

OPERATING CODE NO. 1

(OC1)

GC0096 STORAGE – PROPOSED LEGAL TEXT
30 JULY 2019

DEMAND FORECASTS

CONTENTS

(This contents page does not form part of the Grid Code)

<u>Paragraph No/Title</u>	<u>Page Number</u>
OC1.1 INTRODUCTION.....	2
OC1.2 OBJECTIVE	2
OC1.3 SCOPE.....	2
OC1.4 DATA REQUIRED BY THE COMPANY IN THE OPERATIONAL PLANNING PHASE.....	2
OC1.5 DATA REQUIRED BY THE COMPANY IN THE PROGRAMMING PHASE, CONTROL PHASE AND POST-CONTROL PHASE	3
OC1.6 THE COMPANY FORECASTS.....	5

- OC1.1 INTRODUCTION
- OC1.1.1 **Operating Code No.1 ("OC1")** is concerned with **Demand** forecasting for operational purposes. In order to match generation output with **Demand** for electricity it is necessary to undertake **Demand** forecasting. It is also necessary to undertake **Demand** forecasting of **Reactive Power**.
- OC1.1.2 In the **Operational Planning Phase**, **Demand** forecasting shall be conducted by **The Company** taking account of **Demand** forecasts furnished by **Network Operators**, who shall provide **The Company** with information in the form set out in this **OC1**. The data supplied under the **PC** is also taken into account.
- OC1.1.3 In the **Programming Phase** and **Control Phase**, **The Company** will conduct its own **Demand** forecasting taking into account information to be furnished by **Suppliers** and **Network Operators** and the other factors referred to in OC1.6.1.
- OC1.1.4 In this **OC1**, the point of connection of the **External Interconnection** to the **National Electricity Transmission System** shall be considered as a **Grid Supply Point**. **Reactive Power Demand** includes the series **Reactive** losses of the **User's System** but excludes any network susceptance and any **Reactive** compensation on the **User's System**. **The Company** will obtain the lumped network susceptance and details of **Reactive** compensation from the requirements to submit data under the **PC**.
- OC1.1.5 Data relating to **Demand Control** should include details relating to MW.
- OC1.1.6 **OC1** deals with the provision of data on **Demand Control** in the **Operational Planning Phase**, the **Programming Phase** and the **Post-Control Phase**, whereas **OC6** (amongst other things) deals with the provision of data on **Demand Control** following the **Programming Phase** and in the **Control Phase**.
- OC1.1.7 In this **OC1**, Year 0 means the current **Financial Year** at any time, Year 1 means the next **Financial Year** at any time, Year 2 means the **Financial Year** after Year 1, etc.
- OC1.1.8 References in **OC1** to data being supplied on a half hourly basis refer to it being supplied for each period of 30 minutes ending on the hour and half-hour in each hour.
- OC1.2 OBJECTIVE
- The objectives of **OC1** are to:
- OC1.2.1 enable the provision of data to **The Company** by **Users** in the **Programming Phase**, **Control Phase** and **Post-Control Phase**; and
- OC1.2.2 provide for the factors to be taken into account by **The Company** when **Demand** forecasting in the **Programming Phase** and **Control Phase**.
- OC1.3 SCOPE
- OC1** applies to **The Company** and to **Users** which in this **OC1** means:
- (a) **Network Operators**, and
 - (b) **Suppliers**.
- OC1.4 DATA REQUIRED BY THE COMPANY IN THE OPERATIONAL PLANNING PHASE
- OC1.4.1
- (a) Each **User**, as specified in (b) below, shall provide **The Company** with the data requested in OC1.4.2 below.
 - (b) The data will need to be supplied by each **Network Operator** directly connected to the **National Electricity Transmission System** in relation to **Demand Control** and in relation each **Generator** with respect to the output of **Embedded Medium Power Stations** within its **System**.
- OC1.4.2 (a) Data

By calendar week 28 each year each **Network Operator** will provide to **The Company** in writing the forecast information listed in (c) below for the current **Financial Year** and each of the succeeding five **Financial Years**.

(b) Data Providers

In circumstances when the busbar arrangement at a **Grid Supply Point** is expected to be operated in separate sections, separate sets of forecast information for each section will be provided to **The Company**.

(c) Embedded Medium Power Station Output and Demand Control

For the specified time of the annual peak half hour **National Electricity Transmission System Demand**, as specified by **The Company** under PC.A.5.2.2, the output of **Embedded Medium Power Stations** and forecasts of **Demand** to be relieved by **Demand Control** on a **Grid Supply Point** basis giving details of the amount and duration of the **Demand Control**.

OC1.5 DATA REQUIRED BY THE COMPANY IN THE PROGRAMMING PHASE, CONTROL PHASE AND POST-CONTROL PHASE

OC1.5.1 Programming Phase

For the period of 2 to 8 weeks ahead the following will be supplied to **The Company** in writing by 1000 hours each Monday:

(a) Demand Control

Each **Network Operator** will supply MW profiles of the amount and duration of their proposed use of **Demand Control** which may result in a **Demand** change equal to or greater than the **Demand Control Notification Level** (averaged over any half hour on any **Grid Supply Point**) on a half hourly and **Grid Supply Point** basis;

(b) Medium Power Station Operation

Each **Network Operator** will, if reasonably required by **The Company**, supply MW schedules for the operation of **Embedded Medium Power Stations** within its **System** on a half hourly and **Grid Supply Point** basis.

OC1.5.2 For the period 2 to 12 days ahead the following will be supplied to **The Company** in writing by 1200 hours each Wednesday:

(a) Demand Control

Each **Network Operator** will supply MW profiles of the amount and duration of their proposed use of **Demand Control** which may result in a **Demand** change equal to or greater than the **Demand Control Notification Level** (averaged over any half hour on any **Grid Supply Point**) on a half hourly and **Grid Supply Point** basis;

(b) Medium Power Station Operation

Each **Network Operator** will, if reasonably required by **The Company**, supply MW schedules for the operation of **Embedded Medium Power Stations** within its **System** on a half hourly and **Grid Supply Point** basis.

OC1.5.3 Medium Power Station Output

Each **Network Operator** will, if reasonably required by **The Company**, supply **The Company** with MW schedules for the operation of **Embedded Medium Power Stations** within its **System** on a half hourly and **Grid Supply Point** basis in writing by 1000 hours each day (or such other time specified by **The Company** from time to time) for the next day (except that it will be for the next 3 days on Fridays and 2 days on Saturdays and may be longer (as specified by **The Company** at least one week in advance) to cover holiday periods);

OC1.5.4 Other Codes

Under **OC6** each **Network Operator** will notify **The Company** of their proposed use of **Demand Control** (which may result in a **Demand** change equal to or greater than the **Demand Control Notification Level**), and under **BC1**, each **Supplier** will notify **The Company** of their proposed use of **Customer Demand Management** (which may result in a **Demand** change equal to or greater than the **Customer Demand Management Notification Level**) in this timescale.

OC1.5.5 Control Phase

OC1.5.5.1 Demand Control

Under **OC6**, each **Network Operator** will notify **The Company** of any **Demand Control** proposed by itself which may result in a **Demand** change equal to or greater than the **Demand Control Notification Level** averaged over any half hour on any **Grid Supply Point** which is planned after 1000 hours, and of any changes to the planned **Demand Control** notified to **The Company** prior to 1000 hours as soon as possible after the formulation of the new plans;

OC1.5.5.2 Customer Demand Management

- (a) Each **Supplier** will notify **The Company** of any **Customer Demand Management** proposed by itself which may result in a **Demand** change equal to or greater than the **Customer Demand Management Notification Level** averaged over any half hour on any **Grid Supply Point** which is planned to occur at any time in the **Control Phase** and of any changes to the planned **Customer Demand Management** already notified to **The Company** as soon as possible after the formulation of the new plans.
- (b) The following information is required on a **Grid Supply Point** and half-hourly basis:
 - (i) the proposed date, time and duration of implementation of **Customer Demand Management**; and
 - (ii) the proposed reduction in **Demand** by use of **Customer Demand Management**.

OC1.5.5.3 Load Management Blocks

In Scotland, by 11:00 each day, each **Supplier** who controls a **Load Management Block** of **Demand** with a capacity of 5MW or more shall submit to **The Company** a schedule of its proposed switching times and profiles in respect of each block for the next day.

OC1.5.6 Post-Control Phase

The following will be supplied to **The Company** in writing by 0600 hours each day in respect of **Active Power** data and by 1000 hours each day in respect of **Reactive Power** data:

(a) Demand Control

Each **Network Operator** will supply MW profiles for the previous calendar day of the amount and duration of **Demand** reduction achieved by itself from the use of **Demand Control** equal to or greater than the **Demand Control Notification Level** (averaged over any half hour on any **Grid Supply Point**), on a half hourly and **Grid Supply Point** basis.

(b) Customer Demand Management

Each **Supplier** will supply MW profiles of the amount and duration of **Demand** reduction achieved by itself from the use of **Customer Demand Management** equal to or greater than the **Customer Demand Management Notification Level** (averaged over any half hour on any **Grid Supply Point**) on a half hourly and **Grid Supply Point** basis during the previous calendar day.

OC1.6 THE COMPANY FORECASTS

OC1.6.1 The following factors will be taken into account by **The Company** when conducting **National Electricity Transmission System Demand** forecasting in the **Programming Phase** and **Control Phase**:

- (a) Historic **Demand** data (this includes **National Electricity Transmission System Losses**).
 - (b) Weather forecasts and the current and historic weather conditions.
 - (c) The incidence of major events or activities which are known to **The Company** in advance.
 - (d) Anticipated interconnection flows across **External Interconnections**.
 - (e) **Demand Control** equal to or greater than the **Demand Control Notification Level** (averaged over any half hour at any **Grid Supply Point**) proposed to be exercised by **Network Operators** and of which **The Company** has been informed.
 - (f) **Customer Demand Management** equal to or greater than the **Customer Demand Management Notification Level** (averaged over any half hour at any **Grid Supply point**) proposed to be exercised by **Suppliers** and of which **The Company** has been informed.
 - (g) Other information supplied by **Users**.
 - (h) Anticipated **Pumped Storage Unit** ~~and Existing Pumped Storage Unit~~ demand.
 - (i) the sensitivity of **Demand** to anticipated market prices for electricity.
 - (j) **BM Unit Data** submitted by **BM Participants** to **The Company** in accordance with the provisions of **BC1** and **BC2**.
 - (k) **Demand** taken by **Station Transformers**
- (l) Anticipated Electricity Storage Module demand

OC1.6.2 Taking into account the factors specified in OC1.6.1 **The Company** uses **Demand** forecast methodology to produce forecasts of **National Electricity Transmission System Demand**. A written record of the use of the methodology must be kept by **The Company** for a period of at least 12 months.

OC1.6.3 The methodology will be based upon factors (a), (b) and (c) above to produce, by statistical means, unbiased forecasts of **National Demand**. **National Electricity Transmission System Demand** will be calculated from these forecasts but will also take into account factors (d), (e), (f), (g), (h), (i) and (j) above. No other factors are taken into account by **The Company**, and it will base its **National Electricity Transmission System Demand** forecasts on those factors only.

< END OF OPERATING CODE NO. 1 >

