	5823	6149											
PDP 1993				3643	3762	4126	4539	5038	5732	6613	7430	8232	9023	9977	10816	11724									
PDP 1996 (High)								4744	5397	6079	6779	7484	8266	9135	10102	11177									
PDP 1997 (Low)									5273	5183	5304	5498	5656	5823	6014	6213	6428	6659	6909	7177	7406				
PDP 1999 (Low)										5342	5607	6055	6564	7196	7727	8327	9030	9830	10737	11744	12871				
PDP 2000											5557	5898	6370	6931	7551	8139	8774	9457	10192	10985	11841				
PDP 2001 (Low)												5960	6293	6830	7458	8143	8915	9762	10689	11705	12816	14038			
PDP 2002 (Low)													6308	6752	7275	7855	8505	9161	9830	10548	11319	12149	13034		
PDP 2003 (Low)														6454	6937	7473	8076	8662	9323	10036	10786	11575	12406	13280	
PDP 2004 (Low)															6537	7343	7964	8635	9372	10171	11018	11917	12871	13884	14959

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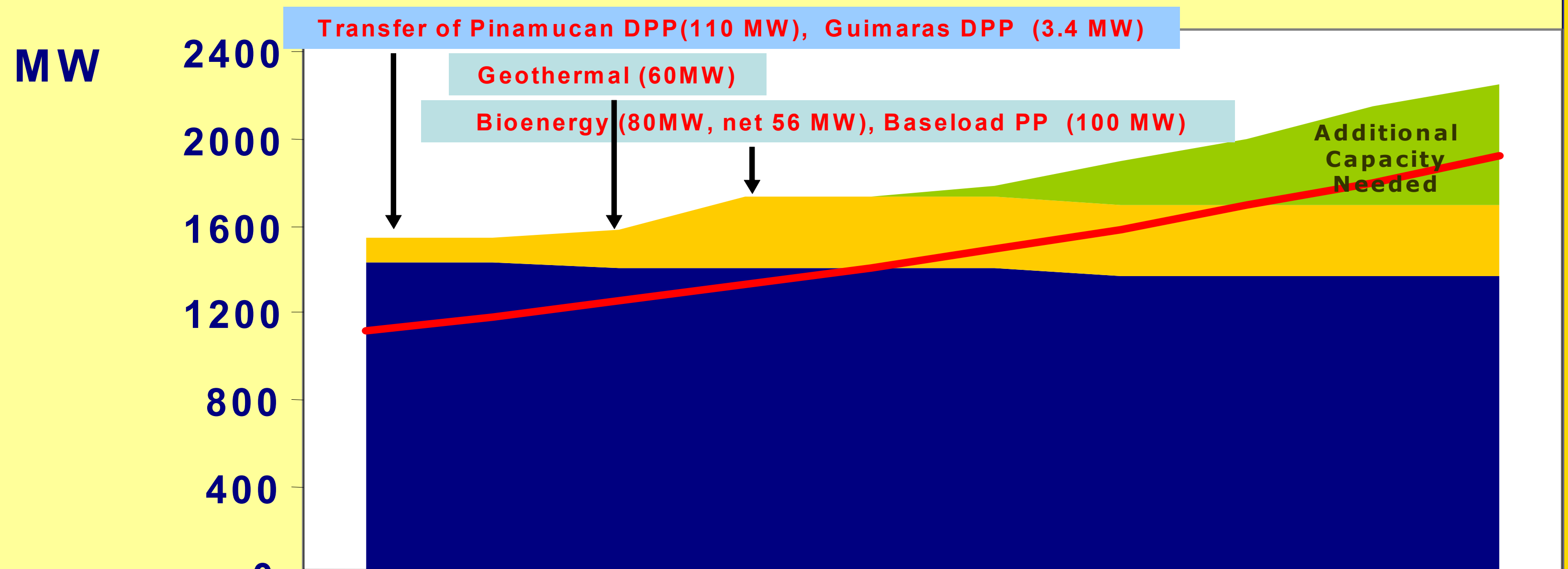
POWER DEMAND-SUPPLY SCENARIO

Visayas, 2005-2014



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Req'd Cap. Add.	0	0	0	0	0	50	150	100	150	100
Committed Cap.	113	0	60	156	0	0	0	0	0	0
Existing	1435	1435	1410	1410	1410	1410	1366	1366	1366	1366
Peak Demand	1120	1182	1255	1330	1410	1495	1589	1690	1798	1916

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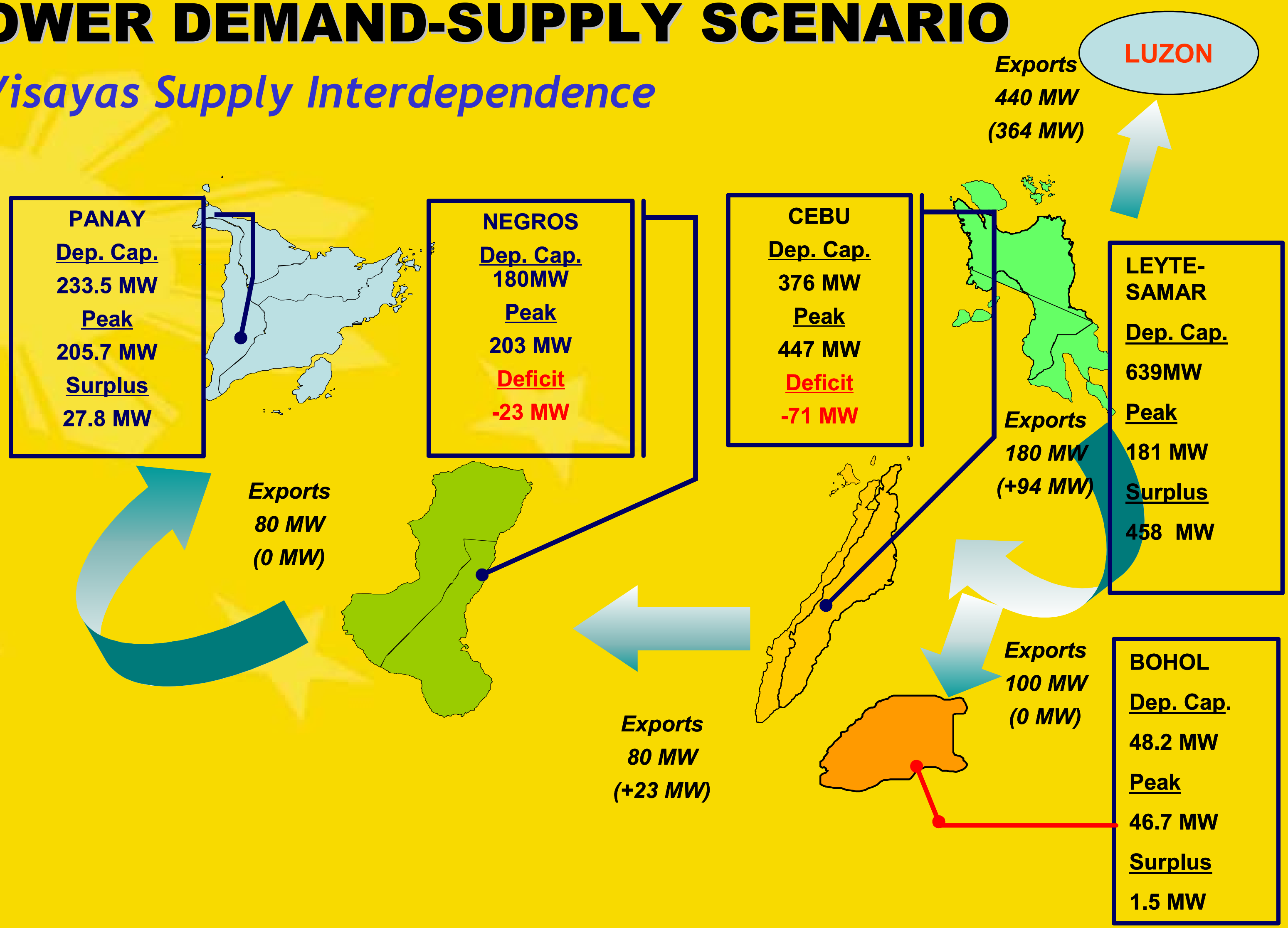
POWER DEMAND-SUPPLY SCENARIO

Visayas Supply Interdependence



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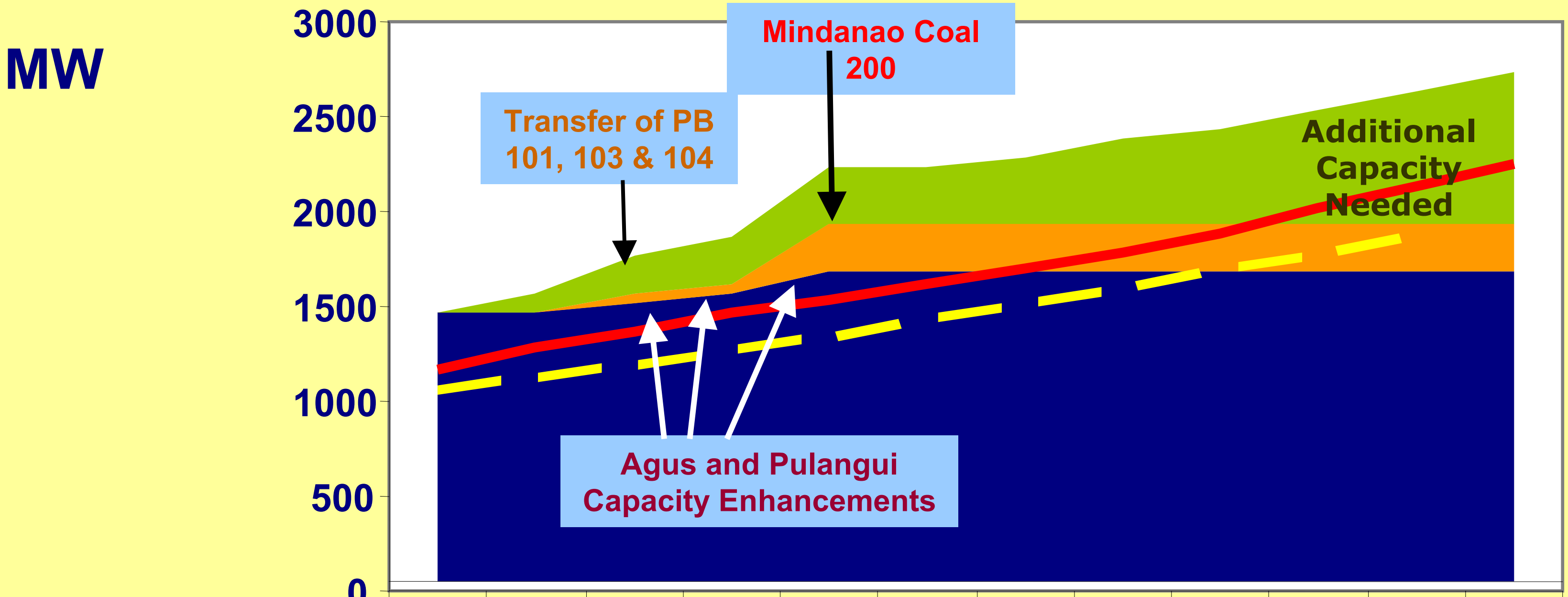
POWER DEMAND-SUPPLY SCENARIO

Mindanao, 2005-2014



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Req'd Cap Add.	0	100	100	50	0	0	50	100	50	150	100	100
Committed	0	0	50	0	210	0	0	0	0	0	0	0
Existing	1460	1460	1515	1566	1681	1681	1681	1681	1681	1681	1681	1681
Peak (PDP 2004)	1,166	1,278	1,374	1,460	1,536	1,615	1,697	1,784	1,891	2,010	2,125	2,249
Peak (PDP 2003)	1,049	1,112	1,181	1,259	1,331	1,412	1,498	1,586	1,676	1,769	1,864	

POWER DEMAND-SUPPLY SCENARIO

Per Grid Highlights

- Luzon to start requiring additional capacity as early as 2008
  - Wind power to provide 65 MW by 2006
  - Transmission reinforcement projects necessary to address transmission constraints specifically from the supply in South Luzon to the growth areas of Metro Manila & within Visayas
  - Investments are encouraged to provide additional peaking and midrange capacities
- Among the 5 sub-grids in the Visayas, Cebu is projected to start requiring additional capacity by 2009
- Immediate measures must be undertaken for Mindanao
  - 50 MW for 2005

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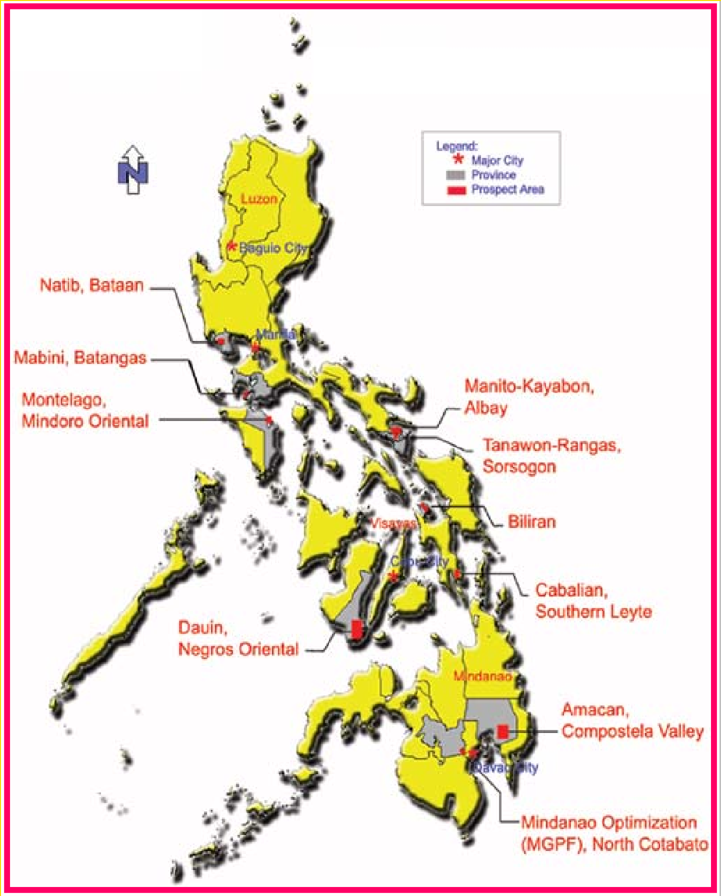
Other Energy Initiatives

OTHER ENERGY INITIATIVES

To be World Leader in Geothermal Energy

- Active promotion of geothermal exploration through Geothermal Bid Round
  - 10 prospective geo sites with 300 – 510 MW potential capacity
  - Bidding extended to November 2004



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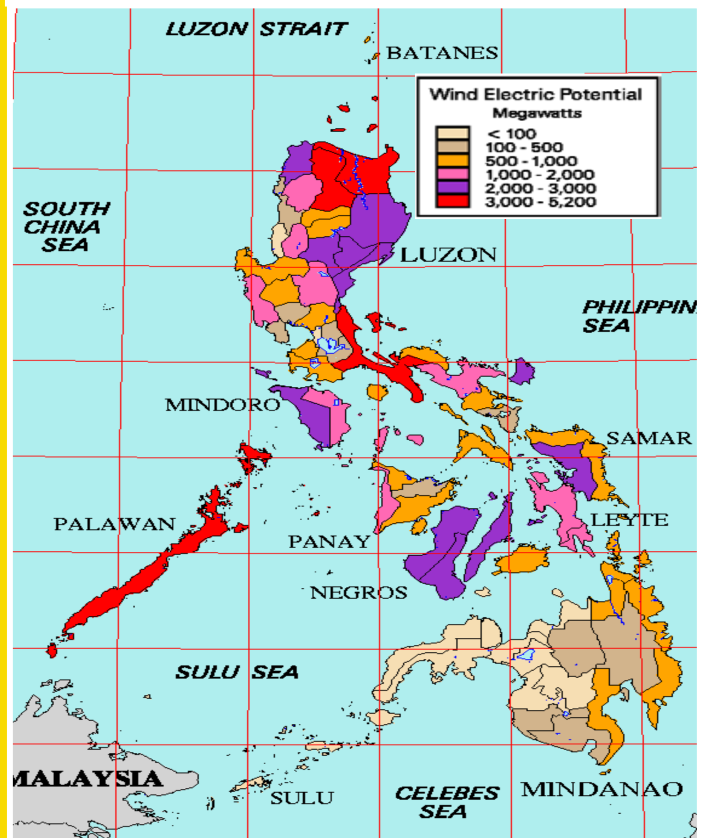
OTHER ENERGY INITIATIVES

To be the Largest Wind Power Producer in SEA

- Launched the first ever wind investment kit for 16 wind power areas with 345 MW potential capacity in June ‘04
- Northwind’s 25MW Wind power project in Bangui, Ilocos Norte by December 2004
- PNOC-EDC’s 40MW wind farm in Ilocos Norte by 2006

Philippine Wind Energy Potential Map



OTHER ENERGY INITIATIVES

To Make Natural Gas the Fuel of Choice in Luzon

- Power Sector
  - Conversion of existing and decommissioned power plants
  - Construction of greenfield power plants
- Infrastructure development
  - BatMan 1 & spur lines by 2007
  - LNG Terminal by 2010
- Transport Sector
  - CNG buses to start plying major routes of Manila to Laguna by 1Q ’05
  - 8 local bus operators signed purchase contracts for 160 units of CNG buses from China

OTHER ENERGY INITIATIVES

To Promote Alternative Transport Fuels: Hybrid Cars

- DTI & DOE coordinating to promote assembly & importation of hybrid vehicles

Toyota Prius: First Hybrid Car in RP

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OTHER ENERGY INITIATIVES

To Promote Alternative Transport Fuels

- Acceleration of the Coco Bio-Diesel Program
  - Memo Circular 55 to utilize coco-based diesel on government vehicles signed in Feb. '04
  - Program officially launched in April '04

- Development of Ethanol as gasoline blend
  - Cooperation with Thailand
  - Sugar industry launched the Philippine Fuel Ethanol Alliance
  - Petron to introduce pre-blended ethanol in the local market

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Moving Forward

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CHALLENGES IN THE POWER SECTOR

Moving Forward

- Continued active private sector participation
  - EPIRA restriction on the government to put up additional generating
  - Government's limited financial resources to finance much needed power infrastructure & facilities
  - Some areas in critical power supply situation
- Creating a conducive environment for investment
  - Market-based environment specifically in the power generation sector
  - Investor interest to participate in the privatization efforts
  - Tariff rate mechanism that would balance interests of the investors and consumers

CHALLENGES IN THE POWER SECTOR

Moving Forward

- Government remains committed to power reforms, despite earlier delays brought about by unforeseen and fortuitous events
- Energy Independence as one of the five major reform agenda of the President

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