



Terms of Reference for the 5th Review of Metering Installations and Arrangements (5RMIA)

26 June 2022 to 25 December 2025

FEBRUARY 2026

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

Document Information Classification: Public

The information contained in this document is based or lifted from the relevant references such as Market Rules and Manuals and audit documents.

Table of Contents

1.	REQUIREMENT.....	2
2.	BACKGROUND.....	2
2.1	The Wholesale Electricity Spot Market (WESM).....	2
2.2	Retail Market	3
2.3	Metering Services in the WESM and Retail Market.....	4
2.4	The Market Operator, Central Registration Body (CRB), and the Governance Arm ..	5
2.5	Basis for the Audit.....	6
2.6	Objectives of the Audit.....	6
2.7	Applicable Rules.....	7
3.	AUDIT SCOPE.....	8
3.1	Period Covered	8
3.2	Auditees	8
3.3	Scope of Work.....	8
3.4	Exclusion.....	10
3.5	Materiality	10
4.	PROPOSED ARRANGEMENTS	11
4.1	Project Schedule.....	11
4.2	Deliverables	11
4.3	Qualifications of Independent Auditor/ Independent Audit Team Members	14
4.4	Interface among the Independent Auditor, the Auditees, and PAC	14
4.5	Confidentiality and Non-Disclosure Agreement (NDA) Requirements	15
4.6	Data Privacy	15
4.7	Intellectual Property Requirements	16
ANNEX A – LIST OF MSPs		18
ANNEX B – LIST OF METERING SITES FOR INSPECTION.....		20

1. REQUIREMENT

Engagement of the services of an Independent Auditor to conduct the 5th Review of Metering Installations and Arrangements (5RMIA).

2. BACKGROUND

2.1 The Wholesale Electricity Spot Market (WESM)

- 2.1.1. The Electric Power Industry Reform Act of 2001 (EPIRA) mandates the establishment of the WESM to facilitate a competitive market environment in the Philippine electricity industry. Pursuant to the EPIRA, the Department of Energy (DOE), upon joint endorsement of the electric power industry participants, promulgated the WESM Rules on 02 June 2002 through DOE Department Circular No. DC2002-06-003¹.
- 2.1.2. WESM began commercial operations in Luzon on 26 June 2006 and was expanded to Visayas on 26 December 2010. Effective 26 June 2021, the commercial operations of the enhanced WESM design and operations in Luzon and Visayas commenced consistent with DOE Department Circular No. 2021-06-0015². Mindanao was then integrated into WESM on 26 January 2023 following the DOE's issuance of Department Circular No. DC2022-12-0039³.
- 2.1.3. Governed by the WESM Rules, the WESM is a venue for trading electricity as a commodity. It serves as a clearing house to reflect the economic value of electricity as indicated by the spot price. The WESM uses the concept of a gross pool market where all electricity output of the generators is centrally coordinated for scheduling and dispatch. Generators, as well as buyers of bulk electricity, compete for a share of this pool to be dispatched and scheduled to meet the electricity demand in real time. The members of the WESM include Generation Companies, Customers, Trading Participants, Network Service Providers, Ancillary Services Provider, Metering Services Providers, and System Operator.
- 2.1.4. With respect to policy and regulatory oversight over the WESM, such functions are carried out by the DOE and the Energy Regulatory Commission (ERC). The functions of the DOE involve the formulation of the country's overall energy policy, the development and

¹ [DOE Department Circular No. DC2002-06-0003 Wholesale Electricity Spot Market Rules and Joint Endorsement of the Wholesale Electricity Spot Market Rules](#)

² [DOE Department Circular No. DC2021-06-0015 Declaring the Commercial Operations of Enhanced Wholesale Electricity Spot Market \(WESM\) Design and Providing Further Policies](#)

³ [DOE Department Circular No. DC2022-12-0039 Declaring the Commercial Operation of the Wholesale Electricity Spot Market \(WESM\) in the Mindanao Grid](#)

improvement of the WESM design, as well as the promulgation of the WESM Rules and Manuals, including changes thereto.

- 2.1.5. On the other hand, the ERC enforces the provisions of the EPIRA and its implementing rules and regulations, and has investigative and quasi-judicial powers over any market participant for violations of the EPIRA, its implementing rules and regulations, and the WESM Rules. The ERC also reviews and approves, among others, the market fees being charged by the Market Operator from the Market Participants to recover the cost of administering and operating the WESM, including the formulas and methodologies used in determining such fees.

2.2 Retail Market

- 2.2.1. Section 31 of the EPIRA mandates the implementation of RCOA within three (3) years of the law's effectivity. RCOA began commercial operations on 26 June 2013 following the certification by the ERC that the conditions of its implementation have already been met.
- 2.2.2. Subsequently, the DOE issued Department Circulars No. DC2013-01-0002⁴ and No. DC2015-06-0010⁵ integrating RCOA into WESM, and setting policies for its full implementation, respectively. The ERC then adopted the 2016 Rules Governing the Issuance of Licenses to Retail Electricity Suppliers and Prescribing the Requirements and Conditions Therefor and the Revised Rules for Contestability to implement the DOE policy on RCOA.
- 2.2.3. Thereafter, the DOE issued Department Circulars No. DC2017-12-0013⁶, No. DC2017-12-0014⁷, and No. DC2019-07-0011⁸ allowing voluntary participation of contestable customers and lifted mandatory requirements. The DOE then issued Department Circular No. DC2021-06-0012⁹ promoting participation in retail competition.

⁴ [DOE Department Circular No. DC2013-01-0002 Promulgating the Retail Rules for the Integration of Retail Competition and Open Access in the Wholesale Electricity Spot Market](#)

⁵ [DOE Department Circular No. DC2015-06-0010 Providing Policies to Facilitate the Full Implementation of Retail Competition and Open Access \(RCOA\) in the Philippine Electric Power Industry](#)

⁶ [DOE Department Circular No. DC2017-12-0013 Providing Policies on the Implementation of Retail Competition and Open Access \(RCOA\) for Contestable Customers in the Philippines Electric Power Industry](#)

⁷ [DOE Department Circular No. DC2017-12-0014 Providing Policies on the Implementation of Retail Competition and Open Access \(RCOA\) for Retail Electricity Suppliers \(RES\) in the Philippines Electric Power Industry](#)

⁸ [DOE Department Circular No. DC2019-07-0011 Amending Various Issuances on the Implementation of the Retail Competition and Open Access \(RCOA\)](#)

⁹ [DOE Department Circular No. DC2021-06-0012 Adopting Further Amendments to the Wholesale Electricity Spot Market \(WESM\) Rules, Retail Rules and Various Market Manuals for the Implementation of Enhancements to WESM Design and Operations \(Provisions to Promote Participation in the Retail Competition\)](#)

- 2.2.4. In 2018, the DOE introduced the GEOP through Department Circular No. DC2018-07-0019¹⁰, and the ERC issued its Resolution No. 08, Series of 2021, A Resolution Adopting the Rules for the GEOP. GEOP is a voluntary policy mechanism enabling end-users to choose renewable energy, with registration started in December 2021.
- 2.2.5. In 2024, the DOE declared through Department Circular No. DC2024-03-0009¹¹ the commercial operations of RCOA and GEOP in Mindanao effective 26 March 2024.

2.3 Metering Services in the WESM and Retail Market

- 2.3.1 In accordance with EPIRA Section 43, the ERC promulgated the Philippine Grid and Distribution Codes providing technical requirements for transmission and distribution systems, respectively. The ERC also issued ERC Resolution No. 28 Series of 2006 providing guidelines for the issuance of Certificate of Authority for WESM Metering Services Provider (MSP).
- 2.3.2 WESM Rules Clause 8.4.1.2 authorizes the DOE to approve and promulgate amendments to the WESM Rules and Market Manuals, and/or adoption of new Market Manuals.
- 2.3.3 WESM Rules Clauses 2.3.3 and 4.3.3 define the MSP as an ERC-authorized entity registered with the Market Operator, and provide the obligations of the MSPs for ensuring that its metering installations comply with WESM Rules, relevant Market Manuals, the Philippine Grid and Distribution Codes, and other applicable laws, rules, and regulations.
- 2.3.4 Section 4.6 (i) of the Guidelines on the Collection of the Feed-in Tariff Allowance (FIT-All) and Disbursement of the FIT-All Fund requires Distribution Utilities (DUs) to provide metering services to Eligible Renewable Energy plants connected to their distribution system under a metering service agreement.
- 2.3.5 Retail Rules Clause 2.4.5 designates the DU as the default Retail MSP within its franchise area. Other than the DUs, all other Retail MSPs shall register with the WESM and CRB before providing metering services for RCOA settlement.
- 2.3.6 WESM Rules Clause 4.5.5.4 mandates the PEM Audit Committee (PAC), in consultation with the Market Operator and MSPs, to review security arrangements and compliance of metering installations with the relevant rules. Similarly, Retail Rules Clause 4.8.1 requires the PAC to review and audit the metering arrangements and compliance of the Retail MSPs and the Central Registration Body. In addition, the PAC also oversees the monitoring of MSPs performance.

¹⁰ [DOE Department Circular No. DC2018-07-0019 Promulgating the Rules and Guidelines Governing the Establishment of the Green Energy Option Program Pursuant to the Renewable Energy Act of 2008](#)

¹¹ [DOE Department Circular No. DC2024-03-0009 Declaring the Commercial Operations Date of Retail Competition and Open Access \(RCOA\) and Green Energy Option program \(GEOP\) in Mindanao](#)

- 2.3.7 WESM Manual on Metering Standards and Procedures Section 9 and Retail Manual on Metering Standards and Procedures Section 8 provide that integrity and timely submission of meter data by MSPs is crucial for the Market Operator to generate and deliver settlement-ready data to trading participants on schedule. Any errors in meter data or delays in submission can compromise the accuracy and timeliness of billing and settlement for WESM generators, and customers. Moreover, PEMC, as the Governance Arm, is responsible in monitoring the performance of MSPs according to the standards provided under the WESM and Retail Manuals on Metering Standards and Procedures.
- 2.3.8 Specifically, the MSP performance monitoring focuses on MSP's service delivery of metering data and customer satisfaction. Annual performance ratings from 2018 to 2024 showed 16 MSPs with consistently failed performance ratings.¹² These MSPs also had findings with *Medium to Critical* risk ratings during the 4RMIA.¹³ The issues gathered as part of the MSP performance monitoring and findings during the 4RMIA, including the MSP's action plans to address these, were observed to be similar and primarily related to personnel training and adequacy, process gaps, and communication deficiencies.
- 2.3.9 On 18 June 2025, the complete audit reports of 4RMIA and PAC Audit Report on 4RMIA was transmitted to the ERC. Similarly, the PAC Audit Report on 4RMIA was transmitted to the DOE on the same date.
- 2.3.10 During the 4RMIA, there were 58 audited MSPs. Additional 32 MSPs will be audited in the 5RMIA, with a total of 90 auditees, based on the number of MSPs with customers that are being monitored for performance as of December 2025.
- 2.3.11 The MSPs that will be audited are only those with customers as those are the ones submitting Metered Quantities that are used in settlements.

2.4 The Market Operator, Central Registration Body (CRB), and the Governance Arm

- 2.4.1. Section 30 of the EPIRA mandates the DOE to form an autonomous Market Operator with equitable industry representation. In November 2003, the DOE constituted the Philippine Electricity Market Corporation (PEMC) to operate the WESM and later designated it as the Central Registration Body (CRB) for RCOA through DOE Department Circular No. DC2012-02-0002¹⁴.

¹² [MSP Annual Performance Ratings from 2018 to 2024: Metering Services Provider Performance | Philippine Electricity Market Corporation](#)

¹³ [PAC Audit Report on 4RMIA: Market Audit | Philippine Electricity Market Corporation](#)

¹⁴ [DOE Department Circular No. DC2012-02-0002 Designating the Philippine Electricity Market Corporation \(PEMC\) as the Central Registration Body \(CRB\)](#)

- 2.4.2. On 18 January 2018, the DOE issued Department Circular No. DC2018-01-0002¹⁵ endorsing and setting out the guidelines on transitioning to an independent operator, leading to IEMOP assuming WESM operations on 26 September 2018 while PEMC retained governance functions. Thereafter, the DOE issued Department Circular No. DC2019-07-011¹⁶ designating the independent market operator, Independent Electricity Market Operator of the Philippines (IEMOP), as the CRB.
- 2.4.3. Accordingly, IEMOP as the CRB, facilitated GEOP registration in Luzon and Visayas starting December 2021.

2.5 Basis for the Audit

- 2.5.1. The WESM Rules Clause 4.5.5.4 provides that the PEM Audit Committee, in consultation with Market Operator and MSPs, shall review the security arrangements and requirement of metering installations. This requirement is further detailed in Section 5.4 of the PEM Audit Market Manual Issue 3.0.
- 2.5.2. Moreover, Clause 4.8.1 of the Retail Rules likewise requires the PEM Audit Committee to conduct a periodic review and audit of the metering arrangements and compliance of the Retail MSPs and the CRB.
- 2.5.3. Furthermore, under the PEM Audit Market Manual Section 5.4.5, the PEM Audit Committee, supported by the Technical Committee, is tasked to conduct an audit regarding the following:
- a. Compliance with requirements of metering installations;
 - b. Compliance with security arrangements associated to metering systems and processes; and
 - c. Adequacy of security arrangements by the Market Operator and work procedures by MSPs.
- 2.5.4. To ensure sufficient and adequate expertise, the services of independent persons, teams or companies, who shall act as the Independent Auditor, will be engaged for the said audit, in accordance with Section 4.1 of the PEM Audit Manual.

2.6 Objectives of the Audit

- a. Assess the adequacy of the metering standards, security systems, procedures and working processes in the WESM/Retail Market;
- b. Confirm that the metering arrangements and installations comply with the applicable rules;

¹⁵ [Department Circular No. 2018-01-0002 Adopting Policies for the Effective and Efficient Transition of Independent Market Operator for the Wholesale Electricity Spot Market](#)

¹⁶ [Amending Various Issuances on the Implementation of the Retail Competition and Open Access](#)

- c. Identify and report any possible non-compliance/s;
- d. Recommend best practices and identify potential improvements for MO/CRB and MSPs;
- e. Review and assess the compliance of the MO/CRB and MSPs based on the applicable rules; and
- f. Review and assess the appropriateness of actions taken by the MO/CRB and MSPs to address previous audit findings.

2.7 Applicable Rules

The following shall guide the Independent Auditor in the conduct of the audit:

- a. Philippine Grid Code 2016 Edition (applicable only to WESM MSP or WMSP);
- b. Philippine Distribution Code 2017 Edition;
- c. Philippine Electrical Code 2017 Edition;
- d. WESM Rules and Retail Rules;
- e. WESM Manual on Metering Standards and Procedures Issues 12 to 16;
- f. Retail Manual on Metering Standards and Procedures Issues 5.1, 6.1, and 7.0;
- g. ERC Resolution No. 28, Series of 2006¹⁷;
- h. ERC Resolution No. 12, Series of 2009¹⁸;
- i. ERC Resolution No. 21, Series of 2013¹⁹;
- j. ERC Resolution No. 23, Series of 2016²⁰;
- k. ERC Resolution No. 13, Series of 2024²¹;
- l. DOE Department Circular No. DC2016-05-0007²²;
- m. DOE Department Circular No. DC2018-04-0009²³;
- n. Documented Policies and Internal Business Procedures of the Auditees; and
- o. Relevant Circulars, Orders, and other Issuances or directives of the DOE and ERC.

¹⁷ [ERC Resolution No. 28, Series of 2006 Guidelines for the Issuance of Certificate of Authority for WESM Metering Services Providers](#)

¹⁸ [ERC Resolution No. 12, Series of 2009 A Resolution Adopting the Rules and Procedures for the Test and Maintenance of Electric Meters of Distribution Utilities](#)

¹⁹ [ERC Resolution No. 21, Series of 2013 A Resolution Adopting the Amendments to Sections 5.3, 5.4 & 6.1 of the 'Rules and Procedures for the Test and Maintenance of Electric Meters of Distribution Utilities', as Adopted in Resolution No. 12, Series of 2009](#)

²⁰ [ERC Resolution No. 23, Series of 2016 A Resolution Adopting Amended Rules on the Definition and Boundaries of Connection Assets for Customers of Transmission Providers](#)

²¹ [ERC Resolution No. 13, Series of 2024 A Resolution Adopting the Omnibus Rules for Customer Choice Programs in the Retail Market](#)

²² [DOE Department Circular No. DC2016-05-0007 Providing Policies for Further Improvements of the Operations and Metering Installations of the Metering Services Providers \(MSPs\) in the Wholesale Electricity Spot Market \(WESM\) and RCOA](#)

²³ [DOE Department Circular No. DC2018-04-0009 Adopting Further Amendments to the Retail Rules and its Market Manual on Metering Standards and Procedures for the Implementation of Enhancements to WESM Design and Operations](#)

3. AUDIT SCOPE

3.1 Period Covered

This audit shall cover the period 26 June 2022 to 25 December 2025.

3.2 Auditees

- 3.2.1 WESM MSPs and Retail MSPs with customers; and
- 3.2.2 The Market Operator/CRB.

3.3 Scope of Work

3.3.1 Review of Metering Installations and Arrangements

Refer to "Annex A" for the List of MSPs

Task 1.1 – Procedures/Process and Compliance Review

- a. Assess the compliance of the MSPs with their obligations under the applicable rules;
- b. Assess the consistency of MSP's Internal Business Processes with the applicable rules;
- c. Review the adequacy of and assess the compliance of the MSPs with their documented internal procedures/protocols, including but not limited to the processes for meter data collection/retrieval, ensuring that the systems and measurement tools used employ the Network Time Protocol (NTP) or equivalent time-synchronization mechanisms/process/procedures to maintain synchronized timestamps for secured metered quantity and its daily and monthly transmission to the Market Operator/CRB, specifically for manual retrieval of meter data in times remote communication failure. In the absence of internal procedures, recommend necessary procedures;
- d. Verify the availability and implementation of emergency and recovery plans and procedures in case of erased or corrupted metering data, and availability of an off-site data storage location.
- e. Assess the adequacy and conformance of MSPs with the applicable rules, for preventive maintenance performed on metering equipment based on approved schedules, including completeness of maintenance programs, test results, and sealing records;
- f. Check the timeliness of the MSPs in addressing Meter Trouble Reports (MTRs) and verify the causes of MTRs, including the documented and justified delays beyond the control of the MSP, and corrective actions taken;
- g. Check the availability of information dissemination of the MSPs to the Market Operator during meter trouble;
- h. Assess the adequacy of metering data adjustment process and variables with respect to the metering installation's physical configuration in relation to Task 1.3 (b);
- i. Review the validity and completeness of the MSP's meter test results conducted during the review period;
- j. Review the MSP's compliance with the testing schedules to be conducted on metering components in accordance with the applicable rules; and

- k. Review of MO/CRB's process/procedures in focus of the following functions:
 - Receipt of metering data from MSPs;
 - Data validation and issuance of Meter Trouble Reports when appropriate;
 - Processing validated metering data for input into settlement calculations; and
 - Receipt, processing and maintenance of MSPs and their customers' information (from registration, updating, to deregistration/cessation).
- l. Provide recommendations on the possible enhancements to the procedures/processes and compliances based on the best practices of other competitive electricity markets related to the tasks above.

Task 1.2 – Review of Systems Used by Metering Services Providers

- a. Assess the reliability of the meter communication links and interfaces to the meter data collection system of MSPs, taking into account the current levels of third-party telecommunications services and program of MSPs to improve communication reliability;
- b. Review the availability, accuracy, and reliability of software, tools and programs used by MSPs for meter data collection, processing and database management (e. g. MV-90);
- c. Assess the reliability of communication link and interfaces between MSPs and the MO/CRB;
- d. Verify the availability of back-up systems during power failures, and review the MSP's Business Continuity Plan (BCP) and Disaster Recovery Plan (DRP);
- e. Assess the adequacy of each MSP's Meter Data Retrieval System in alerting the MO/CRB of any occurrence of any failure thereof including a review of the Incident, Problem and Change Management process;
- f. Verify the adequacy of physical and logical access security of metering data stored in metering installations and metering database; and
- g. Review the adequacy of the Availability Plan and Capacity Plan for MSP's metering infrastructure.
- h. Provide recommendations on the possible enhancements to the systems used by MSPs based on the best practices of other competitive electricity markets related to the tasks above.

Task 1.3 – Review of Metering Installations (On-site Inspection)

The on-site inspection will cover registered metering sites in Luzon, Visayas, and Mindanao. Refer to "**Annex B**" for the List of Metering Sites for Inspection. The review of metering installations will include, but not limited to the following:

- a. Assess compliance of the design, technical specifications, operations, maintenance, safety, and security of metering installations with the standards set forth in the applicable rules;
- b. Determine the appropriateness of the revenue metering and market trading node location;
- c. Assess NGCP's compliance with DOE Department Circular No. DC2016-05-0007 in connection to ERC Resolution No. 23 Series of 2016, specifically on the relocation of metering facilities at the prescribed connection point;
- d. Verify MSP's compliance program on the upgrading of the contestable customer's metering installation for the implementation of the 5-minute dispatch interval in the WESM and

RCOA (DOE Department Circular No. DC2018-04-0009), as amended by DOE Department Circular No. DC2021-06-0012);

- e. Verify the consistency of metering installation components with the corresponding Metering Installation Registration Form (MIRF) and the applicable Notice of Metering Equipment Replacement (NMER);
- f. Check the availability of spare parts (e.g. meters, Current Transformers and Potential Transformers) to ensure immediate replacement in case of defective metering installations;
- g. Check the availability of check meters for main revenue meters, where applicable;
- h. Conduct thermal scanning to identify loose and/or hotspot connections; and
- i. Provide best practice recommendations based on other competitive electricity markets related to the tasks above.

Task 2 – Review of Previous RMIA Findings

Review and assess the adequacy of actions undertaken by the MO/CRB and MSPs in addressing previous metering audit findings/recommendations.

3.4 Exclusion

The following areas shall be excluded in the scope of work:

- a. Legal process;
- b. Design and development of systems and programs; and
- c. Budget and planning.

Further, the work papers of the Auditor of the MO/CRB/MSPs for its ISO 27001 and ISO 9001 surveillance or recertification, cannot be made available to the Independent Auditor. Hence, the Independent Auditor shall formulate its own audit approach to review the quality management and information security posture of the MO/CRB/MSPs.

3.5 Materiality

- 3.5.1 The materiality levels for the tests of transactions and significant findings shall be set and disclosed by the Independent Auditor, subject to review and inputs of the Auditee, and subject to review and approval of the PAC.
- 3.5.2 Upon the discretion of the Independent Auditor, review and inputs of the Auditee, and review and approval of the PAC, other thresholds may be adopted for the reporting of significant issues identified during the course of the review, although it is recognized that there may be qualitative aspects in determining the significance of any issue. That is, the Independent Auditor shall report and evaluate the impact of the issues that come to its attention that exceed these significant issues threshold, or that it believes to be significant for other reason.

4. PROPOSED ARRANGEMENTS

4.1 Project Schedule

- 4.1.1 The audit shall commence upon receipt of the Notice to Proceed and will be deemed completed upon issuance of the Certificate of Completion.
- 4.1.2 The Independent Auditor shall review all documentation and consult relevant parties to be able to deliver the project deliverables as scheduled.
- 4.1.3 Below are the details of the activities to be conducted for the completion of the project with the corresponding tentative schedules.

No.	Activity	Tentative Schedule
1	Kickoff Meeting	Week 1 of Month 1
2	Submission of Draft Inception Report to PAC	Week 3 of Month 1
3	Auditees' review of draft Inception Report	Week 4 of Month 1 – Week 2 of Month 2
4	Finalization of Inception Report and Start of the Audit	Week 4 of Month 2
5	Start of audit and site inspections	Week 1 of Month 3 – Week 4 of Month 9
5.1	Reporting of Monthly Progress to PAC <i>*PAC meeting is scheduled every 2nd week of the month</i>	Month 3 – Month 9
5.2	Submission of Draft and Final Audit Reports per MSP*	Month 3 – Month 9
5.3	Submission of Draft and Final Holistic Report	Week 1 of Month 10
6	Reporting to the PAC, PEM Board, and by request, to the DOE and ERC	Month 11
7	Meetings with the PEM Audit Committee and/or concerned process owners	As needed

Note: *Reports should be submitted and finalized upon completion of the audit of the respective Auditee. Draft report will be reviewed by the respective Auditee prior to finalization of the audit report.

4.2 Deliverables

- 4.2.1. The Independent Auditor shall submit one (1) soft copy file of the following reports:

- a. Inception Report – It shall contain the Independent Auditor’s Audit Plan, Methodology and Work Program. This shall confirm the audit scope and outline the audit approach, including the audit process, schedule of proposed client interaction throughout the audit period, among others, which shall be finalized together with the Independent Auditor and PEM Audit Committee, in consultation with the parties to be audited.

The Independent Auditor shall also conduct a workshop on the audit process and audit approach.

- b. Progress Reports – Monthly reports that shall highlight the status and relevant developments of the audit activities.

The Progress Report shall provide the following:

- i. Initial findings for the period covered by the Progress Report, including the recommendation and as applicable, the target date that the responsible audited party will address the finding;
- ii. Updates on initial findings – in situations where additional investigation is required; and
- iii. Status of Audit Activities.

The Progress Reports shall be submitted prior to and presented during the monthly PAC meeting scheduled every 2nd Tuesday of the month. A special meeting may likewise be scheduled as necessary.

- c. Significant Issues Report – It shall include findings that have material impact to the market and/or findings that need to be addressed immediately, if any. The Independent Auditor shall provide best practice recommendations based on other competitive electricity markets to address the significant issue.
- d. Individual Audit Reports – These are draft and final individual reports for all Auditees containing the following:
- i. Audit methodology;
 - ii. Main findings, including, but not limited to audit results of the specific tasks conducted under the scope of work; and identified non-compliance to the applicable rules including the level of materiality as set by the Independent Auditor;
 - iii. Recommendations, such as possible ways to improve the WESM and Retail Rules, including DOE Circulars and ERC Resolutions, operating procedures, control objectives, specific controls, practices and processes in order to address non-compliance or provide best practices; and
 - iv. Action Plans/ Responses / Comments by the Auditees relative to the findings and recommendations of the Independent Auditor.

Before the draft Individual Audit Report is finalized, the Independent Auditor shall give the concerned process owners the opportunity to comment and meet with the Independent Auditor to discuss the findings, if necessary.

- e. Holistic Report – It is the draft and final report summarizing all the Final Individual Reports. This report shall contain the following:
- i. Audit methodology;
 - ii. Main findings, including, but not limited to audit results of the specific tasks conducted under the scope of work; and identified non-compliance to the applicable rules including the level of materiality as set by the Independent Auditor;
 - iii. Recommendations, such as possible ways to improve the WESM and Retail Rules, including DOE Circulars and ERC Resolutions, operating procedures, control objectives, specific controls, practices and processes in order to address non-compliance or provide best practices; and
 - iv. Action Plans/ Responses/ Comments by the Auditees relative to the findings and recommendations of the Independent Auditor.

The Holistic Report shall have a public version which does not contain any confidential data and shall be published on the Market Information Website.

- 4.2.2. The Independent Auditor shall present its findings to the PAC, PEM Board, and if requested to the ERC and DOE. The Holistic Report will be made available to the PAC, PEM Board, WESM Governance Committees, ERC, DOE, and to the concerned Auditees, as deemed appropriate by the PAC.
- 4.2.3. The Independent Auditor shall submit an Audit Findings Register which is a centralized record or database that consolidates all findings, observations, nonconformities, and recommendations identified during audits. It will serve as the reference for tracking each issue from identification to closure. At a minimum, the Register will contain the following information:
- Rule or Manual Reference;
 - Rule or Manual Requirement;
 - Methodology used to identify observation/ findings;
 - Observation/finding;
 - Risk rating (based on the methodology that will be agreed upon with the PAC during the audit Inception Phase);
 - Compliance rating (based on the methodology that will be agreed upon with the PAC during the audit Inception Phase);
 - Review Recommendation;
 - Auditee Response/ Action Plan;
 - Auditor Comment; and
 - Audit trails of any key discussions.

4.3 Qualifications of Independent Auditor/ Independent Audit Team Members

- 4.3.1. The Independent Auditor's Audit Team shall be composed of competent audit professionals that have adequate experience and capability of understanding the business, information technology (IT), controls and processes that are adopted by similar electricity markets which are applicable to the WESM and Retail Market, and Market Governance.
- 4.3.2. The team shall have the following qualifications:
- a. The Team Leader (Key Auditor) shall have project management skills;
 - b. The members of the Audit Team shall include, but are not limited to, the following:
 - i. Audit expert (operations and financial);
 - ii. Information and communications technology expert;
 - iii. Electricity market operations expert;
 - iv. Regulatory expert (Legal, Finance, Economics);
 - v. Metering Audit expert (operations, processes, and controls);
 - vi. Metering Services expert; and
 - vii. Cybersecurity expert (cybersecurity standards for electrical metering and SCADA systems, such as IEC 62351);
 - c. The Audit Team shall collectively possess all of the following qualifications, or their equivalent:
 - i. Certified Information Systems Auditor (CISA);
 - ii. Certified Information Systems Security Professional (CISSP);
 - iii. ISO 27001 Auditor Certification for Information Security Management Systems (ISMS);
 - iv. Certified Internal Auditor (CIA);
 - v. Licensed Electrical Engineer with at least five (5) years of experience in revenue metering; and
 - vi. Level 1 Certified Thermographer;
 - d. The audit project is open to local and foreign auditing firms. Joint venture partnership is allowed.

4.4 Interface among the Independent Auditor, the Auditees, and PAC

- 4.4.1. The Independent Auditor shall conduct the audit under the supervision of the PAC and shall report to the PAC for the duration of the audit.
- 4.4.2. Audit activities shall be done through hybrid arrangements or subject to other arrangements to be agreed among the PAC, Auditees, and the Independent Auditor.
- 4.4.3. All activities of the Independent Auditor shall be accordingly coordinated with the PAC, through the PAC Secretariat. The PAC Secretariat shall extend all reasonable support to the Independent Auditor for the duration of its services, which support shall include, among others:
- a. Facilitate technical assistance of Auditees;
 - b. Provide necessary office space, internet access, access pass, etc.;

- c. Facilitate access to all data and information related to the audit subject matter. Any access rights needed to the data, information and software beyond this initial provision will be subject to applicable access management, safety management, data privacy and information security policy of the Auditee; and
- d. Arrange meetings with the PAC and Auditees to discuss issues and concerns pertaining to the conduct of the review, if any.

4.5 Confidentiality and Non-Disclosure Agreement (NDA) Requirements

- 4.5.1. The Independent Auditor shall ensure the removal of all confidential data used during the audit process upon the conclusion of the audit. The PEMC will send a formal request for confirmation of data deletion, and the Independent Auditor must provide written acknowledgment of compliance with this requirement.
- 4.5.2. The Independent Auditor shall be required to execute a Non-Disclosure Agreement (NDA) in favor of the MO/CRB or other Auditees, as may be required, as owner of the confidential data, and will be separate from an NDA it may execute in favor of PEMC/PEM Audit Committee. The NDA shall outline the Independent Auditor's obligations to maintain strict confidentiality throughout and after the audit process. The delivery of the duly executed NDA to the MO/CRB or other Auditees, as may be required, is a pre-requisite to the data provision under the audit. This requirement will be further discussed during the audit Kickoff meeting to ensure full understanding and compliance.
- 4.5.3. An evaluation of the engaged Independent Auditor's performance shall be conducted upon the conclusion of the audit. The Independent Auditor shall be evaluated in terms of quality of service, effectiveness of communication, and impartiality and professionalism. The evaluation shall also solicit comments on the audit process and improvement of the criteria being used in the evaluation.

4.6 Data Privacy

- 4.6.1 The Independent Auditor acknowledges and agrees that, in the course of providing the Services, it may receive or have access to Personal Information of PEMC's directors, officers, employees, MO/CRB, market participants, WESM governance committee members, and authorized representatives. The "Personal Information" shall have the meaning ascribed to it under Republic Act No. 10173, and its implementing rules and regulations, as may be amended from time to time (the "Data Privacy Act").
- 4.6.2 The Independent Auditor represents and warrants that its collection, access, use, storage, disposal, and disclosure of any Personal Information shall at all times comply with the Data Privacy Act and all other applicable data privacy and data protection laws and regulations.
- 4.6.3 In the event that the Independent Auditor will act as a Personal Information Processor, the Independent Auditor shall:

- i. Process the personal data including transfers of personal data to another country or an international organization, only upon the document instructions of PEMC;
- ii. Ensure that an obligation of confidentiality is imposed on persons authorized to process the personal data;
- iii. Implement appropriate security measures and comply with the Data Privacy Act and other relevant issuances of the National Privacy Commission ("NPC");
- iv. Not engage another Personal Information Processor without prior instruction from PEMC; Provided, that for any such arrangement authorized by PEMC, the Independent Auditor shall ensure that the same obligations for data protection are implemented, taking into account the nature of the processing;
- v. Assist PEMC, by appropriate technical and organizational measures and to the extent possible, fulfill the obligation to respond to requests by data subjects relative to the exercise of their rights;
- vi. Assist PEMC in ensuring compliance with the Data Privacy Act, other relevant laws, and other issuances of the NPC, taking into account the nature of processing and the information available to the Independent Auditor;
- vii. At the option of PEMC, delete or return all personal data to PEMC after the end of the provision of services relating to the processing; Provided that this shall include deleting exiting copies unless storage is authorized by the Data Privacy Act or other relevant laws;
- viii. Make available to PEMC all information necessary to demonstrate compliance with the obligations laid down in the Data Privacy Act, and allow for and contribute to audits, including inspections, conducted by PEMC or another auditor mandated by the latter; and
- ix. Immediately inform PEMC if, in its opinion, an instruction infringes the Data Privacy Act, or any other applicable issuance of the NPC.

4.7 Intellectual Property Requirements

- 4.7.1 Subject to section 4.7.2 and 4.7.3, all reports, data, documents and work product, created, used or produced by the Independent Auditor in performing the Services (hereafter, the "Work Product") shall be or remain the sole property of PEMC or the Auditees, as the case may be.
- 4.7.2 To the extent that such Work Product includes other pre-existing materials of the Independent Auditor or modifications and improvements made thereto, the Independent Auditor shall retain ownership of materials but grants PEMC a perpetual, royalty-free, non-exclusive right and license to use such materials in connection with PEMC's use of such Work Product and such grant expressly includes PEMC's right to release such Work Product.
- 4.7.3 To the extent that such Work Product includes third party materials, software or intellectual property that PEMC must license separately, the Independent Auditor shall inform PEMC of such license requirement and if requested by PEMC, assist PEMC in obtaining the appropriate license. The Independent Auditor warrants that all systems and equipment used from the Services, and all of the works created from the Services do not violate or infringe on any intellectual property right or any third-party claim. The Independent Auditor shall indemnify PEMC from and against any and all claims that may be asserted PEMC by reason of any infringement or alleged infringement of intellectual property rights in carrying out the Services.

- 4.7.4 This provision shall not be construed to limit the Independent Auditor's right to use for any purpose the residuals resulting from the performance of the Services for PEMC. As used herein, "residuals" shall mean technical information in non-tangible form, which may be developed or retained by persons who have provided Services or have had access to PEMC's or Auditees information or systems, including ideas, concepts, know-how and techniques contained therein.

FINAL

ANNEX A – LIST OF MSPs

Wholesale Metering Services Provider (WMSP)

No.	Metering Services Provider	Short Name	Region
1	Cotabato Electric Cooperative, Inc.	COTELCMSP	Mindanao
2	South Cotabato I Electric Cooperative, Inc	SCTCO1MSP	Mindanao
3	Cotabato Electric Cooperative, Inc. - PPALMA	PPALMAMSP	Mindanao
4	National Grid Corporation of the Philippines	NGCPMSP	Luzon, Visayas, and Mindanao

Retail Metering Services Provider (RMSP)

No.	Metering Services Provider	Short Name	Region
1	Angeles Electric Corporation	AECMSP	Luzon
2	Authority of the Freeport Area of Bataan	AFABMSP	Luzon
3	Aklan Electric Cooperative, Inc.	AKELCOMSP	Visayas
4	Albay Electric Cooperative, Inc.	ALECOMSP	Luzon
5	Agusan del Norte Electric Cooperative, Inc.	ANECOMSP	Mindanao
6	Antique Electric Cooperative, Inc.	ANTECOMSP	Visayas
7	Agusan del Sur Electric Cooperative, Inc.	ASELCOMSP	Mindanao
8	Benguet Electric Cooperative	BENECOMSP	Luzon
9	Balamban Enerzone Corporation	BEZMSP	Visayas
10	Bohol I Electric Cooperative, Inc.	BHCO1MSP	Visayas
11	Bohol II Electric Cooperative, Inc.	BHCO2MSP	Visayas
12	Bohol Light Company, Inc.	BLCIMSP	Visayas
13	Batangas I Electric Cooperative, Inc.	BTLC1MSP	Luzon
14	Batangas II Electric Cooperative, Inc.	BTLC2MSP	Luzon
15	Bukidnon Second Electric Cooperative, Inc.	BUSECOMSP	Mindanao
16	Capiz Electric Cooperative, Inc.	CAPELCMSP	Visayas
17	Camarines Sur II Electric Cooperative, Inc.	CASUR2MSP	Luzon
18	Cebu I Electric Cooperative, Inc.	CEBEC1MSP	Visayas
19	Cebu II Electric Cooperative, Inc.	CEBEC2MSP	Visayas
20	Cebu III Electric Cooperative, Inc.	CEBEC3MSP	Visayas
21	Clark Electric Distribution Corporation	CEDCMSP	Luzon
22	Cabanatuan Electric Corporation	CELCORMSP	Luzon
23	Central Pangasinan Electric Cooperative, Inc.	CENPELCOMSP	Luzon
24	Cagayan Electric Power & Light Company, Inc.	CEPALCMSP	Mindanao
25	Cagayan 1 Electric Cooperative, Inc. MSP	CGLCO1MSP	Luzon
26	Cagayan II Electric Cooperative, Inc.	CGLCO2MSP	Luzon
27	Consort Land, Inc.	CNSORTMSP	Luzon
28	Northern Davao Electric Cooperative, Inc.	DANECOMSP	Mindanao
29	Davao Del Sur Electric Cooperative, Inc.	DASURMSP	Mindanao
30	Dagupan Electric Corporation	DECORPMSP	Luzon
31	Davao Light and Power Company, Inc.	DLPCMSP	Mindanao
32	Don Orestes Romualdez Electric Cooperative, Inc.	DRLCOMSP	Visayas
33	First Bukidnon Electric Cooperative, Inc.	FIBECOMSP	Mindanao
34	First Industrial Township Utilities, Inc.	FITUIMSP	Luzon

No.	Metering Services Provider	Short Name	Region
35	First Laguna Electric Cooperative, Inc.	FLECOMSP	Luzon
36	Iloilo I Electric Cooperative, Inc.	ILECO1MSP	Visayas
37	Iloilo II Electric Cooperative, Inc.	ILECO2MSP	Visayas
38	Iloilo III Electric Cooperative, Inc.	ILECO3MSP	Visayas
39	Ilocos Norte Electric Cooperative, Inc.	INECMSP	Luzon
40	Ilocos Sur Electric Cooperative, Inc.	ISECOMSP	Luzon
41	Isabela I Electric Cooperative, Inc.	ISLCO1MSP	Luzon
42	Isabela II Electric Cooperative MSP	ISLCO2MSP	Luzon
43	Lanao Del Norte Electric Cooperative, Inc.	LANECOMSP	Mindanao
44	Leyte II Electric Cooperative, Inc.	LEYCO2MSP	Visayas
45	Leyte V Electric Cooperative, Inc.	LEYCOVMSP	Visayas
46	Lima Enerzone Corporation	LEZMSP	Luzon
47	La Union Electric Company, Inc.	LUECOMSP	Luzon
48	La Union Electric Cooperative, Inc.	LUELCOMSP	Luzon
49	Malvar Enerzone Corporation	MALVEZMSP	Luzon
50	Mactan Electric Company, Inc.	MECMSP	Visayas
51	Mactan Enerzone Corporation	MEZMSP	Visayas
52	Iligan Light and Power, Inc.	MILPIMSP	Mindanao
53	Misamis Occidental II Electric Cooperative, Inc.	MOELC2MSP	Mindanao
54	MORE Electric and Power Corporation	MOREMSP	Visayas
55	Manila Electric Company	MRLCOMSP	Luzon
56	Misamis Oriental-1 Rural Electric Service Cooperative, Inc.	MRSCO1MSP	Mindanao
57	Misamis Oriental II Electric Service Cooperative, Inc.	MRSCO2MSP	Mindanao
58	Nueva Ecija II Area 1 Electric Cooperative, Inc.	NEEC21MSP	Luzon
59	Nueva Ecija I Electric Cooperative, Inc.	NEECO1MSP	Luzon
60	Negros Electric and Power Corp.	NEPCMSP	Visayas
61	Negros Occidental Electric Cooperative	NOCECOMSP	Visayas
62	Northern Negros Electric Cooperative, Inc.	NONECOMSP	Visayas
63	Negros Oriental I Electric Cooperative, Inc.	NOREC1MSP	Visayas
64	Northern Samar Electric Cooperative, Inc.	NORSAMMSP	Visayas
65	Negros Oriental II Electric Cooperative, Inc.	NRECO2MSP	Visayas
66	Olongapo Electricity Distribution Company, Inc.	OEDCMSP	Luzon
67	Pampanga I Electric Cooperative, Inc.	PELCO1MSP	Luzon
68	Pampanga II Electric Cooperative, Inc.	PELCO2MSP	Luzon
69	Pampanga III Electric Cooperative, Inc.	PELCO3MSP	Luzon
70	Peninsula Electric Cooperative, Inc.	PENLCOMSP	Luzon
71	Pangasinan III Electric Cooperative	PNLCO3MSP	Luzon
72	Pampanga Rural Electric Service Cooperative, Inc.	PRESCOMSP	Luzon
73	Quezon I Electric Cooperative, Inc.	QZLCO1MSP	Luzon
74	San Jose City Electric Cooperative	SAJELCMSP	Luzon
75	South Cotabato II Electric Cooperative, Inc.	SCTCO2MSP	Mindanao
76	Subic Enerzone Corporation	SEZMSP	Luzon
77	San Fernando Electric Light & Power Co., Inc.	SFELAPMSP	Luzon
78	Samar I Electric Cooperative, Inc.	SMLCO1MSP	Visayas
79	Sorsogon II Electric Cooperative, Inc.	SOREC2MSP	Luzon
80	Sultan Kudarat Electric Cooperative Inc.	SUKELCMSP	Mindanao

No.	Metering Services Provider	Short Name	Region
81	Tarlac Electric, Inc.	TEIMSP	Luzon
82	Tarlac I Electric Cooperative, Inc.	TRLCO1MSP	Luzon
83	Tarlac II Electric Cooperative, Inc.	TRLCO2MSP	Luzon
84	Visayan Electric Company, Inc.	VECOMSP	Visayas
85	Zambales II Electric Cooperative, Inc.	ZAMEC2MSP	Luzon
86	Zamboanga del Norte Electric Cooperative, Inc.	ZANECOMSP	Mindanao

ANNEX B – LIST OF METERING SITES FOR INSPECTION

(intentionally removed due to confidentiality)