Distribution Code Consultation Response Proforma

DCRP/21/02/PC: Distribution Code EREC G100 Issue 2: Technical Requirements for Customers' Export and Import Limitation Schemes

Stakeholders are invited to respond to this consultation, expressing their views or providing any further evidence on any of the matters contained within the consultation document. Stakeholders are invited to supply the rationale for their responses to the set questions.

Please send your responses and comments by **17:00, 3rd December 2021** to dcode@energynetworks.org and please title your email 'Consultation Response DCRP/21/02/PC – EREC G100 Issue 2. Please note that any responses received after the deadline may not receive due consideration by the Working Group.

Any queries on the content of the consultation pro-forma should be addressed to DCode Administrator on 020 7706 5105, or to dcode@energynetworks.org

Respondent	*Name*
Company Name	BEAMA
No. of DCode Stakeholders Represented	
Stakeholders represented	*Available on request*
Role of Respondent	*Trade Association*

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We intend to publish the consultation responses on the DCode website. Do you agree to this response being published on the DCode website? [Y/N]	Y

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	Question	Response

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Q1	Do you agree with the general intent of the proposed modification? If not, please explain your views.	In general, we welcome the development of G100 to provide a consistent approach to both generation and load limitation, and in particular the intention to make it straightforward for manufacturers, equipment suppliers and installers to install equipment such as EV chargers, batteries and heat pumps in domestic properties. However, some members had concerns over a number of points in the full document. These relate in particular to potentially onerous security of devices on site, commissioning tests required by the installer, four-hour lock out periods and the requirement to both measure and react to voltage fluctuations at the Connection Point. In even more general terms: We as a BEAMA Group acknowledge that G100 is now concerned with both import and export, and our preferred way forward is now that the Code's approach be 'light touch' in relation to these, administering and restraining activities as little as possible to deliver an acceptable, basic level of confidence and resilience. The remaining complexities could be transferred to other ongoing projects and workstreams and considered in light of the entire architecture of the smart building that follows from publication of PAS 1879 etc., but we see the intentions of the proposed EREC G100 changes to be just another (though critical) component of the smart building architecture. We would welcome the opportunity to contribute further to ongoing careful deliberation of these proposals to ensure they are aligned with all the other developments and decisions being made in relation to smart home architecture (e.g. the centralization or not of Public Key Infrastructure, interface protocols, load limitation choices, and in particular how a system would decide with ESA within the home would be manipulated to avoid breaching a G100 limit, for there may be numerous disconnected actions that initiate curtailment unless there is a some centralized control, for example through a central CEM). From an industrial and commercial standpoint (rather than the domestic/SME scope implied by the text above, as within scope of PAS 1879 for example), we have a fundamental concern: By introducing these limits on load behind the meter storage is being considered as an "additive" load. But an operator or owner will usually install storage in order to help balance load, and to reduce the load on the grid. So it seems that storage, though part of the solution, is being treated as part of the problem. For example, Government has recently stated that it "expects developers to consider agile solutions to network capacity issues to manage grid capacity (e.g. introducing battery storage on housing sites or load management systems), working closely with network operators to ensure the policy requirements can be met in all but exceptional circumstances". (p17 of Govt response to Consultation on EV Charge Points in Residential & Non-residential Buildings: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1035711/consultationresponse-electric-vehicle-charging-in-residential-and-non-residential-buildings.pdf). This is clearly antithetical to the notion that storage is additive to demand. This Code could usefully be explicit about how it recognizes and intends to treat storage in this context.

		Dynamic load balancing allows you to install much greater EV charging load without breaking supply capacity. This Code change does not seem to recognize this sufficiently. We also need to consider the diversity of uses of infrastructure. As an example: say a supermarket wants to install 50 22kW AC chargers, but a MW is deemed to be too much load. But in practice, most vehicles would use these charge points at 3.6kW to 11kW; very few cars charge at 22kW AC. Therefore, the supermarket's proposal should actually be manageable, and load protection would act to protect the supermarket if load was exceeded. The point here is just that restrictions on load behind the meter risk hampering the ability of business to innovate if the limits do not take into account context, use patterns and specific conditions. We would like to better understand (p9 of your consultation) "As an alternative to complying fully with all the EREC G100 requirements for a **CLS**, the **Customer** may elect to install overload and/or reverse power protection that trips the whole site. For overload protection the nominal setting shall be based on the state 2 limits." Does this mean that installing a circuit breaker, set at state 2 limits, allows an unlimited load – provided you are confident that your power management systems are adequate? If the answer Yes, that may address our concerns. But we would still welcome more discussion to understand the DNOs' approach to this.
Q2	Do you agree that the revised EREC G100 should be included in the Distribution Code (as a new requirement by reference in DPC6), be listed in Annex 1 and included under Distribution Code governance in the future?	No opinion
Q3	Do you agree that the proposed modifications satisfy the applicable Distribution Code objectives? If not, please explain your concerns.	Yes

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Q4	Do you support the formal description of the states of operation and the migration between them?	Yes. However, to confirm our understanding: State 3 – It's not clear on how state 3 is exited. State 4 – Is state 4 just a failure condition of the CLS? i.e. CLS turned off.
Q5	Do you agree with the fail safe approach, and with the excessive state 2 operation criteria? If not, would your propose different criteria?	Yes However: There was a concern raised about the failure modes in the CT Clamps. This is difficult to detect if a manufacturer is using third-party meters and CT clamps (e.g. a control unit connected to an external MID Meter that has CT clamps around the cables from the connection point). State 2 – How would the second trigger condition of 4.5.1.3 be invoked? There was a concern that in order to create a good user experience the manufacturer or SP is going to have to detect the failure conditions and then explain why charging has stopped. This adds to the cost of the user interface. We would like to better understand the rational for the time between two consecutive attempts being 10min.
Q6	Do you agree with the proposed approach to resetting the limitation scheme and recovering from state 3? In particular do you agree that it is appropriate to distinguish the capability to reset the CLS between domestic and commercial/industrial installations? An alternative would be to make a distinction between fully type tested CLSs and those which are not fully type tested; the WG would be interested in views on this.	Yes One member had a concern that resetting from mode 3 places a burden on the CLS provider to provide this functionality to the support team and the installer. We would like to better understand why commercial sites must have a four-hour lock out. This is potentially highly damaging to customer operations where customers depend on a fleet of charged vehicles.

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Q7	Do you agree with the revised design limits? Do you support the thresholds now proposed?	Partially. For domestic installations it may be impractical to measure the voltage at the Connection Point, particularly where the CLS is built into the EVSE. Voltage measurement within the EVSE is reasonable but will be subject to the voltage drop on the cable to the EVSE, which may be several volts. These restrictions need to be recognised in the drafting. Potential options (for Domestic Installations) include: - Removing the voltage based thresholds for domestic installations (recognising that these are already covered by G98/G99 for generation sites) - Removing the overvoltage threshold for Import Only CLS. - Allowing the voltage at the Connection Point to be inferred by the EVSE based on the current flowing to the EV. (The actual method used by the EVSE to calculate the voltage drop in the supply cable should not be explicitly stated in the Engineering Recommendation, but it may be reasonable to include demonstration of the feature in the Manufacturer's Type Test requirements)
Q8	Do you support the approach to communication media? Do you agree with the suggested approach to cyber security?	Broadly Yes, however it may not be appropriate for ETSI 303 645 to be applied to all components. We agree that secure and encrypted comms are appropriate for a cloud to device scenario, but are less convinced of the need for such security and encryption between a charging station and a MID meter installed at the connection point. We wonder whether NCSC has reviewed or specified this? If not then it may be advisable to include them and the BEIS/OZEV security teams in this work. BEAMA would be willing to support this initiative as required.
Q9	Do you have any comments on the requirement to monitor the integrity of the secondary circuit of the current transformers used?	The current transformer is a critical part of the CLS and the CLS must move to mode 3 if there are any problems with the CT, including - disconnection of the CT (particularly important in domestic installations where the CT will normally be clipped around the meter tail. It is common for the CT to be removed by the meter fitter when meters are replaced or upgraded to smart meters) - disconnection or damage to the secondary wiring from the CT to the CLS control unit As drafted, we believe that the integrity of the CT and secondary wiring are covered by 4.5.1. We also want to understand How likely is this failure mode. A lot of third-party devices don't have this functionality and it would be a slow process to get them to add this. Therefore, is the risk level sufficient that we need this functionality?
Q10	Do you support the approach proposed for multiple limitation devices installed in a single premise?	Yes
Q11	Do you have any comments on the proposals for domestic installations?	As stated already: Onsite testing may be onerous for a domestic installer, which would add time and cost Q16 – Threshold for recording a Mode 2 excursion to be increased to 15 seconds Q7 – Drafting needs to be changed to reflect that it is nor practical to measure the voltage at the Connection Point in a Domestic Installation

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Q12	Do you have any comments on the proposed type testing regime?	We would like more clarity on how it works. What is the process for a manufacturer to show compliance?
Q13	Is there the right balance of principle and detail in Section 5 on testing? Do you have any detailed comments on how testing should be prescribed?	
Q14	Do you agree that the addition Figure 0-1 in the Introduction of EREC G100 aids understanding of the relationship between EREC G100 and flexibility services that the customer might be providing? If not, can you suggest any improvements?	
Q15	Do you agree with requirement in EREC G100 to only provide a schematic diagram, with any operational diagram for generation remaining to be as specified in EREC G99 (or G98, 59 or 83)?	

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Q16	Do you agree that the 5s period before an excursion into state 2 is registered is appropriate? If not, please state what you think might be an appropriate approach.	No. The 5-second period is too short. We suggest further conversations about this; it isn't practical to summarize all BEAMA members' opinions on the question in this document, and some members are still working through the implications and working out a preference for an alternative approach.
Q17	Do you agree that is appropriate to allow remote resetting of state 3?	Yes

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Q18	Do you agree that fully type tested CLSs should be tested at three current settings, viz maximum, minimum and one intermediate point? If not please suggest.	Yes

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Q19	If you have any detailed comments on the proposed drafting, please provide those comments in the proforma provided, or by marking up the consultation draft of G100.	

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Please provide comments relating to the specific technical content of the proposed modifications[1]

Page / line No	**Clause/ Subclause**	**Paragraph Figure/ Table**	**Type of comment** (General/ Technical/Editorial)	**COMMENTS**	**Proposed change**	**OBSERVATIONS OF THE SECRETARIAT** on each comment submitted
						See comments above.

[1] Add more rows if required

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