

One Spark...



**Wholesale Electricity
Spot Market**

Market Report
June 2006 - June 2007

One Spark

brings progress to a nation





One Spark

brings life to communities





One Spark

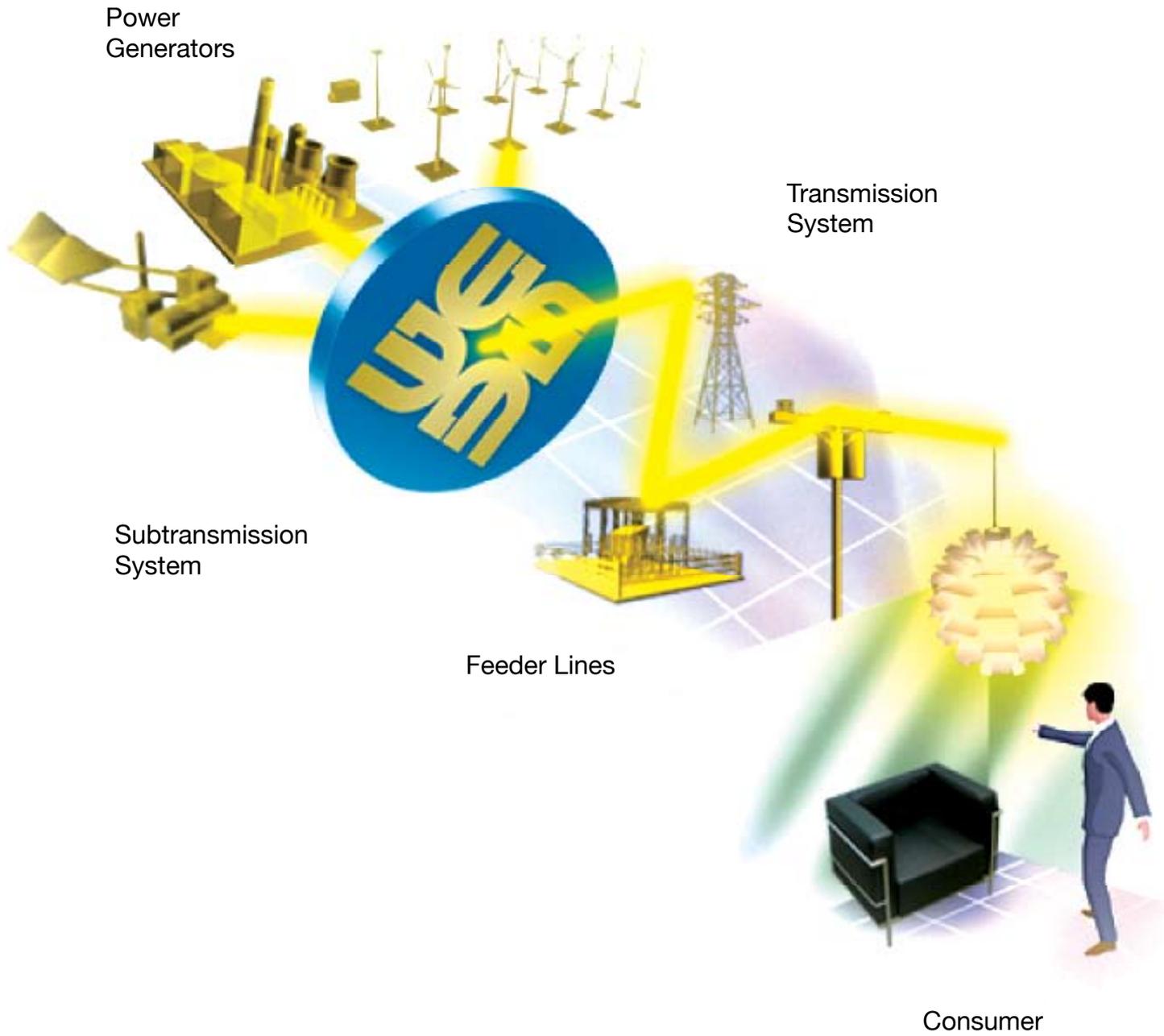
brings hope to a better future





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01
WHAT IS WESM?



The WESM is a centralized venue for buyers and sellers to engage in the trading of electricity as a commodity.



LOOKING BACK

that the Philippines is the first among Asia's developing economies to have successfully begun a wholesale power spot market.

By EPIRA's reckoning, the WESM should have been up and running in 2002. But, as our experience has shown, paradigm shifts require a more measured pace. Stakeholders had to be brought on board and not all could proceed at the same speed. We also needed to benchmark on models from other parts of the world, adopting as much as adapting from recognized best practices.

And yet, we also could not wait indefinitely for perfect conditions to occur before commencing WESM's commercial operations. In order for the privatization of state generation assets to gain momentum, and for fuller competition to take place, prospective buyers of government power plants need an alternative market for their expected output, particularly in the absence of adequate bilateral supply contracts that could be attached to the generation plants. That alternative is the WESM.

Thus, amidst imperfect competition—with the recognized dominance of the state-owned companies in the generation sub-sector and that of a private utility in the distribution sector in Luzon—we nevertheless decided to meet head-on the challenges of transition.

Let us briskly walk through this eventful year. We started Luzon operations with 9 generators and 2 distribution utilities participating. We ended the year with 13 registered direct participants in the market, with 10 generators and 3 distribution utilities.

From a larger perspective, the reforms envisioned under the Electric Power Industry Reform Act of 2001 (EPIRA) are all about building strong institutions for a modernizing society. From the power industry's viewpoint, these are institutions that collectively could bring about transparency, fairness, and competition. Their ultimate aim is to render real the people's power of choice by allowing consumers to exercise their choice of power.

Among the new institutions EPIRA mandated to be built from the ground is the Wholesale Electricity Spot Market or WESM.

We launched this year WESM's commercial operations in Luzon. 2006, therefore, marks a milestone for Philippine power reforms. We are particularly proud

Accomplishments of the Past Year

During the year, we recorded Luzon's registered capacity at 11,396 MW, with a peak demand logged at 6,590 MW on 18 May 2007.

In the market's first two months, prices were below the average Time-of-Use rates of the National Power Corporation. Still, we expected the process of price search to continue over several months of operation as the participants familiarized themselves with the workings of the market.

We monitored price increases two months thereafter and the WESM was thrust into public attention. In hindsight, I as chair of the PEM Board would have handled some aspects of this episode in the market's early life differently. But the entire experience allowed us to observe our system of monitoring and surveillance under stress and gave the government the opportunity to revisit the WESM rules, its structure and processes. It also established that the review mechanism of the Energy Regulatory Commission works.

This year also lived up in other ways to its billing as a time of transition. Nature—and climate change as some would hasten to add—was a great player in this year's market. Typhoon *Milenyo*, for instance, resulted in the market's suspension for five days. There was also the shutdown of the Malampaya natural gas project which overlapped with the unscheduled rehabilitation of one of Luzon's biggest coal-fired power plants.

Despite these hardships, the WESM not only survived; it emerged strengthened.

As we move forward with 215 trading nodes and a total spot market volume of 10,263 GWh with a value of PHP51,253M, we will continue to be faithful to our mission “to establish a competitive, efficient, transparent and reliable market for electricity”.

By design, the Secretary of Energy's chairmanship of the PEM Board is transitory. I look forward to the day when our transition period ends and when self-regulation by the industry's players begins. Government can then shift more fully to its role as regulator and policy-maker. Indeed, I would not want the dilemmas I encountered while exercising the burdens of transition imposed by law to be visited upon those who will come after me.

In overcoming these challenges, I wish to congratulate all the market participants and the market officers and staff. My deepest thanks to you and to my colleagues in government for the hard work in the struggles we went through.

Finally, I am grateful to President Gloria Macapagal-Arroyo for her full appreciation of the importance of the WESM and for her unqualified support in ensuring that we build it as a strong institution above the politics of the day.



RAPHAEL P.M. LOTILLA

Secretary, Department of Energy
Chairman, PEM Board



VISION FOR CHANGE

Vision For Change

Positive thinking, patience, and persistence pulled us through the most exigent times of the life of EPIRA and WESM. We knew that reform was not easy. But we also knew that it could be done. It was only a matter of political will.

We overcame our hurdles in the past six years thanks to an energy team which was exceedingly dedicated and cooperative.

We successfully renegotiated the IPP contracts, restructured the energy agencies, established PSALM and TransCo, started the privatization of the NPC assets which is now in full swing; accelerated rural electrification; and rehabilitated electric cooperatives. We also strengthened the institutional capability of the energy agencies to deal with a deregulating sector.

We formulated significant guidelines and policies to implement EPIRA. Among the guidelines we promulgated was the WESM Price Determination Methodology. We laid the foundation for the wholesale electricity spot market through the successful bidding for the WESM platform at one of the lowest costs in the world, establishment of the Philippine Electricity Market Corporation (PEMC), and completion of the WESM market model. WESM is now successfully operating in Luzon and new players have entered the industry.

With these successes, I believe that WESM has more to accomplish. We need to increase participation in WESM as the demand side is still low. We should encourage more ECs to participate to make the WESM operation more widespread. I would like to see WESM expand to Visayas in the near future.

The great work that had been done in the past six years and the greater work that will be done in the years ahead will hopefully lead to electricity prices that are more competitive and transparent. All our efforts will then translate to benefits felt by the consumers in their everyday lives—the power to choose the generator that will sufficiently answer their needs; or to the environment advocates, the power to choose the type of fuel used.

Against this backdrop, I would like to tell our market players that WESM is working efficiently. We encourage you to actively participate so that the market continues to operate.

As we are only the second country in Asia to implement an electricity spot market, I hope it continues to operate successfully for the benefit of the power consumers, and I aspire that our Philippine experience will become a shining example for other emerging countries to follow!

To the employees of PEMC, I send you my warmest congratulations for a job well done. More power to you!

VINCENT S. PÉREZ

Former Secretary, Department of Energy
Former Chairman, PEM Board

Transitions

When the WESM began commercial operations in 2006, there was a wide range of views as to what would be the eventual outcome. One thing was clear though, it was launched at a time when the industry needed progress. We were, at the time, an industry on the brink, and the consensus was that a successful market could pull us back and put us on track for the full implementation of the EPIRA. One year on and it's already a very different industry, in many unexpected ways.

We know a lot more about our industry now, our system, and its economics. Since the start of commercial operations we have gone through force majeure interruptions, a shutdown of the Malampaya platform, blistering, dry weather, soaring global primary energy costs and fuel constraints. Where possible, the WESM priced the economics of the system, and slowly the industry has gained more confidence in it. In effect, the WESM has become a mirror of the industry, reflecting both its strengths and shortcomings.

Already, significant progress has been made in the privatization of generating plants, making the Philippines one of the largest power investment destinations in the region this year. These new entrants will soon become participants in the WESM, bringing greater depth to the market both in terms of megawatts and international experience. On the demand side, slowly we are beginning to see increased participation from the Electricity Cooperatives, perhaps surprisingly,

taking the lead over the smaller private distribution utilities. Suppliers, who will eventually trade on both the buy- and sell-side, are beginning to be formed, mostly by existing industry players, and these should play a significant role in the development of our market.

Along with us, the public has also learned a lot about our industry, and in this way we can perhaps best measure our success as a market. Despite the volatility and the drama of the first months of operation, both the press and the public have accepted the outcomes, even the expensive ones – testimony to the integrity of the market. But this is a trust that we must keep earning. While there is no such thing as a perfect market, it must

always be a goal that we, as operators, governors and participants, should always strive for, since by doing so we make our industry better and we secure our own future.



GEARING UP FOR THE FUTURE

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LASSE A. HOLOPAINEN

President, PEMC

Chairman, Rules Change Committee

Independent Member, PEM Board

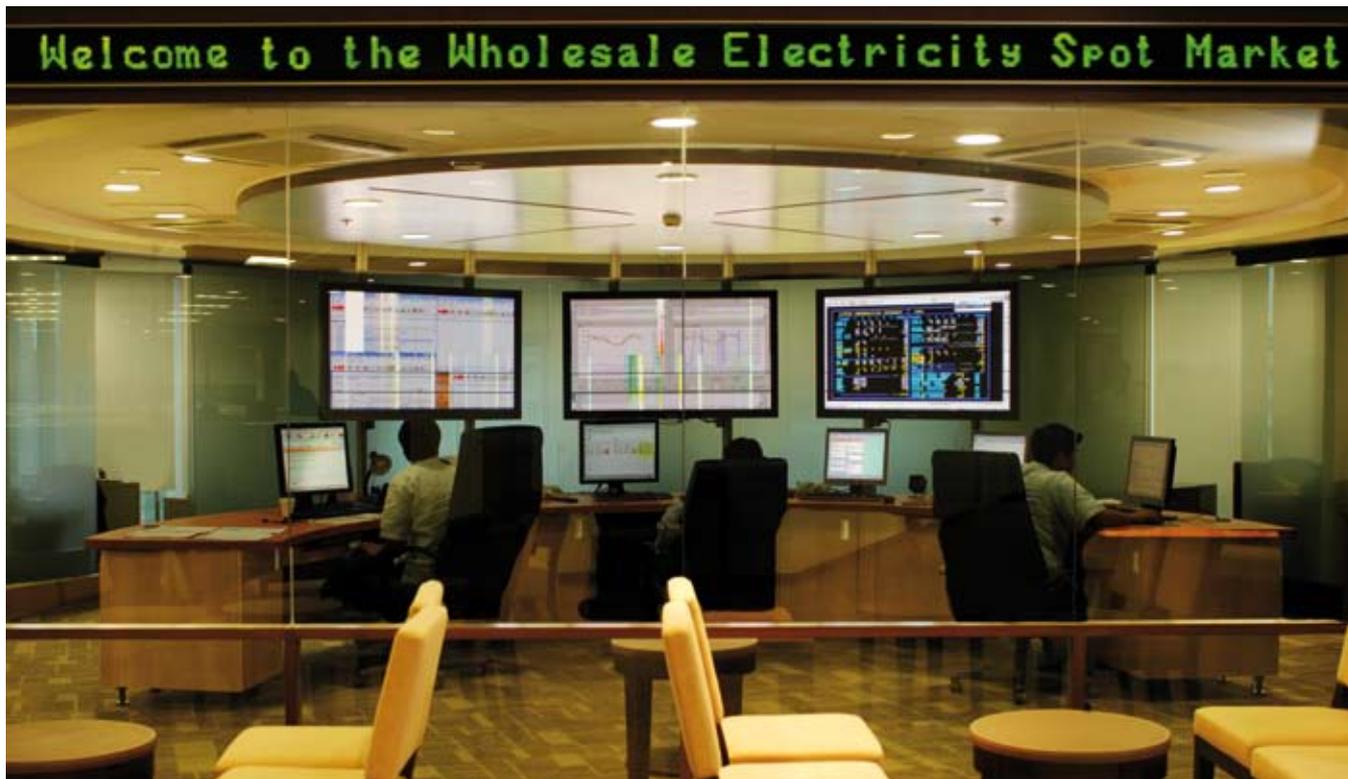
Philippine Electricity Market Corporation



The Philippine Electricity Market Corporation (PEMC) is the governing body of the Philippine Wholesale Electricity Spot Market (WESM). Created by the Department of Energy (DOE) in conjunction with the Electricity Industry Participants, as mandated by Section 30 of the Electric Power Industry Reform Act, PEMC has been in existence since 18 November 2003. Industry Participants are equitably represented on the Board of Directors, which include independent directors.

PEMC's primary purpose is to establish a market for the wholesale trade of energy and reserves in the Philippines. PEMC also established various independent and semi-independent committees to undertake governance functions, and prides itself in its institutional integrity. PEMC, in the interim following the start of WESM commercial operations, has also acted as the Autonomous Group Market Operator (AGMO), but in the future will be operating the market through an Independent Market Operator (IMO).

8 The WESM and PEMC are dedicated to building and securing the future of our country through the development of a competitive power industry.



Mission, Vision and Values

Philippine Electricity Market Corporation

MISSION

We provide a fair and transparent trading environment responsive to the needs of the electricity industry stakeholders.

We promote the sustainability of the industry by fostering healthy competition, contributing to the economic development of the country.

We will do this by maintaining professionalism, integrity and dedication to excellence.

VISION

We create, develop and operate the best markets in the world.

CORPORATE VALUES

In achieving our mission and vision, we uphold the core value of EXCELLENCE (“Kagalingan”) which we manifest through:



Philippine Electricity Market Board of Directors

On 18 December 2003, the DOE established the PEM Board and appointed an interim Board of Directors according to the PEMC By-laws and the WESM Rules. As stated in the WESM Rules, the 15-member PEM Board is made up of the following members:

- 1 Director representing the Market Operator
- 1 Director representing the Transmission Sector
- 4 Directors representing the Distribution Sector [2 for the Electric Cooperatives and 2 for the Private Distribution Utilities]
- 1 Director representing the Supply Sector
- 4 Directors representing the Generation Sector
- 4 Independent Directors

CURRENT BOARD OF DIRECTORS





The members of the first Board of Directors as of December 2003 were:

Chairman of the PEM Board:

Hon. Vicente S. Pèrez, Jr., Secretary of Energy

Transmission Sector:

Dr. Alan T. Ortiz, President and Chief Executive Officer, National Transmission Corporation

Market Operator:

Engr. Mario R. Pangilinan, Acting, Vice President, Market Operations of PEMC

Generation Sector:

Mr. Ernesto B. Pantangco, President, Philippine Independent Power Producers Association

Mr. Froilan A. Tampinco, Vice President for Asset Valuation and Disposal, Power Sector Assets and Liabilities Management

Mr. Pio J. Benavidez, Senior Vice President for Generation, National Power Corporation

Mr. Edgardo A. Bautista, President, Mirant Philippines

Distribution Sector:

Mr. Jesus P. Francisco, President and Chief Operating Officer, Manila Electric Company

Mr. Ramon C. Abaya, Philippine Electric Plant Owners Association

Mr. Wilfred L. Billena, General Manager, Iloilo 1 Electric Cooperative, Inc.

Independent:

Mr. Lasse A. Holopainen, former Assistant Secretary, DOE

Atty. Vigor D. Mendoza II, Executive Director, Philippine Ecozones Association

Engr. Meleusipo E. Fonollera, Institute of Integrated Electrical Engineers of the Philippines

Mr. Elvico B. Gumban, Semiconductor and Electronics Industries Philippines

Similarly, the PEM Board appointed the first PEMC Corporate Officers, namely:

Mr. Lasse A. Holopainen as President of PEMC

Atty. Celina R. Encarnacion as Corporate Secretary

Ms. Elizabeth F. Lumasac as Corporate Treasurer.

Board of Directors (June 2006 - June 2007)

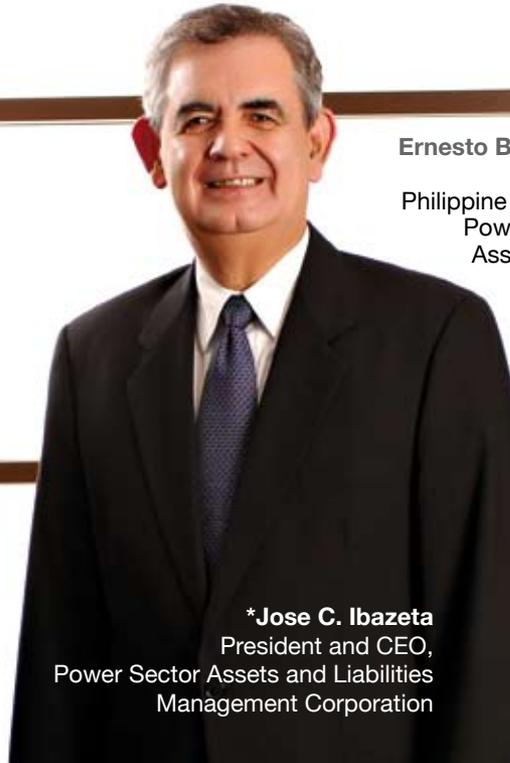
GENERATOR

Lee Kang Won*
President, Korea
Electric Power
Company-Philippines

*Not in picture



Cyril C. del Callar
President, National
Power Corporation



***Jose C. Ibazeta**
President and CEO,
Power Sector Assets and Liabilities
Management Corporation

Ernesto B. Pantangco
President,
Philippine Independent
Power Producers
Association, Inc.



*replaced Ms. Nieves L. Osorio of the Power Sector Assets and Liabilities Management Corporation (21 September 2005 - 28 February 2007)

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DISTRIBUTOR



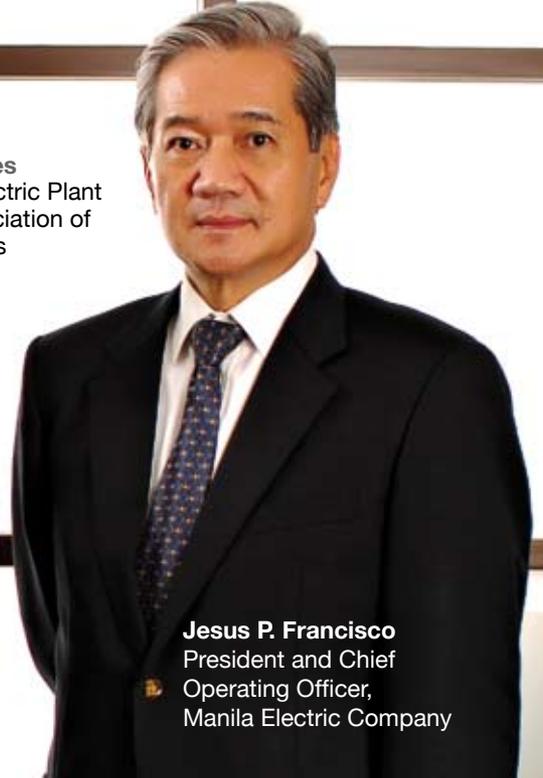
Gerardo P. Verzosa
General Manager,
Benguet Electric
Cooperative, Inc.



Wilfredo L. Billena
General Manager,
Iloilo 1 Electric
Cooperative, Inc.



Deon P. James
Philippine Electric Plant
Owners Association of
the Philippines



Jesus P. Francisco
President and Chief
Operating Officer,
Manila Electric Company

MARKET OPERATOR

SYSTEM OPERATOR



*replaced Dr. Allan T. Ortiz of the National Transmission Corporation (18 December 2003 - 24 September 2006)

DEPARTMENT OF ENERGY



INDEPENDENT



*not in photo: Engr. Meleusipo E. Fonellera (18 December 2003 - 27 April 2007)



Sec. Raphael P.M. Lotilla

21 March 2005 - Present

Energy Secretary

Department of Energy

President Gloria Macapagal-Arroyo appointed Raphael P.M. Lotilla as the Energy Secretary in March 2005. With his appointment and given the critical role of energy in the economy, the Energy Secretary joined the country's economic management team with the Secretaries of Finance, Trade and Industry, Socio-Economic Planning, Budget and Development and the Bangko Sentral Governor. He interacted with Congress on the imposition of a 12% value-added tax on the previously exempt fuel and power sectors, and shepherded its smooth implementation particularly in the transition phase. He also led the Executive's efforts to push the renewable energy bill into law and to enact a law mandating a market for biofuels while avoiding a competition between food and fuel.

In January 2004, Sec. Lotilla was appointed president and chief executive officer of the Power Sector Assets and Liabilities Management Corporation (PSALM) and is credited with steering PSALM's progress in privatizing the assets of the National Power Corporation in the same year.

As PSALM president, he gave topmost priority to the adjustment of the rates of National Power Corporation to reflect more fully the true cost of power, the absorption by the National Government of P200 billion in NPC's debts, and the demonstration of the government's resolve to privatize its generation plants notwithstanding the absence at that time of a spot market and of bilateral supply contracts attached to the plants.

From 1996 to January 2004, Sec. Lotilla served as the deputy director-general of the National Economic Development Authority. He was also a major contributor in the formulation of the government's position in the Electric Power Industry Reform Act of 2001.

Sec. Lotilla served as legal consultant to the Senate and the Senate Committee on Foreign Relations before he joined the government, providing technical assistance to the Senate Committee on Energy and serving as coordinator for the Legislative-Executive Development Advisory Council.

Sec. Lotilla holds undergraduate degrees in Psychology and History, a Bachelor of Laws degree from the University of the Philippines, and a Master of Laws degree from the University of Michigan Law School. Thereafter, he began his teaching profession as assistant professor of Law in 1985 at the University of the Philippines.

He also served as UP's vice president for public affairs in 1991 and as director of the Institute of International Legal Studies of the UP Law Center from 1989 to 1996. He was appointed Professor of Law in 1995.



Ernesto B. Pantangco

18 December 2003 - Present

President and Chief Executive Officer

First Private Power Corporation

Ernesto B. Pantangco is Senior Vice President of First Gen Corporation and President and Chief Executive Officer of First Private Power Corporation and its major asset, Bauang Private Power Corporation. He sits in the boards of Philippine Electricity Market Corporation (PEMC), PNOG Energy Development Corporation, Adtel, Inc., First Gen Luzon Power Corp., FG Bukidnon Power Corp., First Gen Hydro Power Corp., First Gen Geothermal Power Corp., First Gen Visayas Hydro Power Corp., First Gen Mindanao Hydro Power Corp., and First Gen Northern Energy Corp. He is also Senior Vice President of First Gen Luzon Power Corp., First Gen Hydro Power Corp., First Gen Geothermal Power Corp., First Gen Visayas Hydro Power Corp., First Gen Mindanao Hydro Power Corp., and First Gen Northern Energy Corp., and Red Vulcan Holdings Corp.

Mr. Pantangco is also President of the Philippine Independent Power Producers Association (PIPPA), a post he has held since March 2002.

He earned his Bachelor of Science in Mechanical Engineering degree from De La Salle University and Master of Business Administration degree from the Asian Institute of Management as a Dean's Lister. He is a registered mechanical engineer and placed 6th in the 1973 board exams.



Cyril C. Del Callar

16 May 2005 - Present

President

National Power Corporation

A graduate of B.S. Management Engineering from the Ateneo de Manila University with a Juris Doctor from the Ateneo de Manila School of Law, Cyril C. Del Callar assumed office as President of the National Power Corporation in April 2005. Prior to that, he was the Undersecretary of the Department of Energy (DOE) for power-related policies and programs, representing DOE in different government agencies such as the Investment Coordination and Infrastructure Committees of NEDA and the Governing board of PEZA. He also served as Chairman of the Steering Committee of the Wholesale Electricity Spot Market (WESM).

Mr. Del Callar started his stint in the DOE as Assistant Secretary in-charge of Legal, Financial & Management and Administrative Services from 1995 to 1997, where he also acted as Officer-In-Charge of DOE's Policy and Programs Office. He was also instrumental in the formulation and implementation of the Electric Power Industry Reform Act (EPIRA), the law leading to the restructuring of the Philippine Power Sector.

Mr. Del Callar co-chaired the ASEAN-EU panel on Energy, an institutional and informal forum for wider private sector participation. In 1999 he chaired the ASEAN Senior Officials Meeting on Energy (SOME), which led to the formulation, adoption and establishment of the ASEAN Centre for Energy based in Jakarta, where he also served as Board Member.

Prior to his joining the Department of Energy, Mr. Del Callar was a law practitioner of RAV Saguisag & Associates, and the Chief Legal Officer of the Presidential Committee on the Bataan Nuclear Power Plant.



Jose C. Ibazeta

27 March 2007 - Present

President and CEO

Power Sector Assets and Liabilities Management Corporation (PSALM)

Currently a director of the International Container Terminal Services, Inc. (ICTSI) and member of the ICTSI Audit Committee, Jose C. Ibazeta was appointed president of the Power Sector Assets and Liabilities Management Corp. (PSALM) by President Gloria Macapagal Arroyo in 2007.

Ibazeta, who has a master's degree in Business Administration from the University of San Francisco, California and an MBA in Banking and Finance with the New York University, is a consultant to the Chairman and a director of A. Soriano Corp. He is also a director in the following companies: ICTSI Ltd., Anscor Consolidated Corp., Anscor Property Holdings, Inc., Anscor-Casto Travel Corp., Anscor Insurance Brokers, Inc., Island Aviation, Inc., Atlas Consolidated Mining and Development Corp., Minuet Realty Corp., Anscor Land, Inc., Phelps Dodge Philippine Energy Products Corp., Newco, Inc., Capital Mediaworks, Inc., Pet Plans, Inc., Multi-Media Telephony, Inc., Seven Seas Resorts and Leisure, Inc., A. Soriano Air Corp., Vicinetum Holdings, Inc., Vesper Industrial and Development Corp., Toledo Mining and Industrial Corp., Columbus Technologies, Inc., and ASC Mining and Industrial Corp.

A member of the Finance Committee of the Ateneo de Manila University, Ibazeta is also a member of the Board of Trustees of Radio Veritas. He was also chairman of Ensenada International Terminal de C.V. and Ensenada Cruiseport Village S.A. de C.V. until 2001. He was treasurer and director of IHC until 2001.



Lee Kang Won

28 February 2007 - Present

President

Korea Electric Power Corporation - Philippines

The current president of Korea Electric Power Corporation (KEPCO), Lee Kang Won, joined KEPCO in 1976 after completing his Bachelor's Degree in Law from Cheongju University. His 32 years of service in KEPCO included being the General Manager in charge of procurement and contract management of the Ulchin Nuclear Power Site from 1987 to 1989; General Manager in charge of new business development, Overseas Procurement Department from 1989 to 1991; and General Manager in charge of procurement in the New York Office from 1991 to 1996.

He was the Director of KEPCO's Gyeongbuk District Head Office from 1996 to 1999 and served as the Director of the company's Restructuring Office from 1999 to 2006. In 2006, Mr. Lee became the Director General of KEPCO's Overseas Project Department.

Mr. Lee also holds a Master's Degree in Public Administration from the Graduate School of Public Administration in Konkuk University, South Korea in 1978.



Jesus P. Francisco

18 November 2003 - Present

President and Chief Operating Officer
Manila Electric Company

Jesus P. Francisco is the current President and Chief Operating Officer of the Manila Electric Company. He is a mechanical and electrical engineering graduate of the University of the Philippines with an MBA degree from the Asian Institute of Management.

At present, Mr. Francisco is also the Chairman of the Board for MIESCOR Builders, Inc., the President of Clark Electric Distribution Corp. and Chairman of the Board for Landbees Corp.



Wilfredo L. Billena

18 December 2003 - Present

General Manager
Iloilo-1 Electric Cooperative, Inc.

Wilfredo L. Billena, who has a master's degree in Management from the University of the Philippines in the Visayas and an electrical engineering degree from the Western Institute of Technology in Iloilo City, started his career as an Electrical Engineer in 1975 with the Davao Light and Power Company, Inc. From 1982 to 1992, he served several roles for different electric companies in the Visayas region.

Mr. Billena was the chief engineer of the Iloilo-1 Electric Cooperative, Inc. in Tigbauan, Iloilo from 1984 to 1989. Prior to being the cooperatives' general manager, he spent time with VMC Rural Electric Services Cooperative, Inc. as acting general manager, and was also the Regional Technical Assistant for Engineering of the Regional Electrification Center VI in Iloilo City.

Currently the president of Western Visayas Electric Cooperative Association, Mr. Billena is also the core group chairman and vice president of RPEIB VI. He is the current president of the Philippine Rural Electric Cooperative Association and managing partner of the Rural Electrification Financing Corporation.

Mr. Billena is also a member of the Board of Administrators of the National Electrification Administration.



Gerardo P. Verzosa

26 April 2004 - Present

General Manager

Benguet Electric Cooperative, Inc. (BENECO)

Holding a Bachelor of Science degree in Business Management from Ateneo de Manila University, Gerardo P. Verzosa entered the workforce immediately after graduation as a detailman for United Laboratories, Inc. He further honed his skills in business management further as a marketing management trainee at Pfizer (Phils.), Inc., and as product manager for Johnson & Johnson (Phils.), Inc.

In 1986, Mr. Verzosa served the government as he took on the role as officer-in-charge and vice mayor of Gattaran, Cagayan Valley. After his vice mayoral stint, he rejoined the private sector to work for the Benguet Electric Cooperative, Inc. (BENECO), a non-stock, non-profit utility under the supervision of the National Electrification Administration (NEA). Mr. Verzosa spent a year as the NEA's project supervisor for BENECO, after which he was appointed as the cooperative's general manager, a position he has held for the past fourteen years.



Deon P. James

27 September 2005 - Present

Chief Executive Officer

Dagupan Electric Corporation

Prior to his position as Chief Executive Officer, Deon P. James took on the role of senior assistant to the president of the Dagupan Electric Corporation (DECORP), a privately owned power distribution firm supplying electricity to Central Luzon in February 2004. He was previously the Distribution Regional Manager of Western Region of Eskom, a vertically integrated, corporatised state-owned utility of South Africa responsible for providing a high-quality supply of electricity to satisfy the needs of the African nation.

Prior to joining the Distribution Sector, he was Engineering Manager of all the Eskom Peaking Power Stations.

Mr. James also represents the Philippine Electric Plant Owners Association (PEPOA) in the PEM Board. PEPOA is a private agency whose main goal is to ensure that collectively they have a voice in the continuous improvement of the Philippine electricity industry.

He earned his Mechanical Engineering degree in 1984 and his Masters in Business Administration in 1990, both at the University of Cape Town in South Africa, and has extensive exposure to electricity markets and regulation in Africa, Europe, Australia and New Zealand, as well as EPRI (Electric Power Research Institute).

MARKET OPERATOR



Mario R. Pangilinan

20 January 2005 - Present

Executive Vice President

Philippine Electricity Market Corporation

Mario R. Pangilinan has been involved in the power industry since he began his career with the National Power Corporation (NPC) where he worked for 19 years in System Operations and System Planning.

After his NPC stint, Mr. Pangilinan went on to work for the National Transmission Corporation (TransCo) as department manager for Market Operations, where he actively participated in the design and development of the Philippine Wholesale Electricity Spot Market (WESM), the drafting of the Philippine Grid Code, and the formulation of the WESM Rules.

Currently the Executive Vice President for Market Operations of the Philippine Electric Market Corporation (PEMC), Mr. Pangilinan is responsible for overseeing preparations made by the PEMC for the establishment of the WESM. His background in Electrical Engineering put him in charge of managing and developing the Market Management System (MMS), the infrastructure (i.e. hardware and software) that supports the WESM, together with the development of market operating systems and procedures. Mr. Pangilinan is involved in the formulation of the price determination methodology for WESM as well which was approved by the Energy Regulatory Commission prior to the WESM Commercial Operations.

SYSTEM OPERATOR



Arthur N. Aguilar

17 November 2006 - Present

President and Chief Executive Officer

National Transmission Corporation

A graduate of De La Salle University with degrees in AB Political Sciences and History and a BSC in Accounting, Mr. Arthur N. Aguilar helped in the creation of the original asset privatization law in the Philippines, where he played a lead role in the establishment of the Asset Privatization Trust which assigned him to manage and privatize various companies.

He served as the general manager of the National Development Company (NDC) from 1992 to 1997 where he actively worked on the privatization of Interbank, the National Shipping Corporation of the Philippines, and Filipinas Palm Oil Corporation and Semirara Mining Corporation.

In 2004 President Gloria Macapagal Arroyo reappointed him to the NDC. He concurrently served as Chairman and CEO of the Philippine National Construction Corporation where he played a key role in reviving the SLEX and Skyway projects.

Mr. Aguilar, who also holds an MBM from AIM and an MPA from Harvard University, started his career in investment banking and project finance in Singapore and the World Bank's International Finance Corporation in Washington DC, and Bancom Development Corporation.

Engaged by creditor commercial banks, he managed and engineered the successful turn around of Victorias Milling Corporation over a four year period.

He is the past president of the Management Association of the Philippines and the Harvard Club and is a fellow of the Institute of Corporate Directors.



Lasse A. Holopainen

18 November 2003 - Present

President

Philippine Electric Market Corporation

Before becoming president of the Philippine Electricity Market Corporation (PEMC), Lasse A. Holopainen was Assistant Secretary for the Department of Energy. In his capacity as Assistant Secretary, he supervised various teams and chaired a number of committees in the sub-sectors of power, renewable energy, oil and gas exploration and oil and gas dispersion. Prior to joining the government, he was the Managing Director of Real Venture Asia Limited (RVAL, Hongkong/Sweden) in 2000 and an investment banker with Schrodgers in Singapore from 1996-2000.

While serving as PEMC President, Mr. Holopainen was also the President and Chairman of South Western University (SWU) in Cebu from 2006-2007.

Mr. Holopainen earned his Bachelor of Science degree in Management (Honor's Program) at the Ateneo de Manila University and completed his post-graduate degree in Business Administration at the Institut Européen d'Administration des Affaires (INSEAD) in Fontainebleau, France.



Atty. Vigor D. Mendoza II

18 December 2003 - 30 June 2006

Corporate Secretary and Executive Director

Philippine Ecozones Association (PHILEA)

Before joining the Philippine Ecozones Association (PHILEA), Atty. Mendoza was a commissioner at the Land Transportation Franchising and Regulatory Board and was a partner in the Go Cojuangco Mendoza Ligon & Castro Law offices from 1993 to 1998. Today he is the Corporate Secretary and Executive Director of the PHILEA, which was organized in 1990 as a response to the government's encouragement to the private sector to assume a more proactive role in industrial estate development.

Atty. Mendoza is also one of the managing partners in the Malcolm Law Offices and is the chairman of the United Transport Koalisyon (1-UTAK).



Ernie B. Santiago

9 September 2004 - Present

Executive Director

Semiconductor and Electronics Industries Philippines, Inc. (SEIPI)

Ernie B. Santiago is currently the executive director and a member of the Board of Trustees of the Semiconductor and Electronics Industries in the Philippines Inc. (SEIPI), the largest and leading organization of foreign and local semiconductor and electronics companies in the Philippines. His executive directorship covers planning, organization and implementation of the organizations' plans and programs on global competitiveness, advocacy, information and networking.

Mr. Santiago is also a member of the Board of Trustees of the Philippine Exporters Confederation, Inc., a non-stock, non-profit private organization born out of the merger of the Philippine Exporters Foundation and the Confederation of Philippine Exporters in October 1991.

A mechanical and electrical engineer with a master's degree in Business Administration, Mr. Santiago represents the industry in the Information Technology and E-Commerce Council, the Export Development Council and is presently Chair of the IT Committee of the Philippine Chamber of Commerce and Industry.



Vincent S. Pèrez

18 November 2003 - 20 March 2007

Vincent S. Pèrez is the chairman of Merritt Partners, a boutique energy advisory firm providing advice to energy companies operating throughout Asia. He is also founder and CEO of Alternergy Partners, a power company focused on developing renewable energy in fast-growing emerging countries in Asia.

Mr. Pèrez was the youngest and longest serving Philippine Energy Minister from June 2001 to March 2005. He boosted energy self-sufficiency, promoted clean indigenous energy and crafted an ambitious renewable energy policy framework. He accelerated a massive rural electrification program, energizing a record 6,634 villages in four years. He pushed power reforms, reorganized five energy agencies and commenced the privatization of the National Power Corporation (NPC) and the National Transmission Corporation (TransCo) assets. He also laid the foundation for the Wholesale Electricity Spot Market (WESM) through the establishment of the Philippine Electricity Market Corporation (PEMC) and completion of the WESM market model.

Prior to his appointment as Energy Secretary, Mr. Pèrez served briefly as Undersecretary for Industry at the Department of Trade and Industry and as Managing Head of the Board of Investments in early 2001.

Before joining the government in 2001, Mr. Pèrez had 17 years experience in debt restructuring, capital markets, and private equity in emerging countries, based in Pittsburgh, London, New York and Singapore. At 35, he became the first Asian General Partner at Lazard Frères in New York as head of its Emerging Markets Group. He was Managing Director of Lazard Asia in Singapore from 1995 until 1997. Mr. Pèrez founded Next Century Partners in 1997, a private equity firm that invested in Smart Communications, Del Monte Pacific and Fastech Synergy. His team also launched successful start-ups in mobile applications.

Mr. Pèrez is an independent director of Nido Petroleum (ASX), Energy Development Corporation (largest geothermal company in Asia), SM Investments, and ST Telemedia, a Temasek company. He also invested in Northwind Power, the first commercial wind farm in Southeast Asia.

Mr. Pèrez obtained an MBA from the Wharton Business School of the University of Pennsylvania and a Bachelor's Degree in Business Economics from the University of the Philippines. He was a 2005 World Fellow at Yale University, where he lectured an MBA class on renewable power in emerging countries.



Meleusipo E. Fonollera

18 December 2003 - 27 April 2007

The former president of the Institute of Integrated Electrical Engineers of the Philippines, Inc. (IIEE) and the Society of the Philippine Electrical Contractors and Suppliers, Inc., Meleusipo E. Fonollera retired in 2002, when he also assumed the position of director-consultant of Westrade International Co., Inc.

In 1995, the Mapua Institute of Technology (MIT) and the National Association of Mapua Alumni awarded Mr. Fonollera with the Outstanding Mapuan Award in Electrical Engineering and was conferred the Grade of Fellow award by the IIEE, the highest distinction given to an IIEE member. He was also the Professional Regulation Commission's recipient of The Outstanding Professional of The Year in the Field of Electrical Engineering in 2006.



Lee Gil Gu

19 January 2006 - 14 January 2007

Lee Gil Gu began his career in the Korean Electric Power Corporation in 1975. Since then, he has served different positions within the company, working as Secretary to the Chairman & CEO of KEPCO in 1986, before becoming the Senior Manager Representative of KEPCO's New York Office in 1987.

By 2000, Mr. Lee began his new assignment as the General Manager of the KEPCO Guri/Ulsan Metro City Branch Office. In 2002, he was assigned to the Philippines as the President and Chief Executive Officer of both KEPCO Philippines Corporation and KEPCO Ilijan Corporation, a position he held until his retirement in 2007.



Nieves L. Osorio

27 September 2005 - 28 February 2007

Nieves L. Osorio was the President and Chief Executive Officer of the Power Sector Assets and Liabilities Management Corporation (PSALM) from 2005 to 2007. She first joined the government as a member of the faculty of the University of the Philippines, after which she served in the National Electrification Administration.

Her illustrious career in government includes positions in the Tax Research Branch of the National Tax Research Center as Assistant National Treasurer in the Bureau of Treasury; Chief Operating Officer of the Subic Bay Metropolitan Authority; Undersecretary of the Department of Finance's Corporate Affairs Group and its Policy and Development Management Services Group; and Executive Vice President and Chief Operating Officer for the Philippine National Oil Company (PNOC).



Allan T. Ortiz

18 December 2003 - 24 September 2006

Dr. Alan T. Ortiz was the president and chief executive officer of the National Transmission Corporation (TransCo) from December 2002-September 2006. He was a leading figure in the formation and early stages of the WESM organization, which was initially under TransCo.

With a well-rounded background on foreign affairs, national security, economics and infrastructure development and notable experience in the electric power industry, he was a consultant to the Senate Committee on Energy. Dr. Ortiz also served as the head of the Technical Working Group on the Electric Power Industry Reform Act (EPIRA) of 2001.



Edgardo A. Bautista

18 November 2003 - 15 December 2005

Edgardo A. Bautista was the President and CEO of Mirant (Philippines) Corporation, one of the leading independent power producers in the Philippines and a subsidiary of Mirant Asia Pacific Ltd (MAPL).

Before joining Mirant Philippines, Mr. Bautista was the Senior Vice President of the First Philippines Holdings Corporations, a holding company with core investments in power and tollways, and strategic initiatives in property and manufacturing. He also served as executive vice president for Westinghouse Electric International.



Pio J. Benavidez

18 December 2003 - 15 May 2005

Pio J. Benavidez began his thirty years of service to the National Power Corporation (NPC) in 1974 as a Temporary Associate Mechanical Design Engineer. Through Mr. Benavidez's hard work and dedication, he eventually became the senior vice president and chief executive of the Generation Group of the NPC.

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Froilan A. Tampinco

18 November 2003 - 17 December 2003 / 28 September 2005

Froilan A. Tampinco is currently the Vice President for Asset Management and Electricity Trading of the Power Sector Assets and Liabilities Management Corporation (PSALM), whose core function is the privatization/ disposal of the assets of the National Power Corporation (NPC) and the formulation of strategies and programs for PSALM's participation in the development of the Wholesale Electricity Spot Market (WESM).

Mr. Tampinco's career in the power industry began in the 1980s with the National Power Corporation where he held several positions, including Vice President for Sales and Services and Vice President/ Head of GenCo 2 in 2004.



Geromin T. Nepomuceno, Jr.

20 January 2004 - 6 June 2004

Geromin T. Nepomuceno, Jr. is the current President and Corporate Planning Manager of the Angeles Electric Corporation. He began his thirty-three years of active employment as an Industrial Engineer for Engineering Equipment, Inc. and spent the next twenty years with the Holy Angel University in Angeles City, where he served as Dean before becoming the university's Comptroller and eventually the Vice-President for Internal Operations.

He currently holds several positions in different corporations within Angeles City—President of Unicom Finance Corporation, Inc., Angeles Ice Plant, Inc., and Metro Clark International Development Corporation.



Ramon C. Abaya

18 December 2003 - 18 November 2004

Ramon C. Abaya is the Chairman of the Board and Chief Executive Officer of the Cagayan Electric Power and Light Company, Inc. (CEPALCO). With a career in the power industry for more than 25 years, Mr. Abaya is also the Vice President of the Private Electric Power Operators Association (PEPOA).



Elvico B. Gumban

18 December 2003 - 8 September 2004

Elvico B. Gumban is the current Director for Facilities and Site Services of AMI Semiconductors at Camelray Industrial Park 2 in Calamba City. His over 20 years in the semiconductor and electronics industry include responsibilities as Facilities Manager in various companies including the National Semiconductor Phil., Inc., American Microsystems Inc. and Analog Devices Phil., Inc.

Prior to his directorship of PEMC, Mr. Gumban was elected vice chairman of the Semiconductor and Electronics industries in the Philippines, Inc. (SEIPI), the leading and largest organization of foreign and Filipino semiconductor and electronics companies in the Philippines.

Key Officers





Mario R. Pangilinan
Executive Vice President

Robinson P. Descanzo
Vice President, Operations
Planning & Business Development

Patrick S. Fernandez
Assistant Vice
President, IS/IT

Isidro E. Cacho
Assistant Vice President,
Operations Planning &
Business Development

Edwin N. Mosa
Department Head,
Trading Operations

Jose Artemon M. Luna, Jr.*
Department Head, Billing
and Settlements

Rachel Angela P. Anosan
Chief of Staff

** replaced Eduardo B. Buhain as Department Head of Billing and Settlements as of 1 April 2007*

A Brief History

The current structure of the Philippine power industry finds its beginnings in the debilitating energy crisis of the late 1980s and early 1990s, a period marked by daily blackouts and a productivity loss of up to billions of dollars per year. Within a few short years, the supply shortfall had reached critical levels, and the government saw a critical need for sweeping reforms to ensure the future of the Philippine power sector.

In 1987, Executive Order 215 was issued, an early effort to address the burgeoning electricity crisis. This allowed the entry of independent power producers, or IPPs, into the electricity market, and put us on a course towards the full privatization of the industry.

With Republic Act 7638, or the Department of Energy (DOE) Law of 1992, the DOE was created, under whose administration fell the organization and functions of the energy-related government agencies. Republic Act 7648, or the Electric Power Crisis Act of 1993, subsequently prescribed further urgent measures to address the continuing power crisis.

It took Republic Act 9136, or the Electric Power Industry Reform Act (EPIRA), almost seven years in the House of Representatives and the Senate before it was signed into law on 8 June 2001. The EPIRA sought to ensure transparent and reasonable cost of electricity in a competitive environment and to encourage private investment while removing government from operations in the power sector. This landmark legislation would underpin the deregulation of the power industry, and consequently, establish a competitive electricity market.

Embedded in the EPIRA were four mechanisms: its implementing rules and regulations (IRR), the Philippine Grid Code (PGC), the Philippine Distribution Code (PDC), and the Wholesale Electricity Spot Market Rules (WESM Rules).

The IRR became effective in February 2002, upon approval by the Joint Congressional Power Commission. The implementation of the PGC and the PDC followed suit, with both codes establishing the basic rules, requirements, procedures and standards of the country's transmission and distribution systems.

The WESM rules were endorsed by the electric power industry participants and promulgated by the DOE in June 2002. These completed the foundation for the safe, reliable operation of the power system—and set the stage for an equitable, competitive and transparent electricity market.

The DOE created the Philippine Electricity Market Corporation (PEMC) on 18 November 2003, as further mandated by the EPIRA. The primary purpose of the PEMC is to establish, maintain, operate, and govern an efficient, competitive, transparent, and reliable market for the wholesale purchase of electricity and ancillary services in the Philippines. PEMC, a non-stock, non-profit corporation, is the governing body of the WESM, the autonomous group market operator that undertook the preparatory work and initial operation of the market.

CHALLENGES IN A DEVELOPING MARKET

The country's archipelagic geography makes for a complicated power system. To date, there are more than 300 players in the power market, including over a hundred cooperatives, distribution utilities, directly connected large customers, and suppliers and aggregators, as well as the Independent Power Producers (IPP), the National Power Corporation (NPC), and NPC IPPs. This diversity is reflected in a correspondingly intricate Market Design, making the Philippine electricity bourse a continuous challenge, as well as a model of particular interest in the global power industry.

After the establishment of the PEM Board and the promulgation of the WESM rules, crucial enabling infrastructure was developed and put into place in the form of the Market Management System (MMS). The MMS included highly advanced applications for market interfacing, market applications, settlements, accounting, and metering. Since market system development is a highly specialized field, foreign vendors were enlisted. In early 2004, PEMC awarded the MMS Project to Asea Brown Boveri, (ABB) Inc.

Over several months, Filipino engineers worked around the clock with their foreign counterparts, exposing and addressing key issues and disparities between the MMS and the rules that governed the WESM. After successfully completing a factory acceptance test in November of 2004, ABB delivered the MMS and completed site installation and integration the very next month. A dry run of the WESM was then conducted, briefly placing the MMS in a live environment before the decision was made to fully launch commercial operations.

The last stage of preparation for WESM commercial operations in Luzon began in April 2005 with the launch of trial operations and was completed in December of the same year. With preparations for Luzon in place, PEMC quickly started preparing for the Visayas market which would eventually be integrated into the Luzon market.

The actual trading floor—where electricity was to be traded—was inaugurated in January 2006. This was a key component and a historic step toward a full and fair trade. The rigorous process of processing all the regulatory requirements needed for full commercial operations of the WESM took all of six months—with the Price Determination Methodology, the WESM Market Fees and the Administered Price Determination Methodology requiring approvals from the Energy Regulatory Commission.

On 23 June 2006, after the final requirements were fulfilled and approved, Sec. Raphael P.M. Lotilla declared the official start of the commercial operations of the first Philippine Electricity Market, and on 26 June 2006, the first trades were transacted.

A year later, with the power industry still in a continuous state of reform, work at the WESM continues. Already the market is looking at serving the future needs of the industry, as this grows more dynamic and competitive. In order to support this, the market continues building its role within the industry—to develop and operate a market that provides a venue for fair and transparent competition for the Philippine power sector.

A Brief History

2001

2002

2003

2004

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

2001 June
EPIRA (RA 9136)

President Gloria Macapagal-Arroyo signed the EPIRA (Republic Act 9136) into law on 8 June 2001.

2001 December
Grid Code

The Energy Regulatory Commission adopted the Philippine Grid Code and the Philippine Distribution Code in its Resolution No. 115.

2002 February
EPIRA - IRR

Energy Secretary Vincent S. Pèrez declared the effectivity of the Implementing Rules and Regulations of the EPIRA on 27 February 2002, as approved by the Joint Congressional Power Commission.

2002 June
WESM Rules

By virtue of Department Circular No. 2002-06-003 of the Department of Energy, the Wholesale Electricity Spot Market Rules were promulgated on 28 June 2002.

2003 November
PEMC Established

The Philippine Electricity Market Corporation was incorporated as a non-stock non-profit corporation registered with the Securities and Exchange Commission (SEC) on 18 November 2003.

2004 March
Awarding of MMS Project

The Market Management System (MMS) project and WESM Project Management was awarded to the ABB, Inc. and the Marketplace Company, respectively. The MMS is the infrastructure that supports the WESM.

2004 October
Market Management System Factory Acceptance Test Completed

The Factory Acceptance Test for the MMS was conducted at the ABB, Inc. offices at Sta. Clara, California, USA. It was completed in October 2004.

2004 December
Delivery of MMS and Start of Site Acceptance Test

PEMC received shipment of the MMS and immediately commenced and completed the Site Installation and Integration in December 2004. The Site Acceptance Test commenced likewise in December 2004.

2005

2006

2007

2005 April
**Commencement
of TOP Luzon**

In April 2005, the Trial Operations Program for Luzon began in anticipation of the commencement of the WESM and was completed in December of the same year.

2005 October
**Commencement
of TOP Visayas**

In the Visayas, the Trial Operations Program began in October 2005 and is currently on-going to prepare the region for their integration into the WESM operations in Luzon.

2005 December
**MMS Project
Completion**

The Market Management System (MMS) Project was completed in December 2005.

2006 June
**Luzon Live
Dispatch
Operations**

The Live Dispatch Operations for Luzon was conducted from 19-25 June 2006 as a final dry run before the start of the WESM operation.

2006 June
**PDM
Application
Approval**

Application for the approval of the Price Determination Methodology of the WESM was filed with the Energy Regulatory Commission on 22 February 2006 and was approved on 20 June 2006.

2006 June
**Market
Fees and
Administered
Price Approval**

The application for the WESM Market Fees and the Administered Price Determination Methodology was filed with the Energy Regulatory Commission on 14 November and 19 December 2005, respectively. Both were approved on 22 June 2006.

2006 June
WESM Launch

Upon approval of the Price Determination Methodology, Energy Secretary Raphael P.M. Lotilla declared the start of the WESM commercial operations in Luzon on 23 June 2006.

2006 June
**Commercial
Operations**

Commercial operations of the WESM officially began on 26 June 2006.

2007 January
**Reserve
Market
Application**

PEMC filed an application to the Energy Regulatory Commission to operate the reserve market on 8 January 2007.

The Wholesale Electricity Spot Market



The Wholesale Electricity Spot Market (WESM) is a centralized venue where buyers and sellers engage in the trading of electricity as a commodity. Its price is based on actual use (demand) and availability (supply).

The WESM was created by Republic Act 9136, the Electric Power Industry Reform Act. This provided for the establishment of an electricity market that reflects the actual cost of electricity and drives efficiency through competition.

The aims of the WESM are as follows:

- To create a transparent, fair and reliable trading venue for suppliers and buyers of electricity.
- To provide real-time pricing information that guides WESM participants, future investors and the public.
- To provide competition and incentives for power producers to be more efficient, thus bringing down the over-all cost of electricity.

Basic Features of the WESM

GROSS POOL

- All energy transactions are scheduled through the market
- Energy transactions include the demand and supply of electricity covering the whole Luzon area
- This allows all the power produced, supplied and used to be accounted for

NET SETTLEMENT

- Bilateral contract quantities transacted in the pool can be settled outside the market

LOCATIONAL MARGINAL PRICE

- Marginal price is computed at each node or location to reflect the transmission loss and/or congestion

RESERVE CO-OPTIMIZATION

- Reserve and energy offers are scheduled at the same time

DEMAND BIDS

- Customers have the option to buy energy at a price lower than the regulated rate

MANDATORY MARKET

- Existing distributors are mandated by law to procure at least 10% of its electricity from the WESM for the first 5 years of its establishment
- Entities directly connected to the grid are not allowed to inject or withdraw without being registered in the WESM

Direct Participants

COMPLETE NAME	RESOURCES	POWER PLANT TYPE	
Generators			
First Gas Power Corporation	Sta. Rita	Natural Gas	
FGP Corporation	San Lorenzo	Natural Gas	
First Gen Hydro Corporation	Pantabangan	Hydro	
First Gen Hydro Corporation	Masiway	Hydro	
National Power Corporation - ANGAT	Angat	Hydro	
National Power Corporation - BINGA	Binga	Hydro	
National Power Corporation - CALACA	Calaca	Coal	
National Power Corporation - MAKBAN	Makban	Geothermal	
National Power Corporation - MASINLOC	Masinloc	Coal	
National Power Corporation - BACMAN	Bacman	Geothermal	
National Power Corporation - TIWI	Tiwi	Geothermal	
PSALM Trading Team 1	NIA Baligatan	Hydro	
	Casecnan	Hydro	
	Hedcor	Hydro	
	Ilijan	Natural Gas	
	Limay	Combined Cycle Gas Turbine	
	Bakun	Hydro	
PSALM Trading Team 2	BPPC	Diesel	
	Sual	Coal	
	Malaya	Oil Thermal	
	San Roque	Hydro	
	Pagbilao	Coal	
	Caliraya	Hydro	
PSALM Trading Team 3	Subic	Diesel	
	Leyte A	Geothermal	
	CBK (Caliraya-Botocan-Kalayaan)	Hydro	
	Kalayaan	Hydro	
	Quezon Power Philippines (Limited) Company	QPPL	Coal
	SN Aboitiz Power, Inc.	Magat	Hydro
Trans Asia Power Generation Corporation	TAGPC	Diesel	
Distribution Utilities			
Manila Electric Company			
Electric Cooperatives			
Ilocos Norte Electric Cooperative, Inc.			
Camarines Sur II Electric Cooperative, Inc.			

Indirect Participants

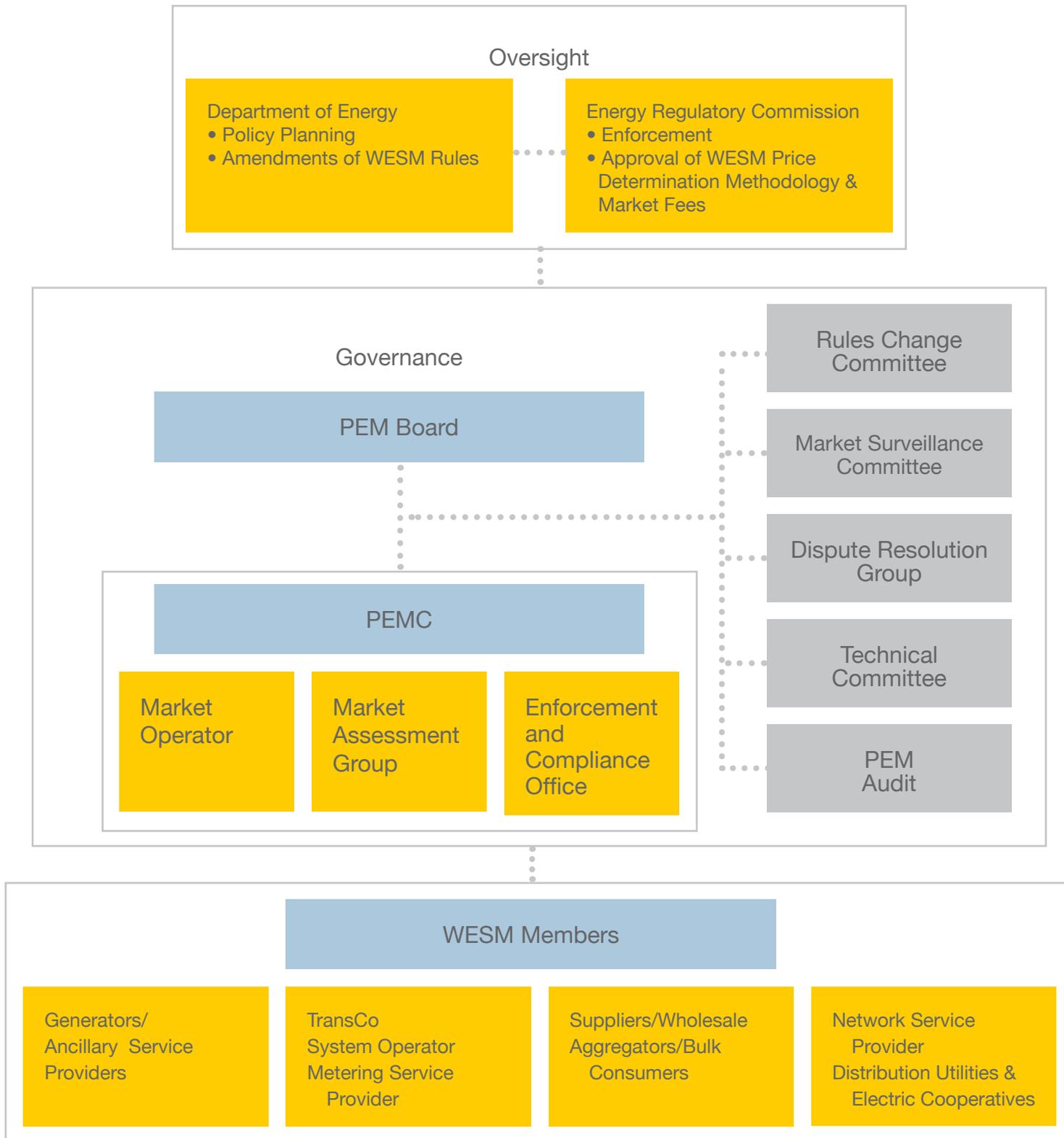
COMPLETE NAME	CATEGORY
Duracom Mobile Power Corp.	Generator (Diesel)
Hedcor, Inc.	Generator (Hydro)
Asia Pacific Energy Corporation	Generator (Coal)
Dagupan Electric Corporation	Distribution Utility
Angeles Electric Corporation	Distribution Utility
Albay Electrical Cooperative, Inc.	Electric Cooperative
Central Pangasinan Electric Cooperative, Inc.	Electric Cooperative
Pangasinan I Electric Cooperative, Inc.	Electric Cooperative
Abra Electric Cooperative, Inc.	Electric Cooperative
Benguet Electric Cooperative, Inc.	Electric Cooperative
Mountain Province Electric Cooperative, Inc.	Electric Cooperative
Camarines Sur III Electric Cooperative, Inc.	Electric Cooperative
Sorsogon II Electric Cooperative, Inc.	Electric Cooperative
Pangasinan III Electric Cooperative, Inc.	Electric Cooperative
Holcim Philippines, Inc.	Non-utilities

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Intending WESM Participants

COMPLETE NAME	CATEGORY
Philippine National Oil Company	Generator (Geothermal)
GN Power Ltd. Co.	Supplier

WESM Institutional Structure



Market Performance



The presence of WESM assures us that our investments will earn their fair share of returns in a transparent and fully competitive market.



SN Aboitiz Power considers the Wholesale Electricity Spot Market as an important barometer of the health of the investment environment in the Philippines, particularly in the power sector. The transparency it creates in the pricing of electricity shows where and when investments are needed. This is particularly crucial when we see high prices of oil and coal in the world market which can push the regulatory environment to become restrictive.

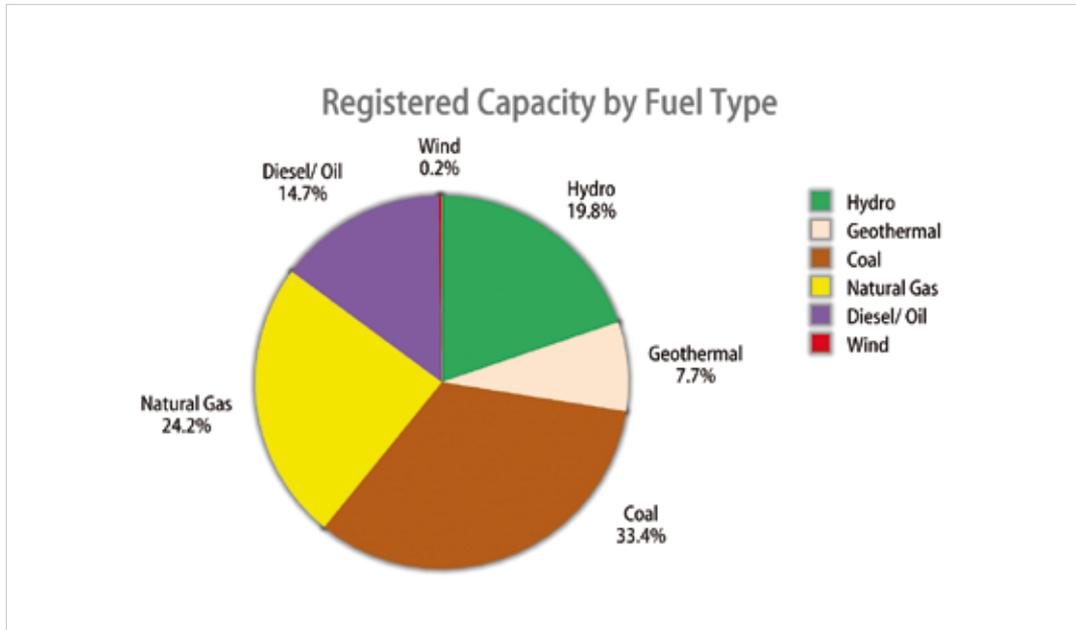
It is therefore important for us to continue to support the development and maturation of the WESM. To date, we have invested and will be investing in excess of US\$ 850 million to acquire the Magat, Ambuklao and Binga hydroelectric plants. We are planning to expand their capacities in the future. The presence of WESM assures us that our investments will earn their fair share of returns in a transparent and fully competitive market.

Emmanuel V. Rubio
CEO
SN Aboitiz Power, Inc.
Participant since April 2007

The First Year of Luzon WESM Operations

- Luzon Registered Capacity: 11,396 MW
- Peak Demand: 6,590 MW on 18 May 2007
- 13 Registered Direct Participants
 - 10 Generators
 - 3 Customer Participants
- 140 Customer Participants registered under the Default Wholesale Supplier (DWS) Program of NPC
- 215 Trading nodes
- Total Energy Volume: 38,186 GWh
- Total Spot Market Volume: 10,263 GWh
- Total Spot Market Value: PhP 51,253 Million

Capacity Mix



At the end of the first year of WESM commercial operations, the total registered capacity in Luzon was 11,396 MW.

Coal-based plants accounted for 33.4% of the 11,396 MW registered capacity in Luzon. Natural gas plants followed with 24.2%, while the wind power plant accounted for the smallest share with 0.2%.

FIGURE 1a: Registered Capacity by Fuel Type

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Two NPC-owned plants were privatized during the first year of operations of the WESM. The Pantabangan-Masiway hydroelectric plant, with a registered capacity of 112 MW, was acquired by the First Generation Hydro Power Corporation (FGHPC). The Magat hydroelectric plant, with a registered capacity of 360 MW, was acquired by the SN Aboitiz Power Corporation (SNAP). These plants represented 4% and 12%, respectively, of the total registered capacity of the NPC-owned plants originally registered by NPC in the spot market.

Registered capacity represents the maximum energy and reserve that can be offered by the generators into the WESM depending on their availability.

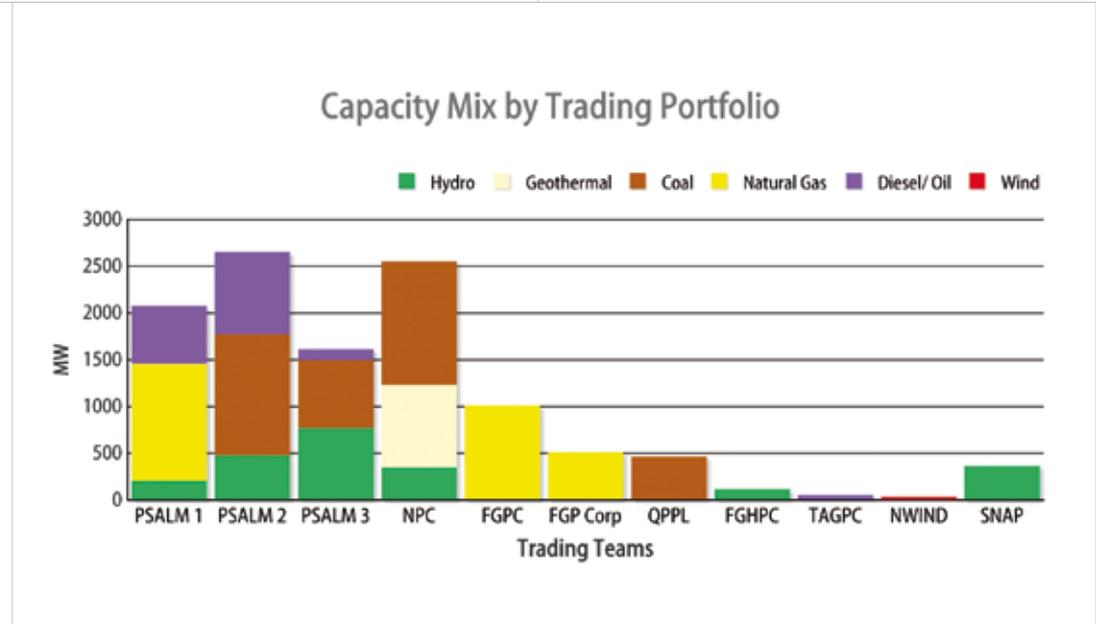


FIGURE 1b: Capacity Mix by Trading Portfolio

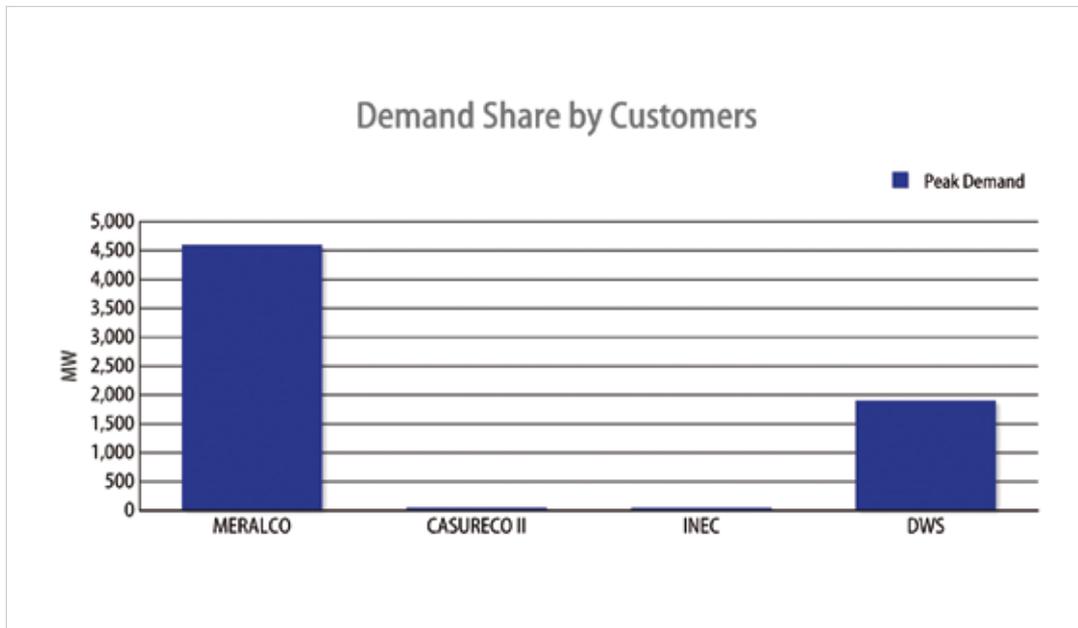


FIGURE 1c: Demand Share by Customers

On the Customer side of the market, the highest demand was registered by MERALCO which accounted for 70% of the total system peak demand. The two other WESM direct participant customers, NEC and CASURECO II, had a combined demand of 73 MW. The remainder of the demand is under the DWS arrangement with NPC currently at 1,891 MW or about 29% of the total demand.

The DWS or Default Wholesale Supply in the WESM refers to the supply of electricity to cover the supply imbalances of customers that are not registered in the WESM.

Demand and Consumption

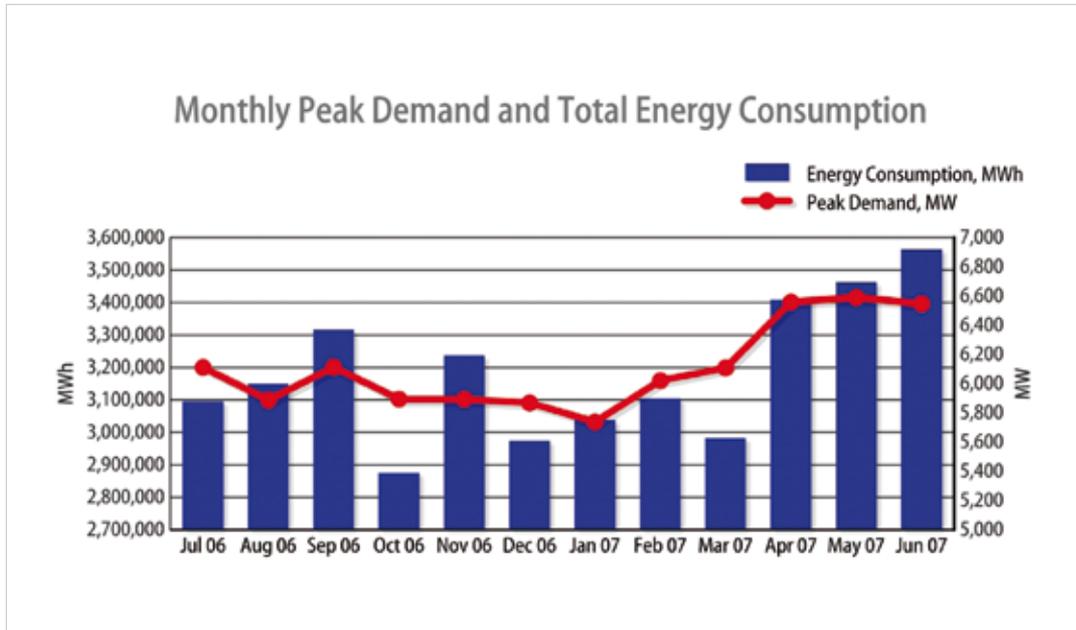


FIGURE 2.a: Monthly Peak Demand and Total Energy Consumption

Demand peaked at 6,590 MW during the first twelve months of operations (recorded at 2:00 pm on 18 May 2007), a 3.5% increase from 2006 peak demand of 6,369 MW.

Energy consumption upon start of market in July 2006 was recorded at 3,094,165 MWh. This decreased to 2,873,285 MWh by October 2006 but rose to its maximum in June 2007 at 3,561,656 MWh.

An average demand of 4,751 MW was recorded for the one-year period while monthly energy consumption averaged at 3,182,195 MWh.

Demand and Supply

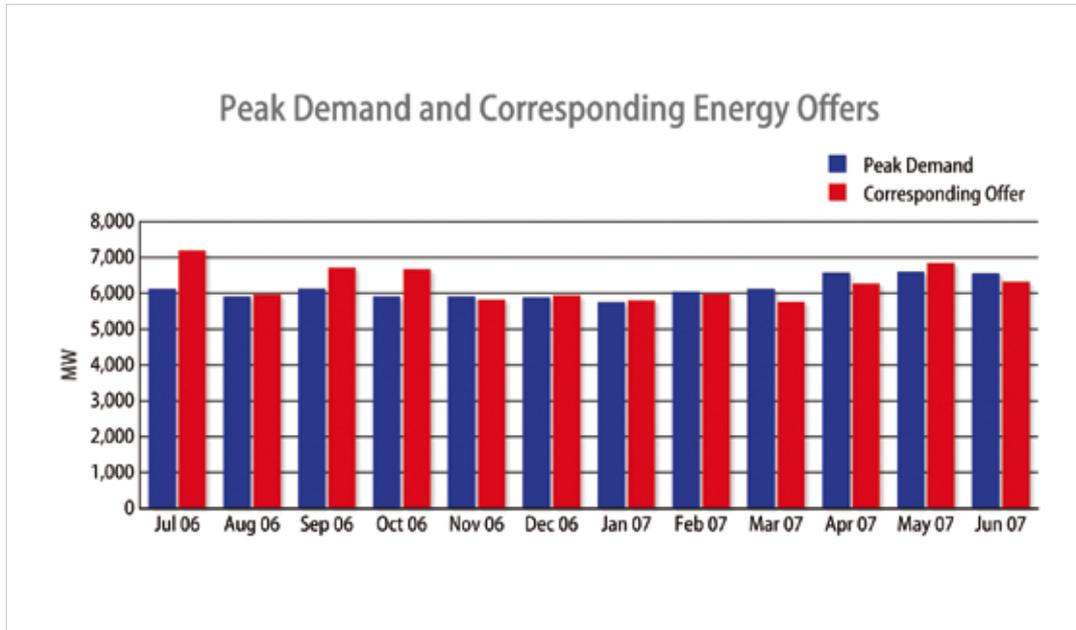


FIGURE 2.b: Peak Demand and Corresponding Market Offers

Maximum demand reflected an increasing trend while corresponding offers (for the same trading interval when the maximum demand was experienced) decreased from over 7,000 MW in July 2006 to a low of 6,300 MW in June 2007. By the third month of operations, energy offers tracked the demand closely.

Weather and temperature were the primary drivers of demand. Notably, the low levels of demand from December 2006 to January 2007 were attributed to the expectedly cold weather during those periods as well as a protracted holiday season.

Energy supply for the period covered can be attributed to various factors including: the level of energy offers by the trading participants, level of dispatch and shortage of hydroelectric power plants, outages, and provision for reserves.

The price discovery process reflected infeasible conditions in the market runs due to the insufficiency of energy offers to meet the demand in about 14% of the total trading intervals throughout the year.

However, out of the 8,760 trading hours in the first year of WESM operation in Luzon, actual manual load dropping was experienced in only one trading day in April 2007 and lasted for three trading intervals.

Energy Mix

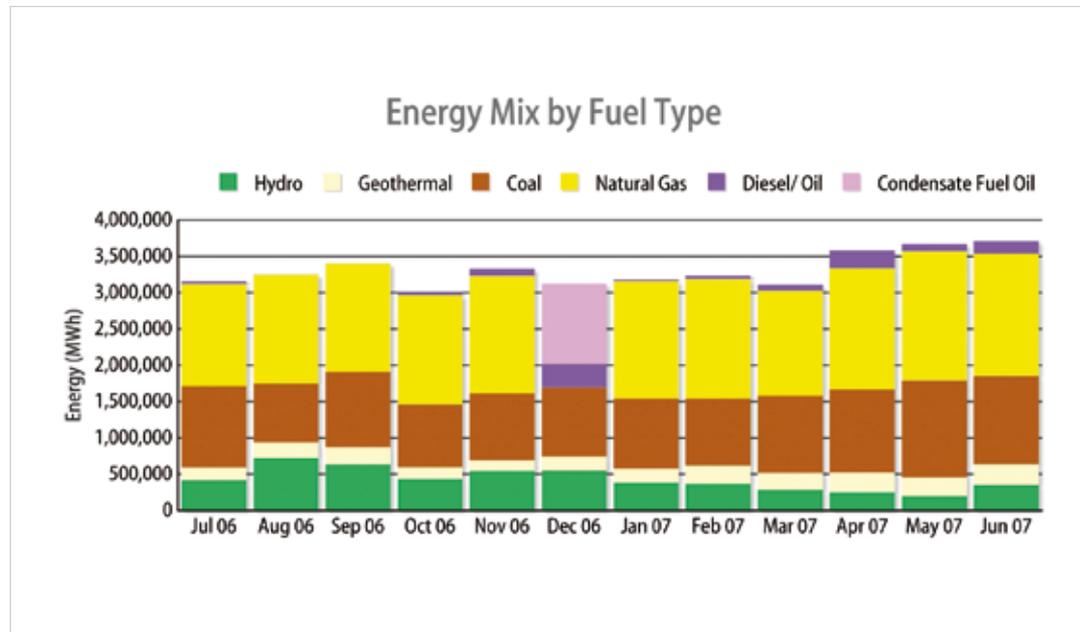


FIGURE 3: Energy Mix by Fuel Type

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HYDRO

Max share: 22.0%, August 2006

Min share: 5.2%, May 2007

Hydro share was, as expected, high during August to September 2006 as these periods coincide with the rainy months when the reservoirs are at their highest level. It was lowest in April and May 2007 when summer was at its peak.

GEOTHERMAL

Max share: 7.8%, June 2007

Min share: 4.4%, November 2006

Geothermal share stayed below 8% throughout the year, maintaining an average of 6.57% a month.

COAL

Max share: 36.5%, May 2007

Min share: 25.0%, August 2006

Coal generation levels were generally affected by planned and forced plant outages and fuel limitations resulting in curtailed plant availability from August 2006 to April 2007.

NATURAL GAS

Max share: 51.0%, January 2007 to February 2007

Min share: 0.0%, December 2006

Natural gas share was high throughout the year, consistently contributing over 40% to the energy mix except in December 2006 when the natural gas supply was interrupted as the Malampaya Shallow Water Platform underwent scheduled maintenance.

During this period, condensate fuel oil was used by the natural gas plants as replacement fuel.

DIESEL/OIL

Max share: 10.3%, December 2006

Min share: 0.1%, August 2006 to September 2006

Diesel and oil-based generating plants were operated at higher levels in December 2006 to compensate for the reduced supply from natural gas plants. Diesel/Oil share was also high from April 2007 to June 2007 as hydro generation decreased and coal fuel supply experienced constraints.

Market Prices

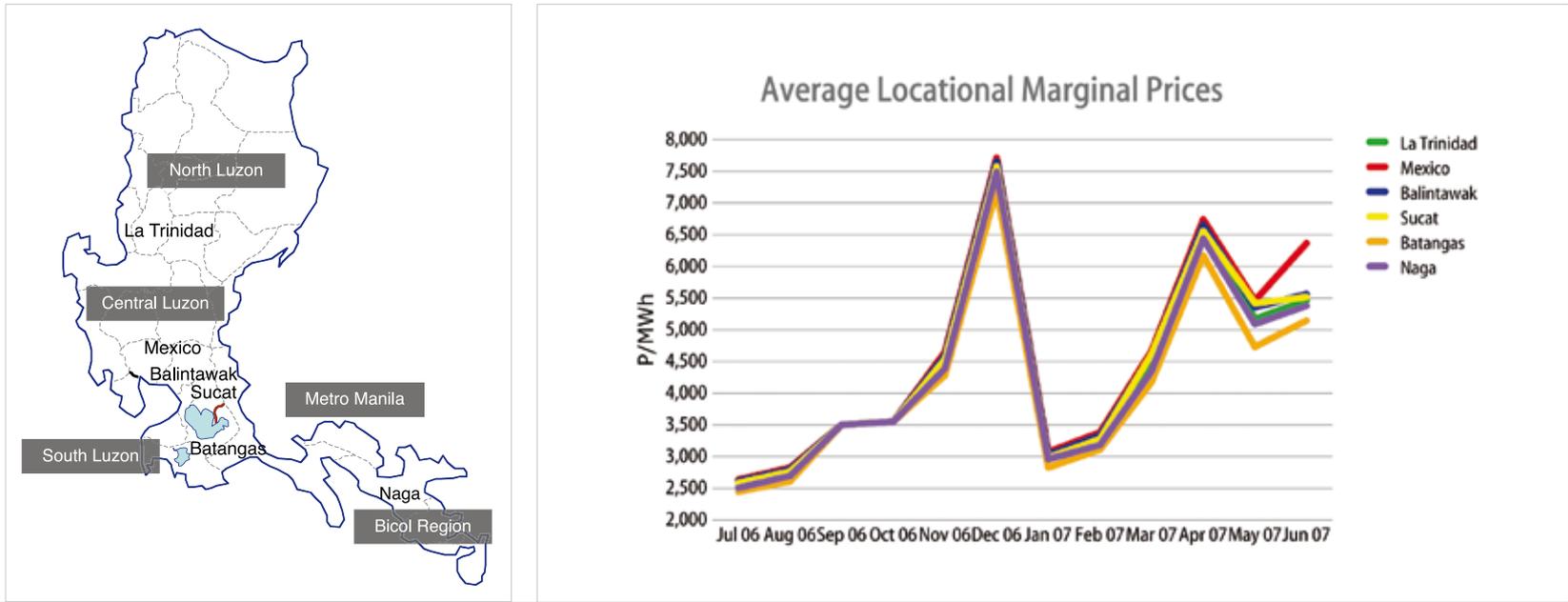


FIGURE 4: Average Locational Marginal Prices (P/MWh)

Six nodes (out of 215 trading nodes) are selected to illustrate the levels of nodal prices in the Luzon Grid. These nodes are La Trinidad, Mexico, Balintawak, Sucat, Batangas and Naga.

Of the six representative nodes, the Mexico node posted the highest annual average LMP of P4,547/MWh while the Batangas node had the lowest at P4,146/MWh.

Among the LMPs of these six representative nodes, December 2006 posted the highest average LMP at P7,511/MWh while July 2006 registered the lowest LMP at P2,553/MWh.

Locational Marginal Price (LMP), also termed Nodal Price, is the price of energy at a particular node.

The average price spread among these representative nodes ranged from a low of P62.00 in September 2006 to a high of P2,914 in June 2007.

High price spreads were experienced from April to June 2007 as a result of limitations in the transmission lines connecting Central Luzon and Metro Manila.

The Average Price Spread indicates the average price difference between the highest and lowest nodal price for all trading intervals for each month, determined by calculating the mean of the difference between the highest customer nodal price and lowest generator nodal price for each trading interval in a particular month.

LMPs (P/MWh)	JUL 06	AUG 06	SEP 06	OCT 06	NOV 06	DEC 06	JAN 07	FEB 07	MAR 07	APR 07	MAY 07	JUN 07
La Trinidad	2,537	2,665	3,502	3,550	4,407	7,421	2,965	3,272	4,509	6,566	5,168	5,462
Mexico	2,636	2,825	3,502	3,550	4,651	7,714	3,072	3,381	4,666	6,743	5,460	6,366
Balintawak	2,611	2,796	3,502	3,550	4,595	7,656	3,028	3,333	4,608	6,656	5,356	5,562
Sucac	2,581	2,763	3,502	3,550	4,534	7,576	2,985	3,272	4,614	6,558	5,417	5,517
Batangas	2,447	2,608	3,502	3,550	4,282	7,205	2,829	3,106	4,175	6,172	4,731	5,146
Naga	2,505	2,694	3,502	3,550	4,390	7,492	2,959	3,180	4,347	6,437	5,091	5,377
Ave Price Spread	277	544	62	91	549	1,162	354	595	911	1,099	1,219	2,914

TABLE 1: LMPs of Representative Nodes

Settlement Volumes

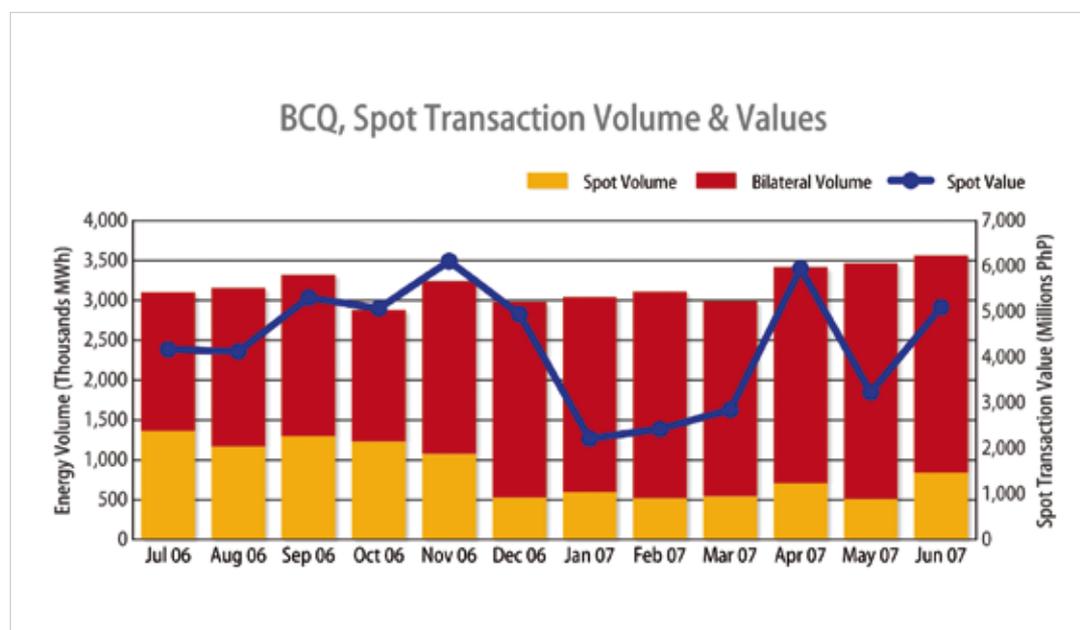


FIGURE 5: BCQ and SPOT TRANSACTION VOLUME AND VALUES

MONTH	JUL 06	AUG 06	SEP 06	OCT 06	NOV 06	DEC 06	JAN 07	FEB 07	MAR 07	APR 07	MAY 07	JUN 07
Spot Quantity, GWh	1,355	1,159	1,291	1,224	1,069	519	590	510	536	699	504	806
Bilateral Quantity, GWh	1,739	1,988	2,024	1,649	2,166	2,453	2,446	2,592	2,445	2,709	2,957	2,756

TABLE 2: Summary of Metered Quantities

Over the one-year period, spot market transactions ranged from a high of 44% at the start of the market to a low of 15% (in May 2007) of the total energy volume scheduled in the WESM. The remaining share (about 56% to 85%) was covered by bilateral power supply contracts.

Total settlement volume for the year, which includes spot and bilateral quantities, amounted to 38,186,335 MWh. Of this, 27% represented spot market transaction volumes while 73% were covered by bilateral power supply contracts. June 2007 had the largest volume of traded energy with 3,561,656 MWh, 77% of which was traded under bilateral power contracts. Minimum traded

energy was recorded in October 2006 with 2,873,285 MWh, 57% of which was covered by contracts and 43% traded on the spot market.

Spot transactions for the one-year period amounted to a total value of P51,253 Million, with a monthly average of P4,271 Million. Highest spot value of P6,112 Million was recorded in November 2006. Spot transaction value was at its lowest in January 2007 at P2,219 Million.

The significant increase in the bilateral contract quantities (BCQ) beginning December 2006 was due to the signing of the Transition Supply Contract

(amounting to 6,600 GWh) between the Manila Electric Company and the National Power Corporation. On the other hand, increased spot quantities in June 2007 may be attributed to the maintenance outage of generating plants serving bilateral contracts.

Traded energy in Luzon is composed of bilateral contract and spot market transaction quantities. Spot quantities are settled based on resulting market prices while bilateral quantities are settled outside the market based on the bilateral energy price agreed between the generator and its counterpart customer.

Effective Settlement Prices

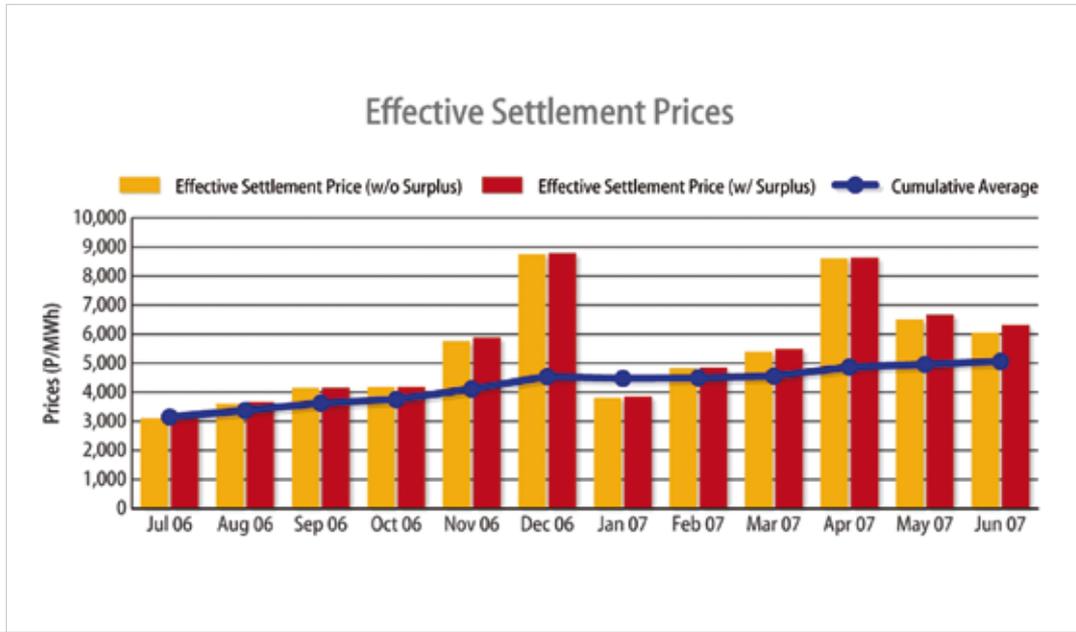


FIGURE 6: Effective Spot Market Prices

Effective settlement prices ranged from a low of P3,165/MWh in July 2006 to a high of P8,761/MWh in December 2006. Settlement adjustments were made on the settlement amounts in September and October 2006. For these months, the NPC Time-of-Use (TOU) rates were applied resulting in effective settlement prices of P4,129/MWh and P4,159/MWh for September and October 2006, respectively.

High prices in December 2006 were caused by the utilization of the higher-priced diesel and oil-based power plants to offset the shortage in natural gas supply resulting from the Malampaya platform maintenance shutdown. Increased prices from April to June 2007, on the other hand, were due to high energy demand, tight supply conditions and transmission system constraints.

Figure 6 also shows the cumulative average of effective spot market prices which ranged from P3,152/MWh at the start of the WESM operation to P5,062/MWh in June 2007 which is close to the NPC TOU rates.

Effective Settlement Prices (ESP) represent the amount paid by the WESM customers for their market transactions.

Table 3 presents the summary of settlement data for the total transaction volumes (total metered quantities), payables to the generators, amounts of receivables from the customers, net settlement surplus which accounts for the difference between the generator payments and customer collections, and the resulting effective settlement prices.

MONTH	JUL 06	AUG 06	SEP 06	OCT 06	NOV 06	DEC 06	JAN 07	FEB 07	MAR 07	APR 07	MAY 07	JUN 07
Metered Quantity, GWh	3,094.00	3,148.00	3,315.00	2,873.00	3,235.00	2,972.00	3,036.00	3,103.00	2,981.00	3,408.00	3,461.00	3,562.00
Generator Payments, Millions PHP	4,177.00	4,130.00	5,311.00	5,072.00	6,112.00	4,948.00	2,219.00	2,427.00	2,851.00	5,951.00	3,230.00	4,825.00
Customer Collections, Millions PHP	4,394.00	4,350.00	5,311.00	5,072.00	6,479.00	5,042.00	2,330.00	2,488.00	3,152.00	6,052.00	3,763.00	5,731.00
Surplus, Millions PHP	217.70	219.60	0.00	0.00	367.00	93.90	111.10	61.80	300.60	100.90	533.30	905.90
ESP with Surplus, P/MWh	3,165.00	3,648.00	4,129.00	4,159.00	5,861.00	8,761.00	3,829.00	4,831.00	5,472.00	8,623.00	6,640.00	6,288.00
ESP without Surplus, P/MWh	3,094.00	3,578.00	4,129.00	4,159.00	5,747.00	8,732.00	3,792.00	4,810.00	5,370.00	8,593.00	6,485.00	6,032.00

TABLE 3: Summary of Metered Quantity, Payables, Receivables, ESP & Surplus

Market Operator Performance

• Market Fees

Market Fees paid by the generators participating in the WESM are calculated based on their total metered quantities for the month.

The total Market Fees collected for the first year of WESM operations in Luzon amounted to P325,218,207, which were collected for the October 2006 to June 2007 supply months. No market fees were collected for the first three months of WESM operations, in accordance with the publication requirement under the Implementing Rules of the EPIRA.

Over the twelve-month period, the market fees paid by generators ranged from a minimum of 0.95 centavos per kWh of transaction in June 2007 to a maximum of 1.28 centavos per kWh in October 2006 as it had the lowest transaction volume of any period at 2,873 GWh.

The market fees paid by the generators represent about 0.59% to 1.63% of the total settlement values of their transactions in the WESM.

Billing Month	Market Fees (Centavos/kWh)
Jul 06	0.00
Aug 06	0.00
Sep 06	0.00
Oct 06	1.28
Nov 06	1.00
Dec 06	1.21
Jan 07	1.25
Feb 07	1.17
Mar 07	1.23
Apr 07	1.10
May 07	1.05
Jun 07	0.95

Table 4: Monthly Market Fees



Figure 7.1 Market Fees and Transaction Values

Monthly Market Fee is calculated by dividing the monthly market budget by the total gross energy deliveries of generators. Market Transaction Value indicates the ratio of Market Fees to the generator payments.

- Market Management System Availability

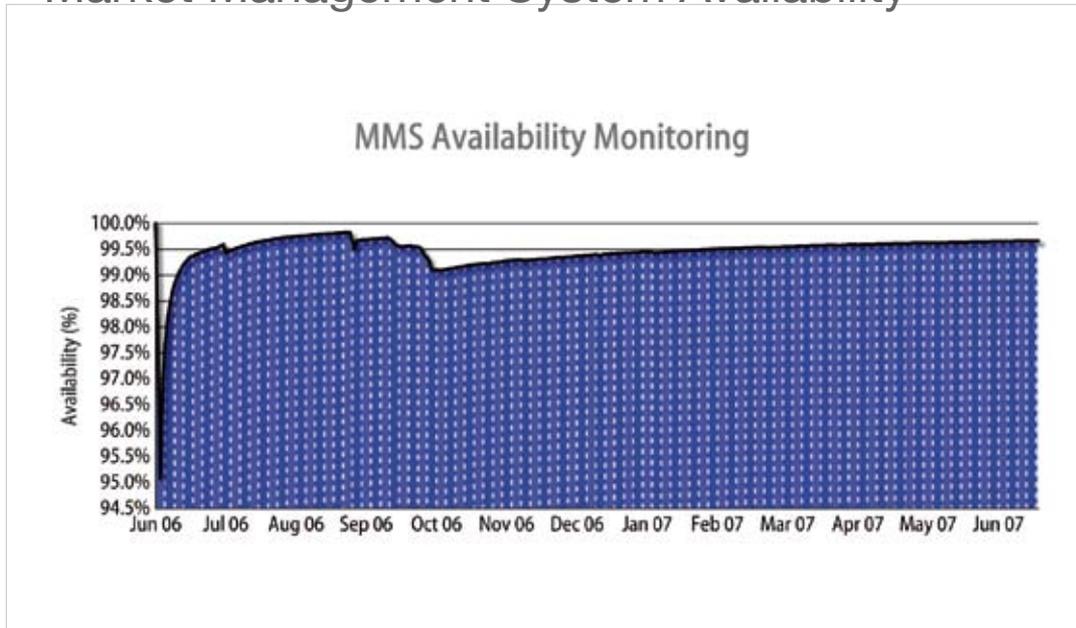
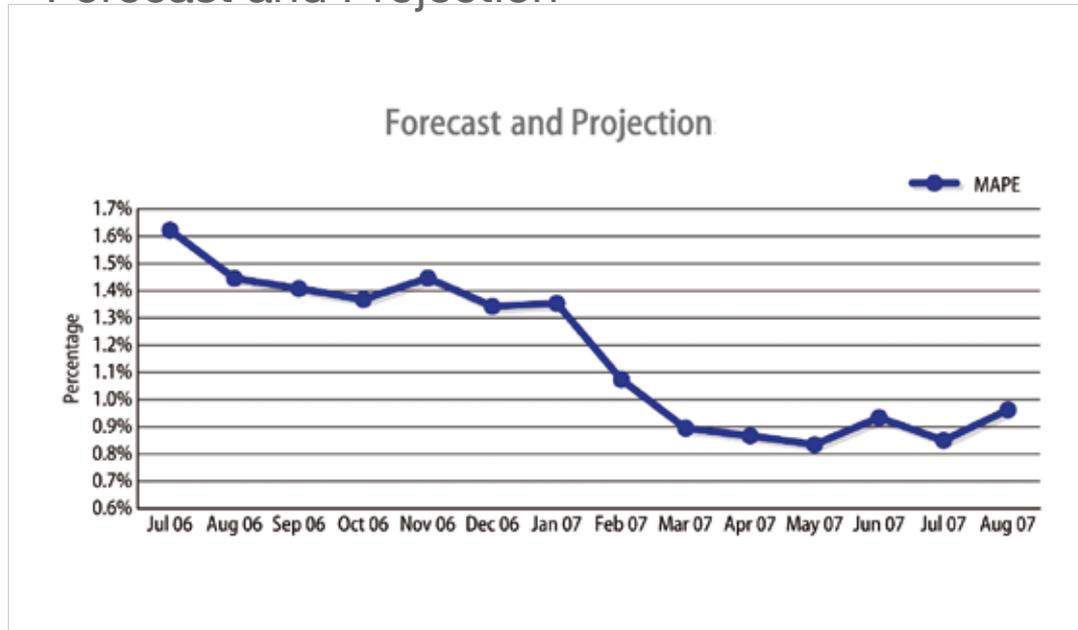


Figure 7.2: MMS Availability Monitoring

The Market Management System (MMS) is designed to have four major workflows, Ex-Ante (RTD), Ex-Post (RTX), Day-Ahead Projection (DAP) and Week-ahead Projection (WAP). Each workflow has separate output and corresponding time of publication. Throughout the first year of WESM operations, the MMS successfully completed the various market runs in over 99% of all the trading intervals. The process flow time for the RTD, RTX and WAP runs were completed within the designed time for 90% of the trading intervals and 84% for the DAP runs.

• Forecast and Projection



Market Operations achieved a high level of accuracy in its hour-ahead, day-ahead and week-ahead forecasting throughout the first twelve months of WESM operations. The resulting Mean Absolute Percentage Error (MAPE) was less than the specified tolerance of 3% in most intervals. The annual MAPE averaged 1.21%, equivalent to an average of 56.87 MW. Figure 7.3 shows a general downtrend in MAPE which indicates that forecast errors steadily decreased over time.

Figure 7.3: Forecasts and Projections

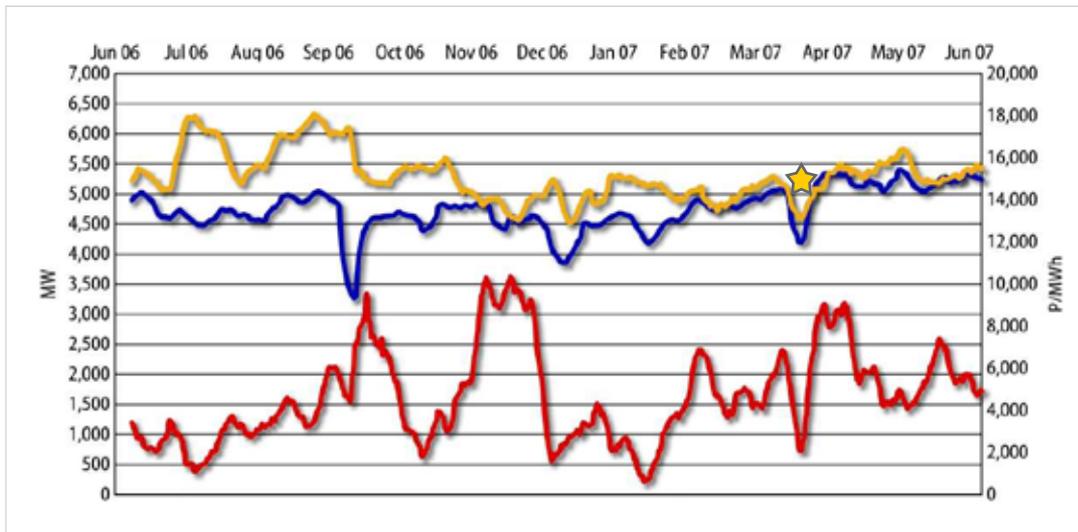
• Market Intervention and Suspension

Market intervention occurred in 71 out of 8,760 trading intervals during the first year of the WESM. These interventions were initiated for various reasons, which include: addressing system security threats, and failure of the MMS to arrive at a feasible dispatch schedule due to software failure and other related reasons.

Market suspension was declared by the Energy Regulatory Commission (ERC) from 28 September – 2 October 2006 as Typhoon Milenyo caused a system-wide collapse.

Market suspension is declared by the ERC in cases of natural calamities or following an official declaration by the President of the Philippine Republic.

Operational Highlights



- Load Weighted Average Price, P/MWh (7-day Mov. Ave.)
- Demand, MW (7-day Mov. Ave.)
- Generation Supply, MW (7-day Mov. Ave.)



Tight supply condition and increased dispatch of oil-based plants resulting in higher spot prices

★ Extremely low level of demand during the Holy Week

Tight supply condition due to outages, fuel constraints and line limitations resulting in higher spot prices. Manual Load Dropping was experienced on 18 April 2007 due to a large amount of generation capacity on outage

Increasing demand trend due to warm temperatures beginning March 2007

Lower demand from January to February 2007 due to the cold weather

Tight supply situation from November to December 2006 due to Malampaya shutdown leading to increased prices in the WESM

Five day market suspension from 28 September - 2 October 2006 due to Typhoon Milenyo

July to August 2006 prices were below average NPC Effective Rate of P4.53/kWh

The low levels of demand for July to August 2006 were due to the lower temperature during rainy season

Market Indices

“ We need a partner like the Wholesale Electricity Spot Market (WESM) that could provide a fair, transparent and reliable trading environment that will attract investments and encourage healthy competition among key players in the industry. ”

As the Philippine Electricity industry moves toward a more competitive market structure, the present policy direction is leaning toward reliance on the forces of competition. A trend has emerged from unbundling the generation, transmission, distribution, to potential retail functions of the electric utility industry.

Seeing that the electricity industry draws closer to the implementation of retail competition and open access, as a registered Whole Sale Aggregator (WSA) and Retail Electricity Service provider (RES), Aboitiz Energy Solutions (AESI) envisioned consolidating demand requirements of DUs for the purpose of purchasing and reselling electricity on a per group basis. We will cater to the electric needs of contestable markets, including end-users within a contiguous area, which would include those in villages.

In fulfilling our mandated functions and responsibilities, we need a partner like the Wholesale Electricity Spot Market (WESM) that could provide a fair, transparent and reliable trading environment that will attract investments and encourage healthy competition among key players in the industry. With the help of the WESM, we are assured that the demand requirements of our customers are met economically and reliably.

Jaime Jose Aboitiz
President
Aboitiz Energy Solutions, Inc.
Participant since June 2007



Figure 1 – Load Weighted Average Price (LWAP) Ex-post

PRICE VOLATILITY

WESM market price signals guide the areas for future investment and building of new generation capacity in the electricity industry.

The market price for electricity, as measured by the ex-post Load Weighted Average Price (LWAP), followed a cyclical pattern except for significant price spikes occurring during certain trading intervals in October 2006 and April 2007.

During the first year of WESM operations, significant price volatility measured by hourly changes in market price was regularly observed. The LWAP data indicated that the deviation of the prices from the yearlong average showed a strong upward bias as illustrated in Figure 1.

PSFI measures how often a generator sets the price for a particular period. A generator qualifies as a price setter in a particular trading interval if the generator's accepted offer is between 95%-100% of the nodal price.

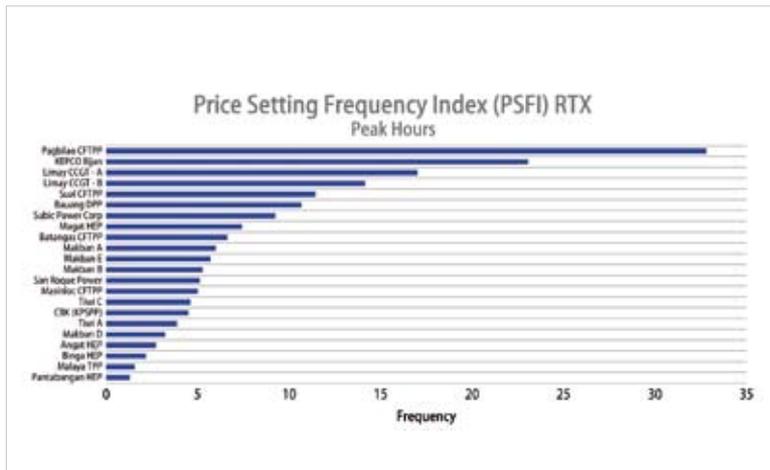


Figure 2 – Price Setting Frequency Index (PSFI), RTX Peak Hours

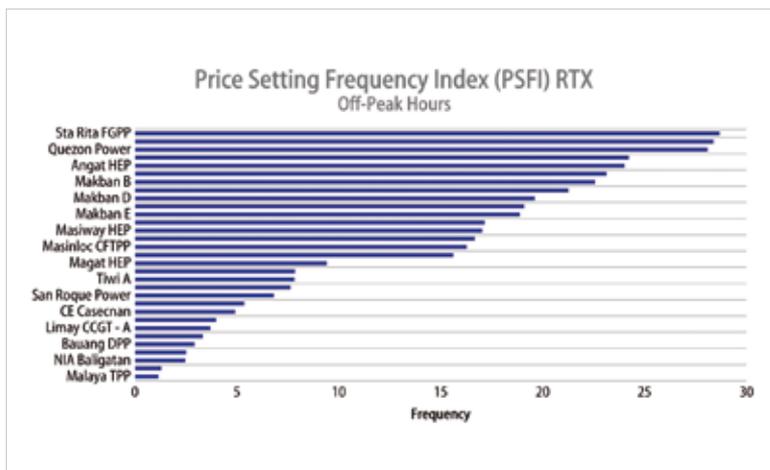


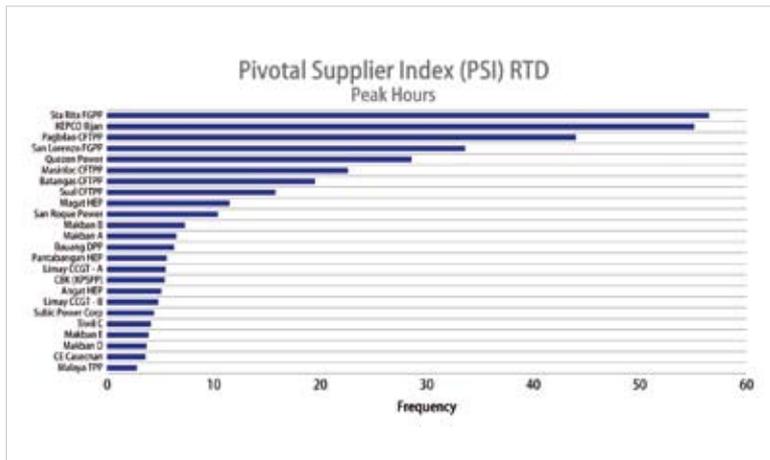
Figure 3 - Price Setting Frequency Index (PSFI), RTX Offpeak Hours

PRICE SETTING FREQUENCY INDEX (PSFI)

Coal-fired Pagbilao was the most frequent price setter during peak hours, setting the price almost 33% of the time. Far second was the natural gas-run KEPCO-Ilijan which was setting prices 23% of the time during peak hours for the period.

Price setting during off-peak hours was more evenly distributed among several plants with the Sta. Rita gas-fired plant and the coal-fired Quezon Power prominent among these.

PSI measures how often a generator is pivotal for a particular period. A generator is pivotal if the power system demand cannot be fully supplied without it.



PIVOTAL SUPPLIER FREQUENCY INDEX (PSI)

On average, Sta. Rita FGPP was the pivotal supplier in most trading intervals closely followed by KEPCO-Ilijan. Both plants are fuelled by natural gas and were pivotal suppliers for more than half of the intervals last year.

Figure 4 – Pivotal Supplier Index (PSI), RTD Peak Hours

HERFINDAHL-HIRSCHMAN INDEX (HHI) ANALYSIS

During the first year of WESM operations, there were only three major players in the market: the National Power Corporation (NPC), the Power Sector Assets and Liabilities Management Corp. (PSALM) and the MERALCO IPPs. The market becomes less concentrated when disaggregated by generating plants (as indicated by the yellow HHI line in Figure 5).

The realization of full competition in the electricity market will depend on the success of the privatization of the NPC plants, the establishment of Independent Power Producer Administrators (IPPAs), as well as new entrants into power generation in the future.

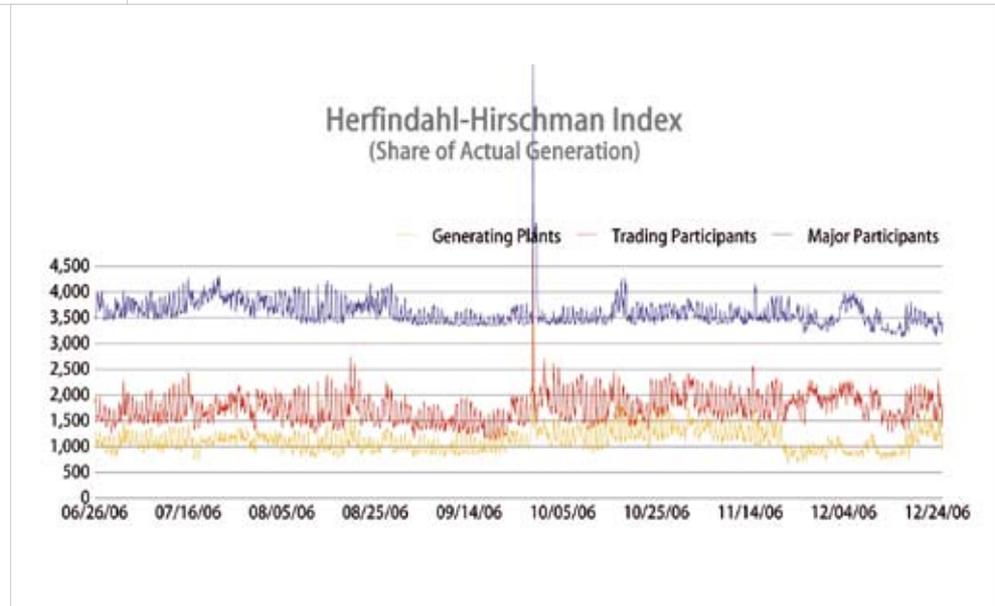


Figure 5 – Herfindahl-Hirschman Index (Share of Actual Generation) – Hourly Trend

HHI measures the degree of concentration in the market. It is generally considered that HHI above 2,500 indicates a high degree of market concentration.

Market Governance

“

The WESM has demonstrated its independence in the midst of a power industry that continues its struggle to transition into a more open and competitive market.

”

We are encouraged by the overall performance of the WESM in 2007. The WESM has demonstrated its independence in the midst of a power industry that continues its struggle to transition into a more open and competitive market. We look forward to the WESM's expansion to the Visayan grid.

Federico R. Lopez
President and CEO
First Gas Power Corporation
Participant since June 2006

Overview

The Philippine Electricity Market Corporation (PEMC) established the Governance Committees to ensure that the Wholesale Electricity Spot Market (WESM) principles of good market governance are observed to encourage competition, promote a level playing field, enhance market transparency, resolve conflicts and ensure predictability and consistency in the operation of the market.

The Governance Committees are organized into the Rules Change Committee, the Market Surveillance Committee, the Dispute Resolution Group, the Technical Committee and the Audit Committee.

Rules Change Committee (RCC)



The Rules Change Committee is mandated to assist the PEM Board and the Department of Energy (DOE) in the revision and amendment of the WESM Rules. The Committee is also tasked to assess whether proposed changes to the WESM Rules and Manuals are feasible and consistent with the objectives of the WESM.

Originally an Industry Technical Working Group, the Rules Change Committee was recently reconstituted from the Interim Rules Change Committee. The Committee continues to develop and review proposed amendments to the WESM Rules and market manuals including guidelines and procedures that are responsive to the present and future requirements of the electricity market. Since the commencement of the WESM operations, the Rules Change Committee has been actively engaged in the development and amendment of market manuals and WESM Rules in response to the proposals for Rules changes that would efficiently address issues in the operation of the market. Within the first year of the WESM's operation, the Committee completed three new market manuals, five WESM Rules amendments, and seventeen amendments to the market manuals.



RULES CHANGE COMMITTEE: (TOP) Dennis P. Gonzales, Wendell V. Ballesteros, Nixon G. Hao, Pablo M. Pan, Robinson P. Descanzo (Vice Chairman), Dennis A. dela Serna; (BOTTOM) Jesusito H. Sulit, Crisanto R. Laset, Jr., Lasse A. Holopainen (Chairman), Melburgo S. Chiu, Phares P. Parayno; (Not in picture) Ramon Diaz de Rivera

Market Surveillance Committee (MSC)

The Market Surveillance Committee constantly monitors the performance of the electricity spot market to ensure that it remains efficient, competitive and transparent.

In the WESM's first year of Commercial Operations, the MSC initiated various recommendations including the immediate privatization and transfer of control of government-owned generating plants as well as independent trading for all generators. The MSC has also lined up requests for investigations and issued reports for market suspensions and market interventions.

The Market Surveillance Committee is also mandated to design and promulgate the Financial Penalty Scheme pursuant to the WESM Rules. As such, the Committee spearheaded consultations with the Rules Change Committee, the Dispute Resolution Group, the trading participants and the PEM Board on the scheme's framework. Following the consultations, the Financial Penalty Scheme will soon be ready for implementation by the MSC.



MARKET SURVEILLANCE COMMITTEE: Rolando A. Danao, Danilo P. Mercado, Sr., and Bernarda C. Lavisores
Not in picture: Peter L. Wallace, Fernando A. Dumuk (March 2006 - January 2007)

Dispute Resolution Administrator/Group (DRG)



60

DISPUTE RESOLUTION GROUP: Alfredo J. Non, German A. Umali, Rogelio M. Avenido, Joel J. Marciano (Dispute Resolution Administrator), Victorio Mario A. Dimagiba

The Dispute Resolution Group is mandated to resolve conflicts that may arise between or among the WESM trading participants, intending WESM members as well as such other person or entity whose application for registration as WESM member is denied. The Dispute Resolution Group is guided by a set of procedural processes under the WESM Rules and the Dispute Resolution Market Manual when resolving disputes under the alternative dispute resolution process.

The WESM alternative dispute resolution is classified into three categories: negotiation where the parties involved act in good faith and use all reasonable efforts and sincerely endeavor to negotiate and amicably settle their dispute without the involvement of the third party; mediation where a mediator from the Dispute Resolution Group is selected to facilitate the communication and negotiation in reaching a voluntary and mutually satisfying agreement between parties; and arbitration where the parties agree to elevate the decision-making process to a Dispute Resolution Panel composed of three members from the Dispute Resolution Group.

Technical Committee



TECHNICAL COMMITTEE: Edgar Graciano F. Alcazar, Meleusipo E. Fonollera, Sr., Carlito C. Claudio, Francis V. Mapile

Ensuring the market's technical improvements and competence, the Technical Committee provides expertise related to information technology, metering technology and data as well as other technical matters relating to the market.

The Technical Committee is guided by the WESM Rules, the Philippine Grid Code and the Philippine Distribution Code in their functions, an important part of which is proposing amendments to the WESM Rules and market manuals in relation to technical matters to improve the efficiency and effectiveness of the market.

PEM Audit Committee



62 PEM AUDIT: Felixberto U. Bustos, Gloria Victoria Y. Taruc

The Audit Committee oversees the conduct of the annual audit of the Market Operator, the settlement system as well as all procedures and systems relevant to the operation of the WESM.

The Audit Committee is guided by the WESM Rules and the PEM Audit Market Manual in their review of market procedures and practices. The Committee recommends changes to the WESM Rules and market manuals as a result of its audit especially when it detects deficiencies in the rules, market manuals and protocols of the WESM.

The following terms are defined as they are used in this report:

- 01 **Average Demand** – is the mean of the hourly actual demand for the whole month.
- 02 **Average Price Spread** – indicates the average price difference between the highest and lowest nodal price for each month. It is calculated by getting the mean of the difference between the highest customer nodal price and lowest generator nodal price for each trading interval in a particular billing month.
- 03 **Bilateral Contract** – a contract between parties in which a defined quantity of electricity has been agreed as sold by one party to another at a particular node.
- 04 **Capacity Mix** – the capacity share (in %) of the different energy resources or fuel type for a particular month based on the registered capacities in the WESM.
- 05 **Customer** – a person or entity engaged in the activities of purchasing electricity through a transmission or distribution system, and is registered with the Market Operator.
- 06 **Effective Spot Prices or ESP** – represent the average amount paid by the WESM customers for their market transaction
- 07 **Energy Mix** – shows the energy contribution (in %) of the different generating plants by fuel type for a particular month based on actual generation.
- 08 **Energy Offers** – this is the sum of all the last offer block quantity (in MW) of all generators with valid offers for a particular trading interval.
- 09 **Forecast Accuracy** – indicates the accuracy of the ex-ante forecast. It is measured by means of Mean Absolute Percentage Error (MAPE). Ideally, MAPE should be less than 3%.
- 10 **Generator or Generating Company** – a person or entity authorized by the ERC to operate facilities used in the generation of electricity, and registered with the Market Operator.
- 11 **Herfindahl-Hirschman Index (HHI)** – measures the degree of market concentration defined as the sum of squares of the participants' market shares. It is generally considered that HHI above 2,500 indicate a high degree of concentration.
- 12 **Locational Marginal Price or LMP (in P/MWh)** - also termed Nodal Price is the price of energy for each market trading node.
- 13 **Market Intervention** – is a condition whereby the System Operator assumes the responsibility for giving directions and coordinating the actions to be undertaken by the Market Operator and Trading Participants including the scheduling of generators. Intervention by the System Operator arises when the power system is in extreme state of condition arising from (a) an emergency, (b) a threat to system security or (c) an event of force majeure.
- 14 **Market Suspension** – is declared by the Energy Regulatory Commission (ERC) of the Philippines in cases of natural calamities or following an official declaration by the President of the Philippine Republic.
- 15 **Mean Absolute Percentage Error or MAPE** = $\frac{\sum |(\text{Forecast}-\text{Actual})/\text{Actual}|}{\text{Total number of intervals}} \times 100$
- 16 **Metered Quantities** – energy quantities inclusive of both the spot and bilateral contract quantities measured from a metering installation
- 17 **Monthly Peak Demand** – the highest demand recorded for a particular month.
- 18 **Net Settlement Surplus** – the difference between the total collections from customers and the total payments to the generators in the WESM.
- 19 **Node or Trading Node** – a connection point on a network or junction point within a network model.
- 20 **Pivotal Supplier Index (PSI)** – a generator is pivotal if, given the market conditions of demand and generation, the demand cannot be supplied without that generator. The index then measures the frequency that a generating plant is pivotal in a particular trading interval under study.
- 21 **Price Setting Frequency Index** – is a monitoring index for identifying generators that are “price setters”. A generator that frequently sets the price may have greater opportunities to design bidding strategies to manipulate prices.
- 22 **Registered Capacity** – represents the maximum energy and reserve that can be offered by a generator into WESM.
- 23 **Settlement Volume or Volume of Traded Energy** – represents the total energy that is transacted through the market. It is composed of spot market and bilateral contract quantities.
- 24 **Trading Participant** – may be a customer or a generator.
- 25 **Trading Team** – trading group that handles trading transactions of one or more generators.

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