

Orientation Program for DMC Officials

ADB's Role in Supporting Power Sector Restructuring in the Philippines

Electricity Market Development Project

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ADB and Philippines' energy sector



Over the last 30 years, ADB has provided about **\$3.6 billion** in loans, guarantees and around **\$15 million** in technical assistances to the sector

ADB Assistance to the Power Sector

- 20 loans (US\$1.6 billion) and a partial credit guarantee of JPY12 billion to National Power Corporation for power generation and transmission projects.
- 2 program loans to the Government for power sector restructuring and debt liabilities management (US\$300 +\$450 million).
- Partial Credit Guarantee to PSALM (US\$500 million)
- 35 technical assistance grants to the power sector for institutional strengthening and various studies (about US\$15.5 million)

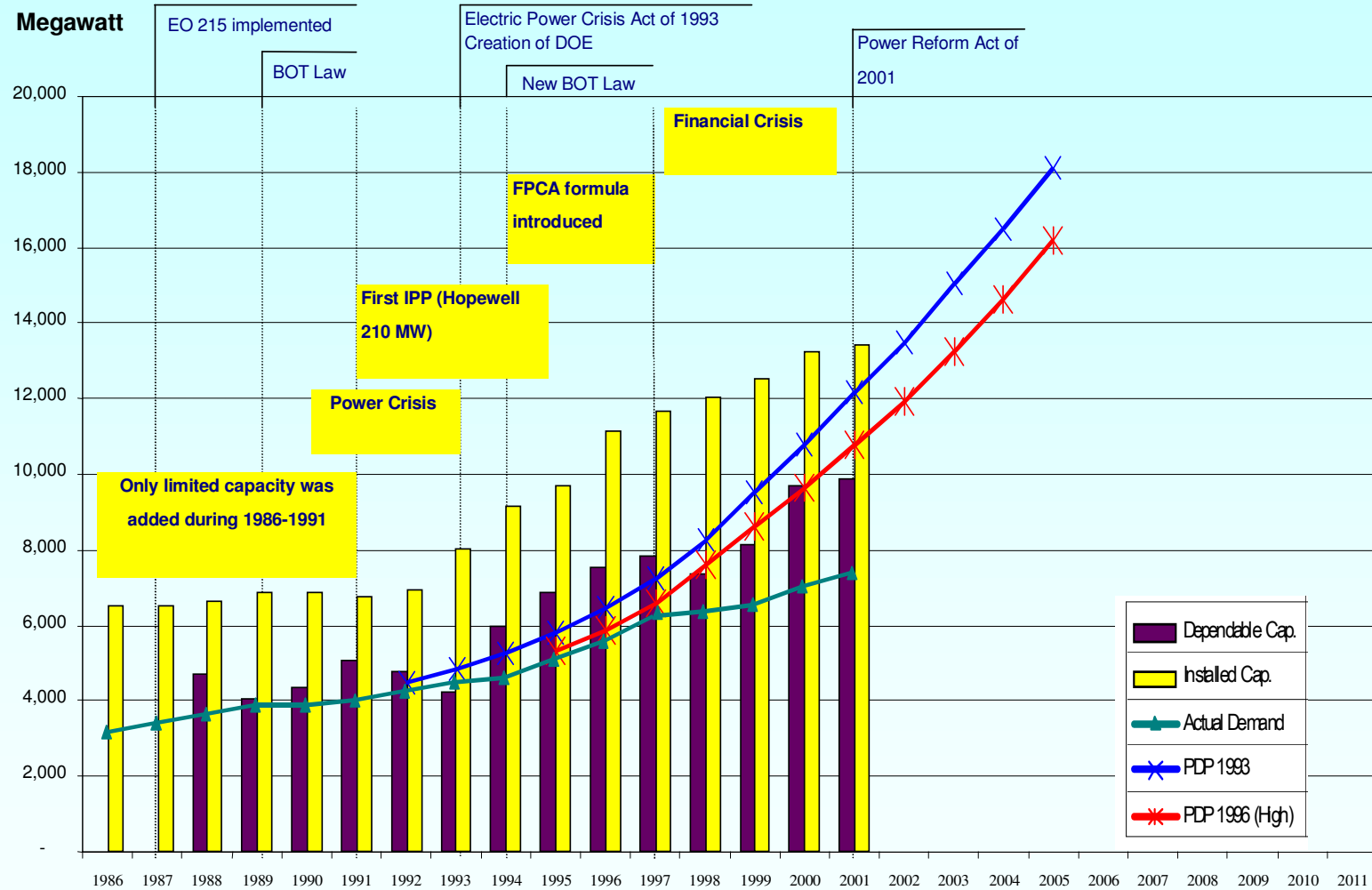
Genesis of Power Sector Reform in the Philippines (1)

- In late 1980s, the Government scrapped Bataan Nuclear Power Plant (620MW, \$2.3 billion, fully paid in April 2007);
- In early 1990s, Luzon experienced severe power shortages due to inadequate generation capacity
- With emergency power granted by Congress, Government contracted IPPs to resolve the power crisis – over 6000MW contracted with take-or-pay provision guaranteed by the Government.
- Meralco also contracted 2000MW from IPPs.

Genesis of Power Sector Reform in the Philippines (2)

- Unfortunately, demand did not grow as fast as projected.
- For example, the projected peak demand in 2004 for the Luzon, Visayas, and Mindanao grids would be 9,303 megawatts (MW), 1,496 MW, and 1,964 MW while the actual peak demand was only 6,728 MW for Luzon (38% below forecast), 1,063 MW for Visayas (40% below forecast), and 1,278 MW for Mindanao (53% below forecast) in 2004
- NPC has incurred a heavy debt burden, large debt service obligations, and continuing financial losses since 1998. NPC's long term debts were about 30% of Government's contingent liabilities.

Megawatt



How much we pay? (Meralco, as at September 2007)

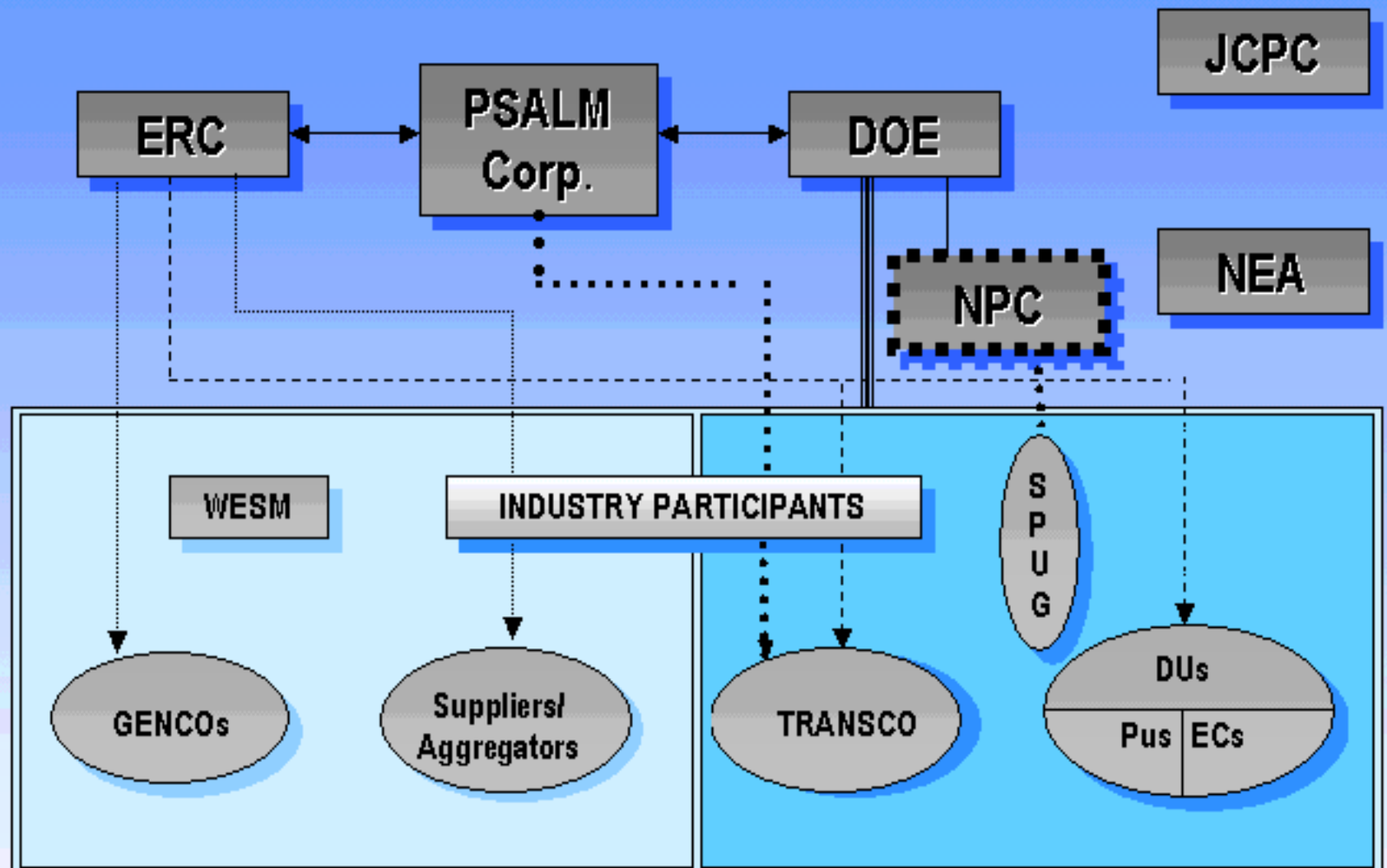
	P/KWh (US cent/KWh)	%
Generation	4.68 (11.4)	58.5
Transmission	0.92 (2.2)	11.5
Distribution	0.97 (2.4)	12.1
Losses	0.62 (1.5)	7.8
Taxes/UC	0.80 (1.9)	10.0
Total	8.00 (19.5*)	100

* The average wholesale price is about US cent 6/KWh, and retail price is US cent 9/KWh. i.e., the cost of generation alone in the Philippines is more than the final retail rate in the US.

ADB Supported Power Sector Restructuring Program

- The Government of the Philippines decided to restructure and privatize the electric power industry in late 1990s. ADB has been playing a supportive role through technical assistance and also lending to the Government.
- On 16 December 1998, ADB approved the Power Sector Restructuring Program (PSRP) for \$300 million to the Republic of the Philippines. The Japan Bank for International Cooperation (JBIC) also approved a loan of \$300 million to support the Program.
- On 4 December 2002, ADB approved a partial credit guarantee (PCG) on yen bonds to be issued by the Philippines' Power Sector Assets and Liabilities Management Corporation (PSALM) for an amount of up to US\$500 million equivalent.

THE NEW STRUCTURE OF THE ELECTRIC INDUSTRY



LEGEND:



The Road to Restructuring

Retail
Competition
and Open
Access

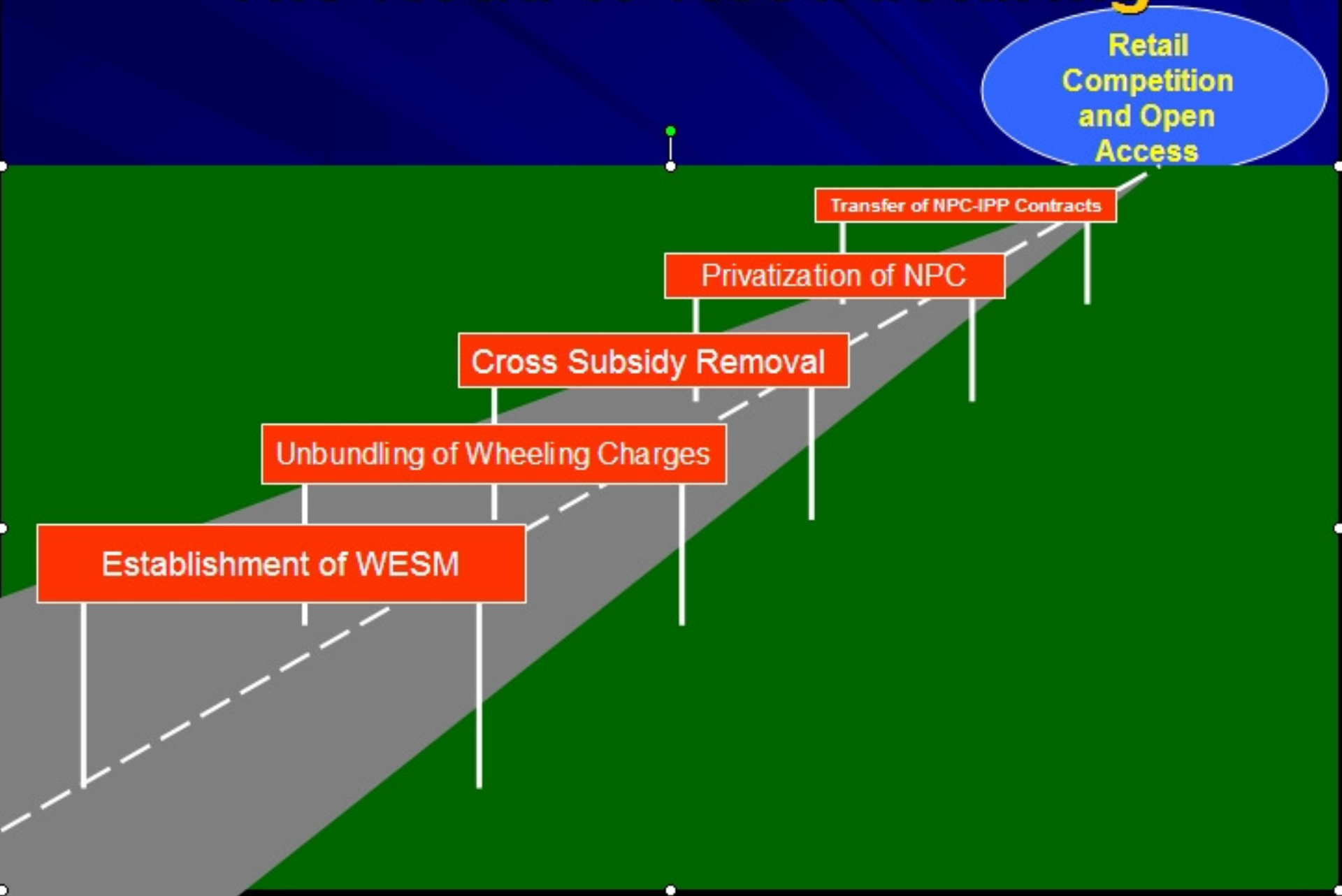
Transfer of NPC-IPP Contracts

Privatization of NPC

Cross Subsidy Removal

Unbundling of Wheeling Charges

Establishment of WESM



Electricity Market Development Project

Processing Milestones

- Fact-finding mission: 2-26 April 2002.
- Management Review Meeting: 13 June 2002
- Appraisal Mission: 22 July – 9 August 2002.
- Staff Review Committee: 30 September 2002
- Loan negotiations: 25 October – 14 November 2002
- Board approval: 16 December 2002
- Loan signing: 16 December 2003
- Loan effectiveness: 9 March 2004

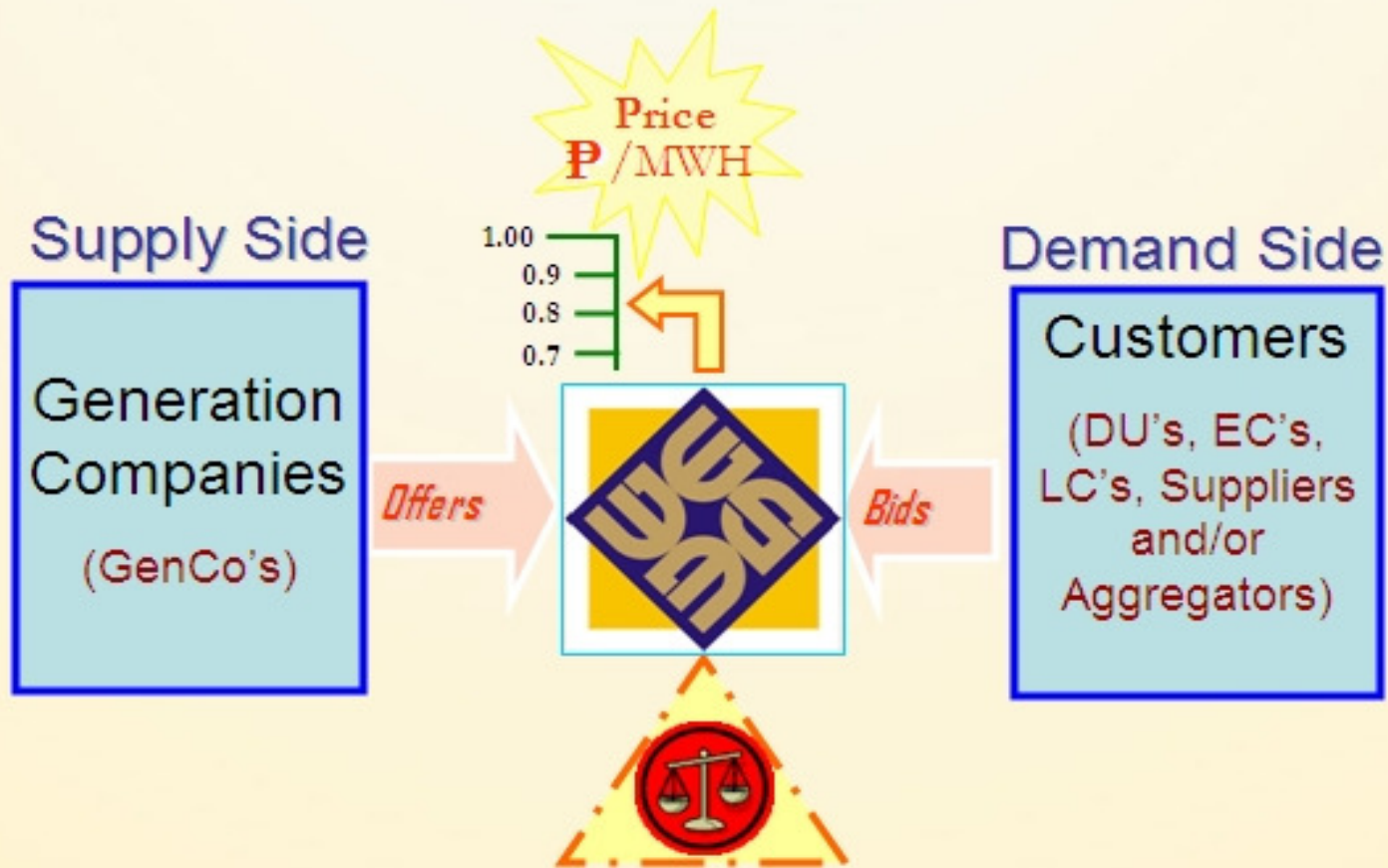
Electricity Market Development Project

Procurement & Implementation

- Specific Procurement Notice: 14 May 2002
- ABB (USA), ALSTOM (France), LOGICA (UK), MITSUBISHI (Japan) and SIEMENS (USA) participated in the bidding to supply hardware and software for WESM.
- ABB won the contract (about US\$ 8 million) in November 2003.
- The hardware and software were delivered on 14 December 2004.
- After one year market trial operations, the commercial operations of WESM started in June 2006.



Demand and Supply Balancing



Old Pricing Regime vs New Pricing Regime

Cost-Based Pricing: The Old Regime

$$\text{Price} = \frac{\text{RORB} + \text{O \& M} + \text{Dep}}{\text{Sales Forecast}}$$

- Based on historical costs
- Long-term averaging
- Fixed by regulators
- Possible cross-subsidy
- No economic incentives

Market-Based Pricing: The New Regime



Price is determined by interaction of supply & demand

How does WESM work?

Supply Side



The Marketplace for Energy



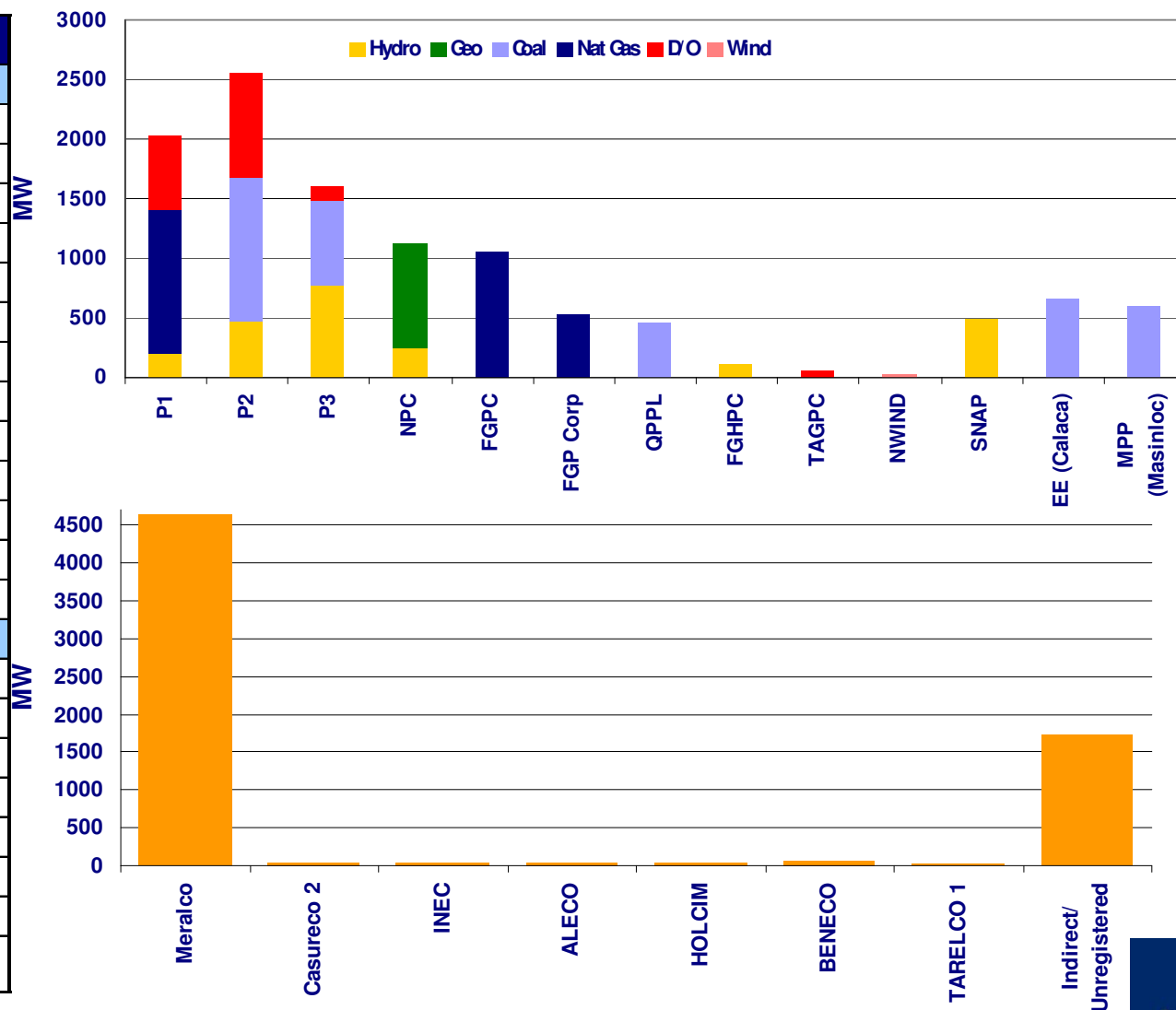
Demand Side

**Industry Demand Requirements:
400 MW**

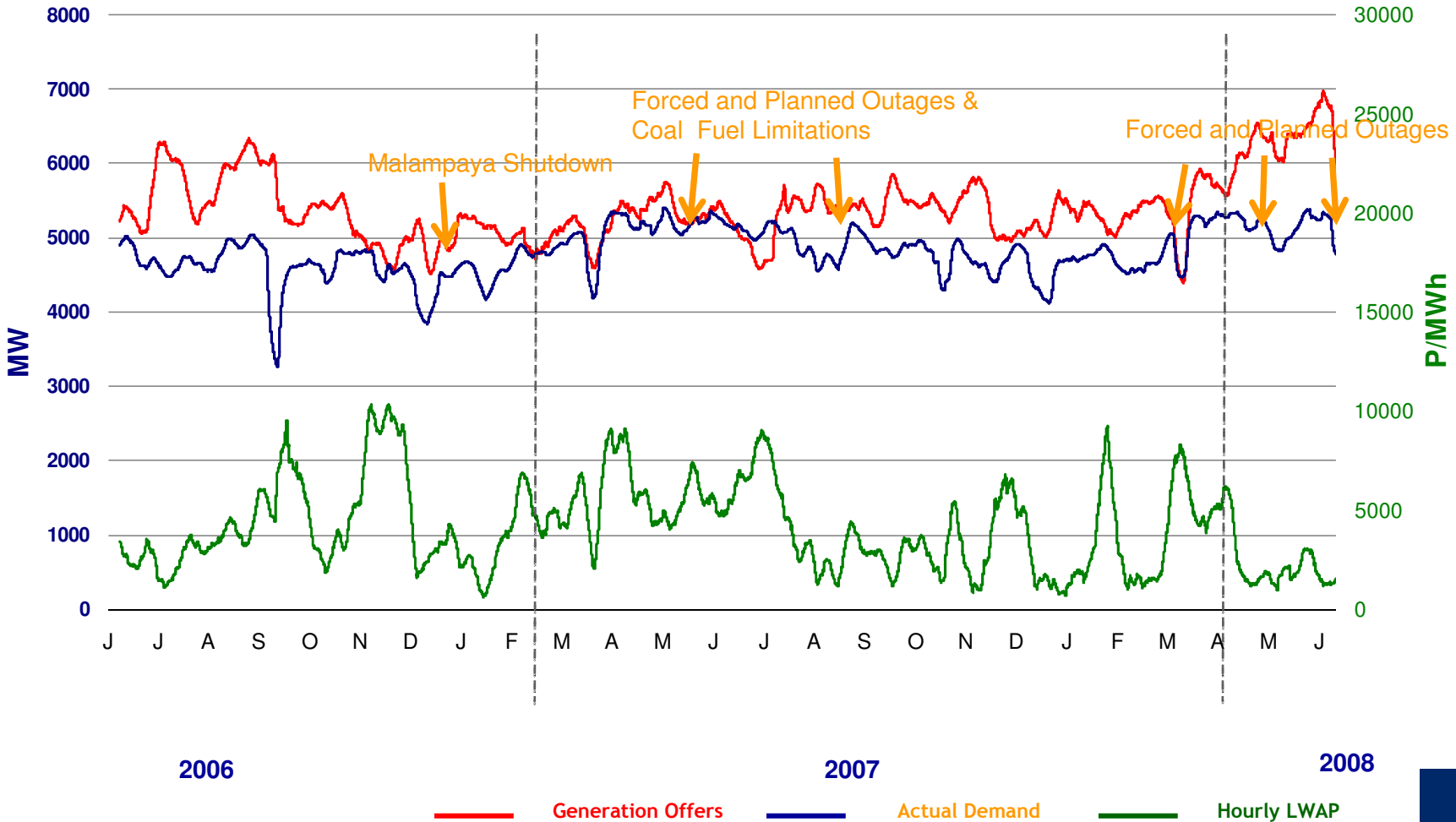
Market Clearing Price is set at P 2,000/MWh and is also the Marginal Cost of meeting such requirement.

Market Participants

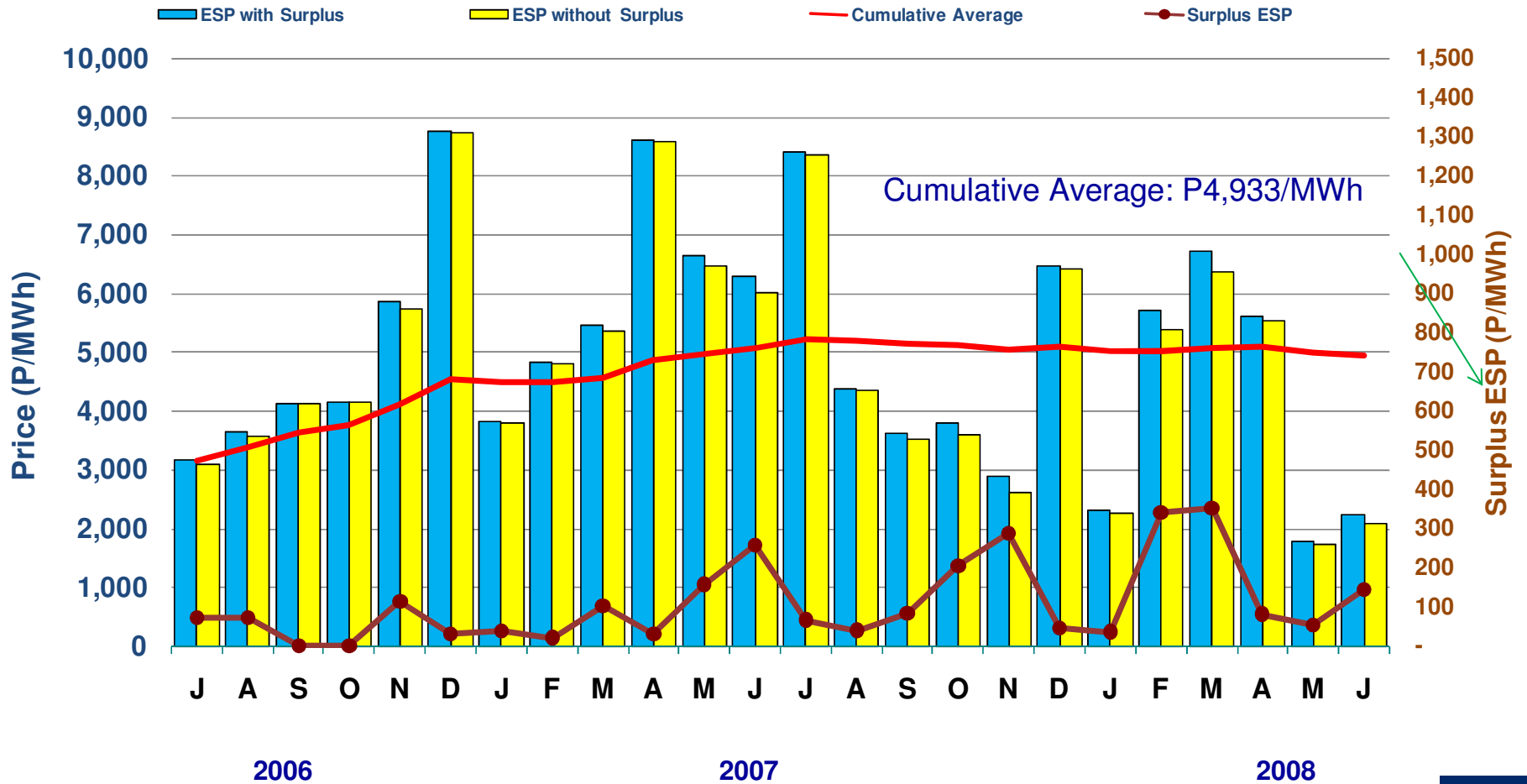
Trading Participants	Capacity (MW)
Generators	11278
1. NPC	1126
2. PSALM 1	2021
3. PSALM 2	2551
4. PSALM 3	1609
5. FGPC	1054
6. FGP Corp	529.8
7. QPPL	459
8. NWIND	27
9. TAPGC	50
10. FGHPC	112
11. SNAP	480
12. MPP(Masinloc)	600
13. EE(Calaca)*	660
Customers	6619
1. Meralco	4633
2. Casureco 2	38
3. INEC	35
4. ALECO	48
5. HOLCIM	50
6. BENEKO	59
7. TARELCO 1*	28
8. Indirect/Unregistered	1728



Market Results

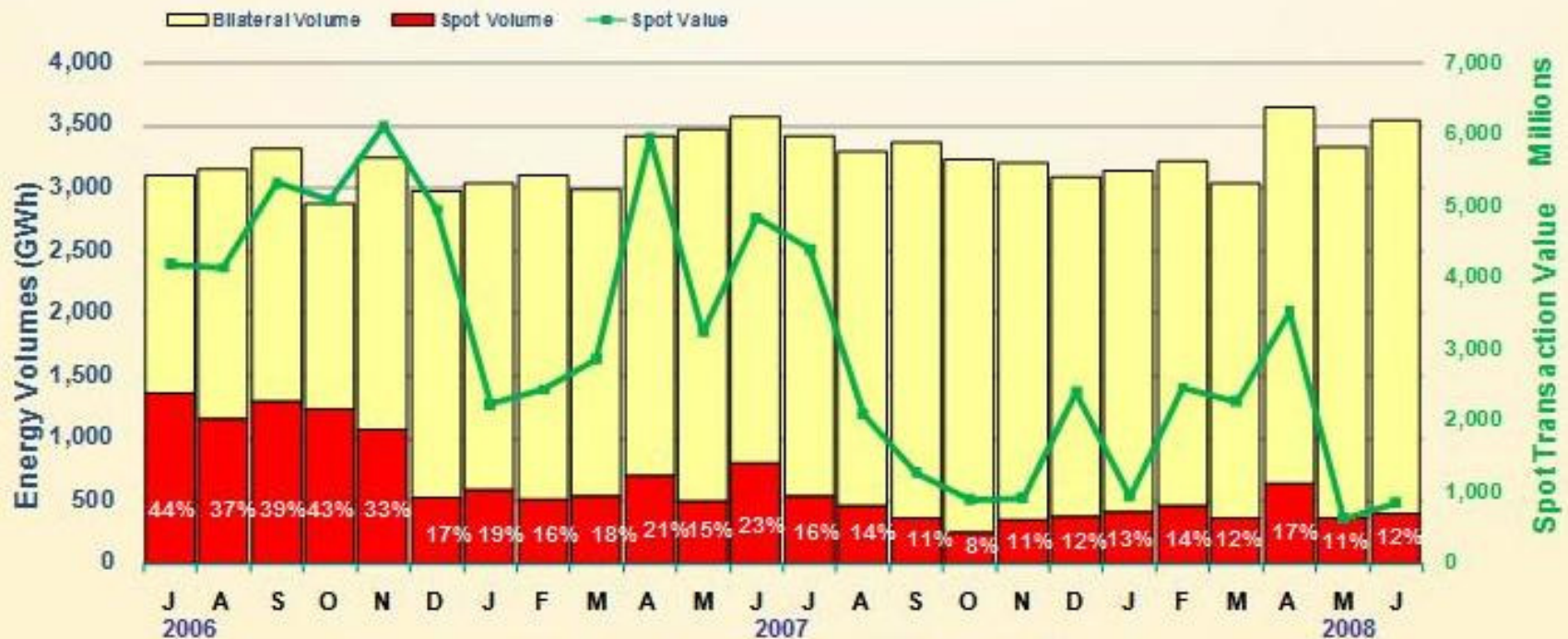


Effective Settlement Price



Market Outcome

Transaction Volumes and Values



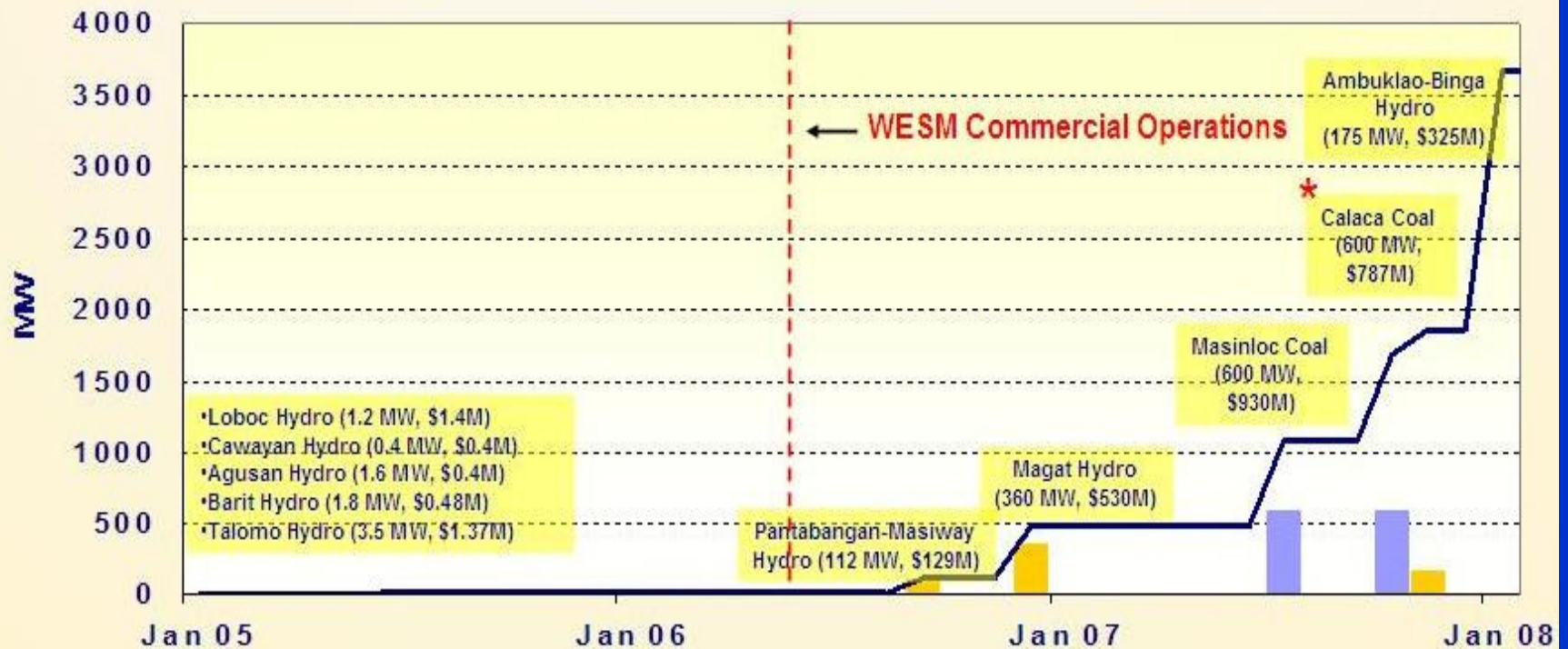
Average Spot Quantity
 2006: 35%
 2007: 15%
 2008 (Jan-June): 12%

Long-Term Pricing Impact



Wholesale Electricity Spot Market

Increased Investor Interest



Impact Assessment of ADB Support

- Sector Reform
 - Integrated power industry unbundled
 - Independent energy regulator established
 - Substantial progress in privatization (68% of NPC plants and TRANSCO concession)
 - Wholesale electricity spot market operational
- Challenges
 - Making electricity rate more affordable
 - Averting power shortages beyond 2012