DNSP S-factor calculation handbook

for the STPIS S-factor calculation model

September 2025



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1 Introduction

Under Chapter 6 of the NER, the AER is required to publish, administer, and maintain a Service Target Performance Incentive Scheme (STPIS). The STPIS provides incentives for maintaining and improving performance of distribution network service providers (DNSPs) to the extent that customers are willing to pay for such improvements.

The financial reward or penalty as a result of a DNSP's service performance outcome is calculated in accordance with the STPIS version 2.01. This is referred to as the 'S-factor'.

The AER has developed an S-factor calculation model (the model) in excel spreadsheet form that illustrates the calculation of the annual S-factors (in percentage terms) for DNSPs in accordance with the STPIS version 2.0.

The model is intended to be used as a tool to help DNSPs understand the calculations the AER uses to determine the S-factor. The model is not a data submission tool but DNSPs can use the model to replicate the AER's S-factor calculations and test outcomes.

This handbook has been prepared to assist DNSPs identify the input data used in the model, follow the model's calculation process, and interpret the output from the model. It also details the limitations of the model.

The handbook and the model do not replace the AER's *STPIS* for electricity distribution network service providers version 2.0 (STPIS scheme v2.0)² and if there are any differences between the model and the scheme, the scheme takes precedence. In particular, the model does not cover all the possible scenarios laid out in the scheme. The likelihood of some of these scenarios occurring is low, and attempting to cover all contingencies would increase the complexity—and decrease the accessibility—of the model.

1.1 What is the purpose of the model?

The objective of this model is to allow DNSPs visibility over calculations that are undertaken by the AER when it calculates annual S-factors for electricity distribution businesses. DNSPs can use the model to understand these calculations and test outcomes.

1.2 What data is used in the model?

The inputs required for this model for relevant parameters: SAIDI, SAIFI, MAIFI (or MAIFIe) and Telephone Answering are set out in Table 1.

AER, Electricity distribution network service providers Service target performance incentive scheme Version 2.0, November 2018.

AER, Electricity distribution network service providers Service target performance incentive scheme Version 2.0, November 2018.

Table 1 - Data inputs by source

Data Input	Source
Revenue at Risk	STPIS scheme version 2.0, unless otherwise
Telephone Answering incentive rate (if relevant)	set out at the DNSP's Distribution Determination (for the relevant period)
Performance targets	DNSP's Distribution Determination (for the
Incentive rates	relevant period)
Table 6.7.1 STPIS daily performance	
Table 6.3.1 Sustained Interruptions	Annual Information Order – Electricity distributors (for the relevant regulatory year)
Table 6.2.4 STPIS Customer summary	
Major Event Day threshold	Other (calculated in accordance with Appendix D of the STPIS scheme v2.0)

To assist with the illustrative purpose of this model, AER has provided a version of the model populated with sample data that is not actual data. The sample data has been chosen to represent the 2024-25 reporting year. Screen shots from the prepopulated model are used in this handbook.

AER has also provided a (blank) template version of the calculation model for DNSPs to download for their own use.

1.3 Annual Information Order

As at 4 September 2025 (date of publication), annual data requirements for DNSPs relating to service performance are specified in the Annual Information Order – Electricity distributors 2024-25 to 2027-28 (the Order).

Following feedback on the initial draft S-factor calculation model shared with DNSPs in December 2024 the AER issued guidance to DNSPs on 30 May 2025 as follows:

AER Guidance

Currently the Annual Information Order states: (Appendix A instructions - Section 5.1.10)

"For interruptions that are restored in multiple stages we require at least two restoration stages to be reported.

- Restoration stage 1 will be used to derive a SAIDI Impact and a SAIFI impact for each feeder impacted by the interruption.
- Restoration stage 2 will be used to derive a SAIDI impact but will not be used to derive a SAIFI impact."

Through the development of the S-factor calculation model, DNSPs have shown that reporting multiple restoration stages is not necessary and will not provide the AER with the information it needs. As such we are now advising DNSPs there are two options to report multistage interruptions in Annual Orders table 6.3.1. We intend to amend the Order to reflect this update to reporting requirements for the 2026-27 data collection onward, but this guidance should be used for 2024-25 and 2025-26 data reporting.

OPTION 1:

For interruptions that are restored in multiple stages we do NOT require at least two restoration stages to be reported.

AND

The customers reported in the "Customers (STPIS) affected by interruption" column must not double count any customers affected by the interruption at different stages - i.e. each affected customer is only counted once. In this instance, electricity distributor should record the Restoration stage as "1".

OPTION 2:

Where the electricity distributor has reported interruptions that are restored in multiple stages against at least two restoration stages, "Customers (STPIS) affected by interruption" reported against stages two and greater must not double count any customers affected by the interruption at an earlier stage - i.e. each affected customer should only be reported once.

Restoration stages 2 and greater will (also) be used to derive a SAIFI impact.

The Order requires DNSPs to provide disaggregated 'Total customer minutes off supply', 'Customers affected by the interruption', as well as 'Average customer numbers' (raw data) so calculations of SAIDI and SAIFI outcomes can be made by the AER as set out in the STPIS.³ This contrasts with the annual RINs (Annual Reporting, Economic Benchmarking and Category Analysis) where the AER required DNSPs to provide calculated inputs to the S-factor calculation (that is, SAIDI and SAIFI). The AER requires the raw data as we use information on service interruptions for a broader analysis than annual S-factor calculations, including performance reporting relating to both service performance and customer experience.

During our consultation on the Order, we received feedback from DNSPs recommending the AER share its current S-factor calculation model, so DNSPs can see the inputs and

³ AER, Annual Information Order – Electricity distributors, April 2024.

calculations the AER use. DNSPs have stated visibility over this model will allow them to explore reasons for different S-factor outcomes.

In response, the AER developed the S-factor calculation model for consultation with the DNSPs.

Following two rounds of consultation with the DNSPs in December 2024 and again in June 2025, the AER published our S-factor calculation model and this supporting handbook in September 2025.

1.4 What are the limitations of the model?

Table 2 provides a description of the clauses from the STPIS scheme v2.0 that we have not included in this model.

Table 2 - Clauses not covered in the S-factor calculation model

Clause	Description
2.6	Transitional arrangements
2.6A	Transition from version 1.2 to version 2.0 of this scheme
2.7	Suspension of this scheme
4	Quality of supply component
5.1(a)(2)-5.1(a)(4)	Customer service component parameters:
	Streetlight Repair, New Connections, Response to Written Enquiries.
6	Guaranteed service level component

1.5 Consultation

The AER received five submissions from DNSPs in response the draft S-factor calculation model provided to DNSPs in December 2024.

The AER received six submissions from DNSPs in response the draft S-factor calculation model provided to DNSPs in June 2025.

Each issue raised has been responded to in an Issues Register which was provided directly to the DNSPs.

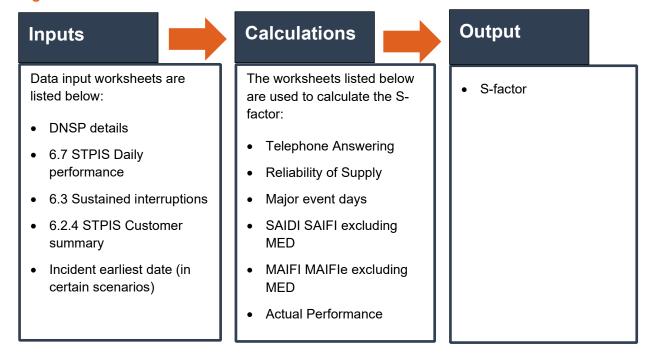
Main themes raised were:

- Rounding of Performance Targets and Incentive Rates See 3.1.3 Performance targets and Incentive rates used
- Formula used to calculate SAIFI see 1.3 Annual Information Order, AER Guidance box.
- The calculation of the Major Event Day Threshold see attachment A
- Rounding of average customer numbers see 4.2 Calculation sheet Reliability of Supply (Average customer numbers, boxed text).

2 Model overview

The model clearly sets out the inputs required to calculate the S-factor. The model also illustrates the calculations made to generate the S-factor. These calculations are made in accordance with the STPIS scheme v 2.0. Specifically, the model is a Microsoft Excel workbook that calculates an S-factor based on the data inputs set out in section 1.3. Figure 1 provides an overview of this process.

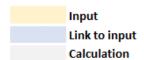
Figure 1 - Process overview



3 Model inputs

The model's input sheets capture information required to calculate the S-factor. There are five input sheets as set out in Figure 1.

The legend on each sheet shows which cells are data input cells, which cells have been linked to the data input cells and which cells are calculations (or formulas).



3.1 Input sheet - DNSP details

3.1.1 Entity details and MED

The "DNSP details" sheet includes "Business name", and the "Reporting year start date" (for the S-factor calculation) under the "Entity details" heading. The prefilled model uses annual data from the 2024-25 period so the "Reporting year start date" entered for the fictional DNSP in Figure 2 below is 1/07/2024. The "Short Date" format is used in the model to allow the VLOOKUP calculations to work.

The Major Event Day threshold (tMED) is not calculated in this model. The tMED for the relevant reporting year is a required input for the S-factor calculation. The fictional threshold of 5.772426 has been used in the model under the "MED" heading. See Figure 2.

Figure 2 - DNSP details - Entity details and MED

S-factor calculation model



3.1.2 Distribution determination details

Under the "Distribution determination details" heading, subheadings are categorised as: Revenue determination period; Parameters that apply to DNSP in the determination period; Performance targets; and Incentive rates.

Parameters that apply to DNSP

The model is designed to work for all DNSPs. We have updated the model so DNSPs can select if the telephone answering parameter is relevant. If it is not relevant, the related input cells will be greyed out. Similarly, if a non-Victorian DNSP is selected as "Business name" under the Entity Details, the MAIFI/MAIFIe input cells will be greyed out. See Figure 3.

Figure 3 - Distribution determination details - Parameters that apply to DNSP

Parameters that apply to Australian Distribution Co. in 2023-28 SAIDI/SAIFI Yes MAIFI/MAIFIe No Telephone Answering No **Performance Targets** Reliability of Supply Parameters and Performance Targets Feeder classification SAIDI CBD 92.118425 1.015407 Urban 215.948178 10.069557 Short rural 266.225926 2.376648 Long rural 544.060865 5.170691 Customer Service Parameters and Performance Targets **Incentive Rates** Reliability of Supply Parameters and Incentive Rates Feeder classification SAIDI SAIFI CBD 0.003313 0.232017 Urban 0.004136 0.014635

Performance Targets and Incentive Rates

The DNSP's performance targets and incentive rates for each relevant Reliability of Supply parameter are segmented by feeder classification type. The performance target and incentive rate for Telephone Answering parameter (if applicable) are not segmented, see Figure 4.

Figure 4 - Distribution determination details - Performance targets and incentive rates

Performance Targets Reliability of Supply Parameters and Performance Targets Feeder classification SAIFI MAIFI/MAIFIe CBD 92.118425 1.015407 0.249457 Urban 215.948178 10.069557 0.194917 Short rural 266.225926 2.376648 4.288226 Long rural 544.060865 5.170691 4.587002

Customer Service Parameters and Performance Targets

Telephone Answering

88.080177

Incentive Rates

	Reliability of Supply Parameters and Incentive Rates			
Feeder classification	n SAIDI SAIFI MAIFI/MAIFIE			
CBD	0.003313	0.232017	0.051190	
Urban	0.004136	0.014635	0.032115	
Short rural	0.008121	0.208712	0.042322	
Long rural	0.009512	0.911518	0.041231	

Customer Service Parameters and Incentive Rates

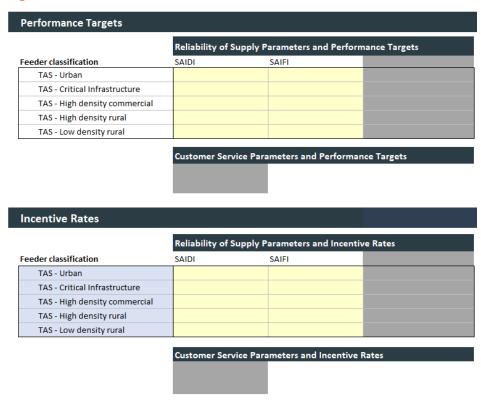
Telephone Answering

-0.040000

Where "TasNetworks (2019-24)" is selected as the Business Name, TasNetworks' feeder classifications will populate. See Figure 5.

TasNetworks' feeder classification for 2025-26 onwards are also available in the Model by selecting Business name "TasNetworks (25-26 onwards)".

Figure 5 - TasNetworks' feeder classifications



Where a feeder classification does not apply to a DNSP, the corresponding Performance Target and Incentive Rate cells are left blank. For example, in Figure 6 the CBD feeder classification does not apply for the DNSP.

Figure 6 - CBD feeder classification does not apply

	Reliability of Suppl	y Parameters and Pe	rformance Targ
Feeder classification	SAIDI	SAIFI	
CBD			
Urban	215.948178	10.069557	
Short rural	266.225926	2.376648	
Long rural	544.060865	5.170691	
Incentive Rates	Customer Service P	arameters and Perfo	rmance Targets
	Reliability of Suppl	/ Parameters and Inc	
Feeder classification			
Feeder classification CBD	Reliability of Suppl	/ Parameters and Inc	
Feeder classification CBD Urban	Reliability of Suppl SAIDI 0.004136	/ Parameters and Inc SAIFI 0.014635	
Feeder classification CBD	Reliability of Suppl	/ Parameters and Inc	
Feeder classification CBD Urban	Reliability of Suppl SAIDI 0.004136	/ Parameters and Inc SAIFI 0.014635	

3.1.3 Performance targets and Incentive rates used

In the case where the AER has published an excel STPIS model with a DNSP's revenue determination decision, the unrounded Performance Targets and Incentive Rates, from the published STPIS model will be used to calculate the S-factor.

In the case where the AER has NOT published an excel STPIS model with a DNSP's revenue determination decision, the Performance Targets and Incentive Rates used to calculate the S-factor will be those from the published final decision pdf document and the number of decimal places used in the S-factor calculation will reflect those used in the published document.

3.1.4 Scheme or determination details

The STPIS scheme v2.0 sets out total Revenue at Risk for all applicable parameters (that is, total Revenue at Risk under the scheme) as well as Revenue at Risk for the Customer Service parameters.⁴ The total Revenue at Risk and the Revenue at Risk for the Customer Service parameters can be superseded in a DNSP's revenue determination.

The sample data used in the model are the scheme default Revenue at Risk values for the total revenue at risk and the Telephone Answering parameter (a parameter of the Customer Service component). These are ±5% and ±0.5 percent, respectively. See Figure 7.

Figure 7 - DNSP details - Scheme details

Scheme or determination details				
Revenue at risk				
Total Revenue at risk (cap)				
Max	5.00%			
Min -5.00%				
Telephone answering parameter				
Max	0.50%			
Min	-0.50%			

3.2 Input sheet – 6.7 STPIS Daily performance

Table 6.7.1 on sheet "6.7 STPIS Daily performance" is populated with data from table 6.7.1 as submitted by the DNSP under the Annual Information Order for the relevant year. See Figure 8.

"Number of calls received" and "Number of calls answered in 30 seconds" are used to calculate actual performance of the Telephone Answering parameter, if relevant.

Columns under the "MAIFI/MAIFIe" heading are used to calculate actual performance of the MAIFI or MAIFIe by feeder classification type, if relevant.

Yellow cells are data entry cells.

⁴ AER, *Electricity distribution network service providers Service target performance incentive scheme* Version 2.0, November 2018, cl 2.5 (total revenue at risk) and cl 5.2 (customer service revenue at risk).

ANNUAL INFORMATION ORDER Australian Distribution Co. **REPORTING STATEMENT: 2024-25** Daily performance data - unplanned DC05 - Service performance | Momentary interruptions Call centre & Momentar Total number of Number of calls Number of calls swered in 30 sec Units number of calls 244 0.006317 0.006317 0.005169 0.005169 2/07/2024 number of calls 173 173 0.001718 0.001718 0.001406 0.001406 3/07/2024 number of calls 172 172 156 number of calls 330 5/07/2024 number of calls 405 405 320 7/07/2024 number of calls 339 283

Figure 8 - 6.7 STPIS Daily Performance - Annual Information Orders

3.3 Input sheet - 6.3 Sustained interruptions

Table 6.3.1 on sheet "6.3 Sustained interruptions" is populated with data from table 6.3.1 as submitted by the DNSP under the Annual Information Order for the relevant year. See Figure 9.

The following data from this worksheet are used in the calculation of the S-factor.

- Start date of interruption
- Incident reference number (if relevant)⁵
- Feeder classification
- Reason for interruption
- Customers (STPIS) affected by interruption
- Total customer minutes off supply

Yellow cells represent data entry cells.

See Section 3.4 Input sheet – Incident earliest date.

JAL INFORMATION ORDER Australian Distribution Co. REPORTING STATEMENT: 2024-25 6.3.1 - SUSTAINED INTERRUPTIONS TO SUPPLY Free text DD/MM/YYYY HH:MM:SS DD/MM/YYYY HH:MM:SS Free text Yes/No 36 83 18 343 293 24 264 135 354119124 354119126 354119135 01:56:00 06:49:01 08:38:50 Overloads Unknown Asset failure M21 Long Rural HV HV 09:20:12 13:49:55 SB21 Asset failure SB21 09:20:12 ME1160 GAMA Asset failure 09:33:06 11:19:56 354119153 KA01 BMY Asset failure 270 11:49:16 KA01 1/07/2024 12:23:49 13:17:37 01/07/2024

Figure 9 - 6.3 Sustained Interruptions - Annual Information Orders

3.4 Input sheet - Incident earliest date

The table on sheet "Incident earliest date" is only used in the S-factor calculation when the following condition applies:

• The DNSP does not use the same "start date of interruption" and "start time of interruption" for each row of data with the same "Incident reference number"

In this instance, the DNSP may choose to specify restoration stages greater than 1 or, as per the AER Guidance given in section 1.3, restoration stage may equal 1 for all rows.

The table on sheet "Incident earliest date" is used to identify the first (earliest) "Start date of interruption" for every row of data in table 6.3.1, for the purpose of correctly identifying Major Event Days. When an interruption spans across more than one day, rows with the same "Incident reference number" will be grouped together and allocated to the earliest start date for the relevant "Incident reference number". In this way, if an interruption began on a Major Event Day, all rows with the same "Incident reference number" will be excluded from the S-factor calculation as required under the STPIS scheme v2.0.

DNSP's can populate the table on this sheet by creating a table of unique incident reference numbers in the left column, matched to the earliest date of a corresponding interruption in the right column. See Figure 10.

The AER will populate the table by using the data provided by the DNSP in table 6.3.1 of the Annual Information Orders. The AER will create a table by copying the relevant columns (i.e. "Incident reference number" and "Start date of incident") in table 6.3.1. The AER will then sort the data by (level 1) Incident number and by (level 2) Start date of incident (oldest to newest) and remove duplicate incidents (by incident number only, not start date). This will leave the required table of unique "Incident reference numbers" and their corresponding earliest start dates.

Figure 10 - Incident earliest date

Incident reference number (UNIQUE)	Earliest start date of incident	
Free text	DD/MM/YYYY	
354115218	5/07/2024	
354118975	7/07/2024	
354119124	1/07/2024	
354119126	1/07/2024	

3.5 Input sheet - 6.2.4 STPIS Customer summary

Table 6.2.4 on sheet "6.2.4 STPIS Customer Summary" is populated with data from table "6.2.4 STPIS Customer Summary" under the Annual Information Order. See Figure 11

In the Order, table 6.2.4 is populated with data from table 3.6.8 Network feeder reliability. Therefore, the customer number data used to calculate the S-factor comes from table "3.6.8 Network feeder reliability" as submitted by the DNSP under the Annual Information Order for the relevant year.

Customers (STPIS) as at 1 July and as at 30 June are calculated by summing the corresponding columns in table 3.6.8 (under the Order) by the corresponding feeder classification.

For simplicity, we have not included table 3.6.8 in the STPIS calculation model but instead allowed the 'Customers (STPIS)' cells in table 6.2.4 to be input cells. AER's methodology will be to use 'Customers (STPIS) as calculated from table 3.6.8 and summarised in table 6.2.4 (under the Order).

"Average customer numbers" for each feeder classification are used with the data in sheet "6.3 Sustained interruptions" to calculate actual performance for the SAIDI and SAIFI parameters.

Figure 11 - 6.2.4 STPIS Customer Summary - Annual Information Orders

ANNUAL INFORMATION ORDER Australian Distribution Co. REPORTING STATEMENT: 2024-25
AR RIN 3.6.8 NETWORK FEEDER RELIABILITY
DC04 - Customer numbers STPIS
6.2.4 - STPIS Customer summary data

		Customers (STPIS)	
	as at 1 July (start of year)	as at 30 June (end of year)	Average customer numbers
CBD	4,567	4,529	4,548.0
Urban	20,020	19,960	19,990.0
Short rural	202,936	204,605	203,770.5
Long rural	47,390	47,988	47,689.0
Whole Network	274,913	277,082	275,997.5

3.6 Lookups

This sheet sets out lists used to perform calculations. It includes the list of valid DNSP names and exclusions.⁶ The sheet also includes a Yes/No list to grey out the Customer Service Parameter (Telephone Answering) when "No" is selected on the "DNSP details" sheet next to Telephone Answering.

Four sets of feeder classifications are listed – one for TasNetworks pre 2024 classification change, one for TasNetworks post 2024 classification change, and one for non-TasNetworks businesses (excluding CitiPower, Powercor and United Energy), and one for CitiPower, Powercor and United Energy. These feeder classifications link throughout the workbook depending on the "Business name" selected on the "DNSP details" sheet. The values in column D indicate which feeder classification column should be used. Victorian DNSPs are identified for application of the MAIFI parameter by a "V" next to their name in column C.

In the model, DNSPs can amend the exclusions in the 'Valid exclusions' list to change the hypothetical output of the model. However, for the purpose of annual S-factor calculation the AER considers valid exclusions to be:

- Planned
- DRMG exclusion 3.3.1
- DRMG exclusion 3.3.2
- DRMG exclusion 3.3.3
- DRMG exclusion 3.3.4
- DRMG exclusion 3.3.5
- DRMG exclusion 3.3.6
- DRMG exclusion 3.3.7

The AER identifies valid exclusions by matching the above listed AER valid exclusions to the "Reasons for interruption" identified by the DNSP in "Reason for interruption" column of table 6.3.1 as submitted by the DNSP in response to the Annual Information Order – Electricity distribution, in the Order reporting workbook.⁷

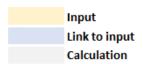
Exclusions refer to events that cause an interruption, but that interruption is not used in the calculation of the S-factor.

For the 2024-25 reporting year, this is "DNSP – Annual Order 2024-25 – Data submission workbook – January 2025" as available on the AER website.

4 Model calculations

The model's calculation sheets convert data on the model's input sheets into the information required to calculate the S-factor. There are six calculation sheets as set out in Figure 1.

As with the data input sheets, the legend on each sheet shows which cells are data input cells, which cells have been linked to the data input cells and which cells are calculations (or formulas). The six "calculation" sheets are primarily made up of links to input data and calculations and are accordingly formatted blue and grey, respectively. There are no data input (yellow) cells in the calculation sheets.



We do not round or truncate data from calculations. The excel formatting has been set to 6 decimal places, which can make the calculated data appear rounded, but the outputs are derived using unrounded data.

4.1 Calculation sheet - Telephone Answering

Step 1

The "Telephone Answering" sheet links to data from the "6.7 STPIS Daily performance" input sheet. Specifically, the "Number of calls received" and "Number of calls answered in 30 seconds". These cells are coloured blue in the "Telephone Answering" sheet to represent they are linked directly from an input sheet with no calculations or other changes made to them. See section A of Figure 12.

Step 2

The "Major Event Day" column uses a lookup to see if a day is a Major Event Day on the "Major Event Days" sheet. Major Event Days return a value of "1". Days that are not a Major Event Day return a value of "0". These cells are coloured grey to represent they contain a formula. See section B of Figure 12.

Step 3

The "Total (Excluding MED)" row sums the "Number of calls received" and the "Number of calls answers in 30 seconds" respectively but does not include values where the day is a Major Event Day (i.e. excluding Major Event Days). These two cells are coloured grey to represent they contain formulae. See section C of Figure 12. It is these cells that feed into the calculation for the actual performance of the Telephone Answering parameter on the "Actual Performance" sheet.

Number of calls Number of calls received answered in 30 seconds | Major Event Day (after removing (MED = 1)(after removing excluded events) excluded events) Total 80,623 72,366 (Excluding MED) 1/07/2024 244 240 0 0 2/07/2024 173 148 0 3/07/2024 172 156 4/07/2024 498 330 0 0 5/07/2024 405 320 0 237 6/07/2024 276 0 7/07/2024 339 283 1 8/07/2024 212 198 0 9/07/2024 146 138 10/07/2024 118 112 0 205 0 11/07/2024 236

Figure 12 - Calculating call centre daily performance

4.2 Calculation sheet – Reliability of Supply

Step 1

The "Reliability of Supply" sheet links to data from the "6.3 Sustained Interruptions" input sheet: "Feeder classification", "Reason for interruption", "Customers (STPIS) affected by interruption" and "Total customer minutes off supply".

The "Reliability of Supply" sheet also links to data from the "6.2.4 STPIS Customer summary" input sheet. "Customers on feeder classification type" links to "Average customer numbers" for the relevant feeder classification. "Customers on network" links to the "Average customer numbers" for the "Whole Network" and this number is repeated for every cell in the entire column.

Average customer numbers

Average customer numbers are not rounded; however, they are calculated by taking the average of customers at the beginning and end of the regulatory period. Customers at the beginning and end of the regulatory period must be reported as integers.

These cells are coloured blue in the "Reliability of Supply" sheet to represent they are linked directly from an input sheet with no calculations or other changes made to them. See Figure 13.

"Start date of interruption" looks up the "Incident reference number" in table 6.3.1 to find a match in the table on the "Incident earliest date" sheet. If it finds a match, the formula returns the correct start date of the interruption for the purposes of identifying if the interruption occurred on a Major Event Day. If the "Incident earliest date" sheet is not in use, the formula will return the "Start date of interruption" as entered in table 6.3.1.

The "Start date of interruption" cells are coloured grey in the "Reliability of supply" sheet to represent they are calculated. See Figure 13.

Figure 13 - Data sources for calculating SAIDI (Network and Feeder) and SAIFI

Source: Source: 6.2.4 - STPIS Customer summary data 6.3.1 - SUSTAINED INTERRUPTIONS TO SUPPLY Customers (STPIS) **Total customer Customers on** Start date of Feeder Reason for **Customers on** affected by minutes off feeder classification classification network interruption interruption interruption supply type 5/07/2024 Urban Asset failure 1 187 19,990 275,998 7/07/2024 Long Rural Other 1 36 47,689 275,998 1/07/2024 Long Rural Overloads 1 83 47,689 275,998 1/07/2024 Short Rural Unknown 1 18 203,771 275,998 1/07/2024 Long Rural 1 343 Asset failure 47,689 275,998 1/07/2024 Long Rural Asset failure 1 293 47,689 275,998 1/07/2024 Long Rural Asset failure 1 24 47,689 275,998 1/07/2024 Urban Asset failure 1 264 19,990 275,998 1/07/2024 Urban Unknown 1 135 19,990 275,998 1/07/2024 Short Rural Asset failure 9 275,998 270 203,771

Step 2

The linked data inputs shown in Figure 13 are used to calculate the following:

- Interruptions included/excluded
- Feeder category SAIDI
- Network SAIDI
- Category SAIFI

"Interruption included/excluded" looks up the "Reason for Interruption" and compares it to the list of valid exclusions listed on the "Lookups" sheet. If the "Reason for interruption" matches a valid exclusion on the "Lookups" sheet, the "Interruptions included/excluded" cell returns a value of "0" otherwise it returns a value of "1". A value of "1" means the interruption will be included in the S-factor calculation.

"Feeder category SAIDI" is calculated (for each interruption) by dividing "Total customer minutes off supply" by "Customers on feeder classification type".

"Network SAIDI" is calculated the same way but uses "Customers on network".

"Category SAIFI" is calculated (for each interruption) by dividing "Customers (STPIS) affected by interruption" by "Customers on feeder classification type".

"Interruption included/excluded", "Feeder category SAIDI", "Network SAIDI" and "Category SAIFI" are coloured grey to represent they contain formulae. See Figure 14.

Figure 14 - Feeder & Network SAIDI, SAIFI

Customers (STPIS) affected by interruption	Total customer minutes off supply	Customers on feeder classification type	Customers on network	Interruption included = 1 excluded = 0	Feeder category SAIDI	Network SAIDI	Category SAIFI
1	187	19,990	275,998	1	0.009355	0.000678	0.000050
1	36	47,689	275,998	1	0.000755	0.000130	0.000021
1	83	47,689	275,998	1	0.001740	0.000301	0.000021
1	18	203,771	275,998	1	0.000088	0.000065	0.000005
1	343	47,689	275,998	1	0.007192	0.001243	0.000021
1	293	47,689	275,998	1	0.006144	0.001062	0.000021
1	24	47,689	275,998	1	0.000503	0.000087	0.000021
1	264	19,990	275,998	1	0.013207	0.000957	0.000050
1	135	19,990	275,998	1	0.006753	0.000489	0.000050
9	270	203,771	275,998	1	0.001325	0.000978	0.000044

4.3 Calculation sheet – Major Event Days

The "Major Event Days" sheet is used to identify Major Event Days in the reporting year. It populates dates for the year starting at the day inputted on the "DNSP details" sheet against "Reporting year start date". "Network SAIDI" from the "Reliability of Supply" sheet are summed such that all "Network SAIDI" values calculated from incidents occurring on the same day are summed together into one row per unique day on the "Major Event Days" sheet.

Only interruptions where the "Interruptions included/excluded" column has a value of "1" (representing the interruption does not have a valid exclusion reason) are included in the sums to calculate the "Network SAIDI" values on the "Major Event Days" sheet. These cells are coloured grey to represent they are formulae. See Figure 15.

The "MED = 1 (above threshold)" column compares the corresponding "Network SAIDI" value to the Major Event Day threshold value inputted on the "DNSP details" sheet against "tMED". If the "Network SAIDI" value is strictly less than the inputted "Major Event Day threshold" value, the "MED = 1 (above threshold)" cell returns a value of "0". If the "Network SAIDI" value is equal to or greater than the inputted "Major Event Day threshold" value, the "MED = 1 (above threshold)" cell returns a value of "1". See Figure 15.

These cells are coloured grey to represent they are formulae.

Events occurring on dates with a corresponding "MED = 1 (above threshold)" value of "1" occur on Major Event Days and are excluded from the S-factor calculation.

Figure 15 - Major Event Days

	Network SAIDI	MED = 1 (above threshold)
1/07/2024	0.031881	-
2/07/2024	1.304483	-
3/07/2024	0.176923	-
4/07/2024	0.431947	-
5/07/2024	0.298736	-
6/07/2024	0.657655	-
7/07/2024	5.067652	-
8/07/2024	8.002762	1

4.4 Calculation sheet - SAIDI & SAIFI excluding MED

Daily SAIDI and Daily SAIFI by feeder classification type are calculated from the "Feeder category SAIDI" and "Category SAIFI" columns in the "Reliability of Supply" sheet.

As shown in Figure 16, "Feeder category SAIDI" and "Category SAIFI" from the "Reliability of Supply" sheet are each split into up to five columns (maximum), one for each feeder classification type. In addition, the interruptions are summed such that there is one value per day of the year. Interruptions with valid exclusion reasons and interruptions that start on Major Event Days are omitted from the daily sum. The result is the "SAIDI and SAIFI Parameters by Feeder Classification" table on the "SAIDI & SAIFI excluding MED" sheet, as shown in the bottom half of Figure 16.

The cells in this table are coloured grey to indicate they are formulae.

Example

Figure 16 shows how the Daily SAIDI and Daily SAIFI Urban feeder classification values for 1/8/2024 are calculated. Starting with the "Reliability of Supply" sheet, sum the values in the "Feeder category SAIDI" column where the:

"Start date of interruption" = "1/8/2024"

"Feeder classification" = "Urban"

"Interruptions included/excluded" = "1" (that is, the interruption has not been excluded)

"Start date of interruption" is not a Major Event Day

In the example, the eligible cells to be summed in the "Feeder category SAIDI" column and the "SAIFI" column are circled red. These values sum to the Daily SAIDI and Daily SAIFI in the "SAIDI and SAIFI Parameters by Feeder Classification" table for Urban feeders on 1 August 2024.

If 1/8/2024 was identified as a Major Event Day on the "Major Event Days" sheet, returned values in the Daily SAIDI and Daily SAIFI table for 1/8/2024 would be "0" (for all feeder types).

SAIDI (Network and Feeder) and SAIFI Calculations Interruption **Total customer** Feeder Start date of Feeder Reason for Category SAIFI affected by minutes off included = 1 category interruption classification interruption SAIDI interruption supply excluded = 0 1/08/2024 Short rural Overloads 0.000005 0.001747 1 356 1 1/08/2024 Short rural Asset failure 1 264 1 0.000005 0.001296 1/08/2024 Urban Planned 115 54,832 0 0.000050 2.742971 1/08/2024 Urban Third Party 216 0.010805 1 1 0.000050 1/08/2024 Urban Asset failure 4 50 1 0.000050 0.002501 1/08/2024 Urban Asset failure 332 0.000050 0.016608 1 1/08/2024 Short rural Animal 1 185 0.000005 0.000908 1/08/2024 Urban Overloads 30 513 0.000050 0.025663 1/08/2024 Overloads 1 131 1 Urban 0.000050 0.006553 1/08/2024 Urban Weather 1 10 1 0.000050 0.000500 1/08/2024 Urban Asset failure 1 112 1 0.000050 0.005653 214 0.000050 1/08/2024 Urban Network business 1 1 0.010705 1/08/2024 0.000050 Urban Asset failure 25 50 0.002501 2/08/2024 Urban Network business 0.000050 0.000050 1 0.00021 2/08/2024 Long rural Asset failure 497 68,487 1.436109 Daily SAIDI Daily SAUP CBD Urban Short rural Long ru CBD Urban Short rural Long rural 1/07/2024 0.047274 0.004274 0.146428 0.002151 0.000088 0.000566 2/07/2024 0.624112 0.357903 0.122144 2282 0.026379 0.124011 0.000440 0.008287 000334 3/07/2024 0.253743 0.585460 0.002474 0.357029 0.017765 0.298867 0.018659 0.000618 0.002488 1/08/2024 0.081491 0.613146 0.003252 0.002753 2/08/2024 0.157979 0.001119 1.690675 0.007704 0.000005 0.012540 3/08/2024 0.153977 0.008544 0.293464 0.003402 0.000029 0.001489 4/08/2024 0.148774 0.009025 1.100526 0.008904 0.000059 0.007738

Figure 16 - Calculating SAIDI and SAIFI Parameters by Feeder Classification

4.5 Calculation sheet – MAIFI / MAIFIe excluding MED

The "MAIFI MAIFIe excluding MED" sheet is populated by data from the "6.7 STPIS Daily performance" sheet.

The data on the "MAIFI MAIFI excluding MED" sheet is almost a direct link to the relevant feeder headings in the input sheet, linking to the "After removing excluded events" columns for the relevant feeders. The only calculation made to this data is to return a value of "0" where the corresponding start date is a Major Event Day (as identified by the "Major Event Days").

Figure 17 shows how the values from "6.7 STPIS Daily performance" feed into the "MAIFI MAIFIe excluding MED" sheet. In this example, despite a value of 0.033000 in the "Short Rural After removing excluded events" cell in the MAIFI/MAIFIe table, the Daily MAIFI/MAIFIe for Short rural (and all feeder classifications) has returned a value of "0" because 8/7/2024 has been calculated as a Major Event Day on the "Major Event Day" sheet. See Figure 15.

The "Daily MAIFI/MAIFIe" table after removing excluded events and after excluding Major Event Days is shown in the bottom half of Figure 17.

The cells in this table are coloured grey to indicate they are formulae.

MAIFI / MAIFIe Short rural **CBD** Urban Long rural After After After After removing removing removing removing All events All events All events All events excluded excluded excluded excluded events events events events 0.006317 0.005169 0.006317 0.005169 0.001718 0.001718 0.001406 0.001406 0.033000 0.033000 Daily MAIFI/MAIFIe CBD Urban Short rura Long rural 1/07/2024 0.006317 0.005169 2/07/2024 0.001718 0.001406 3/07/2024 4/07/2024 5/07/2024 6/07/2024 7/07/2024 8/07/2024 9/07/2024

Figure 17 - Calculating daily MAIFI/MAIFIe removing excluded events and MEDs

4.6 Calculation sheet - Actual Performance

The "Actual Performance" sheet calculates actual performance for the reporting year.

Actual performance results are required for each relevant parameter. For the 'Reliability of Supply' Component, actual performance is required for each parameter by feeder classification type. A DNSP may have up to 12 individual actual performance values under this component if it has four feeders and if the MAIFI/MAIFIe parameter applies.

For the 'Customer Service' Component, the model can only calculate actual performance for the Telephone Answering parameter.

Reliability of Supply Component

Actual performance for 'Reliability of Supply' parameters (SAIDI, SAIFI and MAIFI/MAIFIe) are calculated by summing the daily SAIDI, SAIFI and MAIFI/MAIFIe for each feeder classification type.

- The Daily SAIDI and Daily SAIFI by feeder classification type are on the "SAIDI & SAIFI excluding MED" sheet. See Figure 18.
- The Daily MAIFI/MAIFIe by feeder classification type are on the "MAIFI MAIFIe excluding MED" sheet. See Figure 19.

To calculate actual performance, simply sum the daily values for the relevant feeder classification as shown in Figure 18 and Figure 19.

Figure 18 - Daily SAIDI & Daily SAIFI to Actual Performance

	Daily SAIDI					Daily SAIFI	
	CBD	Urban	Short rural	Long rural		CBD	
1/07/2024	-	0.047274	0.004274	0.146428	-	-	
2/07/2024	-	0.624112	0.357903	5.758728	-	-	
3/07/2024	0.124011	0.253743	0.074957	0.585460	-	0.000440	
4/07/2024	-	0.153827	0.121007	1.918339	-	-	
5/07/2024	-	1.010572	0.280728	0.105790	-	-	
6/07/2024	-	2.839336	0.032982	2.475036	-	-	
7/07/2024	-	0.202101	3.861581	12.743882	-	-	
8/07/2024	-	-	-	-	-	-	
9/07/2024	-	0.335068	0.090273	0.959061	-	-	
> SAIDI & SAIFI Excluding MED M _€ ··· + : ■							
Su	Sum: 46.82680667						

Figure 19 - Daily MAIFI/MAIFIe to Actual Performance

	Daily MAIFI/MAIFIe					
	CBD ▼	Urban	Short rural	Long rural		
1/07/2024	-	0.006317	-	0.005169		
2/07/2024	-	0.001718	-	0.001406		
3/07/2024	-	-	-	-		
4/07/2024	-	-	-	-		
5/07/2024	-	-	-	-		
6/07/2024	-	-	-	-		
7/07/2024	-	-	-	-		
8/07/2024	-	-	-	-		
9/07/2024	-	-	-	-		
SAIDI & SAIFI Excluding MED		MAIFI MAIFIe Exc	luding MED Actu	Actual Performance		
		Sum: 0.189139479				

Telephone Answering parameter

Actual performance for the 'Telephone answering' parameter is the total "Number of calls answered in 30 seconds" as a proportion of the total "Number of calls received" as calculated on the "Telephone Answering" sheet. The value is then multiplied by 100. See Figure 20.

Number of calls Number of calls received answered in 30 seconds Major Event Day (after removing (after removing (MED = 1)excluded events) excluded events) Total 80,623 72,366 (Excluding MED) 1/07/2024 0 244 240 2/07/2024 0 173 148 3/07/2024 172 156 0 0 4/07/2024 498 330 0 5/07/2024 405 320 0 6/07/2024 276 237 7/07/2024 0 339 283 1 8/07/2024 198 212

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Figure 20 - Actual Performance telephone answering parameter

Actual Performance (using the sample data)

9/07/2024

The sum of the CBD daily SAIDI column shown in Figure 18 is 46.826807. This can be seen as the actual performance value for unplanned SAIDI – CBD in Figure 21. Similarly, the sum of the Urban daily MAIFI column shown in Figure 19 is 0.189139 and this is the actual performance value for MAIFI/MAIFIe – urban in Figure 21.

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In Figure 20 the total "Number of calls answered in 30 seconds" (72,366) as a proportion of the total "Number of calls received" (80,623) multiplied by 100 is 89.758506. This can be seen as the actual performance value for the 'Telephone Answering' parameter in Figure 21.

0

Figure 21 - Actual Performance all parameters



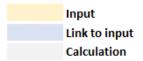
Parameter	Actual				
SAIDI					
CBD	46.826807				
Urban	46.537878				
Short rural	124.261840				
Long rural	437.325318				
SAIFI					
CBD	0.520449				
Urban	2.852143				
Short rural	1.720138				
Long rural	4.214033				
MAIFI/MAIFIe					
CBD	0.023024				
Urban	0.189139				
Short rural	2.773600				
Long rural	0.158942				
Telephone answering	89.758506				

5 Model outputs

The "S-factor" sheet is the only output sheet in the model.

The "S-factor" sheet takes the values from the input sheets and, using the calculations sheets, calculates the S-factor.

As with the data input sheets and the calculation sheets, the legend on the output sheet shows which cells are data input cells, which cells have been linked to the data input cells and which cells are calculations (or formulas). There are no data input (yellow) cells in the output worksheet.



5.1 Output sheet - S-factor

The "S-factor" sheet calculates the S-factor using the following equation for each parameter:

S-factor = (Target Performance less Actual Performance) multiplied by Incentive Rate

Where:

- Target Performance and Incentive Rate are linked to the input sheet "DNSP details" and
- Actual Performance is calculated on the "Actual Performance" sheet.

For the 'Reliability of supply' component, s-factors are calculated for each parameter by feeder classification type. These s-factors are then summed to be the "Sum of the raw s-factors (Reliability of Supply parameters)" see section A of Figure 22.

For the 'Customer service' component, the model only sets out calculations for the 'Telephone Answering' parameter. The uncapped s-factor for the Telephone Answering parameter is shown at section B of Figure 22.

The 'Telephone Answering' s-factor is subject to Revenue at Risk. See section C Figure 22. In this example the Revenue at Risk for the 'Telephone Answering' parameter is ±0.5 percent. Once this is applied to the s-factor calculated at B, the result is the 'capped s-factor (Telephone Answering parameter)' as showed in section D of Figure 22.

Once the sum of the s-factors (Reliability of Supply) and the capped s-factor (Telephone Answering parameter) have been calculated, the two are added together (A + D). The total Revenue at Risk, in this example, $\pm 5\%$ (section E Figure 22) is then applied (to A + D). The result is the S-factor that is used to calculate the revenue increment or decrement applicable to the DNSP. See section F of Figure 22.

Figure 22 - S-factor calculation

S-factor calculation									
Assessment Year	2024-25								
	(Target	-	Actual)	x	IR	=	S-factor (uncapped)	Revenue at Risk Min Max	S-factor (capped)
Reliability of Supply Parameters									
SAIDI									
CBD	92.118425	-	46.826807	X	0.003313		0.150061%		
Urban	215.948178	-	46.537878	X	0.004136		0.700682%		
Short rural	266.225926	-	124.261840	X	0.008121		1.152955%		
Long rural	544.060865	-	437.325318	X	0.009512	=	1.015291%		
SAIFI									
CBD	1.015407	-	0.520449	х	0.232017	=	0.114839%		
Urban	10.069557	-	2.852143	х	0.014635	=	0.105628%		
Short rural	2.376648	-	1.720138	х	0.208712	=	0.137022%		
Long rural	5.170691	-	4.214033	x	0.911518	=	0.872011%		
MAIFI/MAIFIe									
CBD	0.249457	-	0.023024	X	0.051190		0.011591%		
Urban	0.194917	-	0.189139	X	0.032115		0.000186%		
Short rural	4.288226	-	2.773600	Х	0.042322		0.064101%		
Long rural	4.587002	-	0.158942	Х	0.041231	=	0.182575%		
Sum of the raw s-factors (ROS parameters)						A	4.506941%		
Customer service parameters									
Telephone answering parameter	88.080177	-	89.758506	х	-0.040000	=	0.067133%	-0.50% 🕻 0.50%	0.067133%
Sum of the s-factors for all parameters									
S-factor								-5.00% E 5.00%	F 4.574074%

Glossary

Term	Definition
AER	Australian Energy Regulator
DNSP	Distribution Network Service Provider
MAIFI	Momentary Average Interruption Frequency Index
MAIFIe	Momentary Average Interruption Frequency Index event
MED	Major Event Day
Order	Annual Information Orders 2024-25 to 2027-28
Order reporting workbook	For the 2024-25 reporting year, this is "DNSP – Annual Order 2024-25 – Data submission workbook – January 2025" as available on the AER website.
RIN	Regulatory Information Notice
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
STPIS	Service Target Performance Incentive Scheme
S-factor	The financial reward or penalty as a result of a DNSP's service performance outcome calculated in accordance with the STPIS version 2
tMED	Major Event Day threshold

Attachment A – Major Event Day Threshold calculation

The AER has shared a Major Event Day threshold calculation workbook (Attachment A to this handbook). The workbook illustrates how the Major Event Day threshold can be calculated in line with the 2.5 Beta methodology set out in Appendix D of the STPIS version 2, noting a DNSP may propose an alternate methodology in accordance with clause 2.2 of the STPIS.