



Demand Control Rotation Protocol Overview

Latest Version: 3.0

Last Review: October 2024

The Demand Control Rotation Protocol (DCRP) informs organisations within the electricity sector of the DCRP process, the communication procedures, and the actions they must take. This document is an overview of the industry protocol that will be used by the distribution network when DCRP is required to be enacted.

This overview is based on version 3.0 of the protocol. This document will need to be updated, along with the full protocol, following modifications to the Grid and Distribution Codes (currently estimated to be complete for Winter 2025).

Introduction

In an electricity supply emergency, demand control measures can be used to protect the electricity system. These measures reduce electricity demand across Great Britain in a fair and equitable manner. The demand control measures that form part of the protocol will not be used to handle day-to-day repair and recovery of parts of the transmission and distribution systems.

The Demand Control Rota Protocol (DCRP) was created in 2023 to reflect recent geopolitical changes in the global energy sector. It is allowed for under the obligations set out in [Operation Code No. 6 \(OC6\) – Demand Control](#), which comes under the Grid Code. The objective of OC6 is to achieve the reduction in demand that will either avoid or relieve issues on the Transmission System, while being fair and equitable to consumers. For the initial disconnection under OC6, OC6.5.3 and OC6.5.4 apply, which allows for disconnection of up to 40% of demand. For subsequent rotations, OC6.5.6 applies. DCRP addresses short-term issues in order to prevent unplanned demand disconnections, such as via Low Frequency Demand Disconnection (LFDD) or, at the extreme, the total shutdown of the GB electricity system. The protocol outlines how the interchange of demand reduction under OC6 will be delivered, whilst ensuring protection (from the DCRP demand control measures) to Protected Sites¹.

Longer term rota disconnections can be achieved under the powers set out within the Energy Act 1976 or the Electricity Act 1989 using the Electricity Supply Emergency Code (ESEC).

DCRP is only applicable to operators of the Distribution Network, i.e. DNOs and iDNOs. Transmission Operators (TOs) across Great Britain have no formal role under DCRP.

Demand Shortfall Tools

There are different tools available to industry to help manage an electricity supply shortfall to avoid the total shutdown of the GB electricity system. The table below shows a high-level summary of these tools, as detailed in OC6.

¹ Protected Sites are determined in the [Electricity Supply Emergency Code](#).



	Demand Control Rotation Protocol (DCRP)	Electricity Supply Emergency Code (ESEC)	Low Frequency Demand Disconnection (LFDD)
Grid Code Reference	OC6.9	OC6.1.5	OC6.6
Convenor of process/code	NESO	DESNZ/Secretary of State	NESO/Network Operators
Purpose	To deal with short periods of shortage of available electricity supplies to meet demand from consumers. Provide co-ordinated strategy for limiting negative impacts to society & preventing an electricity system shutdown.	To deal with prolonged shortage of available electricity supplies to meet demand from consumers. Provide co-ordinated strategy for limiting negative impacts to society & preventing an electricity system shutdown.	To limit the consequences of a major loss of electricity supplies or rapid increase in demand.
Methods of Demand Reduction	1. Planned Load Disconnection (exclude protected loads) via up to 18 (circa five percent of demand) load blocks.	1. Public appeals 2. Restrict usage of industrial & commercial premises 3. Planned Load Disconnection (exclude protected loads) via 18 (circa five percent of demand) load blocks.	1. Designed to automatically disconnect at least 60% (40% in Scotland) of the total DNO demand over 9 stages at predefined low frequency points (48.8 - 47.8Hz).
Conditions for using Planned Load Disconnection	1. Enhanced market and network options exhausted, generation or storage or interconnector shortage remains. 2. System Warning issued. NESO instructs DNOs to implement the required amount and duration of load disconnection.	1. NESO advise DESNZ of a requirement to use load disconnection for a prolonged period 2. ESEC is invoked by Secretary of State (SoS) following obtaining an Order of Council 3. Public appeal to reduce usage & restrict usage of industrial & commercial premises. SoS directs NESO and DNOs to implement rota load disconnection in accordance to agreed plans.	1. Automatic low frequency relay devices are triggered by the falling frequency on the GB electricity system. NESO will instruct DNOs when to restore disconnected demand.

Table 1 – Comparison between Demand Control Rotation Protocol (DCRP), Electricity Supply Emergency Code (ESEC) and Low Frequency Demand Disconnection (LFDD).



DCRP Process

The DCRP process enables a response to a short-term, sudden impact events on the electricity network. An example of this where there is a shortfall in supply to meet forecasted demand, such as during a period of cold temperatures, combined with low wind. This would likely be an in-day response that will need to be enacted within 24 hours of a shortfall being identified. It will most likely be activated to manage an electricity supply shortfall during evening peak, where the situation cannot be effectively controlled using other demand control measures, e.g., voltage reduction. It can, however, be utilised to manage other short-term shortfalls in electricity supply. DCRP reduces demand through planned load disconnections, using a pre-prepared rota and plan. DCRP will only be utilised after enhanced market and network options have been exhausted.

A summary of the process can be seen in the diagram below.

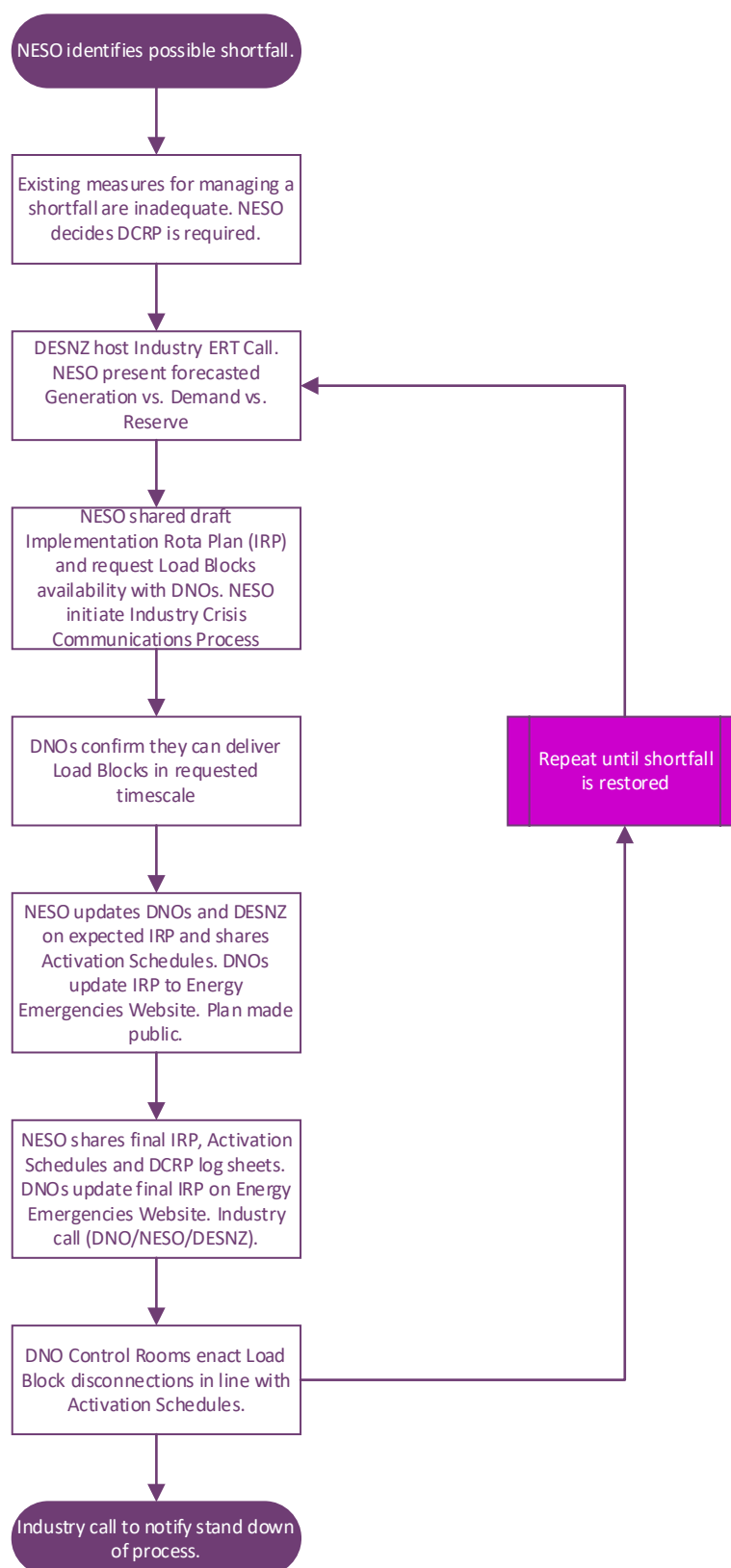


Figure 1 – Flowchart showing a summary of the DCRP Process.



Implementation Rota Plan

NESO will create an Implementation Rota Plan (IRP) with the rota for disconnecting and reconnecting load blocks. Where practicable and necessary, the same level of rota disconnection will apply to all 14 DNO licence areas. The IRP will be created during the emergency, to adapt to the requirements of the situation. The IRP uses the same load blocks used by ESEC with R, S, T & U reserved as fast blocks² (to be used in an emergency). Non protected consumers load will be disconnected in alphabetic sequence (up to letter Q).

Stand Down Procedure

When NESO forecasts show that there are no further electricity supply shortages and the DCRP based demand disconnection is no longer required, NESO will inform DESNZ, Ofgem, and industry. NESO's decision to stop using DCRP will then be communicated to DNOs with a formal instruction for DNOs to revert to normal network configuration and operation (without demand disconnection).

Communications Plan

The Communications Plan for DCRP will use existing communications procedures. A summary of additional measures needed for a DCRP event is listed below.

NESO will lead on all communications related to a DCRP event. This will include hosting a National Press Conference and publishing information on its social media channels (LinkedIn and X). All communications will be coordinated with the Energy Networks Association (ENA) and will utilise the www.powercut105.com website.

² Fast blocks can be disconnected by the DNO at very short notice in accordance with OC6.5.3. and this allows NESO to still call upon these additional services whilst demand control rotation is being used. This then retains the ability to use fast blocks during an emergency if one was to concurrently occur during a DCRP event.