

Modification proposal:	Distribution Code: DCRP/18/03 – Revision of Engineering Recommendation (EREC) P2 – Security of Supply		
Decision:	The Authority ¹ has decided to approve ² this modification		
Target audience:	Distribution licensees, Distribution Code Review Panel, distribution network users and other interested parties		
Date of publication:	14 th June 2019	Implementation date:	10 th August 2019

Background

'Engineering Recommendation P2 – Security of Supply' (ER P2) is a distribution network planning standard. It sets the minimum levels of security of supply that Distribution licensees must achieve on GB distribution networks. The current issue of ER P2 is issue 6, and referenced as ER P2/6³. ER P2 has been in place since the 1950s, and the current version ER P2/6 came into effect in 2006.

Under ER P2/6, the minimum level of security of supply required for a particular area of network is dependent on the magnitude (MW) of total demand (called 'group demand') within that area of network; the ER P2 security of supply standard applies to groups of demand rather than to individual customers. Therefore, a geographical area's security of supply which is principally determined by the capacity and configuration of the distribution network is based on the group demand. ER P2 has strongly informed the design of GB distribution networks.

ER P2/6 references a second document called Engineering Report 130 (EREP 130, previously known as ETR 130). EREP 130 contains supporting information as to how Distribution licensees can use the output from Distributed Generation (DG) to contribute towards meeting the security of supply standards set out in ER P2. This is on the basis that co-located DG is an alternative to network capacity for supplying some of the group demand.

Neither ER P2/6 nor EREP 130 count Demand Side Response (DSR) or storage as contributing to security of supply, nor do they take explicitly account of price signals that might influence the level of group demand to be secured. Given that compliance with ER P2/6 is a driver of network investment, there is a risk that some of this investment will be unnecessary or inefficient if ER P2/6 does not reflect the availability, capability and operation of Distributed Energy Resources (DER)⁴ and changes in customer behaviour due to price signals.

ER P2/6 is referenced in Annex 1 of the Distribution Code and is incorporated within the requirements of the Distribution Code. Therefore, any change to ER P2/6 constitutes a change to the Distribution Code and must be approved by Ofgem.

This document sets out our decision on modification proposal Distribution Code Review Panel (DCRP) DCRP/18/03 (the 'modification proposal'), received on 31 May 2018, which

1 References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.

2 This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

3 http://www.dcode.org.uk/assets/uploads/ENA_ER_P2_Issue_6_2006_-1.pdf

4 DER is the collective term for DSR, storage and generation.

proposes changes to ER P2/6 and consequential changes to the Distribution Code. This document does not cover modifications to the Distribution Licence which may be required insofar as it references ER P2/6 or EREP 130.

The modification proposal

In 2014, the DCRP set up a working group to review ER P2/6 in light of evolving DER capabilities and operational activities. The first stage (Phase 1) of this work completed in Q3 2016, and concluded that there was a strong economic case for reform of ER P2/6. To take this forward the next stage of the work (Phase 2) was split into three sub-phases:

- Phase 2a would focus on modifications and clarifications that would enable smart solutions within the context of RIIO-ED1.
- Phase 2b would focus on those items requiring more fundamental changes.
- Phase 2c would review EREP 130.

Out of Phase 2a came this modification proposal to update ER P2/6 (the new version to be referenced as EREC P2/7). A public consultation on the proposed changes opened on 12 January 2018. Four responses were received, all of which were supportive of the proposed changes.

The modification proposal recommends changes to ER P2/6 and the Distribution Code to seek to address the treatment of DER by giving Distribution licensees greater flexibility to use the capability of DER to contribute towards meeting ER P2 security of supply standards, and updating the definition of group demand such that DNOs consider tariffs and price signals. The modification proposal does not seek to change the current security of supply standards, but to update DER's impact on security of supply and allow Distribution licensees greater latitude in using the capabilities of DER to meet those standards.

In summary, the modification proposal seeks to:

1. Clarify the roles of EREC P2 and EREP 130: EREC P2 is the standard that sets the security of supply that is to be achieved, whilst EREP 130 becomes a document providing guidance on how that security of supply should be achieved;
2. Formally incorporate DER into EREC P2 to allow consideration of DER's impact on security of supply;
3. Remove from ER P2/6 duplicated information such as F-Factors and other tables associated with assessing the security contribution from DG, as these are already in EREP 130;
4. Update the definition of group demand to appropriately include
 - a. The Latent Demand due to DG
 - b. The Latent Demand due to DSR
 - c. The Latent Demand due to storage and any other types of DERs
 - d. The effects of Suppliers time of use tariffs
 - e. The effects of Network Operator price signals e.g. transmission and distribution network charges.
 - f. The effects of cold load pickup / demand following re-energisation
 - g. META data e.g. peak demand values vs half hourly average values
5. Specifically exclude the security of supply to DG installations from the scope of EREC P2.

These changes aim to reflect the increased contribution of DER and the impact of smart pricing signals. The consequential changes proposed to the Distribution Code include updating:

1. 'Distribution Planning and Connection Code (DPC) 4.2.1 Security' to replace all references to ER P2/6 with EREC P2/7;
2. 'DPC7.4.5.2 System Stability' to replace all references to ER P2/6 with EREC P2/7;
3. Annex 1 Qualifying Standards to replace all references to ER P2/6 with EREC P2/7; and
4. Schedule 5b Data Registration Code to replace all references to ER P2/6 with EREC P2/7.

The modification proposal does not propose any changes to EREP 130, the Distribution Licence or any other documents. However, Distribution licensees are obliged by their licences to comply with core industry documents, including the Distribution Code (under SLC 21), and must meet the planning standards prescribed by SLC 24. SLC 24 states that a licensee must plan and develop its distribution system in accordance with a standard no less than that set out in ER P2/6. We note that the approval of this modification will require the reference in SLC 24 to ER P2/6⁵ to be updated to EREC P2/7. We will shortly undertake this process.

DCRP⁶ comments and licensee recommendation

At the DCRP meeting of 5 April 2018, the modification proposal was discussed. The draft modification proposal was subsequently circulated to the DCRP for approval via email on 11 April 2018. The DCRP subsequently approved the modification proposal for submission to the Authority.

The Final Modification Report ('Final Report') for DCRP/18/03 was submitted to us on 31 May 2018. The DCRP consider that the modification proposal would better facilitate the Distribution Code objectives. Specifically, the DCRP considers that the modification proposal better facilitates Distribution Code objective (a): to permit the development, maintenance and operation of an efficient, coordinated and economical system for the distribution of electricity. The modification proposal was recommended for approval by the Distribution network licensees.

Our decision

We have considered the issues raised by the modification proposal and in the Final Report. We have considered and taken into account the responses to the consultation on the modification proposal which are included in the Final Report.⁷ We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of the applicable objective of the Distribution Code;⁸ and

⁵ Distribution System planning standard and quality of performance reporting.

⁶ The DCRP is established in accordance with SLC 21 of the Electricity Distribution Licence.

⁷ Distribution Code proposals, final reports and representations can be viewed at:

<http://www.dcode.org.uk/areas-of-work/> and <http://www.dcode.org.uk/consultations/>

⁸ As set out in Standard Condition SLC 21.4 of the Electricity Distribution Licence available at:

<https://epr.ofgem.gov.uk/Content/Documents/Electricity%20Distribution%20Consolidated%20Standard%20Licence%20Conditions%20-%20Current%20Version.pdf>

- approving the modification proposal is consistent with our principal objective and statutory duties.⁹

Reasons for our decision

We consider this modification proposal will better facilitate Distribution Code objective (a) and has a neutral impact on the other applicable objectives.

(a) permit the development, maintenance, and operation of an efficient, co-ordinated, and economical system for the distribution of electricity

The proposed revision to ER P2/6 allows the securing of demand via a combination of network and non-network solutions, including DER. It is our view that this revision of EREC P2 better permits the development of an efficient system for the distribution of electricity.

The changes proposed in EREC P2/7 formally incorporate DER, and allow the contribution of these resources to be considered in the assessment of group demand and therefore the security of supply arrangements. The enhanced flexibility available to the Distribution Network Operators (DNOs) through the consideration of non-network DER resources should lead to more efficient and economic development and operation of the distribution network by allowing OPEX and CAPEX approaches to be considered equally.

We note that although all responses to the DCRP consultation were supportive of the modification proposal, one respondent considered that EREP 130, which is currently being reviewed by the DCRP, should be considered at the same time as EREC P2 in order to enable a full holistic view of the reliability of the network. In response, the DCRP noted that the phased approach to reviewing EREC P2 and EREP 130 was agreed with industry stakeholders. We are broadly in agreement with the consultation response and consider that future revisions of EREC P2 and EREP 130 should be considered at the same time to give a holistic view of the contribution to security of supply by non-network resources.

Observations

We consider the security of supply arrangements for demand customers on the distribution network to be of great importance. We are pleased to see that the Distribution licensees have taken steps towards updating and modifying EREC P2. We note that the working group is expecting to deliver the remaining work phases by the second quarter of 2019. In completing the works we believe there are a number of areas that need to be reviewed. In particular:

- EREC P2/7 is written as guidance for DNOs, not as a measurable and enforceable standard. We consider that future revisions of EREC P2 should propose a metric or series of metrics to allow the measurement of compliance with EREC P2 and therefore assessment of security of supply. Any changes to the language in EREC P2 should not reduce the flexibility in the application of the standard, but any metrics proposed should allow compliance to be measured and should be developed in consultation with stakeholders.

⁹ The Authority's statutory duties are wider than matters which the Panel and licensees must take into consideration and are largely provided for in statute, principally in this case the Electricity Act 1989.

- The DCRP proposes that EREP 130 becomes a guidance document describing how that security of supply should be achieved, which would create a hierarchy of guidance documents with EREC P2/7. We consider this is potentially a material change to EREP 130, which is currently an application guide for assessing the capacity of networks containing distributed generation. Depending on the proposed changes to EREP 130, we consider that EREP 130 may become an Annex 1 document to the Distribution Code.
- EREC P2/7 retains the longstanding deterministic criteria for network planning. The deterministic nature of EREC P2/7 is a strength, as the application of the standard is straightforward and transparent. However, the degree of security provided by the deterministic security criteria, using generic rules applied across the network areas, may not be optimal in terms of economic cost, required reliability and losses for all customers. Probabilistic analysis techniques would increase indirect design costs which must be borne by customers through either connection or Distribution Use of System (DUoS) charges but may also allow a more optimal security of supply arrangement and therefore connection arrangements. We consider that future revisions should consider the balance between probabilistic analysis and a deterministic standard and this should be informed by stakeholder engagement.
- We note that the process for derogations from EREC P2 has not been incorporated into the current version of the standard. At present, DNOs are able to self-derogate for demand groups of <60MW¹⁰. Self-derogation allows DNOs to move away from EREC P2's prescribed minimum requirements where there is a demonstrable case for doing so. We expect the self-derogation system to be looked at through the EREC P2 review and a transparent solution to recording derogation proposed. We consider that this is necessary and will review the future of the self-derogation process in 2019.
- EREC P2/7 improves on ER P2/6 with the consideration of common mode failures of Active Network Management (ANM) systems and other control systems or protection systems. We consider that security of contribution of DER should consider failures of all shared supporting systems and future revisions of P2 should consider all credible Common Mode Failures (CMF) and High Impact Low Probability (HILP) events.

Decision notice

In accordance with SLC 21.11 of the Electricity Distribution Licence, the Authority hereby directs that the modification to the Distribution Code set out in the Final Report to the Authority of 31 May 2018 be made.

Peter Bingham
Chief Engineer

Signed on behalf of the Authority and authorised for that purpose

¹⁰ <https://www.ofgem.gov.uk/publications-and-updates/decision-and-direction-extension-engineering-recommendation-p26-derogation-where-group-demand-60mw>