Revised Proposal
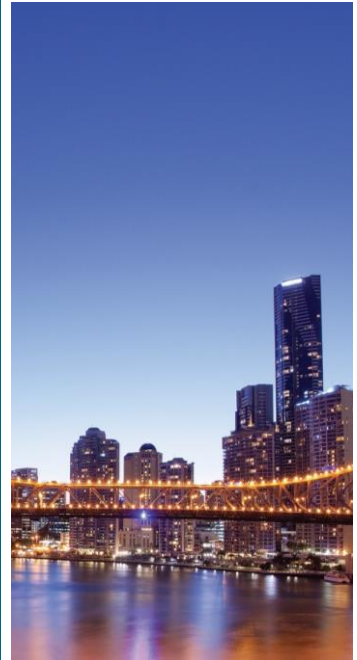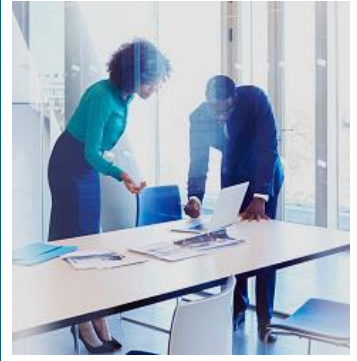
Attachment 9.03 - GHD Back-Cast Audit

January 2019

STPIS Back-Cast Audit

Ausgrid

19 December 2018

Contents

Appendices

Executive summary

Purpose

GHD Advisory has been engaged by Ausgrid to provide an independent audit of the data and process used to back-cast its 5 year historical data for the purposes of setting Service Target Performance Incentive Scheme (STPIS) targets in the next regulatory period.

Scope

The audit considers the suitability of Ausgrid's data in the following areas:

- The exclusion of "momentary" interruptions: under the new STPIS, momentary interruptions are defined as outages of under 3 minutes in duration whereas they were previously defined as outages of under 1 minute in duration.

- Number of customers interrupted: under the new STPIS, single phase outages are to be reported as impacting 33% of customers for LV and 67% of customers for HV (previously Ausgrid has reported that 100% of customers on the feeder are affected for all types of interruptions).

Further to the above, it is noted that the new STPIS requires that, where Ausgrid is unable to accurately back-cast data, it may proceed with a transitional arrangement.

Compliance assessment

The table below provides the grading assessment in relation to Ausgrid's ability to back-cast data. The assessment is made in relation to Ausgrid's ability to back-cast data using the new requirements as compared to the prior requirements. That is, it tabulates our assessment of the difference in accuracy between the two requirements, rather than the overall accuracy.

Component	Grade
Momentary Interruptions	±1%
HV single phase outages	±10%
LV single phase outages	±5%
Back-cast data *(current OMS data vs reported data)*	±50% (FY14 CBD SAIDI)
	±5% (FY14 & FY17 Long Rural SAIFI)
	±1% (All other years / categories / metrics)

Conclusions

Our opinion on the suitability of the data for back-casting purposes is provided below with respect to each of the audited elements. Generally, our opinion is that data with an accuracy of ±5% is suitable for use to back-cast data in accordance with the new STPIS requirements. Whereas, instances where accuracy is ±10% or lower should be considered in context.

- **Momentary interruptions:** Ausgrid is able to back-cast this data with a high level of accuracy. This capability is embedded within automated system processes. Our opinion is that this data is suitable for use to back-cast data in accordance with the new STPIS requirements i.e. we have observed no evidence that indicates this data is unsuitable to be used for this purpose.

- **Single-phase interruptions:** Ausgrid is able to back-cast this data with a reasonable level of accuracy. However, we note that this data has a lower level of accuracy (LV = ±5% and HV = ±10%) than would be expected of data that has been historically reported and audited. Notwithstanding, our opinion is that this data provides a reasonable level of accuracy for use to back-cast data in accordance with the new STPIS requirements.

  There is an opportunity for Ausgrid to improve the accuracy of this data going forwards; to achieve this Ausgrid should review its processes for capturing this information, and implement controls to ensure that it is captured to the level of accuracy that would be expected of reportable (and routinely audited) information.

- **Back-cast data:** Although there are discrepancies between the current data captured in OMS and previously reported figures, Ausgrid is able to back-cast this data with a high level of accuracy in most instances. Our opinion is that this data is generally suitable for use to back-cast data in accordance with the new STPIS requirements i.e. with the below exception, we have observed no evidence that indicates this data is unsuitable to be used for this purpose.

  There is a 38% discrepancy in FY14 for the CBD feeder category in the SAIDI figures currently held in OMS versus those that were previously reported. Ausgrid advises that this relates to an outage to a single CBD customer that wasn't closed in the system when power was restored and went undetected as an open outage in the system for over a month. Ausgrid advises that it has since reviewed its controls to prevent similar errors form occurring. We recommend that Ausgrid seeks guidance from the AER on how the 38% discrepancy in FY14 CBD SAIDI figures should be managed for back-casting purposes.

Whilst data discrepancies and opportunities for improvement have been observed as described above, adopting the new approaches will mean that Ausgrid reports a more accurate representation of its reliability performance that it has historically under the prior STPIS requirements.

Limitations

This report has been prepared by GHD for Ausgrid and may only be used and relied on by Ausgrid for the purpose agreed between GHD and Ausgrid as set out in GHD's proposal.

GHD otherwise disclaims responsibility to any person other than Ausgrid arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Ausgrid, which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

1. Introduction

1.1 Background

In November 2018, the AER published its new STPIS guideline (updated 13 December 2018), replacing STPIS 2009[1]. In November 2018, the AER also published Ausgrid's draft regulatory determination for 2019-2024, including how STPIS will be applied in the 2019-2024 regulatory period[2]. Based on the draft determination, the 2009 version of the STPIS will apply to Ausgrid for 2019-2024. Ausgrid is currently preparing its revised proposal and would like to propose adoption of the new STPIS guidelines.

Under the new STPIS arrangements, Ausgrid will need to back-cast its 5 year historical reliability performance to account for key differences between the two schemes.

1.2 Audit objective

GHD Advisory has been engaged by Ausgrid to provide an independent audit of the data and process used to back-cast its 5 year historical data for the purposes of setting Service Target Performance Incentive Scheme (STPIS) targets in the next regulatory period.

1.3 Audit scope

The audit considers the suitability of Ausgrid's data in the following areas:

- The exclusion of "momentary" interruptions: under the new STPIS, momentary interruptions are defined as outages of under 3 minutes in duration whereas they were previously defined as outages of under 1 minute in duration.

  The new definition is as follows:

Momentary Interruption	Means an Interruption to a Distribution Customer's electricity supply with a duration of 3 minutes or less, provided that the end of each Momentary Interruption is taken to be when electricity supply is restored for any duration.

  (Source: AER, Electricity distribution network service providers – Service target performance incentive scheme – Version 2.0, Table A1: Reliability component, November 2018)

- Number of customers interrupted: under the new STPIS, single phase outages are to be reported as impacting 33% of customers for LV and 67% of customers for HV (previously Ausgrid has reported that 100% of customers on the feeder are affected for all types of interruptions).

  The new requirements are as follows:

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[1] https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/service-target-performance-incentive-scheme-2018-amendment

[2] https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/ausgrid-determination-2019-24

> 7. For high voltage (HV) feeder single phase outages – unless there are accurate means to determine the exact number of customers affected, 67% of all downstream customers are taken to be affected for a single-phase HV feeder outage on a three phase network. 100% of customers are taken to be affected for all other HV outages. For example, when there is a single HV phase outage on a two phase or single phase HV system, 100% of customers are taken to be affected.
>
> 8. For low voltage single phase outage – unless there are accurate means to determine the exact number of customers affected, 33% of all downstream customers for a single phase outage are taken to be affected.

(Source: AER, Electricity distribution network service providers – Service target performance incentive scheme – Version 2.0, Table A1: Reliability component, November 2018)

Further to the above, the new STPIS requires that, where Ausgrid is unable to accurately back-cast data, it proceed with a transitional arrangement:

> (a) To implement this STPIS version 2.0, we require historical performance data under the new measurement method. If a DNSP is unable to back-cast historical data based on the new measurement method, the reliability measures SAIDI, SAIFI, MAIFI and MAIFIe are taken as having the same meaning as that shown in Table A2 of Appendix A.

(Source: AER, Electricity distribution network service providers – Service target performance incentive scheme – Version 2.0, 2.6A Transitional arrangement where a DNSP is unable to back-cast historical data, November 2018)

2. Audit approach

2.1 GHD Audit Team

The GHD team members that carried out the audit are provided in Table 1.

Table 1   GHD audit team

Name	Title/role
Adam Homan	Lead Auditor
Stephen Hinchliffe	Peer Reviewer

2.2 Methodology

The approach that has been implemented by GHD to carry out this audit is as follows:

- Opening meeting: GHD held an opening meeting between the audit team and Ausgrid on 6 December 2018 to walk through the audit plan and commence the audit. The agenda included the proposed audit procedures, logistics for information requests and scheduling audit interviews, agreed roles, reporting, and other arrangements pertinent to this audit.

- Preliminary information review: Ausgrid provided preliminary information prior to the opening meeting. This information was discussed in detail at the opening meeting.

- Off-site review: During the opening meeting further information was requested from Ausgrid. The information was reviewed to assess compliance against the scope of the audit.

- Quality Assurance and Peer Review: This audit was conducted to ASAE 3000 - Assurance Engagements Other than Audits or Reviews of Historical Financial Information, Australian Auditing Standards. The Lead Auditor has been responsible for arranging that this audit report is peer reviewed and checked for accuracy and quality assurance purposes.

2.3   Finding / opinion reporting

The opinion expressed in this audit report are provided on the basis of "limited assurance". Limited assurance represents a reduction in assurance engagement risk to a level that is acceptable in the circumstances of the engagement. The audit opinion in this report is expressed in a negative form of assurance in accordance to ASAE 3000 paragraph A180.

The audit opinion is provided in two ways:

- A compliance assessment; and

- A conclusion on findings.

2.3.1   Compliance assessment

The compliance assessment is made using a two-part grade which assesses: the suitability of systems and procedures for generating information; and the accuracy of the data. Table 2 and Table 3 outline the criteria applied for the compliance assessment.

Table 2   Data reliability

Grade	Reliability Assessment
A	*All data is based on sound information systems and records and on documented policies, practices and procedures which are followed by Ausgrid. (Note: Procedures may not always be explicitly stated, they can for instance, be implicit in an IT system. However, it is important that processes and procedures are followed.)*
B	*Most data conforms to the requirements of grade A. Data which does not has a minor impact on overall data integrity. For example, a minority of data may be based on minor variations from documented procedures or reliance on unconfirmed reports.*
C	*In many cases but not all, data does not conform with grade A or B.*
D	*None of the requirements of A, B or C are met.*

Table 3   Data accuracy

Grade	Reliability Assessment
1	± 1%
2	± 5%
3	± 10%

Grade	Reliability Assessment
4	± 25%
5	± 50%
6	± 100%
X	*For small samples where an accuracy cannot be calculated or percentage error would be more than 100%*

2.3.2 Conclusion on findings

The conclusion on findings provides an interpretation on the compliance assessment, and outlines any recommended actions or opportunities for improvement.

3. Audit findings

3.1 Observations

3.1.1 Adjusted reliability indices

Ausgrid has back-cast its reliability Indies for System Average Interruption Duration Index (SAIDI) and System Average Interruption Duration Index (SAIFI) based on adjusted data relating to momentary interruptions and single-phase outages. Table 4 presents Ausgrid's adjusted reliability indices. Our observations on the processes used to derive the adjusted indices are discussed in Sections 3.1.2 to 3.1.4.

Table 4   Adjusted reliability indices

Category	Index	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
CBD	SAIDI	3.664043593	7.467411136	7.495828146	14.49434414	12.33943057
URBAN	SAIDI	59.37280775	53.76233588	59.56054209	66.59162885	60.27871381
Short Rural	SAIDI	150.7337426	142.9594826	124.518591	112.3067008	109.2772884
Long Rural	SAIDI	430.5859785	327.7831031	571.9419499	813.0525379	337.2294161
CBD	SAIFI	0.011187859	0.070867991	0.010454421	0.032966205	0.06349991
URBAN	SAIFI	0.684664207	0.512420523	0.572828604	0.606339755	0.603542527
Short Rural	SAIFI	1.388111276	1.224863491	1.044551483	1.064432928	0.932309926
Long Rural	SAIFI	3.095779012	1.662242141	2.67980829	3.389997484	1.52767526

3.1.2 The exclusion of momentary interruptions

Ausgrid captures time durations for interruptions using its Outage Management System (OMS); however, this is not captured automatically.

When an outage is identified by telemetered switching equipment, the control room operator will receive an alarm. The operator manually initiates the outage in OMS at this time, mainly so that the business knows that an outage is occurring, and so call centre personnel can advise customers that call in relation to the outage. Outages triggered by SCADA have an electronic timestamp of when the switching event occurred.

The process for capturing these outages in OMS is audited as part of Ausgrid's Licence Conditions Audit, as required by the Independent Regulatory and Pricing Tribunal (IPART). Whilst the recent audit[3] outlined a level of inaccuracy with the data stored in OMS (±5%), no anomalies were identified with respect to timestamped outages as related to momentary interruptions.

Ausgrid advises that all HV circuit breakers and auto-reclosers are now telemetered, which will be captured with an accurate timestamp. Some of these devices were not telemetered at the beginning of the 5 year period; momentary interruptions associated with un-telemetered devices will not be captured in the system.

The above issues apply equally to reported momentary interruptions of one minute duration, and momentary interruptions of three minutes in duration. Albeit, customers are less likely to report an interruption of under one minute, as power is restored before it can be reported; thus, interruptions up to three minutes in duration associated with un-telemetered devices are more likely to be included in the data.

We have reviewed the underlying data and confirmed that Ausgrid is able to accurately identify momentary interruptions as outages under three minutes in duration using the OMS data.

3.1.3   Number of customers interrupted

Ausgrid has historically reported that all customers are affected whenever an outage occurs. This is conservative as the actual number of customers affected will be less during single phase outages. The new requirement under the STPIS more accurately reflects the reliability impact to customers.

Ausgrid's OMS has an option to select the phase upon which the outage event occurred. This information has been captured across the five year reporting period. It is understood to be manually captured by the operator, rather than captured electronically.

Figure 1 indicates that single phase outages are being captured at consistently for HV outages (~18%) and LV outages (~45%).

Figure 1 – percentage of outages captured as single phase outages in OMS
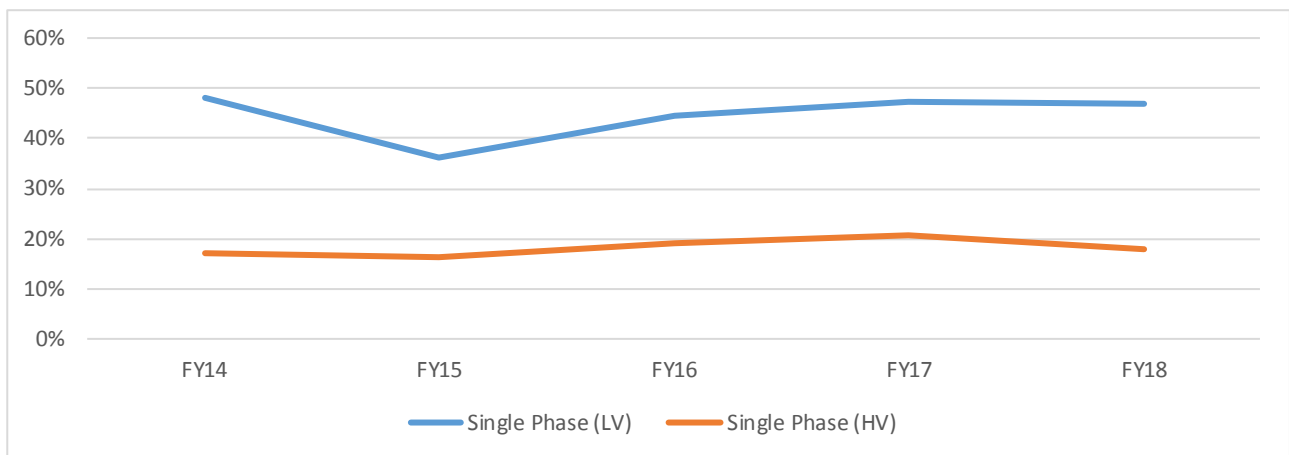
It is understood that the accuracy of this information has never been audited as it has not historically been a reporting requirement for Ausgrid. Analysis of the data over the period shows that between 12-15% of outage events are "unselected" each year, meaning the operator has not captured the affected phases for the outage.

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[3] 2017-18 Reliability and Performance Conditions Audit, Ausgrid / IPART, 27 September 2018

Ausgrid's back-cast analyses assume that these outages affect 100% of customers, which means it is likely to conservatively back-cast this data. Figure 2 shows that this is a greater issue for HV outages than for LV outages.

We have extrapolated the percentage of single-phase outages across the "unselected" portion of the data. This gives an indication of the margin of error with Ausgrid's approach to capture all "unselected" outage events as three-phase outages:

- Maximum HV error = 18% x 35% = 6.4%

- Maximum LV error = 45% x 8% = 3.6%

Notwithstanding, it seems likely that an operator would be more likely to omit the data for standard three-phase outages where the circuit is isolated by a circuit breaker than for event where a single phase outage is actually reported. Hence, in our opinion the above error calculation associated with "Unselected" data may be considered as maximum error rates.

Figure 2 – percentage of outages where affected phased are "Unselected" in OMS
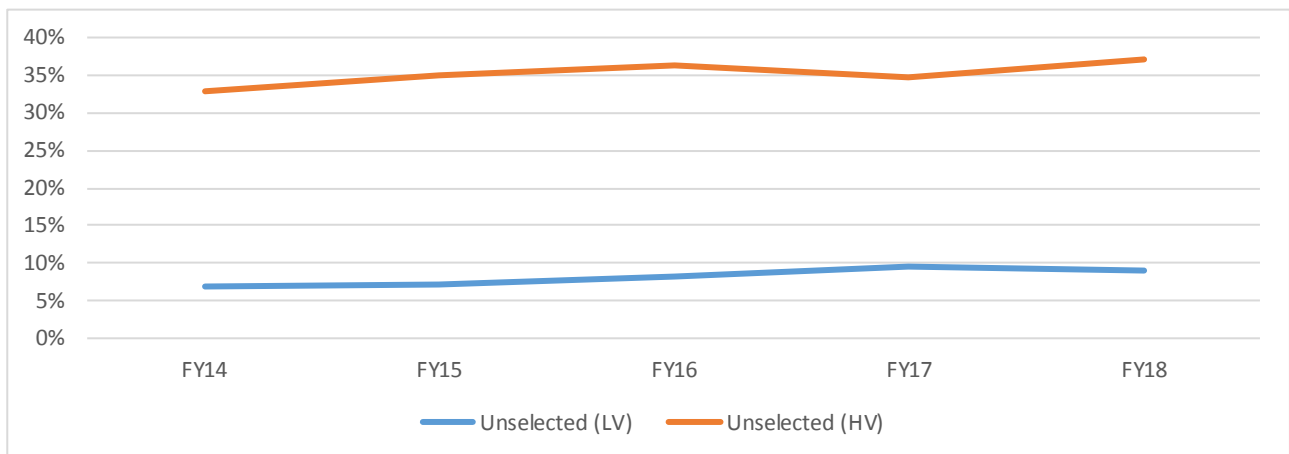
We have sampled the underlying data and confirmed that Ausgrid has accurately re-categorised single phase outages using the OMS data.

Figure 3 shows that all single-phase HV SAIDI data across the period has been reduced to 67% (this excludes outages affecting less than three customers).

Figure 3 – histogram of SAIDI conversion for HV single phase outages affecting 3 or more customers

However, Figure 4 shows some discrepancies in the conversion of single-phase HV SAIFI data (this excludes outages affecting less than three customers). The total SAIFI discrepancy for single phase HV outages equates to 0.3%.

Figure 4 – histogram of SAIFI conversion for HV single phase outages affecting 3 or more customers

Figure 5 and Figure 6 show similar outcomes for LV outages. The total SAIFI discrepancy for single phase LV outages equates to 0.2% (this excludes outages affecting less than three customers).

Figure 5 – histogram of SAIDI conversion for LV single phase outages affecting 3 or more customers
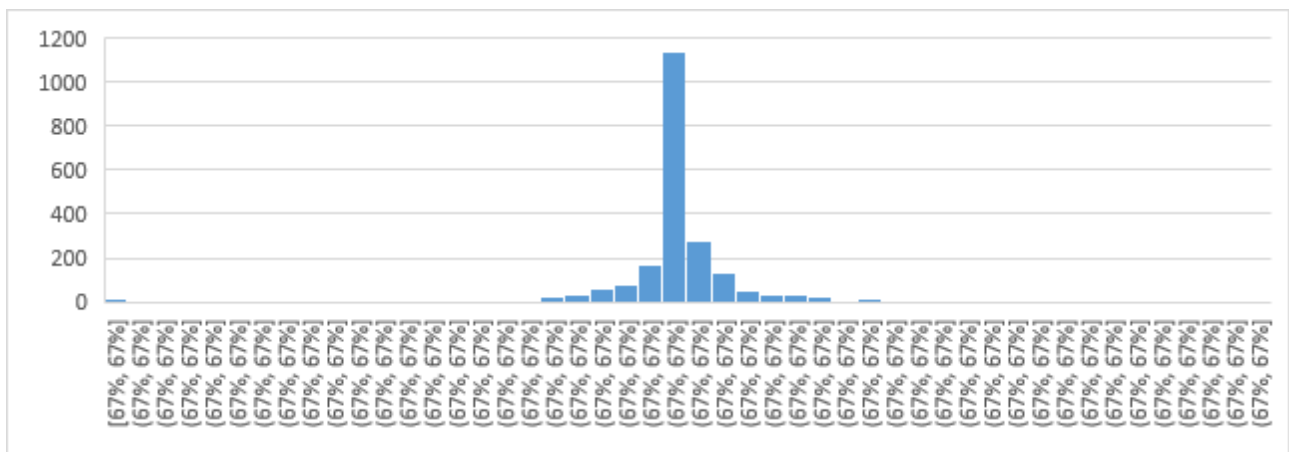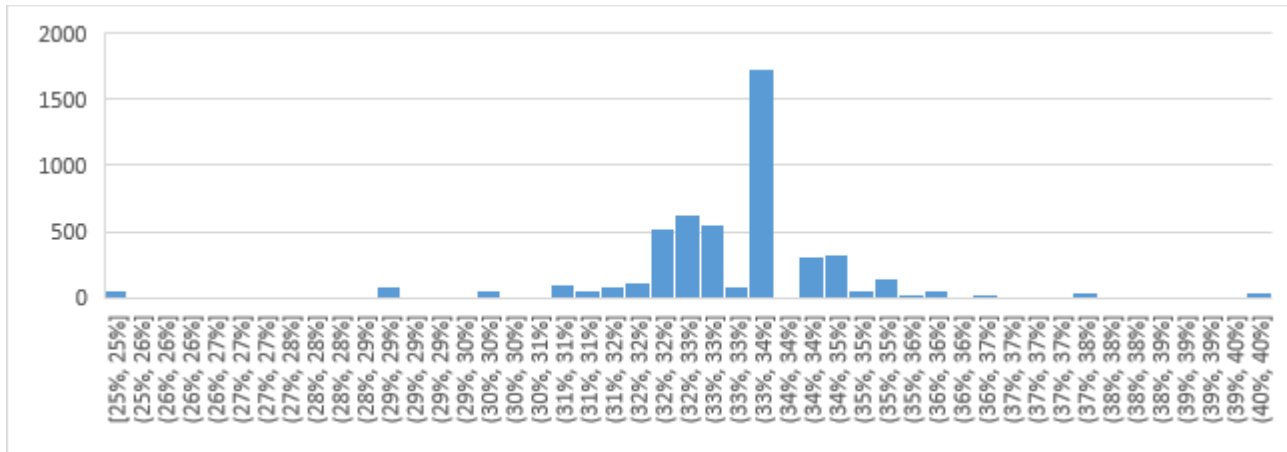
Figure 6 – histogram of SAIFI conversion for LV single phase outages affecting 3 or more customers

For outages affecting one or two customers, Ausgrid has applied the 33% and 67% adjustment to SAIDI figures in accordance with the new STPIS definitions. However, for its SAIFI figures it has reduced the customers interrupted by integers. This results in the following discrepancies in relation to the definition:

- Single phase HV SAIFI:

  – Outages affecting two customers: Customer numbers for outages affecting two customers have been reduced to one customer (rather than 67% which equals 1.34 customers). This results in an understatement of SAIFI for outages affecting 2 customers by 17%. There are 432 of these events over the 5 year period.

  – Outages affecting one customer: Customer numbers for outages affecting one customer have been retained at one customer (rather than 67% which equals 0.67 customers). This results in an overstatement of SAIFI for outages affecting 1 customer by 33%. There are 649 of these events over the 5 year period.

    For HV outages this equates to a discrepancy of 0.2%.

- Single phase LV SAIFI:

  – Outages affecting two customers: Customer numbers for outages affecting two customers have been reduced to one customer (rather than 33% which equals 0.66 customers). This results in an overstatement of SAIFI for outages affecting 2 customers by 17%. There are 206 of these events over the 5 year period.

  – Outages affecting one customer: Customer numbers for outages affecting one customer have been reduced to zero customers (rather than 33% which equals 0.33 customers). This results in an understatement of SAIFI for outages affecting 1 customer by 33%. There are 1576 of these events over the 5 year period.

    For LV outages this equates to a discrepancy of 0.6%.

Table 5 shows the total calculated discrepancy for back-cast data associated with single phase outages for the observed data anomalies.

Table 5   Total discrepancy for back-cast data associated with single phase outages

Voltage	SAIDI	SAIFI
HV	6.4%	6.9% (6.4% + 0.3% +0.2%)
LV	3.6%	4.4% (3.6% + 0.2% + 0.6%)

3.1.4   Back-casting historical data

Ausgrid's reported data is a snapshot in time when the data was extracted from Ausgrid's system. There are discrepancies between the data contained in the system now and the data that was extracted at the time of reporting. Ausgrid has advised that these discrepancies are due to its manual processes for reviewing outage events and updating OMS data afterwards, which can take several weeks.

The discrepancies are shown in Table 6 to Table 13. It can be seen that:

- There is a 38% discrepancy for CBD SAIDI data in FY14.

- There is a 2% discrepancy for Long Rural SAIFI data in FY14 and FY17.

Table 6   Total discrepancy for back-cast data vs reported figures (SAIDI – CBD)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	4.562378018	8.729294832	9.420331521	15.82778998	12.659931
Reported data	7.3266	8.7311	9.4203	15.8278	12.6837
Discrepancy	**38%**	**0%**	**0%**	**0%**	**0%**

Table 7   Total discrepancy for back-cast data vs reported figures (SAIDI – Long Rural)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	440.1064217	349.1745727	590.0425599	838.0912619	349.8913409
Reported data	440.2392	349.1746	590.4040	838.2176	353.5625
Discrepancy	**0%**	**0%**	**0%**	**0%**	**1%**

Table 8   Total discrepancy for back-cast data vs reported figures (SAIDI – Short Rural)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	156.7792597	152.0246281	131.6899726	119.1154595	114.0315855
Reported data	156.3030	151.1087	131.7169	119.0141	114.0346
Discrepancy	**0%**	**1%**	**0%**	**0%**	**0%**

Table 9   Total discrepancy for back-cast data vs reported figures (SAIDI – Urban)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	64.39939452	58.88818393	65.65506465	72.71971434	64.47396104
Reported data	64.5028	58.4101	65.3642	72.6917	64.2357
Discrepancy	**0%**	**1%**	**0%**	**0%**	**0%**

Table 10   Total discrepancy for back-cast data vs reported figures (SAIFI – CBD)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	0.013994853	0.086863455	0.015425938	0.037409062	0.064656125
Reported data	0.0140	0.0869	0.0154	0.0374	0.0640
Discrepancy	**0%**	**0%**	**0%**	**0%**	**1%**

Table 11   Total discrepancy for back-cast data vs reported figures (SAIFI – Long Rural)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	3.14663322	2.192904516	3.185164504	3.782641382	1.589722917
Reported data	3.0883	2.1929	3.1860	3.8585	1.5975
Discrepancy	**2%**	**0%**	**0%**	**2%**	**0%**

Table 12   Total discrepancy for back-cast data vs reported figures (SAIFI – Short Rural)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	1.448836069	1.388620752	1.151163939	1.16457206	0.981689568
Reported data	1.4477	1.4013	1.1473	1.1677	0.9817
Discrepancy	**0%**	**1%**	**0%**	**0%**	**0%**

Table 13   Total discrepancy for back-cast data vs reported figures (SAIFI – Urban)

Parameter	FY14	FY15	FY16	FY17	FY18
Current data	0.735293164	0.573809407	0.626840414	0.651488717	0.6443756
Reported data	0.7378	0.5712	0.6246	0.6520	0.6472
Discrepancy	**0%**	**0%**	**0%**	**0%**	**0%**

3.2   Compliance assessment

Table 14 provides the compliance opinion and grading assessment in relation to Ausgrid's ability to back-cast data with the same degree of accuracy as it produced figures under the prior definitions. The assessment is made in relation to Ausgrid's ability to back-cast data using the new requirements as compared to the prior requirements. That is, the accuracy difference between the two requirements, rather than the overall accuracy.

Table 14   Summary audit findings of compliance

STPIS component	Definition	Compliance	Grading
Appendix A: Performance incentive scheme parameters— standard definitions	***Momentary Interruption*** *Means an Interruption to a Distribution Customer's electricity supply with a duration of 3 minutes or less, provided that the end of each Momentary Interruption is taken to be when electricity supply is restored for any duration.*	Nothing has come to our attention that causes us to believe that Ausgrid is unable to back-cast this data under the new definition with the same degree of accuracy as it produced figures under the prior definition.	A1

STPIS component	Definition	Compliance	Grading
Table A1: Reliability component	**Notes:** 7. For high voltage (HV) feeder single phase outages – unless there are accurate means to determine the exact number of customers affected, 67% of all downstream customers are taken to be affected for a single-phase HV feeder outage on a three phase network. 100% of customers are taken to be affected for all other HV outages. For example, when there is a single HV phase outage on a two phase or single phase HV system, 100% of customers are taken to be affected.	It has come to our attention that Ausgrid is unable to back-cast this data under the new definition with the same degree of accuracy as it produced figures under the prior definition.	B3
	Notes: 8. For low voltage single phase outage – unless there are accurate means to determine the exact number of customers affected, 33% of all downstream customers for a single phase outage are taken to be affected.	It has come to our attention that Ausgrid is unable to back-cast this data under the new definition with the same degree of accuracy as it produced figures under the prior definition.	B2
2.6A Transitional arrangement where a DNSP is unable to back-cast historical data	*(a) To implement this STPIS version 2.0, we require historical performance data under the new measurement method. If a DNSP is unable to back-cast historical data based on the new measurement method, the reliability measures SAIDI, SAIFI, MAIFI and MAIFIe are taken as having the same meaning as that shown in Table A2 of Appendix A.*	It has come to our attention that Ausgrid is unable to back-cast this data under the new definition with the same degree of accuracy as it produced figures under the prior definition.	B5 (FY14 CBD SAIDI) B2 (FY14 & FY17 Long Rural SAIFI) B1 (All other years / categories)

3.3   Conclusions

Our conclusions on the suitability of the data for back-casting purposes for each of the audited areas are provided below. These conclusions are distinct from the findings detailed in Ausgrid's 2017-18 Licence Conditions Audit [4]; thus, the below conclusions should be read in conjunction with those audit findings.

- **Momentary interruptions:** Ausgrid is able to back-cast this data with a high level of accuracy. This capability is embedded within automated system processes. Our opinion is that this data is suitable for use to back-cast data in accordance with the new STPIS requirements i.e. we have observed no evidence that indicates this data is unsuitable to be used for this purpose.

- **Single-phase interruptions:** Ausgrid is able to back-cast this data with a reasonable level of accuracy. However, we note that this data has a lower level of accuracy (LV = ±5% and HV = ±10%) than would be expected of data that has been historically reported and audited. Notwithstanding, our opinion is that

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[4] 2017-18 Reliability and Performance Conditions Audit, Ausgrid / IPART, 27 September 2018

this data provides a reasonable level of accuracy for use to back-cast data in accordance with the new STPIS requirements.

There is an opportunity for Ausgrid to improve the accuracy of this data going forwards; improvements may be made by, Ausgrid reviewing its processes for capturing this information, and implementing controls to ensure that it is captured to the level of accuracy that would be expected of reportable (and routinely audited) information.

- **Back-cast data:** Although there are discrepancies between the current data captured in OMS and previously reported figures, Ausgrid is able to back-cast this data with a high level of accuracy in most instances. Our opinion is that this data is generally suitable for use to back-cast data in accordance with the new STPIS requirements i.e. with the below exception, we have observed no evidence that indicates this data is unsuitable to be used for this purpose.

  There is a 38% discrepancy in FY14 for the CBD feeder category in the SAIDI figures currently held in OMS and those that were reported. Ausgrid advises that this relates to an outage to a single CBD customer that wasn't closed in the system when power was restored and went undetected as an open outage in the system for over a month. Ausgrid advises that it has since reviewed its controls to prevent similar errors form occurring. We recommend that Ausgrid seek guidance from the AER on how the 38% discrepancy in FY14 CBD SAIDI figures should be managed for back-casting purposes.

Whilst data discrepancies and opportunities for improvement have been observed as described above, adopting the new approaches will mean that Ausgrid reports a more accurate representation of its reliability performance that it has historically under the prior STPIS requirements.

GHD
Advisory

Appendices

Appendix A – Evidence Reviewed

The files provided by Ausgrid and reviewed in the course of the audit are as follows:

- *BO FY14 Original.xls*
- *BO FY15 Original.xls*
- *BO FY16 Original.xls*
- *BO FY17 Original.xls*
- *BO FY18 Original.xls*
- *1vs3 with duration.xlsx*
- *SAS Events FY14.xlsx*
- *SAS Events FY15.xlsx*
- *SAS Events FY16.xlsx*
- *SAS Events FY17.xlsx*
- *SAS Events FY18.xlsx*
- *SAS FY14.xlsx*
- *SAS FY15.xlsx*
- *SAS FY16.xlsx*
- *SAS FY17.xlsx*
- *SAS FY18.xlsx*
- *SAS combined.xlsx*

GHD Advisory

Rev.No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
v1-0	Adam Homan	Stephen Hinchliffe	*S. Hinchliffe*	Stephen Hinchliffe	*S. Hinchliffe*	18/12/2018