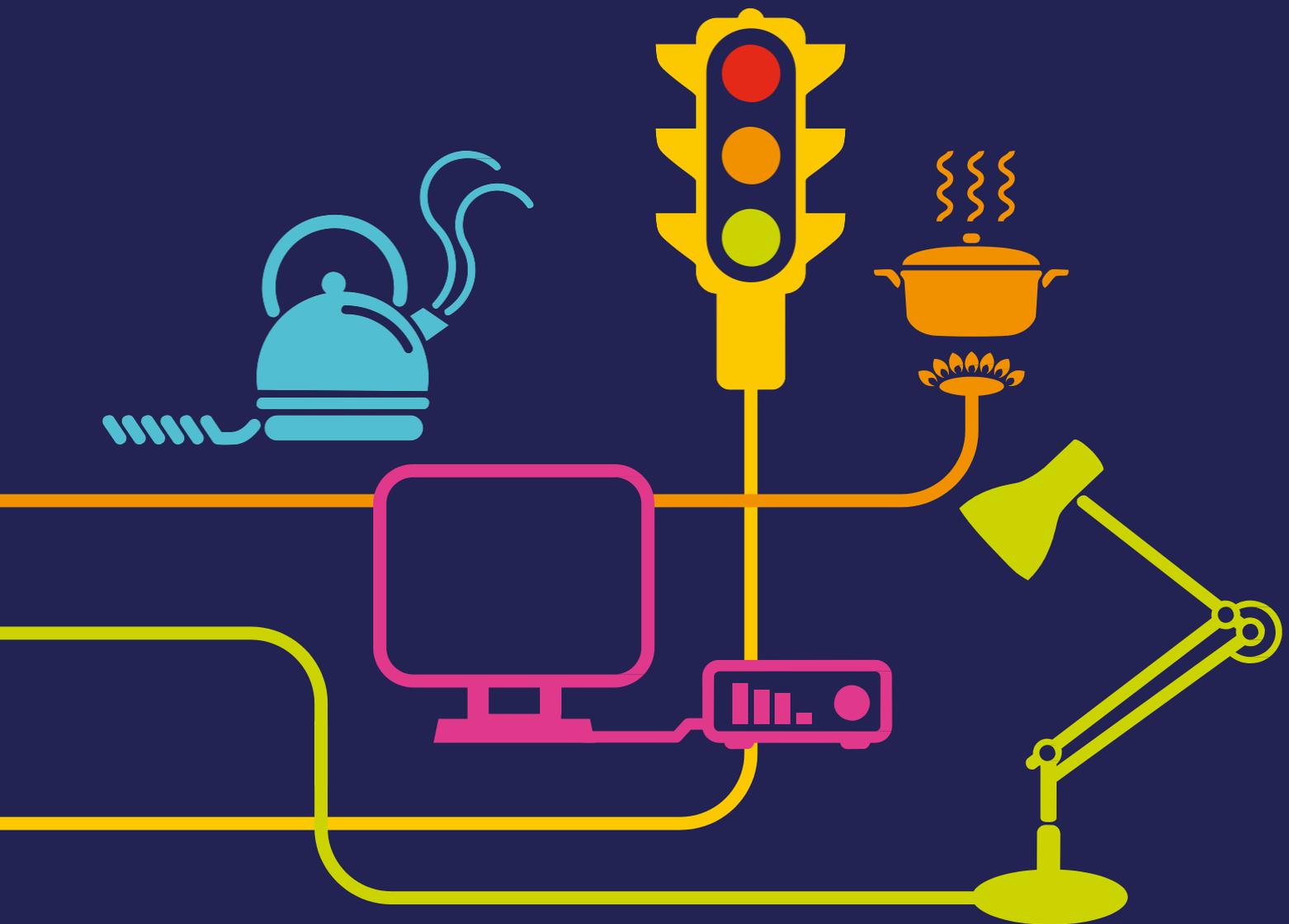


# Frequency Control by Demand Management (FCDM)



A guide to the services procured by National Grid to manage system frequency

“National Grid is an international electricity and gas company responsible for operating the electricity and gas transmission systems across Great Britain”

### What is system frequency?

System frequency is a continuously changing variable that is determined and controlled by the second by second (real time) balance between system demand and total electricity generation. If demand is greater than generation the frequency falls, while if generation is greater than demand the frequency rises.

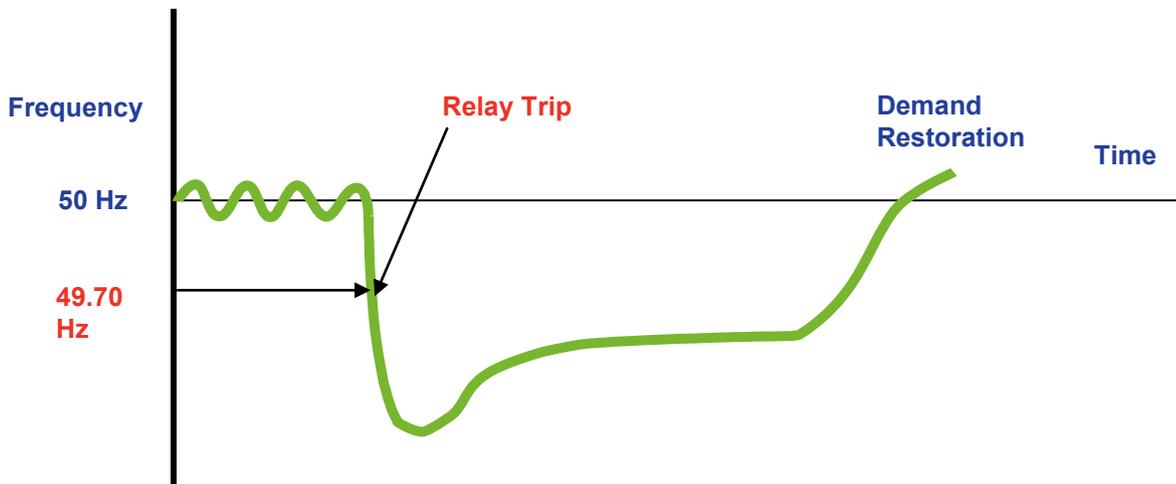


## What is the service?

This service aims to prevent a fall in system frequency below the statutory limit of 49.5Hz. In general, frequency does not fall below 49.70Hz unless there is an unplanned generation loss or demand increase on the system. The FCDM service helps to stop a fall in frequency through the interruption of customers that use large amounts of electricity (over 3MW) from the transmission system (demand customers). This helps the system because as demand falls the frequency should increase.

The interruption is achieved by the installation of equipment at a provider's site which can detect a fall in frequency below a pre set level. These are commonly known as low frequency relays, and they will disconnect a pre-agreed level of demand for a 30 minute period.

Once the demand has been disconnected, the system frequency should stabilise after which the provider may manually restore their demand connection.



## How is the service procured?

The service is negotiated on an individual basis with National Grid, provided that the provider meets the following minimum requirements:

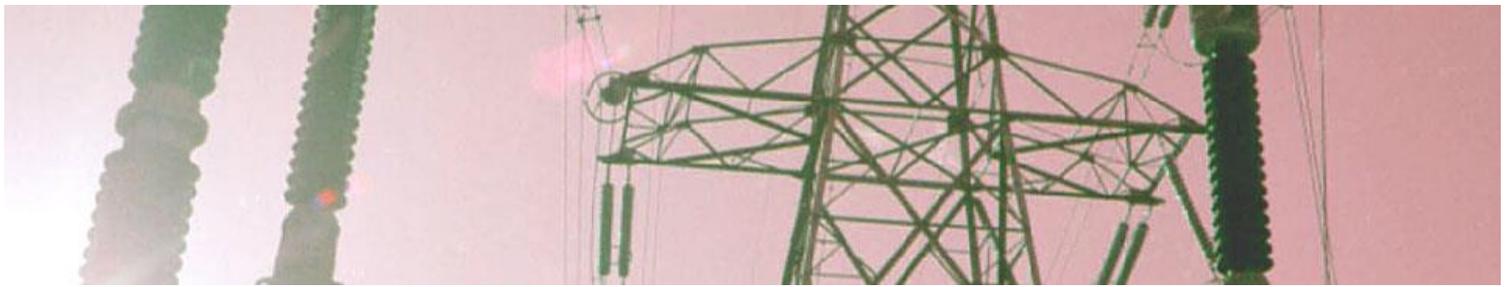
- The demand must be a minimum of 3MW
- The plant must be available for the FCDM service continuously but the provider can declare which periods they are available
- The demand reduction must take place within 2 seconds and be sustained for a minimum of 30 minutes

## Aggregators

It is possible for providers to appoint an agent to aggregate their demand site, and there is a list of current aggregation companies on the National Grid website.

## Payment

Providers are paid an availability fee in £/MWh, and this is calculated based on the aggregated metered MWh of demand during the period.



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**Information:**

For more information on Balancing Services please visit:

<http://www2.nationalgrid.com/uk/services/balancing-services/frequency-response/frequency-control-by-demand-management/>