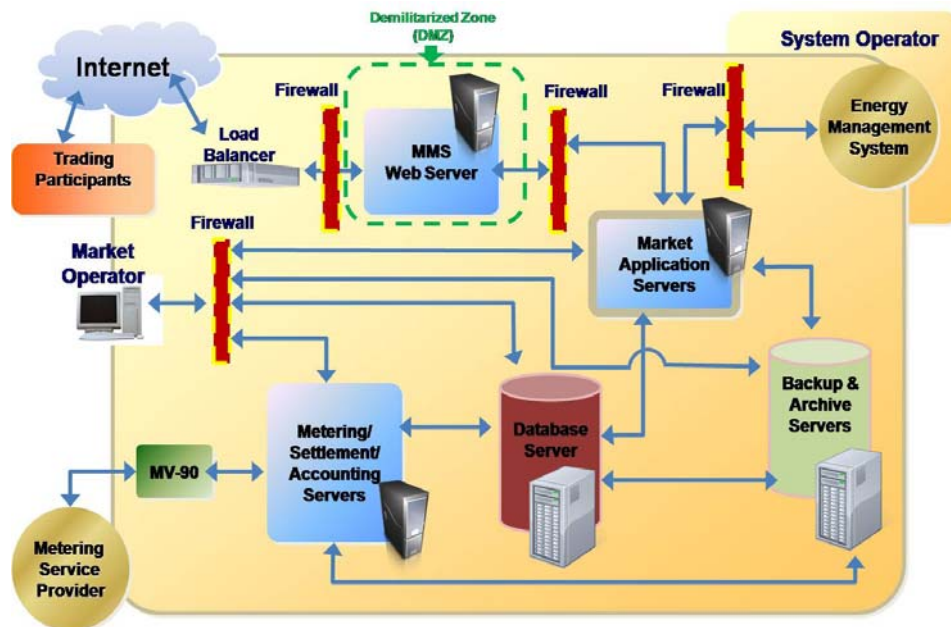


### 3.3 SYSTEM CONFIGURATION

45. The WESM MMS is supported by a collection of hardware and software components that run the subsystem modules and applications. The MMS is mainly composed of application, web and database servers running high capacity and reliability machines and programs. Auxiliary facilities such as the emergency backup system, communications equipment, firewalls, additional storage, backup/archive servers and uninterruptible power supply, among others, are integrated with the core MMS components to constitute a system configuration that would meet the requirements of the EPIRA and the WESM Rules.
46. The current hardware components of the MMS are practically the same ones that were originally installed in 2005 and are nearing obsolescence. HP, the main hardware manufacturer of the MMS servers has in fact announced that it will be desupporting the line of servers that are being in the MMS. PEMC is undertaking a project to upgrade the MMS by migrating it into newer machines.
47. A schematic of the system configuration of an instance of the MMS (there are four instances of the MMS for redundancy) is shown in Figure 6 – MMS System Configuration:

**Figure 6 – MMS System Configuration**



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**3.3.1 Market Application Servers (MAS)**

48. The Market Application and Market Infrastructure modules and applications are hosted in HP Alphaserver DS25 machines utilizing HP Tru64 UNIX operating systems. The primary DS25 market application server, referred to as MAS-A, is connected to the redundant server, MAS-B, with a high-speed memory channel operating in an HP TruCluster configuration. The TruCluster setup enables the redundant server to take over the complete production load in case the primary server fails. Each HP Alphaserver DS25 is equipped with two processors, operating at 1001 MHz in a Symmetric Multiprocessor (SMP) environment with 2 GB of ECC main memory (expandable up to 16 GB) memory and 72 GB of local disk space.
49. The MAS runs the SABLE Application and executes the processes for the EMSI, Energy Demand Forecast (SDLF and LDP), and SCED modules. The following MI applications are also executed by the MAS:
- a. Event Manager
  - b. Participant Interface
  - c. Application Server
  - d. Participant Registration
  - e. Physical Market Data Submission
  - f. Publishing Module
50. The following third party software are also installed in the DS25:
- a. Tibco SmartSockets: Is the message oriented middleware (MOM) which handles the quick, reliable and secure distribution and exchange of information across the various platforms and networks of the MMS). This software connects the separate systems and transmits messages, which may contain data, software instructions, or both. The MOM infrastructure stores messages in a queue pending delivery, and keeps track of whether and when each message has been delivered.
  - b. iPlanet Directory Server: The application that manages directory databases and responds to client requests. It is based on an open-systems server protocol called the Lightweight Directory Access Protocol (LDAP), which is both cross-platform and standards-based. This means that various

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applications like the ones running the MMS can communicate and exchange information regardless of the type of server hosting the directory or database.

51. The Commercial Operation servers for settlement, metering and accounting are made up of Proliant DL380 servers running Microsoft 2000 Advanced Server operating system. The Proliant DL380 machines have two Intel Xeon 3.0 GHz processors in a SMP environment, 2 GB of main memory (expandable to 8 GB), and 72 GB of internal disk storage. The Commercial Operation servers are linked for redundancy using Windows 2000 Advanced Server Clusters software similar to what HP TruCluster does for the HP DS25 server. The Commercial Operation servers house the POMAX Settlement System, Microsoft SQL Server Database and Microsoft Great Plains for accounting, the Metering Service Provider interface and bank interface for electronic fund transfer. The in-house developed programs based on Microsoft Excel are run from desktop PCs and the results are fed manually into the MA and Commercial Operation servers. Upon completion of the ISMS, it shall be installed in the Proliant DL380 servers to replace the POMAX system.

### 3.3.2 Database Servers (DBS)

52. Market Application, Market Infrastructure and Commercial Operations databases of the MMS also reside in HP Alphaserver DS25 machines identical to the hardware and configuration of Market Application servers. The following databases are maintained by the MMS:
- a. Market Application database:
    - i. SCED
    - ii. Load Forecast
  - b. Market Infrastructure database:
    - i. Live/Audit Input Data
    - ii. Live/Audit Output Data
    - iii. PRM Snapshots
    - iv. Settlements/PRM Local MI Data
  - c. Metering database
  - d. Settlements database
53. The database of the MSS runs within the Oracle9i Real Applications Clusters computing environment. This software harnesses the processing power of two or more database servers and unites these into a single functioning instance. The

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environment under such a setup enhances the availability, scalability and manageability of the database. Data synchronization between the primary MMS and the EBS is automated through the Oracle9i Data Guard tool.

54. In order to improve the performance of the MMS, PEMC-MO decided to install additional IBM AIX servers to run the Settlements database separately from the MI, MA and Metering databases hosted in the HP Alphaserver DS25 machine. The additional database servers (four were added, one for each instance of the MMS) are linked logically to the rest of the databases through Oracle9i software.

### **3.3.3 Internet Application or Web Servers (WEB)**

HP Alphaserver DS15 machines using Tru64 UNIX operating system serve as the platform for the Internet Application Servers (Web Servers) of the MMS. The servers have 1 GHz Alpha 64-bit processor and 512 MB of memory (expandable to 4 GB) and 36 GB of local disk space. The Web servers use IPlanet Enterprise Web Server software and are linked using HP UNIX TruCluster configuration.

55. An important component attached to the Web servers are the Coyote Point Load Balancers (EQ250), which determines the traffic in each Web server and routes requests to the machine that is least loaded. In addition, the load balancers allow the system administrator to add (or remove) Web Servers as needed, automatically detect server failures and route the requests to the other servers, offer security features against system attacks and manageability from a single point of control.

### **3.3.4 Auxiliary Storage**

56. Aside from the built-in hard disks in the servers, auxiliary storage is provided through modular storage arrays (using Redundant Array of Independent Disks or RAID). A redundant storage area network (SAN) connects the RAID auxiliary storage to the MMS servers using Fibre Optic Channel Switches.
57. Backup servers run Arkeia Enterprise Network Backup software for backup and archiving purposes. Data are stored in tape libraries for both backup (composed of two tape drives) and archiving (single tape drive with option to expand to two drives).

### 3.3.5 Communications Equipment

58. Networks and links use the Transmission Control Protocol/Internet Protocol (TCP/IP), which is an internationally recognized standard protocol, to transfer data. All the network equipment use standard communication protocol. Data traffic among the various servers is managed through a series of Cisco switches and routers. Firewall and Intrusion Detection Modules are also installed in the routers for network security. In addition to the security software, the MMS is supported by security appliances or hardware whose main functions are to detect and prevent unauthorized access to the network and to block various other external attacks on the system.
59. Actual energy flows as recorded by the remote telemetering units can be sent directly to the MV-90 front end servers of PEMC-MO and fed automatically into the MMS Settlement modules. To communicate with the meters, one set of 12 PCs (2 PCs are backups and set on standby) and 20 modems are provided each at the primary site and EBS. The MV-90 can communicate with up to 2,000 meters over the 20 dialup lines. Manual meter readings in the field may also be done through notebook computers running MV-LT.
60. The MV-90 servers have the following specifications: Athlon XP 2800 (2.08 GHz) processors, 256 MB of memory, 40 GB of disk space, CDROMs, 1.44 MB floppy disk drives, 10/100 Ethernet ports for connection to the MMS network, and 2 x V.92 modems to connect to the RTUs in the field.

### 3.3.6 Development System

61. The MMS Development System Platform consists of a two Alphaserver DS25's, a Proliant DL380 and an AlphaServer DS15. One Alphaserver DS25 is used for the Development MAS. This DS25 has one 1001 MHz processor (upgradeable to 2), 1 GB of memory (upgradeable to 16 GB) and 5 x 146 GB of local storage space (in lieu of a separate modular RAID). The other Alphaserver DS2 is allocated for the Development system database and has the same configuration as the Development MAS except it has two 1001 MHz processor instead of one.
62. The Proliant DL380 server, which runs the Development Commercial Operations server, employs one 3.0 GHz Intel Xeon Processor (upgradeable to 2), 2 GB of

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memory (upgradeable to 8 GB) and 5 x 146 GB hard disks for local storage. The Development Web server is an AlphaServer DS15 with a 1 GHz Alpha Processor, 512 MB of memory and 36 GB of local disks.

63. The Development System has its own separate LAN but can also interface with the main MMS system through a firewall router.

### 3.3.7 Market Operations Scenario Testing, Trials and Training (MOST3)

64. PEMC-MO utilizes the prototype system provided by ABB for the MOST3 system. The MOST3 is a downsized version of the MMS used for doing market re-runs, scenario tests and training of participants. MOST3 is comprised of an Alpha Server DS25 machine (2 x 1.0 GHz CPU, 2 GB MEM, 510 GB of storage) running Tru64 Unix 5.1B operating system; and two (2) HP D530 Personal Computers (2.8 GHz Pentium 4 CPU, 1 GB MEM, 80 GB storage). The MOST3 has its own network separate from the MMS.

65. SABLE Platform
- a. MA Applications
  - b. MI Applications
  - c. MA Database
  - d. SCED, SDLF and Load Predictor
  - e. MI Database
  - f. MPR, PM
  - g. STTL Database
  - h. SABLE GUI for MA (installed on iPlanet Web Server)

### 3.3.8 Uninterruptible Power Supply (UPS)

66. The APC Silicon UPS 40KW/40KVA will be used to Power the MMS. The UPS is designed and manufactured under ISO9001, ISO14001 certification and is expected to meet all international valid norms and standards. The UPS is also redundant with two identical systems. If one fails, the other takes over the full load.

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### 3.4 PROPOSED NEW SYSTEMS AND UPGRADES

67. PEMC has proposed key projects and upgrades to enable the PEMC-MO to comply with its functions. These projects are identified in the ITMS Plan for 2009 – 2013 and among them are ten (10) that may be deemed as critical market operations:

a. **MMS Migration to Supported Hardware Platform** - The Market Management System (MMS) in operation is on Hewlett Packard (HP) Alpha hardware infrastructure. The manufacturer, HP, has confirmed the “end-of-life” of this server technology and the discontinuation of technical support in 2011. The migration of the MMS software from the HP Alpha platform to a supported hardware platform is a critical project for the market operator and the WESM. IBM AIX is the current hardware platform preference for the migration. The MMS migration project has two subprojects:

i. **Upgrade of MMS Application Servers** – In anticipation of the increase in transactions and introduction of new services and markets, PEMC is proposing to split the MI and MA application servers onto separate physical servers. The rationale is to isolate the MI and MA subsystems, and so prevent the MI and MA subsystems from affecting one another, and increase the processing capacity available to the applications.

ii. **Market Offline System Upgrade Project** – The Market Offline System (MOS) upgrade aims to an enhance to the existing Market Operations Scenario Testing, Trials and Training (MOST3) system where market re-runs, simulation and trainings are undertaken. The MOST3 also runs on the HP Alphaserver platform which is due to be desupported.

b. **Integrated Settlement and Metering System (ISMS)** – PEMC has been unable to fully utilize the original delivered POMAX settlements system to meet the requirements of the market, especially with regards to support for disaggregated loads and computational accuracy due to decimal place limitations. An interim measure adopted by PEMC was to use an alternative Settlements calculations system using Microsoft Excel, which has allowed PEMC-MO to meet the requirements of the market. The in-house developed ISMS improves on the interim solution by resolving the inefficiencies and difficulties in monitoring and controlling the existing Excel-based application.

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- c. **Inclusion of Prudential Monitoring Calculations within the ISMS** – At present, PEMC manually performs prudential monitoring calculations for the market using Microsoft Excel spreadsheets. This system, however, is not capable of breaking down the prudential amounts per participant. Consequently, the prudential data could not be published, which not only creates a market rule compliance risk for PEMC but, more importantly, exposes the WESM to the risk of insufficient prudential security. This project is seeking to develop an automatic prudential monitoring calculation model within the new ISMS environment to calculate the prudential security requirements per the WESM Market Rules.
- d. **Market Assessment and Surveillance “screening”** – This project aims to improve the effectiveness of the market surveillance function currently being performed by PEMC. The project shall create automated “screening” systems to proactively detect and alert on “unusual” or “undesirable” market behaviour in real-time.
- e. **VSAA System and Preparation for the Visayas COP** – PEMC is proposing to develop the Visayas Supply Augmentation Auctioning (VSAA) System as an immediate and interim solution to facilitate electricity pricing mechanisms and dispatch scheduling in the region. The VSAA will be developed as a modular system that is completely independently of the existing MMS systems. On the other hand, preparations for the Visayas Commercial Operations Program (COP) includes the set-up of the necessary facilities for the Visayas market operations which will essentially be running on the existing MMS. The facilities shall include:
- i. Data and Voice Communications
  - ii. Computing Equipment
  - iii. WESM Applications
- f. **Ancillary Services Market** – Although the existing MMS systems have built in capabilities to support co-optimisation of energy and reserve, PEMC has not yet implemented the Operating Reserve ancillary services market due to issues with market participants. Specifically, participants cannot comply with the strict “definitions” of each type of reserve. There is a need to re-evaluate the reserve type definitions and the associated market rules. It is expected



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that any such adjustments could lead to the requirement for significant changes to be made to how reserve is treated within the MMS systems. The ultimate goal, however, is to launch a WESM Ancillary Services Market, providing a single integrated and optimal solution to the market through the co-optimisation of energy and reserve.

- g. **Automated Delivery of Information to Participants** – This project aims to provide market participants with the ability to automate the exchange of information with the WESM through the use of Web Services and Simple Object Access Protocol (SOAP). These “automating” capabilities are not present in the existing systems which have prompted market participants to develop their own applications to “screen scrape” the existing MPI and Public web interfaces. Other enhancements can also be added over time to provide participants with such features as proactive notifications for price spikes, differential pricing between market nodes, outages, etc.
- h. **Business and Services Infrastructure (BDES)** The project aims is to create a data warehouse of raw, processed and computed data from various systems within and outside the Market Management System (MMS). BDES will provide the “single version of truth” for all market information and the processing tools to handle queries from internal users and other system applications. Queries will be “diverted” to the BDES system instead of the current MMS which reduces the stress on mission critical operational systems, providing improved MMS stability. The project plan has been split into “Phase 1”: setting up the central repository and related infrastructure and “Phase 2”: providing improved post-data analysis and monitoring abilities using visualisation, forecasting and analysis tools.
- i. **Establishment of a B2B System for the Retail Market** – The Energy Regulatory Commission (ERC) has directed PEMC to lead in creating a consolidated database repository of retail meter readings, registration details and details on customer “switching” in preparation for the set-up of a retail electricity market for the industry. The project will involve integrating with the numerous collectors of meter reading data from electricity consumers in order to retrieve and store meter reading data in a single consolidated databases and format. The development model for the project is yet to be confirmed but two options are being considered: an internally developed system

implemented using the “phased” approach, and an outsourced “turn-key” model. The final scheme will ultimately depend on the required implementation timeframe for the project to be dictated by ERC.

- j. **New Market Participant Interface for Participants** – PEMC is proposing to develop, preferably with in-house resources, a new Market Participant Interface (MPI) to replace the current ABB provided MPI which has limited functionality and inflexible interfaces that only allow downloading of individual text files. The new MPI will be a virtual “one stop shop” and shall be “information and feature rich”. It will provide market participants with the ability to query, view and download operational information as well as perform analysis on historical market information.

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## 4 OPERATIONAL/TECHNICAL SPECIFICATIONS

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### 4.1 INTRODUCTION

68. Although the operational specifications for the IMO shall mirror the system environment of the PEMC-MO, the operational specifications must not be limited by what PEMC-CO has at the moment. The fact that new applications are continuously being proposed and old ones are being replaced points to the need for constant adaptation to the situation of the market. This is also driven by the rate of technological innovation of equipment and applications that run the MMS. As faster, more reliable, and cheaper hardware and software products become available the IMO could be expected to shift to new systems if doing so would be beneficial to operations and afford better financial returns. The following considerations nevertheless remain: the IMO must be able to deliver services accurately, timely, securely and reliably in accordance with the WESM Rules.

### 4.2 MINIMUM OPERATIONAL REQUIREMENTS

#### 4.2.1 Application Architecture

69. The IMO shall ensure that the MMS and its supporting subsystems are maintained at a state that is compliant with industry standards; that the MSS and its supporting subsystems shall be of robust architecture, reliable and scalable with regard to:

- a. hardware infrastructure;
- b. operating system;
- c. database system;
- d. application software;
- e. network topology;
- f. security;
- g. systems deployment and management; and
- h. external security, firewalls, virus protection etc.

#### 4.2.2 Standalone System Environments

70. The IMO must maintain separate and independent environments for production and those used for development, testing, and training. Activities on the development, testing and training environments must not affect the production environment in any way.

#### **4.2.3 Hardware/Software Support and Upgrades**

71. The IMO must ensure that equipment, software and applications that are used for the WESM are duly supported by the suppliers or vendors. Any component of the system that is due to be desupported should be upgraded or replaced.
72. The IMO shall prepare the necessary implementation plan for upgrades to hardware and software to be approved by the IMO Governing Body. Upgrades must undertaken be within a strict timetable with due notice to all relevant parties so as to cause the minimum of disruption to market operations.

#### **4.2.4 Scalability**

73. The architecture must be readily scaleable to accommodate additional equipment as necessary to address a growth in users and transactions per annum, without significantly affecting performance and reliability.

#### **4.2.5 Data Integrity**

74. The IMO shall maintain the data environment and ensure that the system is capable to rebuilding information from material errors made by users during loading of the data via file transfer. The IMO must provide the necessary assistance to users in executing any such recoveries. The IMO shall also develop a procedure to prevent users from loading inaccurate information.
75. The IMO must undertake the recovery (where possible) of any database integrity and corruption issues and correct any errors that occur as a result of the system incorrectly processing any information.

#### **4.2.6 Interoperability**

76. The IMO shall maintain an information transfer procedure between participants and MMS that is secure, reliable and simple enough to accommodate the wide range of IT sophistication of the participants. Information transfer shall use files in CSV format.

The provision of other transfer mechanism, formats and interfaces that may have advantages may be recommended by the IMO where appropriate.

#### 4.2.7 System Availability

77. The IMO shall ensure that the level of reliability equivalent to a dual redundant configuration is preserved such that the MMS is available to receive, send and process information 24x7 (with the exception of planned outages).
78. Availability and outage service levels are delineated by the point at which any transaction enters or exits the system's subcontracted Internet Services Provider (ISP). All service components, including the system host, local and wide area networks and ISP, are covered under availability and outage calculations as follows:
- a. The percent availability shall be calculated based on the number of trading intervals that the system is substantially unavailable in any one month, i.e.,  $100 - (\text{intervals outage}/(\text{days in month} \times 24) \times 100) = \% \text{ availability per calendar month}$
  - b. Outages will occur whenever the system is unavailable due to the failure of any component of the system host or the system ISP or any planned outage required to perform regular housekeeping or to install upgrades.

#### 4.2.8 Operational Service Levels

79. In addition to the IMO obligations in the WESM Rules (Interim WESM Market Operator Performance Measures), the following target performance levels must be achieved: (excluding planned outages )

PERFORMANCE CATEGORY	ANNUAL PERFORMANCE MEASURE
WESM Rules / Procedures and Regulatory Compliances	99% Compliance to applicable WESM Rules and Procedures.
Market Management System Availability	99.8% Availability of the MMS. This would be tantamount to about eighteen (18) 1-hour trading intervals only that the market system was not available to market participants in a

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	year. (excluding Planned Outages)
Forecast Accuracy	<p>Two performance indicators are proposed:</p> <p>a) Real-time forecast based on Mean Absolute Percentage Error (MAPE) assessment for the year is within +/-1%.</p> $MAPE = \frac{\sum abs(LDF_i - ACT_i)}{\sum ACT_i} \times 100\%$ <p>Where:  <i>LDF<sub>i</sub></i> = hourly load forecast  <i>ACT<sub>i</sub></i> = actual hourly load  <i>i</i> = trading interval, 1 to 24</p> <p>b) Forecast Error Rate (FER) &lt;= 3%: The actual number of RTD intervals that exceed the tolerance level of +/-3%, i.e.</p> $FER = \frac{FEI}{8760} \times 100\%$ <p>Where FEI = Trading intervals when forecast exceeds +/- 3%</p>
Dispatch Scheduling and Pricing	<ul style="list-style-type: none"> <li>• 99% success rate for the different Market Workflows runs:                             <ul style="list-style-type: none"> <li>• Real Time Dispatch</li> <li>• Real Time Ex-post</li> <li>• Day Ahead Projection</li> <li>• Weak Ahead Projection</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>• All Pricing Error validation and market re-runs are completed prior to final settlement (i.e. 100%)</li> </ul>
Billings and Settlements	<ul style="list-style-type: none"> <li>• Preliminary and Final Settlement statements are issued as per WESM settlement timetable to all market participants (i.e. 100% timeliness)</li> </ul>
	<ul style="list-style-type: none"> <li>• 99% Accuracy in Final Settlement statements relative to adjustments to trading amounts and the number of affected participants as a result of corrections/adjustments due to both internal and external factors (e.g., bilateral re-declaration, metering data adjustments, adjustments due to Must Run Units (MRU), Pricing errors, Price Substitutions and settlement surplus allocations)</li> </ul>
	<ul style="list-style-type: none"> <li>• Prudential monitoring must be done such that the IMO would have an accurate</li> </ul>

IMO TECHNICAL SPECIFICATIONS

	<p>estimate on when a trading participant's exposure in the market would exceed its trading limit. Based on historical trading volumes of each participant, the IMO must know and log seven (7) days in advance when a margin call may have to be made.</p>
<p>Registration and Customer Relations</p>	<ul style="list-style-type: none"> <li>• Direct, Indirect or intending market participant Registration application are processed within 15 business days upon receipt of complete application requirements and/or additional information or fees</li> </ul>
	<ul style="list-style-type: none"> <li>• 100% of help desk queries acted on within the timeframe prescribed in the WESM Rules.</li> </ul>
	<ul style="list-style-type: none"> <li>• Market Participant trainings completed as scheduled with high ratings on the training evaluation survey at the end of the training session</li> </ul>
	<ul style="list-style-type: none"> <li>• High over-all Market Participant satisfaction on the services rendered by the IMO.</li> </ul>

- 80. The IMO must, whenever possible, undertake preventive and corrective maintenance and the implementation of enhancements outside business hours.
- 81. For urgent corrective maintenance that must be done to address grave system faults in the MMS, the provider must immediately undertake such maintenance measures. Any such unavailability shall count against performance level of the IMO.
- 82. The provider must provide the IMO Governing Body with a monthly report detailing its performance vis-à-vis the prescribed target levels and citing reasons for the failures.
- 83. Per Section 1.3.2.3 of the WESM Rules, the IMO shall, every year, prepare and publish performance indicators to measure operational service levels.

**4.2.9 Recoverability and Business Continuity**

- 84. Backup copies of data must be done daily and stored in a secure location. The retention and recycle policy of backup media and the storage location must be agreed with the IMO Governing Body in accordance with the WESM Rules. Similarly, backup copies of the latest version of the software must also be kept offsite. At least weekly,

- backup copies of the data and software must be delivered and stored at the EBS location.
85. Prior to the transfer of market operator functions to the IMO, the IMO must develop a disaster recovery plan for the approval of the IMO Governing Body. The IMO shall periodically review such plan and ensure that it is up to date. Any revisions shall be for the approval of the IMO Governing Body.
86. The disaster recovery plan must include procedures for system recovery in the event that the primary MMS site becomes inoperable. The plan must ensure that the system shall be able to recover and provide services within two one-hour trading intervals following a major disaster.
87. Prior to the transfer of market operator functions to the IMO, the IMO must test the disaster recovery plan and every six months thereafter. The test must include:
- a. Restoration of the system to the remote location;
  - b. Restoration and roll-forward to a known time; and
  - c. Verification of system availability to an external user.

#### **4.2.10 Security**

88. The IMO must ensure that only trained and authorized personnel operate the system. In relation to this, the IMO must institute user account protocols on password age, length and complexity and account lock-outs for unsuccessful logon attempts and session timeouts. The security protocol must be reviewed each year to ensure it conforms to industry best practice.
89. User privileges must be able to set access at both function and specific data level. The session timeout settings must be configurable to the user.
90. The IMO shall ensure that audit logs of user interactions with the system are properly maintained and alerts from repeated unsuccessful logons are closely monitored to prevent hacking. The audit logs, which shall be available upon request, must provide information for participants to analyze their own usage patterns of the system.



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**4.2.11 Confidentiality**

91. The IMO must maintain the confidentiality of market information in accordance with Section 5.3 of the WESM Rules.

**4.2.12 Capacity**

92. The IMO must craft a well-defined and documented capacity planning strategy and must employ system management utilities that will assist predict future capacity requirements given the growth of transactions managed by the system.
93. At the onset the IMO must consider the capacity requirements of future services prescribed under the WESM Rules such as the Visayas electricity market, Ancillary Services Market under Section 3.3 “Ancillary Services” and Financial Transmission Rights under Section 3.12 “Financial Transmission Rights”.
94. The IMO must promptly inform the IMO Governing Body if increases in the volumes of transactions beyond the levels prescribed in the Concession Agreement/Contract are threatening the stability of the MMS. The IMO Governing Body and the IMO must promptly review the capacity of the MMS and if necessary increase its capability to enable it to meet performance targets.
95. In the event that transaction volumes have grown sufficiently to exceed those agreed upon in the Concession Agreement/Contract or new systems have to be introduced per changes in the WESM Rules to the extent that performance target level can longer be met, the IMO and the IMO Governing Body will initiate change control procedures to upgrade the capability of the system.

**4.2.13 Data Ownership and Archiving**

96. All information and data collected, calculated and published by the IMO in fulfilment of its functions under the WESM Rules belong to the IMO Governing Body. The IMO must store the data securely and be able to provide it on request within a reasonable amount of time subject to Section 3.11 “Market Information” of the WESM Rules.
97. The IMO must retain historical operational data for a period of at least ten (10) years available for reasonable access in accordance with Section 5.2.5 “Information Records” of the WESM Rules.

**4.2.14 Audit Trail**

98. Per Section 1.3.2.1 (e) of the WESM Rules, the IMO must ensure an adequate audit trail of all data input, confirmations delivered, notifications delivered and the delivery of information to other parties to substantiate and reconstruct relevant actions performed in the WESM. The audit trail must be maintained for or a period of at least seven (7) years in accordance with Paragraph 13.2.1 of the PEM Audit Market Manual. Audit information must include time, party, method and any other pertinent information to allow for full tracking from source to destination.

**4.2.15 Service Management**

99. The IMO must employ industry service management methodologies, such as ITIL (Information Technology Infrastructure Library), to cover the management functions provided by IMO.
100. The IMO must also provide a help desk contact available during regular business hours to actively assist with participant queries, to report operational incidents, system faults, to receive change requests and to notify all concerned parties. Questions from participants are expected to be technical in nature so the contact person must have sufficient electricity industry knowledge. Queries which require analysis of market results or pertain to management decisions shall be addressed within three (3) to seven (7) business days from receipt of the query by the IMO.
101. The IMO must provide a fault management service during regular service and business hours to record and rectify operational incidents and system faults. Operational incidents are instances when the system cannot be accessed by users and system faults are errors in the system that renders all or any part of it inoperable or unusable. The IMO must commence work to address and rectify operational incidents and system faults within two hours of their detection or reporting.
102. The IMO must maintain a register of all help desk requests, system faults and other operational incidents reported by market participants during the previous 12-month period. The register must contain details on the market participant, time and details of the incident and the resolution. The IMO must notify participants when incidents are resolved or the time when they are expected to be resolved. The IMO must develop an incident management process for users to view all incidents and to report any

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faults. A summary of all incidents and their resolution times must be included in the monthly report on service levels.

#### **4.2.16 Change Management**

103. Prior to the implementation of any new software or hardware or the modification of an existing software of system the IMO must follow the procedures set out in Section 10 “Software of the Market Operator” of the PEM Audit Market Manual of the WESM.

#### **4.2.17 Development Methodology**

104. When developing new procedures, processes or systems as prescribed in Section 1.3.1.6 of the WESM Rules, the IMO must employ industry standard software engineering practices including robust quality assurance processes. Any methodology must cover the whole system development lifecycle (SDLC) in the development and maintenance of software.
105. The software must be designed for flexibility and adaptability to ensure changes to functions in accordance with user requests and rule changes can be made efficiently and cost effectively. The IMO must be able to develop custom reports on request from the IMO Governing Body and from participants. All custom developments will follow the agreed change control procedure.

#### **4.2.18 Liaison**

106. The IMO must maintain close contact with the IMO Governing Body and the market participants, be proactive in identifying additional services to would ensure that the WESM is responsive to the needs of the industry.
107. The IMO must develop, distribute and consolidate an annual survey to assess the level of market participant satisfaction on the service provided by the IMO. The survey is to be conducted annually and the results reported to the IMO Governing Body.

108. The IMO shall conduct continuing training and education programs for current and potential WESM participants, consumers and the general public. In relation to this, the IMO shall develop the necessary training curriculum and materials.
109. Whenever the system is not available, the IMO must liaise with the IMO Governing Body and market participants not less than daily to apprise them of the measures being undertaken to remedy the situation and of the expected time for the resumption of service. The IMO shall also inform market participants of schedules of planned outages that will cause the system to be unavailable.

#### **4.2.19 Documentation**

110. The IMO must maintain and provide as a minimum:
- a. An up-to-date functional specification against which the software can be audited as per the PEM Audit Market Manual of the WESM.
  - b. User manuals and online help facilities to enable participants to configure their systems correctly and access the system. The user documentation must be able to help participants operate the relevant functions of the system, a troubleshooting guide, and other frequently asked questions regarding the system;
  - c. A manual of procedures for disaster recovery in case of a system crash with detailed instructions on what must be done for business continuity; and
  - d. Sufficient technical documentation to hedge against the loss of key personnel. This must include a complete operations manual and design specification that describes how the system delivers the functions.

#### **4.2.20 System Audits**

111. The IMO Governing Body may carry out audits of the records and procedures of the software within normal working hours on reasonable notice.
112. The IMO must comply with the annual audit requirements as set out in the PEM Audit Market Manual of the WESM with respect to the conduct of audit for systems, software and working processes.

113. The IMO must implement, under the change management procedure, any changes necessary to give effect to any reasonable recommendations made by an auditor, with the objective of constantly improving services.

**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND  
ANTICORRUPTION ACTION PLAN**

**(SUBPROJECT) SUPPORT FOR THE ESTABLISHMENT OF AN  
INDEPENDENT MARKET OPERATOR, PHI**

**TA-6445 (REG)**

**IMO AND GOVERNANCE STRUCTURE**

**Prepared for Department of Energy and The Asian Development Bank**

**2010**

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## **SUPPORT FOR THE ESTABLISHMENT OF INDEPENDENT MARKET OPERATOR IN THE PHILIPPINES**

### **Establishing an Independent Market Operator (IMO) for the Wholesale Electricity Spot Market – Financial Analysis of Autonomous Group Market Operator and Options for Determining a Market Price for an IMO**

#### **1.0 Background**

1. On July 24, 2001 the Congress of the Philippines adopted Republic Act No. 9136, an act to reform the Electrical Power Industry which became known as the Electric Power Industry Reform Act of 2001 (EPIRA). The act was the culmination of the country's declared policy to encourage total electrification of the country in an orderly, transparent, fair and socially responsible manner.
2. In addition the act provides for "a strong and independent regulatory body and system to ensure consumer protection and enhance competitive operations of the electricity market.
3. The essence of the law was to provide the Electricity Market with a timetable to move from a Government owned and controlled electricity market and independent market driven but government regulated market, where competition and innovation could drive increased access while at the same time Government interventions could ensure fairness and transparency.
4. One of the cornerstones of this policy was to encourage competition for production capacity from autonomous regional distributors. The result is that we are now seeing the sale of production capacity by the Department of Energy to private companies. This production capacity is being sold nationwide through a series of direct bilateral contracts with Electrical Cooperatives and Independent Electrical Distributors.
5. A secondary objective of EPIRA was to help foster a Wholesale Electricity Market whereby independent producers could sell electricity through the Country's Grid network to any of the scores of Electrical Distributors to match their demand.
6. The sale of excess capacity would serve to increase revenue for producers while at the same time reduce costs as asset usage becomes more efficient and sales are only constrained by the country's borders.
7. Achieving this goal would on the one hand increase opportunities for entries into the market while on the other hand benefit consumers who seek electrical services at the lowest possible cost. Consumer prices must continue to be regulated but provided efficient producers, wholesalers and distributors are active in the market, costs can be held in check.

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8. Pursuant to Section 30 of EPIRA and under Rule 9 of EPIRA's implementing regulations a Wholesale Electricity Spot Market (WESM) was to be established and WESM rules promulgated.
  9. Section 6 of Rule 9 defines the actions of the WESM Market Operator as follows:
    - a) A Market Operator in accordance with the WESM rules shall implement the WESM. Not later than one (1) year after the implementation of WESM, **an independent entity, the IMO, shall be formed and the functions, assets and liabilities of the AGMO shall be transferred to such entity with the joint endorsement of the DOE and the Electricity Power Industry Participants: *Provided***, that the IMO shall be financially and technically capable, with proven experience and expertise of not less than two (2) years as a leading independent market operator of similar or larger size electricity market.
    - b) Subject to Technical Constraints, the grid operator of the TRANSCO or its Buyer or Concessionaire shall provide Central Dispatch of all Generation Facilities connected, directly or indirectly, to the transmission system in accordance with the dispatch schedule submitted by the Market Operator, which shall take into account outstanding bilateral contracts.
    - c) The Market Operator shall have the following functions and responsibilities:
      - i. Operate and administer the WESM and allocate resources to enable it to operate and administer the market, in accordance with the WESM rules;
      - ii. Determine the dispatch schedule of all facilities in accordance with the WESM Rules. Such schedule shall be submitted to the grid operator of the TRANSCO or its Buyer or Concessionaire;
      - iii. Monitor daily trading activities in the market;
      - iv. Oversee transaction billing and settlement procedures; and
      - v. Maintain and publish a register of all WESM Participants and must update and publish a register whenever a Person becomes or ceases to be a WESM Participant.
  10. Section 7 of Rule 9 paragraph (e) clearly states:
  11. **Not later than one (1) year after the implementation of WESM, the AGMO shall transfer its functions, assets and liabilities to the IMO.**
  12. According to the law, the entire process should have been completed in 2003 or 2004 but the delays appear to be a result of establishing the AGMO and the regulatory environment. Without first establishing a Market Operator and a system for ensuring that transactions get concluded along with reimbursing costs and fees to the Market Operator it might be more difficult to attract an Independent Market Operator. However, with a history of experience and clear mechanisms to support Market Operations the stage has been set for ensuring a viable market operator can be sought.
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## 1.1 Analysis Objective

13. The activities under the project are defined as follows:
  - (i) develop independent market operator (IMO) structure and identify the terms of contract;
  - (ii) establish proper ownership of assets and liabilities of the autonomous group market operator (AGMO) and develop mechanism for the smooth transfer of the said assets and liabilities to the IMO;
  - (iii) develop selection process, guidelines and procedures for the appointment of the IMO;
  - (iv) develop the performance indicators and performance contract of the IMO and a set of monitoring strategies;
  - (v) design approach and instrumentalities to be used by the doe and PEMC during the stakeholders' consultation and endorsement for the tendering of the IMO; and
  - (vi) develop program and documentation for the promotion of the IMO to the prospective bidder.
14. The international electricity market financial specialist will ensure to establish proper ownership of assets and liabilities of the Autonomous Group Market Operator (AGMO) and develop mechanism for the smooth transfer of the said assets and liabilities to the IMO.
15. The Consultant's responsibilities are to:
  - (i) Review the financial statements of AGMO
  - (ii) Appraise the assets, liabilities and net worth of AGMO;
  - (iii) Develop a mechanism to determine the Contract Price for the IMO by considering different options in packaging the offer and whether its nature will be converted to a stock and profit oriented entity or to retain its non-stock non-profit identity;
  - (iv) Develop mechanism and determine required documents for the transfer of Assets and Liabilities to the IMO.
16. To achieve this goal, the consultant reviewed the financial statements of the Philippines Electricity Market Corporation as audited by SGV& Co an affiliate of Ernst & Young<sup>1</sup>. In particular, we reviewed the audit opinion, the statements of Assets, Liabilities and Fund Balance, Comprehensive Income, Changes in Fund Balance and the Statements of Cash Flows. Because the Notes to Financial Statements form an integral part of the financial statements of the Philippines Electricity Market Corporation a review of all notes was undertaken as well.
17. In addition we reviewed how the company generated its revenues and its relationships with the Electricity Market Regulator (ERC) by reviewing revenue generation along with ancillary revenue. In addition we reviewed a rate increase application to determine both the methodology and documentation provided for rate applications.
18. Below we present our findings of the financial analysis.

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<sup>1</sup> Ernst & Young is known as a member in the Big 4 Accounting Firms of the United States and is considered to be one of the largest and most prestigious accounting firms worldwide.

**2.0 Financial Assessment**

19. The Philippines Electricity Market Corporation is a non-stock, nonprofit corporation originally registered with the Philippines Securities and Exchange Commission on November 18, 2003. In response to Section 30 of EPIRA, the Department of Energy created an autonomous group market operator (AGMO) who is engaged in preparing the initial operations of the Philippines Wholesale Electricity Market (WESM). The Company acts as the AGMO and the governing body of WESM. The company is managed by its Board of Directors whose composition is equitably represented by electric power industry participants. The company's primary purpose is to manage, govern and administer an efficient, competitive, transparent and reliable market for the wholesale and purchase of electricity and ancillary services in the Philippines in accordance with EPIRA.
20. PEMC's by-laws expire one year from the spot market commencement date. Despite this, the Board remains at its Interim Period with members appointed by the Secretary of the DOE.
21. Section 30 of EPIRA and WESM rules 10.2 mandate the AGMO will undertake the initial operation of WESM but one year after initiation an Independent Market Operator will be formed and the functions, assets and liabilities of the AGMO will be transferred to the IMO upon the joint endorsement of the DOE and the industry participants. While the law is clear, the IMO has yet to be formed and selected by DOE.
22. WESM trading participants include generation companies, distribution utilities including electrical cooperatives, bulk customers and suppliers or aggregators.
23. As a non-stock, nonprofit corporation, the cost of administering and operating WESM is expected to be fully funded by the collected market fees as regulated by the ERC.
24. As Market Operator of WESM, the Company oversees the transaction billing and settlement procedures of the market in accordance with WESM Rules. While the Company is required to oversee these transactions and settle balances, they do so as a facilitator to the transaction and maintain funds in a fiduciary capacity for WESM trading participants. The Company may not benefit from the use of funds on behalf of the WESM trading participants and any revenue derived there from must be credited to the WESM trading participants.
25. As we reviewed the Financial Statements of PEMC we were impressed by how well prepared the financial records were, how much disclosure was contained in the financial statements taken as a whole, and while there were a number of Internal Accounting Concerns, none of those concerns appears to reflect negatively on the quality of the accounting staff or its management, merely internal accounting control breakdowns consistent with either a need for further investment in accounting systems or a need for additional staff. The consequences of the internal control breakdowns should be weighed against the overall cost of addressing those weaknesses.
26. The Auditors opinion that "the financial statements present fairly, in all material respects, the financial position of Philippines Electricity Market Corporation as of December 31, 2009 and 2008, and its financial performance and its cash flows for

the years then ended in accordance with Philippines Reporting Standards” without reservation, gives credence to the belief that the financial statements are reliable and can be used to determine a reasonable valuation for the company.

27. We did note that the Company’s Fund Balance or Net Worth stood at PhP262,443,366. Cash balances were PhP402,671,969.
28. Our assessment began with a trend analysis of the Company’s Income Statement. A trend analysis analyzed revenues and costs as relative trends to each other to determine if revenues are being generated to cover the cost of operations.
29. This analysis revealed revenues growing by 37% and 23% respectively in the past two years while expenses increased with higher volumes of transactions, they grew at rates far less than revenue growth. Major costs such as personnel salaries and interest costs represent 29.6% and 8.4% of revenues in 2008 fell to 24.2% and 4.6% respectively in 2009.
30. This growth in revenue and relative reduction in expenses is reflected in the Company’s Excess of Revenues over Expenses climbing from PhP179,787,876 in 2008 to PhP352,616,304 in 2009.
31. Increased cash flows have afforded the company extraordinarily high liquidity. Working capital grew from PhP97,551,761 in 2008 to PhP349,785,438 in 2009. This equates to a working capital ratio of 1.55 and 2.82 respectively. The Company is clearly able to meet all obligations as they become due with the possible exception of repaying TransCo for the Market Management System which we discuss below.
32. The only troubling issue we experienced in reviewing the financial statements was the relatively low Interest Income and excessive days sales in accounts receivable.
33. In our review we projected potential interest income by averaging the beginning of the year cash in bank with the end of the year cash in bank. Using a 5.5% interest income rate we were able to see that 2008 was relatively in line with our expectations, 2009 interest income was little more than half of our expectations. Improved treasury management and returns on invested cash is called for.
34. Days sales in accounts receivable is a method of determining how long it takes an organization to collect its accounts receivable and has a direct impact on liquidity. Collection of fees is consistent with the time it takes to bill and settle market transactions as fees are a percentage of the billing and settlement of wholesale transactions. Billing and settlement is currently occurring every 60 days hence the average days sales in Accounts Receivable of 62 days.
35. The delay in billing and settlement is having a profound effect on the willingness of Electrical Utilities to transact for Wholesale Spot Electricity. In accordance with WESM Rules all traders must place security, known as a Prudential, for all transactions on the exchange from inception up to settlement. Since settlement is so delayed this can range up to 60 days of transactions. Securing the transaction can be done in a number of ways; i) a cash deposit; ii) a bank guarantee; iii) a letter of credit from a credited bank; or iv) a surety bond from a recognized surety or insurance company.

36. Many smaller utilities do not have access to funds, guarantees or letters of credit hence they are unable to trade on the exchange. There is currently no insurance company or surety bonding agent in the Philippines Market that we are aware of.
37. **It is our recommendation that consideration be given to reducing the time lag for billing and settlement to less than one month.** In markets like Canada and the United States billing and settlement is as low as daily, with weekly averages being the norm. If this was accomplished in the Philippines the result will likely be better cash flows for all parties, lower prudential requirements encouraging greater access to the market for smaller electrical cooperatives to optimize their costs resulting in lower costs overall particularly for consumers.
38. With settlement time being reduced, stronger cash flows, increased interest income and lower carrying costs will ensue for the IMO.

## 2.1 Revenue Generation

39. Currently the AGMO, generates its revenue from principally one source, Market Transaction Fees. Additional income comes from Market Registration Fees, Interest Income and certain miscellaneous income such as training fees. However, the Wholesale Electricity Spot Market Rules defines activities available to the Market Operator to generate income known as *Ancillary Services*. At present PEMC acting as AGMO does not seek nor can they be compensated for implementing *Ancillary Services*.
40. **Market Transaction Fees** are the costs incurred by the operator to maintain the business to operate the WESM. Fees are generally expressed in cost per kWh. To determine the rate, the market operator projects his annual costs based on output and then receives a reimbursement for each kWh traded on the WESM. Once the fees are determined then the operator receives monthly payments or payment on the settlement date of transactions as they occur. Under Philippine regulation requirements the operator cannot receive more or less than his projected costs approved each year annually during the rate application by the Market Operator. The Transaction fees include all metering data collection contained in the Metering fees, Billing and Settlement services proscribed as Billing and Settlement fees and Administration costs within the meaning of Administration Fees.
41. Market transaction fees (MTF) are calculated as follows:
 
$$\text{MTF (PhP/kWh)} = \frac{\text{Total Annual Market Transaction Fees (PhP)/12}}{\text{Total Generation Metered Quantity for the Month (kWh)}}$$
42. **Registration Fees** are an annual fee payable by each WESM member for the category or categories for which they are registered.
43. The Electricity Regulatory Commission regulates fees paid to the Market Operator. Basic fees are the two listed above. Market Transaction Fees and Registration fees. However, there are many other fees available to the Market Operator that are defined in the EPIRA Implementing Rules and Regulations (IRR) and further expanded in the Wholesale Electricity Spot Market (WESM) Rules.
44. In examining other market based fees we present below an overview of other potential services that can be provided by the Market Operator as regulated under

WESM Rules. These services are not currently in operation owing to a number of factors most significant of which is the lack of approvals from the ERC.

45. **Reserve Fees** - Reserve Requirements (Operating Reserve) are simply having energy in your back pocket if something unexpected arises negatively effecting the ability to supply power to the system such as a generator breaks, load goes heavy or something happens where you immediately need energy to satisfy market demand. Unlike any other commodity demand has to equal supply at all times or the system collapses. If demand is greater than supply voltage begins to immediately collapse. If the voltage decline is too great machines shutdown and generators remove themselves from the Grid and things get worse.
46. If we take wheat rather than electricity as an example, if demand is greater than supply the price rises until the supply and demand match to obtain the equilibrium price in economic terms. However, unlike the pull of power demand, there is no immediate system failure leading to a total collapse of the system in minutes.
47. What Operating Reserve does is provide the System Operator with power they can quickly add to the system to bring the Demand and Supply back into balance.
48. Typically the requirement is to have Ten Minute Operating Reserve (OR) (the amount of energy you can get by calling these reserves in ten minutes) equivalent to the largest single contingency. For example if the Largest Generator in the Philippine Grid is 1200 MW then you would want to have 1200 MW of ten minute reserve.
49. You can think of OR as a Call Option on a Generator, they receive a Premium, the hourly OR Payment, and if required are called upon to produce this energy within ten minutes and are paid the clearing price for that energy. In situations where this reserve is needed, the System Operator pays a Generator not to generate power but to hold it in reserve in the event of a systemic occurrence which temporarily reduces power. The System Operator can call in his reserve option and get the Generator to transmit power from his reserve system based upon his ability to ramp up power to meet system needs<sup>2</sup>
50. Reserves can be bought from generators who will promise to increase their output in ten minutes or load which will promise to reduce their demand in ten minutes, the outcome is the same Supply = Demand. Therefore, the System Operator is mostly concerned with keeping the system from crashing and having demand available.
51. Requesting the Generate not to produce requires the System Operator to pay the Generator a reasonable cost to do so. The Generator would not wish to sell his reserve unless he received at a minimum all his fixed costs<sup>3</sup> plus his expected return on capital if the plant were operating.

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<sup>2</sup> It is understood that most generators ramp up gradually and require a certain time period to get power on line. A typical ramp rate is 5 MW per minutes for most fossil fuel generators. Hydro ramps immediately but since most are run of river types of plants without storage there is no benefit in holding these plants in reserve

<sup>3</sup> Since the Generator is not producing power, it is assumed that no variable costs would be incurred. There may well be some to keep the generator operating such as regular maintenance and other quasi-variable measures but all that must be computed in the price.

52. The System Operator faces a dilemma. He wants to reserve power for a rainy day but does not want to either overpay the Generator or increase prices for the system to maintain this insurance. Clearly the Load wishes to have their demand needs met at the most optimal prices.
53. The Market Operator has the algorithm that can determine the most efficient and cost effective purchase of Power and Operating Reserve. In most market systems the Load will pay the Market Operator a fee to compute and commit the lowest cost option for Operating Reserve.
54. The existing computer program does have the algorithm to make the computation. At this writing, the ERC has yet to approve any fee based system for Operating Reserve. Further while the program is available the market remains naïve and it is unlikely if demand for computing OR exists at present.
55. **Transmission Rights** - a financial transmission right is an option contract that guarantees its owner the right to sell power at the spot price at a given location in the network, regardless of where that power is injected into the network. Financial transmission rights are often paired with markets that employ pool-based, nodal pricing while physical rights are usually discussed in the context of a decentralized market of 'bilateral' trades. Such a right would entitle its owner to be paid the transmission price on a given path (multiplied by the number of rights the owner has), or, in a nodal market, the price difference between two nodes.
56. At present, AGMO does not engage in the selling for transmission rights. If one were to look at transmission rights, it is similar to an insurance contract that provides protection against congestion at the node from interfering with the producer being able to sell his production at a reasonable contract price. It can also insure that his production is sold at his expected nodal price rather than the reduced price of a node that has more production than the node can absorb.
57. **Prudential Fund** – Under WESM rules, WESM members must provide security for payments under the settlement provisions. The Market Operator is required to compute the financial obligations anticipated by WESM Members annually based on the member's anticipated maximum exposure in respect of a billing period in the following year.
58. To secure their ability to meet this financial obligation, the WESM Member is required to provide security in the form of a Prudential Fund. The prudential fund simply put is a security deposit to provide assurance to the Market Operator that the Member will be able to liquidate their obligations as they occur.
59. This security amount is proscribed under WESM rules. Those rules require the security to be in the form of:
  - a) A bank guarantee acceptable to the market operator.
  - b) An irrevocable and unconditional letter of credit from a bank acceptable to the Market Operator.
  - c) A surety bond issued by a surety or insurance company duly accredited by the office of the Insurance Commissioner of the Philippines.
  - d) Such other forms of security or guarantee acceptable to the Market Operator.



60. PEMC's auditors has raised the need to monitor and ensure that all Prudential Funds are deposited and up to date. Any income earned on the Prudential Fund or security deposit is the property of the funding agency or WESM Member. By and large security is provided with a bank guarantee or irrevocable letter of credit. The problem detailed in the audit findings is that PEMC is not applying consequences for LCs or Guarantees that may have expired. The result is that security obligations, in some cases, are not being met.
61. PEMC has, since the issuance of the Audit Report, tightened controls over Prudentials through calls on guarantees acceleration of payments, but there still remains a gap in the market that could provide increased assurances and could be timed to meet the needs for Prudential Funds. In addition it could provide additional revenues for the Market Operator.
62. WESM rules allow for the use of Surety Bonds by accredited institutions to meet Prudential requirements. Despite this right, there still remains no insurance company or surety in the Philippines to provide such Surety Bonds sufficient to meet the needs of the market. It is unclear if any insurance company, registered with the office of the Insurance Commissioner of the Philippines, has been approached about providing surety to the market. While the lack of market participants is an obstacle, it is also clear that there could be a demand for such services.

## **2.2 Scope of Services**

63. Service fees are generally calculated on providing services for trading wholesale electricity production for the Luzon Grid only.
64. The Market Operator has made an application to the ERC for clarification on Operations, computer optimization models and fees for Visayas Supply Augmentation Auction (VSAA). The Visayas region which includes Cebu, Negros and Panay Islands was proposed as a voluntary supply augmentation auction geared to meet recurring deficit in supply for the Visayas region. In addressing this problem, only those customers who applied to participate could be included in this program and the Market Operator was ordered to include the entire deficit in its auction and where supply was not available.
65. Since the VSAA is currently in its testing phase and by and large is not operating as a Wholesale Electricity Spot Market, we have not include these revenues and costs in our pricing analysis. It is unclear if any supporting infrastructure is needed, what the markets operating and capital expenses will be or what other extraneous factors will be included to determine Market Transaction Fees.
66. While these Services are not included in our pricing formula, it is clear that operating and capital expenditures will be incurred and our pricing formula will take future revenue, expenses and capital forecasts into regard.

## **2.3 Software and Hardware**

67. The PEMC financial statements carry a fixed asset known as Market Management System (MMS) with an historical cost of almost PhP575 million. Further, they carry a liability known as Obligation for the MMS of exactly the same amount. As explained in Footnote 8 in the Notes to Financial Statements of PEMC is a complete explanation of what gave rise to both the Asset and Liability.

68. To summarize that footnote, the National Power Corporation (NPC) entered into loan agreements with the Asian Development Bank (ADB) and Japan Bank for International Cooperation (JBIC) to secure financing for Philippine power industry development. Part of the proceeds of these loans was to secure the MMS for the WESM. TransCo was the designated project executing agency with the Company as project administrator.
69. In March 2004, TransCo entered into a Turnkey Implementation of the MMS Contract with ABB, Inc. and others. In December 2004 the MMS was transferred to PEMC and installation was complete by June 2006. In 2004 PEMC and TransCo agreed on cost recovery mechanisms for advances by TransCo but did not include cost and recovery in MMS. The Company's financial statements did not include MMS in its financial accounts as of December 31, 2006.
70. At present, the financial obligations remain clouded but the Company has had beneficial use of the Asset and has recorded the asset and liability on its books. The Company acknowledges the obligation but has yet to agree on a final cost which, since the sale of TransCo to a private concern has been turned over to PSALM for resolution of stranded assets and debts. PSALM estimates the amount payable to be PhP697.4 million at August 6, 2008 which included actual costs plus accumulated financing and other transactions fees from 2004 to 2008.
71. At December 31, 2009, the Company and PSALM were close to reaching an agreement on obligations and payments and had made application for a rate increase to begin repayment of outstanding obligations. This application was denied as ERC felt that resolution of obligations had not progressed sufficiently and final agreement had yet to be reached.
72. On the books and records of PEMC the software is not being depreciated and costs are not being put aside for replacement of the asset beyond its useful life. Outstanding debts are not being liquidated and the companies financial profile remains in doubt until a final accounting can be agreed and Market Transaction Fees are approved to liquidate the debt. From a financial point of view funds must be generated first to pay outstanding debt obligations incurred to acquire these assets and second put aside funds to replace assets as they become used and obsolete.
73. It must be understood that the MMS software is an "off-the-shelf" software developed many years ago. It also has certain limitations that may need to be addressed as the market becomes more sophisticated over time. While the software is highly capable its application should be reviewed constantly and it is suggested that the software be depreciated to ensure at the least funds are set aside for replacement should this become necessary.
74. From a valuations standpoint this software is a significant asset. Managing the Market would be impossible without software that can direct generators and loads to the most efficient and least costly option. Further this can and does ensure consumers have the most cost effective options for matching power production with consumer needs. Without this software, it is likely that power shortages, outages or even failure might ensue.



75. During our review of pricing options we will examine a need to determine the replacement cost and present value of this software as a vehicle to manage the Market and to produce revenue for an Independent Market Operator. Under normal circumstances valuation models for an asset of this nature would be valued the asset at the lower of the Net Present Value of future cash flows or replacement cost.

## 2.4 Liabilities and Contingencies

76. As noted above, there is a major outstanding obligation to PSALM for the MMS software. In addition there are obligations carried on the books and records of the Company in respect of start-up operation and capital funding for the Company prior to collecting Market Transaction Fees. This start-up capital was advanced by TransCo, was evidenced by promissory notes carrying interest at 12% per annum. In 2007, the Company began liquidating these advances based on a note received from TransCo that includes interest and principal amortization. At December 31, 2009 the outstanding debt was approximately PhP255.2 million with amortization of this debt scheduled at PhP120.5 million and PhP134.7 million in 2011 and 2012 respectively.
77. Except for accounts payable in the normal course of business and normal retirement benefits payable under the Company's defined benefit retirement benefit obligations there are no other outstanding existing liabilities.
78. The Audit Report does not indicate any lawsuits or contingent liabilities beyond the normal course of business obligations. Nothing has come to our attention that would indicate any contingent or actual liabilities except those disclosed on the Company's Financial Accounts.

## 2.5 Personnel

79. Personnel Expenses rise gradually with both inflation and increased transactions. However, the relationship between increasing personnel expenses and increasing market fees are not proportional. Our trend analysis noted that Personnel Expenses as a percentage of revenue dropped from 36% in 2007 to 24% of revenue in 2009. As the company expands service increased efficiencies are likely to be experienced. While Personnel Costs are the largest expense that the Company has it must be recognized that expenses appear to be in line with needs.
80. We further analyzed Compensation of identified management personnel. While we did not look at salary structures we examined overall costs as detailed in the Company's December 31, 2009 Financial Statements. We were surprised to see a year on year reduction of key management personnel costs. Prima facie evidence that costs are under control and management salaries are reasonable can be demonstrated through analysis of financial statements.
81. As the Management of the Company evolves, management salaries are likely to be approved by independent boards with an agenda of ensuring that the Company remains well managed, provides beneficial services to their constituents, is able to expand services and meets obligations as they become due. **Some consideration should be given to incentive structures that allow management to benefit from well managed operations.**

82. While we may be unable at this juncture to envisage a management incentive scheme, we do anticipate, similar to the National Grid Corporation of the Philippines (NGCP) that incentives can and should be applied to Company operations. Incentives applied will reward effective market oriented behavior rewarding the Company for solid improvements, effective service and reducing costs.
83. If incentives are provided to the Company as they are with NGCP, sharing these incentives with management and staff will motivate all personnel to improved performance and better service for their constituents.

## **2.6 Asset Enhancements/Replacements**

84. During the course of operating any business, assets need to be purchased, improved systems introduced and serviced enhanced. To more effectively manage operations a process must be in place to ensure asset acquisitions are agreed and paid for. However, as we examine the needs for an Independent Market Operator we must be mindful of regulatory processes, approvals and forward planning.
85. To determine how asset enhancements and replacements would be approved and managed, we looked for existing precedents here in the Philippines. The most immediate precedent that we could determine was the sale of the Philippine Transmission Company to the National Grid Corporation of the Philippines.
86. The National Transmission Corporation (TransCo) was created under Republic Act No. 9136, or the EPIRA, to assume the electrical transmission function of the National Power Corporation. Further to this, the EPIRA provided that TransCo shall be privatized by way of concession or an outright sale.
87. The privatization of TransCo was accomplished by the assumption by the private concessionaire, NGCP, of the transmission business on January 15, 2009, the Commencement Date of the concession.
88. After securing its franchise from Congress, NGCP took over the task of delivering safe and reliable electricity throughout the Country. Previously a responsibility of TransCo, TransCo retains residual functions, including but not limited to monitoring the concession contract with NGCP.
89. NGCP is owned by a consortium of Monte Oro Grid Resources Corporation (MOGRC), State Grid Corporation of China (SGCC) and Calaca High Power Corporation (CHPC). Monte Oro Grid, a wholly-owned subsidiary of Monte Oro Resources and Energy Inc. (MORE), was incorporated to invest and hold interest in shares of stocks of companies engaged or proposing to engage in mining, energy exploration and infrastructure projects as well as in government privatization or similar projects, whether as proponent, equity investor or financial or technical advisor.
90. SGCC, formerly known as State Power Corporation, is the largest electric power provider in China and ranks 29th in the 2007 Fortune Global 500 – the highest ranked electric power company in the list. As the largest utility in the world, SGCC operates power transmission, distribution and other assets of the power grid. Its corporate service area covers 88% of the national territory. SGCC is also the

Second largest state owned enterprise in China, with more than 145 million customers and annual revenue of more than US\$107 billion.

91. Calaca High Power is in the business of operating, managing, maintaining and rehabilitating energy systems and services for gas, steam and electricity.
92. The concession agreement requires rates be set through the Regulated Transmission Wheeling Rates are currently called the Regulatory Reset by the Concession agreement. Rate approvals rates are the responsibility of the Electricity Regulatory Commission. Rates are set through an agreed formula defined in the Concession Agreement between NGCP and TransCo.
93. The Concession Agreement and Revenue Pricing formula is exceptionally complex. While it is complex, it is better to break down the formula into more easily digestible terms particularly as it pertains to Asset Replacement and Enhancements.
94. The rate paid to the Market Operator should include:
  - i. A return of current Operating Costs, indexed for inflation or for future operating needs.
  - ii. A return of taxes not associated with their corporate business activities.
  - iii. Capital expenditures to meet future demand based on demand forecasts, forward planning analysis and criteria and market requirements.
  - iv. Current depreciation of revalued assets.
  - v. Returns on investment based on the Weighted Average Cost of Capital
95. The formula which will be reviewed more formally below includes two key structures. First the need to ensure sufficient capital is available to invest in assets that ensure future operations. Second the formula helps establish a pricing formula for determining a basic sales price if selling the market operation to an Independent Third Party is deemed appropriate.
96. Concentrating for the moment on Asset Acquisitions and Enhancements, the most appropriate measure of determining those needs is by forecasting the market circumstances and developing a plan for meeting the market forecast needs. Of course, factoring asset replacements, improvements, overhauls and meeting current asset demands are vital.
97. The NGCP escalation formula has certain important criteria that we can follow. Their model include some very necessary building blocks:
  - i. Determine demand forecasts through certain economic assumptions and GNP measures. Using current economic forecast models the market can be determined based on National growth and new target regions.
  - ii. Capital expenditures needed to meet demand, market expansion and on-going needs. This forecast does not necessarily mirror the market needs but is a multiple year effort needed to reflect changing technology along with growth. The model will define new investment over an extended period of time to meet development goals.

- iii. Weighted average cost of Capital is a necessary measure in acquisition of new assets. Some will require financing to acquire with market interest rates applied. In addition, projections of these costs will need to be determined in order to ensure that the effect on tariffs is clear and unambiguous.
98. With these market mechanisms employed a clear understanding of effects, benefits and obligations of new assets will be understood. In addition, the impact on tariffs must be understood by both the ERC and the Independent Market Operator's Board.

## 2.7 Asset Rebasings

99. The NGCP model was adapted to value the assets of PEMC to analyze the Company's worth. Generally the worth of any organization is based on current cash flows which will be a predictor of future cash flows. A second determining criterion is the company's actual net assets<sup>4</sup>. Finally a third criterion might be the sales value of the company's assets over its outstanding liabilities, sometimes called its breakup value.
100. We decided to explore each of these criteria in an effort to calculate the most appropriate measure for expected sales value for PEMC.
101. **Discounted Cash Flows** – the net worth of any company can be determined by discounting future cash flows by the Weighted Average Cost of Capital (WACC). The WACC is defined as the weighted average cost of all sources of funding including debt and equity. Debt funding will have a range of costs based on the type of debt it is, sourcing mechanism and the date the debt was incurred.
102. For our purposes the formula driving the WACC can be determined as follows:

$$WACC = r_e E/V + r_d D/V$$

where  $r_e$  is the cost of equity,  $r_d$  is the cost of debt,  $E$  is the value of equity,  $D$  is the value of debt, and  $V = E + D$ .

103. Note that the WACC combines both debt and equity to determine the discount factor. PEMC is currently a non-stock, non-profit enterprise. While they are currently experiencing an excess of revenues over expenses this is not the intention of PEMC. Current excess revenues may be reduced in future. In fact, regulatory discussion and decisions in recent months have all pointed to fee reductions. ERC appears more reluctant to approve excesses similar to the past.
104. While we believe that this method offers an effective means of determining a company value, without real certainty of future revenues exceeding future expenses this method, even though widely accepted, becomes difficult to recommend. We therefore rejected Discounted Cash Flows from our analysis.
105. **Net Assets** – also called Net Worth determines the current book value of all assets and liabilities and by determining those net assets we can compute a company value. This method works well when determining the net worth of individuals with a

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<sup>4</sup> Net assets are defined as Assets less outstanding debt will determine what is otherwise called equity.

large majority of their assets in market valued instruments. Market valued instruments include cash on deposit, publicly traded stocks and publicly traded bonds. There is an immediate recognition of the value of each of these assets without dispute since they are publicly traded.

106. Unfortunately companies operating in a specific and defined market do not easily fall within this valuation model. Further as PEMC is a non-stock, non-profit company there should be no value for the company save any initial equity deposited at start up. At start up costs were funded by loan infusions by TransCo. These loans are being repaid and the proceeds are used to input equity into the Company.
107. As we have analyzed the Company however we noted that except for computer software and hardware, the Company does not have significant assets. Cash balances exceed the fund balance and it appears easy for the Company's owners to declare a dividend or increase costs through imposing management fees that would eliminate the Company's fund balance. Besides, in valuing the company for eventual sale, one would not use cash on hand for determining how much an investor should pay for your cash on hand. The easy answer is the value of cash on hand is the amount that should be paid.
108. Hence we rejected this method for determining the Company's value. We felt however, that a similar type of analysis was needed to understand current valuation.
109. **Rebased Assets** – are assets that are analyzed and rebased to either current value or replacement costs. Under many regulated utility pricing formulas, assets on hand are “rebased” or revalued to reflect current market costs for replacement of those assets. This is done for a variety of reasons, most important of which is to ensure that the utility values its assets at current prices so that depreciation reflects the current cost of replacing assets as they become obsolete.
110. This is a normal methodology along with demand forecasting and projecting new asset development many years on advance to develop a business plan used for determining tariffs and funds needed for future operations. As this method reflects the real values of existing assets in operations, it seem the most appropriate method for determining the sales price of PEMC.
111. To determine this price we looked at several rebasing methodologies. First we examined inflation adjusted asset based, next we examined useful life estimates of the asset base and finally replacement cost.
112. Inflation adjusted rebasing assumes that asset values keep pace with inflation and like your automobile lose value fairly consistently over fixed period. If for example you owned a car that would have useful life of say 3 years you would see in year 2 the value of the vehicle would be its historical cost plus inflation less accelerated depreciation. Unfortunately, PEMC's major asset is a computer program with a likely cost including interest and service fees of approximately PhP700 million. The net selling price of this asset is not based upon its inflation value but its value to the Market which is dependent on the computer program to keep the Market operating.

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113. Useful life estimates can use inflation or may not be inflation adjusted. Recognizing that all assets have a useful life, the time it takes for the relative benefits of assets to be realized and eventually discarded, valuation is based on the asset value at the time of purchased escalated to current value and then its wear and tear reflected in a depreciated value for that asset.
114. In considering the current status of PEMC's assets as we stated earlier, the Company's major asset, in fact its only income producing asset is its computer system and software. Where the hardware can be easily replaced the software actually makes the organization responsive to its customers. The MMS was developed in the 1970s and has operated in a number of Electricity Market operations with only minor changes. Furthermore, the number of companies offering services, updates and adaptation to new and fast hardware are limited.
115. For these reasons we are unable to recommend any measure for this specific and specialized software other than determining its replacement value. To develop new software to replace this software would require an investment in the millions of dollars. So specialized is the software that no new companies have entered the market for decades. There remain some firms willing to offer maintenance and adaptation services but it is understood that the market is becoming more and more limited as the cost of maintaining a staff outweighs the revenue potential from maintenance.
116. One further fact must be considered. In computer industry terms all software and hardware for that matter has a very limited shelf life. New and better software is being developed all the time with the result that computer replacement cost is not relevant. However, in this case the software is so unique, the algorithm so complex that finding any software firm that will develop a new and better program is unlikely within the near future. External factors will need to occur to encourage new software development in a fairly settled conservative industry.
117. To determine the replacement cost for MMS would require a review of purchasing the software, installation and adaptation to current hardware technology and finally there needs to be significant operator training to ensure software operations efficiency.
118. In 2004 the software was purchased and installation began. However, it was not until 2006 that the software actually went into service. This time lag represents the time to adapt existing software to current hardware technology and training needed to start system operation and encourage system efficiency.
119. So how to determine the replacement cost of the software and hardware operating the MMS. Well again we look to the precedent established under the TransCo/NGCP Concession Agreement. Asset revaluation or rebasing is allowed to follow one of three basic forms:
- i. Indexation from the prior regulatory asset valuation
  - ii. Absolute valuation by replacement cost analysis; and
  - iii. Absolute valuation using modern equivalent asset analysis



120. In its Position Paper, the ERC advised that it had decided to follow a primary and a secondary approach to asset valuation for the Third Regulatory Period. The primary approach (the approach that will be used to determine the revenue path for NGCP) will be to undertake the asset valuation using optimized depreciated replacement cost (ODRC) techniques.
121. It would seem that following this precedent of ODRC is appropriate for valuation of assets and determining asset values. However, as noted above depreciated cost may not be appropriate since there is little actual depreciation or obsolescence of critical software components.
122. However, as NGCP used an outside consultant to value the assets of TransCo for regulatory rebasing, it seems appropriate that to determine the anticipated selling or offer price an outside consultant valuation would be most appropriate particularly for the MMS.
123. The consultant, SKM<sup>5</sup>, used both indexed replacement cost (IRC) and ODRC. Because of the highly specialized nature of the MMS we would suggest that IRC be used for MMS and ODRC for all other assets including computers. This will allow valuation to reflect more correctly actual values of existing assets as computer hardware in operation for 3 years or more would reflect limited value<sup>6</sup>.
124. To reiterate the valuation formula and elements that must be included in determining the pricing structure for company valuation. Asset rebasing is needed to determine the Company's worth. This more correctly reflects the difficulty in evaluating future cash flow without first developing demand forecast, assets needs over a 20 year period<sup>7</sup>.
125. Once the valuation formula is confirmed and agreed, the rate base calculation must take this into regard when determining agreed Market Transaction Fees (MTF) for PEMC and its successor. These fees would be based on expected operating expenses (OPEX), annual capital acquisitions (CAPEX), the weighted average cost of capital (WACC), Rebased Depreciation costs (DEP).

$$\text{MTF} = \frac{\text{OPEX} + (\text{CAPEX} \times \text{WACC}) + \text{DEP} + (\text{D} + \text{Q}) \times \text{WACC}}{\text{Total Generation Metered Quantity for the Month (kWh)}}$$

Where D is the amount of Debt carried by the IMO and Q is the equity of the IMO. This formula would provide fees revenue equal to all operating costs, new asset acquisitions, replacement of assets, repayment of loans and interest plus a return on investment to the IMO.

126. Of course approvals and agreements with the ERC, IMO board and Market Committee must be agreed before any rate or fee can be finalized, we trust that this evaluation formula can and will assist greatly in finalization.

<sup>5</sup> Sinclair, Knight, Merz, Pty, Ltd.

<sup>6</sup> Actually only reflect its salvage value at the end of 3 year which in the computer industry is exceptionally low reflecting the continuing upgrade of hardware capabilities and reflecting new technologies in play.

<sup>7</sup> Normal business planning requires a company to look forward in developing their business strategy targeted demand over an extended period of time, particularly in utility practice considering the long lead times for assets to come on line, usually 20 – 25 years. From this extended demand analysis a medium term business plan would be developed that factors in asset acquisitions, operating expenses, interest costs, revenues, etc over this period for regulation purposes.

## 2.8 Taxes

127. The pricing model for NGCP concerns itself with certain pricing add-backs. The Concession Agreement signed by TransCo and NGCP excluded taxes except for the 3% franchise tax. NGCP has a letter from the Department of Finance confirming the exemption from:
- i. Income and withholding tax
  - ii. VAT
  - iii. Import fees and duties
  - iv. Documentary Stamp Tax
128. This tax exemption provides the NGCP with certain benefits not available to normal businesses but positively affects the price of electricity service to consumers. There are, however, certain calculations required to determine corporate income taxes and the like as it appears that the income taxes, VAT and Stamp Taxes must be paid and recovered as reasonable costs established by ERC.
129. While it is difficult to present here the convoluted nature of these transactions, we would concur with the intention and recommend certain tax exemptions be granted to the IMO if it is determined to be operated as a private sector concession. However, to avoid recovery of costs that negatively affect consumers, tax exempt letters should be granted the IMO and no tax paid for any purchases or the filing of corporate income tax returns with the IRS under tax exempt status.
130. By so doing the ERC would not condone passing on taxes paid by the Market Operator to consumers.

## 3.0 Project Packaging Options

131. Above we have demonstrated many ways to approach net worth, cash flows and asset rebasing that will be used in project packaging. In order for us to recommend the best option we first reviewed the options most beneficial for offering the project to the private sector. Options considered during our analysis we categorize as follows:
132. **Comparable values** – is based on determining similar transactions where companies are sold to investors based upon previous performance in the hope that this will mirror future performance hence establishing a purchase price in excess of net worth. The analysis looks at the Company's net worth as the first indicator of value. Secondly, we would examine the sales price of similar businesses in the region. From this review we would determine an expected premium of sales price over net worth.
133. This method works well with smaller businesses that have much competition in a rather limited region or area. In respect of the Philippines Electricity Market Corporation there are few if any businesses of a similar nature in the Philippines. Furthermore determining PEMC's net worth is a problem. As we see from above, PEMC as a non-stock, nonprofit Corporation does not have a net worth in business terms. Instead it has a "Fund Balance" which represents retained excess revenues over expenses.
134. While this Fund Balance could be construed as the Company's net worth, it is worthwhile noting that if the Company's cash were returned to the DOE or if they



were forced to repay outstanding loans for Company start up, or if the ERC suddenly determined that PEMC funding requests were inflated as shown by the excess of revenues over expenses, then the Fund Balance could be depleted almost immediately. We are unaware of any stipulation under law or in practice that requires the Company to maintain a certain level of funds for ongoing operations. Instead, the Company has been able to amass the bulk of the Fund Balance in the past year only.

135. Further the PEMC is currently repaying debts to PSALM which acquired the stranded assets and debts of TransCo when it was sold to NGCP. Cash flows are used to settle these debts which are expected to be liquidated by 2011. Further PEMC has debt related to the purchase of the MMS. This debt is also to PSALM as part of the stranded assets and debts of TransCo. However, at December 31, 2009 a final accounting of the Asset and Liability had yet to be accomplished. On the accounting records the fully verified Asset and Liability were included in the Financial Statements. However, the Notes to Financial Statement revealed potentially a further PhP150 million additional liability and asset.
136. Despite all the possible permutations we have been unable to utilize this method as a way of determining an Option for Packaging the Company for a private independent owner. With the uncertainty surrounding the cost of their primary asset and with a Fund Balance that could easily become negative if cash payments were requested by DOE, there is little to offer by looking at net worth as a determinate for the Company's worth. Further, this business is highly specialized with only one other similar service organization in the Country. There is no comparable business sale that could approximate the value of PEMC. For these reasons we have chosen to reject this method for determining the value of the Company and will need to examine other Options for Packaging the Company.
137. **Net Present Value of Future Cash Flows** – is the preferred method for determining corporate value. Often called the Price/Earnings Ratio, It works by examining all the factors for operating a functioning business. It analyzes the total revenue that is expected to be earned based upon standard sales or tariff formula, development or construction costs controlled by specific analyses for project such as a 20 MW Combined Cycle Power plant prepared by experienced and capable contractors, operating expenses for known operating costs that vary only in respect of variable costs of production with fixed daily operating expenses being easily determined in projections. The result of these analyses is a series of cash flows over a specific timescale of the project or business.
138. This analysis is used to determine cash flows as a return on capital investments made to develop the business. By way of example, assume that you were building the 20 MW Combined Cycle Power Plant indicated above. The cost of the Plant was \$100 million dollars. Assume the plant generated cash profits after paying operating expenses of \$15 million dollars. You could impute a weighted average return on investment of 15%. The actual return on equity would depend on the debt/equity ratio.
139. In cases where you were in a project finance scenario, you would select the company that projected the lowest wholesale electricity tariff for production. The tariff is an algorithm of the combined cost of the plant, operating cost, weighted average cost of capital and un-assumed risk by the operator.

140. In the case of the sale or assumption of the AGMO by an IMO the problem is more complex, however. The price received by the DOE is predicated on long-term cash flows that can be expected to be received by the IMO. Cash receipts by the IMO are a product of approved tariffs payable by the Market Participants and as regulated by ERC. In this case there is little if any experience to go by to determine an estimate of the lowest cost producer. Low cost production may not be easily assessed.
141. Because of the absence of experience, the need to repay debt associated with the purchase of MMS, the inability to determine the mix of debt and equity (all new funds injected should be equity) we felt that this was not the best option for Packaging the Company.
142. **Asset Rebasng** – is a method of determining the current Replacement Value of existing assets offset by depreciation. As noted above the major asset available to the Company is its MMS software. While this software is being used presently, because of the specialized and unique nature of the software there are few if any alternatives. No new and improved software is being developed at the present time and so long as adaptation to current computer systems and models continues it is unlikely if the computer or its algorithm can be considered obsolete.
143. The consultants believe that if an independent asset evaluation were to determine the current replacement cost of all assets including and in particular the MMS asset values would increase substantially. To determine the net value of PEMC therefore we propose a valuation model as follows:
- $$V = A - (L - CoH) + R_b.$$
- Where V is the Value of Packaging the Company, A is the Company's Assets, L is the value of outstanding liabilities, CoH is the total Cash on Hand available to the Company and  $R_b$  is the value of difference between rebased assets and historical cost less depreciation. These rebased assets shall be based on an independent asset valuation.
144. Using this analysis, we assumed that any cash the Company has on hand should be used to offset existing liabilities, particularly funds payable to PSALM as successor to TransCo who funded initial start up costs and acquisition of MMS. This would help to determine the true net worth of PEMC plus any rebasing of existing assets particularly MMS. We believe that this method will provide a valuation model that most closely coincides with the Company's real worth.
145. In our evaluation we also assumed that there is likely to be factors outside of operations that can increase the value of the Company. Those factors typically known as goodwill are a consequence of the Company's many years of operation, the stability of the market and the potential opportunities for growth in other areas such as VSAA. However, since we do not possess historical or projected information that can easily capture this value, for purposes of Packaging Options we would recommend using the Asset Rebasng value as a floor for investor interest.

### 3.1 Discussion of Packaging Options or Converting AGMO to IMO

146. Under TA-4073 along with the present analysis of Program Structure it was concluded the converting from an AGMO directly to an IMO was a viable and beneficial option in pursuit of the program. TA-4073 states:

Due to the definition of IMO in the IRR, the IMO could in principle be created (i) as a new independent company from a tender with international Market Operators; or (ii) by forming the IMO from the current AGMO with support of experts from another Market Operator company from another country). In both cases, the participation of a Market Operator from another country would be required.

For these reasons and also to ensure that the transition to the IMO cannot be challenged as contrary to the EPIRA or the IRR, we have reviewed in depth the provisions related to the IMO in the legal frameworks and other frameworks (Market Rules, PEMC By-Laws, etc). We have also reviewed the current market operation arrangements [the AGMO] to assess changes that would be needed in the transition to the IMO given the existing conditions regarding the Market Operator.

147. The analysis of the Program Structure developed by the Consulting team under this project should stand on its own. However for the review of packaging options versus converting the existing AGMO to an IMO we examined the advantages and disadvantages of each structure. The advantages and disadvantages are presented below:

**Chart 1 – Asset Rebasing vs. Converting AGMO to IMO**

<b>Asset Rebase</b>	<b>PMEC - IMO</b>
<b>Advantages</b>	<b>Advantages</b>
Residual funds to DOE Repay O/S debt Offset PEMC Cash vs O/S debt	Repay O/S debt Timeframe Market responsive Minor legal revisions Higher levels of control Lower MTF No Sovereign guarantee
<b>Disadvantages</b>	<b>Disadvantages</b>
Time consuming Possibly no investor interested Tax risk Personnel might not wish to move Higher MTF Less Market Responsive	No residual funds to DOE Any new borrowings would likely required a sovereign guarantee

148. The advantages of Rebasing assets and tendering to find an Independent Market Operator are focused on cash to repay outstanding debt through cash provided by the PEMC, the existing AGMO, through payments by the purchaser to repay outstanding loans and residual cash paid to the Department of Energy for the right to create and operate the Market.

149. Disadvantages of rebasing mean higher Market Transaction Fees to reflect the return on equity associated with a private sector firm purchasing the right to operate. Further risks include a time consuming process to tender and select an operator. Generally, tenders take at least one year to complete, issues such as an unwillingness of existing personnel to change their status might occur, there is always the possibility that no investor would be interested and finally an offer to the private sector might entail providing tax breaks and other measures to encourage investment and secure operation.
150. On the other side of the equation – converting the PEMC to an IMO, there are a great many advantages but only two disadvantages. Without a sale of PEMC there is no residual cash to be paid to DOE. However, if we convert PEMC to an IMO, we will obtain a market responsive entity with long experience in operating the WESM. Furthermore, with only limited legal revisions, the transaction can be accommodated quickly. In addition without the need to tender and considering that current board members agree to a revised structure this entire transaction can take place very quickly (within months rather than in excess of one year).
151. It must also be noted that the new IMO can continue to act as a non-stock, nonprofit entity without or with limited legal changes in status. They may continue to file tax returns reflecting their status as a legal entity not subject to taxation. If a private sector IMO were selected and there was agreement to provide tax relief for the investor legislative rules might have to be altered to accommodate the agreement. The new structure creates a number of advantages that do not require legal structuring.
152. A further very clear benefit for the conversion of the PEMC to an IMO is the immediate likelihood of lower Market Transaction Fees. Without requiring a return on equity to total WACC is bound to be lower without a needed return on equity.
153. There is one final concern that must be addressed forthrightly by Government. Under normal privatization of existing Government Corporations, the organization is an ongoing operating company generating income and profits. Its stability and profitability make it a relative good candidate for expanding its business though new debt. However, with a non-stock, nonprofit entity such as PEMC any expansion of existing activities, purchase of new assets, new borrowing, etc. may require the full faith and credit assurances of the Department of Energy and the Government of the Philippines.
154. While this current inability to borrow may resolve itself over time as banks become more knowledgeable in respect of the Market Operator, at least in the medium term some government sovereign backing will be required.
- 155. Except for concerns over new asset purchases and IMO borrowing, based on international precedent, a review of benefits and disadvantages of all approaches and the concurrent financial implications thereto we strongly recommend converting the existing AGMO, the Philippines Electricity Market Corporation, to a newly created Independent Market Operator for WESM.**

### 3.2 Risks

156. We considered a number of risks during our analysis such as force majeure risk, regulatory risks, financing risk and prudential risk. We concluded that all risks are

within normal parameters and should not unduly hinder closing transactions to transfer ownership from the PEMC to a newly franchised non-stock, nonprofit IMO. Below we summarize some of the inherent risks associated with the transaction.

157. **Force Majeure Risk** – is the risk that a catastrophic event will occur that will cause the transaction irreparable damage or not permit the transaction to close. Force Majeure is often called acts of god due to the unpredictability of such occurrences. Generally there should be little risk associated with force majeure beyond the need to buy insurance to cover catastrophic events.
158. **Regulatory Risks** – These risks have a much higher possibility of disrupting the business needs of the IMO. Independent regulators are in place to ensure that the monopoly provider of Market Management service acts conscientiously and at a reasonable price. However, any regulator can and may let factors beyond good business practice influence decision making.
159. In an effort to reduce any arbitrary use of regulatory power by the regulator the newly created by-laws of the IMO should detail as extensively as possible formula for establishing transaction fees. This formula should ensure that fees are based on meeting the obligations of the Market Operator while at the same time ensuring available funds for continuing operations.
160. Of course, agreeing to Market Transaction Fees by the Regulator can be influenced by outside forces including but not limited to the internal politics of the country, elections, economic forces and many other factors. This risk is akin to sovereign risk and should be assessed accordingly.
161. **Financing Risk** – consist of two very important risks. First are funds available locally to be able to seek debt to finance future acquisitions at a reasonable cost and second will long-term debt be closely match cash flows.
162. Regulators must provide assurance to any prospective operator that tariffs will meet financing requirements. By and large investors are now beginning to feel that regulatory issues are fairly confined and there is growing certainty with financing.
163. Further it should be noted that in our proposed structure for conversion of PEMC to an IMO there are no real financing issues except whether the government provides a guarantee.
164. If an outright sale is chosen as the final model, then our capital analysis model assumes a weighted average cost of capital similar to the NGCP requests of setting Transmission Wheeling Rates. The rates estimated by NGCP by an independent expert for the WACC was estimated at 19%. WACC is the combined Debt/Equity profile that includes a 2 to 1 debt/equity ratio. The WACC may vary if D/E ratios are higher or lower.
165. It should also be noted that the cost of debt or equity for the IMO is based on both the creditworthiness of the investor (to a lesser degree) and the quality of the contract between the PEMC/DOE and the investor. With a contract with assurances of performance on the part of Government and the ERC in particular, the cost of finance. Further funds are a factor of local conditions such as inflation

rates, sovereign risk<sup>8</sup> and other factors such as the source of funds. With the Philippines reflecting a fairly stable inflation rate<sup>9</sup> and improving sovereign risks, financing costs are expected to lower over the coming years. Negotiating a reasonable WACC will be important to ensure that the rate both encourages a range of investors but is reasonable to consumers.

166. **Prudential Risk** – are risks associated with ensuring that Prudential Requirements are met.
167. The WESM Rules contain various provisions governing prudential requirements (WESM Rules 3.15). This includes provisions outlining Acceptable Credit Criteria for Market Participants, and Network Operators in certain circumstances, to establish they are an acceptable credit risk. Where the credit criteria is not met, the IMO will require the Market Participant, or Network Operator as the case may be, to provide Credit Support in an amount not less than the Credit Limit determined by the IMO for that entity.
168. The IMO will monitor the financial liability of a Market Participant to the IMO, the Outstanding Amount, on a daily basis. The Outstanding Amount will be compared to the Market Participant's Trading Limit, set in accordance with the Market Rules, to arrive at the Market Participant's Trading Margin. In the event that the Market Participant's Trading Margin falls to zero or below (i.e. Outstanding Amounts exceed the Trading Limit), a Margin Call Notice is issued.
169. The aim of the Margin Call Notice is to reduce the Outstanding Amount to the level of Typical Accrual. The Typical Accrual represents the outstanding liability which would have been accrued by the Market Participant if the average price and quantity estimates used in the calculation of the Credit Limit were the Market Participant's actual price and usage over the preceding 60 days.
170. The Margin Call Notice compels response with either increased Credit Support or a Security Deposit of cleared funds by the next Business Day. Market Participants are obligated not to submit to the IMO any transaction that could result in their Trading Margin being exceeded. In making this determination, the Market Participant is to value the transaction contemplated by the submission using the expected value guidelines outlined in this procedure. The IMO may reject submissions that, in its view, could result in the Trading Margin being exceeded. The IMO uses the expected value guidelines in making its determination.
171. A failure by a Market Participant or Network Operator to comply with an obligation under this Market Procedure constitutes a breach of clause 3.15.10 of the WESM Rules.
172. Currently, market participation is lower than expected principally a result of high Margin requirements for settlement of transactions. In other countries settlement procedures are significantly faster. In some cases happening daily and Prudential Requirements requiring weekly reconciliation.

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<sup>8</sup> Also known as beta coefficients

<sup>9</sup> Based on the Bangko Sentral Ng Pilipinas Fourth Quarter 2009 Inflation Report, Inflation is projected to fall between 4.5% and 4.0% in the foreseeable future.



#### 4.0 Conclusions and Recommendations

173. Our review of the financial condition of PEMC and its likelihood of operating as an Independent Market Operator is quite good. PEMC is by and large well managed with only minor issues regarding financial presentation. The Company's auditors are the World Class Accounting Firm of Ernst and Young and have given the Company a clean opinion. It is easy to deduce from this analysis that proper disclosure is available for any investor to feel confident with not only the financial condition of the Company but also be in a position to make a reasonable offer for the assets and liabilities of the Company.
174. We must also conclude, however, that making an offer for any value contained within the Company is going to be very difficult. The Company is a non-stock, nonprofit entity whose only real assets of any worth are the cash it holds in the bank and its specialized computer software which operates the WESM.
175. Valuation of the Company beyond these measures to determine issues such as goodwill or net present value of future cash flows are problematic. Goodwill is market based and is determined by examining comparable market investments. It is difficult to determine if there are any comparable market investments.
176. Net present value of future cash flows are predicated only on ERC's willingness to assure future investors Market Transaction Fees consistent with meeting future costs and returns on current and future investments. Because of the nonprofit nature of PEMC these future cash flows have not be established and less assured.
177. We have recommended that to establish a market price for the IMO, rebasing assets to meet current replacement cost criteria would be the most effective means. This means that current debt obligations would be repayed and assumed by the acquiring Company or IMO and a payment to the Government equaling the rebased assets over current long-term liabilities. Further the Government would be obligated to reduce the Fund Balance to zero, use remaining existing cash to extinguish any outstanding debt with the residual being assigned to the new IMO.
178. However, when we weighed the benefits and disadvantages of seeking a private sector IMO under a concession agreement or converting the PEMC to an IMO we found that for many reasons the most effective financial option was conversion to an IMO by PEMC. In paragraph 155 we state categorically:
- “Except for concerns over new asset purchases and IMO borrowing, based on international precedent, a review of benefits and disadvantages of all approaches and the concurrent financial implications thereto we strongly recommend converting the existing AGMO, the Philippines Electricity Market Corporation, to a newly created Independent Market Operator for WESM.”**
179. Finally, we would recommend certain financial covenants should be required by the Government and encourage the regulator to provide Market Transaction Fees sufficient to meet covenants such as:
- Debt equity ratios must never exceed 3:1.
  - Working Capital ratios must be 1.5:1 or greater.
  - Acid ratios must be 1.25:1 or greater.
  - Day's sales in accounts receivable must be 20 days or less.

180. Other ratios can be added but these ratios regulate leverage and contribution of equity, working capital and the ability to meet obligations as they become due and the accounts receivable assures that settlement occurs more rapidly than currently encouraging more participants in the market.
181. Finally Market Transaction Fees must be set at least annually. Further provisions should allow for a more frequent fee structure should inflation, interest rates and changes in law significantly alter the cost structure for the IMO.



**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND  
ANTICORRUPTION ACTION PLAN**

**(SUBPROJECT) SUPPORT FOR THE ESTABLISHMENT OF AN  
INDEPENDENT MARKET OPERATOR, PHI**

**TA-6445 (REG)**

**PRIMER ON THE IMO GOVERNANCE STRUCTURE**

**Prepared for**

**Department of Energy and The Asian Development Bank**

**2010**

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## 1 INTRODUCTION

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1. The Department of Energy issued DOE Circular No. 2010-\_\_\_\_\_ entitled “Amending the Philippine Electricity Market Board Membership Arrangement and Governance Structure in the Philippine Wholesale Electricity Spot Market (WESM) and Declaring an Independent Market Operator Policy for the WESM” setting out the policy on the IMO structure and outlining the steps towards the formation and establishment of the IMO to administer and govern the WESM.
2. Although appearing to be the trigger event or document which launches and prioritizes the establishment of the IMO, the issuance of Circular is itself a step in the process which began with the enactment of R.A. 9136 or the Electric Power Industry Reform Act (EPIRA) in 2001. The Circular for all intents comes past midway of the process and is the culmination of major achievements in the Philippine electric power industry – among which is the commercial operation of the WESM.
3. The timing of the Circular and its objectives, therefore, were based on the development of the industry and the WESM. It signals that the WESM and its participants have achieved a degree of maturity which is required for the evolutionary changes in the market as envisioned by the EPIRA. That change, at this juncture, will be in the form of the IMO taking over the administration and governance of the WESM.

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## **2 THE MANDATE: ESTABLISH THE INDEPENDENT MARKET OPERATOR (IMO) FOR THE WESM**

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4. The establishment of the Wholesale Electricity Spot Market (WESM) in 2006 was a lynchpin event in the deregulation of the Philippine electric power industry. The WESM was seen as a vital adjunct to the process of privatization that was ushered in by the EPIRA. Through the WESM, electricity would be traded and prices would be set through the dynamics of a deregulated industry and a competitive market.
5. Section 30 of the EPIRA tasked the DOE to set up the WESM and to install an interim body, referred to as the Autonomous Group Market Operator (AGMO), which would operate and administer the WESM. The EPIRA called for an AGMO that will equally represent the participants in the electric power industry. Accordingly, the Philippine Electricity Market Corporation (PEMC) and its governing body, the PEM Board that composed of industry stakeholders was constituted in November 2005 to undertake the functions of the AGMO.
6. However, the EPIRA only intended the AGMO to be a transitory organization that would help establish the WESM and make it operational. The law requires that an Independent Market Operator (IMO) shall thereafter be formed to takeover the functions, assets and liabilities of the AGMO once the preparatory work and the initial operation of the WESM have been accomplished. Section 7(d) of Rule 9 of the IRR states the AGMO governing body is to govern the operation of the WESM until the formation or the selection of an IMO. These preparatory works have been done:
  - (a) The AGMO, PEMC, has been constituted;
  - (b) The DOE, jointly with the electric power industry participants, has formulated the detailed rules for the WESM; and
  - (c) PEMC has been administering a commercially operational WESM since June 2006.
7. The formation of the IMO is therefore the next key event for the WESM and the basis for the formation of the IMO is the crux of this document.

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**2.1 SECTION 30 OF THE EPIRA AND RULE 9 OF THE EPIRA IRR**

8. The WESM is among the mechanisms of the new regulatory environment underpinned by the EPIRA. The mandate for the establishment of the WESM and the creation of an AGMO to administer and govern it is squarely stipulated in Section 30 of the EPIRA and in Rule 9 of the EPIRA Implementing Rules and Regulations (IRR). The shift from the AGMO to the IMO is likewise called for in Section 30 and Rule 9 of the IRR. Per Section 30, the AGMO is deemed as the transitory market operator pending the formation of the independent entity. Further, Section 6 (a) of Rule 9 of the IRR defines the independent entity as the IMO.
9. Section 30 and Rule 9 of the IRR also require that the independent entity or the IMO should have the joint endorsement of the DOE and the industry participants.

**2.1.1 Defining the Independent Entity**

10. The EPIRA recognizes the necessity of having an independent entity administering and operating the WESM otherwise there would have been no need to transfer the market operations functions from the AGMO to the IMO. The AGMO has for more than four years demonstrated its technical capability to operate the WESM. However, the EPIRA requires the transfer to take place regardless of how the AGMO has been performing. What is being stressed therefore is the administering or governance aspect of the market operator's functions – being an autonomous entity is not enough; the market operator must be an independent entity. But what is the meaning of independent entity? Section 30 uses the term independent entity but does not explicitly define it. There are, however, other clues within the EPIRA as to what “independent” means.
11. Section 45 of the EPIRA, which deals with cross ownership, market power abuse, and anti-competitive behavior could be used as a guide on how an entity may be classified as “independent”. Section 45 prohibits market participants or their affiliates from holding any interest directly or indirectly in TRANSCO or its concessionaire. The term ‘affiliates’ is defined as two persons or a group of persons who directly or indirectly can control or influence each other's decisions and management policies. An independent entity therefore is one that has no affiliates who are members of the WESM.
12. The WESM Rules, particularly Rule 1.4.2.7, provides a more specific description of the term. In the WESM Rules, the term “Independent” which has been **defined in agreement by both the DOE and Stakeholders** has the meaning at its simplest: to be

independent of the Philippine electric power industry. A person independent of the electric power industry is described as a person who:

- (a) Is not and has not been within the past two years an employee, contractor, agent, manager, director or shareholder of a WESM Member or any company, affiliate or any other entity related to or associated with a WESM Member;
  - (b) Is not a relative of a person, within the fourth civil degree of consanguinity or affinity, of an employee, contractor, agent, manager, director or shareholder of a WESM Member;
  - (c) Agrees not to be employed by and does not accept employment with any electric power industry participant, or a company or body related to or associated with a WESM Member within one year after the person ceases to be a Director.
13. It is clear from the EPIRA, the IRR and the WESM Rules that electric power industry participants should not be able to unduly influence the IMO or its Board. If the industry participants remain as members of the governing body of the IMO, they would have the opportunity to exercise such influence.
  14. With regard to the DOE's involvement in the WESM, the DOE is not an industry participant per se but it is a stakeholder in the industry fulfilling an oversight function. The DOE oversees the WESM at a high-level where it sits at the policy end of the spectrum and also acts as the ultimate guardian of the WESM Rules (and as such it retains the final sign-off on amendments to them).
  15. The IMO should also be independent of the DOE, but the independence of the DOE is not the key point here. The main consideration is that the DOE must be close enough to understand the key issues that the WESM is grappling with at any particular time but not so close that its national policy perspective is narrowed. This would most probably occur if the DOE is involved with the day to day operations of the WESM.
  16. In summary, based on the above interpretations from EPIRA, the EPIRA IRR, the WESM Rules, and observations are applied it would mean that:
    - (a) The IMO must be independent of electric power industry participants as all IMO actions and decisions must be made in the interests of the WESM as a whole without undue influence, perceived or real, from stakeholders;

- (b) The presence of electric power industry participants in the IMO governing body provides, in reality or perception, an opportunity for stakeholders to exercise an undue influence on IMO actions and decisions; and therefore
  - (c) The IMO governing body should be independent of electric power industry participants. Nevertheless, it should be recognized that participants hold a key role in ensuring the success of the WESM by both providing recommendations and advice to the Governing Board of the IMO; and
  - (d) The IMO governing body should be independent of the DOE.
17. As laid out in EPIRA and its IRR and interpreted from the WESM Rules the IMO should be independent of the stakeholders (i.e. the electric power industry participants), the government, and any stakeholdered governing body over an IMO that could influence its decisions.
18. The creation of such an entity is consistent with the general policy statements set out in Section 2 of the EPIRA, which emphasizes the need for transparency, fair competition and full accountability in the electric power industry.

## **2.2 DOE CIRCULAR NO. 2010-\_\_\_\_\_**

19. In order to give high priority to the establishment of the IMO, the DOE issued DOE Circular No. 2010-\_\_\_\_\_ on \_\_\_ August 2010 to concretize the policy on the IMO's structure. The Circular lays out the mandate, powers and functions of DOE to supervise the restructuring of the electricity industry and to exercise such other powers as may be necessary or incidental to attain the objectives of the EPIRA and the DOE Act.
20. The Circular declares the following key policies and goals:
- (a) The objectives of the WESM;
  - (b) The continuing DOE supervision of the WESM;
  - (c) The policy on the IMO structure defining the governing body, the supporting committees and stakeholdered market committee;
  - (d) Assignment of the jointly endorsed IMO entity to operate the WESM;

- (e) The dissemination of the IMO policy to the public;
  - (f) The conduct of consultations with electricity industry participants on the implementation details of the IMO structure and for the endorsement of the IMO entity; and
  - (g) Creation of the IMO Transition Committee (ITC) that will oversee the process of transfer from the AGMO to the IMO.
21. The Circular also provides the procedures necessary to implement the formation and selection of the IMO. This includes amending the existing stakeholder governing body and seeking endorsement of industry participant for the IMO entity.
22. The inter-agency ITC, which is chaired by the DOE Secretary and comprised of the PEMC, PSALM, NPC, TRANSCO, NGCP and NEA, is given the critical task of coordinating, preparing and formulating all necessary documents, infrastructures, protocols, rules, manuals, and activities needed for the implementation of the IMO structure and the IMO.



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### 3 THE INDEPENDENT MARKET OPERATOR (IMO) STRUCTURE

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23. The EPIRA, the IRR and the WESM Rules have created the basis for a framework for the IMO. Once the IMO is put in place the AGMO (PEMC and the PEM Board), no longer holding functions, assets or liabilities, or duties or powers, simply become redundant; a shell corporation. The new WESM governing body, the IMO, as required under EPIRA will be established and empowered through the WESM Rules.
24. DOE Circular No. 2010-\_\_\_\_\_ gives flesh to the EPIRA-based framework by declaring the specific policy defining the IMO's structure. The Circular calls for the independent entity to become the market operator for joint endorsement with electric power industry participants as follows:
- (a) The IMO Board composed of eight independent members and the IMO management President:
  - (b) The IMO management and personnel composed of the current PEMC to perform market operation functions and responsibilities.
25. The Circular also describes the process on how the market will evolve from the current AGMO setup into the IMO Structure. The current AGMO set up is shown in Figure 1 below.

**Figure 1. Current Structure of the AGMO**

26. From a governance perspective the stakeholder membership of the current PEM Board is a structure that has been tried in other markets. However, there has been an international trend towards the establishment of independent electricity market boards. The vast majority of Market Operators (10 of 12) have an Independent Board and a not for profit structure (11 of 12). In cases where stakeholders are members of the Board (2 of 12), the Market Integrity Functions (Market Surveillance and Compliance) report to a different entity with the ability to effect change if issues are found.
27. It cannot be said, however, that a stakeholder board is inherently a bad option. For instance it might be argued that the present WESM stakeholder board structure is equitably represented, has an independent Chair, and also ensures that the Board has a wealth of knowledge and understanding of the electricity sector in each member. This argument for retaining a stakeholder board within WESM, however, does go against the current trends in other electricity markets. What is apparent in other stakeholdered Boards is that their Surveillance groups do not report to the Board, rather to another Regulatory Agency to remove the conflict of interest associated with stakeholders monitoring themselves: *Quis custodiet ipsos custodes?* - who will Guard the Guards?
28. It may be argued that, rather than assessing one particular board membership composition as being better or worse than another, it is only necessary to assess whether the principles of good governance are achieved by the particular structure.

### 3.1 TWO-TIERED GOVERNANCE

29. The structure design intended for the IMO is a two-tiered governance model that operates neutrally and independently in managing the electricity grid and markets. The structure is represented in Figure 2 below.
- (a) The first tier being the Independent Board and its Governance of the Market and Market Operations; and
  - (b) The second tier being the Market Participants and their advice and guidance to the Independent Board on the Market and its Rules setting.

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**Figure 2. IMO Structure – Two Tiered Governance**

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30. Independence and neutrality are at the core of the proposed business operations by creating a two-tiered governance structure – the IMO Board and the Market Committee – that ensures independent decisions
31. The IMO Board is charged with ensuring that the IMO operates the Market efficiently including the setting of WESM Rules and creates and operates a fair energy market. To establish neutrality, Board members can have no personal affiliation or ongoing professional relationship with, or any financial stake in, any WESM participant. The Board shall comprise of eight elected independent members plus the IMO Management President.
32. The Board ensures that no member or group of members has undue influence. The Board is required to prevent the undue exercise of market power by any market participant. To support this goal of Market oversight, the IMO Board employs market integrity committees, details of which discussed in Section 3.2 of this document, which report to the Board.
33. In summation, the proposed structure for the IMO:
  - (a) Complies with the requirements of EPIRA and the IRR;

- (b) Establishes independence and neutrality through a two-tiered governance structure;
- (c) Provides key roles for the stakeholders in formulating rules and guiding the market;
- (d) Is evolutionary and builds upon the experiences and foundations established by the AGMO; and
- (e) Consistent with how other foreign markets are developing

## **3.2 IMO STRUCTURE COMPONENTS**

### **3.2.1 Market Integrity Functions – Reporting Directly to the IMO Board**

#### **3.2.1.1 WESM Market Surveillance Committee - Independent**

- 34. The WESM market monitoring body must be independent to shield it from stakeholder influence. This is a key structural component of a well-governed market.
- 35. The general principle is that the market monitoring function is structured to ensure the data collected, analysis conducted, and information provided by the market monitoring body is free of bias. To promote this the market monitoring body must be independent and the market monitoring process must, and must be seen to, promote objectivity. .

#### **3.2.1.2 WESM Compliance Committee - Independent**

- 36. The WESM Compliance Committee must be independent to shield it from stakeholder influence in applying the rules. This is a key structural component of a well-governed market.
- 37. It is recommended that the ECO report directly to a compliance body which sits under the WESM governing body without going through the MSC or its equivalent under the new structure.
- 38. It is recommended that a Compliance Committee sits under the WESM governing body responsible for receiving and deciding whether it agrees with ECO recommendations on findings of breach of the WESM Rules and making recommendation on breach and sanctions on participants for breaches to the Board. The Compliance Committee will comprise only Board member and will be supported by the Corporate Secretary (not

the market administration unit) so as to keep monitoring and compliance information streams separate.

### **3.2.1.3 WESM Audit Committee - Independent**

39. The audit body, the Audit Committee, will sit under the WESM governing body and will be responsible for managing the WESM audits including the IMO annual audit conducted by an independent auditor (including software audits), the annual WESM audit, and reviewing the IMO's internal audits, including any software updates.
40. This Audit Committee may also be responsible for monitoring the performance of market operation services under any future outsourced market operator functions.

### **3.2.1.4 Dispute Resolution Panel - Independent**

41. The Dispute Resolution body will report to the WESM governing body for any resolution approvals. It will be administered by the IMO and is presently established with its roles and responsibilities under Chapter 7.3 of the WESM Rules. It will comprise a panel of independent members who can provide mediation and arbitration services to disputants. In other Markets while this Body reports to the Board of Directors typically it is an outsourced service provided by Dispute Resolution Experts, typically with a Legal background.

## **3.2.2 Market Participant Functions and ResPonsibilities**

### **3.2.2.1 Market Committee - Stakeholdered**

42. As a reflection of the dual Governance role of the IMO and the Market Participants, the Market Committee is composed of Market Participants and oversees and monitors the IMO'S conduct of market operations, including key reliability functions directly related to market operations. It regularly interfaces with the IMO governing body.
43. The Market Committee, on which each member/customer has a representative, provides advice to the Board by proposing and voting on changes and new programs. Regularly scheduled Market Committee meetings with the Board facilitate more direct communication from the membership to the Board on key issues. The voting rights must not be designed around electricity traded volume as this will lead to an imbalance of representative votes. It must also include future potential membership of Visayas and Mindanao.

44. While the Market Committee provides an integrated view it is also responsible for:
- (a) supervising and reviewing work of the other IMO Market Participant committees, the Rules Change Committee and the Technical Committee and whatever Ad Hoc Market Participant Committees as may be struck:
  - (b) developing positions on IMO operations, policies, rules, and procedures:
  - (c) making recommendations to the other committees and the Board:
  - (d) reviewing and making recommendations to the Board with respect to Market Rule changes proposed by the Rules Change Committee:
  - (e) such other functions and powers conferred on it by the IMO Board.

#### **3.2.2.2 Rule Change Committee – Stakeholdered**

45. The Rules Change Committee is made up of both Stakeholders and Independents and presently recommends Rule changes to the PEM Board, who may or may not take their advice to enact Rule changes. In turn the DOE as the “owner” of the Rules may determine if such Rule changes are appropriate to meet the purposes of the electricity market. Presently the Rules Change Committee sits under the PEM Board.
46. The Rules Change Committee must include input from experts in the market place and those impacted by the Rules themselves, the market participants. The interaction of these two groups leads to Market Rules that are crafted to ensure the correct incentives within the marketplace.
47. The Rules Change Committee can report to either the Independent Board or a Stakeholder Committee (i.e. the Market Committee). In both cases it is a recommending body and while it can recommend, the WESM Board will decide.

#### **3.2.2.3 Technical Committee**

48. The Technical Committee has been established in Chapter 1.7 of the Market Rules and it is envisaged that neither its composition, roles or responsibilities will change. It will sit under the Market Committee providing advice.

**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND ANTICORRUPTION  
ACTION PLAN**

**(SUBPROJECT) SUPPORT FOR THE ESTABLISHMENT OF AN  
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**TA-6445 (REG)**

**IMO Consultation Mini-Pack**

**DOE and ERC Roles in WESM**

**Prepared for**

**Department of Energy and The Asian Development Bank**

**2010**

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## 1 INTRODUCTION

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- 1.1 The high-level governance mechanisms applicable to the electricity sector are established under the Electric Power Industry Reform Act of 2001 (Republic Act No. 9136) (“EPIRA”).
- 1.2 The Department of Energy (DOE), the Energy Regulatory Commission (ERC), and the WESM governing body each has a complementary role, including functions and powers, pertaining to the oversight of the WESM.
- 1.3 The boundaries of responsibility of the DOE, the ERC, and the WESM governing body are defined primarily by the provisions contained in the Department of Energy Act of 1992 (Republic Act No. 7638) (“DOE Act”) (for the DOE specifically) and the EPIRA and also in supporting lower level legislation in the Implementing Rules and Regulations and, lower level still, in the WESM Rules.
- 1.4 The WESM Rules are mandated by an Act of Congress (EPIRA) and developed and introduced with assistance from, and finally made by, the DOE. But, of course, they are sub-ordinate to the DOE Act and the EPIRA. Even so, the WESM Rules establish the operational structure within which the electricity sector carries out its day-to-day activities and, as such, are an essential reference point for defining the various delineations of responsibility between the WESM governing body and the DOE and ERC.
- 1.5 The DOE is the official overseer and implementer of national energy policy, including high-level oversight of the WESM and oversight of the implementation of the WESM and associated EPIRA policy directives.
- 1.6 The ERC is the energy regulator.

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## 2 DOE

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### 2.1 Doe Authority and Mandate

- 2.1.1 The DOE Act created the DOE. The DOE Act provided the platform for the development of the EPIRA, which in turn established a new structure for governance for the sector.
- 2.1.2 Section 2 of the DOE Act states the declared policy of State as follows:
- (a) to ensure a continuous, adequate, and economic supply of energy with the end in view of ultimately achieving self-reliance in the country's energy requirements through the integrated and intensive exploration, production, management, and development of the country's indigenous energy resources, and through the judicious conservation, renewal and efficient utilization of energy to keep pace with the country's growth and economic development and taking into consideration the active participation of the private sector in the various areas of energy resource development; and
  - (b) to rationalize, integrate, and coordinate the various programs of the Government towards self-sufficiency and enhanced productivity in power and energy without sacrificing ecological concerns.
- 2.1.3 This policy statement predates the EPIRA. But the EPIRA specifically refers to the DOE Act and also makes amendments to it through Section 37 of the EPIRA, and so has been aligned with the EPIRA when the EPIRA came into force.
- 2.1.4 So the policy of State referred in Section 2 of the DOE Act has continuing relevance to the electricity sector. The policy statement is a strategic national policy on energy, which includes electricity.
- 2.1.5 The DOE therefore has a responsibility to ensure that the policy of State is carried out in respect of, amongst other things, the

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- electricity sector. This is a continuous obligation and is what is being referred to when stating the DOE is the implementer of national policy.
- 2.1.6 The DOE was created to carry out the policy declared in section 2 of the DOE Act. It has the mandate, referred in Section 4 of the DOE Act, to prepare, integrate, coordinate, supervise, and control all plans, programs, projects, and activities of the Government relevant to energy exploration, development, utilization, distribution, and conservation.
- 2.1.7 The WESM concept was established by Congress, a key element of a program of electricity industry reform, through the EPIRA and was developed and implemented by the DOE.
- 2.1.8 The unique feature of this government program brought about through the EPIRA is that it created the WESM. National energy policy therefore is directly linked to the establishment, and the high level outputs, of the WESM.
- 2.1.9 From a policy perspective the outputs of the WESM will be a significant measure of the efficacy of the government program brought about through the EPIRA.
- 2.1.10 So, in respect of the reform program brought about through the EPIRA, the DOE has the obligation and mandate, supported by Sections 2 and 4 of the DOE Act and Section 37 of the EPIRA, to oversee the operation, development, outputs, and impacts of the EPIRA to enable it to prepare, integrate, coordinate, supervise, and control all plans, programs, projects, and activities of the Government relative to energy exploration, development, utilization, distribution, and conservation.
- 2.1.11 The DOE accordingly provides oversight of the development of the EPIRA. In accordance with its mandate contained in section 37 of the EPIRA (and as inserted into section 5 of the DOE Act), the DOE, jointly with the electric power industry participants, established the wholesale electricity spot market and formulated the detailed rules governing its operations.
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2.1.12 The DOE, through section 37, has the responsibility to supervise the reform program of restructuring the electricity industry.

2.1.13 The DOE has the over-arching responsibility to ensure that all the policy of State enunciated in the EPIRA is carried out. Therefore the DOE also has an obligation to monitor whether the structures created by, and the activities performed under, the EPIRA are meeting that policy directive.

## **2.2 The DOE Powers and Functions**

2.2.1 The DOE powers and functions are contained in the DOE Act, the EPIRA, and the WESM Rules.

2.2.2 Section 5 of the DOE Act of 1992 was amended by section 37 of the EPIRA of 2001 and confers upon the DOE the following powers and functions:

- (a) Formulate policies for the planning and implementation of a comprehensive program for the efficient supply and economical use of energy consistent with the approved national economic plan and with the policies on environmental protection and conservation and maintenance of ecological balance, and provide a mechanism for the integration, rationalization, and coordination of the various energy programs of the Government;
- (b) Develop and update annually the existing Philippine Energy Plan, hereinafter referred to as 'The Plan', which shall provide for an integrated and comprehensive exploration, development, utilization, distribution, and conservation of energy resources, with preferential bias for environment-friendly, indigenous, and low-cost sources of energy. The plan shall include a policy direction towards the privatization of government agencies related to energy, deregulation of the power and energy industry, and reduction of dependency on oil-fired plants. Said Plan shall be submitted to Congress not later

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than the fifteenth day of September and every year thereafter;

- (c) Prepare and update annually a Power Development Program (PDP) and integrate the same into the Philippine Energy Plan. The PDP shall consider and integrate the individual or joint development plans of the transmission, generation, and distribution sectors of the electric power industry, which are submitted to the Department: *Provide, however,* That the ERC shall have exclusive authority covering the Grid Code and the pertinent rules and regulations it may issue;
- (d) Ensure the reliability, quality and security of supply of electric power;
- (e) Following the restructuring of the electricity sector, the DOE shall, among others:
  - (i) Encourage private sector investments in the electricity sector and promote development of indigenous and renewable energy sources;
  - (ii) Facilitate and encourage reforms in the structure and operations of distribution utilities for greater efficiency and lower costs;
  - (iii) In consultation with other government agencies, promote a system of incentives to encourage industry participants, including new generating companies and end-users to provide adequate and reliable electric supply; and
  - (iv) Undertake in coordination with the ERC, NPC, NEA and the Philippine Information Agency (PIA), information campaign to educate the public on the restructuring of the electricity sector and privatization of NPC assets.

- 
- (f) Jointly with the electric power industry participants, establish the wholesale electricity spot market and formulate the detailed rules governing the operations thereof;
  - (g) Establish and administer programs for the exploration, transportation, marketing, distribution, utilization, conservation, stockpiling, and storage of energy resources of all forms, whether conventional or non-conventional;
  - (h) Exercise supervision and control over all government activities relative to energy projects in order to attain the goals embodied in Section 2 of RA 7638;
  - (i) Develop policies and procedures and, as appropriate, promote a system of energy development incentives to enable and encourage electric power industry participants to provide adequate capacity to meet demand including, among others, reserve requirements;
  - (j) Monitor private sector activities relative to energy projects in order to attain the goals of the restructuring, privatization, and modernization of the electric power sector as provided for under existing laws: *Provided*, That the Department shall endeavor to provide for an environment conducive to free and active private sector participation and investment in all energy activities;
  - (k) Assess the requirements of, determine priorities for, provide direction to, and *disseminate* information resulting from energy research and development programs for the optimal
  - (l) development of various forms of energy *production* and utilization technologies; Formulate and implement programs, including a system of providing incentives and penalties, for the judicious and efficient use of energy in all energy-consuming sectors of the economy;

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- (m) Formulate and implement a program for the accelerated development of non-conventional energy systems and the promotion and commercialization of its applications;
  - (n) Devise ways and means of giving direct benefit to the province, city, or municipality, especially the community and people affected, and equitable preferential benefit to the region that hosts the energy resource and/or the energy-generating facility: *Provided, however,* That the other provinces, cities, municipalities, or regions shall not be deprived of their energy requirements;
  - (o) Encourage private enterprises *engaged in energy* projects, including corporations, cooperatives, and similar collective organizations, to broaden the base of their ownership and thereby encourage the widest public ownership of energy-oriented corporations;
  - (p) *Formulate* such rules and regulations as may be necessary to implement the objectives of this Act; and
  - (q) Exercise such other powers as may be necessary or incidental to attain the objectives of this Act.

2.2.3 These powers and functions necessitate the DOE to oversee the operation, development, outputs, and impacts of the EPIRA in order to properly fulfill its mandate as described in section 5 of the DOE Act and section 4 of the DOE Act to carry out the policy of State.

2.2.4 The DOE must monitor activities within WESM in order to attain knowledge of whether the goals of the restructuring, privatization, and modernization of the electric power sector are met as provided for under EPIRA.

2.2.5 In attaining the above-stated goals of the restructuring, privatization, and modernization of the electric power sector, the DOE must endeavor to provide for an environment conducive to



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free and active private sector participation and investment in all energy activities.

2.2.6 The DOE must also monitor its own performance regarding its ongoing EPIRA-related responsibilities:

- (a) Ensuring the reliability, quality and security of supply of electric power:
- (b) Encouraging private sector investments in the electricity sector and promote development of indigenous and renewable energy sources:
- (c) Facilitating and encouraging reforms in the structure and operations of distribution utilities for greater efficiency and lower costs:
- (d) In consultation with other government agencies, promoting a system of incentives to encourage industry participants, including new generating companies and end-users to provide adequate and reliable electric supply:
- (e) Developing policies and procedures and, as appropriate, promote a system of energy development incentives to enable and encourage electric power industry participants to provide adequate capacity to meet demand including, among others, reserve requirements:
- (f) Preparing and updating annually a Power Development Program (PDP) and integrate the same into the Philippine Energy Plan.

2.2.7 The DOE monitors the market in its role as the national policy adviser to ensure that WESM is effective and efficient. Accordingly this includes monitoring WESM governance, including transparency and operations. It also monitors the ERC processes and outputs because these have significant potential national energy policy implications.

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## 2.3 Summary of DOE role

2.3.1 The DOE is responsible for initiating, developing, and overseeing energy policy, including related energy programs, so far as that relates to the national interest of the Philippines, including facilitating reform of the electric power industry introduced through the EPIRA. To fulfill this responsibility it must:

- (a) monitor the WESM high level outputs to determine if the WESM is producing the desired policy effect (for example in the areas of investment, capacity, price, transmission, demand-side participation, minimal entry barriers, and so on):
- (b) continuously collate and analyze information about the market to enable it to decide whether it has a policy concern, including with market design or structural or efficiency issues:
- (c) be informed about the WESM so that it is aware as soon as a matter arises that might have a national policy implication:
- (d) rely on the ERC and WESM processes – but, as the national energy policy body and political adviser, it must have access to information regarding market power abuse, including not only current investigations but also those areas of concern identified by the ERC and the WESM and being monitored at the time:
- (e) be able to advise both the ERC and the WESM of any concerns it has that it wishes to be investigated – not only in terms of market power abuse but also anything that relates to national policy outcomes.

2.3.2 To fulfill its role the DOE is required to maintain oversight of the WESM operation. This oversight is high-level where it sits at the policy end of the spectrum and also acts as the ultimate guardian of the WESM Rules (and as such it retains the final sign-off on amendments to them). Therefore its involvement with the WESM

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must be close enough to understand the key issues that the WESM is grappling with at any particular time but not so close that it's national policy perspective might threaten its required detachment from the day-to-day WESM operations.

- 2.3.3 The DOE is therefore required to have a depth of current knowledge on the WESM. With this depth of knowledge the DOE will be less likely to intervene precipitously and more likely to assist appropriately when needed.
- 2.3.4 The DOE has a significant responsibility as a backstop should – in the unlikely event and for whatever reason – the WESM needs urgent support.
- 2.3.5 The DOE will therefore maintain a significant connection with the WESM operations so it will at least receive sufficient and timely WESM information and data to enable it to assess the efficiency and effectiveness of the WESM governance and market processes and the ERC regulatory processes.
- 2.3.6 Appendix A represents the roles of the DOE, ERC, and WESM governance body.

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## 3 ERC

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### 3.1 THE ERC Authority and Mandate

- 3.1.1 The ERC is the energy regulator and is created by the EPIRA.
- 3.1.2 The ERC is an independent quasi-judicial regulatory body. This is specified in Section 38 of the EPIRA.
- 3.1.3 The EPIRA sets out, in sections 43 and 45, the functions of the ERC. Broadly the ERC is required to promote competition, encourage market development, ensure customer choice and penalize abuse of market power in the restructured electricity industry. In pursuance of these goals it has the following key functions (highlights are of particular relevance here):
- (a) Enforce the Implementing Rules and Regulations (IRR):
  - (b) Promulgate and enforce the National Grid Code and the Distribution Code:
  - (c) Enforce the rules and regulations governing the WESM for the purpose of ensuring a greater supply and rational pricing of electricity:
  - (d) Determine the level of cross subsidies in the retail rate:
  - (e) Amend or revoke any person's authority to operate if that person fails to comply with the EPIRA, the IRR, or any order or resolution of the ERC:
  - (f) Establish and enforce a methodology for setting transmission and distribution wheeling rates and retail rates for the captive market of a distribution utility:
  - (g) Ensure limited cross subsidies of charges of Transco and Distribution Utilities:
  - (h) Review and approve changes to conditions of service of Transco or any Distribution Utilities:

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- (i) Allow Transco to charge user fees for ancillary services:
  - (j) Set a lifeline rate for marginalized end-users:
  - (k) Monitor and take measures to penalize abuse of market power, cartelization, and anti-competitive or discriminatory behavior:
  - (l) Impose fines and penalties for any non-compliance with or breach of the EPIRA, the IRR, and the rules and regulations which the ERC promulgates and administers:
  - (m) Take any other action delegated to it:
  - (n) Provide annual reports to the President and Congress and publish its decisions:
  - (o) Monitor the activities in the generation and supply of the electric power industry to promote free market competition:
  - (p) Issue certificates, licenses, and permits or modify and revoke them as appropriate:
  - (q) Act on applications for cost recovery and return on demand side management projects:
  - (r) Act against any person in the energy sector for violations of any law, rule, or regulation governing that person;
  - (s) Exercise its inspection powers as a quasi-judicial body to determine the existence of any anti-competitive behavior and/or market power abuse and any other violations:
  - (t) Perform such other regulatory functions to ensure the successful restructuring and modernization of the electric power industry:
  - (u) Have original and exclusive jurisdiction over all case contesting rates, fees, fines, and penalties imposed by it.

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## 3.2 ERC Powers and Functions

- 3.2.1 Section 30 of the EPIRA provides that the cost of administering and operating the WESM shall be recovered by the MO through a charge imposed to all market members: provided that such charges are filed with and approved by the ERC.
- 3.2.2 ERC therefore has the function of approving the budget of the market operator. The applicable process within the WESM rules for budget approvals are set out in rules 2.10 and 2.11.
- 3.2.3 ERC has a wide scope of functions some of which bring its activities to the border of activities conducted by the IMO and the WESM governance body. These functions and associated activities are relevant in the analysis of the governance of and over the IMO and the WESM governing body and the structure within which they operate. Some of these relevant functions of the ERC include:
- (a) enforcing the WESM rules:
  - (b) imposing fines and penalties for breaches of the WESM rules:
  - (c) monitoring and penalizing abuse of market power, cartelization, or anti-competitive behavior or discriminatory behavior.
- 3.2.4 The ERC has the function of:
- (a) Monitoring and taking measures to penalize abuse of market power, cartelization, and anti-competitive or discriminatory behaviour:
  - (b) Monitoring the activities in the generation and supply of the electric power industry to promote free market competition.
- 3.2.4 The EPIRA and the IRR give to the ERC the responsibility for monitoring and enforcement of market power related issues within

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the WESM. The WESM rules do not contradict this responsibility lies with the ERC.

- 3.2.5 The ERC and the WESM governance mechanisms are developed and performed in a co-ordinated manner so that both the ERC and the WESM activities are complementary so far as practicable.
- 3.2.6 The following sections in the EPIRA define the powers and functions of the ERC relevant to enforcement:
- (a) Section 46 of EPIRA sets out the range of fines and penalties that may be imposed by the ERC for any violation or non-compliance with the EPIRA or IRR. The range is Minimum of P50, 000 to maximum of P50, 000,000;
  - (b) Section 4(a) of Rule 3 of the EPIRA IRR reiterates the ERC has the responsibility of promoting competition, encouraging market development, ensuring customer choice, and penalizing abuse of market power;
  - (c) Section 4(b) of the IRR also provides the ERC with the power to promulgate rules and regulations pursuant to sections 43 and 45 of EPIRA (such as the Competition Rules) and to impose fines and penalties for non-compliance with those promulgated provisions and any other rules which it administers;
  - (d) The requirement for ERC to establish Competition Rules referred above is further referred to and explained in section 8 of Rule 11 of the IRR. The Competition Rules will prescribe the penalties and other remedies for any unreasonable restriction to competition;
  - (e) Section 7(a) of Rule 11 of the EPIRA IRR provides the ERC responsibility for enforcing competitive safeguards to promote true market competition and prevent harmful monopoly and market power abuse;

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- (f) Section 7(d) of Rule 11 of the IRR, provides the ERC the power to penalize electric power industry participants for market power abuse or anti-competitive or unduly discriminatory act or behavior or any unfair trade practice that distorts competition or harms consumers. Such penalties are imposed under ERC's judicial authority. The scope of enforcement powers available to the ERC under this section is very wide and includes, in addition to the penalties provided for under section 46 of EPIRA, power to impose price or bid controls and the issuance of injunctions. The complaints procedure followed by the ERC will follow due process and such procedures of the judicial body are to be promulgated;
  - (g) Sections 4(i) and (n) of Rule 3 of the IRR provide the ERC with responsibility for enforcing the rules and regulations governing the operations of WESM to ensure greater supply and rational pricing of electricity, including the power to suspend spot market operations in cases of national or international security emergencies or natural calamities.

3.2.6 ERC has the following penalty-related functions:

- (a) Amending or revoking any person's authority to operate if that person fails to comply with the EPIRA, the IRR, or any order or resolution of the ERC;
- (b) Imposing fines and penalties for any non-compliance with or breach of the EPIRA, the IRR, and the rules and regulations which the ERC promulgates and administers;
- (c) Issuing certificates, licenses, and permits or modifying and revoking them as appropriate;
- (d) Having original and exclusive jurisdiction over all case contesting rates, fees, fines, and penalties imposed by it;



- 3.2.7 Section 4(m) of Rule 5 of the IRR provides that the ERC may impose fines and penalties for non-compliance by the generation companies (Gencos) of numerous specified standards but excludes a large portion of the standards contained in the WESM rules. The specified standards includes those contained in the Grid Code, environmental standards, COC requirements, unbundling standards, and the membership criteria prescribed under the WESM rules.
- 3.2.8 A similar enforcement empowering provision for the ERC as provided for Gencos is contained in section 4(s) of Rule 7 and section 4(g) of Rule 8 of the IRR in respect of the Distribution Utilities (DUs) and suppliers. However, the scope of enforcement by ERC against DUs and suppliers includes all of the WESM rules. In addition the ERC may suspend, revise, or revoke a supplier's license for non-compliance.
- 3.2.9 Section 5(v) of Rule 15 of the IRR provides that, when unbundling and determining the rate base, management inefficiencies such as penalties shall not be included in the rate base calculation.
- 3.2.10 Section 8 of Rule 18 of the IRR provides for the imposition of fines and penalties by the ERC under section 46 of the EPIRA for non or late payment of the universal charge.
- 3.2.11 Section 11(b) of Rule 22 of the IRR provides the power for the ERC to impose sanctions or penalties for failure by TRANSCO or any successor-in-interest to comply with the Grid Code and the TDP.
- 3.2.12 Rule 3 of Part 1 of the IRR states that the ERC has exclusive jurisdiction over the Grid Code and the Distribution Code. This is relevant to the development of WESM enforcement policy and indicates that a WESM governing body's oversight of these 2 Codes is limited.
- 3.2.13 The Grid Code provides standards for the MO, SO, and the GO. The Grid Management Committee (GMC) is established by the Grid Code and is responsible for the day to day monitoring of

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those standards. The ERC enforces the standards and is empowered under section 2.5.2 of the Grid Code to impose fines and penalties for non-compliance with the standards.

3.2.14 The Distribution Code provides standards for the operation of the distribution system. The Distribution Management Committee (DMC) is established by the Distribution Code and is responsible for the day to day monitoring of those standards. The ERC enforces the standards and is empowered under section 2.5.2 of the Distribution Code to impose fines and penalties for non-compliance with the standards.

### **3.3 Summary of ERC role**

3.3.1 The ERC monitors market power and anti-competitive behavior in the WESM. The ERC has the prime responsibility in these matters and does not have a secondary monitoring role to WESM in respect of those matters. The IMO Board is primarily focused, in this respect, on the prevention of market power abuse through market design.

3.3.2 The ERC decides whether there has been an abuse of market power or whether a particular activity within the WESM has amounted to anti-competitive behavior. Any person, including by WESM or its participants, may inform the ERC of any market power concerns.

3.3.3 The ERC has the over-arching responsibility for enforcing the provisions of the EPIRA and all legislation created by and under the authority of the EPIRA. To fulfill this responsibility it must:

- (a) monitor the operation and activities of the WESM in such a manner as to provide an assurance that the WESM is functioning in accordance with the EPIRA and all related legislation including the WESM rules;
- (b) monitor and penalize as set out in the EPIRA, including to, motu proprio, monitor and penalize any market power abuse

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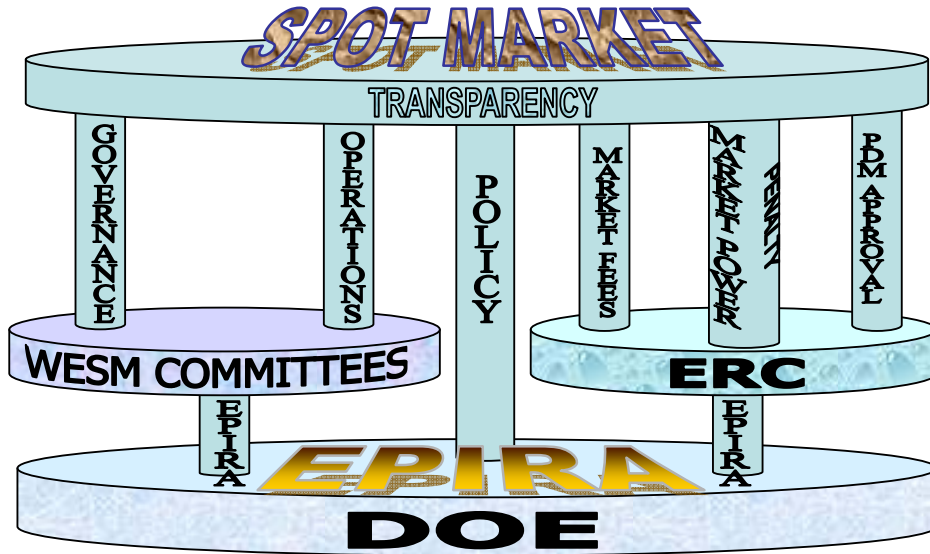
or anti-competitive or discriminatory act or behavior within WESM;

- (c) hear WESM-related matters that require a semi judicial forum.

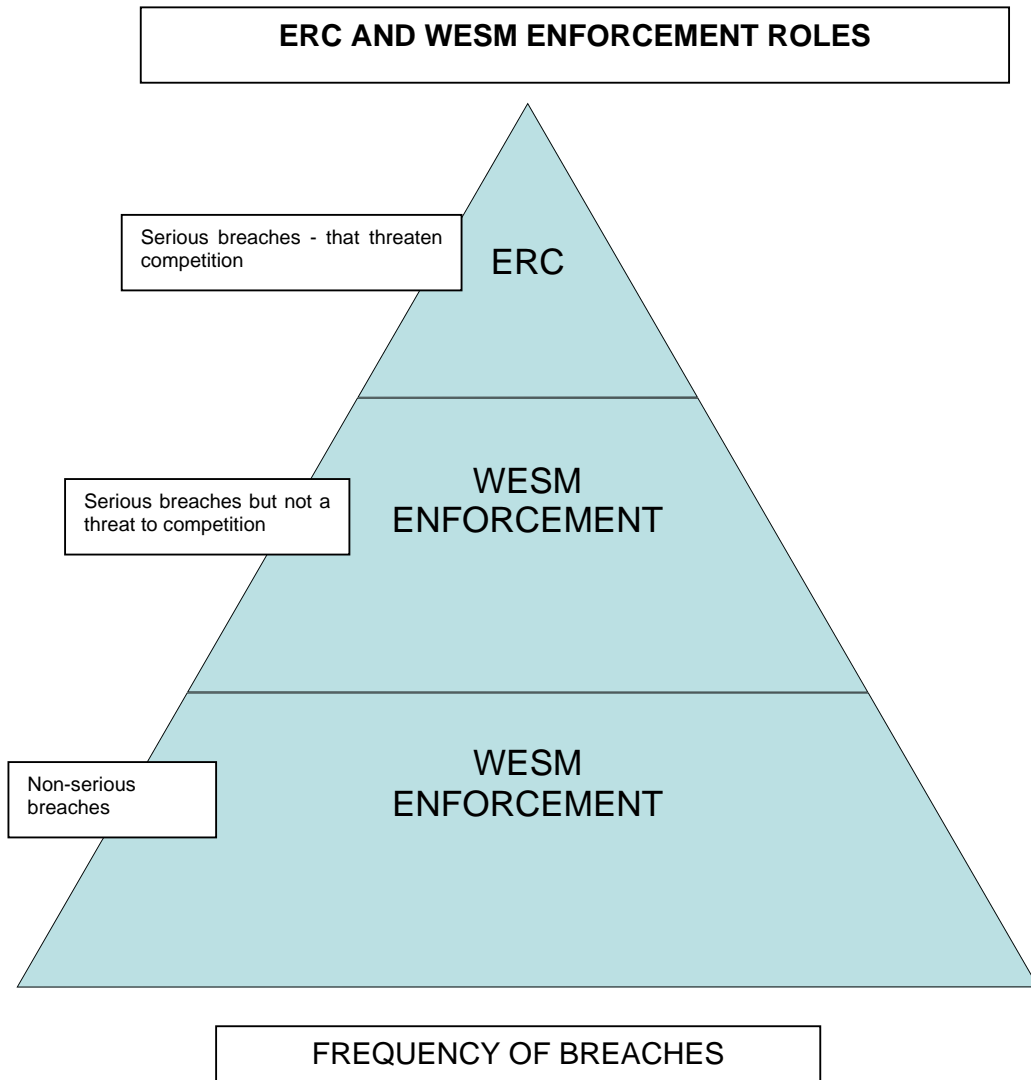
3.3.4 The diagram in Appendix B represents the relative enforcement responsibilities shared between the ERC and the WESM. It highlights that the most serious breaches occur relatively infrequently and will be enforced by the ERC. These breaches seriously damage the integrity and reputation of the WESM and will involve market power abuse, anti-competitive or discriminatory acts or behavior, unfair trade practices, manipulative behavior, or attempted monopolization of the market. The majority of breaches within WESM, however, are less serious and will be enforced by the WESM. Protocols are established to manage potential overlaps of responsibility as shown in Appendix C.

APPENDIX A

WESM RELATED ROLES DEFINED BY THE EPIRA AND DOE ACT



**APPENDIX B**



**APPENDIX C**

This table identifies the activities undertaken by the ERC and the WESM in respect of the various breach types that may occur within WESM, and identifies those areas where potential overlap is managed through a protocol.

	<b>MONITORING</b>	<b>INVESTIGATING</b>	<b>DETERMINING BREACH</b>	<b>PENALIZING BREACH</b>
<b>SERIOUS BREACHES THREATENING COMPETITION WITHIN WESM</b>	ERC	ERC	ERC	ERC
	<i>PROTOCOL FOR BOUNDARY HERE</i>			
	WESM			
<i>PROTOCOL FOR BOUNDARY HERE</i>				
<b>SERIOUS BREACHES THAT DO NOT THREATEN COMPETITION WITHIN WESM</b>	WESM	WESM	WESM	WESM
<i>PROTOCOL FOR BOUNDARY HERE</i>				
<b>LESS SERIOUS, MINOR TO MODERATE, BREACHES</b>	WESM	WESM	WESM	WESM

The table above identifies the activities of the ERC and the WESM in respect of the breaches that may occur within the WESM. DOE monitors at a policy level.

The ERC will enforce all of those matters that are the most serious breaches, which threaten competition within WESM. These breaches seriously damage the integrity and reputation of the WESM and will involve market power abuse, anti-competitive or discriminatory acts or behavior, unfair trade practices, manipulative behavior, or attempted monopolization of the market.

The other breaches will be enforced by the WESM.



**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND ANTICORRUPTION  
ACTION PLAN**

**(SUBPROJECT) SUPPORT FOR THE ESTABLISHMENT OF AN  
INDEPENDENT MARKET OPERATOR, PHI**

**TA-6445 (REG)**

**IMO Consultation Mini-Pack**

**IMO Asset and Liability Transfer**

**Prepared for**

**Department of Energy and The Asian Development Bank**

**2010**

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## 1 IMO ASSETS AND LIABILITIES

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### 1.1 Requirement to Transfer Assets and Liabilities

1.1.1 Section 30 also sets out the requirements to transition to an independent entity after the WESM has been established and the initial Market Rules have been agreed to between the DOE and electric power representatives:

- (a) *Not later than one (1) year after the implementation of the wholesale electricity spot market, an independent entity shall be formed and the functions, assets and liabilities of the market operator shall be transferred to such entity with the joint endorsement of the DOE and the electric power industry participants. Thereafter, the administrative supervision of the TRANSCO over such entity shall cease.*

1.1.2 This provision requires the IMO to immediately have transferred to it all the assets and liabilities of the AGMO once it is put in place.

### 1.2 Assets and Liabilities

1.2.1 Therefore it will be critical to assess the exact nature and ownership of any assets and liabilities relevant both to the current AGMO and the new IMO. This will include ascertaining the assets and liabilities that should be transferred to the IMO Board, regardless of whether those assets and liabilities currently reside with the AGMO.

1.2.2 For example this may take into account the desirability to financially prepare the IMO Board to be able to obtain new software for reasons such as to upgrade the existing software and/or hardware, link with SO systems, or enable the integration of open access and renewable energy obligations.

1.2.3 It will also require investigation into the actual ownership of current assets and liabilities to ensure that there are no assumptions made as where such ownership currently lies. Having determined that then the question will need to be addressed whether the owner is the appropriate body for the particular asset or liability.

**1.3 Transfer of Assets and Liabilities**

- 1.3.1 The smooth transfer of the assets and liabilities to the IMO will necessitate coordination and assistance from various sectors of the industry and will require both financial and legal expertise.
- 1.3.2 The object will be to ensure that the AGMO holds, immediately prior to transfer, all the assets and liabilities determined that should be transferred to the IMO Board. This may include any debt loading required to transfer debt or assets (eg MMS hardware and software/license) from other agencies' books or to provide sufficient resource for the IMO to function, which also may remove debt from the Government's books.
- 1.3.3 It will also require decisions to be made regarding the desirability, level, and mechanisms for the IMO Board to incur debt obligations and/or have access to contingency funds (similar to the PJM) for unexpected or unbudgeted operational needs.

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**IMO Compliance Committee Process**

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## 1 THE COMPLIANCE COMMITTEE

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### 1.1 Membership of the Compliance Committee

- 1.1.1 The Compliance Committee sits under, and is a Standing Committee of, the IMO Board.
- 1.1.2 The Compliance Committee will comprise a Chair who will be a senior attorney or a similarly qualified person with a deep strategic and philosophical understanding of enforcement and at least two other members who, in combination, will provide in-depth knowledge of electricity markets from both economic and electrical engineering perspectives.
- 1.1.3 The Compliance Committee will be composed of only Board members and therefore is independent. This independence is key structural component of a compliance regime within a well-governed market.

### 1.2 Compliance Committee Support

- 1.2.1 The Corporate Secretary, not the market administration unit, will support the Committee so as to keep monitoring and the compliance information streams separate.
- 1.2.2 The Enforcement and Compliance Officer (ECO) is the technical and investigative arm of the WESM Compliance Committee. The ECO establishes mechanisms to promote consultation and voluntary compliance by participants to the WESM Rules, but also conducts investigations of possible breaches of the WESM Rules and makes recommendations, reviewed by the Committee, regarding the compliance of WESM Members.

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## 2 THE COMPLIANCE COMMITTEE PROCESS

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### 2.1 The IMO Board and Compliance Committee

- 2.1.1 The Compliance Committee will be responsible for initiating compliance investigations and reviewing ECO Reports.
- 2.1.2 The IMO Board will be responsible for determining whether a breach has occurred and for imposing sanctions on participants for breaches of the WESM rules.
- 2.1.3 Sanctions imposed by the IMO Board will be in accordance with the penalty process prescribed under the WESM Rules and in accordance with a protocol with the ERC, which sets out the boundary line between the two different but compatible enforcement processes.
- 2.1.4 These sanctions take the form of administrative penalties, which means the penalties relate to the lesser order of breaches than market power abuse or similar. The more serious breaches cover market power abuse and anti-competitive and discriminatory behavior and are determined and enforced by the ERC.
- 2.1.5 The Compliance Committee is responsible for receiving and deciding whether it agrees with ECO recommendations on findings of breach of the WESM Rules and making recommendation on breach and sanctions on participants for breaches to the Board.
- 2.1.6 The ECO initiates fact-finding immediately the IMO receives notice of any potential breaches and then reports to the Compliance Committee at its next Committee meeting. The Committee may, at this point, decide not to pursue a matter, setting out its reasons, or to direct ECO to begin an investigation proper, or to seek further information. The Committee will not oversee investigations and thereby will be able to objectively assess ECO's final Investigation Report including ECO's recommendation on breach including relevant considerations for penalty in cases where a breach has occurred.
- 2.1.7 The Committee will then provide its own recommendation on breach and, if relevant, on penalty to the Board.

- 2.1.8 If a party disagrees with the decision of the IMO Board on breach or on penalty then the matter may be taken to the ERC who will decide whether to exercise its original jurisdiction to hear a matter.
- 2.1.9 Essentially the Compliance Committee, which is composed of Board members, will act as a filtering mechanism for the Board and also to ensure that the Board is sufficiently apprised of the compliance activities conducted on behalf of the market. Essentially most compliance related decisions are left with the full Board to determine.

## 2.2 The ECO

- 2.2.1 The day-to-day management of the enforcement process is handled by the Enforcement and Compliance Officer (ECO), which currently sits within the AGMO.
- 2.2.2 The ECO will be responsible for liaising with the Compliance Committee to, as stated in rule 1.4.8(c), continuously develop systems and procedures to deter breaches of the WESM Rules and further evolve enforcement of penalties consistent with the objectives of WESM.
- 2.2.3 The ECO and its roles and responsibilities are established in Chapter 7 of the WESM Rules.
- 2.2.4 Currently the Enforcement Market Manual requires the Market Surveillance Committee (MSC) to review the ECO Investigation Report prior to it going to the PEM Board. This step will be removed and the ECO will report directly to the Compliance Committee.
- 2.2.5 ECO will recommend whether a breach has occurred, providing any relevant advice regarding appropriate penalty, and reports to the Compliance Committee. The Compliance Committee reviews ECO's recommendation on breach and makes its own recommendation on breach and penalty to the Board.
- 2.2.6 The ECO:
- (a) Investigates potential breaches of the WESM rules:
  - (b) Monitors WESM rules compliance:



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(c) Reports to the Compliance Committee.

- 2.2.7 The ECO will not investigate market power type issues, which will be investigated by ERC. The ECO may, of course, do so under a delegation from ERC to assist the ERC in the exercise of its functions.
- 2.2.8 Currently WESM Rule 1.6.2(d)(3) provides that the MSC may be requested by the PEM Board or the ECO to assist it to investigate suspected or alleged anti-competitive behavior. This rule will be amended to align with the ERC's investigation powers and to accurately represent WESM bodies lack authority to investigate matters such as anti-competitive behavior. It may, however, be possible for the WESM to "inquire" into or monitor potential anti-competitive behaviors for purposes other than enforcement such as reviewing WESM structure or rule design issues, or under a Protocol to assist the ERC in its investigations.
- 2.2.9 Under current practice the ECO investigates, under authority of the relevant Market Manual, matters such as suspected or alleged anti-competitive behavior. The Manual will be amended accordingly so that the ECO will hand over any investigation of these issues to the ERC who in turn may seek assistance from ECO under a pre-agreed Protocol.
- 2.2.10 The ECO will report to the Compliance Committee:
- (a) Non-compliance reports:
  - (b) Investigation reports.
- 2.2.11 The ECO will report to the President administratively but functionally it is ring-fenced and reports directly to the Compliance Committee.
- 2.2.12 The ECO reporting lines will ensure that conflicts are appropriately managed. Conflict will arise when the ECO is investigating potential breaches that involve market operations. The penalty immunity provided to the MO now no longer applies so the IMO will be liable for penalty for breaches or, if the rules are amended, liable to reduction of its performance bonus. The IMO Board and the Compliance Committee, however, will be independent and will be in a position to provide objective oversight of the market operations functions.

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### 3 THE ERC

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#### 3.1 The ERC interface with the IMO

- 3.1.1 The IMO Board will not have judicial authority. It will continue to have, however, the tools and the opportunity both to 'discover' and to 'fix' WESM day-to-day operational issues. Of course there are limits to the ability that the IMO will have to do this, one such limit being the enforcement of market power issues. WESM will continue to recognize the role of and defer to the ERC in these matters.
- 3.1.2 A boundary where the ERC and WESM interacts will be at that point where an enforcement matter escalates to a level whereby its resolution is most appropriately dealt with by a judicial body, at which time the matter should transfer to the ERC.
- 3.1.3 The ERC will receive information from the WESM as to the performance of the WESM enforcement regime. It is advantageous for efficiency to promote a level of compliance continuity so in this respect is important that the ERC is kept informed of matters about which it has over-arching responsibility.
- 3.1.4 Co-ordination will be required between the IMO and the ERC because the IMO's enforcement powers are exercisable without prejudice to the ERC's wide authority to impose fines and penalties in respect of any WESM-related matter.

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## 4 IMO BOARD POWERS OF SANCTION

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### 4.1 The IMO Board Powers and Limits

- 4.1.1 The purpose of WESM, amongst other things, is to provide for adequate sanctions in cases of breaches of the WESM rules. This is stated in WESM Rule 1.2.2(e).
- 4.1.2 The IMO Board will have the obligation, under WESM Rule 7.2.1, to do all things reasonably necessary to ensure that all WESM members comply with the WESM rules.
- 4.1.3 Clause 6.5.1.1(d) of the Market Surveillance, Compliance and Enforcement Manual, allowing the PEM Board to impose the appropriate penalties for acts and omissions constituting a breach, abuse of market powers, or anti-competitive behavior will not be transferred to the IMO Board and will be removed as this is a matter more appropriately dealt with by the ERC.
- 4.1.4 The IMO Board will have all the powers necessary to perform its functions (refer WESM Rule 1.4.1.2). It has a wide discretion to perform such functions it deems reasonably necessary to promote the WESM objectives and improve the operation of WESM (refer WESM Rule 1.4.5). The IMO Board will have the power to determine compliance or non-compliance with the WESM Rules (refer WESM Rule 1.4.5.1(d)).
- 4.1.5 The IMO Board will have the power to impose sanctions on any participant for breaches of the WESM rules (refer WESM Rule 7.2.5.2). However this latter power of the IMO Board does not diminish the ERC's authority to impose fines and penalties under section 46 of the EPIRA. It is to be noted that this rule also does not specifically provide the power for the Board to impose a penalty in respect of breaches related to market power abuse.
- 4.1.6 The IMO Board will have an obligation, under WESM Rule 1.4.5, to notify the ERC of any potential breaches of the WESM rules and recommend to the ERC any action to be taken. The IMO Board will have this obligation only for serious breaches. The ERC has also the authority under WESM Rule 1.2.3.2 to enforce the WESM rules and the activities of market participants for the purpose of ensuring greater supply and rational pricing of electricity.

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- 4.1.7 Even though both the ERC and the IMO Board each will have powers to enforce the WESM rules these powers do not conflict with each other.
- 4.1.8 WESM Rule 1.4.5 will be amended to provide the IMO Board the power to take enforcement action but limited to deciding whether a breach that is within the scope for administrative penalties has occurred and imposing an administrative penalty where appropriate. This reflects the existing practice.
- 4.1.9 The ERC's power to impose fines and penalties and to enforce the WESM rules is not diminished by any power the IMO Board will have to impose sanctions or in respect of WESM enforcement generally.
- 4.1.10 Refer to WESM Rule 7.2.5 which states the ERC has original and exclusive jurisdiction over contesting cases and also that the PEM Board powers do not prejudice the ERC authority. This supports Section 45 of the EPIRA, which states the ERC shall, *motu proprio*, monitor and penalize any market power abuse or anti-competitive or discriminatory act or behavior by any participant in the electric power industry.

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**IMO Board Selection Process**

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## 1 IMO BOARD

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### 1.1 Membership of the IMO Board

1.1.1 The IMO Structure Policy ensures the EPIRA requirement in Section 30 is met by establishing an IMO Board that comprises the IMO management President and 8 elected members all of whom are independent.

### 1.2 Independence

1.2.1 The IMO Board will be independent.

1.2.2 In the WESM Rules currently, the term “Independent” has been defined in agreement by both the DOE and Stakeholders. It has the meaning at its simplest to be independent of the Philippine electric power industry. *WESM Rule 1.4.2.7 reads:*

*For the purposes of this clause 1.4.2, a person is deemed to be independent of the Philippine electric power industry if that person:*

*(a) Is not an employee, contractor, agent, manager, director or shareholder of a WESM Member;*

*(b) Is not a relative of a person, within the fourth civil degree of consanguinity or affinity, of an employee, contractor, agent, manager, director or shareholder of a WESM Member;*

*(c) Is not an employee, contractor, agent, manager, director or shareholder of a company, affiliate or any other entity related to or associated with a WESM Member, where:*

*(1) A related company or body, is a parent or holding company of the WESM Member, a subsidiary or affiliate of the WESM Member or a subsidiary of a holding company of the WESM Member; and*

*(2) An associate is a person who is a director, manager or shareholder of that related company or entity or a relative of*

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*such a person;*

*(d) Has not been employed by any electric power industry participant, or a company or body related to or associated with a WESM Participant (as defined in clause 1.4.2.7 (c)) within two years prior to the nomination date; and*

*(e) Agrees not to be employed by and does not accept employment –*

*with any electric power industry participant, or a company or body related to or associated with a WESM Member (as defined in clause 1.4.2.7 (c)) within one year after the person ceases to be a Director.*

1.2.3 Section 45 of the EPIRA also provides the principles of “independence” to apply to section 30 of the EPIRA. It states as follows:

*(a) No generation company, distribution utility, or its respective subsidiary or affiliate or stockholder or official of a generation company or distribution utility, or other entity engaged in generating and supplying electricity specified by ERC within the fourth civil degree of consanguinity or affinity, shall be allowed to hold any interest, directly or indirectly, in TRANSCO or its concessionaire.*

1.2.4 Therefore, applying these principles, an “independent entity” means that certain classes of person or their affiliates cannot hold any interest directly or indirectly in the IMO. In addition those persons should not themselves become an affiliate of the IMO by controlling the IMO or, in other words, having the power to direct or cause the direction of the management policies of the IMO by contract, agency, or otherwise.

1.2.5 section 45 of the EPIRA provides a useful guide as to who are those “certain classes of person” that the IMO is to be independent from:



- 
- (a) a “generation company, distribution utility, or its respective subsidiary or affiliate or stockholder or official of a generation company or distribution utility, or other entity engaged in generating and supplying electricity specified by the ERC within the fourth civil degree of consanguinity or affinity” and
- (b) “the TRANSCO, or its concessionaire or any of its stockholders or officials or any of their relatives within the fourth civil degree of consanguinity or affinity”.

1.2.6 These classes of person also represent the stakeholders in WESM and can be considered to fairly represent those persons defined in the EPIRA as an “electric power industry participant”.

1.2.7 The IMO Board will also need to be independent of the DOE. Although the IMO is independent of the DOE, the DOE is kept sufficiently informed and detached to enable it to have the widest policy perspective. This detachment, while offering independence from the IMO, also enables the DOE to be the most effective ultimate guardian of the WESM Rules.

1.2.8 A Director shall not be, and shall not have been at any time within two years prior to or subsequent to election to the Board, a Director, Officer, or employee of a Member, User, or an affiliate of a Member or User. At all times while serving on the Board, and for two years thereafter, a Director shall have no material business relationship or other affiliation with any Member or User, or an affiliate of a Member or User. (Refer WESM Rule 1.4.2.7)

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## 2 IMO BOARD SELECTION PROCESS

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### 2.1 Composition of the IMO Board

- 2.1.1 The Board of Directors of the IMO consists of eight members, plus the President. The President is a non-voting, ex officio member of the Audit committee of the IMO Board.
- 2.1.2 The Chair and Vice Chair are elected annually by majority vote of the Directors but the President cannot be either.
- 2.1.3 If appropriate and consistent with the EPIRA and the current provision in WESM Rule 1.4.2.2, the Board may recommend to the DOE amendments to the Company's Bylaws, in order to provide for a different Board size than may be set forth therein.
- 2.1.4 Consistent with the Company's Bylaws, the Company's Directors will be elected to staggered terms with actual elections conducted on an annual basis. In addition, there are no age limits that govern.

### 2.2 Selection of the IMO Board

- 2.2.1 The DOE will select the initial 8 members of the IMO Board.
- 2.2.2 As a transition mechanism, those independent members on the PEM Board at the time the IMO structure is put into place can provide the foundation for the new IMO Board.
- 2.2.3 The DOE has a strong incentive to nominate the best candidates as members because the successful implementation of the WESM, and therefore the relevant EPIRA, policy, for which the DOE is responsible, depends on the IMO Board's performance. The qualifications of the members will be prescriptive so as to guide the DOE on the prerequisites for membership and to ensure the membership remains of a high caliber.
- 2.2.4 Of the 8 non-permanent members one member will roll off each year. Thus on an annual basis there would be one new Board member. The roll-off process must ensure no member avoids their

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turn to stand down, so that over the initial period of nine years all initial members have rolled off as members on the Board and so on.

- 2.2.5 After the DOE has made the initial IMO Board selection, the DOE may only recommend future candidates to the IMO Board, and the IMO Board ultimately decides on the appropriate candidate.
- 2.2.6 The IMO Board will provide candidates, including members of the various Independent Committees that will become a “training” ground in the Spot Market as potential candidates but the DOE would decide on the slate.
- 2.2.7 After the DOE has made the initial IMO Board selection, the DOE will recommend, for the IMO Board’s decision, the final slate with a minimum of three candidates per open position.

### **2.3 Criteria for selection of the IMO Board**

- 2.3.1 The members can come from many disciplines but it will ideally include members who have expertise and experience in corporate leadership at the senior management or board of directors level, and in the professional disciplines of finance, economics, accounting, engineering, or utility law and regulation. One member must be a senior lawyer who has adequate qualifications and experience to chair the Compliance Committee.
- 2.3.2 Certain of the Directors, will have expertise and experience in the operation of electric transmission systems, or expertise and experience in electric generation or shall have expertise and experience in commercial markets and trading, and associated risk management
- 2.3.3 It will be a function of the IMO Board to ensure that the relevant expertise will reside within the Board for the continued success of the WESM.
- 2.3.4 Of the eight non-permanent Directors, four shall have expertise and experience in corporate leadership at the senior management or board of directors level, or in the professional disciplines of

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## 2 IMO BOARD SELECTION PROCESS

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- 2.1.1 The Board of Directors of the IMO consists of eight members, plus the President. The President is a non-voting, ex officio member of the Audit committee of the IMO Board.
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## 1 BACKGROUND

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### 1.1 Introduction

- 1.1.1 The transition provision in the WESM Rules that applied immunity to the AGMO has expired and the Market Operator is now liable for fines and compensation.
- 1.1.2 There are grounds for reviewing whether the IMO should be exposed to normal penalty and compensation liability.
- 1.1.3 The fundamental basis for imposing an equal penalty and compensation regime across all participants in the market is that it will promote a perception of fairness and contributes to market integrity. However this can result in unfair results, as described below.

### 1.2 Rationale for IMO Penalty Immunity

- 1.2.1 The objective of imposing a monetary penalty in the market is to create an incentive for participants to comply with the WESM Rules.
- 1.2.2 This incentive should reduce the risk to the market of systemic issues arising in participants' business units and promote participant responsibility to utilize internal processes for taking corrective and preventive actions.
- 1.2.3 It may not, however, be appropriate to impose financial penalties on a non-profit IMO organization for these reasons:
  - (a) There is a risk that the compliance regime will promote a culture within the IMO of reluctance to make critical real time decisions:
  - (b) The IMO should be treated fairly and its exposure to penalty should be mitigated taking into account it is required to make complex decisions in real time:
  - (c) The IMO insurance costs will increase to meet the IMO's exposure to these potential penalties and will be reflected in higher fees;

- 
- (d) The ultimate payer of these costs may not derive economic value from numerous and high cost punitive investigations or any associated high penalties.
- 1.2.4 Conversely, a monetary incentive may be argued to be appropriate to use against the IMO because participants could perceive imposing a monetary penalty as transparent and equitable.
- 1.2.5 Participants may perceive an alternative enforcement mechanism as weakening transparency and parity, so it is critical that any substitute for penalty by way of fine contains a comparable level of punishment. Unless the alternative enforcement mechanism for the IMO can be shown to contain an equivalent incentive to the IMO it will be perceived as weak enforcement.

### **1.3 Rationale for IMO Compensation Immunity or Cap**

- 1.3.1 In regards to liability for compensation the arguments for imposing a limitation on the IMO's exposure are strong.
- 1.3.2 The IMO, as a service provider, faces an inherent risk that it will breach the WESM rules or make an error.
- 1.3.3 A breach or error by the IMO can result in funds being distributed erroneously, for example by overpaying a participant. If this happens it is often difficult for the IMO or a party who should have received those funds to force the receiver to hand the funds to them. The risk is that a party who is unjustly enriched does not return the funds, which may, if the IMO is exposed and the event was caused by an IMO breach of the rules, require the IMO to pay compensation to another party without itself having received any benefit.
- 1.3.4 This scenario will produce an unjust result against the IMO if there is no limit to its liability in such circumstances. It will also raise the insurance the IMO will need to secure and that would raise the IMO fee requirements and consequently flow back to consumers.



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**1.4 A Foreign Market Example Penalty and Compensation Immunity or Cap**

- 1.4.1 In New Zealand the System Operator and the Market Operator are both liable for penalty.
- 1.4.2 The MO roles of Clearing and Settlement and Pricing are undertaken by a private for-profit organization.
- 1.4.3 The Electricity Commission, a non-profit non-stock government entity, performs the other functions of market operation. The role of SO (including scheduling) is undertaken by Transpower, a government owned entity.
- 1.4.4 Under the New Zealand model the Grid Owner can be fined except in respect of breaches relating to metering standards or the provision of metering information. The Grid Owner may, however, be made to pay compensation in respect of these and any other kind of breach. All participants' liability in respect of these types of breach is limited to \$200,000 each year (includes fines and compensation).
- 1.4.5 The SO can be liable for each event up to \$200,000 (fines and compensation) for each breach and no more than an aggregate of \$2,000,000 each year.
- 1.4.6 Compensation cannot be ordered from any party in respect of a breach that relates to or affects final price. All Service Providers have liability limited to some extent, ranging from the Clearing function limit of \$5M for each event and \$10M aggregate, Reconciliation of \$500K and \$2M, Registry of \$50K and \$1M, Market Administration of \$50K and \$500K, and Pricing of \$200K and \$5M.
- 1.4.7 In Australia NEMMCO is the SO and MO. It, and network service providers, are provided immunity from incurring any civil monetary liability unless the act is done in bad faith or through negligence. Civil monetary liability includes fines and compensation. NEMMCO's liability is also capped in any event.

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## **2 WESM IMO COMPENSATION CAP AND PENALTY BONUS REDUCTION**

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### **2.1 Penalty for WESM IMO**

- 2.1.1 The IMO Board structure will be a non-stock non-profit organization. This is relevant to any possible immunity being provided to the IMO for penalty and compensation and, if so, to what extent.
- 2.1.2 Consideration should be made how most effectively to incentivize the market operator to not breach the rules. If it receives a financial penalty by way of a fine then this may either be disproportionately high if the IMO is not for profit or merely be able to be recouped through the market fees and so be an ineffective penalty mechanism.
- 2.1.3 A mechanism should be put in place to incentivize IMO appropriately, for example for the market operation functions to be immune from penalty-fine but to suffer instead a reduction in bonus payment. This will ensure that penalties work to incentivize compliance and are not either unfair or simply passed through to end consumers.
- 2.1.4 The most appropriate and effective financial penalty will be a reduction of a performance bonus.
- 2.1.5 Ideally the IMO will have access to a performance bonus mechanism. It will be through this mechanism that incentives will be most effectively managed such that any breaches will reduce the bonus available in any given year.

### **2.2 Compensation Cap for WESM IMO**

- 2.2.1 The WESM IMO will be a non-stock non-profit organization. It will not be efficient or fair to force the IMO to pay compensation when it has not profited from its error or breach of the WESM Rules.
- 2.2.2 A form of indemnity or cap can therefore be strongly argued for to limit the IMO exposure to compensation liability. However, any indemnity or cap from liability should not subsist where the actions of the IMO are carried out grossly negligently or where breaches are incurred intentionally or willfully.

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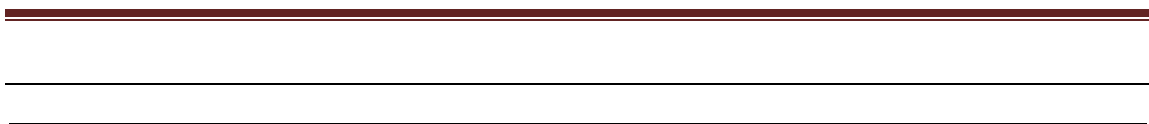
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<b>1.4# Chairperson of Market Committee</b>	<b>2#</b>



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## 1 THE MARKET COMMITTEE

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### 1.1 Composition of Market Committee

- 1.1.1 The dual role of the IMO governance structure necessitates a substantial stakeholder presence via a Market Committee composed of the stakeholder community, which will provide advice and recommendations to the IMO Board on appropriate market changes to enhance the effectiveness of the WESM.
- 1.1.2 The stakeholder community comprises electric power industry participants, which the EPIRA defines as any person or entity engaged in the generation, transmission, distribution, or supply of electricity.
- 1.1.3 The Market Committee will have the same structure and representation as is presently included in the PEM Board, but including Visayas when they enter the market, and will represent the sectors as follows:
- (a) Market Operator: 1 member:
  - (b) Distribution: 4 members, including 2 from electricity cooperatives:
  - (c) Generation: 4 members:
  - (d) Transmission: 1 member:
  - (e) Customers: 1 member, including but not limited to Suppliers.
- 1.1.5 Membership shall include the stakeholder members in the PEM Board at the time the IMO structure is put in place.
- 1.1.7 The following will need to be discussed during consultation and finally resolved through separate workshops and/or through the RCC process:
- (a) The concessionaire System Operator is included in the Market Committee:
  - (b) One extra member is included for each of the Distribution, Generation, and Consumer sectors to include Visayas. This will give a total membership of 14 members:
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- (c) Proposal that the selection for Market Committee members from the representatives of each sector should not be determined solely by the business transacted in the WESM by that representative in its sector; and that a more equitable selection process must be phased in within a set and agreed time period.

## **1.2 Voting rights of Market Committee**

- 1.2.1 WESM Rule 1.4.4 will remain unchanged as to the voting rights of the Committee.

## **1.3 Term of Market Committee members**

- 1.3.1 No limit to term applies as long as the member's representation is valid.

## **1.4 Chairperson of Market Committee**

- 1.4.1 This will need to be discussed during consultation and finally resolved through separate workshops and/or through the RCC process. Perhaps by vote of the Market Committee members??
- 
- 
-

**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND ANTICORRUPTION  
ACTION PLAN**

**(SUBPROJECT) SUPPORT FOR THE ESTABLISHMENT OF AN  
INDEPENDENT MARKET OPERATOR, PHI**

**TA-6445 (REG)**

**IMO Consultation Mini-Pack**

**Market Comparisons**

**Prepared for**

**Department of Energy and The Asian Development Bank**

**2010**

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## 1 INTERNATIONAL COMPARISONS

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- 1.1 From a governance perspective the stakeholder membership of the PEM Board is a structure that has been tried in other markets.
- 1.2 For example in the voluntary market in New Zealand the Board was majority stakeholder but the Chair was independent. That is now changed and the Board is totally independent.
- 1.3 In CAISO the Board was stakeholder but this was changed after the crisis in the California market.
- 1.4 In NYISO the Board members have no business, financial, operating or other direct relationship to any Market Participant or stakeholder of Directors and stakeholder Management Committee.
- 1.5 In Ontario, initially the Board was comprised of both stakeholders and independents but was changed to being totally independent.
- 1.6 In other US States, for example in the NYISO Board, the MISO Board, the ISO-NE Board, the PJM Board, and the SPP Board, the boards are all independent.
- 1.7 An internet review was undertaken to discern the Independence of Boards in other Electricity markets. Refer to Appendix A, which surveys the Independence and Governance of all the North American and Asian Electricity markets. In all but two cases, ERCOT and Australia, these Market Boards are structured as being independent of the Market Participants. In both of these cases with stakeholder boards the Monitoring and Surveillance of these markets is left with an Agency not reporting to the ISO Board but able to effect change and is Independent of all market participants.
- 1.8 Refer to Appendix A for a summary of comparison with other foreign electricity markets. By far the vast majority of Market Operators (10 of 12) have an Independent Board and a not for profit structure (11 of 12). Those that have stakeholders on the Board (2 of 12) have their Market Integrity Functions (Market Surveillance and Compliance) reporting to a different entity with the ability to effect change if issues are found.

**APPENDIX A**

**COMPARISON OF OTHER MARKETS**

	<b>Independent Board *</b>	<b>For Profit</b>	<b>Rule Change Process</b>	<b>Budget / Fee's / Monitoring</b>
<b>New England ISO</b>	Yes	No	Members Vote on Rule Changes, outcome not binding to the Board	Budget is set by NE-ISO and Fee's recovered via a FERC governed Tariff. Internal Market Monitoring and External
<b>New York ISO</b>	Yes	No	Members - Management Committee (MC) votes on Rules 58% required for pass to go to Board	Budget is set by NYISO and Fee's recovered via a FERC governed Tariff. MC works with NYISO on Budget Internal Market Monitoring and External
<b>PJM ISO</b>	Yes	No	Members Committee – provides advice to the Board and recommendations to the Board.	Budget is set by PJM and Fee's recovered via a FERC governed Tariff. Monitoring Undertaken by an outsourced company Monitoring Analytics
<b>MISO ISO</b>	Yes	No	Advisory Committee made up of members can provide advice to the Board on Rule changes	Budget is set by MISO and Fee's recovered via a FERC governed Tariff. Internal Market Monitoring and External

	<b>Independent Board *</b>	<b>For Profit</b>	<b>Rule Change Process</b>	<b>Budget / Fee's</b>
<b>ERCOT ISO</b>	No - mix of Independents plus Participants	No	Members - Technical Advisory Committee (TAC) makes recommendations to the Board. PUCT has final approval	Budget is set by ERCOT Public Utilities Commission (PUCT) approves fees PUCT has Market Oversight
<b>CAL ISO</b>	Yes	No	Committees struck as required to provide advice to the Board	Budget is set by CALISO and Fee's recovered via a FERC governed Tariff. Internal and External Monitoring
<b>Ontario IESO</b>	Yes	No	Members Technical Panel Recommends Rule Changes to Board, Vote recorded	Budget set by IESO Approved by Ontario Energy Board) Market Surveillance Panel Reports to the OEB ( Regulator)
<b>Alberta AESO</b>	Yes	No	Consultation by AESO with Members	Reviewed by Alberta Utilities Commission (AUC) if complaints. The Monitoring Authority is a separate not for profit providing input to the AUC

	<b>Independent Board *</b>	<b>For Profit</b>	<b>Rule Change Process</b>	<b>Budget / Fee's</b>
<b>Singapore EMC</b>	Yes – Independent of Stakeholders	Yes, joint venture between Gov't and Software supplier	Members Rule Committee (RCP) recommends Rule Changes to the Board	Fees Approved by Energy Market Authority (Gov't Agency) Market Surveillance Compliance Panel Reports to the EMC and the EMA (Regulator)
<b>Australia (NEM)</b>	Stakeholders plus Government Majority of Board is Independent	No	Rules set by AEMC ( Gov't Agency)	Set by member agreed Tariff. Market Monitoring reporting to a constituent of the Australian Competition Commission
<b>Western Australia IMO</b>	Yes	No	Members Market Advisory Committee (MAC) recommends Rule Changes to the Board	Set by the IMO and approved by the State Minister for Energy The Economic Regulation Authority a separate Gov't Organisation monitors the Market
<b>New Zealand</b>	Yes	No, outsourced to service providers	Ad Hoc Working Groups reporting to the Board	Collected by the Gov't of New Zealand

**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND ANTICORRUPTION  
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**TA-6445 (REG)**

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**Rule Change Process**

**Prepared for**

**Department of Energy and The Asian Development Bank**

**2010**

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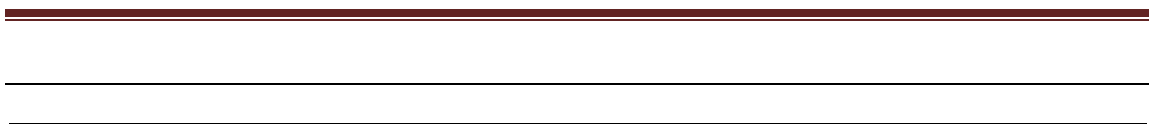
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## 1 WESM RULES BACKGROUND

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### 1.1 The WESM Rules in Context

- 1.1.1 The WESM Rules are mandated by an Act of Congress, The Electric Power Industry Reform Act 2001 (RA 9136) (EPIRA), and developed and introduced with assistance from, and finally made by, the DOE. But, of course, they are sub-ordinate to primary and secondary legislation, including the DOE Act (RA 7638), the EPIRA, and the EPIRA Implementing Rules and Regulations (IRR).
- 1.1.2 Rule 9 Section 1 of the IRR states that, pursuant to section 30 of the EPIRA, all WESM participants shall comply with the WESM Rules. Rule 9 Section 1 of the IRR imposes a regulatory requirement for participants to comply with the rules. The EPIRA and IRR give the ERC the regulatory authority to enforce the rules and regulations governing the operations of the WESM and the activities of the market operator.
- 1.1.3 Within the WESM system members also sign a compliance agreement. This agreement forms the contractual basis for enforcement within the WESM. This WESM enforcement regime works in conjunction with the regulatory regime where the ERC has overarching authority as the energy sector regulator.
- 1.1.4 The WESM Rules are therefore a creature of legislation (via the EPIRA and IRR and made under DOE's authority) and are regulatory in nature; but also contain a contractual element (via participant members' agreement upon registration to comply with the WESM Rules).
- 1.1.5 The DOE makes the WESM Rules after those rules have been through the formal WESM approval processes, including consultation with the parties to the contract, much like any contractual process where the parties must agree on the contract and any amendments to it. Each market participant agrees to be bound by the contract, including the obligation to meet any penalties imposed. Each participant signs an agreement to comply with the WESM Rules and thereby enters into contractual obligations. Disputes are resolved in the WESM system without initial recourse to the public (Court) system.



## **1.2 The WESM Rules key to Self-Governance**

- 1.2.1 The WESM system is an efficient mechanism for achieving significant self-regulation. The contractual agreement provides certainty whether and when a participant has become a WESM member, it elicits an express agreement regarding the participant's willingness to follow the dispute resolution procedures in the rules, it creates the basis for an internal enforcement system including penalties, and it creates a contractual obligation for participants to comply with the confidentiality requirements even after they have ceased to be a WESM member.
- 1.2.2 The WESM does not represent a purely private self-governing system that is established, administered, and operated wholly under a multi-lateral contract solely by electric power industry participants. However it does contain strong key elements of a self-governing system. WESM cannot be said to be a regulated market. It is self-governing in that the WESM system formulates, but not makes (the DOE does this by order), its own rules and those rules contain enforcement provisions to which the members are contractually and regulatorily bound, and it has its own independent monitoring and enforcement system. The fact that the IMO is an independent body strengthens its self-governance because it is able to retain the key governance integrity functions such as monitoring, enforcement, and audit which would otherwise need to move to a separate, possibly regulatory, system.

## **1.3 The Purpose and Objectives of the WESM Rules**

- 1.3.1 The WESM Rules Change process exists to ensure the WESM Rules remain relevant, promote best practices, and are continuously reviewed and developed to achieve the WESM purposes and objectives.
- 1.3.2 The key policy elements driving the establishment of the WESM are found in section 2 of the EPIRA. The purpose and objectives of the WESM are consistent with the EPIRA policy.
- 1.3.3 The purpose of the WESM Rules is stated in rule 1.2.2 to implement the provisions of the EPIRA, its IRR, and other related laws as well as to:
- (a) Promote competition:

- (b) Provide an efficient, competitive, transparent, and reliable spot market:
- (c) Ensure efficient operation of the WESM by the Market Operator in coordination with the System Operators a way which:
  - (i) Minimizes adverse impacts on system security:
  - (ii) Encourages market participation:
  - (iii) Enables access to the spot market:
- (d) Provide a cost-effective framework for resolution of disputes among WESM Participants, and between WESM Participants and the Market Operator:
- (e) Provide for adequate sanctions in cases of breaches of the WESM rules:
- (f) Provide efficient, transparent and fair processes for amending the WESM rules:
- (g) Provide for the terms and conditions to which entities may be authorized to participate in the WESM:
- (h) Provide the authority and governance framework of the PEM Board:
- (i) Encourage the use of environment-friendly renewable sources of energy in accordance with the Act.

1.3.4 The objectives of the WESM rules are stated in rule 1.2.5 to establish a competitive, efficient, transparent, and reliable market for electricity where:

- (a) A level playing field exists among *WESM Participants*:
- (b) Trading of electricity is facilitated among *WESM Participants* within the *spot market*:
- (c) Third parties are granted access to the *power system* in accordance with the *Act*:
- (d) Prices are governed as far as practicable by commercial and market forces:

(e) Efficiency is encouraged.

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## **2 WESM RULES CHANGE PROCESS AND BODIES**

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### **2.1 Process for WESM Rules Change**

- 2.1.1 The DOE will have, as is the case now, the final approval decision based on a high-level review of each WESM Rules change proposal and is the sole authority for making the rules.
- 2.1.2 Currently the WESM Rules are worded such that the DOE only considers proposed changes, but not proposals that are rejected. It is envisaged that the DOE will also have the authority and discretion to request the IMO Board to reconsider proposals that are rejected by the IMO Board on its own account or if the Market Committee makes a request to the DOE for it to reconsider rejected proposals and provided that the DOE considers the request is reasonable and satisfies the overall objectives of the WESM.
- 2.1.3 Chapter 8 of the WESM Rules sets out the process for considering, proposing, and making or rejecting rule amendments. These processes will not undergo significant change; however, the bodies involved in the processes will need to be aligned with the new bodies created under IMO Board structure.
- 2.1.4 The Rules Change Committee functions that are detailed in Chapter 8 of the WESM Rules will remain unchanged except instead of it reporting to the PEM Board it will report to the Market Committee.
- 2.1.5 The Rules Change Committee will make recommendations to the Market Committee who in turn will make its recommendation to the IMO Board regarding WESM Rules change proposals.
- 2.1.6 The IMO Board may then either accept the recommendations of the Market Committee, in which case the proposal is sent to the DOE for its approval and, subject to its satisfaction, formal making of the amendment of the WESM Rules, or the IMO Board may reject the proposal.

### **2.2 WESM Rules Change Bodies**

- 2.2.1 The Market Committee, on which each member/customer has a representative, provides advice to the IMO Board by proposing and voting on WESM Rule changes.

- 2.2.2 As a reflection of the dual Governance role of the IMO and the market participants, the Market Committee is composed of market participants and oversees and monitors the IMO's conduct of market operations, including key reliability functions directly related to market operations.
- 2.2.3 The Market Committee is composed of four voting sectors representing power generators, transmission owners, electric distributors and consumers. Regularly scheduled Market Committee meetings with the Board facilitate more direct communication from the membership to the Board on key issues.
- 2.2.4 In addition to its other responsibilities, the Market Committee votes on whether WESM Rules change proposals will be recommended by it to the IMO Board for its decision.
- 2.2.5 In turn the IMO Board will have the right to accept the WESM Rules Change proposal or reject it with a documented rationale to the Market Committee as to why it was rejected. In addition the IMO Board will still decide on the outcome of WESM Rules change proposals that are not recommended by the Market Committee, but a failed Committee vote will carry weight.
- 2.2.6 Reporting to the Market Committee will be the presently constructed Rules Change Committee and the Technical Committee. This differentiation in committee structure is made to include skill sets from different levels of technical and management skills in providing the best advice and recommendations to the IMO Board.
- 2.2.7 The Rules Change Committee is made up of both Stakeholders and Independents and presently recommends WESM Rules change proposals to the PEM Board, who may or may not take their advice to enact Rule changes. *Nb do we refer here to IMO sitting/chairing this Committee???*
- 2.2.8 The Rules Change Committee will include input from experts in the market place and those impacted by the Rules themselves, the market participants. The interaction of these two groups leads to WESM Rules that are crafted to ensure the correct incentives within the marketplace.
- 2.2.9 The IMO Board will ensure it is well informed on the efficiency of the market and market design and structure through monitoring. Through the MSC

and RCC processes the IMO Board will ensure that the WESM Rules remain a current representation of the operation of the market and that the market design and structure are continuously reviewed for improvement, but subject to the EPIRA and the DOE's overriding policy mandate.

- 2.2.10 In turn the DOE as the "owner" of the Rules will determine if WESM Rules change proposals are appropriate to meet the purposes and objectives of the electricity market.

**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND ANTICORRUPTION  
ACTION PLAN**

**(SUBPROJECT) SUPPORT FOR THE ESTABLISHMENT OF AN  
INDEPENDENT MARKET OPERATOR, PHI**

**TA-6445 (REG)**

**IMO Consultation Mini-Pack**

**Rules, Manuals, and Protocols Changes**

**Prepared for**

**Department of Energy and The Asian Development Bank**

**2010**

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Appointment of the PEM Board (1.4.3.2), 1.4.4 Voting rights to include President right to vote but not in tie. Delete 1.4.4.4:

- (iii) Rule 1.4.6 Formation of Committees paragraph (d) reference to Rules Change Committee change to Market Committee:
  - (iv) Rule 1.6 Market Surveillance Committee, 1.6.2 review responsibilities and paragraph (d) transfer of role to Compliance Committee:
  - (v) Rule 1.7 Technical Committee, 1.7.1 Appointed by Market Committee with some independent members on it, 1.7.2 include responsibility to Market Committee:
- (b) Chapter 5 (market information and confidentiality) of the WESM Rules (involving at least 2 subrules) including Rule 5.3 Exceptions (Confidentiality), 5.3.2 to include standing committees:
- (c) Chapter 7 (Enforcement and Dispute Resolution) of the WESM Rules (involving at least 16 subrules) including Rule 7.2 Enforcement: include Compliance Committee reference where appropriate, remove ECO decision re breach, remove MSC involvement at rule 7.2.4.3, Board decision on penalty inserted:
- (d) Chapter 8 (Rule Change) of the WESM Rules (involving at least 17 subrules) including:
- (i) Rule 8.2 Rules Change Committee, review of rules to include Market Committee in the process, includes revision of rules 8.2.1 to 8.2.6 and 8.2.9:
  - (ii) Rule 8.3 (Referral of matters to RCC), 8.3.1 review who receives rule change proposal:
  - (iii) Rule 8.4 (Consideration of proposal), General: Review roles to insert Market Committee in process, 8.4.7 Insert Market Committee as the maker of recommendation to Board:
  - (iv) Rule 8.5 (Consideration of proposal), 8.5.1 to 8.5.3.2 to include



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IMO management and SO and also metering service providers.

**SUPPORT FOR IMPLEMENTATION OF THE SECOND GOVERNANCE AND ANTICORRUPTION  
ACTION PLAN**

**(SUBPROJECT) SUPPORT FOR THE ESTABLISHMENT OF AN  
INDEPENDENT MARKET OPERATOR, PHI**

**TA-6445 (REG)**

**IMO STRUCTURE POLICY**

**NOTIFICATION AND**

**CIRCULAR**

**Prepared for**

**Department of Energy and The Asian Development Bank**

**2010**

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## 1 INTRODUCTION

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### 1.1 Objective of Report

1.1.1 The objective of this Report is to outline the mechanisms and substance for dissemination of DOE's policy on the IMO structure.

1.1.2 The proposed policy aligns with and fulfills the EPIRA policy and requirements for the establishment of an independent entity to operate the WESM.

1.1.3 This Activity outlined in the Report will complete the milestones outlined in paragraph 2 of the Consultation Plan as follows:

- a. Creation of an IMO Transition Committee (ITC);
- b. Introduction of the DOE's policy on the IMO Structure;
- c. Consultation to public by DOE on IMO Structure policy; *Ruth we need advice from DOE on how this is normally conducted*

1.1.4 As stated in paragraph 3 of the Consultation Plan, these milestones will be accomplished through the following activities:

- a. The announcement of the upcoming new IMO policy and establishment of an ITC through a speech by DOE Secretary Almendras during PEMC's anniversary on 12 August 2010;
- b. Issuance of the DOE Circular formalizing the policy on the IMO structure and creating the ITC;
- c. Public consultation and finalization of policy by DOE.



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## 2 POLICY ANNOUNCEMENT (WITH DOE FOR REVIEW)

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### 2.1 Announcement of Policy Roll-out Plan

2.1.1 In accordance with the Consultation Plan, the DOE policy dissemination process is initiated with an announcement from the DOE Secretary. The announcement will inform a major proportion of the electric power industry participants that DOE will declare the IMO policy over the ensuing few weeks by way of DOE Circulars. It is envisaged that the DOE Secretary will make this announcement at the WESM anniversary celebrations on 12 August 2010.

2.1.2 Paragraph 4 of the Consultation Plan outlines the following requirements for the announcement referred to in 1.1.4.a. above:

- a. Coordination with the DOE's communications group or with the staff of Sec. Almendras regarding the salient points of the speech for delivery during the PEMC anniversary. Among the IMO matters to be highlighted should be:
  - i. Compliance to the EPIRA required;
  - ii. EPIRA will be the primary foundation of Policy for the IMO structure;
  - iii. The Policy will ensure the IMO structure is an evolution of, and is built on foundations provided by, the existing PEMC structure; and
  - iv. DOE policy statements to be made through one or more circulars over the following two week period; and
  - v. Creation of the ITC to ensure policy is effectively implemented and the transition is managed with minimal disruption to the WESM.

- 
- b. The inputs to the speech are to be transmitted to the DOE communications group of the Secretary's staff not later than 04 August 2010.

## **2.2 Details of the Announcement**

### *2.2.1 Compliance to the EPIRA required:*

- a. The EPIRA, specifically Section 30, sets out very clearly the requirement for an independent entity to be established as the IMO for Wholesale Electricity Spot Market (the WESM):
- b. The IMO stands for Independent Market Operator:
- c. As envisaged by the policy underpinning the EPIRA, the establishment of the IMO will provide a significant foundation block for the WESM and from which the Wholesale Electricity Spot Market will be led to and beyond the next level of maturity.

### *2.2.2 EPIRA will be the primary foundation of Policy for the IMO structure:*

- a. The EPIRA was the catalyst for reform of the electricity industry:
- b. The EPIRA sets out the fundamental policy for that reform, including the establishment of the Wholesale Electricity Spot Market:
- c. Establishing the IMO is a key element in the development of the WESM and is specifically addressed in the provisions of the EPIRA:
- d. The Department of Energy considers that the WESM has had a sufficient settling-in period and considers, in view of the developments in the market and the electric power industry, that it is an appropriate time to give urgent priority to establishing an IMO. The DOE has reviewed the EPIRA requirement for an IMO to be

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established and is currently reviewing the recommendations from external consultants regarding the structure and implementation of an IMO in accordance with the EPIRA.

2.2.3 *The Policy on the IMO Structure will ensure the IMO structure is an evolution of, and is built on foundations provided by, the existing governance structures:*

- a. Based on in-depth analyses and recommendations it has appraised, the DOE will soon be making public the IMO structure that is required by and implements EPIRA policy.
- b. The DOE will ensure so far as possible that the IMO structure is an evolutionary development of the spot market. In other words the existing structures in place in the WESM will evolve to accommodate the IMO structure. The IMO is intended to be a natural development and enhancement of the WESM and not a revolutionary change to it.
- c. The DOE shall also ensure that the new IMO structure that will be implemented will adhere to the EPIRA principles of transparency, fair competition and accountability; and shall be for the benefit of the WESM as a whole.

2.2.4 *DOE policy statements to be made through one or more circulars over the following two week period:*

- a. The details of the IMO Structure policy will be disseminated through a series of DOE Circulars issued over a short period beginning in the next two weeks after the WESM anniversary.
- b. Then will follow a public consultation on the policy ***Ruth we need advice from DOE on how this is normally conducted – we are not***

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***sure if you call the IMO Structure a DOE Policy? Or is it EPIRA Policy that DOE is implementing?***

- c. After that will follow consultation with electric power industry participants on the details for the implementation of the IMO structure and for an endorsement of the IMO entity.
- d. We envisage that the consultations will be concluded by October this year, by which time the process of implementation can begin to establish the IMO in accordance with the EPIRA requirements.

***2.2.5 Creation of the ITC to ensure policy is effectively implemented and the transition is managed with minimal disruption to the WESM:***

- a. To facilitate a smooth transition to an IMO Structure and to having an IMO in place, the DOE will also establish an IMO Transition Committee to be chaired by the DOE Secretary.
- b. The DOE Circulars will explain further details regarding the IMO Transition Committee and its proposed schedule.

***2.2.6 In Summary:***

- a. To meet the requirements of the EPIRA, the DOE is taking steps to ensure an IMO is established that will be a positive development for the WESM:
- b. To that end the DOE will announce the policy for the IMO structure within which an IMO will be established. The DOE will then seek an endorsement from electric power industry participants for an independent entity to be the IMO.

- 
- c. These changes will involve a series of consultations, which will be completed by October this year.
  - d. An IMO Transition Committee will be established to oversee and direct the transition to the IMO structure and the establishment of an IMO.
  - e. We expect to see the IMO structure in place and an IMO established and operating in the WESM within one year.

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### 3 CIRCULAR (FOR DOE REVIEW)

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#### 3.1 Pronouncement of Policy by DOE Circular

3.1.1 Paragraph 4 of the Consultation Plan outlines the following requirements for the Circular referred to in 1.1.4b. above:

- a. An initial draft of the Circular prepared by 10 August 2010 and finalized by 17 August 2010. The draft shall include:
  - i. Declaration of the IMO structure and policy;
  - ii. Creation and identification of the members of the ITC;
  - iii. Conduct of public consultation of policy; and
  - iv. Conduct of participant consultations for the implementation of the policy and the endorsement of the IMO entity.

- b. The Circular should be issued by 19 August 2010 for dissemination.

3.1.2 To prevent confusion and to give the content of the Circular logical order, it is recommended that the Circular is divided at least into the following five sections:

- a. Section 1
  - i. Statement of the Objectives of the WESM:
  - ii. This Section may be divided into two sections to highlight the DOE's ongoing supervisory role in the establishment of the WESM (refer Appendix where this is done):
- b. Section 2:
  - i. Declaration of the IMO Structure Policy:
- c. Section 3:
  - i. Outline the process of public consultation on the Policy:
- d. Section 4:

- 
- i. Declare the creation of the ITC:
  - ii. Identification the members of the ITC:
  - iii. Outline the role of the ITC:
  - e. Section 5:
    - i. Conduct of participant consultations for the implementation of the policy and the endorsement of the IMO entity

3.1.3 The recommended content of the Circular is contained in Appendix A.

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## 4 DOE POLICY CONSULTATION (FOR DOE REVIEW)

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### 4.1 DOE Policy Consultation

4.1.1 Paragraph 6 of the Consultation Plan outlines the following requirements for the DOE policy consultation referred to in 1.1.4c. above:

- a. The DOE will conduct the public consultation on the IMO Structure Policy in accordance with standard DOE practices for policy declaration and finalization.

4.1.2 *Ruth we need advice from DOE on how this is normally conducted*



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**5 APPENDIX A – CIRCULAR (FOR DOE REVIEW)**

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DEPARTMENT CIRCULAR NO. \_\_\_\_\_

**AMENDING THE PHILIPPINES ELECTRICITY MARKET BOARD  
MEMBERSHIP ARRANGEMENT AND GOVERNANCE STRUCTURE IN  
THE PHILIPPINE WHOLESALE ELECTRICITY SPOT MARKET (WESM)  
AND DECLARING AN INDEPENDENT MARKET OPERATOR POLICY  
FOR THE WESM**

**WHEREAS**, the Department of Energy (the “DOE”) is mandated under Section 30 of Republic Act No. 9136, otherwise known as the “Electric Power Industry Reform Act of 2001” or “EPIRA”, to establish the Wholesale Electricity Spot Market (WESM) that will facilitate a transparent, competitive, and reliable electricity market in the country;

**WHEREAS**, in accordance with the EPIRA and Rule 9 Section 3(a) of the Implementing Rules and Regulations of the EPIRA (“IRR”), the DOE is mandated to organize and establish the appropriate market design and governance structure of the WESM;

**WHEREAS**, in accordance with Rule 9 Section 3(b) of the IRR, on 18 November 2003, on the initiative of the DOE, the Philippine Electricity Market Corporation (the “PEMC”) was incorporated as a non-profit, non-stock corporation and thereafter its Board of Directors (PEM Board) was constituted with equitable representation from electric power industry participants to serve as the governing arm of the WESM, which constituted the Autonomous Group Market Operator (“AGMO”) tasked to undertake the preparatory work and initial operation of the WESM;

**WHEREAS**, on 21 June 2006, the DOE issued Department Circular No. 2006-06-0008 declaring the start of commercial operations in two phases, with the launching of the WESM in the Luzon Grid as Phase 1 and with Phase 2, the

inclusion of the Visayas Grid, to be declared upon completion of the Visayas Trial Operations Program as certified by PEMC;

**WHEREAS**, Section 30 of the EPIRA requires the initial market operator, the AGMO, which is charged with undertaking the preparatory work and initial operation of the WESM, and which is the autonomous group constituted by the DOE with equitable representation from electric power industry participants, to be replaced by an independent entity within 1 year of the implementation of the WESM;

**WHEREAS**, the wholesale electricity spot market has been operational in the Luzon Grid for 4 years and the Visayas Grid is soon to join the WESM thereby completing both phases of the 2-phase implementation of the WESM and signaling the preparatory work and initial operation of the WESM, for which purpose the AGMO was constituted by the DOE in accordance with the EPIRA and the IRR, has been completed;

**WHEREAS**, Section 37 of the EPIRA gives the DOE its mandate to supervise the restructuring of the electricity industry and, furthermore, amends Section 5 of the Department of Energy Act of 1992 (RA 7638) (the "DOE Act"), to provide the DOE with powers and functions to attain the objectives of the DOE Act and in pursuance of DOE's mandate provided in Section 37 of the EPIRA;

**WHEREAS**, Section 2 of the DOE Act states the declared policy of State is to ensure a continuous, adequate, and economic supply of energy with the end in view of ultimately achieving self-reliance in the country's energy requirements through the integrated and intensive exploration, production, management, and development of the country's indigenous energy resources, and through the judicious conservation, renewal and efficient utilization of energy to keep pace with the country's growth and economic development and taking into consideration the active participation of the private sector in the various areas of energy resource development; and to rationalize, integrate, and coordinate the various programs of

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the Government towards self-sufficiency and enhanced productivity in power and energy without sacrificing ecological concerns;

**WHEREAS**, Section 5 of the DOE Act was amended by Section 37 of the EPIRA in support of DOE's mandate to supervise the restructuring of the electricity industry and gives the DOE powers and functions to attain the objectives outlined in Section 2 of the DOE Act, including exercising supervision and control over all government activities relative to energy projects in order to attain the goals embodied in Section 2 of the DOE Act and to exercise such other powers as may be necessary or incidental to attain the objectives of the DOE Act;

**WHEREAS**, pursuant to its mandate and powers and functions given in the EPIRA and the DOE Act, the DOE is giving high priority to the establishment of an IMO to operate the WESM;

**NOW, THEREFORE**, from the foregoing premises, the DOE hereby declares the following:

### **Section 1 – Objectives of the Wholesale Electricity Spot Market**

1.1 Consistent with its mandate under Section 5 of the DOE Act and Section 30 of EPIRA and, more particularly, Rule 9, Section 3(a) of the EPIRA IRR, the DOE adopted, in Phase 1 of the two-phase implementation of the wholesale electricity spot market, a WESM design and structure that is intended to achieve the objectives of the wholesale electricity spot market which includes establishing a competitive, efficient, transparent, and reliable market for electricity where:

(a) A level playing field exists among participants:

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- (b) Trading of electricity is facilitated among participants within the spot market:
  - (c) Third parties are granted non-discriminatory access to the power system:
  - (d) Prices are governed as far as practicable by commercial and market forces:
  - (e) Efficiency is encouraged.

## **Section 2 – Continuing DOE supervision of the Wholesale Electricity Spot Market**

2.1 The DOE continues to oversee the development of the WESM and to undertake such actions as provided in the implementing rules of the EPIRA in connection with the establishment of the WESM.

2.2 The DOE retains overall responsibility for ensuring that the market design, governance, and operational structure achieve the objectives of the wholesale electricity spot market including those stated in stated in clause 1.1 hereof.

2.3 The DOE herein declares the IMO Policy to substitute the AGMO, which is charged with undertaking the preparatory work and initial operation of the WESM, with an independent entity as soon as practicable.

2.4 The IMO Policy will incorporate the independent entity into the existing WESM structure such that it evolves the foundations already established so far as is practicable and so as to ensure that the market design and structure most favorably positions the WESM to achieve the objectives of the wholesale electricity spot market including those stated in clause 1.1 hereof.

## **Section 3 – Declaration of the IMO Policy**

3.1 The DOE hereby declares the following IMO Policy:

- (a) That an IMO Board:

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- i. be established:
  - ii. be composed of eight (8) elected members all of whom are independent and the IMO management President:
- (b) That an Audit Committee, a Compliance Committee, and the Market Surveillance Committee shall support and report to the IMO Board:
- (c) That the existing non-independent PEM Board members transfer to a stakeholder's Market Committee and that equitable representation in the Committee is enhanced, including the Visayas region:
- (d) That the Market Committee:
- i. recommends rule changes to the IMO Board:
  - ii. provides advice and guidance to the IMO Board:
- (e) That the Rules Change Committee and the Technical Committee report to the Market Committee:
- (f) That the membership, reporting lines, functions, powers, and duties of these and associated bodies outlined in this report are reflected in the WESM Rules, Manuals, Protocols, and associated documents:

#### **Section 4 – Outline the process of public consultation on the Policy**

*Ruth we need advice from DOE on how this is normally conducted. Is it correct, as implied by previous DOE Policy Circulars, that public consultation is not undertaken, but it is sufficient for a public notice and adequate notice period (it appears 2 weeks after its publication in 2 newspapers of general circulation is a norm) to introduce new policy?*

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**Section 5 – Declaration of the creation of the ITC**

5.1 The DOE hereby creates the “IMO Transition Committee” (the “ITC”) to oversee and direct, among other things the, (a) overall implementation of the IMO structure and the entity to be the IMO and ensure the effective coordination of various activities of all entities involved in the establishment of the IMO structure and the entity to be the IMO, (b) overall implementation of activities for the smooth transition to the WESM IMO structure and IMO, and (c) any other related activities.

5.2 The ITC shall be composed of:

Chairman: The Secretary of the Department of Energy (DOE):

Members: The President of the Philippine Electricity Market Corporation (PEMC):

National Transmission Corporation (TRANSCO):

System Operator, National Grid Corporation of the Philippines (NGCP):

National Electrification Administration (NEA):

National Power Corporation (NPC)

Power Sector Assets and Liabilities Management Corporation (PSALM):

5.3 The ITC shall exercise the following functions:

- (a) Monitor all activities for the transition to the IMO structure and IMO:
- (b) Devise the timelines, action plans, and target implementation schedule of the establishment of the IMO structure and the IMO:

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- (c) Prepare, formulate, and arrange for the establishment of all necessary documents, infrastructures, protocols, rules, manuals, and activities needed for the implementation of the IMO structure and the IMO:
  - (d) Coordinate activities of all entities involved in the preparation of regulatory compliances:
  - (e) Coordinate activities of various entities involved in the transition to the IMO structure and the IMO:
  - (f) Identify issues and formulate solutions to address any issues arising in the performance of required activities:
  - (g) Perform such other functions as may be necessary and delegated to it by the DOE to ensure the smooth and expeditious establishment of the IMO structure and the IMO.
- 5.4 To assist the ITC in the performance of its functions, the PEMC, TRANSCO, NGCP, NEA, NPC, and PSALM shall have the following responsibilities:
- (a) Prepare and implement action plans for the implementation of the IMO structure and the IMO under the direction of the Committee:
  - (b) Regularly provide the Committee updates on the progress of the implementation of the IMO structure and the IMO including implementation issues:
  - (c) Prepare and implement action plans for the transition to the IMO structure and the IMO under the direction of the Committee:
  - (d) Ensure provision of adequate resources such as manpower and other necessary resources to support the smooth implementation of the IMO structure and the IMO:

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(e) Ensure the mutual cooperation by and among the entities involved and allow the Committee access to information on relevant matters.

5.5 The ITC shall hold a regular monthly meeting or as often as the Chairman directs. The Committee may direct the presence in a meeting of any resource person to provide expert advice or opinion on relevant matters.

5.6 The ITC shall continue to undertake its functions until 3 months after the date the IMO entity has been established and is operating the wholesale electricity spot market, at which time the functions of the ITC shall cease and be disestablished.

### **Section 6 – IMO Consultation – Structure Detail and Entity**

6.1 The DOE will undertake a consultation program involving electric power industry participants on the detail of the IMO Policy, including:

- (a) **Governance Policy Implementation** on the detail of the DOE policy directive amending the existing stakeholder WESM governing body structure to become the IMO structure:
- (b) **IMO Endorsement** for “endorsement” of the entity that will be the IMO, in accordance with section 30 of the EPIRA.

6.2 The consultation materials, including the schedule of meetings and venues, will be posted on the website ... by Tuesday 31 August 2010.

6.3 Consultation meetings with DOE and electric power industry participants will commence in the week of 13 September 2010 and will end in the last week of October 2010.



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**Section 7 – Effectivity of Circular**

7.1 This Circular shall take effect immediately fifteen (15) days from its publication in two (2) newspapers of general circulation.