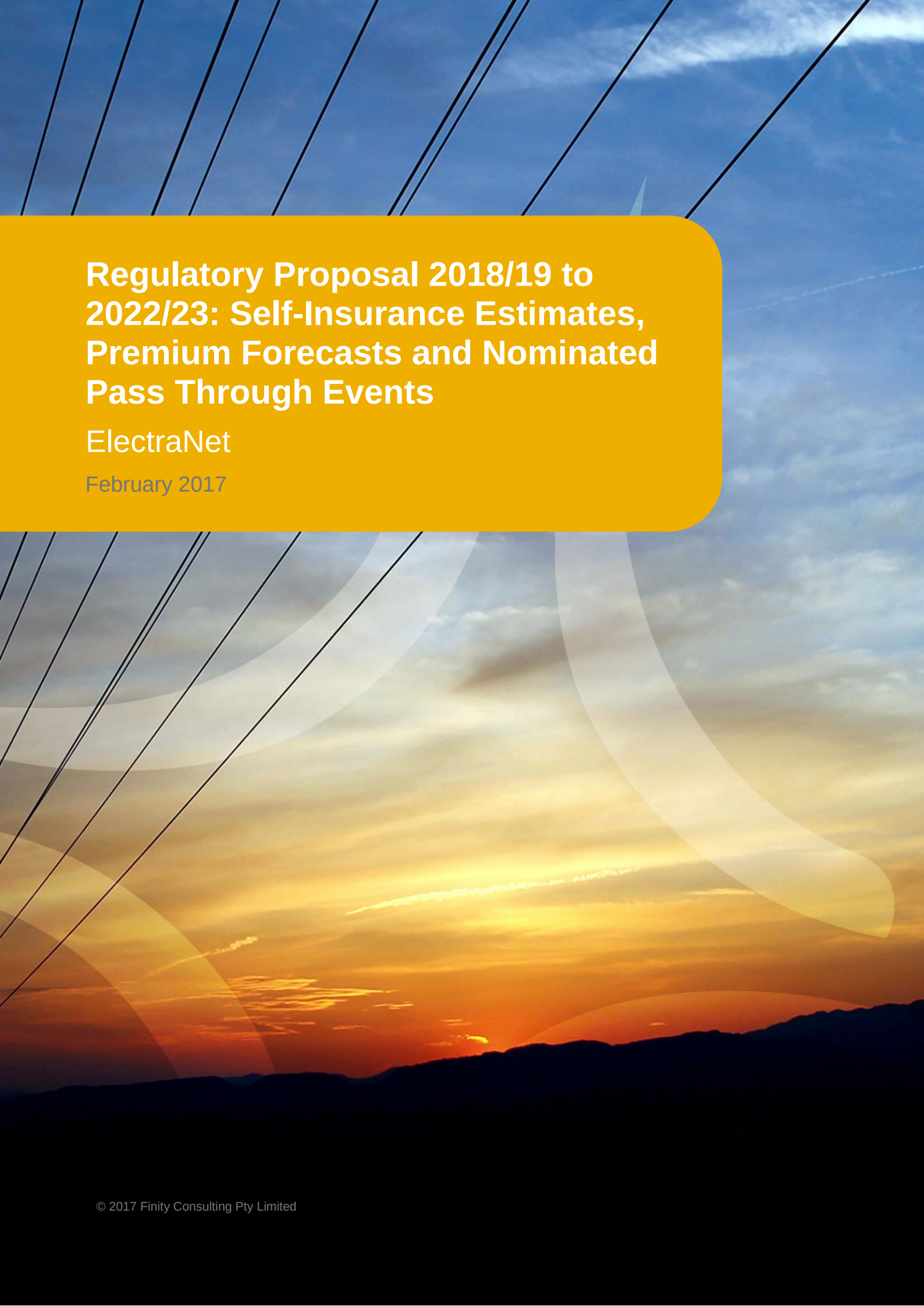

Regulatory Proposal 2018/19 to 2022/23: Self-Insurance Estimates, Premium Forecasts and Nominated Pass Through Events

ElectraNet

February 2017

finity

Actuarial and Insurance Consultants

22 February 2017

Mr Michael Lowe
Risk & Insurance Advisor
ElectraNet
52-55 East Terrace
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Dear Michael

Regulatory Proposal 2018/19 to 2022/23: Self-Insurance Estimates, Premium Forecasts and Nominated Pass Through Events

In accordance with our proposal dated 5 May 2016, we are pleased to enclose our report documenting our:

- Estimated self-insurance costs,
- Forecast insurance premiums, and
- Recommended nominated pass through events,

for the regulatory period 2018/19 to 2022/23.

Please do not hesitate to contact either of us should you have any queries in relation to the report.

Yours sincerely

Mark Hurst

Adam Payne

Fellows of the Institute of Actuaries of Australia

Regulatory Proposal 2018/19 to 2022/23: Self-Insurance Estimates, Premium Forecasts and Nominated Pass Through Events

Part I Executive Summary

1 Background and Scope

Finity Consulting Pty Limited (Finity) has been engaged by ElectraNet to provide an estimate of their self-insured losses and premium forecasts for the five year regulatory period spanning 2018/19 to 2022/23. In addition, we have been asked to provide advice regarding proposed nominated cost pass through arrangements for the forthcoming regulatory control period. Our advice has been prepared pursuant to our proposal dated 5 May 2016. We understand that this report will be provided to the Australian Energy Regulator (AER) as part of ElectraNet's regulatory proposal for 2018/19 to 2022/23.

We acknowledge that we have read, understood and complied with the Federal Court of Australia Practice Note CM7 "Expert Witnesses in Proceedings in the Federal Court of Australia". The advice set out in this report has been prepared by Mark Hurst and Adam Payne of Finity, both of whom are Fellows of the Institute of Actuaries of Australia. Our experience and qualifications are set out in Appendix B of this report.

This Executive Summary summarises the key findings of our work. The main body of the report provides a more complete description of our analysis and results, including reliances and limitations, and should be read fully in order to place our findings in their appropriate context.

2 Projected Self-insurance Losses

Our estimate of the annual cost of self-insured losses for the next regulatory period 2018/19 to 2022/23 is shown in Table 1 below.

It is important to note that the analysis and assumptions underlying the Towers and Lines estimate shown in Table 1 [redacted]

- [redacted]
- [redacted]

Going forward, ElectraNet expects that events of this type and magnitude will be treated as a pass through event. We have defined a natural disaster nominated pass through event to be consistent with this treatment.

In addition, note that the estimates shown above are:

- Based on the current insurance deductibles. If these deductibles change then we expect that our estimate of ElectraNet's retained losses would also change.
- Consistent with the premium forecasts shown in this report as we have been able to ensure that estimates for self-insurance and insurance are based on consistent insurance arrangements with no overlap of results.

Comparison to previous final determination

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]

3 Insurance Premium Forecasts

The following table summarises our forecast insurance premiums for the regulatory period in nominal dollars.

[redacted]

Our forecast of ElectraNet's insurance premiums for the next regulatory period 2018/19 to 2022/23 is [redacted]

[redacted] The increase in the premium rates is predominately due to modest changes in insurance rates that are expected to harden between 2018/19 and 2022/23.

Figure 1 shows the historical premiums across all lines of business and our forecast premiums for the upcoming Regulatory period. All premiums are shown in nominal dollars (i.e. allowing for expected future inflation at the rate of 2% per annum) for comparison purposes.

[redacted]

4 Nominated Pass Through Events

The current provisions relating to pass through events is an important aspect of the regulatory framework as it provides an efficient risk management framework for highly unlikely, but potentially costly events.

ElectraNet are nominating the following pass through events in accordance with clause 6A.7.3 of the Rules:

- Insurance cap event;
- Terrorism event;
- Natural disaster event; and
- Insurer credit risk event.

Our proposed definition for each of these events is consistent with the AER's most recent draft transmission determinations for AusNet Transmission Group and Powerlink. ElectraNet therefore expect the AER to approve our nominated pass through events.

The proposed definitions for the four nominated events are set out below in Figure 2 to Figure 5. The main body of the report includes the rationale for nominating these events and also the risk mitigation processes that ElectraNet have in place.

Figure 2 – Proposed definition for Insurance Cap Event

An Insurance Cap Event occurs if:
1. ElectraNet makes a claim or claims and receives the benefit of a payment or payments under a relevant insurance policy; 2. ElectraNet incurs costs beyond the policy limit of the relevant insurance policy at the time of the event that gives rise to the relevant claim; and 3. The costs beyond the relevant policy limit increase the costs to ElectraNet of providing prescribed transmission services. For this Insurance Cap Event: a) A relevant insurance policy is an insurance policy held during the 2018/19 to 2022/23 regulatory control period or a previous regulatory control period in which ElectraNet was regulated, and b) ElectraNet will be deemed to have made a claim on a relevant insurance policy if the claim is made by a related body corporate of ElectraNet in relation to any aspects of ElectraNet's prescribed transmission services. Note: In making a determination on an Insurance Cap Event, the AER will have regard to, amongst other things: i) the insurance policy for the event, ii) the level of insurance that an efficient and prudent NSP would obtain in respect of the event, and iii) any assessment by the AER of ElectraNet's insurance document in respect of its transmission determination for the relevant period.

Figure 3 – Proposed definition for a Terrorism Event

A terrorism event is:

An act (including, but not limited to, the use of force or violence or the threat of force or violence) of any person or group of persons (whether acting alone or on behalf of or in connection with any organisation or government), which from its nature or context is done for, or in connection with, political, religious, ideological, ethnic or similar purposes or reasons (including the intention to influence or intimidate any government and/or put the public, or any section of the public, in fear) and which increases the costs to ElectraNet in providing prescribed transmission services.

Note: In assessing a terrorism event pass through application, the AER will have regard to, amongst other things:

a) whether ElectraNet has insurance against the event,

b) the level of insurance that an efficient and prudent NSP would obtain in respect of the event, and

c) whether a declaration has been made by a relevant government authority that an act of terrorism has occurred.

Figure 4 – Proposed definition for an Natural Disaster Event

Natural Disaster Event means any natural disaster including but not limited to fire, flood or earthquake that occurs during the 2018/19 to 2022/23 regulatory control period that increases the costs to ElectraNet in providing prescribed transmission services, provided the fire, flood or other event was not a consequence of the acts or omissions of the service provider.

Note: In assessing a Natural Disaster Event pass through application, the AER will have regard to, amongst other things:

(i) whether ElectraNet has insurance against the event; and

(ii) the level of insurance that an efficient and prudent NSP would obtain in respect of the event.

Figure 5 – Proposed definition for an Insurer Credit Risk Event

An Insurer Credit Risk event occurs if:

A nominated insurer of ElectraNet becomes insolvent, and as a result, in respect of an existing, or potential, claim for a risk that was insured by the insolvent insurer, ElectraNet:

i) is subject to a materially higher or lower claim limit or a materially higher or lower deductible than would have otherwise applied under the insolvent insurer's policy; or

ii) incurs additional costs associated with self-funding an insurance claim, which would otherwise have been covered by the insolvent insurer.

Note: In assessing an insurer's credit risk event pass through application, the AER will have regard to, amongst other things:

a) ElectraNet's attempts to mitigate and prevent the event from occurring by reviewing and considering the insurer's track record, size, credit rating and reputation, and

b) in the event that a claim would have been made after the insurance provider became insolvent, whether ElectraNet had reasonable opportunity to insure the risk with a different provider.

5 Reliances and Limitations

Our estimates are based on best estimate assumptions and represent our current assessment of the likely future experience of ElectraNet. Although the estimates we have prepared are best estimates, deviations of the actual experience from our estimates are normal and to be expected.

The reader's attention is drawn to the reliances and limitation of our advice as set out in Section 23 of this report.

Part II Introduction

1 Introduction

Finity Consulting Pty Limited (Finity) has been engaged by ElectraNet to provide:

- An estimate of their self-insured losses,
- An estimate of their insurance premium forecasts, and
- Advice regarding proposed nominated pass through events.

Our advice has been prepared pursuant to our proposal dated 5 May 2016. We understand that this report may be provided to the Australian Energy Regulator (AER) as part of ElectraNet's regulatory proposal for 2018/19 to 2022/23.

ElectraNet owns and operates over AUD$2.5 billion of electricity transmission assets that transport electricity over long distances and to remote areas. The business supports the continued development of renewable energy projects and other generation investment. ElectraNet plays an active role in ensuring that the transmission network is prepared for the changing way electricity is generated and consumed into the future.

ElectraNet Pty Limited is a private company owned by three Shareholders: State Grid International Development Asia and Australia Holding Company Limited, YTL Power Investments Ltd, and Hastings Investment Management Pty Ltd.

The South Australian electricity transmission network consists of a high-capacity 275 kV Main Grid that links generation sources (including two interstate interconnectors) to major load centres (including metropolitan Adelaide), with lower capacity 132 kV systems providing supply to regional centres.

ElectraNet's core business is to build, operate and maintain the electricity transmission highways that transport electricity from generators and interconnectors to distribution networks and large direct-connect industrial customers.

The existing network consists of 91 high-voltage substations and approximately 5,600 circuit kilometres of high-voltage transmission lines that cover a total area of 200,000 square kilometres.

1.1 Background

The AER sets allowable maximum revenue for Transmission Network Service Providers (TNSPs) for each five year regulatory period. As part of the Revenue Proposal application process ElectraNet requires an estimate of future insurance premium forecasts and retained (self-insurance) losses during the five year regulatory period commencing 1 July 2018.

We note that an actuarial report setting out an estimate of a TNSP's self-insurance losses may be required by the AER under submission guidelines 4.3.21 of the National Electricity Rules.

1.2 Scope

The scope of our review can be considered in three parts as set out in the following Parts of this report.

Part III: Self Insurance Allowance

Provide an estimate of ElectraNet's self-insured, or retained, losses across the five year period commencing 1 July 2018 and ending 30 June 2023. Our self-insurance estimates include allowance for the following classes of risk where historical losses have occurred:

To avoid double counting with maintenance related expenditure, we have excluded losses on uninsured assets under $20,000, consistent with ElectraNet's resolution to self-insure and the previous regulatory submission.

Losses relating to two events which clearly exceed 1% of Maximum Allowable Revenue (MAR) have also been excluded from our analysis as they would be expected to be eligible for pass through consideration.

Part IV: Premium Forecasts

Provide an estimate of the total premium payable by ElectraNet across the five year period commencing 1 July 2018 and ending 30 June 2023, with separate estimates for each year. The estimated costs provided are the insurance premiums payable plus an estimate of taxes, levies, GST and broker fees.

We have included premium forecasts for the insurance classes set out in Table 1.2.

Our premium forecasts exclude Contract Works insurance as we understand that the premiums for this class are included elsewhere in ElectraNet's Regulatory Proposal.

Part V: Nominated Pass Through Events

Recommend definitions and highlight considerations for nominating suitable pass through events for:

- Non-insurable risk events e.g. very low probability, high impact.
- Events where it is not possible to calculate reliable self-insurance forecast.

1.3 Risks

ElectraNet has, historically, been subject to financial losses from the following sources:

- Storm damage (wind storms and storms generated by extreme low pressure systems)
- Flood
- Fire
- Machinery breakdown
- Theft of property
- Damage to ElectraNet motor vehicles and property
- Damage to third party property.

There is also potential for ElectraNet to incur financial losses from sources not listed above. We have not estimated or included a cost for such losses even though, in theory, the expected losses are greater than zero.

1.4 Structure of Report

The remainder of **Part II: Introduction** sets out:

Section 2	The data we received and our treatment of the data.
Section 3	Our approach for estimating self-insurance losses and forecasting insurance premiums.
Section 4	ElectraNet's insurance arrangements.
Section 5	The exposure used for our estimates and forecasts.

Following the Introduction, our report covers:

Part III	**Self-Insurance Estimates** for the loss categories set out in Table 1.1
Part IV	**Premium Forecasts** for the insurance classes set out in Table 1.2
Part V	**Nominated Pass Through Events.**

The appendices contain further details of our assessment.

2 Data

The data we received for this assessment and our treatment of the data is set out below.

2.1 Data received

Table 2.1 sets out the data we received for this assessment. In summary, we received:

- Self-insurance loss information – items 1, 2 and 3.
- Insurance arrangements – insurance manuals (item 4), discussion with ElectraNet and ElectraNet's brokers, Marsh, regarding likely future arrangements (item 5) and the premium report from the previous submission (item 13).
- Premium information including brokerage fees – items 6, 7 (forecasts by Marsh) and 8.
- Exposure information – item 9.
- Workers compensation related information –the June 2015 self-insurance actuarial report (item 14) and historical and projected wages (item 15).
- Aon's self-insurance report for the 2013 to 2018 regulatory period (item 16).
- Other information – items 10, 11 and 12.

Table 2.1 – Data Received

Data Request Item	Description
1	Self Insurance Loss Data
2	Towers and Lines Database
3	Insurance Claim History
4	Historical Insurance Arrangements (past 5 years)
5	Future Insurance Arrangements
6	Historical Gross Premiums (up to 2015/16)
7	Forecast Premiums (from 2016/17 onwards)
8	Actual and Forecast Brokerage Fees
9	Exposure Information - Asset values + number of insured vehicles, substations, towers and lines.
10	Replacement costs for tension and suspension
11	Replacement costs per kilometre of transmission line
12	CPI index
13	Marsh Premium Report Full
14	Brett & Watson Report
15	Historical and Projected Wages
16	Aon Self Insurance Risk Quantification Report May 2012

2.2 Self-insurance Losses

We received transactional loss data from ElectraNet's self-insurance general ledger over the last five years (2011/12 to 2015/16). These transactions related to all types of self-insurance losses, excluding workers compensation. The data supplied included the transaction date for each self-insurance payment

('Document Date'), the amount of each payment ('Total') and a description of each transaction ('Name', 'Co Object Name/Detail' and 'Description').

Based on the 'Document Date' and transaction description we mapped each transaction to an individual event or loss for modelling purposes. We allocated each self-insurance event/loss to a valuation class (i.e. Towers and Lines, Substation Machinery Breakdown and General Property Damage) based on both the transaction descriptions and discussions with ElectraNet. The event/loss financial year has been determined from the date of the first transaction. Overall, the purpose of this mapping was to collate multiple transactions related to the same insurance loss.

ElectraNet also provided 'Notis' datasets for the last five years (since July 2012). These datasets relate to insurance type events which are, in most cases, consolidated in the general ledger. Where there are multiple impacts and defects relating to a single event, these events are captured in detail in 'Notis' data, but consolidated in the self-insurance ledger. We have adopted a similar approach to the self-insurance general ledger data to collate transactions to an individual loss event. Going forward we expect these costs to appear in the self-insurance general ledger. Where these Notis loss events have not been reflected in the self-insurance ledger, we have categorised them as "Other losses" as set out in Table 1.1.

In addition to the above datasets, for Towers & Lines, we received additional loss information relating to three losses caused by severe storms in the first half of 2016/17. Further details regarding these losses is set out in Section 6.

2.3 Validation of self-insurance data

We have only included an estimate of self-insurance costs where there is historical loss data to support our estimates. We have relied on the accuracy and completeness of all data and other information (qualitative, quantitative, written and verbal) provided to us by ElectraNet for the purpose of this report. We have not independently verified or audited the data but, where possible, we have reviewed it for general reasonableness and consistency. Specifically, we carried out the following checks to validate the data:

- We have checked the data for reasonableness.
- Reconciled the data provided for the current assessment against the data provided for the previous self-insurance report as documented in Aon Risk Solution's report *"Self-Insurance Risk Quantification"* dated May 2012.
- Compared the historical self-insurance losses provided by ElectraNet with insurance claim data provided by Marsh to ensure validity and consistency of the data used.

We found no significant inconsistencies or errors with the data which would materially affect our results.

Note that our self-insurance estimates do not include maintenance and operational expenditure costs. This statement is predicated on the basis that the historical self-insurance loss data provided by ElectraNet excluded these costs. This ensures there is no double counting, as we understand that costs relating to scheduled maintenance and unscheduled maintenance are included in ElectraNet's operational expense component of the regulatory proposal.

3 Approach

The approach we have adopted to estimate ElectraNet's self-insured losses and forecast insurance premiums is set out below.

3.1 Self-insured Losses

Self-insured losses can be categorised into the following categories:

- Losses relating to insured events up to ElectraNet's insurance deductibles (below deductible losses).
- Losses relating to insured events above ElectraNet's insurance limits (above-limit losses).
- Losses on uninsured risks.

[redacted]

Our approach to estimate ElectraNet's self-insured losses is set out in the diagram below:

Figure 3.1 – Summary of Self-insurance Approach

Approach: Self-insurance

Analyse ElectraNet's historical losses by class of risk - allow for inflation / trends.

Compare actual losses to losses expected based on ElectraNet's most recent AER determination (for 2013/14 to 2017/18) to help assess the appropriateness of our previous assumptions and forecasts.

Where deemed appropriate, adjust for past and expected future changes in exposure (substations).

Any insured losses exceeding the deductible have been capped at the deductible.

Select an annual future number of losses (or frequency) and a corresponding average loss size based on ElectraNet's medium to long term loss experience.

Note that:

- We inflated historical losses to June 2018 equivalent values and capped historical losses at the current insurance deductibles. We expressed our results in 2017/18 end-of-year dollars to be consistent with ElectraNet's overall regulatory proposal. For the remainder of this report we refer to 2017/18 end-of-year as 'June 2018' or '$Jun-18'.
- ElectraNet self-insures their workers compensation risk. We relied on the June 2015 actuarial report from Brett & Watson for the historical self-insurance cost. Our projections were then based on the historical claims rate per million dollars of wages applied to projected wages.
- We have assumed that all insured losses will be fully recoverable from ElectraNet's insurers.

Above Limit Losses

ElectraNet have not had any losses which exceed their insurance limits. We would expect that if any above limit losses were to occur in future that these would be treated as Nominated Pass Through events rather than being included in the self-insurance loss allowance shown in this report. Refer the pass through sections of this report for more details.

Basis of Self-insurance Estimates

We have prepared our self-insurance estimates for ElectraNet on the basis that they:

- Are central estimates (i.e. intended to be the mean value of the range of possible outcomes).
- Take into account historical inflation by inflating all losses to June 2018 values. For our projected losses we have adopted a future CPI inflation rate of 2.0% per annum[1] which we understand is consistent other components of ElectraNet's regulatory proposal.

Note that our estimates of the self-insurance costs do not contain margins for expenses, reinsurance or profits and hence are likely to be lower than the equivalent commercial costs of insurance (if it was available).

Self-Insurance Losses vs Other Costs

The AER's revenue determination recognises TNSP's Operational expenditure (Opex) costs include, but are not limited to:

- Maintenance costs.
- Insurance premiums.
- Self-insurance (or retained) losses.

[redacted]

It is important in any submission to the AER that there is no double counting of costs. We have endeavoured to achieve this by ensuring that costs allocated as being self-insurance losses only relate to losses that are not:

- Recoverable via an insurance policy, nor
- Maintenance-related (both scheduled and unscheduled) costs.

We also exclude from our forecasts any losses that would be eligible for pass through under the Pass Through events specified in the NER or nominated in ElectraNet's Revenue Proposal.

Ultimately, as the party with final responsibility for the regulatory proposal for 2018/19 to 2022/23, we worked with ElectraNet to ensure that, for the data provided, there is no double counting of these costs.

[1] Derived from the Reserve Bank of Australia's (RBA's) short term (i.e. over the next two years) inflation forecasts and the mid-point of the RBA's inflation targeting band. This methodology is consistent with approaches previously approved by the AER.

For this regulatory proposal, Finity has provided the premium forecasts and the self-insurance losses. Hence we have been able to ensure that estimates for self-insurance losses and insurance premiums are done on a consistent basis with no overlap of costs.

3.2 Insurance Premium Forecasts

A summary of our approach to forecasting ElectraNet's insurance premiums is set out in Figure 3.2.

Figure 3.2 – Summary of Approach to Forecasting Premiums

Approach: Premium forecasts

Analyse ElectraNet's historical premiums by class, including a comparison of the actual premiums paid in recent years with the forecast premiums from ElectraNet's most recent AER determination.

For our forecasts we referenced a variety of market research which looks at market-wide historical insurance premiums by class of business and provides industry forecasts taking into account the insurance cycle. Examples of the research include Finity and Deutsche Bank's joint publication Pendulum 2015/16, Pacific Insurance Market Report 2015 produced by Marsh and a Willis Insurance Industry Report.

In addition, we confirmed with ElectraNet and their insurance brokers, Marsh, regarding their proposed insurance arrangements and the latest renewal terms.

Our forecasts relate to the insurance classes for which ElectraNet currently pays insurance premiums. In addition, we have taken into account expected future changes which may impact insurance premiums beyond simply allowing for cost escalation (for example, the insurance cycle, additional classes of insurance such as cyber and changes in exposure (sums insured)).

3.3 Pass through

In analysing and recommending definitions and considerations for suitable Nominated Pass Through events we have taken into account the outcomes from recent AER determinations and discussions with ElectraNet regarding their specific circumstances.

4 Insurance Arrangements

For our self-insurance and insurance premium forecasts we have assumed that the current insurance programme will largely remain unchanged for the regulatory period 2018/19 to 2022/23. This assumption is based on discussions with ElectraNet and ElectraNet's insurance brokers (Marsh).

4.1 Summary of Insurance Arrangements

The table below contains a high level summary of the 2015/16 insurance arrangements for the major classes.

Table 4.1 – Summary of 2015/16 Insurance Arrangements

Class of insurance	Deductible	
ISR / General Property Damage	$250,000 $100,000	Transformer losses All other losses
Combined General Liability	$25,000	
Workers Compensation	$500,000	Indexed deductible

In addition to the classes of insurance included in the table above, ElectraNet's current insurance programme includes FINPRO lines, motor, contract works and other ancillary policies. Other than the proposed addition of cyber insurance, the analysis and recommendations in this report assume that the above insurance arrangements will remain unchanged over the next regulatory period.

4.2 Cyber Insurance Policy

We understand that ElectraNet plans on including insurance coverage for "cyber risk" in the upcoming regulatory period. Currently, ElectraNet do not have a standalone cyber policy but they have been investigating, and are well progressed in obtaining, appropriate cover. As cyber threats continue to grow, cyber insurance (currently a standard inclusion in ISR and Liability policies) is increasingly being acquired by utility businesses. This is reflective of the current insurance market which continues to develop be-spoke, stand-alone cyber insurance offerings as existing property and casualty markets implement exclusions from existing cover. Stand-alone Cyber insurance is strongly supported by assessments by ElectraNet's brokers.

[redacted]

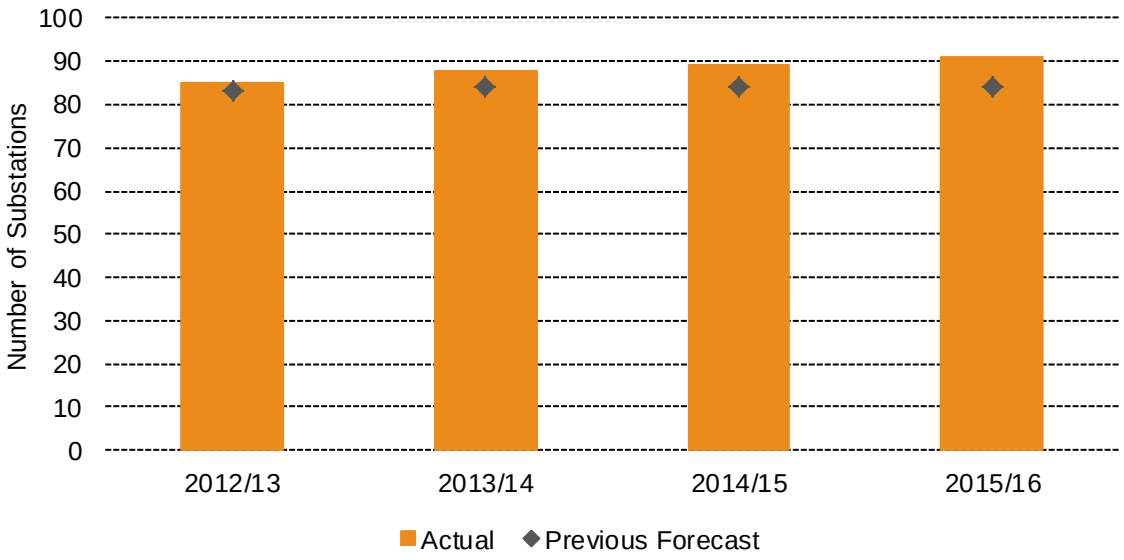
5 Exposure

ElectraNet's historical and future exposure (substations and asset values) provide an exposure measure used as the basis to project self-insurance losses and insurance premiums.

5.1 Actual versus Previous Proposal: Substations

Figure 5.1 compares the historical number of substations over the four years to June 2016 relative to the number of substations projected in ElectraNet's previous regulatory proposal (2013/14 to 2017/18). Previous forecasts are taken from Aon's 'Self Insurance Risk Quantification' report dated May 2012.

Figure 5.1 – Number of Substations: Actual versus Previous Proposal

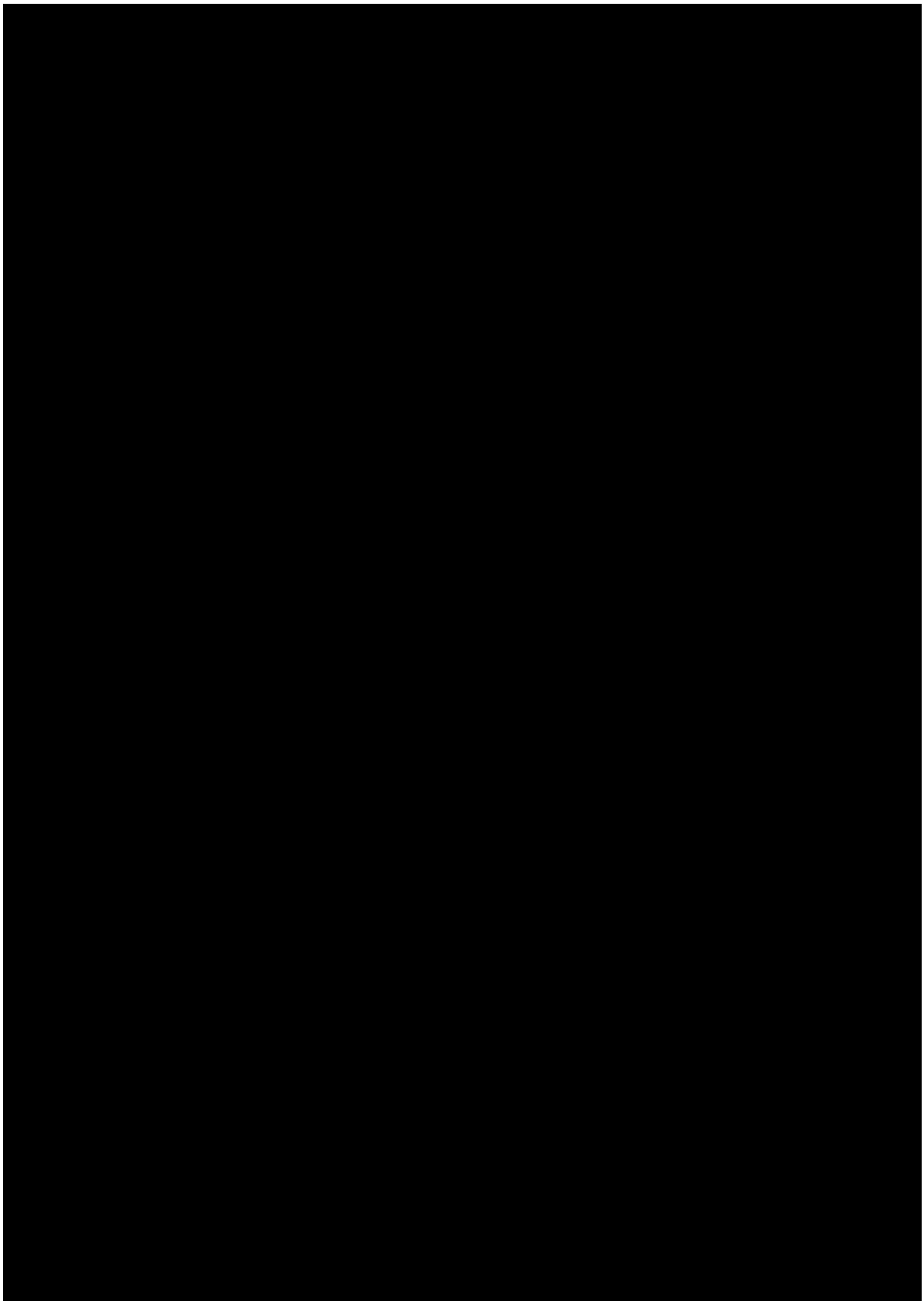


The actual number of substations was above previous forecasts due to a number of new, unanticipated windfarms being constructed during the period.

5.2 Historical and Projected Exposure

In this section we show historical and projected numbers of substations and ElectraNet's asset values up to the end of the next regulatory period (i.e. to 2022/23).

[redacted]



5.2.1 Total Insurance Assets

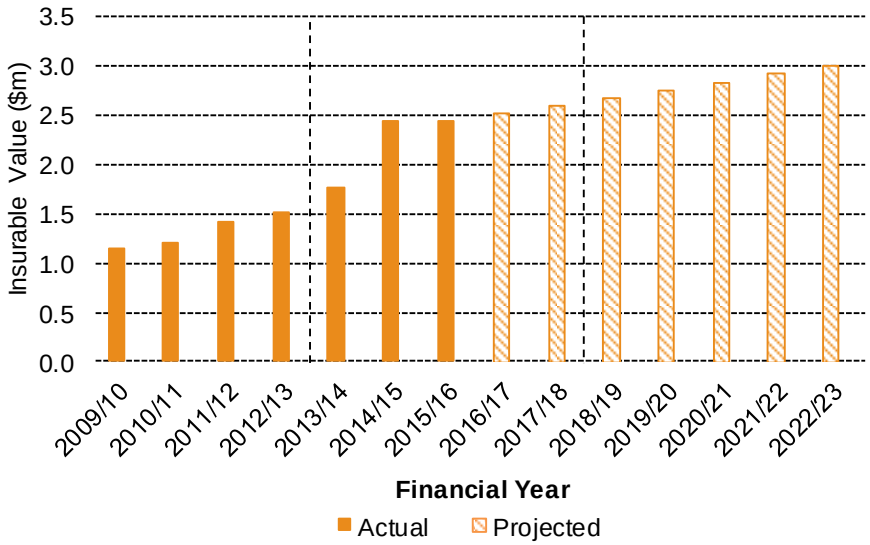
Table 5.2 and Figure 5.3 summarise ElectraNet's historical and projected total insurable asset values up to the end of the next regulatory period (i.e. to 2022/23). Total insurable value includes the following assets:

- Substations
- Radio sites / weather stations
- Occupied sites and Buildings
- Underground Cables.

Historical figures have been provided by ElectraNet whilst projected figures have been provided by ElectraNet's insurance broker, Marsh. Total insurable assets values are assumed to grow by 3% per annum in nominal terms and 1.0% per annum in real terms.

[redacted]

Figure 5.3 – Towers and Lines Asset Values (nominal dollars)



We understand that the growth in asset values in 2014/15 is primarily due to a thorough re-valuation of asset values performed by ElectraNet.

Part III Self Insurance Allowance

In this section we provides estimates of ElectraNet's self-insured, or retained, losses across the five year period commencing 1 July 2018 and ending 30 June 2023. We estimate self-insurance losses up to the insurance deductibles for the insured classes of risk and total ground up costs for uninsured classes of risk (Towers and Lines).

The following classes of risk where historical losses have occurred are included in our self-insurance allowance:

- Towers and Lines
- Substation Machinery Breakdown
- General Property Damage (Uninsured)
- General Property Damage (Insured)
- Workers Compensation
- Other losses (i.e. small miscellaneous insurance-type events that have not been recorded in ElectraNet's self-insurance account).

We have assumed that any above insurance limit losses would be eligible for pass through under the nominated insurance cap pass through event.

6 Self-insurance: Towers and Lines

Towers and Lines losses refer to losses relating to the failure or damage of ElectraNet's transmission lines and tower structures. These losses are [redacted] In this section we set out our analysis of ElectraNet's Towers and Lines loss experience and our forecasts for 2018/19 to 2022/23.

6.1 Historical Losses

6.1.1 Actual versus Forecast Losses

The following table compares Towers and Lines losses over the last four and half years to the self-insurance allowance included as part of the previous determination. All cost figures are in nominal dollars of the year of loss.

[redacted] **Table 6.1 – Actual versus Forecast Towers and Line Losses (nominal dollars)**

[redacted]

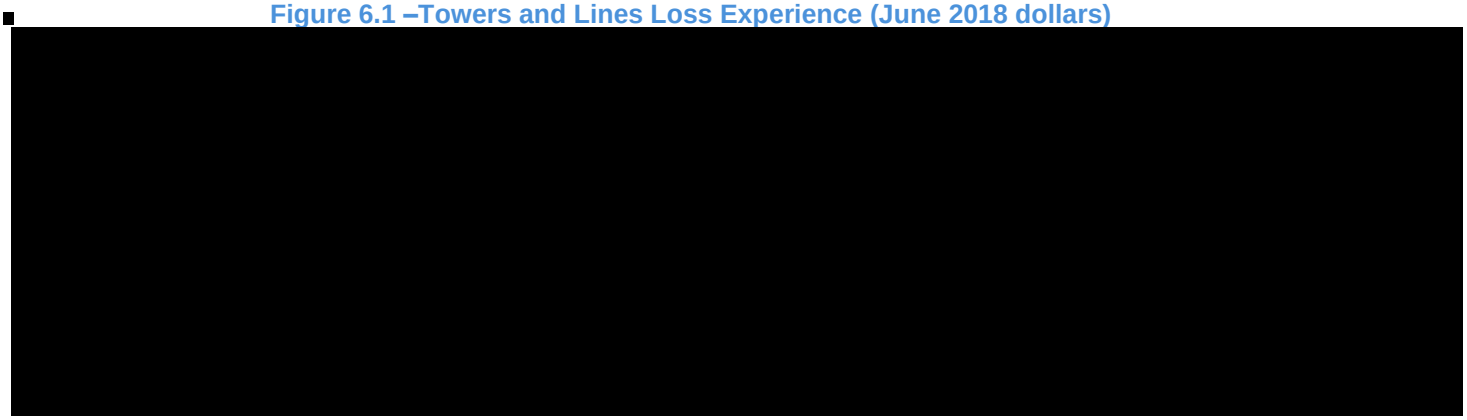
6.1.2 Treatment of 28-30 September 2016 Storms

We note that the actual losses shown in Table 6.1 [redacted]

6.1.3 Analysis of Historical Losses

Figure 6.1 shows ElectraNet's historical Towers and Lines losses since 1960/61.

Figure 6.1 –Towers and Lines Loss Experience (June 2018 dollars)



The above graph shows that ElectraNet have had numerous Tower and Line loss events over the last 57 years, often clustered within decades. In addition, we note that:

- [redacted]
- [redacted]

In projecting future Towers and Lines losses we have excluded the losses associated with these storms from our historical analysis. Going forward, ElectraNet expects that events of this type and magnitude will be treated as a pass through event. We have defined a natural disaster nominated pass through event to be consistent with this treatment (refer Section 21).

Table 6.2 shows the average number and cost of losses per annum for different time periods. We have shown the averages including, and fully excluding, the 1979 and 28-30 September 2016 losses.

Table 6.2 –Towers and Lines Loss Experience

[redacted]

- An average of 0.4 losses per year based on the total historical experience to take account of the volatility of Towers and Lines losses. We note that the occurrence of Towers and Lines losses is primarily related to the frequency of extreme peril events rather than being correlated to growth in asset values. On this basis we haven't selected a frequency relative to asset values.
- [redacted]

6.2 Projected Self-Insurance Losses: Towers and Lines

Table 6.3 provides the projected self-insurance losses for Towers and Lines over the next regulatory period. The selected number of losses per annum and the average loss size are based on ElectraNet's full Tower and Line loss history but excluding the 1979 and 28-30 September 2016 events (assuming that events of this magnitude and severity would be treated as a natural disaster pass through event in the future).

Table 6.3 – Towers and Lines Projected Self-Insurance Losses

[redacted]

7 Self-insurance: Substation Machinery Breakdown

Substation Machinery Breakdown refers to losses relating to network property damage such as transformer or equipment failure and machinery breakdown. Substation Machinery Breakdown is covered by ElectraNet's Industry Special Risks policy [redacted]

7.1 Historical Losses

7.1.1 Actual versus Forecast Losses

The following table compares below deductible Substation Machinery Breakdown losses over the last four years to 30 June 2016 to the self-insurance allowance included in the previous regulatory review by AON (and accepted by the AER). All cost figures are in the nominal dollars of the year of loss.

Table 7.1 – Actual versus Forecast Substation Machinery Breakdown Losses (nominal dollars)

[redacted]

Substation Machinery Breakdown losses over the last four years to 30 June 2016 have been considerably higher than the previous forecast [redacted]

7.1.2 Analysis of Historical Losses

Table 7.2 shows ElectraNet's historical Substation Machinery Breakdown losses over the last 20 years. We have calculated historical frequencies as the total number of losses divided by the number of substations. The 'below deductible costs' are calculated under the current ISR insurance arrangements.

[2] The deductible for business interruption is equal to thirty (30) days actual average daily, indemnifiable loss suffered by the insured.
[3] Net loss is equal to $250,000 deductible for material damage plus $1.1 million deductible for business interruption as described above.

Table 7.2 – Substation Machinery Breakdown Loss Experience

[redacted]

[redacted]

[redacted]

7.2 Projected Self-Insurance Losses: Substation Machinery Breakdown

We have projected total self-insurance losses for Substation Machinery Breakdown based on ElectraNet's historical claims experience and using a frequency times size approach. Our adopted methodology takes into account growth in the network although we note [redacted]

Table 7.3 – Substation Machinery Breakdown Projected Self-Insurance Losses

[redacted]

Table 7.3 shows that:

- [redacted]
- [redacted]

8 Self-insurance: General Property Damage

General Property Damage includes:

- Damage to **uninsured** assets related to the cost of repairing poles and towers outside substation boundaries from vandalism or accidental third party damage. Losses under $20,000 are excluded for our analysis consistent with ElectraNet's self-insurance resolution (as these costs will be treated as ordinary operating expenditure).
- Damage to **insured** assets relating to non-network property losses such as vandalism, theft and damage caused by storms or other natural perils and other minor property damage losses. General Property Damage on non-network property assets is covered by ElectraNet's Industry Special Risks policy [redacted]

In this section we set out our analysis of ElectraNet's General Property Damage loss experience and our forecasts for the next regulatory period 2018/19 to 2022/23.

8.1 Historical Losses

8.1.1 Actual versus Forecast Losses

The following table compares uninsured property losses over the last four years to 30 June 2016 to the self-insurance allowance included in the previous regulatory review by AON (and accepted by the AER). All cost figures are in nominal dollars of the year of loss.

Note that Aon did not include a self-insurance loss allowance for general property damage of insured assets at the previous regulatory review as no losses exceeded the self-insurance threshold of $20,000.

Table 8.1 – Actual versus Forecast Losses – Uninsured Property Only (nominal dollars)

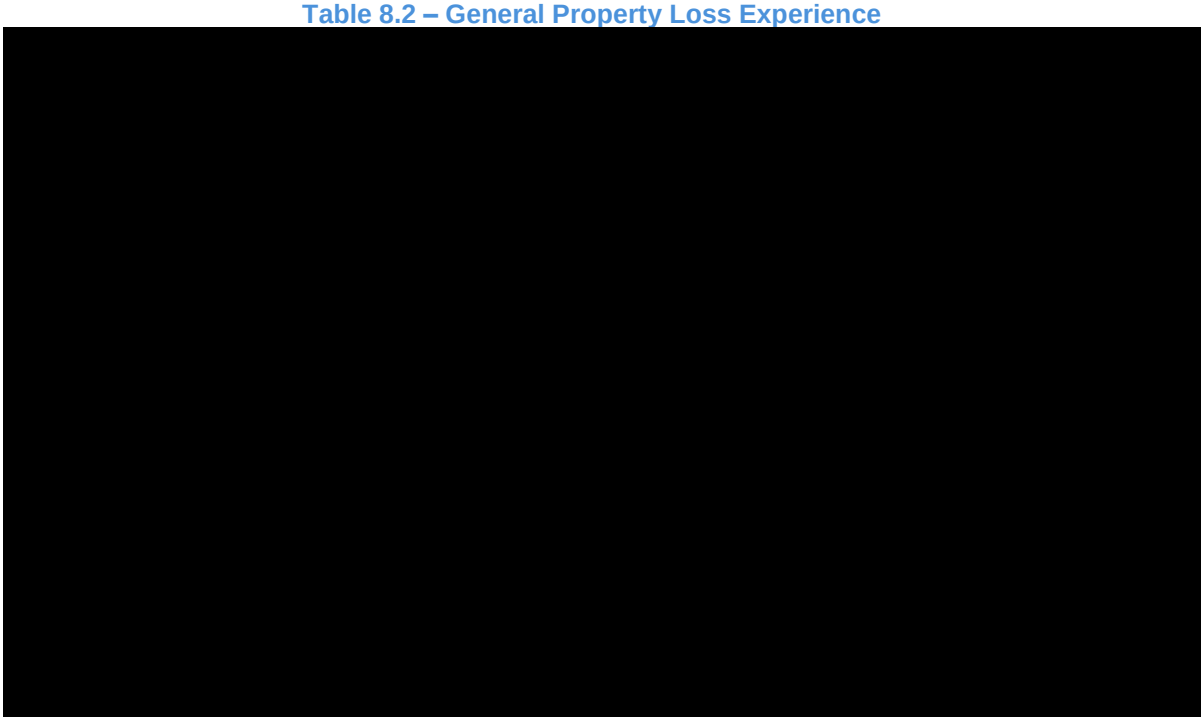
[redacted]

Actual losses between 2012/13 and 2015/16 have been close to forecast with a higher than expected number of losses offset by a lower cost per loss.

8.1.2 Analysis of Historical Losses

Table 8.2 shows ElectraNet's historical losses for property damage on uninsured assets and insured assets for the last 9 years where general damage property losses have been recorded. Insured losses are capped at the insurance deductible.

Table 8.2 – General Property Loss Experience



The number of general property damage losses appears to have increased recently with most of the property losses occurring in the last two years. Based on discussion with ElectraNet we understand this trend is due to improved reporting and recording of smaller (or minor) self-insurance losses.

8.2 Projected Self-Insurance Losses: General Property Damage

We have projected total self-insurance losses for General Property Damage based on ElectraNet's more recent historical claims experience and using a numbers time size approach.

Table 8.3 – General Property Projected Self-Insurance Losses

9 Self-insurance: Liability Losses

ElectraNet hold a Combined General Liability (including Fire liability) with a deductible of $25,000 per bush fire event. Given there have been no liability losses recorded in ElectraNet's history we have not made an explicit allowance for liability below deductible losses for the next regulatory period 2018/19 to 2022/23. This is the same approach as adopted in the previous assessment by AON.

However, given storm events and other factors experienced by TNSPs it would not be unreasonable to expect future losses events and claims in the future in this category. For example, the 2009 Black Saturday bushfire in Victoria led to a large class action against AusNet which secured 10,000 victims $50,000 each; a total of $500 million. We understand that AusNet's liability insurance premiums have now quadrupled as a result of this liability class action.

South Australia has a different risk profile and a different population to Victoria but it is still conceivable that ElectraNet's network could be significantly impacted by a severe fire event which could potentially exceed ElectraNet's insurance limit of $800 million. In this circumstance we would expect the event to be treated as a nominated pass through event.

10 Self-insurance: Other Losses

'Other' losses relate to small insurance-type events (over $1,000) that have not been recorded in ElectraNet's self-insurance general ledger database. The types of losses relate to:

- Third Party Damage
- Landholder claims
- Environmental
- Fauna / Vermin
- Vandalism
- Vehicle.

These losses have only been recorded since 2012/13. Based on discussions with ElectraNet, we understand these costs have not been doubled counted or included in any other component of the 2018/19 to 2022/23 submission.

10.1 Historical Losses

10.1.1 Actual versus Forecast Losses

At the previous self-insurance review AON did not make any allowance for 'Other' self-insurance losses concluding that these losses were immaterial due to infrequency and severity. However, given the improved recording of these losses we believe that this is no longer the case.

10.1.2 Analysis of Historical Losses

The table below summarises the total historical costs for 'Other' losses over the past four years. We have assumed any loss recorded in the data would be retained by ElectraNet and therefore, below deductible costs are equivalent to total costs.

Table 10.1 – Other Losses' Experience

[redacted]

[redacted]

10.2 Projected Self-Insurance Losses

[redacted]

Table 10.2 – Projected 'Other' Losses

[redacted]

11 Workers Compensation

ElectraNet is currently self-insured under the WorkCover scheme in South Australia. Workers' compensation losses relate to the personal injury of an employee within the workplace. These losses include:

- Weekly payments for income replace whilst an employee is unable to work
- Medical and rehabilitation expenses
- Lump sum or permanent impairment benefits in the case of severe injury.

For our historical analysis of ElectraNet's workers compensation claims cost we have relied on a report by Brett & Watson Actuaries as at 30 June 2015. Our projection of the future cost of claims is based on the historical workers compensation cost, relative to wages, applied to projected wages.

11.1 Historical Losses

11.1.1 Actual versus Forecast Losses

The following table compares the cost of ElectraNet's workers compensation claims over the three years to 30 June 2015 to the self-insurance allowance included in the previous regulatory review by Aon (and accepted by the AER). All figures are in nominal dollars of the year of loss payment.

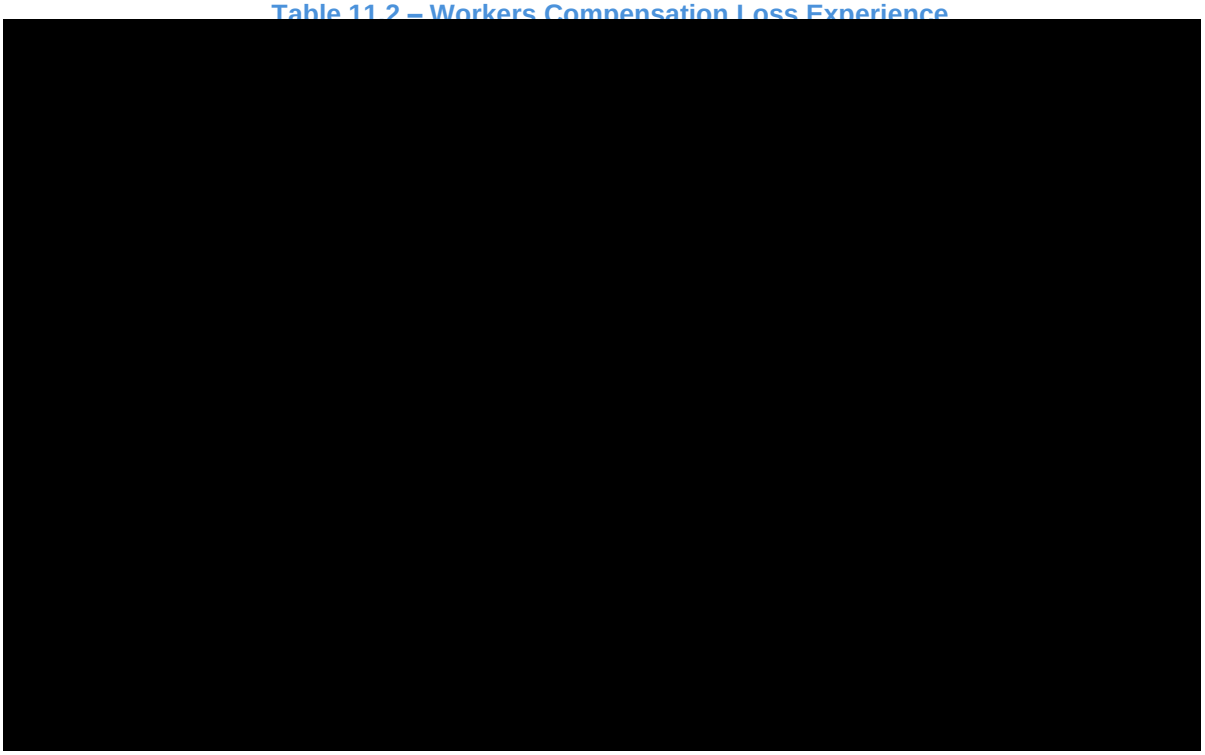
Table 11.1 – Actual versus Forecast Workers Compensation Losses (nominal dollars)

Workers compensation losses over the three years to 30 June 2015 were 25% lower than projected. Given the uncertainty in forecasting workers compensation losses this level of difference is not unusual.

11.1.2 Analysis of Historical Losses

The table below summarises the total historical costs for Workers Compensation losses between 2000/01 and 2014/15 (inclusive). The projected, or ultimate, cost of claims for past years is divided by ElectraNet's remuneration to give a claims rate relative to remuneration.

Table 11.2 – Workers Compensation Loss Experience



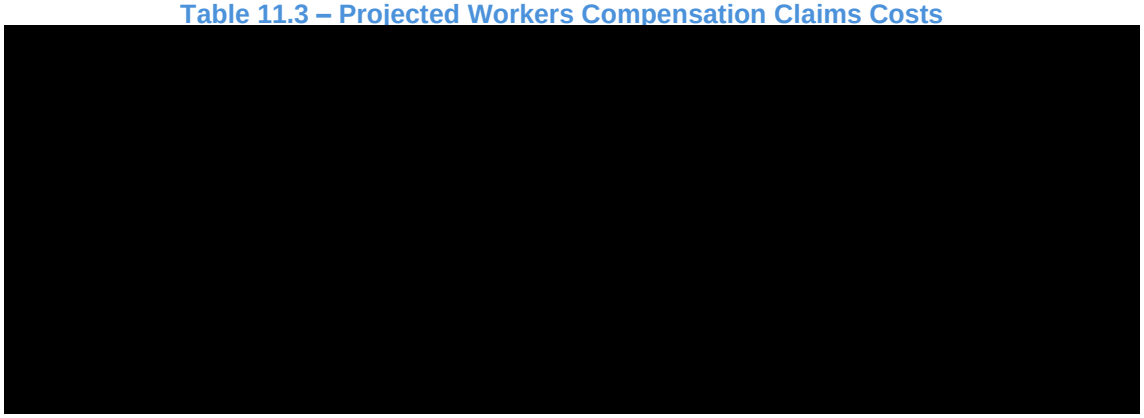
ElectraNet have generally had very few workers compensation claims with correspondingly low costs. The exceptions are 2000/01 and 2014/15 where there were individual large claims.

Given the volatility of workers compensation claims we have selected a claims rate which is based on the average across all years.

11.2 Projected Self-Insurance Losses

Table 11.3 shows our projection of ElectraNet's self-insured workers compensation claims costs for the next regulatory period. We have assumed that ElectraNet's remuneration will grow by 3% per annum.

Table 11.3 – Projected Workers Compensation Claims Costs



The table shows that:

-
- In total, over the five year regulatory period to 2022/23, estimated workers compensation self-insurance

12 Total Self-Insured Losses

In this section we summarise the results from Sections 6 to 11. In addition we have included a comparison to the self-insurance estimates from ElectraNet's previous 2013/14 to 2017/18 final AER determination.

12.1 Summary of Forecast Self-insured Losses

Our estimate of the annual cost of self-insured losses for the next regulatory period 2018/19 to 2022/23 is shown in Table 12.1 below.

In addition, note that the estimates shown in Table 12.1:

- Are based on the deductibles shown in Section 4 ([redacted]). If these deductibles change then we expect that our estimate of ElectraNet's retained losses would also change.
- As required by Australian actuarial professional standards are central estimates (i.e. intended to be the mean or expected value of the liabilities), include an allowance for future changes in the value of ElectraNet's transmission line network and substations (as provided by ElectraNet) and are undiscounted. The above estimates do not contain margins for expenses, reinsurance or profits and hence are likely to be lower than the equivalent commercial cost of insurance (if it was available).
- Are consistent with the premium forecasts discussed in Part IV of this report as we have been able to ensure that estimates for self-insurance and insurance are based on consistent insurance arrangements with no overlap of results.

12.2 Comparison to previous final determination

[redacted] We note that our current estimate of ElectraNet's self-insurance losses also excludes Fire Liability losses as discussed in Section 9.

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]

Part IV Premium Forecasts

Insurance Classes

In this part of the report we provide projections of ElectraNet's total insurance premiums payable across the five year period commencing 1 July 2018 and ending 30 June 2023. The estimated costs provided are the insurance premiums payable plus GST, stamp duty, brokerage and other fees.

Our estimates include allowance for the following insurance classes:

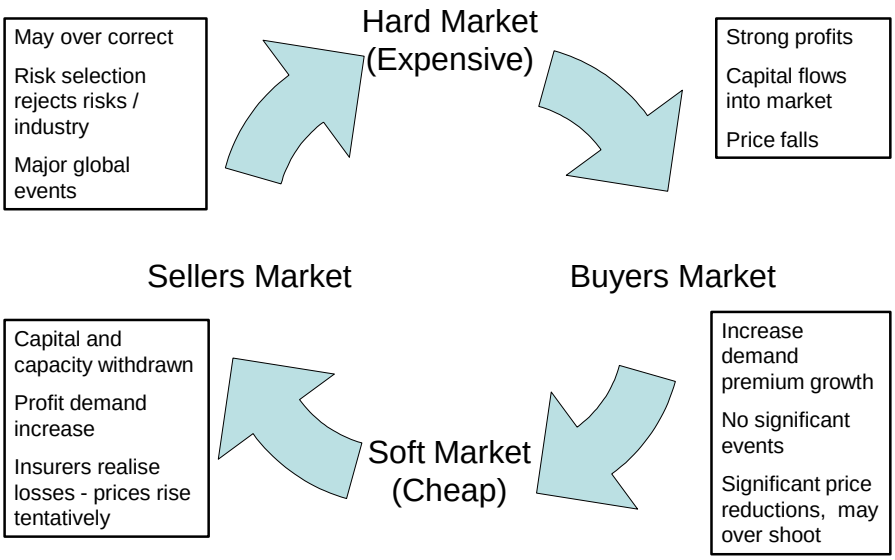
- Industrial Special Risks (ISR)
- General and Products Liability (Combined liability)
- Financial Professional lines (FINPRO) including:
  - Directors and Officers
  - Employment Practices
  - Professional Indemnity
  - Corporate Practices Protection (Inquiry Costs & Statutory Liability)
- Workers Compensation (Excess of Loss)
- Cyber Insurance
- Other ancillary classes of insurance, including:
  - Motor Vehicle
  - Marine Cargo
  - Business Travel
  - Group personal accident.

Our premium forecasts exclude Contract Works as we understand the premiums for this class are included elsewhere in ElectraNet's Regulatory Proposal.

Insurance Cycle

Insurance markets tend to move in cycles as characterised by the following diagram.

Figure – Insurance Cycle



Periods of high premiums and high profits for insurers (a hard market) encourages more capital and new insurers into the market as more investors are attracted to the high returns on offer. This, in turn, increases competition in the market until premiums start to fall as insurers try to maintain market share by dropping rates. Rates are squeezed until profits start to dry up and capital is withdrawn from the market as investors look for "easier" money elsewhere (a soft market).

Generally, premium rates have been falling for most commercial classes of insurance since circa 2004 – i.e. a softening of the market. An absence of any significant catastrophic events and excess capacity in the market means that competition remains strong. This is good news for insurance buyers as:

- The supply of capital and appetite to take on risk remains strong. This means competition for business, particularly in commercial lines, is likely to remain a feature of the market.
- Insurers are now starting to offer enhanced coverage, lower deductibles and long-term agreements as further incentives for clients to purchase insurance.
- Financial security of insurers remains strong.

We expect that the insurance market will remain "soft" for the next couple of years (in the absence of any significant catastrophic events) before transitioning to a "harder" market and premium rate increases. On this basis we have assumed modest premium increases during the regulatory period 2018/19 to 2022/23 for most classes of insurance.

13 Industrial Special Risks Premium Forecasts

Industrial Special Risks insurance provides cover for loss or damage to ElectraNet owned property (including machinery breakdown) and consequential loss from business interruption.

13.1 Historical Premiums

The following table summarises the details of the ISR policy over the last five years to 30 June 2016. The base premium is the amount payable to the insurer prior to the addition of stamp duty and GST. The total premium includes stamp duty, GST as well as broker fees.

Premium rates have been expressed as a percentage of Total Insurable Value (TIV). TIV is the total value of ElectraNet's property assets that are covered under the ISR policy (refer Table 5.2). It is the total value of all of ElectraNet's buildings and properties, including substations. TIV is considered a reasonable measure of exposure as the cost of claims and changes in premiums are related to movements in the asset values underlying the exposure.

Table 13.1 – Insurance Summary – ISR (nominal dollars)

[redacted]

[redacted]

[2] Various sub-limits apply in respect of business interruption, construction, debris removal, increased costs, hazardous substances and contamination etc.

[3] Inclusive of stamp duty, GST and broker fees

[4] Total Premium / TIV

13.1.1 Deductible

The ISR policy is characterised by a deductible of:

- [redacted]
- [redacted]

This means that ElectraNet has a material interest in minimising claims costs through risk minimisation and risk mitigation strategies. ElectraNet's claims experience also materially impacts the insurance premiums paid through the underwriting process undertaken by insurers.

13.1.2 Policy Limit

[redacted]

13.1.3 Premium Rates

[redacted]

13.1.4 Comment on Insurance Program

[redacted]

We consider the current ISR insurance program to be adequate and provide an efficient and prudent coverage against ElectraNet's property exposures.

13.1.5 Actual Versus Expected Premium

The following graph compares the base premium paid to date in the current regulatory period (for years 2013/14 to 2015/16) to the premium allowance from the previous Regulatory Determination 2013/14 to 2017/18 for ISR insurance. All premiums are exclusive of GST, stamp duty and broker fees.

Figure 13.1 – Actual Versus Expected Premiums (nominal dollars)

[redacted]

[redacted] The lower than expected per annum premium increases is a reflection of the relatively benign claims experience over the period (there was an absence of any significant catastrophic events over the period) and the prevailing soft insurance market.

13.2 Insurance Losses

[redacted]

13.3 Premium Forecasts

Our ISR premium forecasts are derived by applying forecast premium rates to the projected TIV.

[redacted]

For the purpose of our projections, we have assumed 0% premium rate increases over the two years (to 30 June 2018) and a 2.0% per annum increase in the premium rate thereafter as shown in the table below. The forecast premium rates are based on our market analysis[4] which indicates ISR rates are expected to remain flat over the next two to three years. Beyond that period, modest premium increases are expected as the market transitions from a "soft" to a "hard" phase in the insurance cycle.

Table 13.2 – Premium Projection – Fire ISR (nominal dollars)

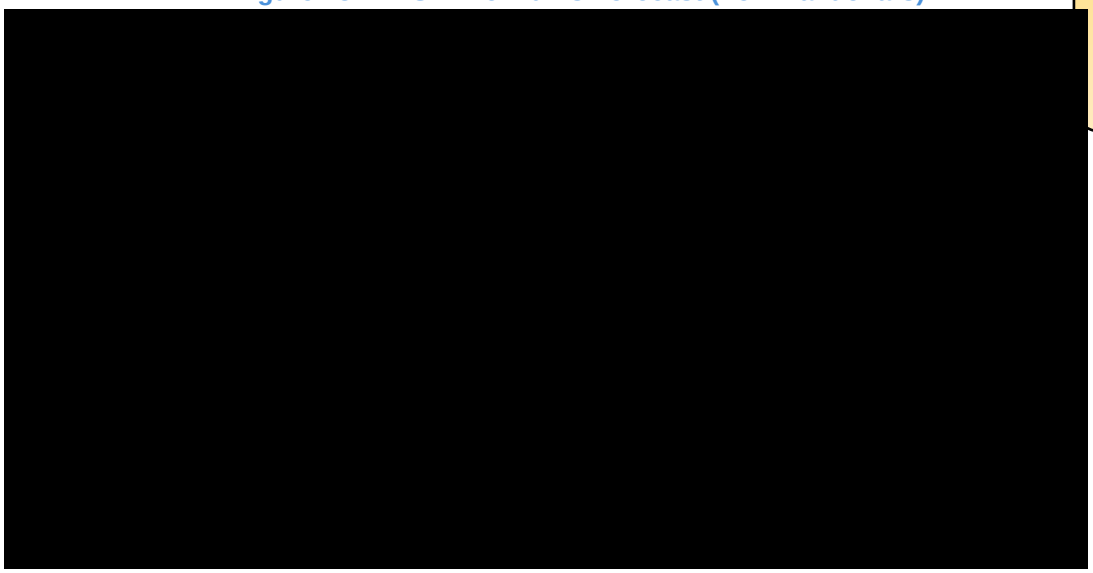
[redacted]

[redacted]

Figure 13.2 summarises the historical premiums for ISR and our forecast premiums for the upcoming regulatory period 2018/19 to 2022/23. All premiums are shown in nominal dollars.

[4] Pendulum July 2016 –industry analysis of insurance markets prepared by Finity Consulting and Deutsche Bank Markets Research
Pacific Insurance Market Report 2015 – Marsh Risk Management Research February 2015
Insurance News – Reinsurance rates to fall further: Guy Carpenter 20 July 2015

Figure 13.2 – ISR Premiums Forecast (nominal dollars)



Regulatory period 2018/19 to 2022/23

14 General Liability Premium Forecasts

General Liability insurance provides cover for loss or damage to third parties as a result of the actions of ElectraNet.

14.1 Historical Premiums

The following table summarises the details of the General Liability policy over the last five years to 30 June 2016.

Premium rates have been expressed as a “rate on line”. The rate on line is equal to the total insurance premium divided by the policy limit. A rate on line expresses the insurance premium as a cost per dollar of insurance coverage. Changes in the rate on line demonstrate the relative cost of insurance for each dollar of cover.

Table 14.1 – Insurance Summary – General Liability (nominal dollars)

[redacted]

14.1.1 Deductible

[redacted] Despite the relatively low deductible, ElectraNet has had no losses exceeding the deductible which provides some evidence that they continue to manage this risk appropriately.

14.1.2 Policy Limit

[redacted]

14.1.3 Premium Rates

[redacted]

14.1.4 Comment on Insurance Program

[redacted]

Our comments regarding ElectraNet’s Liability insurance programme are:

- The low level of losses for Liability – no losses over the past five years – demonstrates that the risk is being managed effectively.
- Liability losses can be very significant (for example, the Victorian bushfires claim against AusNet). The main concern from a TNSP's point of view is ensuring enough cover to insure against potentially catastrophic claims. [redacted]

14.1.5 Actual Versus Expected Premium

The following graph compares the total base premium paid to date in the current regulatory period (for years 2013/14 to 2015/16) to the premium allowance from the previous Regulatory Determination 2013/14 to 2015/16 for General Liability. All premiums are exclusive of GST, stamp duty and broker fees.

Figure 14.1 – Actual Versus Expected Premiums (nominal dollars)

[redacted]

14.2 Insurance Losses

[redacted]

14.3 Premium Forecasts

Our General Liability premium projections are largely based on historical premium rates and the prevailing market conditions.

Our market analysis indicates Liability rates are expected to remain relatively flat in the short term. Unlike the commercial property classes of business (such as ISR), liability insurers continue to write profitable liability business even in light of the premium reductions seen in recent years. Therefore, we believe there is less pressure on liability insurers to increase premiums than the property classes.

For the purpose of our projections, we have assumed 0% premium rate increases over the next two years (to 30 June 2018) and a 3.5% per annum increase in the premium rate thereafter as shown in the table below. Excess capacity in the liability market means heightened competitive pressure forcing insurers to keep premiums rates flat in the next few years. However, analysis shows when the market hardens rates tend to increase by 20% or more over a short period, this is equivalent to 3.5% per annum over the five years to 2022/23.

Table 14.2 – Premium Projection – General Liability (nominal dollars)

[redacted]

Figure 14.2 shows the historical premiums for General Liability and our forecast premiums for the upcoming regulatory period 2018/19 to 2022/23. All premiums are shown in nominal dollars (i.e. allowing for expected future inflation at the rate of 2% per annum) for comparison purposes.

Figure 14.2 – General Liability Premiums (nominal dollars)

15 Professional Lines (FINPRO) Premium Forecasts

Professional Lines includes Directors and Officers Liability (D&O), Statutory Indemnity and Employment Practices insurances. These various insurances provide cover against liability incurred by ElectraNet staff and board members as a result of errors and omissions in performing their professional services. Collectively these lines of insurance are referred to as FINPRO.

We have chosen to combine these insurances as they cover broadly similar risks and the insurance premiums for each are expected to respond in a similar way to changes in market conditions.

15.1 Historical Premiums

The following table summarises the details of the FINPRO policies over the last five years to 30 June 2016.

Table 15.1 – Insurance Summary – FINPRO (nominal dollars)

[redacted]

[redacted]

15.1.1 Deductible

FINPRO policies are characterised by low deductibles dependent on the class of business with ElectraNet retaining the below deductible cost of claims. Generally speaking the cost of FINPRO claims retained by ElectraNet is not material (generally less than $15,000).

15.1.2 Policy Limits

[redacted]

- [redacted]
- [redacted]
- [redacted]

15.1.3 Comment on Insurance Program

To the best of our knowledge these arrangements appear to be reasonably consistent with the rest of the market.

15.1.4 Actual Versus Expected Premium

The following graph compares the actual base premium paid over the last five years to that projected as part of the previous regulatory determination. All premiums exclude GST, stamp duty and broker fees.

Figure 15.1 – Actual Versus Expected Premiums[1] (nominal dollars)

[redacted]

15.2 Insurance Losses

[redacted]

15.3 Premium Forecasts

Our FINPRO premium forecasts are largely based on historical premiums and the prevailing market conditions.

For the purpose of our projections, we have assumed no premium rate increases over the next two years (to 30 June 2018) and a 2.0% per annum increase in the premium rate thereafter as shown in Table 15.2. Our market analysis[5] indicates FINPRO premiums are expected to remain relatively flat over the next two years. Beyond that period, modest premium increases are expected as the market transitions from a "soft" to a "hard" phase in the insurance cycle.

[5] Pendulum July 2016 –industry analysis of insurance markets prepared by Finity Consulting and Deutsche Bank Markets Research
Pacific Insurance Market Report 2015 – Marsh Risk Management Research February 2015
Insurance News – Reinsurance rates to fall further: Guy Carpenter 20 July 2015

Table 15.2 – Premium Projection – Professional Lines (nominal dollars)

[redacted]

[redacted]

Figure 15.2 – Professional Lines Premiums (nominal dollar)

[redacted]

Regulatory period 2018/19 to 2022/23

16 Other Classes Premium Forecasts

In this section we discuss:

- Ancillary cover which includes Motor, Marine, Business Travel and Group Personal Accident insurances
- Cyber insurance, and
- Workers Compensation excess of loss insurance.

We have chosen to combine the ancillary classes as the premiums are generally small in dollar terms. [redacted] Motor premiums are driven by the number and types of vehicles insured. Therefore, we have used ElectraNet's projection of the number of vehicles expected to be insured during the projection period as the key exposure measure by which to project the future ancillary premiums.

16.1 Historical Premiums (Ancillary Classes)

The following table summarises the details of the Ancillary premiums over the last five years to 30 June 2016.

Table 16.1 – Insurance Summary – Ancillary (nominal dollars)

[redacted]

[redacted]

16.2 Insurance Losses (Ancillary Classes)

[redacted]

16.3 Premium Forecast (Ancillary Classes)

Our Ancillary premium forecasts take into account the following factors:

- historical premiums and claims experience
- the soft market conditions
- the competitive motor market
- that the premiums are small relative to other classes of business.

[redacted]

Table 16.2 – Premium Projection – Ancillary Lines (nominal dollars)

[redacted]

[redacted]

Figure 16.1 shows the historical premiums for Ancillary Lines and our forecast premiums for the upcoming regulatory period 2018/19 to 2022/23. All premiums are shown in nominal dollars (i.e. allowing for expected future inflation at the rate of 2% per annum) for comparison purposes.

Figure 16.1 – Ancillary Lines Premiums (nominal dollars)

[redacted]

Regulatory period 2018/19 to 2022/23

16.4 Cyber Insurance

[redacted]

[redacted]

ElectraNet has implemented a wide range of activities and controls to manage cybersecurity threats and improve operational cyber resilience across both high voltage network operations (Operational Technology) and Corporate Technology ahead of seeking coverage for cyber risk in the insurance market in accordance with good industry practice.

[redacted]

[redacted]

[redacted]

16.5 Workers Compensation

ElectraNet hold a workers compensation self-insurance licence with WorkCover in South Australia. As part of the licence conditions ElectraNet must purchase external excess of loss reinsurance cover.

[redacted]

[redacted]

17 Total Insurance Premiums

17.1 Total Insurance Premiums – Nominal Dollars

The following table summarises our forecast insurance premiums for the regulatory period in nominal dollars.

Table 17.1 – Forecast Insurance Premiums (nominal dollars)

[redacted]

[redacted]

[redacted]

Figure 17.1 shows the historical premiums across all lines of business and our forecast premiums for the upcoming Regulatory period. All premiums are shown in nominal dollars (i.e. allowing for expected future inflation at the rate of 2% per annum) for comparison purposes.

Figure 17.1 – Forecast Insurance Costs (nominal dollars)

[redacted]

17.2 Total Insurance Premiums – 2018 dollars

The forecast insurance premiums shown above implicitly assume future CPI inflation of 2.0% per annum, which we understand is consistent other components of ElectraNet's regulatory proposal. We have deflated the forecasts premiums by 2.0% per annum so as to express the premiums in 2018 equivalent values.

Table 17.2 – Forecasts Insurance Premiums (2018 dollars)

Part V Nominated Pass Through Events

18 Introduction

In August 2012 the Australian Energy Market Commission (AEMC) made a rule that enables transmission network service providers (TNSPs) to nominate additional pass through events as part of their revenue proposals, subject to the Nominated Pass Through Event considerations in the rules.

As part of the revenue proposal ElectraNet need to nominate certain pass through events that they want to be considered if they eventuate. These are in addition to certain prescribed pass through events.

If the Australian Energy Regulator (AER) accepts a nominated pass through event, this gives the TNSP the opportunity to submit an application for pass through treatment should the defined pass through event occur. Any application must be approved by the AER.

In this section we provide recommended definitions and considerations for suitable Nominated Pass Through Events for ElectraNet.

Pass Through Definition

Cost pass through is a way of addressing unexpected events.

The forecast efficient expenditure of network service providers in Australia is regulated by the AER and recovered through their "allowed revenue", set each year. This allowed revenue includes the cost of risk management mechanisms, including commercial insurance and self-insurance.

Currently there are two ways that a network business may recover the costs incurred as the result of any significant events that were not forecast as part of their allowed revenues.

1. **Cost pass through** – where expenditure arises in a permitted category of event (prescribed or nominated), the network service provider may apply to the AER to recover this amount from electricity customers in the next year's prices. A cost pass through event nominated at the time of a network determination and approved by the AER only covers that category of event for that regulatory control period.
2. **Capital expenditure re-opener** - transmission network service providers can currently propose a capital expenditure re-opener to the AER. This only covers capital expenditure (e.g. the replacement cost of assets poles and wires swept away by flooding). It does not enable the recovery of repair costs to any assets which are damaged, but not destroyed.

2012 rule change

In August 2012 the National Electricity Rules (NER) relating to the cost pass through provisions for TNSPs were amended. The aim of these amendments was to enable network businesses to recover their efficient costs in the advent of an unexpected event, while ensuring that the prices for consumers are no more than necessary to provide an appropriate level of service.

To achieve this, the AEMC decided to:

- provide transmission businesses with the ability to nominate additional pass through events as part of their revenue proposals

- include a set of 'nominated cost pass through event considerations' in the NER that the Australian Energy Regulator (AER) must consider when deciding whether to accept the transmission or distribution business' proposed pass through event;
- remove the terrorism event from the prescribed pass through events under the NER for both transmission and distribution businesses; and
- provide transitional arrangements for network businesses who have recently completed or are in the middle of their revenue determination with the AER.

Note that the AEMC's policy position remains that cost pass throughs should only be used where other, more suitable, means of addressing these costs are less appropriate.

Prescribed Pass Through Events

The cost pass through provisions set out in clauses 6A.6.9 and 6A.7.3 of the NER allow a TNSP to recover (or pass back to customers) materially higher (or lower) costs in providing prescribed transmission services that have arisen as a result of a defined pass through event occurring. Clause 6A.7.3 (a1) of the Rules defines any of the following as **prescribed** pass through events for a transmission determination:

- A regulatory change event;
- A service standard event;
- A tax change event;
- An insurance event; and
- Any other event nominated as a pass through event in a transmission determination.

We have set out our proposals for specified **nominated** pass through events that are to apply in accordance with clause 6A.7.3(a1)(5) for the regulatory period 2018/19 to 2022/23.

18.1 Criteria

We applied the following criteria to identify the events to be nominated for the cost pass through mechanism:

- Quantification of such an event, by attaching frequency or severity, cannot be ascribed by reasonable means and is subject to significant uncertainty.
- Insurance is not available on an efficient and prudent basis.
- Such an event is beyond the control of ElectraNet, or ElectraNet has taken appropriate and reasonable means in order to prevent or reduce the probability of its occurrence.
- The cost of the event exceeds 1 per cent of the Maximum Allowable Revenue (MAR) for the TNSP for that regulatory year.

For the events nominated, there have been historical events of such magnitude for ElectraNet that could be considered pass through type events. However, for various reasons ElectraNet has not made a pass through claim relating to these events. Regardless, we don't believe that the occurrence of such an event would necessarily preclude it from being a Nominated Pass Through Event in the future, as long as it met the above criteria.

In circumstances where these criteria are satisfied, the adoption of the cost pass through mechanism will likely be the most effective approach in achieving on an ex-ante basis, an adequate balance between:

- Having the incentive mechanisms in place to ensure that prices for consumers are no more than necessary to provide an appropriate level of service; and
- Whilst still providing ElectraNet with a reasonable opportunity to recover efficient costs associated with events that are outside of their reasonable control.

We believe that the pass-through option is an efficient way of dealing with extreme events which occur very infrequently and are extremely difficult to model. The alternative of receiving an annual allowance to be placed in a reserve is problematic as the reserve may need to be maintained, theoretically, for a significant period of time. There is also the possibility that an extreme event may occur well before the reserve has reached the expected size for the event.

18.2 Nominated Pass Through

Accordingly, we nominate the following additional pass through events:

- Insurance cap event
- Terrorism event
- Natural disaster event
- Insurer credit risk event.

The basis for nominating these events, and the proposed definitions, are set out in the following sections.

18.3 Risk Mitigation

We note that ElectraNet as an efficient and prudent NSP, manages its risk profile ensuing a suite of preventative, detective and mitigating controls are effective in both their design and operation. Risk management is supported by complementary preparedness (including business continuity), recovery (both resumption of key processes and restoration of assets) and response arrangements; in line with best practice as outlined by Emergency Management Australia.

Risk management is supported by an integrated “Three Lines of Defence” assurance process that provides confidence that controls are in place, fit for purpose and effective.

In the following sections, for each nominated pass through event, we have described the specific risk mitigation controls employed by ElectraNet.

19 Nominated event 1: Insurance Cap Event

19.1 Definition

We nominate an Insurance Cap Event as a pass through event for the regulatory period 2018/19 to 2022/23. Our proposed definition of this event is as follows.

Figure 19.1 – Proposed definition for Insurance Cap Event

An Insurance Cap Event occurs if:
1. ElectraNet makes a claim or claims and receives the benefit of a payment or payments under a relevant insurance policy; 2. ElectraNet incurs costs beyond the policy limit of the relevant insurance policy at the time of the event that gives rise to the relevant claim; and 3. The costs beyond the relevant policy limit increase the costs to ElectraNet of providing prescribed transmission services. For this Insurance Cap Event: a) A relevant insurance policy is an insurance policy held during the 2018/19 to 2022/23 regulatory control period or a previous regulatory control period in which ElectraNet was regulated, and b) ElectraNet will be deemed to have made a claim on a relevant insurance policy if the claim is made by a related body corporate of ElectraNet in relation to any aspects of ElectraNet's prescribed transmission services. Note: In making a determination on an Insurance Cap Event, the AER will have regard to, amongst other things: i) the insurance policy for the event, ii) the level of insurance that an efficient and prudent NSP would obtain in respect of the event, and iii) any assessment by the AER of ElectraNet's insurance document in respect of its transmission determination for the relevant period.

19.2 Rationale

This pass through event is proposed on the basis that it is not always efficient for TNSPs to fully insure against high impact, low probability events. This is because commercial insurance for these events may be unavailable, or may be available at a prohibitively high cost. It is also unlikely to be efficient to receive an additional annual self-insurance allowance to be placed in a reserve as the reserve may need to be maintained, theoretically, for a significant period of time. There is also the possibility that an extreme event may occur well before the reserve has reached the expected size for the event.

The AER has previously determined that an insured event where costs are incurred beyond the insurance cap would largely be triggered by circumstances beyond the NSP's control, could not be forecast and would likely incur costs of a high magnitude. The AER considered that a combination of self-insurance (for costs above the insurance cap but below a specified threshold) and pass throughs should compensate for such an event.

The above wording is consistent with the wording contained in the AER's recent draft decision for Powerlink.

19.3 Risk Mitigation

ElectraNet understands the complementary nature of commercial insurance coverage, self-insurance and pass through events; ensuing that it is has an optimal blend of cover.

ElectraNet as an efficient and prudent NSP, sets its insurance limits based on credible risk based scenario analysis, worst foreseeable loss studies, asset values, industry benchmarks and professional Broker advice.

20 Nominated Event 2: Terrorism

20.1 Definition

We nominate Terrorism as a pass through event for the regulatory period 2018/19 to 2022/23. Our proposed definition of this event is as follows.

Figure 20.1 – Proposed definition for a Terrorism Event

A terrorism event is:
An act (including, but not limited to, the use of force or violence or the threat of force or violence) of any person or group of persons (whether acting alone or on behalf of or in connection with any organisation or government), which from its nature or context is done for, or in connection with, political, religious, ideological, ethnic or similar purposes or reasons (including the intention to influence or intimidate any government and/or put the public, or any section of the public, in fear) and which increases the costs to ElectraNet in providing prescribed transmission services. Note: In assessing a terrorism event pass through application, the AER will have regard to, amongst other things: a) whether ElectraNet has insurance against the event, b) the level of insurance that an efficient and prudent NSP would obtain in respect of the event, and c) whether a declaration has been made by a relevant government authority that an act of terrorism has occurred.

20.2 Rationale

We believe that a pass through mechanism is currently the most appropriate regulatory approach for addressing the costs arising from a terrorism event as:

- The nature of a terrorism event is such that the associated costs are highly uncertain and extremely difficult to forecast with a reasonable degree of accuracy.
- A “Terrorism event” is no longer defined as a prescribed pass through event.
- The nature and type of event can be clearly identified at the time that the AER makes its determination for ElectraNet.
- The extent to which ElectraNet can reasonably prevent a terrorism event from occurring and/or can substantially mitigate the cost impacts of such an event is limited. That said, ElectraNet have a range of measures in place which are intended to prevent acts of terrorism, and mitigate the impacts of an event should one occur.
- The relative infrequency and potentially very high costs of terrorism events create significant practical challenges to self-insure for such events. A pass though mechanism provides a more appropriate arrangement for managing the cost impacts if a terrorism event occurs and causes a material increase in ElectraNet’s costs.
- Many insurance policies have terrorism exclusions which describe excluded terrorist acts in much broader terms than contained within the Terrorism Insurance Act (TIA). Hence an incident may be deemed a “terrorism” incident by an insurer and may trigger a policy exclusion but never become a “declared terrorist incident” as defined by the TIA.

A pass through mechanism has the advantage of allowing the AER to evaluate the efficient costs arising from a terrorism event after the event has occurred. A pass through mechanism therefore avoids the

need to make a prior allowance for the costs of a terrorism event, either by including a forecast cost as an operating expenditure or through a self-insurance premium.

The above wording is consistent with the wording contained in the AER's recent draft decision for Powerlink.

20.3 Risk Mitigation

ElectraNet will manage terrorism risk with a primary focus on key assets and critical infrastructure. ElectraNet participates in the Australian Reinsurance Pool Corporation (ARPC) under the Terrorism Insurance Act 2003.

21 Nominated Event 3: Natural Disaster Event

21.1 Definition

We nominate that a Natural Disaster Event be included as a pass through event for the regulatory period 2018/19 to 2022/23. Our proposed definition of this event is as follows.

Figure 21.1 – Proposed definition for an Natural Disaster Event

Natural Disaster Event means any natural disaster including but not limited to fire, flood or earthquake that occurs during the 2018/19 to 2022/23 regulatory control period that increases the costs to ElectraNet in providing prescribed transmission services, provided the fire, flood or other event was not a consequence of the acts or omissions of the service provider.

Note: In assessing a Natural Disaster Event pass through application, the AER will have regard to, amongst other things:

(i) whether ElectraNet has insurance against the event; and

(ii) the level of insurance that an efficient and prudent NSP would obtain in respect of the event.

21.2 Rationale

The above definition of a Natural Disaster Event is consistent with the wording contained in the AER's recent draft decision for AusNet Transmission Group.

In that decision, the AER removed the reference to whether a government authority has declared an occurrence to be a natural disaster. In that decision, the AER explained that its inclusion had received criticism in other regulatory processes on the basis it could create uncertainty and introduce irrelevant considerations. While the AER did not accept these concerns, it accepted that it is unnecessary to refer to it explicitly in the definition[1].

We believe the AERs' wording for AusNet Transmission Group is also appropriate for ElectraNet. In South Australia, severe localised storms can cause massive damage to the network but may not be catastrophic in terms of homes lost or loss of life. A case in point is the recent September 2016 storms which destroyed 20 towers and caused a blackout for the whole state of South Australia. This event was a natural disaster in terms of the damage to the network but it wasn't declared a natural disaster.

We note that ElectraNet has been actively seeking a commercial "Towers and Lines" insurance policy for a number of years. However there is limited appetite and capacity from insurance markets. Given ElectraNet's loss profile, the terms and premiums being offered have been deemed commercially unacceptable and unable to meet the AER's requirements as a prudent and efficient transfer of risk. Hence ElectraNet relies on the self-insurance allowance and the nominated pass through mechanism to cover the cost of tower and line losses.

Our view is that the AER should make its own assessment on whether the event is a natural disaster, considering the relevant facts.

[1] AER, Draft Decision, AusNet Services transmission determination 2017–18 to 2021–22, Attachment 13 – Pass through events, July 2016, page 16.

21.3 Risk Mitigation

Natural Disaster events, by definition, cannot be prevented or avoided. ElectraNet employs a range of strategies to minimise and mitigate the exposure of the transmission network to Natural Disasters. These include technical preventative measures such as minimum design standards to withstand seismic, flood and fire (and other natural catastrophes) along with risk transfer mitigation (insurance cover) for certain assets.

For assets such as towers and lines, the exposure to natural disasters is reduced as far as reasonably practicable through design standards and the meshed nature of the network.

Due to South Australia's geographic and demographic composition, beyond localised events there are exposures to extreme events that a prudent and efficient NSP is unable to mitigate or insure against. Given ElectraNet's loss experience for towers and lines, risk transfer (insurance) is not commercially available and for extreme events, such as the storms of September 2016, we believe that the Natural Disaster Nominated Pass Through mechanism facilitates the most cost effective risk mitigation strategy.

22 Nominated Event 4: Insurer Credit Risk Event

22.1 Definition

We nominate that an Insurer Credit Risk Event be included as a pass through event for the regulatory period 2018/19 to 2022/23. Our proposed definition of this event is as follows.

Figure 22.1 – Proposed definition for an Insurer Credit Risk Event

An Insurer Credit Risk event occurs if:
A nominated insurer of ElectraNet becomes insolvent, and as a result, in respect of an existing, or potential, claim for a risk that was insured by the insolvent insurer, ElectraNet: i) is subject to a materially higher or lower claim limit or a materially higher or lower deductible than would have otherwise applied under the insolvent insurer's policy; or ii) incurs additional costs associated with self-funding an insurance claim, which would otherwise have been covered by the insolvent insurer. Note: In assessing an insurer's credit risk event pass through application, the AER will have regard to, amongst other things: a) ElectraNet's attempts to mitigate and prevent the event from occurring by reviewing and considering the insurer's track record, size, credit rating and reputation, and b) in the event that a claim would have been made after the insurance provider became insolvent, whether ElectraNet had reasonable opportunity to insure the risk with a different provider.

22.2 Rationale

[redacted] hence an insurer not being able to pay all, or part, of a claim could materially impact ElectraNet.

Although ElectraNet has mitigated this risk to the best of its ability, the insolvency of one or more of the insurers on their programme is an event that is outside their control. Hence, we believe that a pass through mechanism is currently the most appropriate regulatory approach for addressing the costs arising from a nominated insurer becoming insolvent.

The above wording is consistent with the wording contained in the AER's recent draft decision for Powerlink.

22.3 Risk Mitigation

ElectraNet set minimum requirements for the credit grading of participating underwriters at A minus with Standard and Poors or equivalent. ElectraNet also manage risk through appropriate vertical and horizontal apportionment across its policies both domestically and internationally. This is supported by appropriate due diligence activities by ElectraNet and their Brokers.

23 Reliances and Limitations

We have relied on the accuracy and completeness of the data and other information (qualitative, quantitative, written and verbal) provided to us by ElectraNet for the purpose of this advice. We have not independently verified or audited the data, but we have reviewed the information for general reasonableness and consistency. The reader of this report is relying on ElectraNet and not Finity for the accuracy and reliability of the data. If any of the data or other information provided is inaccurate or incomplete, our advice may need to be revised and the report amended accordingly.

We have prepared our estimates on the basis that they represent our current assessment of the likely future experience of ElectraNet. Sources of uncertainty include the limited number of past events on which to base our assumptions. Although the estimates we have prepared are best estimates, deviations of the actual experience from our estimates are normal and to be expected.

In making our estimates we have placed considerable reliance on the ElectraNet's past loss experience. To the extent that estimates and assumptions are required there is a degree of uncertainty in the analysis particularly with the limited number of line failures and major substation losses. There are no margins included in our results to offset the potential impact of such uncertainty.

In estimating future retained losses on insured assets the result depends on a number of assumptions including the continuation of current insurance coverage and deductible levels and the treatment of the specified losses as retained insurance losses. These assumptions are subject to policy decisions by ElectraNet, market forces and regulatory determination. Should there be any variation in these assumptions our results may change and should be reviewed and updated accordingly.

This report has been prepared for the sole use of ElectraNet for the purpose stated in Section 1. It is not intended, nor necessarily suitable, for any other purpose. Members of Finity staff are available to answer any queries, and the reader should seek that advice before drawing any conclusions or any issues in doubt. The report should be considered as a whole.

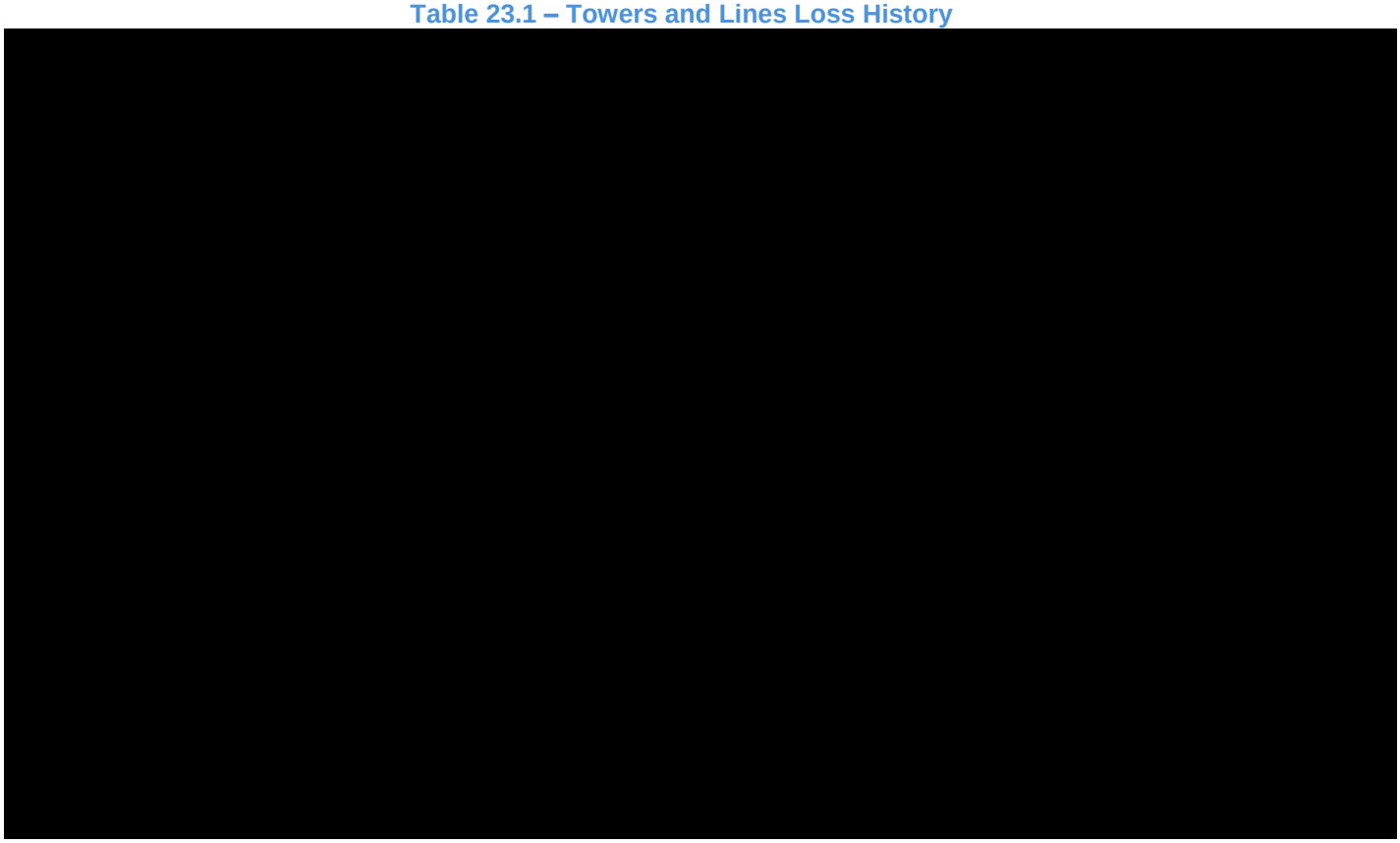
We understand that ElectraNet may wish to provide a copy of the report to the Australian Energy Regulator distributed on a 'confidential' basis. Permission is hereby granted for such distribution on the condition that the entire report, rather than any excerpt, is provided. No other use of, or reference to, this report should be made without prior written consent from Finity Consulting, nor should the whole or part of this report be disclosed to any other person.

Third parties, whether authorised or not to receive this report, should recognise that the furnishing of this report is not a substitute for their own due diligence and should place no reliance on this report or the data contained herein which would result in the creation of any duty or liability by Finity to the third party.

Part VI Appendices

A Self-insurance Loss Summary

Table 23.1 – Towers and Lines Loss History



B Experience and Qualifications

MARK HURST - Project Leader

Mark is a consulting actuary and Principal with Finity with more than 25 years experience in the general insurance industry. Mark has previously led similar projects for Powerlink in 2006, 2011 and 2016 and Energex and Ergon Energy in 2009 as well as a broadly similar assignment for Queensland Rail and Aurizon which involved providing the Queensland Competition Authority with an estimate of their annual self-insurance costs.

Mark is leader of Finity's self-insurance practice and a member of the workers' compensation team. His general insurance experience includes outstanding claims reserving and providing advice to corporates with regard to their insurance arrangements.

Mark has been involved in a variety of projects for self-insurers, including:

- Valuation of outstanding claim liabilities and calculation of bank guarantees
- Examining the feasibility of organisations considering self-insuring liabilities
- Estimating the self-insured allowance for energy companies for submission to the regulator
- Providing advice to self-insurance pools regarding funding and outstanding claim liabilities
- Allocation of costs between operating divisions
- Assistance with self-insurance licence applications
- Development of key performance indicators
- Analysis of the volatility of claims experience and profits under self-insurance
- Advice regarding risk margins.

Mark has authored, or co-authored, several self-insurance papers including "Assessing the Financial Viability of Moving to Self-Insurance" and "Measuring the success of your self-insurance program".

In addition to Powerlink, Mark's self-insurance clients include Myer, The Star Entertainment Group, Linfox, DHL, Aurizon, Primary Health Care, Wilson Security and Virgin Australia.

Mark has Bachelor of Economics and Science degrees from the Australian National University and is a Fellow of the Institute of Actuaries of Australia.

ADAM PAYNE - Senior Actuary

Adam is a consultant with Finity Consulting and has more than 15 years experience in actuarial consulting, specialising in the general insurance industry in the last 11 years. Adam worked on Powerlink self-insurance projects in 2011 and 2016.

Adam has provided advice on reserve levels, pricing, financial projections and reinsurance strategy. Adam is also the APRA Appointed Actuary for a small boutique insurance company.

Adam is heavily involved in Finity's self-insurance practice and provides actuarial advice to a number of workers compensation self-insurers as well as a NSW specialised workers' compensation insurer.

Adam has been involved in valuing the asbestos reserves for a number of insurance companies, including valuing the insurance liabilities for the NRG group of companies as part of the Solvent Scheme of Arrangement. He was also part of the CGU External Peer Review team, specifically charged with reviewing the asbestos liability provisions.

Qualifications

- Fellow of the Institute of Actuaries of Australia, 2003
- Bachelor of Economics (Actuarial), Macquarie University, 1996

Work history

- March 2005 to present: Finity Consulting – Consultant
- 2000 to 2005: Trowbridge Consulting/Trowbridge Deloitte – Consultant specialising in general insurance
- 1996 to 2000: Mercer, Sydney – Actuarial Analyst and Consultant specialising in superannuation