

ESV Validation Report

Powercor 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.

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

Powercor provided a copy of the fire start report to Energy Safe Victoria (ESV) on 30 September 2022. The AER required validation of this report 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 Powercor 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 Powercor 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: Powercor 2021-2022 Fire Start Report” to the AER on 30 November 2022. The AER will provide a copy of this report to Powercor and invite Powercor to respond with any comments. Any comments received from Powercor will be reviewed and a final report issued by 15 February 2023.

Powercor wrote to the AER on 16 December 2022 with its comments on the draft report. After some further correspondence clarifying aspects of the reporting, Powercor provided its final fire start report to the AER on 14 February 2023.

Following the validation process, ESV can confirm that the total IRU amount of 156.02 in the final Powercor 2021-2022 fire start report¹ is correct.

¹ PAL F-Factor RIN 2021-2022 V7 (Locked).xlsm

Contents

- Executive summary3**
- Introduction.....7**
 - Background.....7
 - Request from the AER7
- Validation process8**
 - Scope8
 - Methodology applied8
 - Changes to HBRA/LBRA.....10
 - Caveats10
- Accuracy of information provided11**
 - Preliminary review.....11
 - Completeness assessment11
 - Comparative analysis — IRU-specific factors11
 - Comparative analysis — non-IRU factors13
- Verification of the IRU amount14**
- Conclusion15**

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, Powercor provided ESV with the Powercor 2021-2022 fire start report for validation. This comprised the following document:

- Attachment 1 – F-Factor RIN 2021-2022 Powercor Excel spreadsheet

This document considers the Powercor 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.

Changes to HBRA/LBRA

The CFA has recently reviewed the boundaries of Hazardous Bushfire Risk Areas (HBRA) and Low Bushfire Risk Areas (LBRA) across Victoria. This review has resulted in changes to HBRA and LBRA in the Powercor network area. These changes came into force on 1 November 2021. In undertaking the validation assessment, ESV has applied the old HBRA/LBRA boundaries to those incidents on the Powercor network occurring between 1 July 2021 and 31 October 2021 and the new HBRA/LBRA boundaries to those incidents occurring on or after 1 November 2021.

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 Powercor 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 Powercor 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 Powercor.

Completeness assessment

We compared the records provided in the Powercor 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 of the CitiPower fire start report had identified two incidents in OSIRIS that were incorrectly attributed to CitiPower rather than Powercor. The two incidents were re-opened in OSIRIS so that the correct network details could be entered against the incidents. These two incidents were included in the Powercor 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 four incidents where the differences in information materially affected the IRU for the incident. These were:

- **Incident 20211129PWA_01**

The location at which this incident occurred was reclassified from LBRA to HBRA as part of the cyclic review of HBRA/LBRA boundaries (see page 10). These changes were gazetted effective from 1 November 2021. Given that this incident occurred on 26 November 2021, it should have been classified as "HBRA only" rather than "LBRA only".

- **Incident 20220315PWA_05**

This incident occurred at 00:06am on 14 March 2022. The CFA had rated the fire danger as "High" on 13 March at 6:30am. While the rating was changed to "Low-moderate" on 14 March, the new rating was only valid from 6:30am. As such, the rating of "High" still applied at the time of the incident.

- **Incident 20220509PWA_01**

The location of the incident is classified as being "within area delineated on plan LEGL./16-354" rather than being classified "HBRA only" as recorded in the Powercor fire start report.

- **Incident 20220606PWA_01**

This incident occurred at 01:20am on 3 June 2022. The CFA had rated the fire danger as "No forecast" for the week preceding the incident. While the rating was changed to "Low-moderate" on 3 June, this rating was only valid from 6:30am. As such, the rating of "No forecast" still applied at the time of the incident.

In its response to the draft validation report, Powercor amended the locations (and location multipliers) for incidents 20211129PWA_01 and 20220606PWA_01. Powercor also advised that it had been advised by Emergency Management Victoria, the custodian's of EM-COP where the historic data is stored, that the fire danger ratings applied for the full 24-hour period of the day the forecast is made, including the period from midnight to when the forecast is issued.

ESV reviewed the wording of the F-Factor Scheme Order 2016 and was of the opinion that, under clause 11(1)(a), the danger multiplier applicable to a fire start is based on the fire danger rating forecast at the time the fire started. As such, a rating issued after the fire had occurred could not be applied retrospectively. ESV sought an independent opinion from the Powerline Bushfire Safety Taskforce within the Department of Energy, Environment and Climate Action, who are the custodians of the Scheme Order within the Victorian Government. They confirmed that ESV's interpretation of the Scheme Order was correct and that ratings should not be applied retrospectively.

Powercor accepted this interpretation and issued a revised fire start report on 14 February 2023 that amended the ratings for these two incidents.

Discussions with Powercor regarding the way EM-COP provides the historic data identified aspects where the current data provision could be improved to prevent future confusion. ESV will discuss potential changes to the EM-COP service with Powerline Bushfire Safety Taskforce before the next reporting year.

Comparative analysis — non-IRU factors

ESV undertook a comparison of the data in the Powercor 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 pole identification number, the line identification number or the voltage between the fire start report and OSIRIS.

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 one fire start where ESV would have classified the fire differently to Powercor. This was incident 20220106PWA_07. Powercor classified this incident as “started by any other thing forming part of or coming into contact with a distribution system”, but ESV’s review identified that this incident was “started by any person, bird, reptile or other animal coming into contact with a distribution system”. The incident was due to a tree trimmer using a rotating saw cutting through a HV conductor. If the saw was a tool directly in the hands of a person, the tool would be regarded as an extension of the person and, as such, classified as “started by any person, bird, reptile or other animal coming into contact with a distribution system”. In its response to the draft validation report, Powercor advised that the saw used to cut the tree was a large circular saw mounted on a boom and tractor and, therefore, could not be regarded as an extension of a person. In these circumstances, it would be more appropriate to classify this incident as Powercor had done (that is, “started by any other thing forming part of or coming into contact with a distribution system”). Based on this information, ESV concurs with Powercor’s assessment.

Note: There was one fire that was started when a property owner cut down a tree that then fell onto powerlines (incident 20220328PWA_01). Powercor and ESV both classified this fire as having been “started by any tree, or part of a tree, falling upon or coming into contact with a distribution system” as this was the most relevant category under the F-factor Scheme categories. This incident highlights a limitation in the interpretation of this F-factor data as many would interpret incidents in this category as being due to tree contact or tree failure.

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 Powercor to determine whether Powercor had correctly assigned the multipliers for each fire start. There were four discrepancies in the multipliers that had a material impact on the total IRU amount; these are discussed in more detail on page 12. Powercor corrected these discrepancies in its final fire start report.

ESV has identified that the total IRU amount of 156.02 as reported in the final fire start report (*PAL F-Factor RIN 2021-2022 V7 (Locked).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 Powercor distribution system separately from other systems managed by the service provider.
Clause 6(3)(e)(i)	Comparative analysis — non-IRU factors	There was one difference between the assessment of the fire type made by Powercor and that made by ESV. Powercor amended the classification in accordance with ESV's findings. This difference was not material to the calculation of the total IRU amount.
Clause 6(3)(e)(ii)	Comparative analysis — IRU-specific factors	There were no material differences in the date and time of incidents in the Powercor fire report. There were four differences in the location area and fire danger rating that were material to the calculation of the total IRU amount. Powercor amended the location areas and fire danger ratings in accordance with ESV's findings.
Clause 6(3)(e)(iii)	Comparative analysis — non-IRU factors	There were no differences between the fire start report and OSIRIS in relation to pole identification numbers or polyphase electric line identification numbers.
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 156.02 provided in the final fire start report (<i>PAL F-Factor RIN 2021-2022 V7 (Locked).xism</i>) is correct.
Clause 6(3)(f)	Completeness assessment	Powercor had reported all fires to ESV as the relevant entity.