THE BRITISH
WIND ENERGY
ASSOCIATION

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Dear Lilian,

Re: Consultation G/06: Power Park Modules and Synchronous Generating Units

The changes to P.C.A.2.5.5.7 and P.C.A.2.5.6 require a significant amount of fault infeed data for Power Park Modules irrespective of if they are embedded or directly connected to the transmission system. The information required is far in excess of anything that is requested or stipulated for synchronous generators. This needs further discussion as to why these demands are being placed on to Power Park Modules in particular. The main concerns that BWEA would have are the inconsistency in approach to other forms of generation, the requirement for such detailed information on asymmetrical fault infeeds and motor contribution at the time of application when in the past symmetrical contribution was deemed sufficient. There has to be some recognition that such detailed information may not always be available at the time of application.

Further its BWEA's opinion the requirements in relation to fault infeed data for embedded generators should rest with the DNO rather then the GB SO. It's BWEA's considered opinion that in relation to fault infeed there should be a stipulation within the Grid Code that states that such detailed information should be at least confined to directly connected sites or only required at the behest of the DNO for embedded sites. Also details relating to motor contributions should be limited to motor of an agreed rating. The extension of such requirements to lubricant pump motors etc within individual Power Park Units is impractical given their influence on fault infeed.

Appendix 7 CC.A.7.1

The BWEA in general welcomes the attempt to enshrine the voltage control requirements for Power Park Modules within the Grid code as its an attempt to introduce transparency to such requirements rather than having them set out in individual Bilateral Connection Agreements/ BEGA's etc.

The attempt to separate the transient response from that of the steady state response is also welcome as it helps illustrate the point that a local response from individual turbines is initially acceptable and recognises the fact that a large proportion of the presently available technologies utilise this type of control.

Further clarity is still required in relation to the description of steady state responses as set out in CC.A.7.2.2.2 and CC.A.7.2.2.3 there is a requirement in the former to maintain set point voltage within a resolution of 0.25% and in the latter to maintain slope between 2 & 7% to a resolution of 0.5%. What's missing is a recognition that in some instances the two may be mutually exclusive. BWEA would advocate that either one or the other is required at any one time if indeed the idea of the slope is to be retained at all.

To illustrate the point if the voltage at the point of connection begins to drift away from the set point voltage then the Power Park Module will act to produce or absorb VArs to correct the voltage drift. If the response of the Power Park Module adheres to the slope there can be times when it produces the VArs required by the slope but does not in fact reach the set point voltage. In order to do so it may need to produce more VArs than the slope allows for. At this time it will not achieve the requirements of CC.A.7.2.2. because its outwith the tolerance of 0.25%. Alternatively if its allowed to produce as many VArs as possible to achieve the set point voltage then it may not meet the requirements of CC.A.7.2.2.3 as it will be off the slope by more than 0.5%.

I think some further changes to these clauses are required to square the circle. Either the requirements is that the Power Park Module is mandated to meet one or other clause, or its required to meet the set point voltage with a slope that can vary up to maximum of 7% or some other agreed maximum slope resolution.

CC.A.7.2.3 Transient Voltage Control

On the whole BWEA find these requirements generally acceptable. We would advocate that there is slight change in the wording of some aspects of CC.A.7.2.3.1 i.e.

Part i) change the word "linearly" to "increasingly"
Part iii) change the word "linearly" to "increase"

This is only to reflect that various type of technology react by increasing their response over time but not always in a strictly linear manner. Also with a local turbine response the production of VArs will be influenced by local terminal voltage and the turbine will produce as many VArs as is necessary to reach its local turbine voltage set point and that the correlation on response may not be exactly linearly proportion to fluctuation in voltage every time.

Part v) I think this should be removed as its already clear that after a transient incident and the restoration of steady state condition your required response is already covered by CC.7.2.2.5 to leave this clause in causes confusion. For example if a large amount of VArs is required after a system incident then such a large response will be required until the system voltage settles back to an accepted steady state value. This clause would at least need to be reworded as it implies that post-transient response the Power Park Module should revert to the slope. However if the transient condition persists then the VAr response mandated by the slope may not be enough to support the system.

Frequency Response

The changes to the wording of the Grid Code on Frequency Response in BWEA's opinion are benign in that they neither add nor detract to any clarity in the requirements. I refer specifically to the changes advanced to clause CC.A.3.4. No technology of any kind reacts at time 0 after a change in system frequency there is always an inherent delay of varying degrees some quicker than others but none at 0 secs. Therefore the real question is if the response is to increase with time in the time period after the initial frequency deviation up to t + 10 seconds then when is it acceptable to begin.

BWEA do not believe that this is the proper forum for debating this particular issue it's our contention that the whole matter of Frequency Response from Power Park Modules is something that merits a separate consultation. It's a consultation that should recognise that the speed of response from wind turbines is not as fast acting as some other technologies but that they do have advantages in other areas such as the depth and sustainability of their response and that there should be some cognisance of this in particular and clarity on speed of responses in general.

Whilst BWEA would not oppose the proposed changes being introduced at this time we would like it noted that these proposal do not go far enough in introducing clarity and transparency in relation to the requirements for Frequency Response.

Yours sincerely,

G Cooper

Graeme Cooper
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