



TECHNICAL COMMITTEE 2019 ANNUAL REPORT

January 2019 to December 2019

MARCH 2020

PEMC *Go*

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I. 2019 ACCOMPLISHMENTS

The Technical Committee (TC) submits this Annual Report covering the activities undertaken and accomplished by the TC for the year 2019, and the proposed activities for the year 2020.

A. Study on the Period of Conduct of Testing and Commissioning per Type of Facility

The TC conducted an assessment on the appropriate period of the Conduct of Testing and Commissioning per Type of Technology, as requested by the Market Surveillance Committee (MSC). The purpose of the study is to provide recommendations on the appropriate period for the conduct of testing and commissioning, taking into consideration the complexity and the type of generation facility being tested.

Using the available data and review of best practices in other jurisdictions, the TC recommended the following to the MSC:

1. Proponents to the ERC for Power Plant Testing and Commissioning should submit their detailed plans, including the following information, among others:
 - (i) the type of tests to be performed;
 - (ii) the conditions for testing (including input parameters such as wind speed and water flow);
 - (iii) the parameters to be observed during testing;
 - (iv) the standards to be met; and
 - (v) the period for the conduct for each component of the tests.
2. Proponent's authorized representative should submit its Testing and Commissioning Plans under oath.

The TC transmitted its response letter to the MSC on 07 February 2019

B. Development of a framework for increased integration of VRE

The TC developed a general framework for increased integration of VRE and other new technologies into the WESM. This framework was translated to a work plan for the TC and PEMC.

The TC reviewed the following key market features which allowed the other electricity markets to effectively facilitate the integration of variable renewable technologies into the grid:

1. Gross pool market
 - Gross pool market provides a system for scheduling contracted and uncontracted generation and balancing supply and demand at all times.
2. Large market
 - System size is maximized to increase geographical diversity, access to the maximum possible number of generators for balancing is allowed, and the sharing of balancing errors between regions is facilitated.
3. Accurate price signals
 - Accurate price signals are important to assist market players in their alternative investment options for new generation capacities, demand side management (e.g. consumption curtailment in response to high prices), and network expansions.
4. Fast market
 - To address variability, the market should have a short dispatch interval and short delay times from scheduling to dispatch to reduce forecast errors and the amount of balancing reserves required.
5. Efficient ancillary services
 - Increased variability and uncertainty in electricity supply from VRE resources will have an impact in the reserve requirements. Frequency control ancillary services, particularly for secondary

(minute to minute) control, should be set dynamically to minimize integration costs.

Based on the initial review of the current WESM features and inputs from consultations, the TC identified the following as priority studies for 2019 until 2020.

1. Technical Review and Development of a Proposed Framework for Distribution Network Protocol (MO-SO-DU Interface); and
2. Proposed framework for energy storage system including the requirements for VRE

The TC presented the subject work plan to the PEM Board on 25 September 2019.

C. Real-Time Dispatch Schedule Compliance Issue of Toledo Power Corporation (TPC Sangi)

Following the request of PEMC Enforcement and Compliance Office (ECO), the TC held a discussion with ECO and Toledo Power Corporation (TPC) to provide comments and recommendations as regards the constraints that affect TPC Sangi's compliance with its real-time dispatch (RTD) schedules.

Based on the discussion, the TC submitted its comments and recommendations to the ECO highlighting that the frequent RTD non-compliances of TPC Sangi would have been prevented had the plant submitted its Technical Pmin to the Energy Regulatory Commission (ERC) on time. Also, the TC recommended the following actions to TPC Sangi:

1. Proceed with the disaggregation of TPC1 units and undergo capability testing, including the test for Pmin and Pmax, to be witnessed by NGCP; and
2. Submit to the ERC the Capability Test Report under oath to provide a strong justification for changes in its COC.

D. Review of TC Business Procedures

The TC approved the proposed amendments to the TC Internal Rules through a resolution, Resolution No. 2019-01, adopting the Technical Committee Internal Rules Issue 5.0.

The amendments to the TC Internal rules provides the following enhancements to the Committee's internal procedures in the conduct of its meeting and various activities:

- i. Designation of a Vice Chairperson in the TC's internal activities;
- ii. Transfer of the Secretariat function from the Market Assessment Group to the Corporate Planning Communications Department or any department designated by the PEMC Management;
- iii. Removal of the Grid Management Committee (GMC) and Distribution Management Committee (DMC) representatives from the composition of TC members to reflect the revised Guidelines¹;
- iv. Transfer of regular meetings from first Thursdays of the month to second Wednesdays of the month; and
- v. Consistency of terminologies throughout the Internal Rules.

The revised TC Internal Rules was made effective on 13 March 2019².

E. Review of Proposed Amendments to the WESM Rules and Manuals

As part its mandate under the WESM Rules 1.7.2³, the TC reviewed and submitted to the RCC its comments and suggestions to the following proposed amendments:

¹ Guidelines Governing the Constitution of the PEM Board Committees

² TC Resolution No. 2019-01 A Resolution Adopting the Technical Committee Internal Rules Issue 5.0

³ WESM Rules 1.7.2 – TC Responsibilities- Assist the Rules Change Committee (RCC) in relation to its assessment of proposals of a technical nature

- i. WESM Manual on Registration, Suspension and De-Registration Criteria and Procedures to Include Additional Modelling Requirements and Procedures;
- ii. Proposed Amendments to the WESM Manual on Registration, Suspension and De-Registration Criteria and Procedures to Harmonize with WESM Rules Changes;
- iii. Proposed Amendments to the WESM Manual on Registration, Suspension and De-Registration Criteria and Procedures to Clarify Basis for Registered Capacities of Generating Units in the WESM;
- iv. WESM Rules and Manual on Metering Standards and Procedures to Clarify the Entity Monitoring Wholesale Metering Services Provider Performance;
- v. Proposed Amendments to the WESM Manual on Metering Standards and Procedures to harmonize the WESM Metering Manual with the Philippine Grid Code (PGC) 2016 Edition, Philippine Distribution Code (PDC) 2017 Edition, and other regulatory issuances of the DOE and the ERC;
- vi. WESM Manual on Procedures for the Monitoring of Forecast Accuracy Standards for Must Dispatch Generating Unit to provide a more appropriate calculation and procedures for the monitoring of forecast percentage error;
- vii. WESM Rules, WESM Manual on Registration, Suspension and De-Registration Criteria and Procedures Issue 5.0 to Incorporate the Provisions of the Department of Energy (DOE) DC2019-02-0003, entitled “Providing for the Framework Governing the Operations of Embedded Generators”;
- viii. WESM Manual on Metering Standards and Procedures to Harmonize with the Site Specific Loss Adjustment Procedures of Wholesale Metering Services Providers; and
- ix. WESM Dispatch Protocol Manual to Enhance Procedures in Must-Run Unit (MRU) Accounting.

II. ONGOING ACTIVITY

A. Study on the Implementation of WESM in Mindanao

As part of its 2019 work plan, the TC reviewed the prevailing technical, commercial, and regulatory issues in the Mindanao grid which may affect the establishment and the eventual implementation of the electricity market in the region. The objective is to identify potential technical issues that may affect the operation of WESM Mindanao and to recommend possible solutions to address such potential issues.

To determine the issues and challenges in Mindanao market operations, the TC organized the following consultations/meetings:

Date	Entities	Purpose
March 2019	National Grid Corporation of the Philippines – System Operator (SO)	To provide an overview of the Mindanao Systems Operations and discuss issues encountered.
14 August 2019 at Cagayan de Oro City	<ol style="list-style-type: none"> 1. Embedded Generators 2. Distribution Utilities 3. Electric Cooperatives 4. NGCP-SO 5. IEMOP 	To gather technical and commercial concerns that the Mindanao stakeholders are currently experiencing or may experience with the impending WESM operation in the region.
04 October 2020	<ol style="list-style-type: none"> 1. Meeting with Distribution Utilities Cagayan Electric Power and Light Company, Inc. 	To discuss the following matters which were highlighted during the public consultation in Cagayan de Oro: <ul style="list-style-type: none"> • Market Network Modelling,

Date	Entities	Purpose
	2. Davao Light and Power Electric Company 3. South Cotabato Electric Cooperative II (SOCOTECOII)	<ul style="list-style-type: none"> Asset reclassification (ERC Resolution No. 23 Series of 2016), and Distribution Network Protocol (MO-SO-DU Interface).

The TC then presented their preliminary report on the Study of Embedded Generation for Mindanao to the PEM Board during its meeting on 28 August 2019.

Currently, the TC is formulating the protocol based on the best practices in other jurisdictions and the responsibilities and coordination requirements provided in the WESM Rules, Market Manual, and ERC and DOE issuances. The development of the said protocol is in parallel with the NGCP's effort, which is also tasked to establish a protocol for the dispatch of EGs scheduled in the WESM pursuant to the Department of Energy Circular No. 2019-02-0003 entitled "Providing the Framework Governing the Operations of the Embedded Generators".

The TC expects to complete the subject protocol by 2nd quarter of 2020.

B. Proposed Framework for Energy Storage System (ESS)

The TC has an on-going assessment of the current operations of the Battery and Energy Storage Systems (BESS) in the Philippines specifically on the BESS policies and implementation, registration in the WESM and pending applications before the DOE, and best practices in other jurisdictions.

The TC also organized a meeting with San Miguel Corporation Global Power (SMCGP) to discuss the opportunities and challenges regarding the participation of BESS in the market.

The TC will continue the development of a proposed framework for energy storage system including requirements for VRE until June 2020.

C. Support to PEM Audit Committee (PAC)

Pursuant to the TC's mandate in the WESM Rules, the TC provided comments on the following documents:

- i. Draft Market Readiness Assessment Criteria and Workshop Questionnaires; and
- ii. Terms of Reference for the Conduct of the 4th Review of Metering Installations and Arrangements (RMIA)

The TC also continued to provide assistance to the PEM Audit Committee (PAC) in the joint conduct of the 7th Market Operational (MO) Audit and 4th Review of Metering Installations and Arrangements (RMIA). The TC Chairperson was tasked to chair the Technical Working Group (TWG) and one member of the TC was also part of the TWG. The following are the activities done by the TWG for the year 2019:

- i. Finalization of the Request for Proposal (RFP) document
- ii. Shortlisting of eligible bidders and issuance of the RFP to the eligible bidders

The TWG activities for the 7th MO Audit and 4th RMIA are expected to be finished by the end of 2020.

III. TC 2020 WORK PLAN

Annex A provides details of the TC's program of activities for 2020 consistent with PEMC's Corporate Strategic Plan for 2019-2021 which was approved by the PEM Board on 27 March 2019.

IV. TC RESPONSIBILITIES AND MEMBERSHIP

A. Responsibilities

The responsibilities of the TC are set out in the WESM Rules⁴ as follows:

- i. Monitor technical matters relating to the operation of the spot market,
- ii. Provide a report to the PEM Board on any matter of a technical nature relating to any WESM member which in the reasonable opinion of the Technical Committee, causes:
 - a. That WESM Participant to be unable to comply with the WESM Rules;
or
 - b. Unintended or distortionary effects to the operation of the WESM;
- iii. Assist the PEM Board by providing expertise in relation to:
 - a. Information technology;
 - b. Metering technology and metering data; and
 - c. Any other matter of a technical nature relating to the spot market;
- iv. From time to time if the Technical Committee in its discretion deems necessary or appropriate, propose amendments to the WESM Rules in relation to technical matters, in accordance with chapter 8 with a view to:
 - a. Improving the efficiency and the effectiveness of the operation of the spot market; and
 - b. Improving or enhancing the prospects for the achievement of the WESM objectives; and
- v. Assist the Rules Change Committee in relation to its assessment of proposals of a technical nature to amend the WESM Rules under chapter 8.

⁴ WESM Rules Clause 1.7.2. *Responsibilities of the Technical Committee*

In addition, the TC is also tasked to conduct technical reviews and studies pursuant to the guidelines⁵ set forth in the TC Market Manual.

B. Membership

The members of the Technical Committee (“TC”) are as follows:

1. Mr. Jordan Rel C. Orillaza (Independent)
2. Mr. Fortunato C. Leynes (Independent)
3. Mr. Jaime V. Mendoza (Independent)
4. Mr. Ermelindo R. Bugaoisan, Jr. (SO representative)

Mr. Jordan Rel C. Orillaza was designated as chairperson on 25 May 2016 and was re-appointed as independent member of the TC on 30 October 2019. The SO representative, Mr. Ermelindo R. Bugaoisan, Jr., was appointed on 30 August 2018. Mr. Jaime V. Mendoza was re-appointed as DMC representative on 18 September 2017. Mr. Fortunato C. Leynes was appointed as an independent member of the TC on 28 November 2018.

⁵ WESM-TCMM-002 Section 4.3 *Procedures*

Submitted By:

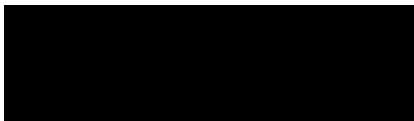
Technical Committee



Jordan Rel C. Orillaza
Chairperson



Fortunato C. Leynes
Vice Chairperson



Ermelindo R. Bugaoisan, Jr.
Member





Jaime V. Mendoza
Member

TECHNICAL COMMITTEE WORK PLAN 2020

ACTIVITIES		OUTPUTS	2020			
			Q1	Q2	Q3	Q4
POWER						
1	Incorporate EGs to the market	Technical Review and Development of a Proposed Framework for Distribution Network Protocol (MO-SO-DU Interface)				
2	Studies on VRE integration and other new technologies	Proposed framework for energy storage system including requirements for VRE				
3		Reserve Market benefit projection/analysis				
EFFICIENCY						
4	TWG for the Joint Conduct of 7th MO Audit and 4th RMIA	Participation to the TWG Activities				
5	Assist the PAC in the engagement of external auditors	Recommendation on the external auditors				
6	Assist PAC in the conduct of metering site inspection	Assistance to the PAC in the site inspection activities				
7	Review the External Auditors' Metering Review Report	Submission of comments/suggestions to the RMIA reports, as required				
8	Review of the Resiliency Standards, Business Continuity Plans, Contingency Plans and best practices in other jurisdictions	Submission of a report on IEMOP's Resiliency Standards, Business Continuity Plans, Contingency Plans to the PAC for consideration in the 7th MO Audit.				
9	Enhanced WGC processes based on best global practices	Proposed amendments to the TC Manual				

ACTIVITIES		OUTPUTS	2020			
			Q1	Q2	Q3	Q4
MARKET						
10	As required, provide inputs on documents/manuals related to the establishment of the RE Market	Comments/suggestions on the documents/manuals for the RE Market, as required.				
11	Attend trainings on RE Market and other related activities	Attendance to trainings and other related activities , as required.				
12	Study on the proposed design for the demand-side participation	Proposed framework including rules change to implement demand side participation				
EMPOWERED GOVERNANCE						
13	Regular conduct of TC Meetings (every 2nd Wednesday of the month)	Attendance to TC Meetings				
14	TC Annual Report and 2020 Work Plan	Submission and publication of TC 2019 Annual Report and 2020 Work Plan				
15	Attend PEMC Membership meetings, as scheduled	Attendance to PEMC Membership meetings, WCO Summit				
16	Provide comments to the RCC on the proposed amendments to WESM Rules and various Manuals	Comments to proposed amendments to WESM Rules and various Manuals				
17	Submit proposed amendments to the RCC as a result of market studies or best practice recommendations	Proposed amendments, as necessary				

Legend:  Submission/Completion of Report
 Regular Activity