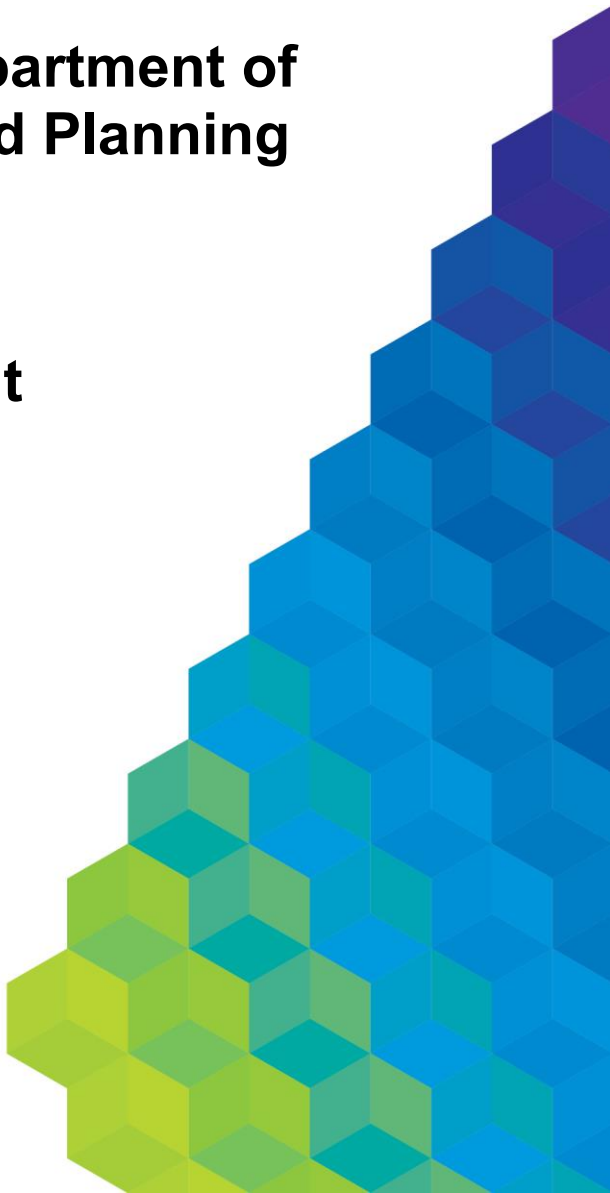
AusNet Electricity Services Pty Ltd

Submission to Victorian Department of Environment Land Water and Planning

F-factor Incentive Scheme Regulatory Impact Statement

Submitted: 7 November 2016



About AusNet Services

AusNet Services is a major energy network business that owns and operates key regulated electricity transmission and electricity and gas distribution assets located in Victoria, Australia. These assets include:

- A 6,574 kilometre electricity transmission network that services all electricity consumers across Victoria;
- An electricity distribution network delivering electricity to approximately 680,000 customers in an area of more than 80,000 square kilometres of eastern Victoria; and
- A gas distribution network delivering gas to approximately 572,000 customer supply points in an area of more than 60,000 square kilometres in central and western Victoria.

AusNet Services' purpose is 'to provide our customers with superior network and energy solutions.' The AusNet Services company values are:

- We work safely
- We do what's right
- We're one team
- We deliver

For more information visit: www.ausnetservices.com.au

Contact

This document is the responsibility of Regulated Energy Services within AusNet Services. Please contact the indicated owner of the document below with any inquiries.

Anh Mai
AusNet Services
Level 31, 2 Southbank Boulevard
Melbourne Victoria 3006
Ph: (03) 9695 6000

Table of Contents

Executive summary **4**

1 Background **6**

2 Nature of the problem and options **7**

2.1 What does the RIS say? 7

2.2 AusNet Services' response 9

3 Setting benchmarks and incentive rates for proposed f-factor scheme **13**

3.1 Overview of RIS approach 13

3.2 AusNet Services' response 14

4 Operation of the scheme **19**

4.1 Caps and collars 19

4.2 Banking arrangements relating to revenue adjustments 19

4.3 Future IRU benchmarks 19

4.4 Transitional arrangements 20

Executive summary

AusNet Services welcomes this opportunity to comment on the Regulatory Impact Statement (RIS) in relation to the f-factor scheme, which has been prepared by the Department of Environment, Land, Water and Planning (DELWP).

AusNet Services is committed to minimising bushfire risk as far as practicable in accordance with our safety commitments and our legal obligations under the *Electricity Safety Act 1998*. However, we do not consider that the proposed f-factor scheme will promote more efficient risk mitigation measures for the following reasons:

- AusNet Services' bushfire mitigation decisions are driven by our safety commitments and legal obligations, not financial incentives. Therefore, the proposed f-factor scheme will not drive risk mitigation improvements as described in the RIS. Bushfire mitigation measures are best optimised through the current safety framework managed by the Energy Safe Victoria.
- AusNet Services currently applies the Fire Loss Consequence Model (FLCM), introduced by the Victorian Government's Powerline Bushfire Safety Taskforce to optimise network operation and investment programs for the mitigation of bushfire risk. This application of the FLCM has resulted in a 36% reduction in fire incidents through a range of programs. The FLCM – and not the proposed f-factor scheme - should continue to drive our approach to bushfire risk mitigation.
- The proposed f-factor scheme is based on a risk assessment framework that is inconsistent with the FLCM. In particular, the f-factor smears risk across large geographical areas rather than adopting the FLCM's more granular risk assessment. The f-factor also gives a greater weighting to geographical risk (as opposed to time factors), which would also distort investment and operational signals.

For these reasons, AusNet Services recommends that the f-factor scheme is allowed to continue to the end of the current regulatory period as currently designed, and is not replaced by an amended scheme. However, should the Government decide to implement the amended f-factor scheme it is recommended the following changes be made to the approach outlined in the RIS:

- Current benchmarks based on historic performance should be maintained. It is not appropriate to adjust existing benchmarks to account for an assumed level of future benefits of REFCL technology. Improvements are expected, but their extent and timing is highly uncertain as the technology has not been used for fire risk mitigation purposes anywhere in the world. Good regulatory practice bases performance targets on historic data, and this approach should be maintained for the f-factor scheme.
- AusNet Services' analysis shows that the RIS overestimates the forecast decrement in future IRUs by assuming that some types of fires (such as HV fuse failures) would be eliminated by the installation of REFCLs. This error reinforces AusNet Services' recommendation that decrements should not be applied or, alternatively, should only be implemented in light of operational experience during 2019/20.
- If, however, a decrement is to be applied as proposed by the RIS, the calculation must be amended to correct for the modelling errors we have identified. A spreadsheet showing the amended calculations accompanies this submission.
- AusNet Services has substantially replicated the RIS analysis in relation to the proposed benchmark of 247.7 using performance data from 2012-15. However, further analysis using data from 2007-10 demonstrates that the RIS significantly understates the maximum financial exposure from the proposed scheme. AusNet Services estimates a maximum loss in excess of $21.5 million compared to the RIS analysis of $9.86 million.

- Given the substantial downside risk, AusNet Services proposes that the maximum loss should be capped at $9.86 million as modelled in the RIS. If the RIS modelling proves to be correct, a cap at this level will not apply in practice. However, the adoption of the proposed cap provides important protection against the financial risk associated with the scheme.
- The Order-in-Council should provide clear guidance that future IRU targets should be set on the basis of historic performance. At present, the draft Order-in-Council provides unfettered discretion to the Government to determine future targets, which is contrary to good regulatory practice.
- The Order-in-Council should provide "banking" arrangements so that distributors can smooth bonuses and penalties across regulatory years at their discretion. This approach has applied in relation to the S-factor, and provides the benefit of smoothing annual price changes without disadvantaging customers or distributors.
- The proposal is to introduce the new f-factor scheme from 1 July 2016, a date which is four months before publication of the RIS. Retrospective regulation should be avoided wherever possible, as it is counter to the Rule of Law principles.
- As the current f-factor scheme operates on a calendar year basis, we propose that it should be allowed to continue to operate for the remainder of the year, which is only two months. The new scheme should operate from 1 January 2017 to 30 June 2017 with the IRUs pro rated accordingly, after which time, it would operate on a full financial year basis.

1 Background

Following the Black Saturday bushfires, the State Government introduced an incentive scheme to reduce electricity network distribution network ignitions. Known as the f-factor, the scheme followed the design of the Service Target Performance Incentive Scheme (STPIS), by providing a penalty or reward of $25,000 for every network ignition above or below their historical five-year benchmark of ignitions.

The Government is proposing to implement an enhanced scheme, which is intended to provide:

- more efficient and targeted risk reduction incentives to encourage investment and operational improvements to the riskiest areas of the state; and
- a benchmark which reflects expected reductions in ignitions due to the planned implementation of Rapid Earth Fault Current Limiters (REFCLs), which is mandated by the Electricity Safety (Bushfire Mitigation) Amendment Regulations 2016.

The Government's preferred f-factor design has the following features:

- Annual performance is measured in terms of Ignition Risk Units (IRUs), where each fire start is scored according to its timing and location.
- An annual benchmark IRU is set by modelling historic ignitions performance over the 2012-2015 period.
- The annual benchmark is decremented at set intervals to reflect the estimated reduction in fire starts as a result of installing REFCLs.
- A $15,000 reward or penalty is applied for each IRU below or above the annual benchmark.

A regulatory impact statement (RIS) has been prepared by the Department of Environment, Land, Water and Planning, in accordance with the Victorian Government Guide to Regulation, July 2014.

This document is AusNet Services' response to the RIS and is structured as follows:

- Section 2 comments on the RIS approach in describing the 'nature of the problem' and assessing the available options.
- Section 3 discusses the Department's modelling approach in determining the IRU benchmark. It explains why a decrement should not be applied, and the importance of capping the financial risks given the risk of extreme IRU outcomes.
- Section 4 discusses the operation of the scheme, including banking arrangements relating to revenue adjustments; transitional arrangements; and arrangements for setting future IRU benchmarks.

2 Nature of the problem and options

2.1 What does the RIS say?

The RIS explains that Victoria is one of the most bushfire-prone regions of the world and electricity assets have been linked to deadly bushfires. This provides the context for implementing arrangements that minimise the risk of electricity assets causing bushfire.

The RIS is concerned with the following perceived deficiencies in the current f-factor scheme:

- The current f-factor scheme has weak incentives and has failed to reduce fire starts[1].
- The distributors face inadequate incentives to extract the full bushfire risk reduction benefit from enhanced network protection devices such as REFCLs[2].
- A continuation of the current f-factor scheme would provide a windfall gain for distributors. According to the RIS, customers will pay 'twice' for risk-reducing technology – once by financing the capital expenditure and again through incentive payments received by distributors as a result of the reduced fire starts.[3]

The RIS presents the following data on fire reduction following the introduction of the f-factor scheme.

Table 1: Distribution network performance under current f-factor[4]

	Citipower	Powercor	Jemena	AusNet	United Energy
benchmark	30.4	401.8	56.8	256.8	124.2
2012 Ignitions	30	303	42	178	85
% to Benchmark	-1.3%	-24.6%	-26.1%	-30.7%	-31.6%
2013 Ignitions	33	498	91	176	127
% to Benchmark	8.6%	23.9%	60.2%	-31.5%	2.3%
2014 Ignitions	31	463	84	182	214
% to Benchmark	2.0%	15.2%	47.9%	-29.1%	72.3%
2015 Ignitions	14	345	54	120	102
% to Benchmark	-53.9%	-14.1%	-4.9%	-53.3%	-17.9%
Average annual Ignitions	27.0	402.3	67.8	164.0	132.0
% to Benchmark	-11.2%	0.1%	19.3%	-36.1%	6.3%

The RIS comments that AusNet Services is the only distributor that has delivered a consistent reduction in fire starts. In light of the above data, the RIS draws the following conclusions:

1 RIS, sections 1.5.1 and 1.5.2.

2 RIS, sections 1.5.3.

3 RIS, sections 1.5.3.

4 RIS, Table 1.4.

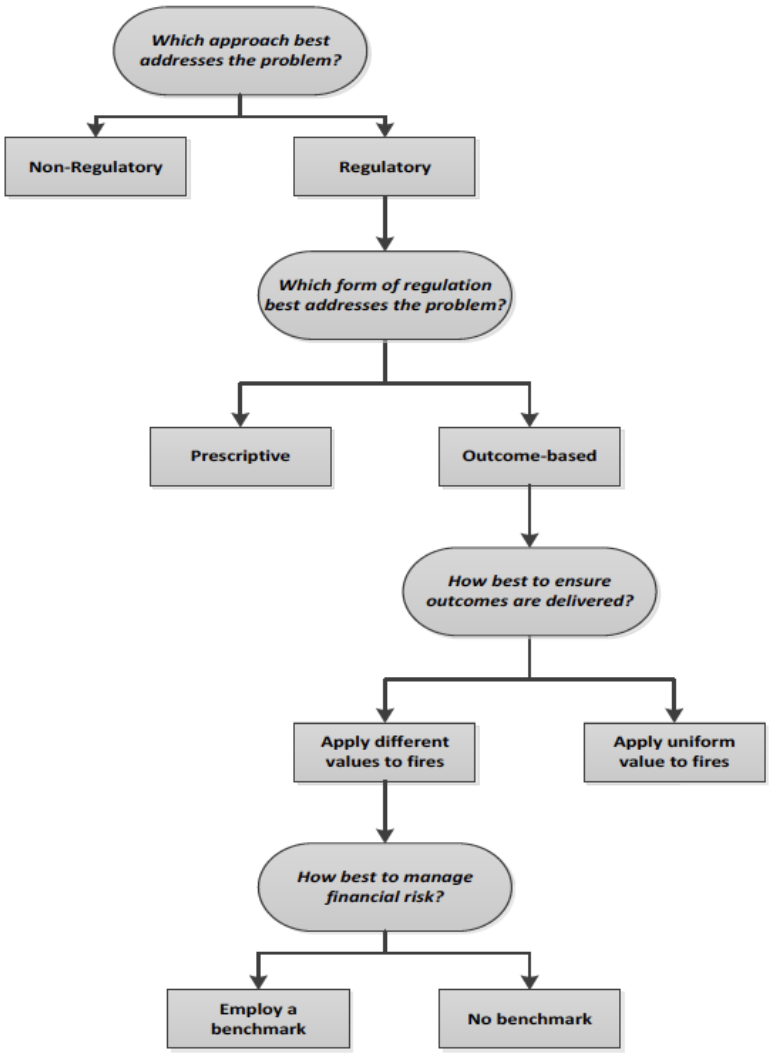
> *"Accordingly, at best the current f-factor scheme has provided an output for a bushfire risk proxy as posed by all networks ignitions across the Victorian distribution businesses. The scheme has not provided a sufficient incentive to influence."*[5]

In relation to the future operation of fire suppression devices, the RIS raises the following concerns regarding the continued operation of the f-factor scheme:

> *"The current f-factor scheme supplies little incentive for distribution businesses to optimise and drive full benefit from the mandated enhanced network protection technologies funded by Victorian consumers to reduce bushfire risk."*[6]

To address the perceived problems with the current f-factor scheme, the RIS employs the following decision tree to consider different types of solutions, starting with a choice between regulatory and non-regulatory approaches.[7]

Figure 1: Options Decision Tree



In working through the decision tree, the RIS concludes that an outcomes based regulatory approach, with financial incentives is the preferred solution. The RIS explains:

> *"An outcomes-based financial incentive allows the State to target the distribution businesses' attention on the times and places of the network of greatest bushfire risk."*[8]

5 RIS, section 1.5.2, page 13.

6 RIS, section 1.5.3, page 14.

7 RIS, Figure 3.1, page 16.

2.2 AusNet Services' response

AusNet Services disagrees with the RIS' conclusion that an enhanced f-factor scheme will promote more efficient bushfire risk mitigation measures, for two reasons:

- AusNet Services' bushfire mitigation measures are not driven by financial incentives; and
- The design of the f-factor scheme is inconsistent with the Fire Loss Consequence Model, which plays an essential role in optimising a range of risk mitigation initiatives.

We address each of these points in turn below, which lead to the conclusion that the current f-factor scheme should not be replaced at the end of the current regulatory period.

2.2.1 Bushfire mitigation measures are not driven by financial incentives

In accordance with section 98 of the Act, AusNet Services' risk management philosophy is to minimise risk as far as is practicable. AusNet Services' Bushfire Mitigation Plan, accepted by Energy Safe Victoria, includes the application of electrical protection settings of greater sensitivity to assets in those parts of the network located in high bushfire risk areas on Total Fire Ban and Code Red days. This accepted network operating practice accords with the recommendations of the Government's Powerline Bushfire Safety Taskforce.

Accordingly, AusNet Services' safety performance is not dependent on or influenced by financial incentives. We therefore reject the view expressed in the RIS that:

> *"A more efficient and targeted risk reduction incentive should incentivise investment and operational improvements to the riskiest areas of the state."*[9]

The RIS is also mistaken in expressing concern that the current f-factor scheme provides inadequate incentives to:

> *"optimise and drive full benefit from the mandated enhanced network protection technologies funded by Victorian consumers to reduce bushfire risk."*[10]

AusNet Services makes explicit commitments through its Bushfire Mitigation Plan to derive the full benefit from this technology. As the safety regulator, ESV is responsible for scrutinising and approving this plan, in accordance with the relevant legislation. ESV's assessment does not consider the financial incentives provided by the f-factor scheme or the AER's Service Target Performance Incentive Scheme – and nor should it.

ESV will only approve a Bushfire Mitigation Plan if it complies with the Electricity Safety Act 1998 and the Electricity Safety (Bushfire Mitigation) Regulations 2013. In this context, ESV could not approve a plan that did not "optimise and drive full benefit" from REFCLs or other risk mitigating technologies. Similarly, each distributor is required by law[11] to act in accordance with the approved plan. The ESV has powers under the Electricity Safety Act 1998[12] to require independent compliance audits or to conduct its own audit to verify that the operator is complying with the approved plan.

It follows from the above discussion that the proposed f-factor scheme will not encourage more efficient risk mitigation measures as described by the RIS. Safety regulation is properly the domain of the ESV, which examines safety matters independently of financial considerations or incentives.

---

8 RIS, section 3.2.2, page 19.

9 RIS, section 1.5.5, page 14.

10 RIS, section 1.5.3, page 14.

11 Section 106, Electricity Safety Act 1998.

12 Sections 83BJ and 83BK.

While financial incentives do not drive safety outcomes, it is important to recognise that a poorly designed f-factor scheme may have adverse consequences for distributors and their customers. In particular, if the scheme exposes distributors to extreme financial risks, it may encourage actions that do not balance safety and reliability considerations – both of which are important to customers. So, while we will not compromise safety – reliability performance may be compromised if excessive financial penalties are introduced through an amended f-factor scheme.

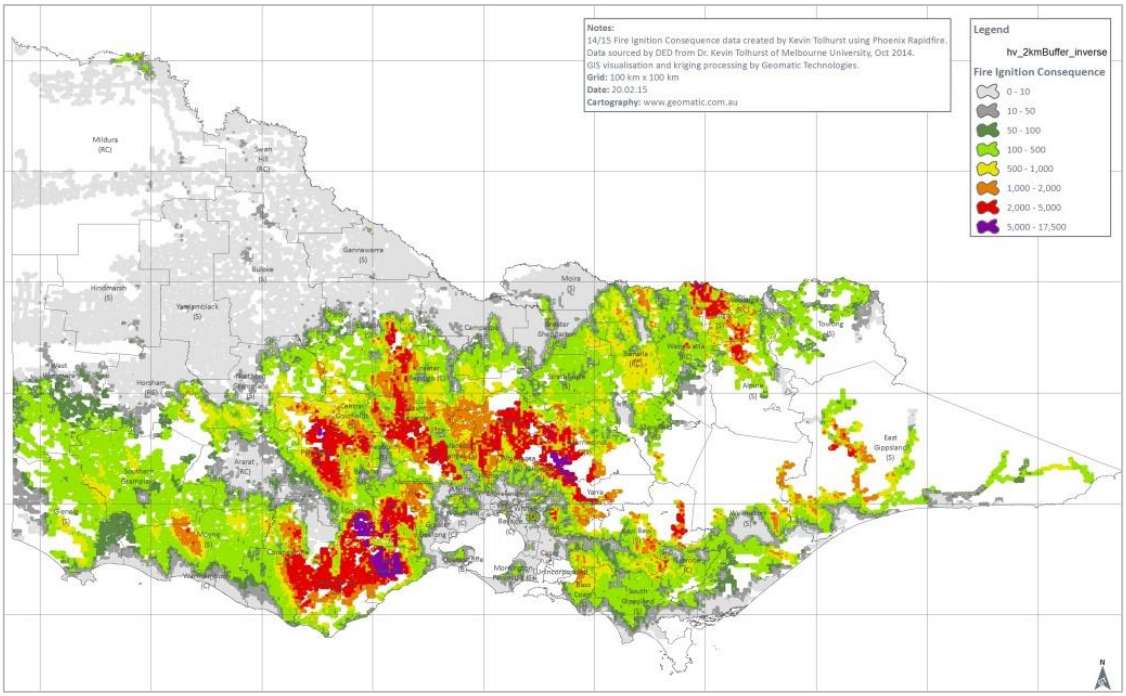
These latter observations reinforce AusNet Services' view that financial incentives should not be used to drive efficient safety outcomes. We therefore do not support the RIS' preferred option of introducing an enhanced f-factor scheme with stronger financial incentives.

2.2.2 Inconsistencies with the Fire Loss Consequence Model

AusNet Services utilises the Fire Loss Consequence Model (FLCM) developed by the Government's Powerline Bushfire Safety Taskforce. The FLCM assists distribution businesses to develop and implement a broad range of network investment programs designed to cost effectively reduce bushfire risk associated with network assets for the Victorian community.

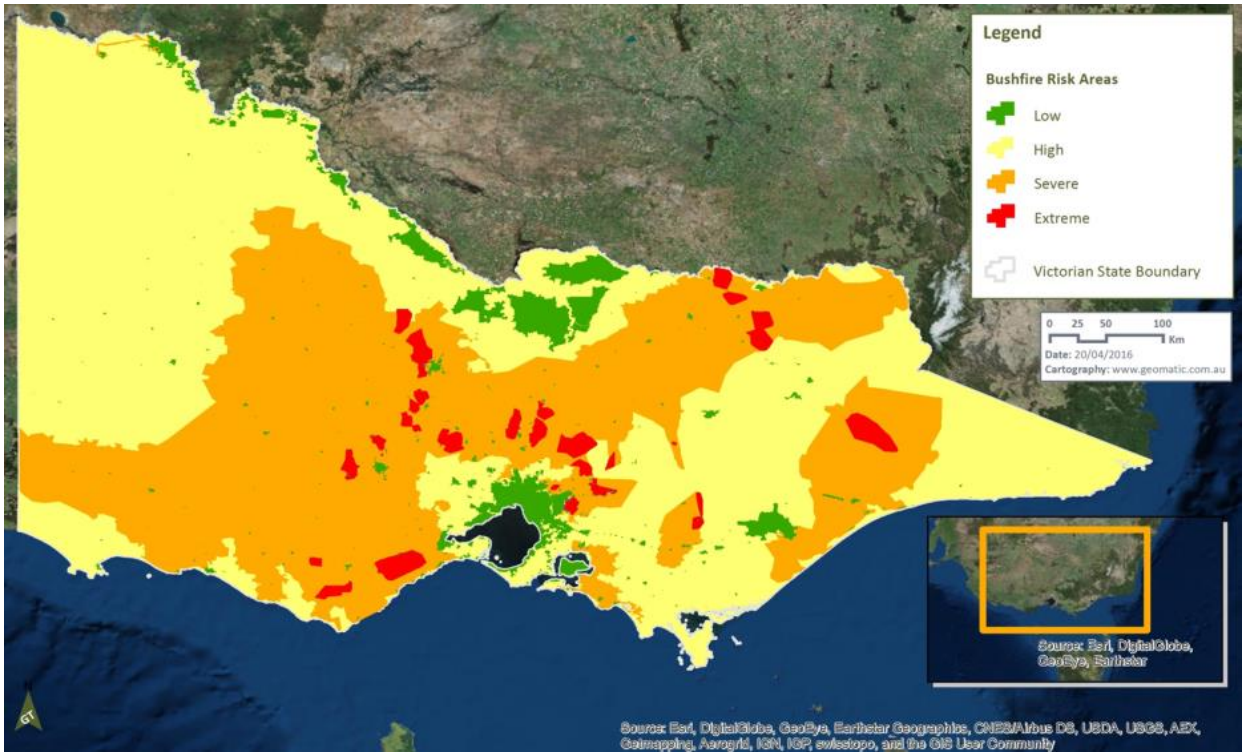
Figure A2.4 of the RIS, illustrates the FLCM. The model shows levels of estimated property loss for fires starting at 27,860 locations proximate to powerlines. AusNet Services' risk modelling utilises this locational information together with estimated property loss (0-17,500 houses) to derive and target network investment programs to cost effectively mitigate bushfire risk.

This risk based modelling is used to demonstrate to the Australian Energy Regulator (AER) that AusNet Services' forecast expenditure is prudent and efficient in mitigating bushfire risks on behalf of electricity customers and the community.



Fire Loss Consequence Model

Figure A2.5 of the RIS, shown below, illustrates how the proposed f-factor scheme rationalises, into four categories, the range of consequences (0-17,500 houses) provided by the FLCM. The determination of these four areas has been influenced by the recently mandated REFCL implementation program which is one of a number of network investment programs. The scheme then applies a methodology to value or weight risk which is inconsistent with the FLCM which is used to support and weight appropriate levels and timing for network investment.



F-factor Scheme Risk Areas

In effect, the proposed f-factor scheme provides an imperfect duplication of the FLCM risk methodology, which is already driving our bushfire mitigation projects. The proposed f-factor smears the more granular FLCM risk assessment by classifying large geographical areas as 'severe' risk, purely because they are served by a REFCL substation. The detail provided by the FLCM, which is essential in driving efficient and prudent expenditure decisions, is absent from the proposed f-factor design.

As an example of application in the operation of the network, AusNet Services applies electrical protection settings with increased levels of sensitivity on high fire danger days. This is undertaken by utilising a combination of the FLCM to identify the areas of highest consequence and the Fire Danger Index (FDI) over the course of a high fire danger day to apply increased protection sensitivity during the highest risk period of the day.

This operational process was established in accordance with recommendation 2 of the Government's Powerline Bushfire Safety Taskforce (PBST). The PBST provided a framework within which recommendation 32 of the 2009 Victorian Bushfires Royal Commission could be applied in a manner that provided a balance between network safety and customer reliability.

The proposed f-factor model has smeared the areas of consequence, particularly in the 'severe' areas, and applies a FDI for a 24 hour duration regardless of the fact that an FDI of heightened risk normally occurs between mid-morning and late afternoon. Accordingly, the proposed f-factor scheme provides sub optimal drivers for network operation.

To date, the application of the FLCM has enabled AusNet Services to deliver a 36% reduction in fire incidents through a range of programs. Given the central importance of the FLCM in driving efficient and prudent investment, it is not appropriate to overlay a different and less sophisticated risk framework through the f-factor scheme.

2.2.3 AusNet Services' recommendation

The previous sections have explained that the proposed f-factor scheme will not deliver the objectives described in the RIS because:

- AusNet Services' bushfire mitigation measures are not driven by financial incentives; and
- The design of the f-factor scheme is inconsistent with the Fire Loss Consequence Model.

For these reasons, the current f-factor scheme should continue to the end of the current regulatory period, but should not be replaced by an enhanced scheme.

While AusNet Services' considers that the proposed f-factor scheme should not be adopted, we recognise that the Government may wish to proceed with the scheme. The remainder of this submission therefore discusses other issues that would need to be addressed if the scheme were implemented.

3 Setting benchmarks and incentive rates for proposed f-factor scheme

3.1 Overview of RIS approach

The RIS' preferred option places a different value on each fire according to the risk associated with the time and location of the ignition. Under this option, the annual ignition performance for each distribution business would be assessed against a benchmark (measured in Ignition Risk Units or IRUs), based on historic performance data. The proposal is to decrement the benchmark IRUs to capture the benefit of enhanced network safety devices.

Table 2: RIS proposed IRI benchmarks for new f-factor scheme[13]

Company	2016/17	2017/18	2018/19	2019/20
AusNet Services	247.7	247.7	247.7	214.3
CitiPower	3.4	3.4	3.4	3.4
Jemena	9.7	9.7	9.7	9.7
Powercor	468.0	468.0	468.0	412.8
United Energy	22.3	22.3	22.3	22.3

The decrement in the 2019/20 benchmark reflects the outcome of CSIRO analysis, which was commissioned by DELWP, using a Risk Reduction Model (RRM). CSIRO estimated the reduced likelihood of each historical fire occurring, assuming that a REFCL had been in operation at the time.

CSIRO's analysis focuses on 22 kV powerlines on zone substations that are targeted for enhanced protection. The RRM calculates the reduction in ignition likelihood for the installation of a REFCL relative to the bare-wire case, taking into account the unique features specific to the location and day of the event. These factors include:

- temperature;
- wind speed;
- humidity;
- dryness of vegetation;
- category of vegetation; and
- terrain.

CSIRO assumes that the likelihood of an ignition occurring will be reduced by between 48% and 60%, depending on the weather and environmental conditions experienced.

In addition to modelling the benchmark decrement to reflect the installation of REFCLs, CSIRO also modelled the variability of the IRU outcome from year to year under different weather conditions, noting that:

- for hotter than average years, there is an increased likelihood that the IRU performance will exceed the IRU baseline (increasing the prospects of a business being penalised); and
- for cooler than average years, there is an increased likelihood that the IRU performance will fall below the IRU baseline (increasing the prospects of customer tariff increases).

13 RIS, Table 4.1, page 27.

CSIRO generated 30,000 simulated ignition years using the 2012-14 data. As all simulated sample years were based on the observed data in 2012 to 2014, no Code Red day appeared in the source data and no Code Red day could appear in any of the simulated years.

The table below shows the range of IRU outcomes modelled by CSIRO.

Table 3: CSIRO simulated IRU outcomes using 2012-14 data[14]

Category	mean	minimum	maximum	5th Percentile	25th Percentile	50th Percentile	75th Percentile	95th Percentile
AusNet Services	274.34	92.44	931.58	161.31	205.92	256.26	327.24	445.82
CitiPower	4.09	0.40	11.74	1.24	1.88	4.38	5.72	7.30
Jemena	8.88	1.14	21.54	2.92	6.22	9.22	11.32	14.24
Powercor	472.87	132.96	935.38	203.46	284.28	505.19	614.44	727.31
United Energy	21.04	4.06	48.64	6.32	8.12	24.44	29.90	34.40

NB: Percentile figures indicate the percentage of simulated years in which the IRU total is below the stated value.

It should be noted that the above data reflects modelling using 2012-14 data, whereas the proposed benchmark also includes 2015 data. The CSIRO modelling shows the variability in the IRU outcomes, where the mean is 274.3 IRU and the maximum is 931.6.[15]

The variability in the IRU outcomes informed the choice of incentive rate. The RIS concludes that a $15,000 payment per IRU above or below the benchmark would be appropriate, as it would[16]:

- provide heightened attention to the most dangerous classes of ignition (the top 8 to 10);
- retain parity with the current scheme with regard to a threshold fire of significance (i.e. a fire in a "high" category of geography occurring on a "severe" weather day); and
- provide a financial rationale for directing resources away from the prevention of relatively low risk ignitions (towards ignitions of higher relative risk).

3.2 AusNet Services' response

3.2.1 Proposed benchmarks and decrements

AusNet Services does not support the application of decrements to the historic performance benchmarks.

The RIS proposes the adjustment of the current f-factor benchmark so that distributors do not make "windfall gains from operation of enhanced network protection devices"[17]. The RIS states:

> *"The benchmark under the current scheme design places the consumer in the position of paying twice for the benefits of new enhanced network protection technology, as it is not adjusted to take account of the deployment and operation of this technology. If the benchmarks are left unchanged, consumers will pay once to install the devices, and again when ignitions are reduced as a result of device operation."*[18]
>
> *[…]*

14 RIS, Table 4.1, page 27.

15 The CSIRO's calculated mean of 274.3 IRUs in Table 3 is different to the proposed IRU benchmark of 247.7. The CSIRO's mean is the outcome of a simulated model covering a 3 year period, whereas the IRU benchmark is the arithmetic mean of actual performance over a 4 year period.

16 RIS, section 4.3.2, page 32.

17 RIS, section 1.5.4., page 14.

18 RIS, section 1.5.4., page 14.

> *"The historically based benchmark is to be adjusted at set intervals to reflect the enhanced bushfire safety that is expected to result from the introduction of new network assets. […] This decrement to the benchmark is necessary ensure that electricity consumers only pay once for the benefits that flow from the roll out and operation of these mandated assets."*[19]

We do not agree that a decrement to the historic performance benchmark is appropriate. No reliable data is available at present regarding the impact of REFCL operation on the frequency of ignitions in Victoria. Therefore, any estimate of the reduction in ignitions attributable to REFCLs must, necessarily, be based on assumptions and opinion.

In this regard we note that the reductions applied in the RIS are based upon assumptions in CSIRO's Risk Reduction Model that are untested.

It is also noteworthy that the RIS acknowledges that:

> *"Fire start historical data is limited (with suitable data only available for a small number of years). The fire start reduction impact of new assets has yet to be fully understood in the field environment."*[20]

In view of the paucity of available data, we replicated the modelling used to derive the reduced benchmarks proposed in the RIS. The results of our analysis are set out below, and the supporting calculations are provided in the accompanying spreadsheet (refer **Attachment 1**). It is noted that when we apply the same assumptions as those used in the RIS modelling, our results align with those presented in Figure A2.17 (Decremented baselines according to mandated asset deployment scenarios) on page 81 of the RIS.

Table 4: RIS benchmark and proposed decrements

Area	IRU Base	2019/20	2022/23	After 2023	% Reduction	Cumulative % Reduction
PRF	96.3	82.1	49.4	48.8	49.3%	49.3%
REFCL	127.7	108.6	83.0	64.3	49.6%	49.5%
HBRA	19.2	19.2	19.2	19.2	0.0%	45.6%
LBRA	4.6	4.4	3.7	3.7	20.1%	45.1%
Grand Total	**247.7**	**214.3**	**155.3**	**136.0**	**45.1%**	**45.1%**

However, after reviewing the assumptions underpinning the RIS modelling, we have identified a number of instances in which avoided fire starts have been incorrectly attributed to REFCL operation. After removing these erroneous assumptions, we re-ran the model and produced the results shown in the table below. AusNet Services' calculated IRU base of 246.9 matches closely to the 247.7 in the RIS, however this is not the case for the decrements.

Table 5: AusNet Services' calculated benchmark and proposed decrements

Area	IRU Base	2019/20	2022/23	After 2023	% Reduction	Cumulative % Reduction
PRF	96.3	90.4	61.4	61.4	36.3%	36.3%
REFCL	126.8	116.6	103.2	95.4	24.8%	29.8%
HBRA	19.1	19.1	19.1	19.1	0.0%	27.4%
LBRA	4.6	4.5	4.3	4.2	9.0%	27.1%
Grand Total	**246.9**	**230.7**	**187.9**	**180.0**	**27.1%**	**27.1%**

19 RIS, section 4.2, page 27.

20 RIS, section 4.2, page 28.

Our analysis shows that the RIS overstates the size of the decrement by wrongly assuming that some types of fires (such as HV fuse failures) would not occur following the installation of REFCLs. This error reinforces AusNet Services' view that decrements should not be applied.

Applying a decrement to the f-factor benchmark anticipates future performance improvements, which are highly uncertain. In the absence of any data that would enable a robust forecast of the improvement to be made, AusNet Services is left inappropriately exposed to the significant risk that the benchmark is set too low - a possibility that is illustrated clearly in the modelling results presented above.

There is a strong regulatory precedent for performance incentive schemes (such as the STPIS) to rely on historic or 'revealed' performance to set benchmarks. This approach enables the business to respond to the incentives on offer, and for the *actual* improvements in performance to be built into future benchmarks. In this way, the benefits of improved performance achieved by the business in response to the incentives are transferred to customers over time.

The RIS appears to advocate this approach in relation to climate change, which is likely to lead to worsening fire ignition performance (other things being equal):

> *"The role of climate change on network ignitions must be acknowledged. Network ignitions occurring in the hotter times of the year present a greater bushfire risk. This is partially due to environmental conditions, such as lack of rain, high heat, and cured combustible material. In the future Victoria may face more fire seasons with a greater number of Total Fire Ban (TFB) days as climate change comes into greater affect. In one respect this shift in weather may present a change in the exogenous factor of weather. As there is no consensus on the timing of climate change, the degree to which this is the case can only be observed over coming years and calls for careful data collection."*[21]

We agree with this reasoning. In the face of uncertainty and in the absence of robust data, the best approach is to observe actual outcomes, and to periodically adjust benchmarks accordingly. Whilst we expect that the impact of REFCLs on ignitions will be more immediate than that of climate change, there remains considerable uncertainty as to the improvements that will be attributable to REFCLs until the technology is installed and operational experience is gained. Presently, the operational effectiveness of this technology in reducing fire ignition risk is untested anywhere in the world. Accordingly, the best approach is to observe the actual results achieved after the REFCLs commence operation, and to adjust the f-factor benchmarks in light of those results.

Under this approach, AusNet Services acknowledges that the recalibration of benchmarks to reflect actual performance will be lagged, and this may result in businesses receiving higher (or lower) incentive payments than would have been the case had the benchmarks been set with perfect foresight. However, this is a natural corollary of using actual performance data to inform the setting of benchmarks. As already noted, this approach to setting performance benchmarks is good regulatory practice as it avoids the poor incentive properties and increased risk associated with anticipating future improvements.

For these reasons, no decrement should be applied to the benchmarks to account for estimated future fire start risk reductions. Alternatively, a decrement could more reasonably be applied in light of the REFCLs operating performance during 2019/20. This assessment could be undertaken as part of the EDPR.

If, contrary to AusNet Services' submission, the Government wishes to apply a decrement in the manner described in the RIS, the calculation must be amended to correct for the modelling errors described above.

[21] RIS, section 3.5.3, page 26.

3.2.2 Variability in IRU outcomes

The CSIRO analysis shows the variability in the IRU outcomes, depending on weather and other factors. We have conducted our own independent analysis to verify CSIRO's modelling results. This analysis adopted CSIRO's "bootstrapping" technique for two periods: 2012-2014 (consistent with CSIRO) and 2007-2010 (a period which included Black Saturday).

Table 6: IRU probability distributions

Analysis	mean	minimum	maximum	5th Percentile	25th Percentile	50th Percentile	75th Percentile	95th Percentile
CSIRO (2012-2014)	274.34	92.44	931.58	161.31	205.92	256.26	327.24	445.82
AusNet Services (2012-2014)	282.24	107.34	812.86	160.46	193.05	237.97	357.12	515.70
AusNet Services, 2007-2010	407.72	106.24	1,711.74	167.64	209.81	268.99	488.72	1,025.56

Our analysis of the 2012-2014 data results in a similar distribution to CSIRO's, albeit with a slightly narrower range (a lower maximum and minimum, but similar mean and shape). It should be noted that the stochastic nature of the modelling means that CSIRO's results are highly unlikely to be replicated exactly.

However, our analysis also shows the significantly different outcome if 2007-10 data is modelled instead of 2012-14. In particular:

- AusNet Services' mean IRU is 407.7, which would result in an annual penalty of $2.4 million based on the benchmark and incentive rates proposed by the RIS; and
- AusNet Services' maximum IRU is 1,711.7 compared to CSIRO's maximum IRU of 931.6. The difference between these two maximum IRU scores equates to an additional annual penalty of $11.7 million. The total penalty would be $21.56 million compared to the RIS estimated maximum of $9.86 million.[22]

While we accept that the period 2007-10 includes the bushfire events in 2009, the period reviewed by CSIRO did not include any Code Red days and therefore provides a downwardly biased estimate of the risk exposure. In effect, the RIS proposes an incentive scheme that imposes an IRU of 99 for a fire start in the worst conditions, but the modelling of the scheme outcomes does not include any such events.

Given the limitations of the CSIRO modelling and the paucity of data, arrangements should be adopted to cap the distributors' risk exposure. AusNet Services considers that the risk should be capped at the maximum specified in the RIS, being $9.86 million per annum. Evidently, a cap at this very high level is consistent with applying no cap if the RIS modelling correctly defines the worst outcome. AusNet Services would be very concerned if the Government did not accept that risks should be capped at this level.

[22] RIS, figure A4.1, page 87.

3.2.3 Incentive rates

Subject to the Government accepting a cap of a maximum annual loss of $9.86 million, AusNet Services would accept an incentive rate of $15,000 per IRU. The alternative approach would be to reduce the incentive rate, so that the maximum loss based on historic data is acceptable. Based on 2007-10 data, the incentive rate under this approach would be approximately $7,000 per IRU.

4 Operation of the scheme

4.1 Caps and collars

For the reasons set out in section 3.2.2, AusNet Services proposes that the maximum loss should be capped at $9.86 million per annum. The potential upside from the scheme is naturally limited by the likely maximum attainable reduction in fire risk. On this basis, the potential upside from the scheme should not be capped.

4.2 Banking arrangements relating to revenue adjustments

Clause 9(5) of the draft OIC gives the AER discretion in determining how a revenue adjustment is to be given effect. The clause provides that without limitation, the revenue adjustment may –

(a) be by way of a pass through;

(b) be by way of an annual adjustment to be included in the control mechanism for a distribution determination;

(c) be expressed as a percentage adjustment to revenue;

(d) take effect over more than one regulatory year; and

(e) take effect over more than one regulatory control period,

The implementation of revenue adjustments over more than one year or regulatory control period is analogous to the s-factor "banking" arrangements in the STPIS scheme applying to Victorian distributors. These arrangements give the distributor the discretion to determine whether adjustments are to be implemented over periods in excess of one year. Typically, a distributor would make such decisions based on considerations relating to pricing impacts for customer and cash flow impacts for the business.

The OIC should contain similar f-factor "banking" arrangements, to provide distributors with the flexibility to manage pricing and cash flow outcomes associated with revenue adjustments. The arrangements should ensure that decisions regarding the timing and duration of revenue adjustments do not disadvantage customers or distributors.

4.3 Future IRU benchmarks

Subclause 1 of clause 10 of the draft OIC specifies the IRU targets applying for the four financial years up to and including 2019/20. In relation to setting targets after that time, clauses 2 and 3 state:

"(2) The IRU targets for relevant financial years after the 2019/20 financial year may be published by the Minister by notice in the Victoria Government Gazette.

(3) If the Minister does not publish the IRU target for a relevant financial year under subclause (2), the IRU target for that financial year is the same as the IRU target for the 2019/20 financial year as specified in the table in subclause (1)."

These arrangements provide insufficient certainty regarding the method for setting future IRU targets. In terms of good regulatory practice, uncertainty of this kind undermines a scheme's integrity and incentive properties. As noted in section 3.2.1 a key feature of well designed incentive scheme is that:

- it encourages efficient behaviour by the regulated business; and
- through the periodic recalibration of performance targets to reflect the outcomes achieved by the business, it provides for a sharing of benefits between the business and its customers.

To ensure that the integrity of the scheme is maintained the OIC should:

- limit the Government's discretion in determining IRU targets; and
- require the IRU targets to be reset at each five-yearly regulatory review to reflect the average performance achieved by the business over the most recent five year period.

4.4 Transitional arrangements

The current f-factor scheme measures performance in regulatory year *t* and applies a revenue adjustment in regulatory year *t+2.* A regulatory year is a calendar year.

Under the new f-factor scheme, the annual performance measurement period is to be changed from a regulatory year to a financial year.

Clause 13 of the draft OIC sets out transitional arrangements that apply in relation to the revenue adjustment for the 2018 regulatory year. The proposed arrangements result in the application of the new f-factor scheme from 1 July 2016, which is:

- halfway through the annual measurement period (the 2016 regulatory year) applying under the current scheme; and
- four months prior to the date of publication of the RIS.

The proposed clause 13 would have the effect of imposing the new f-factor scheme retrospectively. The stated intention of the new f-factor scheme is to provide stronger incentives that will drive changed behaviour and better outcomes. Accordingly, it is not logical for the new f-factor to be applied retrospectively.

Retrospective regulation should be avoided wherever possible, as it is counter to the Rule of Law principles, particularly the principles that laws should be capable of being known so subjects can comply with it, as well as the principle that subjects should not be adversely affected by a retrospective change of the law.

The current regulatory year now has less than two months left to run. In these circumstances, we consider that a more appropriate transitional arrangement would be to introduce the new scheme at the end of the current regulatory year, i.e. from 1 January 2017, so that the outcome in the current annual measurement period under the existing scheme is preserved, consistent with good regulatory practice.

The new scheme could then be introduced on 1 January 2017, with IRU targets prorated for the six month period to 30 June 2017. From 1 July 2017, annual IRU targets would apply for each financial year.