

ESV Validation Report

AusNet Services 2021-2022
Fire Start Report
Final Report

Executive summary

The Victorian Governor in Council made the Order In Council for the F-Factor Scheme Order 2016 under section 16C of the *National Electricity (Victoria) Act 2005*. This was gazetted on 22 December 2016.

AusNet Services provided its fire start report to the Australian Energy Regulator (AER) on 28 September 2022. This report covered the period 1 July 2021 to 30 June 2022.

The AER forwarded the fire start report to Energy Safe Victoria (ESV) on 30 September 2022 for validation by 30 November 2022. ESV undertook the validation process in a staged manner as follows:

- A **preliminary review** to ensure the information provided was complete and in a satisfactory form
- A **completeness assessment** to determine whether all fires previously reported to ESV had been included in the fire start report and to ensure all incidents in the fire start report had been previously reported as fires to ESV
- A **comparative analysis of IRU-specific factors** to identify any material differences between the information reported by AusNet Services in its fire start report and previously to ESV in relation to those aspects of the fire start report pertinent to the calculation of the total Ignition Risk Units (IRU) amount
- A **comparative analysis of non-IRU factors** to identify any differences between the information reported by AusNet Services in its fire start report and previously to ESV in relation to those aspects of the fire start report not pertinent to the IRU calculation.

Further detail on the methodology used for the validation analysis is provided herein.

On completion of the validation analysis, ESV issued the draft “ESV Validation Report: AusNet Services 2021-2022 Fire Start Report” to the AER on 30 November 2022. The AER provided a copy of the draft validation report to AusNet Services on 2 December 2022 and invited AusNet Services to respond with any comments within 15 business days.

AusNet Services wrote to the AER on 14 December 2022 addressing the items raised in the draft report and providing an amended fire start report.

Following the validation process, ESV can confirm that the total IRU amount of 145.66 in the final AusNet Services 2021-2022 fire start report¹ is correct.

¹ AST 2021-22 Electricity Distribution F factor data Ver20221205.xlsm

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Introduction

Background

The Victorian Governor in Council made the Order In Council for the F-Factor Scheme Order 2016 under section 16C of the *National Electricity (Victoria) Act 2005*. This was gazetted on 22 December 2016.

The F-factor scheme is managed by the Australian Energy Regulator (AER). Section 7 of the Order In Council identifies that the AER may request Energy Safe Victoria (ESV) to validate the fire start reports submitted to the AER by the Distribution Network Service Providers. Each fire start report will have an individual validation report.

The Order In Council stipulates that each Distribution Network Service Provider (DNSP) will provide a fire start report to the AER by 30 September each year. The Order In Council also stipulates that, if requested by the AER, ESV will provide a validation report to the AER by 30 November each year.

The Order In Council also identifies that the AER may refer any submissions regarding the validation reports to ESV in order to provide a revised validation that responds to the submissions by 15 February in the following year.

Request from the AER

On 30 September 2022, the AER provided ESV with the AusNet Services 2021-2022 fire start report for validation. This comprised the following documents:

- Attachment 1 – AST 2021-22 Electricity Distribution F factor data Excel spreadsheet
- Attachment 2 – F Factor Statutory Declaration (signed) 27 Sep 2022 PDF document
- Attachment 3 – SOP 30-05.v3 PDF document
- Attachment 4 – WSP Audit Report 5 Sep 2022 PDF document

These documents consider the AusNet Services distribution system separately from other systems managed by the service provider.

As per previous practice, ESV would seek additional information directly from the DNSPs where ESV deemed it necessary for the purposes of validation. This is in line with clause 7(4) of the Order In Council. Where additional information was sought, ESV ensured that the AER was copied into any correspondence.

Validation process

While the scope of the fire start report and the validation process are detailed in the Order In Council (as outlined below), the approach to be undertaken in assessing the accuracy of information provided is not specified. This section describes the process that ESV applied to the validation assessment; the results are provided later in this report.

Scope

In reviewing the information provided in a DNSP's fire start report, clause 7(3) of the Order In Council stipulates that ESV's validation report:

- (b) must include an assessment of the accuracy of the information provided in the fire start report pursuant to clauses 6(3)(d)-(f) and (h), specifically;
- (c) must verify the estimate of the ignition risk unit (IRU) amount for the financial year provided under clause 6(3)(g).

These specific items are detailed in clause 6(3) of the Order In Council, which states that a DNSP's fire start report must, among other things:

- (d) if the Distribution Network Service Provider is the service provider in relation to more than one distribution system, distinguish between distribution systems;
- (e) list all fire starts for a financial year, stating in each case and where known;
 - (i) what kind of fire start it was;
 - (ii) the date, time and latitude and longitude for each fire;
 - (iii) the unique identification number of the pole and polyphase electric line nearest to the fire start;
 - (iv) the voltage of the electric line in which the ignition occurred;
 - (v) the estimated value of the fire start expressed in IRUs, calculated in accordance with this Order;
- (f) state whether the fire was reported to a relevant entity;
- (g) calculate the total IRU amount for the financial year on the basis of the information contained in the fire start report, in accordance with this Order;
- (h) include such other information as the AER may from time to time specify;

Clause 6(3) of the Order In Council also requires that the DNSP's fire start report:

- (i) include an independent audit of the fire start report undertaken by an external auditor;
 - (i) stating, in the auditor's opinion, whether the information contained in the fire start report is accurate and reliable; and
 - (ii) which is acceptable to the AER.

Methodology applied

For its validation assessment, ESV broke these items into the two categories:

- IRU-specific factors

These comprise those factors within the fire start report that are directly relevant to the calculation of the IRUs for the incident. Specifically these are the date, time and latitude and longitude for the fire and the distribution business' estimate of the IRUs for the fire [items (e)(ii) and (e)(v) in the Order In Council].

- Non-IRU factors

These comprise all other information reported in the fire start report [items (e)(i), (e)(iii) and (e)(iv)].

A more detailed analysis was undertaken of the IRU-specific factors than of the non-IRU factors.

ESV validated the DNSP fire start reports as follows:

- *Preliminary review*

The purpose of the preliminary review was to determine that the information provided to ESV was complete and in a satisfactory form for ESV to undertake its validation analysis.

ESV started by reviewing the documentation provided by the AER to ensure that all relevant information was provided and readable.

The DNSP's fire start spreadsheet was then subject to a preliminary, high-level review to ascertain whether there were any obvious issues with the information contained therein. If the preliminary review identified any issues, ESV would contact the DNSP so that the DNSP could provide an updated spreadsheet.

- *Completeness assessment*

The purpose of the completeness assessment was to determine whether:

- all fires in the DNSP's fire start report are listed as fires in OSIRIS²
- all network-related fires listed in OSIRIS are included in the DNSP's fire start report.

Where there were differences identified, ESV contacted the DNSP to confirm the reasons for the difference.

The DNSP then provided a rationale for the differences and, where there was a change to the information in the fire start spreadsheet, the DNSP provided an updated spreadsheet reflecting any changes and, in some instances, additional supporting information.

We reviewed the rationale and information subsequently provided by the DNSP to confirm we were satisfied with the reasons for the inclusion or exclusion of specific incidents.

- *Comparative analysis — IRU-specific factors*

The purpose of the comparative analysis of IRU-specific factors was to identify any material differences between the information reported by the DNSP in its fire start report and through OSIRIS. In determining materiality, ESV considered whether:

- any differences in the location were sufficient to result in a change to the location multiplier being applied to the fire start
- any differences in the location were sufficient to result in an incorrect Country Fire Authority (CFA) region being used for determining the applicable Fire Danger Rating for the fire start
- any differences in the date and time were sufficient to result in an incorrect Fire Danger Rating being applied to the fire start.

Where potentially material differences were identified, ESV contacted the DNSP to confirm the reasons for the differences.

The DNSP then provided a rationale for the differences and, where there was a change to the information in the fire start spreadsheet, the DNSP provided an updated spreadsheet reflecting any changes and, in some instances, additional supporting information.

We reviewed the rationale and information subsequently provided by the DNSP to confirm we were satisfied with the rationale and information provided.

² OSIRIS is ESV's incident reporting portal for the major electricity companies to report details of any serious electrical incidents to ESV. These incidents include a range of events that include fires involving network assets.

- *Comparative analysis — non-IRU factors*

The purpose of the comparative analysis of non-IRU factors was to identify any differences between the information reported by the DNSP in its fire start report and through OSIRIS.

Where differences were identified, ESV identified these in this validation report. The DNSP was able to comment on these differences in its response to the draft validation report.

Following the validation process, ESV then used the final data to calculate an IRU amount for each fire start. We then compared these against the IRU amounts provided by the DNSP, and a total IRU amount was calculated.

Caveats

The following caveats apply to the validation process and the contents and findings of this report:

- *Accuracy of the fire start data*

The validation process involves the comparison of two data sets — the DNSP's fire start report and incident data reported by the DNSP via ESV's OSIRIS. Where there are differences between the data reported in these two data sets, ESV has not sought to ascertain which data set provide the true and accurate record of each fire start for the purposes of this report beyond a desktop assessment.

ESV can only attest that the data provided in the fire start report is appropriate for the purposes of calculating the total IRU amount. The information provided in the DNSP's fire start report should not be used for other purposes without further analysis of the data to verify it is fit for such purposes.

- *Validation against third-party sources*

ESV has not sought to validate or verify the data in the DNSP's fire start report in its entirety against third-party sources such as the CFA and Fire Rescue Victoria (FRV). This is not deemed to be a significant limitation on the validation process as any fires involving network assets should be reported by the CFA/FRV to the DNSP and these are, in turn, reportable to ESV.

Individual records may have been subject to confirmation with the CFA and/or FRV on a case-by-case basis. If this has occurred, it is noted within the report.

- *Independent verification of fire starts*

ESV does not have the resources available to routinely undertake independent assessments of the DNSP's electricity network in order to ascertain whether the DNSP identifies all incidents, including fires. As such, the fire starts may be under-reported; however, we are confident that the number of such incidents is small and that no significant fires could have gone unreported.

Similarly ESV has not undertaken an independent audit of the DNSP's records to ensure their accuracy. In this regard, we have relied on this being undertaken as part of the independent audit commissioned by the DNSP, the details of which were submitted as part of the fire start report.

Accuracy of information provided

ESV undertook an assessment of the accuracy of the information provided in the AusNet Services fire start report in accordance with clause 7(3)(b) of the Order In Council. The following sections outline the findings of the assessment.

Further details regarding the specific incidents reported in the fire start report are available upon request.

Preliminary review

Upon receipt of the AusNet Services fire start spreadsheet, we undertook a preliminary review to ensure that the fire reporting spreadsheet had no obvious issues with regard to incomplete or incorrect data.

No high-level issues were identified with the documentation provided by AusNet Services.

Completeness assessment

We compared the records provided in the AusNet Services fire start spreadsheet with those available from ESV's OSIRIS incident reporting portal. This comparison was undertaken to assess the completeness of the fire start report, with specific attention paid to identifying any records missing from either data set or classified differently between the data sets.

The analysis identified one incident in OSIRIS that had not been included in the AusNet Services fire start report (OSIRIS reference 20220915SPN_04, AusNet Services reference E0087238). There were no incidents in the AusNet fire start report that were not listed as fires in OSIRIS. ESV can confirm that the missing incident was included in the final AusNet Services fire start report.

Comparative analysis — IRU-specific factors

We compared the location (latitude and longitude) and timing (date and time) of each record in the fire start report with the record of the same incident in OSIRIS.

As we recognised that errors may be introduced into the location data due to rounding errors and other system-induced errors, we rounded all latitudes and longitudes to five decimal places to reduce the impact of such errors on the analysis.

We then checked the location area (used to determine the location multiplier) and the CFA fire district (used to determine the danger multiplier) using the DNSP and OSIRIS location data to ascertain whether these differed from the fire start report. As such, we only consider those differences in location that were material to the calculation of the IRU amount.

In undertaking its analysis, ESV focused on those records where the differences could materially affect the IRU calculated for the fire start.

ESV applied the following tests to determine if the differences between the data sets could be material:

- **Test 1** : Is the difference in coordinates sufficient that a change in location may result in a change to the location multiplier?

The location area for each fire start was determined based on the coordinates in the fire start report and OSIRIS. This was done by identifying the location areas in which the coordinates were sited.

If these differed from the location areas listed in the fire start report, the incident was investigated in

more detail to identify the cause of the difference. Where necessary, the incident was referred back to the DNSP for further clarification.

- **Test 2** : Does the Fire Danger Rating applicable at the location and time for a record differ when based on the information specified in the fire start report and in OSIRIS?

The Fire Danger Rating is dependent on the location of the fire (which CFA region the fire occurred in) and the time of the fire (what was the applicable Bureau of Meteorology Fire Danger Rating at the time of the fire).

The CFA region for each fire start was determined based on the coordinates in the fire start report and OSIRIS. This was used to look up the Fire Danger Rating for that region in the spreadsheet of ratings available from the EM-COP website at the listed date and time of the fire.

The Fire Danger Rating was determined based on the coordinates and times in the fire start report and OSIRIS. If these differed from the ratings listed in the fire start report, the incident was investigated in more detail to identify the cause of the difference. Where necessary, the incident was referred back to the DNSP for further clarification.

Using these two tests, we identified one incident (OSIRIS reference 20211004SPN_02) where the differences in information materially affected the IRU for the incident. This is not due any discrepancy in the location or the date and time, but rather due to an error in the fire danger rating attributed to the incident. AusNet Services had listed the rating as “Low-moderate” when the rating at the time of the fire was “No forecast”. ESV can confirm that the fire danger rating for this incident was amended in the final AusNet Services fire start report.

Comparative analysis — non-IRU factors

ESV undertook a comparison of the data in the AusNet Services fire start report and OSIRIS related to:

- the pole and polyphase electric line identification numbers
- the voltage of the electric line
- the kind of fire start.

A direct comparison was made of the details of the pole and line identification numbers and line voltage in the fire start report and OSIRIS. This did not require any subjective assessment. The comparison identified no incidents with differences in the asset identification number or the voltages between the fire start report and OSIRIS. There was one instance (20211117SPN_02) where the polyphase line identification number was different between the fire start report and OSIRIS; the fire start report lists the line number as “KMS11” and OSIRIS lists the line number as “NLA31”. AusNet Services confirmed that the line number in the fire start report was correct and subsequently corrected the details in the OSIRIS incident report.

Details from OSIRIS were used to determine whether the kind of fire start had been correctly identified. This involved a subjective assessment of the information.

The assessment of the kind of fire identified 79 fire starts where ESV would have classified the fire differently to AusNet Services. This included 63 incidents where AusNet Services classified the incidents as “otherwise started by a distribution system” and ESV classified these as “started in or originated from a distribution system”. The classifications are essentially interchangeable and ESV accepts the classifications applied by AusNet Services.

These remaining sixteen incidents were:

- Incidents 20220117SPN_06, 20220118SPN_01, 20220117SPN_08, 20220502SPN_01, 20220303SPN_01, 20220307SPN_02 and 20220316SPN_01

AusNet Services classified these incidents as “started by lightning striking a distribution system or a part of a distribution system”, but ESV’s review identified that they were “started in or originated from a distribution system”. While AusNet Services reported that lightning was involved or thought to be involved in these incidents, the fires in all seven incidents resulted from fuses failing to eject as designed during lightning strike. As such, the cause of these incidents was fuse failure rather than the lightning strikes that the fuses were designed to protect against.

- Incidents 20220118SPN_03, 20220214SPN_01, 20220218SPN_02, 20220221SPN_01, 20220406SPN_01, 20220418SPN_02, 20220517SPN_01 and 20220524SPN_02

AusNet Services classified these incidents as “started by any person, bird, reptile or other animal coming into contact with a distribution system”, but ESV’s review identified that they were “started in or originated from a distribution system”. While AusNet Services reported that possum contact was involved in four incidents and bird contact in the other four incidents, the fires in all eight incidents resulted from fuses failing to eject as designed during such contact events. As such, the cause of these incidents was fuse failure rather than the animal contacts that the fuses were designed to protect against.

None of the differences above any material impact on the total IRU calculation.

In its response to the draft validation report, AusNet Services advised that it had determined the fire start classification based on the initiating event that triggered the incident rather than the cause of the incident. AusNet Services stood by the logic behind its classification process and did not believe that the classifications should be amended.

ESV has reviewed the wording used in the F-factor Scheme Order 2016, specifically that used in clause 5(1) that defines what constitutes a fire start and clause 6(3)(e) that defines what is reportable in the fire start report. By referring to the events that “starts” the fire as opposed to the cause of the fire, the Order is open to interpretation. In this context and without either more accurate wording in the Order or direction from the AER as to interpretation of the Order’s intent, AusNet Services has not incorrectly reported in its fire start report. ESV can confirm that AusNet Services had correctly identified the initiating event for these fires based on the incident reports provided through OSIRIS. As such, ESV accepts the classifications provided by AusNet Services even though ESV would interpret the Order differently.

To ensure that the requirements for future reporting periods are clear, ESV will instigate discussions with the AER (as responsible regulatory agency) and the Powerline Bushfire Safety Taskforce (PBST) within the Department of Energy, Environment and Climate Action (as the Victorian Government custodian of the Order) regarding their understanding of the intent of the Order. This will result in either the AER issuing a notice to all DNSPs clarifying the interpretation of clauses 5(1) and 6(3)(e) and/or PBST including suitable amendments in the next revision of the Order. Either way, clarification will be issued to all DNSPs prior to the next round of F-factor reporting.

Verification of the IRU amount

Following the validation of individual records, ESV compiled any changes to the fire start records and assigned the corresponding location and danger multipliers. The individual and total IRU amounts were then calculated.

We then compared our location and danger multipliers with those of AusNet Services to determine whether AusNet Services had correctly assigned the multipliers for each fire start. There were no differences in the multipliers or IRU amounts.

As part of the validation process, ESV identified no differences in the fire start report that had a material impact on the total IRU amount.

ESV has identified that the total IRU amount of 145.66 as reported in the final fire start report (*AST 2021-22 Electricity Distribution F factor data Ver20221205.xlsm*) is correct.

Conclusion

As noted earlier, the Order In Council stipulates that this validation report:

- (b) must include an assessment of the accuracy of the information provided in the fire start report pursuant to clauses 6(3)(d)-(f) and (h), specifically:
- (c) must verify the estimate of the ignition risk unit (IRU) amount for the financial year provided under clause 6(3)(g).

Table 1 identifies where these items have been assessed within this report and summarises the key findings of the validation assessment.

Table 1: Summary of findings

Statistic	Relevant report section	Key findings
Clause 6(3)(d)	Request from AER	The fire start report addressed the AusNet Services distribution system separately from other systems managed by the service provider.
Clause 6(3)(e)(i)	Comparative analysis — non-IRU factors	<p>There were 79 differences between the assessment of the fire type made by AusNet Services and that made by ESV. Of these, 63 related to the application of interchangeable classifications, with either classification being appropriate. A further sixteen were due to differences in the classifications.</p> <p>While ESV would interpret the intent of the F-factor Scheme Order differently to AusNet Services, it accepts the sixteen differing classifications provided by AusNet Services.</p> <p>These differences were not material to the calculation of the total IRU amount.</p>
Clause 6(3)(e)(ii)	Comparative analysis — IRU-specific factors	<p>There were no material differences in the date and time of incidents in the AusNet Services fire report.</p> <p>There was one incident where an incorrect fire danger rating had been assigned to the fire, which then resulted in a material impact to the calculation of the total IRU amount. AusNet Services amended the fire danger rating in accordance with ESV's findings.</p>
Clause 6(3)(e)(iii)	Comparative analysis — non-IRU factors	<p>There were no differences between the fire start report and OSIRIS in relation to pole identification numbers.</p> <p>There was one difference between the fire start report and OSIRIS in relation to polyphase electric line identification numbers. AusNet Services amended the OSIRIS incident report to reflect the correct line number.</p> <p>This difference was not material to the calculation of the total IRU amount.</p>
Clause 6(3)(e)(iv)	Comparative analysis — non-IRU factors	There were no differences between the fire start report and OSIRIS in relation to voltage of the line involved in the fire.
Clause 6(3)(e)(v)	Verification of IRU amount	The total IRU amount of 145.66 provided in the fire start report (<i>AST 2021-22 Electricity Distribution F factor data Ver20221205.xlsm</i>) is correct.
Clause 6(3)(f)	Completeness assessment	AusNet Services had reported all fires to ESV as the relevant entity. One fire start had not been included in the fire start report as it was only reported late to ESV. This was included in the final AusNet Services fire start report.