



Operating Code OC1 – Demand Forecasting

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Operating Code OC1 – Demand Forecasting

OC1.1 Introduction

OC1 outlines the obligations on OETC and Users regarding the preparation of forecasts of both Active Demand and Reactive Demand on the Transmission System. OC1 sets out the timescales within which Users shall provide forecasts of both Active Demand and Reactive Demand to OETC, and the timescales within which OETC shall provide forecasts to Users. The demand forecasts referred to in OC1 are required for certain operational purposes, specifically;

- the **Operational Planning Phase** requires annual forecasts of both Active Demand and Reactive Demand on the Transmission System for each of the succeeding 5 years;
- the **Programming Phase** requires weekly forecasts of both Active Demand and Reactive Demand on the Transmission System for the period 1 to 8 weeks ahead; and
- the **Control Phase** requires daily forecasts of Demand Control data on the Transmission System for the day ahead.

OC1 also deals with the provision of Demand Control data (as described in OC4) in timescales consistent with the Operational Planning Phase, the Programming Phase, and the Control Phase.

OC1.2 Objective

The objectives of OC1 are as follows;

- to specify the requirement for OETC and Users to provide unbiased forecasts of both Active Demand and Reactive Demand on the Transmission System within specified timescales. These forecasts are used by OETC for Operational Planning purposes, and in the Programming Phase, and the Control Phase;
- to describe information to be provided by Users to OETC in the post Control Phase; and
- to describe certain factors to be taken into account by OETC and Users when preparing forecasts of both Active Demand and Reactive Demand on the Transmission System.



OC1.3 Scope

In addition to OETC, OC1 applies to the following Users;

- Licensed Distributors;
- Power Producers;
- Directly Connected Consumers;
- International Interconnected Parties;
- Internally Interconnected Parties;
- PWP; and
- RAEC if Connected to the Total System.

OC1.4 Data required by OETC

OC1.4.1 Operational Planning Phase

No later than the end of October each year, OETC shall notify each User in writing of the forecast information listed below for each of the following 5 Operational Years;

- the date and time of the forecast annual peak Active Demand and Reactive Demand on the Transmission System at annual maximum Demand conditions¹; and
- the date and time of the forecast annual minimum Active Demand and Reactive Demand on the Transmission System at average minimum Demand conditions¹.

By the end of January of each year, each User shall provide to OETC in writing, the forecast information listed below for each of the succeeding 5 Operational Years;

- each Licensed Distributor (summed over all Bulk Supply Points) and each Directly Connected Consumer (at the Connection Point), shall provide forecast profiles of hourly Active Power Demand for the day of that User's maximum Demand and for the day specified by OETC as the day of forecast annual peak Demand. These forecasts to reflect annual maximum Demand conditions;
- each Licensed Distributor (summed over all Bulk Supply Points) and each Directly Connected Consumer (at the Connection Point), shall provide forecasts of their annual Active Demand requirements for Average Conditions subdivided into the following categories of Consumer;
 - residential;
 - commercial;
 - industrial;
 - agriculture and fisheries;
 - hotels and tourism;
 - government; and

¹ There will be a need for OETC to develop forecast methodologies based on normalised demands, e.g. Average Maximum Demand and Average Conditions



- any other identifiable categories of Consumers.
- each Licensed Distributor (summed over all Bulk Supply Points) and Directly Connected Consumer (at the Connection Point), shall provide forecasts of the profile of hourly Active Demand for the day specified by OETC as the day of forecast minimum Demand at average conditions;
- individual Bulk Supply Point Demand (Active Power) and Power Factor at annual maximum Demand conditions for the annual peak hour at the Bulk Supply Point; and
- Individual Bulk Supply Point Demand (Active Power) and Power Factor at Average Conditions at the specified hour at the annual minimum OETC Demand.

User forecasts of both Active Demand and Reactive Demand on the Transmission System provided to OETC in accordance with OC1 must reflect the User's best estimates of its forecast requirements.

In circumstances when the busbar arrangement at a Bulk Supply Point is expected to be operated in separate sections, separate sets of forecast information for each section shall be provided to OETC.

OETC will use the information supplied to it to prepare forecasts of both Active Demand and Reactive Demand on the Transmission System for use in the Operational Planning Phase.

OC1.4.2 Programming Phase

The Users identified below shall provide OETC in writing by 10:00 hours each Saturday forecasts of Demand for Active Power and Reactive Power on the Transmission System for the period of 1 to 8 weeks ahead;

- Licensed Distributors shall supply hourly profiles of Demand for Active Power and Reactive Power at each Bulk Supply Point and the amount and duration of their proposed use of Demand Control which may result in a Demand change of 1 MW or more on an hourly basis at each Bulk Supply Point; and
- each Directly Connected Consumer shall supply hourly MW profiles of Demand for Active Power and Reactive Power at a Connection Point.

OETC will use the information supplied to it in preparing its forecasts of Demand for Active Power and Reactive Power on the Transmission System for the purposes of the Programming Phase.

OC1.4.3 Control Phase

In accordance with SDC1 each Licensed Distributor, User, and Directly Connected Consumer shall notify OETC by 10:00hours each day of any Demand Control procedures that may result in a Demand Change of 1 MW or more averaged over any hour on any Bulk Supply Point of the following day.

OETC will use the information supplied to it when preparing its forecasts of both Active Demand and Reactive Demand on the Transmission System for use in Control Phase studies. OETC shall issue to all Users the forecasts used in the Control Phase by 15:00hours each day.



OC1.4.4 Post Control Phase

The Users identified below will provide OETC in writing by 10:00 hours each day certain information regarding Active Power data and Reactive Power data for the previous day;²

- each Licensed Distributor shall supply hourly MW profiles for each Bulk Supply Point for the previous day showing the amount and duration of Demand reduction achieved from the use of Demand Control of 1 MW or more averaged over any hour on any Bulk Supply Point.
- each Directly Connected Consumer shall supply MW profiles for the previous day in relation to its Demand and Active Energy requirements,
- each Power Producer shall supply details of hourly Active Power and Reactive Power output sent out to the Transmission System by its Gensets during the previous calendar day.

OC1.5 OETC forecasts

OETC is responsible for the forecasts of both Active Demand and Reactive Demand on the Transmission System used for planning and operational purposes. However, OETC is required by the terms of its Transmission and Dispatch Licence to ensure that the forecasts of Active Demand used in the Operational Planning Phase are consistent with the forecasts of Active Demand prepared and published by the PWP (in its Statement of Future Capacity Requirements).

When preparing forecasts of both Active Demand and Reactive Demand on the Transmission System to be used in the Planning Phase and the Control Phase, OETC shall take account of the following;

- historic Demand data
- Transmission System losses
- weather forecasts and the current and historic weather conditions
- the incidence of major events or activities which are known to OETC in advance
- Generation Schedule and Desalination Schedule
- Demand Control of 1 MW or more proposed to be exercised by Licensed Distributors and of which OETC has been informed
- other information supplied by Users.

² Users are only required to supply the data in 1.4.4 until OETC can obtain it from the SCADA system, The Grid Code Review panel will then need to review this paragraph.