

SONI Grid Code Modification Proposal Form

Email To:
gridcode@soni.ltd.uk



Title of Modification Proposal:

SPID (SONI PROPOSAL ID) **03_2021**

Date:	13 October 2021		
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Grid Code Version:	SONI Grid Code version – October 2020 [Latest Version] http://www.soni.ltd.uk/media/documents/SONI-Grid-Code-8th-October-2020.pdf		
Grid Code Section(s) Impacted by Modification Proposal:	CC13.1		
Modification Proposal Justification:	<p>When provision for Demand Side Units (DSUs) was first added to the Grid Code, all Demand Side Units were eligible to be paid the same for their availability through the Capacity Payment Mechanism, regardless of their performance characteristics. It was therefore necessary for the Grid Code to establish a minimum set of performance characteristics so that all capacity provided by Demand Side Units was of similar value. One of these requirements was that all Demand Side Units must have a Maximum Down Time no less than 2 hours.</p> <p>The SEM Committee's decision SEM-18-030, in June 2018, has changed this. Now, as is the case for other run-hour limited units (such as energy storage), each Demand Side Unit's Maximum Down Time affects its de-rating factor in the Capacity Market.</p> <p>To give an example from the Final Auction Information Pack for the 2023-24 T-4 auction, a 20 MW DSU with a Maximum Down Time of 6 hours would have a de-rating factor of 0.894, whereas if its Maximum Down Time was 10 minutes, the de-rating factor would be 0.081.</p> <p>Now that the capacity payments received by any DSU take into account its Maximum Down Time, there is no longer any need for the Grid Code to impose a minimum.</p> <p>In fact, it is illogical for it to do so: at the moment, the Capacity Market Code allows for DSUs with any value for Maximum Down Time, but the Grid Code makes it impossible to create units which are unable to deliver for at least 2 hours.</p> <p>This requirement is also inconsistent with the treatment of battery storage systems, which compete with DSUs to provide the same system services: many are not able to deliver for 2 hours, but no Maximum Down Time requirement prevents their participation.</p> <p>This restriction reduces the range of customer assets that can participate in DSUs, and so needlessly reduces competition in the relevant markets. It is a particular issue for sites which can provide a demand reduction greater than 10 MW – and so are not</p>		

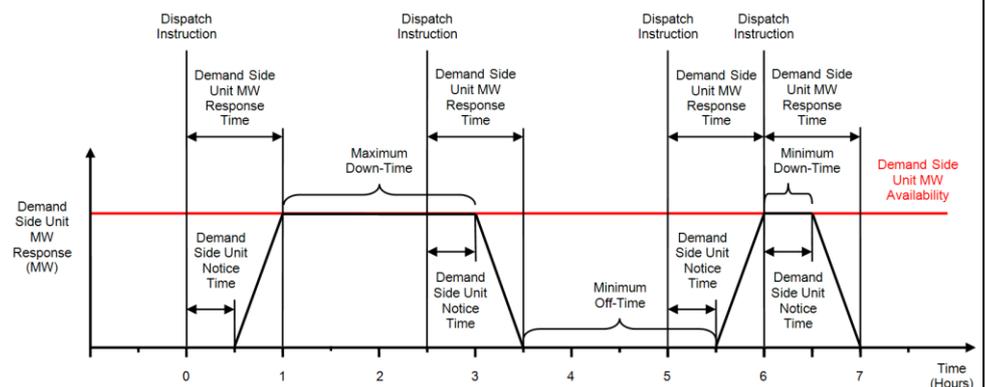
allowed to participate as part of an Aggregated Demand Site – and want to provide System Services, such as Fast Frequency Response.

For example, data centres often have uninterruptible power supply (UPS) systems with capacity of more than 10 MW. Modern UPSs can provide a high quality Fast Frequency Response, much like any other battery, and need only be able to keep up their response for less than a minute to deliver this service reliably.

However, under the current Grid Code, for such a facility to register as a DSU, it would first have to demonstrate that it can maintain its response for at least 2 hours – something that a UPS would typically be incapable of doing. Hence such resources are currently prevented from participating. (Note that a dedicated battery with the same specifications would be allowed to participate, because the Grid Code only imposes a Maximum Down Time requirement on DSUs.)

The proposed modification removes this restriction, so that DSUs can be created with any Maximum Down Time. It is only clause CC13.1(e) that imposes the restriction, and nothing else in the Grid Code or other codes seems to depend on it. The requirements on the other performance parameters in CC13.1 are left unchanged, because they are not taken into account in the Capacity Market’s de-rating factor calculations.

The various DSU performance parameters illustrated in the diagram below, taken from CC13.1:



It may be worth clarifying that this diagram is only an example of a DSU where the Maximum Down Time just happens to be 2 hours, but this is not strictly necessary, as it is already possible to create DSUs with longer Maximum Down Times.

Making this change will allow a wider range of customer assets to participate in DSUs – either individually or as part of an aggregation. Maximising the potential of such demand-side assets will benefit all customers by bringing more supply and greater competition into all markets – for capacity, system services, and (once it is opened to DSU participation) energy.

We expect the greatest benefit to come in the faster services under DS3, because long Maximum Down Times are not necessary to provide these valuable services, and there are many assets – UPSs, behind-the-meter battery systems, and future EV charging systems – that have the potential to provide a fast, accurate, and reliable response.

We do not expect this change to lead to existing DSUs reducing their Maximum Down Times, or to new DSUs that could maintain their response for 2 hours choosing to declare a shorter Maximum Down Time. This is because the much more severe de-rating factors for units with short Maximum Down Time provide a very strong incentive to declare the highest achievable Maximum Down Time. Hence we do not believe that this change would in any way reduce the volume of 2+ hour resources available: its only

	<p>effect would be to allow additional demand-side resources into the market that otherwise would not be able to participate.</p>
<p>Red-line Version of Impacted Grid Code Section(s) - show proposed changes to text: <i>Deleted text in strike-through red font and new text highlighted in blue font</i></p> <p>CC13.1 Each Demand Side Unit shall, as a minimum, have the following capabilities: ... (e) Maximum Down Time not less than 2 hours;[Not used] ... </p>	
<p>Green-line Version of Impacted Grid Code Section(s) - show proposed final text:</p> <p>CC13.1 Each Demand Side Unit shall, as a minimum, have the following capabilities: ... (e) [Not used] ... </p>	
<p>Defined Terms (Bold):</p>	<p>We are not proposing any changes to definitions.</p>
<p>Implication of Not Implementing the Modification:</p>	<ol style="list-style-type: none"> 1. Needless limitation of the range and volume of resources allowed to provide System Services, particularly Fast Frequency Response. 2. Continuation of Illogical situation where the Capacity Market Code explicitly makes provision for DSUs with Maximum Down Times of less than 2 hours, but the Grid Code prevents their creation. 3. Continuation of inconsistent treatment of batteries and DSUs, whereby the same asset with the same capabilities is allowed to participate as a front-of-meter dedicated resource, but not as part of a DSU.
<p>Assessment</p>	<p><u>Overview:</u></p> <p><u>Background:</u></p> <p><u>Analysis & Opinion:</u></p> <p><u>Conclusion:</u></p>
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