Revenue Reset Regulatory Information Notice

Network Information Reporting 2023-28

Revenue Proposal 2023-24 to 2027-28

JANUARY 2022

ElectraNet

Company Information

ElectraNet Pty Ltd (ElectraNet) is the principal electricity transmission network service provider (TNSP) in South Australia.

For information about ElectraNet visit www.electranet.com.au.

Contact

For enquiries about this Revenue Proposal please contact:

Simon Appleby
Manager Regulation and Investment Planning
ElectraNet
52-55 East Terrace
Adelaide SA 5000

revenue.reset@electranet.com.au

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1. Maximum Demand and Utilisation Spatial

1.1 Data requirement

This information has been provided in relation to the Regulatory Information Notice (RIN), Schedule 1, Section 10 Demand Forecasts.

1.2 Demand Forecasts Methodology

The maximum demand forecasts apply SA Power Network (SAPN) forecasts and direct connect customer forecasts.

1.3 SA Power Network Connection Point Maximum Demand

Transmission connection point forecasts provided by SAPN include real power, reactive power, apparent power and power factor.

Historical maximum demands are recorded in both MW and MVA. The forecasting process uses historical demand traces to ensure it is consistent with historical observations and forecasting assumptions.

AEMO also publishes transmission connection point forecasts including both real[1] and reactive[2] power and are used by ElectraNet to independently verify the SAPN forecasts. It has been assessed that there are no material differences between the forecasts.

ElectraNet has applied a spatial forecasting process for the data provided in the RIN template 5.4 Maximum Demand and Utilisation at Spatial Level.

1.4 Contract Agreed Maximum Demand

The relevant contract agreed maximum demand (AMD) for each direct connect customer is used and modified as required. These maximum demand forecasts are summated for each type of forecast, for example each connection point's coincident 10% PoE maximum demand forecast is summated to create a system demand. Due to confidentiality agreements with the direct connected customers, ElectraNet is not able to provide these agreed maximum demands publicly.

All MVA maximum demands are calculated from their MW demand and historical power factors.

1.5 Probability of exceedance

Maximum demand forecasts with 10% and 50% probability of exceedance (PoE) are reported. ElectraNet typically uses 10% PoE maximum demand in network planning.

In calculating PoE the following assumptions were made:

- The non-coincident 10% PoE MW maximum demands are estimated using the AMD provided by the direct connected customers for the forecast years;

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[1] AEMO Transmission Connection Point Forecast-Real Power

[2] AEMO Transmission Connection Point Forecast – Reactive Power

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- The coincident 10% PoE MW maximum demands are estimated from the AMD multiplied by the 10% PoE connection point diversity factor for the forecast years;

- The non-coincident 50% PoE MW maximum demands are estimated using the AMD provided by the direct connected customers for the forecast years;

- The coincident 50% PoE MW maximum demands are estimated from the AMD multiplied by the 50% PoE connection point diversity factor.

- Weather corrected PoEs are obtained from AEMO for SA Power Network connection points;

- Weather correction for non-coincidental demands of the direct connected customers is not applied by ElectraNet since these loads are not weather dependent;

- Diversity factors are calculated based on historical data of each connection point, compared to state maximum demand, for the last 12 years.

1.6   Adjustments for Generation

Adjustments for generation are included in the data provided by SAPN for SAPN connection points.

It is forecasted that maximum coincidental demand in SA is occurring during summer evening when solar PV output is expected to be zero.

"Adjustments - Embedded Generation" is calculated using a generic solar PV trace for direct connected customers where they are known to have solar PV generators. For "Snuggery Industrial" direct connect customers, "Adjustments – Embedded Generation" is assumed zero for coincidental demand as it is assumed that the supplied AMDs have already included the adjustment for embedded generation.

1.7   Block Loads and Load Transfers, and Appliance Models

SAPN includes the following components for each transmission connection point in their forecasting process[3]:

- block loads and load transfers

- energy efficiency in appliances and buildings

Note direct connect customers are assumed not to be affected by load transfers and switching, and no appliance model has been applied.

1.8   Reliability Requirements for Connection Points

The reliability requirement for each connection point is stipulated independently by the Essential Services Commission of South Australia (ESCOSA). These reliability requirements for different connection points include:

- Certain connection points requiring redundancy;

- Certain connection points requiring various levels of redundancy; and

- Certain connection points requiring no redundancy at all.

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[3] SAPN Distribution Annual Planning Report 2020

These redundancy requirements can be found in the SA Electricity Transmission Code (ETC).

1.9   Non-Network Solutions

ElectraNet has a Non-network Solution Policy[4] which is applied in asset management and network planning. The policy requires ElectraNet to consult with non-network providers as part of network planning and it is an essential part of the Regulatory Investment Test for Transmission (RIT-T) process. Previous non-network arrangements are also reviewed on a regular basis.

1.10   Normal and Emergency Ratings in determining capacity

If the connection point is a substation, the connection point rating is the Normal cyclic rating of the substation transformer/s. Where there is more than one transformer such as for a N-1 configuration the summation of the transformer normal cyclic ratings is applied. Similarly, in the case of a line where it also has a N-1 configuration, there is more than one line directly in parallel, the summation of the line seasonal thermal ratings is applied. These rating represents the N capacity of a given connection point (i.e. with all transformers and lines in service). However, ElectraNet does not consider that using the summation of the ratings gives a true and representative proxy of the connection point rating in a N-1 configuration.

ElectraNet's transformers do not have seasonal cyclic ratings hence the non-coincident and coincident ratings will be the same. If the connection point is a line then it will be the seasonal thermal rating (constrained by terminal equipment if applicable) occurring at that time.

In the case where another party owns the assets to which the ratings apply the rating is assumed to be either the highest nameplate of the customer transformer (preferred) or the rating of the next upstream (ElectraNet owned) constraining piece of plant.

Some connection points are configured as grouped connection points. Such connection points in any given group are located in geographically separate locations, but service a common (meshed) load area.

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[4] ElectraNet Internal Policy Document. Doc No. 1-14-OP01