Format for submissions

Common quality and wholesale market arrangements for BESSs and BESS-hybrid stations – Issues and options consultation paper

Submitter	Tesla

Section 3: Terminology

Questions	Comments
Q3.1. Do you support the proposed 5-level structure for generating asset definitions?	Generally supportive. For a single unit of a BESS, perhaps consider 'battery pack/module/unit', given there are multiple inverters within one unit.
Q3.2. Do you foresee any implementation issues or unintended consequences associated with the 5-level structure for generating asset definitions?	N/A.
Q3.3. Do you have any feedback on the System Operator's recommendations in its *Hybrid Plant Integration* report?	Encourage consideration of the appropriate structure for hybrid plants with load, generation, and BESS – particularly with the rise of data centres. How would such a facility such as a co-located data centre and a BESS be registered? In such applications, additional complexities for implementing AOPOs when there is load-BESS hybrid. Encourage further clarification on level 5 – 'the combination and co-location', as site level performance obligations may be different for a facility with co-located resources versus behind the same connection point.

Section 4: Asset owner performance obligations for 'idle' BESSs and BESS-hybrid stations

Questions	Comments
Q4.1. Do you agree with how the Authority has defined the 'idle' operating state of a BESS and a BESS-hybrid station? Please give reasons if you do not agree.	Yes.

Q4.2. Do you consider that frequency management obligations should apply to an idle BESS and an idle BESS-hybrid station? Please give reasons if you do not agree.	Yes.
Q4.3. Do you consider that voltage support obligations should apply to an idle BESS and an idle BESS-hybrid station? Please give reasons if you do not agree.	Yes.
Q4.4. Do you foresee any implementation issues or unintended consequences that we have not discussed in this paper?	N/A.
Q4.5. What do you consider to be the key benefits and costs associated with applying frequency- and voltage-related AOPOs to BESSs and BESS-hybrid stations in the 'idle' operating state? Please quantify these benefits and costs if possible.	BESS are already capable of doing this, so no significant costs expected.

Section 5: Applying the AOPOs to BESS-hybrid stations

Questions	Comments
Q5.1. Which option for applying frequency AOPOs to BESS-hybrid stations that are in the injection or consumption operating state do you support? Please give reasons for your answer.	Tesla is supportive and capable of meeting either option for applying frequency AOPOs. However, while we understand the simplicity for a system level to consider at a station level, Tesla prefers unit-level to enable a more straightforward connection process and understanding of obligations for different technology components. A challenge for station-level obligations is that there can be a broad spectrum of size ratios for a BESS-hybrid station (e.g. a BESS could be 1:1 in MW with the generating component or could be 1:10 in MW). This will introduce complexities in determining what an appropriate station level obligation could be.

Q5.2. Do you consider there to be options for applying frequency AOPOs to BESS-hybrid stations in the injection or consumption operating state that are preferable to those identified by the Authority? Please give reasons for your answer.	N/A.
Q5.3. Do you foresee any implementation issues or unintended consequences associated with applying the frequency AOPOs to BESS-hybrid stations in the injection or consumption operating state that are not identified in this paper?	N/A.
Q5.4. What do you consider to be the key benefits and costs associated with the options for applying frequency AOPOs to BESS-hybrid stations that are in the injection or consumption operating state? Please quantify these benefits and costs if possible.	N/A.
Q5.5. Which option for applying the voltage support AOPO to BESS-hybrid stations that are in the injection or consumption operating state do you support? Please give reasons for your answer.	Tesla is supportive of either option for applying voltage support AOPOs. For more information, see Q5.1.
Q5.6. Do you consider there to be options for applying the voltage support AOPO to BESS-hybrid stations in the injection or consumption operating state that are preferable to those identified by the Authority? Please give reasons for your answer.	N/A.
Q5.7. Do you foresee any implementation issues or unintended consequences associated with applying the voltage support AOPO to BESS-hybrid stations in the injection or consumption operating state that are not identified in this paper?	N/A.
Q5.8. What do you consider to be the key benefits and costs associated with the options for applying the voltage support	N/A.

AOPO to BESS-hybrid stations that are in the injection or consumption operating state? Please quantify these benefits and costs if possible.	
Q5.9. Do you consider that clause 8.23 should be revised to move the point of compliance from the generating unit terminals to the point of connection to the transmission network (on the high voltage side of the connection transformer)? Please give reasons for your answer.	Supportive of moving voltage support point of compliance to the point of connection to the transmission network, similar to other jurisdictions.
Q5.10. Do you consider there to be an alternative that is preferrable to a reactive power export/import requirement of ±39.5% or ±33% of maximum continuous MW output power, measured at the generating station's point of connection to the transmission network (on the high voltage side of the connection transformer)? Please give reasons for your answer.	Supportive of ±39.5% of maximum continuous MW output power, to align with the NEM.
Q5.11. Do you foresee any implementation issues or unintended consequences associated with moving the point of compliance under clause 8.23 from the generating unit terminals to the point of connection to the transmission network that are not identified in this paper?	N/A.
Q5.12. What do you consider to be the key benefits and costs associated with moving the point of compliance under clause 8.23 from the generating unit terminals to the point of connection to the transmission network? Please quantify these benefits and costs if possible.	N/A.
Q5.13. Do you consider that legacy arrangements would be needed for existing generation? Please give reasons for your answer.	N/A.

Section 6 questions: Wholesale arrangements for BESS-hybrid stations

Questions	Comments
Q6.1. Do you agree with the preferred option of requiring BESS-hybrid stations to offer by technology component except in certain circumstances, over the alternative option of creating new obligations for BESS-hybrid stations? If not, why not?	Yes.
Q6.2. Do you agree with our characterisation of the benefits and costs with our preferred option? Are there any other aspects we should consider?	Agree.
Q6.3. Do you agree station dispatch arrangements should be extended to accommodate BESS-hybrid stations that are offered by technology component? What, if any, other issues do you see with the station dispatch arrangements that are in addition to those identified above?	Agree.
Q6.4. Considering the options above, how should the System Operator manage network injection from a BESS-hybrid station where injection is limited by inverter capacity? What implications would this have on your processes or systems?	N/A.
Q6.5. Do you agree with our preferred approach to calculating constrained costs for DC-coupled BESS-hybrid stations? Can you provide any insights about what metering arrangements would be required to enable this approach?	N/A. Tesla supports AC-coupled BESS-hybrid stations with a clear distinction in the metering capabilities.