

8 September 2015

Mr Patrick Lawrence
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Level 37
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Dear Mr Lawrence

**Ergon Energy Insurance Proposal
Public version**

This letter has been prepared at the request of Mr Patrick Lawrence of the Australian Energy Regulator (AER) to review Ergon Energy's (Ergon) response to the AER's preliminary determination in respect of proposed parametric insurance arrangements.

Summary

In my review (letter dated 25 February 2015) of Ergon's original submission (dated 22 October 2014) I found that the parametric insurance proposal was not reasonable because of:-

- cost considerations,
- the limited cover provided,
- concerns over the interaction with cost pass through events and
- the absence of consideration of self-insurance (the current arrangements) as an option.

My opinion remains unaltered after reviewing the material provided by Ergon in their revised proposal (dated 3 July 2015). The proposed parametric insurance represents an additional charge to consumers with no material benefit to consumers. In my view, the proposed parametric insurance arrangements only superficially address the underlying risk management issues and Ergon have failed to adequately consider other risk financing strategies and their implications.

Background

My original advice addressed three specific questions from the AER:-

1. *whether AM Actuaries considers the cost of Ergon Energy's proposed insurance appears reasonable given the risks and possible costs associated with storms and cyclones in Northern Queensland;*
2. *whether the additional cost of Ergon Energy's proposed insurance appears reasonable given the alternative options it considered; and*
3. *whether there are alternative options that Ergon Energy and its advisers may not have considered.*

This letter sets out:-

- a brief outline of the original proposal;
- a recap of my original findings;
- a summary of the key arguments presented in Ergon's response; and
- my opinion of the Ergon's parametric insurance proposal in light of the additional information in its revised proposal.

Original Submission

In its original submission, Ergon assessed its main property risk to be damage to poles and wires caused by cyclonic winds.¹ Ergon proposed parametric insurance² as an option because it considered the level and pricing of traditional insurance for these risks was not prudent³. Parametric insurance is a form of derivative in that the level of recovery responds to the nature of a weather event (location and wind speed) that can cause property damage. However, sustaining actual damage is not a precursor to the payment under the contract and it is also possible for payments to be made in the absence of a loss.

Original Parametric Insurance Proposals

Ergon presented two parametric insurance proposals that respond in the event of a cyclone.

1. *Cat in a Box from Swiss Re* – payments under this model depend on the maximum wind gust speed and are triggered in the event that the eye of a cyclone enters a pre-defined region spanning the Queensland coast.⁴ The cover provided a deductible of \$c-i-c million⁵, a maximum of \$c-i-c million in any one season, and a total limit of \$c-i-c million over the 5 year regulatory control period.

¹ AON Risk Solutions, Insurable Property Risk Review – Report Ergon Energy, June 2012, p. 1.

² Parametric insurance responds to a specified situation rather than to losses sustained. Provided that an event (cyclone) occurs within a predefined region and magnitude, then Ergon is paid a predetermined amount, regardless of the level of loss that may be sustained.

³ Parametric Insurance Report, 22 October 2014, p. 3, para 4.

⁴ Parametric Insurance Report, 22 October 2014, pp. 9-11.

⁵ Deductibles represent the amount paid by the insured should an event be triggered.

2. *Tailored Solution from Endurance Re* – payments under this proposal are for category 2 or higher cyclones occurring in one of 16 specified locations, which were determined from an examination of Ergon’s risk exposures.⁶ Payments are scaled based on the sustained average wind speeds for category 2 and 3 cyclones. Options for deductibles were offered for either \$ c-i-c million or \$c-i-c million, maximum payments were location dependent with an event maximum of \$c-i-c million, and an overall maximum of \$c-i-c million for the 5 year regulatory control period.

The Endurance Re proposal (option 2 with a \$c-i-c million deductible) was Ergon’s preferred option.⁷

***am actuaries’* Original Findings**

In brief, *am actuaries* advice to the AER was that the original parametric insurance proposal did not appear reasonable given the risks and possible costs incurred by Ergon. I reached this conclusion because:-

- anticipated costs (as measured by the expected loss ratio – the ratio of pay-outs to premiums paid) of parametric insurance were similar to traditional insurance. Ergon itself had already rejected traditional insurance on the basis that it was not cost effective. Therefore, I concluded that the parametric insurance proposal was also not cost effective;
- the cover under the parametric insurance options was appeared narrow in that it did not extend to other natural perils and limited cyclones to specific areas and wind speeds. This left Ergon with considerable exposure to loss from other natural perils and cyclones;
- payments under the proposed contracts are disconnected from actual losses sustained. Losses could still be sustained without a response from parametric insurance and vice versa;
- clear interactions between parametric insurance and “cost pass through” existed but the submission was silent as to how this would be managed. Ideally, the adopted risk financing strategy would replace the reliance on cost pass through. Although not clear in the proposal, it appeared that cost pass through for cyclones may continue to co-exist with parametric insurance; and
- the proposal did not examine Ergon’s capacity to retain risk or consider self-insurance as an option. Ergon currently self-insures this risk and they have been able to do this successfully despite incurring significant losses whilst remaining profitable. This demonstrated self-insurance is a viable option.

Ergon’s Response

Ergon’s response to the AER’s preliminary determination included:-

- a recap of the risk the proposal seeks to address;
- an overview of their current risk management approach to storms and cyclones;

⁶ Parametric Insurance Report, 22 October 2014, pp. 11-14.

⁷ Parametric Insurance Report, 22 October 2014, p. 15.

- references to the regulatory drivers;
- a recap of the preliminary determination; and
- its response to specific issues raised in the preliminary determination.⁸

Opinion on Ergon's Revised Proposal

After reviewing the material in Ergon's revised proposal, I consider that the proposed parametric insurance proposal is neither efficient nor effective and represents an additional charge to consumers with no material benefit to consumers. I reached this conclusion after considering the cost implications, the potential benefits, and other arguments presented by Ergon. The revised proposal did not contain any new or additional information that changed my view.

Cost

The parametric insurance proposal increases the cost without a commensurate benefit for consumers.

While it is not possible to accurately assess the net cost⁹ of the proposed arrangements to Ergon and hence consumers, the original proposal provided the best indication of the anticipated net cost. A loss ratio of c-i-c was quoted.¹⁰ This means that, over time, Ergon could expect to receive insurance pay-outs of around c-i-c of the insurance premiums paid. This loss ratio is at a similar level to traditional insurance, which was rejected by Ergon as not cost effective.

Ergon presented an analysis of what may have occurred had the proposed arrangements existed in the past. This showed a relatively low net cost of \$c-i-c million (c-i-c loss ratio) for the 55 years from 1956-2011.¹¹ At this level, I would anticipate that the insurance provider would adjust the premiums to target a lower loss ratio.

Over the last 10 years of the period indicated, an actual profit of \$c-i-c million would have been experienced. While interesting, these examples simply demonstrate that periods can be cherry-picked to show either a high or low net cost. For example, adding or subtracting extra year(s) at either end of the period will result in different apparent levels of profit and/or loss to Ergon.

I agree that Ergon may profit from the contract from time to time; however, insurers aim to write business at a profit. Therefore, Ergon must recognise that parametric insurance will be provided at a cost that, over the long term, will contribute toward the cost of accessing the insurer's capital. While the scenarios illustrated show possible outcomes, no evidence was provided that would suggest that insurance companies would target a loss ratio other than c-i-c as originally quoted.

⁸ Revised Parametric Insurance Report, 3 July 2015.

⁹ The net cost is premiums less pay-outs. It is normally shown as a loss ratio which is calculated as pay-out/premiums. The higher the loss ratio, the more cost effective for Ergon.

¹⁰ AER Ergon Information request 009, response (ID 6560), [confidential].

¹¹ Risk Solutions International, Alternative Risk Transfer report, Appendix 1, September 2014, Table F, pp. 9-10.

Although the level of cover is higher than that available under traditional insurance (see the heading “Benefits” below), Ergon did not provide evidence that this level of cover could not be reasonably managed through self-insurance.

As noted in my original advice, Ergon itself rejected traditional insurance based on a similar cost (loss ratio).¹² I concur with this view and for the same reason consider that the net cost of parametric insurance (net of insurance pay-outs), over time, will not be efficient from a cost perspective.

Benefits

Ergon can expect to derive a financial benefit in years where cyclones trigger a pay-out. However, I remain unconvinced that this would benefit Ergon as it is claimed by:-

- reducing the volatility of its profits,
- improving compliance with its regulatory and legal obligations, or
- removing its capital funding risk.¹³

Ergon’s claims of the benefits of parametric insurance are paraphrased in *italics* below. The rationale for reaching my conclusion follows.

1. *Damage caused by cyclones can have a material effect on profits and dividends. A key benefit of insurance is reduced volatility in profit through the transfer of risk. For example, Ergon reported that cyclone Yasi resulted in a loss of around \$100 million. The volatility this caused to profit would have been reduced with a pay-out from parametric insurance.*¹⁴

However, the reduction in volatility that parametric insurance provides is limited because pay-outs are not necessarily closely correlated to either the occurrence of an actual loss or the level of loss sustained. Therefore, I consider volatility is expected to remain despite the use of parametric insurance as losses can still occur in years where no pay-out is received and, conversely, profits may be boosted when no actual losses are incurred.

2. *Replacing self-insurance with parametric insurance would result in a reduction in exposure to the risk of breaching Ergon’s health and safety, environment, and regulatory legal compliance obligations. Ergon linked these potential compliance breaches to the material effect cyclone damage has on the funding and execution of its works program.*¹⁵

The nexus between self-insurance and its impact on the execution of its works program and breaching of compliance obligations is not immediately evident to me. In particular, I note that Ergon did not provide evidence to show how its retention of cyclone risk in recent years had negatively impacted its compliance obligations. This argument seems tenuous in that parametric insurance does not prevent the damage and so, operationally, it has no impact.

¹² Revised Parametric Insurance Report, 3 July 2015, pp. 8-9.

¹³ Revised Parametric Insurance Report, 3 July 2015, p. 42.

¹⁴ Revised Parametric Insurance Report, 3 July 2015, p. 42.

¹⁵ Revised Parametric Insurance Report, 3 July 2015, p. 42.

In relation to the funding, I note that Ergon was able to absorb a \$100 million loss in a year and still reported a profit¹⁶. Therefore, funding would not appear to be an issue that would materially affect its compliance regime as claimed.

3. *A capital funding risk (access to capital if required) in relation to the retention of cyclone risk, would not exist if parametric insurance were in place.*¹⁷

I agree that a capital funding risk exists but I do not agree that parametric insurance removes this risk exposure. I take this view because, given the maximum pay-out in a year is \$c-i-c million for the preferred parametric insurance option:-

- Ergon has demonstrated its capacity to fund losses up to \$100 million; suggesting this risk is minimal;
- Capital funding risk above the first \$c-i-c million of losses remains.

Other Arguments

Ergon considers that the AEMC and the AER are unambiguous in requiring Distribution Network Service Providers (DNSPs) to manage risks, including the potentially significant financial risks associated with major natural disasters, if at all possible to do so.¹⁸ Ergon's interpretation of referenced AER and AEMC determinations is that it requires them to put in place commercial insurance programs rather than rely on cost pass through. Ergon also argued that self-insurance, which is also discussed in the determinations, was not in the best interests of its shareholder, and its parametric insurance proposal supported the National Electricity Objective (NEO).¹⁹

In my opinion, Ergon's references to the AER and AEMC are misleading. It fails to recognise or address self-insurance, its current mechanism for managing cyclone risk, as a viable option for managing these risks.

AER and AEMC Guidance

The AER and AEMC explicitly include reference to self-insurance in past determinations. This recognises that network service providers have considerable potential to retain risk based on the strength of their balance sheet and revenue generation capacity, and that risk retention provides the financial imperative to effectively manage and control risks retained by organisations where it is appropriate to do so.

Rationale for Self-insurance

The rationale to insure or retain risk depends on various factors. Some of these include the strength of the organisation's balance sheet, profitability, level of shareholder support, capacity in the insurance market, frequency and severity of events, and ability of the organisation to manage and control the identified risk.

¹⁶ As noted in my initial advice, Ergon continue to report profits even in years of cyclonic damage, including the \$100m loss caused by Yasi.

¹⁷ Revised Parametric Insurance Report, 3 July 2015, p. 42.

¹⁸ Revised Parametric Insurance Report, 3 July 2015, p. 20.

¹⁹ Revised Parametric Insurance Report, 3 July 2015, p. 20.

Risks are usually retained where the net cost of insurance is deemed not to provide a material benefit to the organisation. This cost/benefit analysis depends on the capacity of an organisation to finance residual risk, which depends on the impact that potential losses would have on its balance sheet or its ability to fund the loss from normal operating profit.

I consider that self-insurance normally provides the lowest cost option. This is because Ergon can expect the long term cost of any insurance arrangement to exceed pay-outs. As noted earlier, insurers will always price products (i.e target a loss ratio of around 50%) to include the cost of access to “at risk” capital, expenses, and profit. However, there are many valid reasons for insuring risk.

Ergon’s Approach

In the original submission, and largely throughout their revised proposal, Ergon focused almost exclusively on commercial insurance solutions. In relation to self-insurance, Ergon stated that “*it is not in the long term interests of the organisation or shareholders*”²⁰. The rationale provided by Ergon for rejecting self-insurance as an alternative was limited to the discussion in points 2 and 3 under the heading “Benefits” above. I consider that these points have little merit and do not address the fundamental issue of how risks should be managed and financed and what capacity Ergon has to retain risk.

I consider that Ergon has not sufficiently considered self-insurance as an alternative to buying parametric insurance (or cost pass through) as they did not produce any evidence, as good governance now expects, of the Board’s risk appetite or tolerance to risk to support either the proposed insurance arrangements or self-insurance.

- Risk appetite statements represent the Board’s policy as to the type of risks an organisation is prepared to accept.
- Risk tolerances set out the levels of risk (and potential loss) that an organisation is prepared to accept.

Some evidence of Ergon’s risk appetite is implied by the decision of the shareholder to retain cyclone Yasi’s losses and not to seek cost pass through for that event. Ergon reported a profit in the year despite that loss. This suggests that cyclone Yasi, which generated losses of \$100 million, was within Ergon’s risk tolerance and hence self-insurance as a viable option.

National Electricity Objective/Cost Pass Through

Ergon argued that the regular annual premiums of parametric insurance contributes to achieving the NEO through price stability.²¹ I agree that to some extent relying on parametric insurance rather than cost pass through contributes to price stability, but cost pass through may still be called upon when an event occurs where parametric insurance does not respond so will not remove all price volatility caused by cyclones.

²⁰ Revised Parametric Insurance Report, 3 July 2015, p. 42.

²¹ Revised Parametric Insurance Report, 3 July 2015, p. 45.

We also note that the same claim regarding price stability can be made about commercial insurance and self-insurance to varying degrees. The reduction in price volatility depends on the quantum of insurance cover (or self-insurance risk retention) and the interaction with cost pass through.

As noted in my original review, Ergon did not discuss the interaction between cost pass through and parametric insurance (or the interaction with self-insurance). This issue was not clarified in the revised proposal.

Apart from this, I fail to see how Ergon can claim that parametric insurance, which does not reflect efficient risk management, but may achieve some improvement in price stability, would contribute to the NEO.

Alternative Parametric Insurance Options

Ergon's revised proposal also included variations to the proposed parametric insurance models, although none were specifically identified as a replacement to the original proposal.²² None of the four alternatives presented (two each from Swiss Re and Endurance Re) are considered to improve the efficiency (measured by the expected ratio of losses to cost of insurance) and effectiveness (extent to which the cover responds to losses actually sustained by Ergon) of the proposal.

Each of the alternatives presented acted to reduce the net cost to Ergon by limiting the level of cover. However, it is not the absolute dollar cost of the proposals that is at issue, rather it is the merits of the efficiency and effectiveness that parametric insurance provides to Ergon and hence consumers.

Yours sincerely



Clive Amery
Fellow of the Institute of Actuaries of Australia

²² Revised Parametric Insurance Report, 3 July 2015, pp. 36-41.