

Battery Energy Storage
Stakeholder Committee Activity Monthly Summary
July 24, 2019

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Committee	TAC
Date	May 22, 2019 (June TAC meeting was canceled)
Summary	Presentation of Issues Identified in the Battery Storage Integration Workshop and Proposed Stakeholder Committee Assignments
Discussion	ERCOT presented the issues from the battery energy storage workshop (held on April 23, 2019). ERCOT proposed that these issues be assigned to existing stakeholder sub-committees rather than a new task force. The ERCOT presentation included a proposed list of assignments to WMS, ROS, RTF, and MWG.
Resolution	TAC endorsed the list of issues and the proposed assignments to stakeholder committees.
Notes	The TAC presentation including the list of battery storage integration issues is available at: 12. ERCOT Reports.zip

Committee	RTF
Date	June 13, 2019; July 17, 2019
Assigned Issue	Develop appropriate terminology for protocol definitions of battery energy storage devices
Discussion	RTF is tasked with reviewing and (if needed) clarifying existing Resource definitions, and proposing definitions for emerging and future resource types. During recent meetings, RTF has included energy storage devices in their discussions. In the proposed definition of energy storage devices, RTF has proposed that settlement-only devices be defined separately from Resources.
Resolution	The consensus recommendation from this task force regarding a proposed definition for energy storage devices has been documented in NPRR 957 . This NPRR is scheduled to be discussed at the upcoming PRS meeting on August 25, 2019 .

Committee	DSWG
Date	June 21, 2019
Summary	DSWG leadership provided a summary of the battery storage integration issues discussion at TAC on May 22, as well as recent battery storage definition discussions at RTF.
Discussion	<p>DSWG Leadership walked through a presentation on the battery storage discussions held at TAC and RTF (available here).</p> <p>A question was raised as to whether an energy storage device could currently participate in ERS. There was general agreement that DSWG should wait for further instruction from WMS regarding development of any proposed changes to the ERS program to specifically accommodate batteries.</p>
Resolution	The discussion was intended as an update to the working group.

Committee	WMS
Date	July 10, 2019
Summary	Discussion of Battery Storage Integration issues assigned by TAC to WMS
Discussion	<p>ERCOT provided a summary of the discussion of battery storage issues from the previous TAC meeting (presentation available here). ERCOT proposed to group the issues and raise these grouped issues assigned to WMS over the next several meetings. For each group of issues, ERCOT would request that WMS either discuss the issues or assign them to the appropriate working groups.</p> <p>ERCOT said that it would seek consensus for each set of issues; when consensus was reached, that issue would be taken back to TAC for any further discussion. When sufficient issues have been resolved, ERCOT will propose new protocol/guide language (which would be subject to normal stakeholder review) to incorporate these resolved issues into the Nodal Protocols and, as necessary, Guides and/or Other Binding Documents.</p> <p>ERCOT asked that stakeholders propose additional battery storage integration issues that should be added to the list. ERCOT also requested stakeholder feedback on the order in which the issues will be discussed. Lastly, ERCOT stated that it would evaluate ways to keep stakeholders informed of discussions at the various stakeholder committees, including developing a summary of the previous month's discussions for posting to the upcoming TAC meeting page.</p> <p>Following the discussion of the process of handling the assigned issues, ERCOT raised an initial issue for WMS discussion and/or assignment:</p> <p>How should the QSE for a battery device participating in SCED communicate its preference regarding when their limited duration device is available to discharge? This issue represents a group of three issues assigned by TAC to both WMS and ROS.</p> <p>Stakeholders raised the issue of how to allow proposed co-located resources (wind and batteries, solar and batteries, etc.)</p>

	to proceed in the interconnection process stating that this should be a priority for discussions. Stakeholders also asked that the duration requirements for providing ancillary services be discussed.
Resolution	The issue raised by ERCOT was assigned to WMWG (next meeting on July 22, 2019).

Committee	ROS
Date	July 11, 2019
Summary	Discussion of Battery Storage Integration issues assigned by TAC to ROS
Discussion	<p>ERCOT provided a summary of the discussion of battery storage issues from the previous TAC meeting (presentation available here). ERCOT proposed to group the issues and raise these grouped issues assigned to ROS over the next several meetings. For each group of issues, ERCOT would request that ROS either discuss the issues or assign them to the appropriate working groups.</p> <p>ERCOT said that it would seek consensus for each set of issues; when consensus was reached, that issue would be taken back to TAC for any further discussion. When sufficient issues have been resolved, ERCOT will propose new protocol/guide language (which would be subject to further stakeholder review) to incorporate these resolved issues into protocols and other binding documents.</p> <p>ERCOT asked that stakeholders propose additional battery storage integration issues that should be added to the list. ERCOT also requested stakeholder feedback on the order in which the issues will be discussed. Lastly, ERCOT stated that it would evaluate ways to keep stakeholders informed of discussions at the various stakeholder committees, including developing a summary of the previous month's discussions for posting to the upcoming TAC meeting page.</p> <p>Following the discussion of the process of handling the assigned issues, ERCOT raised an initial issue for ROS discussion and/or assignment:</p> <p>As a general rule (with any appropriate exceptions being discussed in future meetings), should battery storage devices be expected to adhere to the same operational requirements when they are charging as when they are discharging?</p> <p>Currently, battery storage devices that are subject to SCED</p>

	<p>dispatch or are providing Ancillary Services must register as both a Generation Resource and a Controllable Load Resource due to limitations in ERCOT systems. Because of these registration limitations, by Protocols, battery devices are required to meet different operational requirements when discharging and charging.</p> <p>The specific operational requirements imposed on battery storage devices will be the subject of future discussions at ROS. Some of these requirements will also be discussed as part of an ongoing review of operational requirements for inverter-based resources (IBR).</p>
Resolution	<p>The issue raised by ERCOT was assigned to PDCWG (next meeting on July 18, 2019).</p>

Committee	PDCWG
Date	July 18, 2019
Assigned Issue	As a general rule (with any appropriate exceptions being discussed in future meetings), should battery storage devices be expected to adhere to the same operational requirements with they are charging as when they are discharging?
Discussion	<p>ERCOT provided a summary of the discussion of battery storage issues from the previous ROS meeting. Following this review of the process of handling the assigned battery storage integration issues, ERCOT raised the initial issue assigned to PDCWG by ROS:</p> <p>As a general rule (with any appropriate exceptions being discussed in future meetings), should battery storage devices be expected to adhere to the same operational requirements with they are charging as when they are discharging?</p> <p>Currently, battery storage devices that are subject to SCED dispatch or are providing Ancillary Services must register as both a Generation Resource and a Controllable Load Resource due to limitations in ERCOT systems. Because of these registration limitations, by Protocols, battery devices are required to meet different operational requirements when discharging and charging.</p> <p>The specific operational requirements imposed on battery storage devices will be the subject of future discussions at ROS. Some of these requirements will also be discussed as part of an ongoing review of operational requirements for inverter-based resources (IBR).</p> <p>PDCWG held a lengthy, detailed discussion of the issue. There were questions raised regarding the capability of these devices when charging and discharging, and discussion regarding the need for battery devices to adhere to specific rules applicable to all Resources. PDCWG stakeholders advocated that the requirements for batteries be made clear as soon as possible to guide resource investment decisions.</p>

Resolution	PDCWG agreed, as a general rule, that battery storage devices should be held to the same operational requirements when charging as when discharging. This issue will be taken back to ROS during the next meeting (on August 8, 2019).
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Committee	WMWG
Date	July 22, 2019
Assigned Issue	How should the QSE for a battery device participating in SCED communicate its preference regarding when their limited duration device is available for dispatch (to discharge energy to the grid)?
Discussion	<p>WMWG had a detailed discussion of the issue. The working group generally agreed it would be preferable for the applicable QSE to control/optimize when a limited duration device such as a battery is utilized based on market conditions, rather than have ERCOT conduct a grid-wide optimization of energy storage device operations. To that end, given that the current Protocol requirements (NPRR 915) only apply to limited duration devices smaller than 10 MW, some Protocol language revisions would likely be needed.</p> <p>Some stakeholders advocated for the current protocol language (allowing battery storage QSEs to telemeter their device as “OFF” when they do not want to be given a dispatch instruction by SCED) to be extended to larger batteries, such as those currently being studied for interconnection. Other stakeholders argued that this was not an ideal solution. Specifically, this option keeps battery storage devices from being included in system ramp calculations and prevents them from being utilized in advance of the price impacts from the Power Balance Penalty Curve.</p> <p>Several stakeholders advocated for a change to protocols allowing Resources to update their Energy Offer Curves (EOC) closer to real-time dispatch. Currently these EOCs cannot be updated within the operating hour. This potential change has been discussed as part of RTC development, but could be implemented prior to RTC (subject to a review of the feasibility of implementation and IA analysis).</p> <p>Utilizing energy offer curves as a means to allow battery storage devices to control how and when their devices are dispatched by SCED could also be affected by offer mitigation in SCED.</p>

	WMWG stakeholders also discussed other alternative approaches, such as adjusting an energy storage resource's EOC based on its current state of charge, or utilizing the general concept of a "Dynamically Scheduled Resource" to address this issue.
Resolution	ERCOT agreed to bring back to the next WMWG meeting more information regarding the potential SCED performance issues or other concerns associated with allowing Resources to adjust their Energy Offer Curves closer to real-time. ERCOT will also evaluate other potential changes as discussed by WMWG.

Upcoming activities for August 2019:

ERCOT is planning to discuss the issues that were assigned to working groups at WMS ([August 7](#)) and ROS ([August 8](#)), and potentially raise additional issues for discussion. ERCOT will bring additional details regarding the issue raised at WMWG to the August WMWG meeting ([August 19](#)). NPRR 957 (proposed by RTF) will be on the agenda for the next PRS meeting ([August 15](#)).