

## Annex A

### Protocol for Central Scheduling and Dispatch of Energy and Contracted Reserves Issue 1.0

Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
INTRODUCTIO N	(new)	N / A	<b><u>1.1.4</u></b> <b><u>DOE, through their Department Circular DC2015-11-0018, promulgated the implementation of the Central Scheduling and Dispatch of Energy and Contracted Reserves. It was effectively implemented on 22 December 2015 for the Luzon grid. It was then implemented in the Visayas grid on 07 October 2017.</u></b>	The revision is being proposed to reflect the legal basis of the promulgation of the central scheduling and dispatch of energy and contracted reserves under the DOE DC 2015-11-0018.		
INTRODUCTIO N	(new)	N / A	<b><u>1.1.5</u></b> <b><u>DOE, through their Department Circular DC2015-10-0015, adopted Enhancements to the WESM Design and Operations, which</u></b>	The revision is being proposed to reflect the transition from 1-hour to five-minute dispatch interval upon the implementation of the enhanced WESM design and operations.		

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			<u>included the change from a 1-hour dispatch interval to a 5-minute dispatch interval.</u>			
INTRODUCTIO N	(new)	N / A	<u>1.1.6 DOE, through their Department Circular DC2019-12-0018, defined the classification and required levels of ancillary services (A/S) pending the harmonization of A/S related issuances and review of the relevant provisions of the 2016 edition of the Philippine Grid Code (PGC 2016).</u>	The revision is being proposed to reflect that this manual is being harmonized with the recent DOE DC 2019-12-0018 on the general framework governing the provision and utilization of ancillary services in the grid, and is also aligned with the 2016 edition of the PGC.		
INTRODUCTIO N	1.2.1	Pursuant to the DOE Department Circular	Pursuant to the DOE Department Circular DC2014-03-0009 <u>and DC2019-12-0018</u> , this	The revision is being proposed to reflect that this manual is aligned with the provisions of the DOE DC2019-12-0018.		

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		<p>DC2014-03-0009, this Protocol implements the directive for NGCP and PEMC to formulate the Central Scheduling and Dispatch of Reserves Protocol. This Protocol shall be referred to as the "Protocol for Central Scheduling and Dispatch of Energy and Contracted Reserves".</p>	<p>Protocol implements the directive for <b><u>the System Operator</u></b> and <b><u>the Market Operator</u></b> PEMC—to formulate and maintain the Central Scheduling and Dispatch of Reserves Protocol. This Protocol shall be referred to as the "Protocol for Central Scheduling and Dispatch of Energy and Contracted Reserves".</p>	<p>With the transition of market operations to the Independent Market Operator, it is also proposed that references to PEMC be revised to Market Operator.</p>		

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INTRODUCTION	(new)	N / A	<p><b><u>1.2.5</u></b>  <b><u>This Protocol shall continue to be applied upon the implementation of the 5-minute dispatch interval unless otherwise stated by a new directive from the DOE and/or the ERC.</u></b></p>	<p>The revision is being proposed to reflect that this protocol will be applicable and effective with the implementation of the enhanced WESM design and operations.</p>		
INTRODUCTION	1.3.1	<p>This Protocol shall apply to the Market Operator, the System Operator and all WESM Members, including intending WESM Members, and</p>	<p>This Protocol shall apply to the <i>Market Operator</i>, the <i>System Operator</i> and all <i>WESM Members</i>, including <i>intending WESM Members</i>, and <b><u>WESM Participants</u></b> in the electric power industry for a limited period and shall immediately cease upon New Commercial Launch Date of the WESM Reserve Market pursuant to the provisions of the <i>DOE</i></p>	<p>The revision is being proposed to reflect that this manual is aligned with the provisions of the DOE DC2019-12-0018.</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		Participants in the electric power industry for a limited period and shall immediately cease upon New Commercial Launch Date of the WESM Reserve Market pursuant to the provisions of the DOE Department Circular No. DC2014-03-0009.	Department Circular No. DC2014-03-0009 <u>and DC2019-12-0018.</u>			
INTRODUCTION	1.3.2	Pursuant to the	Pursuant to the provisions of the <i>DOE</i>	The revision is being proposed to reflect that this manual is aligned with the		

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		provisions of the DOE Department Circular No. DC2014-03-0009, all scheduled ASPA Contracts shall be settled in accordance with the respective provisions of their contract and no settlement of reserves shall be made in the WESM.	Department Circular No. DC2014-03-0009 <b>and DC2019-12-0018</b> , all scheduled ASPA Contracts shall be settled in accordance with the respective provisions of their contract and no <i>settlement of reserves</i> shall be made in the <i>WESM</i> .	provisions of the DOE DC2019-12-0018.		
DEFINITIONS, REFERENCES AND INTERPRETATION	2.1.2	Unless otherwise defined in the	Unless otherwise defined in <del>the Glossary</del> <b>Section 2</b> of this document or unless the	This Manual does not have Glossary. Definitions are provided in Section 2.		

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		Glossary of this document or unless the context provides otherwise, all terms used in this Protocol that are defined in the WESM Rules shall have the meaning as so defined in the WESM Rules and relevant Market Manuals.	context provides otherwise, all terms used in this Protocol that are defined in the WESM Rules shall have the meaning as so defined in the WESM Rules and relevant Market Manuals.			
DEFINITIONS, REFERENCES AND INTERPRETATION		(new)	<b><u>2.1.3 Maximum Operating Limit refers to the maximum MW capability that a</u></b>	For clarity, since this term is used in Section 5.1		

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			<p><u>generator can obtain for a target time or dispatch interval based on its offer capacity while considering its current state, its ramp-up capability, and over-riding constraints, if there are any.</u></p>			
DEFINITIONS, REFERENCES AND INTERPRETATION		(new)	<p><b>2.1.4 Minimum Operating Limit</b> <u>refers to the minimum MW capability that a generator can obtain for a target time or dispatch interval based on its offer capacity while considering its current state, its ramp-down capability, and over-riding constraints, if there are any.</u></p>	For clarity, since this term is used in Section 5.1		
REFERENCES	2.2.1	This	This Protocol should be	The revision is being		



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		Protocol should be read together with WESM Dispatch Protocol Manual, including Chapters 3 and 6 of the WESM Rules, whenever applicable, and the DOE Department Circular No. DC2014-03-0009.	read together with <i>WESM</i> Dispatch Protocol Manual, including Chapters 3 and 6 of the <i>WESM Rules</i> , whenever applicable, and the <i>DOE</i> Department Circular No. DC2014-03-0009 <b><u>and DC2019-12-0018.</u></b>	proposed to reflect that this manual is aligned with the provisions of the DOE DC2019-12-0018.		
RESPONSIBILITIES	3.2.3	The System Operator shall continue to perform the monitoring,	The System Operator shall continue to <b><u>contract out AS required capacities</u></b> <b><u>and</u></b> perform the monitoring, and	The revision is being proposed to clarify that SO shall have the responsibility to contract out the ancillary services required capacities.		

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		and settlement of reserves pursuant to each provider's ASPA.	settlement of reserves pursuant to each provider's ASPA.			
CENTRAL SCHEDULING OF RESERVE CAPACITIES	4.1	4.1 DETERMINATION OF RESERVE REQUIREMENTS 4.1.1 Appendix A.12 – Section 4 of the WESM Dispatch Protocol Manual provides the criteria for the determination of reserve requirements wherein	4.1 <del>DETERMINATION OF</del> <b>RESERVE TYPES AND RESERVE REQUIREMENTS</b> 4.1.1 Appendix A.12 – Section 4 of the WESM Dispatch Protocol Manual provides the criteria for the determination of reserve requirements wherein all reserve requirement levels are set by the System Operator through the Ancillary Services Procurement Plan (ASPP) or as ERC-approved level of reserve requirement. <b>As stated in DOE Department Circular</b>	The revision is being proposed to reflect that the reserve types and reserve requirements were harmonized and aligned with the provisions of the DOE DC2019-12-0018.		

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		<p>all reserve requirement levels are set by the System Operator through the Ancillary Services Procurement Plan (ASPP) or as ERC-approved level of reserve requirement.</p> <p>4.1.2 The Market Operator shall use the results of the hourly forecasted demand of the 1200H Day-Ahead Projection</p>	<p><b><u>DC2019-12-0018, the following reserve types, and its associated reserve requirements, shall be allocated per one-hour interval and per grid.</u></b></p> <table border="1" data-bbox="768 597 1123 1417"> <thead> <tr> <th data-bbox="768 597 908 691"><u>Reserve Type</u></th> <th data-bbox="908 597 1123 691"><u>Description</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="768 691 908 1230"><u>Regulating Reserve</u></td> <td data-bbox="908 691 1123 1230"><u>Readily available and dispatchable generating capacity that is allocated exclusively to correct deviations from the acceptable nominal frequency caused by unpredicted variations in demand or generation output</u></td> </tr> <tr> <td data-bbox="768 1230 908 1417"><u>Contingency Reserve</u></td> <td data-bbox="908 1230 1123 1417"><u>Synchro-nized generation capacity from qualified generating units and qualified</u></td> </tr> </tbody> </table>	<u>Reserve Type</u>	<u>Description</u>	<u>Regulating Reserve</u>	<u>Readily available and dispatchable generating capacity that is allocated exclusively to correct deviations from the acceptable nominal frequency caused by unpredicted variations in demand or generation output</u>	<u>Contingency Reserve</u>	<u>Synchro-nized generation capacity from qualified generating units and qualified</u>			
<u>Reserve Type</u>	<u>Description</u>											
<u>Regulating Reserve</u>	<u>Readily available and dispatchable generating capacity that is allocated exclusively to correct deviations from the acceptable nominal frequency caused by unpredicted variations in demand or generation output</u>											
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		<p>(DAP) for the regulating, contingency, and dispatchable reserve requirements for the next day.</p> <p>4.1.3 Should the System Operator prescribe regulating, contingency, and dispatchable reserve requirements for relevant periods, the Market Operator shall use</p>		<p><u>interruptible loads allocated to cover the loss or failure of a synchronized generating unit or a transmission element or the power import from a circuit interconnection</u></p>	<p>generating units, (b) transmission element, or (c) power import from a circuit interconnection</p>		
			<p><u>Dispatchable Reserve</u></p>	<p>Generating capacity that is not scheduled for regular energy supply, <u>regulating reserve, contingency reserve, or interruptible loads not scheduled for contingency reserve, and that are readily available for dispatch in order to replenish the contingency reserve service whenever a generating unit trips or a loss of a single transmi-</u></p>	<p>Maximum capacity among the (a) second largest synchronized generating units, (b) transmission element, (c) power import from a circuit interconnection</p>		

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		such levels as input to the MDOM for consistency .	<table border="1" data-bbox="768 264 1118 362"> <tr> <td data-bbox="768 264 908 362"></td> <td data-bbox="908 264 1118 362"><del>ssion inter-connection occurs</del></td> </tr> </table> <p data-bbox="768 394 1118 930">4.1.2 The <del>Market Operator</del> shall use the results of the hourly forecasted demand of the 1200H Day-Ahead Projection (DAP) for the regulating, contingency, and <del>dispatchable reserve</del> requirements for the next day. <b><u>For regulating reserves, the requirement shall be:</u></b></p> <p data-bbox="768 946 1118 1222"><b><u>4.1.2.1 Set to 2% of the demand for upward regulation, and 2% of the demand for downward regulation</u></b></p> <p data-bbox="768 1271 1118 1398"><b><u>4.1.2.2 The System Operator may, at its option, set different</u></b></p>		<del>ssion inter-connection occurs</del>			
	<del>ssion inter-connection occurs</del>							

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			<p><u>reserve requirement levels for upward regulation and downward regulation provided that they add up to the prescribed regulating reserve requirement that is stated in clause 4.1.1 of this Protocol.</u></p> <p>4.1.3 — Should the System Operator prescribe regulating, contingency, and dispatchable reserve requirements for relevant periods, the Market Operator shall use such levels as input to the MDOM for consistency.</p>			
CENTRAL SCHEDULING OF RESERVE CAPACITIES	(inserted)	(new)	<p><u>4.2 Use of Day-Ahead Projections and Over-</u></p>	Transferred original Section 4.1.2 and provided details		

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			<u>riding Constraints</u>			
CENTRAL SCHEDULING OF RESERVE CAPACITIES	(inserted)	(new)	<b><u>4.2.1</u></b> <b><u>The <i>Market Operator</i> shall provide the results of the <i>Day-Ahead Projection</i>, particularly covering the one-hour intervals of the next trading day, to the <i>System Operator</i> so that it can be used for determining the <i>MW</i> levels of the reserve requirement for each type of reserve in each <i>grid/region</i>.</u></b>	Transferred from original Section 4.1.2		
CENTRAL SCHEDULING OF RESERVE CAPACITIES -	(inserted)	(new)	<b><u>4.2.2</u></b> <b><u>The <i>System Operator</i> shall submit the level of reserve requirement for each type of reserve of each <i>grid/region</i> for a period of time, while</u></b>	Transferred from original Section 4.1.2		

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			<p><u>taking into account the covered period of the <i>market projections</i> and the real-time <i>dispatch</i>, and in accordance with the <i>WESM Timetable</i>.</u></p>			
CENTRAL SCHEDULING OF RESERVE CAPACITIES	(inserted)	(new)	<p><b>4.2.3</b>  <u>The <i>System Operator</i> may submit <i>over-riding constraints</i> to impose limits on the energy flow along specific <i>transmission lines</i> or branch groups to allow reserve capacities to be dispatched without over-loading.</u></p>	Proposed to ensure that scheduled reserves may be utilized in real-time to provide the service without overloading lines		
CENTRAL SCHEDULING OF RESERVE CAPACITIES	(inserted)	(new)	<p><b>4.2.4</b>  <u>At the very least, the limitation of the energy flow along specific <i>transmission</i></u></p>	Proposed to ensure that scheduled reserves may be utilized in real-time to provide the service without overloading lines		



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			<u>lines or branch groups shall allow additional energy flow equivalent to the upward regulation requirement.</u>			
CENTRAL SCHEDULING OF RESERVE CAPACITIES	(inserted)	(new)	<b>4.2.5</b> <u>The Market Operator shall use the Day-Ahead Ancillary Service Schedule (DAASS) provided by the System Operator to validate the AS schedule nominated by the Trading Participant and ensure that the capacities scheduled be available in the Real-Time Dispatch (RTD).</u>	Proposed to ensure that validation of AS schedule nominated by Trading Participant be based on the submitted DAASS from SO and to ensure the availability of the capacities schedule in the RTD.		
CENTRAL SCHEDULING OF RESERVE CAPACITIES	4.2	4.2 Submission of Generation and	4.2 <del>3</del> Submission of Generation and Reserve Offers for Market Projections 4.2 <del>3</del> .1 XXX	Re-numbered with the insertion of Section 4.2  Clarify the timelines for submitting reserve offers		

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		<p>Reserve Offers for Market Projections</p> <p>4.2.1 XXX</p> <p>4.2.2 Only trading Participants with ERC-Approved ASPA shall submit reserve offers for the market projections (WAP and DAP) of the WESM. The reserve offers shall correspond to their ancillary nominations to NGCP pursuant to</p>	<p>4.23.2 Only <del>trading</del> Participants with ERC-Approved ASPA shall submit reserve offers <b><u>for the one-hour intervals of the next trading day</u></b> for the market <del>projections</del> (WAP and DAP) of the WESM <b><u>prior to 1130H of the current trading day</u></b>. The <b><u>capacities of their</u></b> reserve offers shall correspond to their ancillary nominations to <b><u>the System Operator</u></b> NGCP pursuant to the provisions of their respective ASPAs.</p>			

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		<p>the provisions of their respective ASPAs.</p> <p>4.2.3 Trading Participants shall submit their generation and reserve offers consistent with the WESM Timetable for the Week-Ahead and Day-Ahead market projections to provide a more accurate determination of reserve requirements as set</p>				

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		forth in				
		<p>Section 4.1 of this Protocol.</p> <p>4.2.4 The submission of nominations and offers for Ancillary Services shall be based on per single unit per single type per interval of reserve service in accordance with Appendix A.12 of the WESM Dispatch Protocol Manual.</p>	<p><del>4.2.3.33</del> <i>Trading Participants</i> shall submit their <i>generation</i> and <i>reserve offers</i> consistent with the <i>WESM Timetable</i> for the <del>Week-Ahead and Day-Ahead</del> <i>market Projections</i> to provide a more accurate determination of <i>reserve</i> requirements as set forth in Section 4.1 of this Protocol.</p> <p><del>4.2.4 The submission of nominations and offers for Ancillary Services shall be based on per single unit per single type per interval of reserve service in accordance with Appendix A.12 of the WESM Dispatch Protocol Manual.</del></p>	<p>The System Operator is now allowing reserve provision on an aggregate basis (e.g., Trans-Asia, Subic Enron).</p> <p>Transferred to proposed Section 4.2</p> <p>Original Sections 4.2.6 and 4.2.7 will not be required with the implementation of economic scheduling of Pmin under enhanced WESM design and operations</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>4.2.5 The Trading Participant shall see to it that the nomination submitted to the Market Operator shall be based on the day-ahead ancillary service schedule (DAAS) approved by the System Operator. For Regulating Reserves, only 50% (one-half) of</p>	<p><del>4.2.5 The Trading Participant shall see to it that the nomination submitted to the Market Operator shall be based on the day-ahead ancillary service schedule (DAAS) approved by the System Operator. For Regulating Reserves, only 50% (one-half) of the approved capacity by the System Operator shall be reflected by the Trading Participant to the Market Operator through the Market Participant Interface (MPI).</del></p> <p>4.2.6 If a generating unit is not scheduled as a dispatchable reserve, and it has a zero commercial P<sub>min</sub> and a</p>	<p>MNM representation should be consistent with the System</p>		

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		<p>the approved capacity by the System Operator shall be reflected by the Trading Participant to the Market Operator through the Market Participant Interface (MPI).</p> <p>4.2.6 If a generating unit is not scheduled as a dispatchable reserve, and it has a zero</p>	<p><del>non-zero technical Pmin, the Market Operator shall submit a security limit for that generating unit indicating its technical Pmin as the minimum operating limit, whereas its maximum operating limit shall correspond to its maximum offered capacity.</del></p> <p><del>4.2.7 If a generating unit is scheduled as a dispatchable reserve, and it has a non-zero commercial Pmin, the Market Operator shall submit a security limit for that generating unit indicating zero (0) as its minimum operating limit, whereas its maximum operating limit shall correspond to its maximum offered</del></p>	Operator.		

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		<p>commercial Pmin and a non-zero technical Pmin, the Market Operator shall submit a security limit for that generating unit indicating its technical Pmin as the minimum operating limit, whereas its maximum operating limit shall correspond to its maximum offered capacity.</p>	<p>capacity.</p> <p><b><u>4.3.4</u></b>  <b><u>The generating unit representation of A/S providers in the Market Network Model shall be consistent with the System Operator's model for scheduling, monitoring, dispatching, and settlement of such A/S providers.</u></b></p>			

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>4.2.7 If a generating unit is scheduled as a dispatchable reserve, and it has a non-zero commercial Pmin, the Market Operator shall submit a security limit for that generating unit indicating zero (0) as its minimum operating limit, whereas its maximum operating limit shall</p>				



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		correspond to its maximum offered capacity.				
CENTRAL SCHEDULING OF RESERVE CAPACITIES	4.3	4.3 Day-Ahead Scheduling of Reserves by the System Operator 4.3.1 XXX 4.3.2 Trading Participant shall ensure that they nominate all available capacity to the Market Operator based on the approved	<del>4.34</del> Day-Ahead Scheduling of Reserves by the System Operator <del>4.34.1</del> XXX <del>4.34.2</del> Trading Participants shall ensure that they nominate all <b>submit their maximum</b> available capacity to the Market Operator <b>WESM, inclusive of reserve offers</b> based on the approved day-ahead ancillary schedule. <del>4.34.33</del> The System Operator shall provide the <b>reserve requirements and</b> approved day-ahead ancillary service schedule (DAASS) to	Re-numbered with the insertion of Section 4.2.  To clearly define timelines for submission of information to the Market Operator, Trading Participants, and A/S providers		

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		<p>day-ahead ancillary schedule.</p> <p>4.3.3 The System Operator shall provide the approved day-ahead ancillary service schedule (DAAS) to the Market Operator and ASPA providers not later than 1700H.</p>	<p>the <i>Market Operator</i> and ASPA providers not later than 1700H.</p> <p><b><u>4.4.4</u></b>  <b><u>The System Operator shall provide the approved day-ahead ancillary service schedule (DAASS) to the relevant Trading Participants and ASPA providers not later than 1700H.</u></b></p> <p><b><u>4.4.5</u></b>  <b><u>By 1900H, Trading Participants shall submit their updated generation and reserve offers for the next trading day, ensuring that the reserve offer submitted to the Market Operator shall be consistent with their respective DAASS.</u></b></p> <p><b><u>4.4.6 For Regulating</u></b></p>			

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			<p><u>Reserves, unless otherwise distinctly specified by the System Operator, Trading Participants shall submit half of its DAASS capacity for upward regulation, whereas the other half shall be submitted for downward regulation to the Market Operator through the Market Participant Interface (MPI).</u></p>			
CENTRAL SCHEDULING OF RESERVE CAPACITIES	4.4	4.4 Submission of Generation and Reserve Offers for the Real-Time Dispatch (RTD)	<p>4.4<u>5</u> Submission of Generation and Reserve Offers for the Real-Time Dispatch (RTD)            4.4<u>5</u>.1 XXX             4.4<u>5</u>.2 <i>Trading Participants</i> that were scheduled by the</p>	Re-numbered with the insertion of Section 4.2.		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>4.4.1 XXX 4.4.2 Trading Participants that were scheduled by the System Operator to provide a specific reserve for a specific trading interval shall submit a reserve offer in the WESM equivalent to the capacity scheduled by the System Operator in accordance</p>	<p>System Operator to provide a specific reserve <b>service</b> for a specific trading <b>one-hour</b> interval shall submit a <i>reserve offer</i> in the <del>WESM equivalent to the capacity scheduled by the System Operator in accordance with Section 4.3 of this Protocol</del> <b>based on the following guidelines:</b></p> <ul style="list-style-type: none"> <li>a. Only two (2) <i>reserve offer</i> break quantities shall be submitted</li> <li>b. The first block should have a quantity (MW) of 0 MW</li> <li>c. The second block should have a quantity equivalent to the <del>day-ahead</del></li> </ul>			

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		<p>with Section 4.3 of this Protocol.</p> <p>a. Only two (2) reserve offer break quantities shall be submitted</p> <p>b. The first block should have a quantity (MW) of 0 MW</p> <p>c. The second block should have a quantity equal</p>	<p>schedule <b>DAASS</b> identified in Section 4.3<del>4</del> of this Protocol for that relevant trading interval</p> <p>d. The first and second price offer blocks shall be priced at PhP0.0/MWh only.</p> <p><b>e. For <u>regulating reserves, unless otherwise distinctly specified by the System Operator, Trading Participants shall submit half of its DAASS capacity for upward regulation, whereas the other half shall be submitted for downward</u></b></p>			

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		<p>ent to the day-ahead schedule identified in Section 4.3 of this Protocol for that relevant trading interval</p> <p>d. The first and second price offer blocks shall be priced at PhP0.0/MWh only.</p>	<p><u>regulation.</u></p>			

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		<p>4.4.3 For Trading Participants that were scheduled by NGCP to provide regulation service for the next day(s), they shall submit a reserve offer equal to one-half (1/2) of their day-ahead ancillary schedule to account for the upward and downward dispatch.</p> <p>4.4.4 All</p>	<p><del>4.4.3 For Trading Participants that were scheduled by NGCP to provide regulation service for the next day(s), they shall submit a reserve offer equal to one-half (1/2) of their day-ahead ancillary schedule to account for the upward and downward dispatch.</del></p> <p><u>4.45.43</u> All <i>Trading Participants</i> shall observe the "Open Market Window" in submitting <i>generation</i> and <i>reserve offers</i> as stated in Section 4.4 of Appendix A.1 of the <i>WESM Dispatch Protocol Manual</i>.</p>			

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		Trading Participants shall observe the "Open Market Window" in submitting generation and reserve as stated in Section 4.4 of Appendix A.1 of the WESM Dispatch Protocol Manual.				
CENTRAL SCHEDULING OF RESERVE CAPACITIES	4.5	4.5 Re-nomination of Reserve Capacities	<p><b><u>4.56 Revision in the Reserve Requirements and</u></b> Re-nomination of Reserve Capacities</p> <p><b><u>4.6.1 The System Operator</u></b></p>	Re-numbered with the insertion of Section 4.2.		



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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>4.5.1 All ASPA providers may re-nominate capacities for reserve during the actual day of implementation subject to the re-nomination and approval process set forth by the System Operator.</p>	<p><u>may update the reserve requirements at any time, as may be necessary.</u></p> <p><del>4.5.12</del> All ASPA providers may re-nominate capacities for reserve during the actual day of implementation subject to the <b>AS Guidelines on</b> re-nomination and approval process set forth by the <i>System Operator</i>.</p>			
		<p>4.5.2 Should an ASPA</p>	<p><del>4.5.23</del> Should an ASPA provider's re-nominated capacity be</p>	<p>Ensure that possible re-nomination of reserve capacities will be in accordance with the AS</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>provider's re-nominated capacity be approved by the System Operator, the ASPA provider shall update its generation and reserve offer in the WESM for the relevant trading intervals while observing the "Open Market Window" as stated in Section 4.4 of Appendix</p>	<p>approved by the <i>System Operator</i>, the ASPA provider shall update its <i>generation</i> and <i>reserve offer</i> in the WESM for the relevant trading <b><u>one-hour</u></b> intervals while observing the "Open Market Window" as stated in <del>Section 4.4 of Appendix A.1 of the</del> <i>WESM Dispatch Protocol Manual</i>.</p>	<p>Guidelines processes set forth by SO</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		A.1 of the WESM Dispatch Protocol Manual.				
CENTRAL SCHEDULING OF RESERVE CAPACITIES	4.6	4.6 Setting of Constraint Violation Coefficients during Transition	<del>4.6 Setting of Constraint Violation Coefficients during Transition</del>	Constraint violation coefficients with central scheduling are provided in the WESM Manual on Constraint Violation Coefficients and Pricing Re-Runs.		
CENTRAL SCHEDULING OF RESERVE CAPACITIES	4.7	4.7 XXX  4.7.1 Trading Participants shall ensure that their generators are at the appropriate loading levels prior to the trading intervals where it is	4.7 XXX  4.7.1 Trading Participants shall ensure that their generators are at the appropriate loading levels prior to the trading intervals where it is expected to provide reserve service. This is to ensure that they obtain their intended energy and reserve	Clause provides basis for the MMS to ensure reserve offers are amply scheduled to meet the reserve requirements, subject to the provisions in clause 4.7.2 and 4.7.3  Provides reference from the CVC manual in setting priorities for scheduling		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>expected to provide reserve service. This is to ensure that they obtain their intended energy and reserve schedules for the Real-Time Dispatch (RTD) considering their ramping characteristics.</p> <p>4.7.2 If a generating unit is not scheduled as a dispatchable reserve, and it has a zero commercial</p>	<p><del>schedules for the Real-Time Dispatch (RTD) considering their ramping characteristics.</del></p> <p><b><u>Generating units shall obtain reserve schedules based on the submitted reserve offers in Sections 4.5 and 4.6 of this Protocol with the objective of satisfying the reserve requirements by the System Operator.</u></b></p> <p>4.7.2 If a generating unit is not scheduled as a dispatchable reserve, and it has a zero commercial P<sub>min</sub> and a non-zero technical P<sub>min</sub>, the Market Operator shall submit a security limit for that generating unit indicating its technical</p>	<p>energy and reserve capacities in times of supply deficiency</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>Pmin and a non-zero technical Pmin, the Market Operator shall submit a security limit for that generating unit indicating its technical Pmin as the minimum operating limit, whereas its maximum operating limit shall correspond to its maximum offered capacity.</p>	<p><del>Pmin as the minimum operating limit, whereas its maximum operating limit shall correspond to its maximum offered capacity</del> <b><u>there is an insufficiency in the generation capacities to meet the energy and reserve requirements, the Market Management System shall schedule energy and reserve capacities based on the order of priority set in the WESM Manual on Constraint Violation Coefficients and Pricing Re-Runs.</u></b></p>			
		<p>4.7.3 If a generating unit is</p>	<p><del>4.7.3 If a generating unit is scheduled as a dispatchable reserve,</del></p>	<p>Provides reference from the CVC manual in setting priorities for scheduling energy and reserve capacities</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>scheduled as a dispatchable reserve, and it has a non-zero commercial Pmin, the Market Operator shall submit a security limit for that generating unit indicating zero (0) as its minimum operating limit, whereas its maximum operating limit shall correspond to its maximum</p>	<p><del>and it has a non-zero commercial Pmin, the Market Operator shall submit a security limit for that generating unit indicating zero (0) as its minimum operating limit, whereas its maximum operating limit shall correspond to its maximum offered capacity.</del> <b><u>there is a thermal or an N-1 contingency constraint, the Market Management System shall schedule a generator's capacity to be scheduled for energy instead of being allocated for reserve service based on the order of priority set in the WESM Manual on Constraint Violation Coefficients and</u></b></p>	<p>in times of supply deficiency</p> <p>Transferred from 4.7.1</p>		

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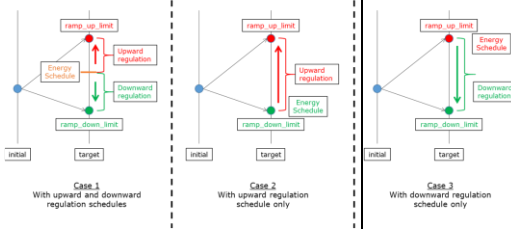
Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>offered capacity.</p> <p>4.7.4 XXX</p> <p>4.7.5 XXX</p> <p>4.7.5.1 XXX</p> <p>4.7.5.2 XXX</p> <p>4.7.5.3 XXX</p> <p>4.7.6 XXX</p>	<p><b><u>Pricing Re-Runs.</u></b></p> <p><b><u>4.7.4</u></b></p> <p><b><u>Trading Participants shall ensure that their generators are at the appropriate loading levels prior to the trading intervals where it is expected to provide reserve service. This is to ensure that they obtain their intended energy and reserve schedules for the Real-Time Dispatch (RTD) considering their ramping characteristics.</u></b></p> <p><b><u>4.7.5</u></b></p> <p><b><u>The Market Management System shall consider ramping constraints for upward and</u></b></p>			

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
			<p><u>downward regulation services.</u> The following equations show the constraints for energy and regulation schedules while considering ramping limitations:</p> <p><u>4.7.5.1. [Energy] – [Downward regulation] <math>\geq</math> [ramp down limit]</u></p> <p><u>4.7.5.2. [Energy] + [Upward regulation] <math>\leq</math> [ramp up limit]</u></p> <p><u>4.7.6</u>  <u>With respect to the constraints shown in clause 4.7.5 of this Protocol,</u> the following illustration shows the different cases of the joint</p>			



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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
			<p><b><u>ramping of energy and regulation (upward and downward).</u></b></p>  <p>4.7.47 XXX            4.7.58 XXX                4.7.58.1 XXX                4.7.58.2 XXX                4.7.58.3 XXX            4.7.69 XXX</p>			
SETTLEMENT OF RESERVE CAPACITIES	4.9	4.9 Settlement of Reserve Capacities  4.9.1 XXX 4.9.2 XXX 4.9.3 Section 4.9.2 shall also consider the	4.95.1 Settlement of Reserve Capacities  4.95.1.1 XXX 4.95.1.2 XXX 4.95.1.3 Section 4.9.2 shall also consider <b>the</b> energy schedule obtained by an ASPA provider while being scheduled for <b>downward</b> regulation in the RTD because of the	Re-numbered with the insertion of the provision as new Section 5  Used minimum and maximum operating limits instead of Pmin and Pmax for a more correct statement of how head-room constraints are applied in the MDOM.		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>energy schedule obtained by an ASPA provider while being scheduled for regulation in the RTD because of the head-room constraint in the Market Dispatch Optimization Model (MDOM). The head-room constraint is imposed in the MDOM so that the energy and regulating reserve schedules are set in a manner so</p>	<p>head-room constraint in the <i>Market Dispatch Optimization Model</i> (MDOM) <b><u>shall also be considered</u></b>. The head-room constraint is imposed in the MDOM so that the energy and <i>regulating reserve</i> schedules are set in a manner so that the downward and upward dispatch of the <i>regulating reserve</i> will not violate the minimum <del>stable loading</del> (<math>P_{min}</math>) and maximum available capacity (<math>P_{max}</math>) <b><u>operating limits of a generator</u></b>, respectively.</p>	<p>The projections on the spot transactions for the reserve market may be inaccurate and may cause an incorrect perception of how the reserve market will operate.</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>that the downward and upward dispatch of the regulating reserve will not violate the minimum stable loading (Pmin) and maximum available capacity (Pmax), respectively .</p>	<div data-bbox="774 272 1115 641"> </div> <p><del>4.9.5.1.4 XXX</del>  <del>4.9.5 The Market Operator shall perform a simulated billing calculation following the billing cycle and to be made available to WESM members participating in the Central Scheduling and Dispatch of Energy and Contracted Reserves.</del></p> <div data-bbox="569 1003 1115 1380"> </div>			

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>4.9.4 XXX            4.9.5 The Market Operator shall perform a simulated billing calculation following the billing cycle and to be made available to WESM members participating in the Central Scheduling and Dispatch of Energy and Contracted Reserves.</p>				

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
SETTLEMENT OF RESERVE CAPACITIES	4.10	<p>4.10 XXX</p> <p>4.10.1 The Market Operator shall submit to the System Operator the hourly ex-ante and ex-post reserve schedules not later than 8AM of the following day.</p>	<p><del>4.10</del><b>5.2</b> XXX</p> <p><del>4.10</del><b>5.2.1</b> The <i>Market Operator</i> shall submit to the <i>System Operator</i> the hourly ex-ante <b><u>RTD energy and reserve schedules, and the generation</u></b> and ex-post reserve schedules <b><u>offers used in the RTD run</u></b>, not later than 8AM <b><u>1200H</u></b> of the following day.</p> <p><b><u>5.2.2</u></b> <b><u>Every Monday, the System Operator shall submit the final list of reserve schedules for the past week (Monday to Sunday) considering the possible revisions for the actual hour in consideration of Section 4.6 of this Protocol.</u></b></p> <p><b><u>5.2.3</u></b></p>	<p>Re-numbered with the inclusion of the provision under Section 5</p> <p>WESM Rules clause 5.3.2 provides exemptions to confidentiality, which includes the System Operator</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
			<p><u>Not later than the 5<sup>th</sup> of the month, the <i>System Operator</i> shall submit to the <i>Market Operator</i> the <i>A/S incidental energy of each A/S provider for each dispatch interval during the recently completed billing period (e.g., On 05 February 2020, A/S incidental energy shall be submitted by the <i>System Operator</i> for the billing period of January 2020).</i></u></p> <p><u>5.2.4</u></p> <p><u>The <i>Market Operator</i> shall coordinate with the <i>System Operator</i> on the validation of the accuracy of the <i>A/S incidental energy provided in clause 5.2.3 of this Protocol. The completion of the validation between the <i>Market Operator</i></i></u></p>			

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
			<p><u>and System Operator shall be completed not later than the 15<sup>th</sup> of the month for the recently completed billing period.</u></p> <p><u>5.2.5</u>  <u>Not later than the 18<sup>th</sup> of the month, the Market Operator shall submit to the System Operator the WESM Trading Amount, including the RTD schedules and metered quantities, of each A/S provider for the dispatch intervals when the A/S provider had a reserve schedule for the recently completed billing period.</u></p>			
<b>A/S PENALTY</b>	(new)	(new)	<b>SECTION 6 A/S</b>	The revision is being		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
			<p><b><u>PENALTY</u></b>  <b><u>The System Operator shall consider the data submitted by the Market Operator in Clause 5.2.1 when applying penalties to A/S providers in accordance with their Ancillary Service Procurement Agreement.</u></b></p>	<p>proposed to include provision that data submitted by the Market Operator to the System Operator shall be considered in the application of ancillary services penalties.</p>		
PERFORMANCE STANDARDS	SECTION 5	<p>SECTION 5 XXX</p> <p>PEMC and NGCP shall endeavor to adopt measures and perform its obligations under this Protocol in accordance with</p>	<p>SECTION <del>5</del> XXX</p> <p>PEMG <b><u>The Market Operator</u></b> and NGCP <b><u>the System Operator</u></b> shall endeavor to adopt measures and perform its obligations under this Protocol in accordance with comparable industry standards of due diligence. Nothing herein shall make PEMG <b><u>the Market</u></b></p>	<p>Re-numbered with the insertion of Sections 5 and 6 With the transition of market operations to the Independent Market Operator, it is also proposed that references to PEMC be revised to Market Operator.</p>		



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		<p>comparable industry standards of due diligence. Nothing herein shall make PEMC and NGCP, its employees, officers and board members liable for any actual or compensatory damages arising from the implementation of this Protocol in the absence of willful negligence</p>	<p><b><u>Operator</u></b> and <del>NGCP</del> <b><u>the System Operator</u></b>, its employees, officers and board members liable for any actual or compensatory damages arising from the implementation of this Protocol in the absence of willful negligence or bad faith. <del>PEMG</del> <b><u>The Market Operator</u></b> and <del>NGCP</del> <b><u>the System Operator</u></b> shall in its reasonable opinion implement remedial measures in order to manage and mitigate any errors in the MMS arising from erroneous inputs, system failures or other related circumstances.</p>			

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>or bad faith. PEMC and NGCP shall in its reasonable opinion implement remedial measures in order to manage and mitigate any errors in the MMS arising from erroneous inputs, system failures or other related circumstances.</p>				
<p>MODIFICATIONS AND EFFECTIVITY</p>	<p>SECTION 6 N 6</p>	<p>SECTION 6 XXX In accordance</p>	<p>SECTION <del>68</del> XXX In accordance with DOE Department</p>	<p>The revision is being proposed to reflect that this manual is aligned with the provisions of the DOE</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>with DOE Department Circular No. DC2014-03-009, this Protocol shall be in effect upon approval by the Department of Energy and shall terminate upon Commercial Launch Date of WESM Reserve Market or upon declaration of its cessation by the DOE.</p>	<p>Circular No. DC2014-03-009 <b>and DC2019-12-0018</b>, this Protocol shall be in effect upon approval by the <i>Department of Energy</i> and shall terminate upon Commercial Launch Date of <i>WESM Reserve Market</i> or upon declaration of its cessation by the <i>DOE</i>.</p> <p>The <i>DOE</i> may, in its discretion, revise Sections of this Protocol as the circumstances may require in consultation with <i>Trading Participants</i>.</p>	<p>DC2019-12-0018. Re-numbered with the insertion of Sections 5 and 6</p>		

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Title	Section	Provision	Proposed Amendment	Rationale	Stakeholder's Recommendation	Stakeholder's Rationale
		<p>The DOE may, in its discretion, revise Sections of this Protocol as the circumstances may require in consultation with Trading Participants .</p>				