



Report on the Software Certification Audit of the Accounts Management System

**Enhancements to the Accounts Management System of the Independent Electricity
Market Operator of the Philippines**

NOVEMBER 2020

This Report is prepared by the
Philippine Electricity Market Corporation –
Market Assessment Group for the
PEM Audit Committee

FOREWORD

The PEM Audit Committee (PAC) supervised the software certification audit of the enhancements to the Accounts Management System (“AMS”) of the Independent Electricity Market Operator of the Philippines (IEMOP).

The audit was conducted to identify the compliance of the enhanced AMS components with the applicable Market Rules and Manuals, relevant ERC issuances, and software specifications.

This activity was handled by the R.G. Manabat & Co., KPMG in the Philippines, under the supervision of the PAC, in accordance with the procedures outlined in the Contract for External Audit Services between KPMG and the Philippine Electricity Market Corporation (“PEMC”).

Upon the conclusion of the audit, KPMG endorsed to the PAC the software certificate on the compliance of the AMS enhancements with respect to the applicable Market Rules and Manuals, relevant ERC issuances, and software specification.

The PAC wishes to express its appreciation and gratitude to the management of the Philippine Electricity Market Corporation (PEMC) as well as the auditee, IEMOP, for the cooperation and support they extended to the auditor for the successful completion of this audit project.


For the PEM Audit Committee,



Felixberto U. Bustos, Jr.
Chairperson



Eduardo Alejandro O. Santos
Member



Christian M. Orias
Member

1. ABOUT THIS REPORT

This report provides an executive summary of the scope, process, and results of the software certification audit of the enhancements to the AMS of IEMOP.

2. EXECUTIVE SUMMARY

2.1. Background

The Philippine Government has promulgated Republic Act No. 9136, also known as the Electric Power Industry Reform Act of 2001 (EPIRA), which enabled the restructuring of the Philippines' electricity industry. Through the EPIRA, the Department of Energy (DOE) established the Wholesale Electricity Spot Market (WESM), which serves as a venue for the trading of electricity.

On 18 November 2003, the DOE constituted the PEMC, a non-stock and non-profit corporation, to operate the WESM. The PEMC served as the autonomous group market operator and governing body of the WESM when it began commercial operations in Luzon in June 2006 and in the Visayas in December 2010.

As Market Operator (MO), PEMC's responsibility then is to administer the operation of the WESM in accordance with the Market Rules from the determination of the dispatch schedule of all facilities, monitoring of the daily trading activities up to overseeing the billing and settlement process.

In 2017, the PEMC embarked on the internal development of the AMS to facilitate an automated settlement process of wholesale and retail markets transactions. This settlement process includes WESM bill issuance, collection entry and tagging, payment allocation and automatic offsetting, and preparation of related reports.

In 2018, the AMS was subjected to the independent software certification audit under the supervision of the PAC, to validate the accuracy of results and its conformance with the Market Rules and Manuals. After the conclusion of the audit in July 2018, KPMG issued a software certificate indicating the compliance of the AMS components with respect to the Market Rules and Manuals.

On 26 September 2018, IEMOP assumed the MO functions and other services defined in the Operating Agreement executed between IEMOP and PEMC on 19 September 2018, while PEMC retained its role as the WESM governing body through the PEM Board and its WESM Governance Committees. Having assumed the functions, assets and liabilities of the market operator of the WESM, IEMOP is now responsible for performing, among others,

billing, settlements, management of prudential requirements relating to WESM transactions, for which the AMS will be used. The AMS was also thus transferred to IEMOP.

After its assumption as MO, IEMOP implemented modifications to the AMS due to changes to external processes (e.g. updates to the Net Settlement Surplus implementation) that interface with the AMS. The IEMOP also implemented modification to the AMS to include a facility to allow partial or full refund of prudential security deposits.

As a result of these enhancements, a re-audit of the AMS was necessary to re-visit the compliance of AMS to applicable Market Rules and Manuals and relevant ERC issuances.

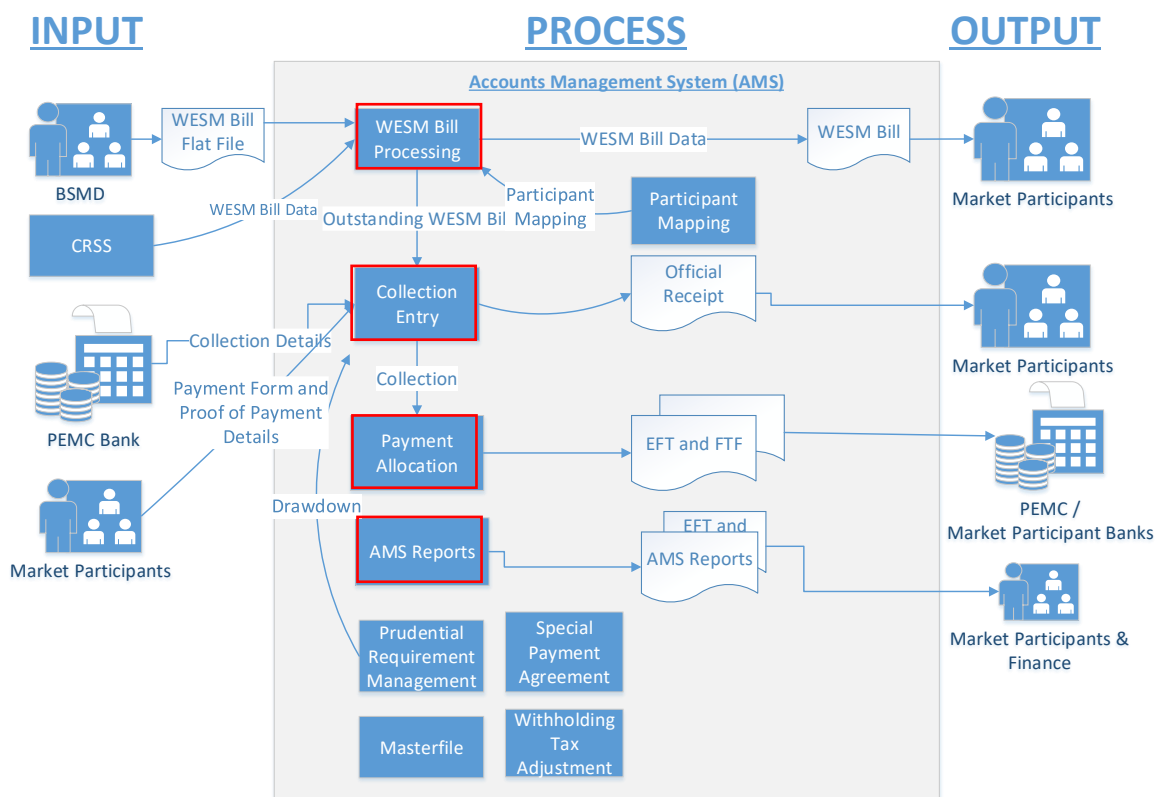
On 16 April 2020, IEMOP informed the PEM Board and the PAC of the ongoing AMS enhancements. The IEMOP then presented the said AMS enhancements and discussed the same with the PAC during its regular meeting on 23 April 2020. During the said meeting, the IEMOP concurred with the PAC's recommendation to conduct a pre-certification audit of the AMS enhancements considering that the system deals with monetary transactions.

In October 2020, KPMG, the third-party expert who previously conducted the 2018 AMS audit, was again engaged to conduct the audit of the enhancements to the AMS.

2.2. Audit Scope

The purpose of the audit is to conduct tests to determine the compliance of specific functionalities and outputs of the AMS enhancements with applicable Market Rules and Manuals, and relevant ERC issuances, and specifications of the AMS in consideration of the enhancements made. The audit was likewise performed to provide actionable recommendations to take remediation/improvement actions of the identified findings.

The figure below shows an overview of the nine (9) components of the AMS. The audit focused on the enhancements to the WESM Bill Processing, Collection Entry, Payment Allocation and AMS Reports Modules.



To be specific, the audit covers the following enhancements to the affected modules, as follows:

| Current AMS Functionality | AMS Enhancements | Affected AMS Module |
|---|---|--|
| Automatically computes the default interest on overdue amount | An interface that will allow the user to exempt certain unpaid invoices (i.e. NSS Bills) from automatic computation of default interest on collection allocation process | 1. WESM Bill Processing 2. Collection Entry 3. AMS Reports |
| Automatically offset unpaid invoices of market participants against their respective share in WESM remittance | An interface that will allow the user to exempt certain unpaid invoices (i.e. NSS Bills) from automatic offsetting process Exclusion of these invoices from automatic computation of default | 1. Payment Allocation 2. AMS Reports |

| Current AMS Functionality | AMS Enhancements | Affected AMS Module |
|--|--|---------------------|
| | interest and offsetting during the payment allocation process | |
| No facility to allow a refund of prudential security deposit | <p>A new facility that will allow the user to process a partial or full refund of prudential security deposit to a requesting market participant.</p> <p>Creation of applicable accounting entries and related reports</p> | 1. AMS Reports |

2.3. Audit Process

After the Planning/Kick-off Meeting held on 05 October 2020, KPMG, IEMOP, PEMC and PAC confirmed the following arrangements for undertaking the audit:

Audit Coordination

1. KPMG coordinated with PEMC for the activities required for the audit, and proposed schedules for confirmation of both PEMC and IEMOP.
2. PEMC sent out MS Teams meeting invites for each schedule confirmed, and liaised between KPMG and IEMOP for any questions or data and document requests.

Audit Execution Approach

1. Due to restrictions in movements during the pandemic, KPMG, PEMC, IEMOP and PAC agreed to conduct all interviews and document inspection online.
2. KPMG did not directly access the system itself but only observed IEMOP's access and simulation of transactions and processes in the AMS through screensharing.
3. Any meetings needed were conducted through MS Teams and schedules were confirmed based on agreed timeline and invites sent by PEMC to all relevant attendees.

Audit Plan

Details per phase related to the agreed-upon procedure were included in KPMG's assessment.

1. Planning Phase

- Meetings with IEMOP process owners were conducted to validate KPMG's understanding of the business and software objectives, application of Market Rules, risk management, relevant IT and other internal business processes-related policies, and risk and key supporting processes to help focus KPMG's assessment
- Operating environment and business and application specific risks were evaluated, which enabled KPMG to focus on areas that represented the most significant risk to the in-scope system. KPMG's understanding of the environment, including its system, were based on information supplied by PEMC and IEMOP.
- Risk analysis was performed by KPMG by means of interview with IEMOP process owners, and review of existing AMS-related documentation including applicable Market Rules and Manuals, and relevant ERC issuances.

2. Controls Review and Assessment Phase

During this phase, KPMG conducted the following:

- Tested the identified enhancements and its interfaces with other components or modules of the AMS, including specific AMS outputs/reports
- Determined whether the identified enhancements to the AMS are consistent with the Market Rules and Manuals, relevant ERC issuances, and software specifications
- For identified inconsistencies and non-compliances, provided explanation as to how such conclusions were derived and discussed the measured level of risks based on possible impact to the organization
- Recommended ways on how the identified inconsistencies and non-compliances could be corrected
- Re-tested the software fixes or releases deployed after conclusion of the preliminary audit

3. Reporting Phase

- KPMG confirmed with PEMC, IEMOP and PAC the factual accuracy of the assessment results through meetings and solicited comments on the draft reports to facilitate resolution of audit findings and correction of system defect.
- KPMG likewise assessed the likelihood and impact of the findings with PEMC, IEMOP and PAC to formulate actionable recommendations.
- Weekly updates meetings were conducted with PEMC and IEMOP to discuss gaps and deficiencies identified during the “Controls Review and Assessment” phase. Thereafter, KPMG issued reports which consists of both business and technical components of the preliminary and final audit findings and software certification over compliance to the Market Rules and Manuals and relevant ERC issuances.

2.4. Conclusion

The enhancements to the AMS were found to be compliant with the applicable Market Rules and Manuals, relevant ERC issuances, and software specification as described in the Final Audit Report and Software Certificate provided by KPMG. (See list of applicable Rules in Appendix A and Software Certificate in Appendix B)

Appendix A – List of Applicable Market Rules and Manuals, and ERC Issuances

| AMS Enhancements | Applicable Market Rules and Manuals, and ERC Issuances |
|--|---|
| <p><u>Enhancement 1</u></p> <p>“An interface that will allow the user to exempt certain unpaid invoices (i.e. NSS Bills) from automatic computation of default interest on collection allocation process.”</p> <p><u>Affected AMS Modules:</u></p> <ol style="list-style-type: none"> 1. WESM Bill Processing 2. Collection Entry 3. AMS Reports <p><u>Applicable Reports:</u></p> <ol style="list-style-type: none"> 1. Official Receipt (OR) 2. Journal Voucher (JV) 3. General Ledger – Cash-In Bank 4. Subsidiary Ledger–Accounts Receivable 5. Summary for Accounting Books 6. Statement of Account (SOA) | <ul style="list-style-type: none"> • WESM Rules Sec. 3.14.12 Interest on Overdue Amounts • WESM Rules Sec. 3.14.11 Payment Default Procedure • WESM Rules Sec. 3.14.2 Electronic Funds Transfer • WESM Rules Sec. 3.14.3 Payment of Settlement Amount • WESM Rules Sec. 3.14.5 Final Statements • WESM Rules Sec.3.13.16 Treatment of Remaining Settlement Surplus • ERC Case No. 2019-018 MC Commission Ruling No. 8 • Energy Regulatory Commission, Order, Case No. 2019-018 MC, 10 May 2019 • Energy Regulatory Commission, Resolution No. 07, Series of 2019, Article IV, Section 1, Redistribution of the Net Settlement Surplus/Deficit • Energy Regulatory Commission, Resolution No. 01, Series of 2018, Article VIII, Section 1, Interests and Penalties |
| <p><u>Enhancement 2</u></p> <p>“An interface that will allow the user to exempt certain unpaid invoices (i.e. NSS Bills) from automatic offsetting process. Exclusion of these invoices from automatic computation of default interest and offsetting during the payment allocation process.</p> <p><u>Affected AMS Modules:</u></p> <ol style="list-style-type: none"> 1. Payment Allocation 2. AMS Reports <p><u>Applicable Documents:</u></p> <ol style="list-style-type: none"> 1. Collection and Payment Summary Report (CAP Summary) | <ul style="list-style-type: none"> • WESM Rules Sec. 3.14.6 Payment by Trading Participants • WESM Rules Sec. 3.14.7 Payment to Trading Participants • WESM Rules Sec. 3.14.9 Settlement Revisions • WESM Rules Sec. 3.14.10 Payment of Adjustments • WESM Rules Sec. 3.14.2 Electronic Funds Transfer • WESM Rules Sec. 3.14.3 Payment of Settlement Amount • WESM Rules Sec. 3.14.5 Final Statements • WESM Rules Sec.3.13.16 Treatment of Remaining Settlement Surplus |

| AMS Enhancements | Applicable Market Rules and Manuals, and ERC Issuances |
|---|--|
| 2. Journal Voucher (JV) 3. Debit/Credit Memo (DMCM) 4. Summary for Accounting Books 5. Subsidiary ledger–Accounts Receivable 6. Subsidiary ledger–Accounts Payable | <ul style="list-style-type: none"> Energy Regulatory Commission, Order, Case No. 2019-018 MC, 10 May 2019 Commission Ruling No. 8 |
| <p><u>Enhancement 3</u> A new facility that will allow the user to process a partial or full refund of prudential security deposit to a requesting market participant. Creation of applicable accounting entries and related reports.</p> <p><u>Affected AMS Modules:</u></p> <ol style="list-style-type: none"> AMS Reports <p><u>Applicable Documents:</u></p> <ol style="list-style-type: none"> Journal Voucher (JV) Fund Transfer Form (FTF) Electronic Fund Transfer (EFT) Summary for Account Books Subsidiary ledger– Cash-in Bank Prudential General Ledger–Prudential per Participant Settlement Notice | <ul style="list-style-type: none"> WESM Rules Sec.3.15.7 Refund of Security WESM Rules Sec. 3.15.6 Drawdown of Security |

Appendix B – Software Certificate for AMS Enhancements Audit



AMS SOFTWARE CERTIFICATE

Philippine Electricity Market Corporation

18th Floor, Robinsons Equitable Tower
ADB Avenue, Ortigas Center
1600 Pasig City, Philippines

This is to certify that based on the Agreed-Upon Procedures performed on the components listed below, all of the preliminary findings on Account Management System (AMS) Enhancements have been addressed, which demonstrated compliance with the applicable Market Rules and Manuals, relevant ERC issuances, and software specification. Listed below were the AMS Enhancement components tested:

- a. **Enhancement 1** – “An interface that will allow the user to exempt certain unpaid invoices (i.e. NSS Bills) from automatic computation of default interest on collection allocation process.”

Affected AMS Modules:

- WESM Bill Processing
- Collection Entry
- AMS Reports

Applicable Reports:

- Official Receipt (OR)
- Journal Voucher (JV)
- General Ledger – Cash-In Bank
- Subsidiary Ledger–Accounts Receivable
- Summary for Accounting Books
- Statement of Account (SOA)

- b. **Enhancement 2** – “An interface that will allow the user to exempt certain unpaid invoices (i.e. NSS Bills) from automatic offsetting process. Exclusion of these invoices from automatic computation of default interest and offsetting during the payment allocation process.”

Affected AMS Modules:

- Payment Allocation
- AMS Reports

Applicable Reports:

- Collection and Payment Summary Report (CAP Summary)
- Journal Voucher (JV)
- Debit/Credit Memo (DMCM)
- Summary for Accounting Books



- Subsidiary ledger–Accounts Receivable
 - Subsidiary ledger–Accounts Payable
- c. **Enhancement 3** – “A new facility that will allow the user to process a partial or full refund of prudential security deposit to a requesting market participant. Creation of applicable accounting entries and related reports.”

Affected AMS Modules:

- AMS Reports

Applicable Documents:

- Journal Voucher (JV)
- Fund Transfer Form (FTF)
- Electronic Fund Transfer (EFT)
- Summary for Account Books
- Subsidiary ledger– Cash-in Bank Prudential
- General Ledger–Prudential per Participant
- Settlement Notice

Please refer to the accompanying Report of Factual Findings for more information.

Very truly yours,

R.G. Manabat & Co.



JALLAIN MARCEL S. MANRIQUE
Partner, IT Advisory

06 November 2020

Makati City, Philippines