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**Subject: Strata Energy Consulting, Final report - Eastland Network Limited response**

Thank you for providing the opportunity for Eastland Network Limited (ENL), to comment on the Strata Energy Consulting *Report on the reliability performance of Eastland Network Limited*, (dated 09 July 2013), as supplied via email on 17 July 2013.

It is noted that the report is described as the "final" report and ENL enquires if this is in fact the case considering a number of errors we have detected in the report and more importantly that if in fact it is "final" there is no scope for consideration or inclusion of ENL feedback (?).

Please note that while ENL is appreciative of the opportunity to comment on the version of the report received, we advise that at this time ENL will defer on supplying commentary for publication until the status of this version of the report is confirmed.

Should you have any comments or queries regarding this response, please do not hesitate to contact me.

**Strata Review**

Both the board of directors and management of ENL are well aware of and fully accepting of the responsibilities of ENL to adhere to all the regulatory requirements associated with owning and operating an Electricity Distribution Business.

Accordingly the breach of the Quality Threshold, (SAIDI only) for 2011/12 was disappointing and of considerable concern to the organisation as a whole. At both a governance and management level considerable effort has been expended to reiterate and build understanding of the underlying causes of the non-compliant network performance and to review all aspects of asset management and operational strategies and practices so that future network performance is compliant with regulatory requirements.

ENL welcomed the initiation of the Strata review and considers it complimentary to ENL's internal on-going review process. Whilst not necessarily in full agreement with all the

specific findings and recommendations contained in the report, generally ENL considers the Strata review and report to be beneficial as it confirms ENL's own understanding of the issues involved and actions being implemented regarding the revision of network performance related asset management and operational strategies and practices. Accordingly Strata's findings and recommendations will be well considered in the course of ENL's on-going reviews.

### **General**

ENL considers it may be useful to consider the findings and recommendations of the Strata report in relation to the following summary information which is detailed in ENL's AMP and has also been provided to the Commerce Commission, (November 2012), as part of the quality breach investigation ;

ENL owns and operates a predominantly low density rural network of which 90% is overhead construction. As recognised within the electricity distribution industry because of this level of overhead construction, in comparison to an underground network, reliability performance of the network is more susceptible to tree interference and one off events such as extreme weather and third party interference.

Over the past decade ENL has effectively experienced nil growth in terms of ICP/connection numbers, delivered energy and maximum demand. This means that the ENL network can be considered to be in a "steady state". It is forecast that the nil growth/steady state will continue into the future. It should be noted that a consequence of operating in a steady state, ENL does not receive the consequential network performance benefits associated with the installation of new assets as needed to meet growth requirements.

ENL has developed strategies and plans which aim to operate and manage the network in a manner consistent with its steady state. At a high level these strategies and plans are aimed to deliver prudent long term stewardship of the network assets and meet long term steady state performance targets with regards to;

- Regulatory pricing and returns
- Regulatory network performance
- Regulatory safety requirements
- Shareholder, customer and consumer expectations

In general ENL's delivered performance is regulatory compliant and consistent with average NZ electricity distribution industry performance especially in the areas of;

- Return on Investment
- Asset age
- Opex and capex spend

ENL considers its achieved performance to be consistent with managing and operating a steady state distribution network.

With regards to ENL's breach of the 2012 quality threshold in addition to ENL's full explanation as to the cause of the breach, (provided November 2012), ENL believes that the following should be considered.

For the regulatory period 2005 - 10 steady state operation of the network delivered compliant SAIDI and SAIFI network performance.

For three of the years SAIDI performance was 30% below the threshold limit of 377 SAIDI.

For the first two years of the 2010 – 15 period continuing steady state operation of the network delivered non-compliant SAIDI performance against the reduced threshold limit of 302 SAIDI, (2010 – 334 SAIDI and 2011 – 395 SAIDI) and compliant SAIFI performance.

For 2012 steady state operation of the network delivered compliant SAIDI performance of 287 SAIDI and complaint SAIFI performance.

While accepting of the change in regulatory threshold limits and having considered network SAIDI performance since 1999, ENL submits that it appears that the steady state management and operation of the network undertaken to date has not resulted in a marked deterioration of assets and a consequential continuing deterioration of network performance. Actual network performance has remained relatively consistent, but apparent network performance looks worse because of the re-setting and lowering of the network performance targets.

## **Strata Report**

The following provides ENL's comments and response to specific parts of the Strata report dated 09 July 2013. ENL commentary is provided with reference to relevant sections, () of the report.

### ***Preface***

Correction required – the report was in relation to Eastland Network Limited, not Alpine Energy.

## ***2 Summary of Findings***

### ***2a while events due to trees have increased during the period, failures due to equipment defects have also increased***

ENL believes that, (as confirmed by information presented in Strata's graph Figure 15) that there is not compelling evidence to show that the number of *defective equipment* incidents is steadily increasing and in fact Figure 15 only shows "good years and bad years". By way of contrast, Strata's Figures 12 and 13 clearly show an increasing trend of *Tree* incidents and their associated increasing contribution to SAIDI.

Also as confirmed by information presented in Figure 15, ENL suggests that an increase in incidents of *defective equipment* in any one year does not necessarily result in a corresponding proportional increase in SAIDI. This would indicate that on average the scope and scale of any increase in *defective equipment* failure occurring is at the lower end of the scale of severity and the number of *defective equipment* incidents is not necessarily indicative of assets in a deteriorating condition.

It should also be noted that ENL has observed that as a result of improved outage reporting procedures, the number of fault /interruption causes assigned as *unknown* has decreased, (eg. 2002 = 47 *unknown*; 2012 = 17 *unknown*). Accordingly it should be considered that part of any increase in *defective equipment* numbers will be due to the allocation of interruption causes which may have previously been allocated as *unknown*. ENL is further refining outage reporting procedure so as to provide improved accuracy and consistency of outage cause allocation.

***2b the significant investment made during the past decade in renewal of the urban networks will have delivered improved reliability to the urban (high consumer density) areas. Therefore the SAIDI boundary breaches represent a greater fall in the rural network performance than the SAIDI figures, on their own, suggest;***

It should be noted that a characteristic of ENL's network is that 65%+ of ENL consumers are located in the urban areas of Gisborne City or Wairoa Township. Accordingly urban faults/outages have a greater effect on overall SAIDI performance than low density rural sections of the network.

Significant investment in 2000 – 2002, (circa \$18m), addressed a backlog of asset safety, operational and performance issues in both the rural and urban sections of ENL's three networks.

A considerable portion of this investment was the installation of six 1 MW diesel generators in rural locations and the renewal of underperforming overhead assets. The generators have the primary purpose of providing an n-1 level of security where none existed previously. It is estimated that this investment alone improved rural network performance by up to 50%.

Post 2002, in keeping with investment strategies described in the AMP, ENL has continued to invest in both the rural and urban sections of its networks. ENL believes that this investment has not been disproportionate in favour of urban assets or consumers. It is however accepted that extreme external events such as occurred in 2010 and 2011 will always affect rural consumers to a greater degree due to factors such as predominance of overhead construction and remoteness.

***2c it is likely that historical low levels of spending on both replacement capex and maintenance opex have contributed to deterioration in asset condition and performance; and***

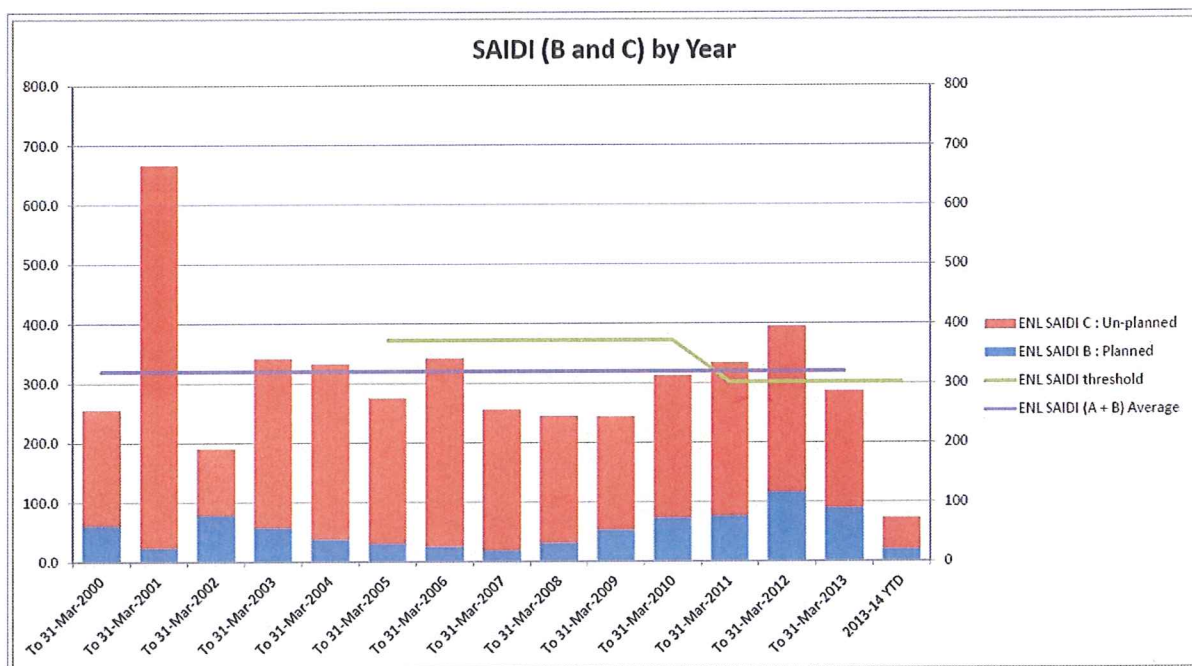
ENL does not believe that either capex or opex spend since 2002 has been at a *low level*.

Information in successive PWC Information Disclosure Compendiums shows that ENL's opex spend has consistently been in line with or slightly above the industry average.

The same information source shows ENL capex spend to be consistently below the industry average. This is a consequence of ENL's steady state where capex expenditure to meet growth is minimal/not required. ENL capex expenditure for the previous decade has been predominantly, (80% +) in the area of Asset Replacement and Renewal.

Consistent with the forecast of continuing steady state/no growth, as detailed in the AMP, ENL's future capex and opex spends are currently forecast to remain at the same level. The level and allocation of both opex and capex spend is however currently under review.

ENL is not certain that there is any evidence that network performance is steadily decreasing. The following graph showing annual SAIDI since 1999 would suggest that there is no occurrence of network performance decrease and in fact network performance appears cyclic. Reference to the 14 year average, (2000 – 2013), of 319 SAIDI), confirms this.



## **2.1 Recommendations**

***While the Commission has not asked Strata to provide advice or recommendations with respect to its enforcement authority or options with regard to regulatory action or intervention, Strata considers that the Commission may find the following points useful.***

***Strata considers that ENL should undertake a strategic review to establish an appropriate approach for management of the aging overhead distribution network. This should include:***

- (a) consideration of the context and respective needs of both urban and rural consumers***
- (b) a review of the forecast capex and opex to ensure that the planned expenditure is optimised and targeted at maintaining asset condition and performance at appropriate levels; and***
- (c) an assessment of the appropriateness of outcomes resulting from current price/reliability trade-offs, which are implicit in the planned capex and opex profiles.***

***Given the specific economic issues in the Gisborne region, ENL may consider it appropriate to constrain expenditure below the level needed to ensure network performance achieves the current SAIDI and SAIFI limits in some parts of their network. If ENL considers that the current SAIDI and SAIFI limits are overly stringent, it could apply to the Commission for a customised price-quality path. Alternatively, ENL may decide to lift expenditure above levels that can be sustained under its Default Price Path (DPP). Consumer consultation will be essential.***

***ENL should address the following strategic decisions in its review:***

- (a) develop and implement a strategy to address the increasing incidence of equipment failure;***
- (b) ensure that the business delivers budgeted capex and maintenance opex, unless it can be demonstrated that any material underspend is prudent;***
- (c) develop and document a comprehensive vegetation management plan as part of the AMP and report annually on delivery of the plan; and***
- (d) set network reliability targets that ensure network performance meets the regulated limits.***

***In making the above recommendations, we have taken into account the information provided to the Commission by ENL1 that the ENL Board has requested that management completes a comprehensive review of network planning and operations (see Annex 1). We consider that our recommendations reinforce the ENL Board's approach. We consider it important that this review is completed and independently reviewed and that establishes a clear direction for the management of ENL's assets.***

As stated above, all of the Strata recommendations will be duly incorporated into or considered as part of ENL's on-going review of all aspects of asset management and operational strategies and practices so that future network performance is compliant with regulatory requirements.

### **3.6 Mobile Generators**

**ENL uses five 1MW and one 0.5MW diesel generators,...**

Should be corrected to **six 1MW.**

Also mention should be made of 1x 60KVA trailer mounted, (ENL owned) and 1x 250KVA truck mounted, (contractor owned) diesel generators that are used throughout the network to reduce the impact of planned and unplanned outages. The energy produced by these units is not paid for by any retailer.

### **3.9 Condition monitoring, assessment and reporting**

**We note that ENL's process is different to most others that we have observed at other EDBs. More commonly, inspectors are required to complete asset component checklists and assess the condition of every pole visited (whether a defect is identified or not) and return completed forms to the office. We requested samples of relevant documentation and it is interesting to note that a copy of an inspector's informal inspection log (handwritten on a diary page) was included. Clearly the completion of a pole-by-pole log is of value (at a minimum – and, of course, barring intentional deception – it demonstrates that an inspection has actually been carried out) and we wonder why pole asset component and inspection data is not routinely collected and entered into the asset data management system.**

For effectiveness and efficiency, (less records to complete and process), while records are kept of which lines and poles have been surveyed, ENL has chosen to have Inspectors report only on exceptions and/or defects found. Also ENL holds in the GIS, data on the attributes of overhead assets which is accurate and recent and hence does not at this time require updating.

**In contrast, Transformer Inspection Sheets (these forms have no marked reference number) provide highly detailed point-by-point inspection and testing checklists in addition to a detailed register of defects. These provide a rich set of asset condition information that can inform future asset expenditure planning.**

Transformer Inspection Sheets do have a reference number which is the unique identifier number assigned to the transformer that has been inspected. In the example supplied the unique number is B268.



#### **4.3.1 Planned Outages**

***We discussed these observations with ENL management. We gained the impression that ENL management closely monitors network performance on a continuous basis. We were told that the annual SAIDI target is treated as a budget of acceptable system minutes of interruption and the objective is to be close to, but not in excess of, the annual target at year-end.***

ENL confirms that it does closely monitor and manage quality performance so that every effort is made to avoid exceeding threshold limits are not exceeded.

***The GM expressed the view that the business is not rewarded by significantly reducing SAIDI below the threshold level in any year. In fact, the business is eventually penalised for consistent good performance because the target is likely to be revised downwards, as happened to ENL at the most recent threshold review. On the other hand, exceeding the SAIDI or SAIFI threshold levels results in a significant penalty to the business due to the resulting Commission investigation.***

Possible misunderstanding/misinterpretation? - ENL has no expectation of being rewarded for significantly reducing SAIDI below the threshold level in any year. ENL equally understands the consequences of exceeding performance thresholds but in no way considers any form of Commission investigation to be a significant penalty.

It is however noted by ENL that it appears that in a steady state network such as ENL the primary reason for the downward revision of the ENL SAIDI threshold target in 2005 was possibly the "good" performance achieved in previous years

***We perceive that ENL management feels it cannot win, unless it is fortunate enough to slide just under the threshold targets year after year. The performance year that triggered the current investigation was cited as a case in point – performance was on target until late summer weather-related unplanned outages (contributing more than 50 SAIDI minutes) triggered a SAIDI blowout.***

ENL is unsure where the *it cannot win feeling* came from (?), and as previously explained ENL does not manage and operate the network to merely *slide under the bar*.

***It is possible that ENL has deferred planned work to manage SAIFI to the threshold that also reduced SAIDI. This in turn would have affected the setting of the SAIDI and SAIFI limits resulting in a SAIDI limit that was unrealistic for the business to achieve.***

Planned work has only ever been deferred to manage SAIDI.



***We consider there is a strong possibility that the combination of a catch up in planned work and the reduction in SAIDI, when the limits took effect, have contributed to the subsequent breaches of the limits. The extent of this effect is difficult to quantify.***

As previously advised ENL has suggested that a high level of planned SAIDI associated with clearing a backlog of asset replacement work was contributory to the breaches in 2011 and 2012.

***We found that ENL has continued to consider the SAIDI and SAIFI limits as targets rather than 'not to be exceeded' limits. We consider that this approach should be reviewed and that ENL set appropriate internal performance targets that are below the regulated limits.***

ENL is well aware that SAIDI and SAIFI not to be exceeded limits as opposed to targets and does not manage or operate the network so as to reach targets. ENL uses the term "target not to be exceeded" as opposed to "limit" as it is a better use of words which helps focus Control Room staff on managing SAIDI and SAIFI performance.

As a steady state network ENL believes it economically appropriate to set quality performance service levels that mirror threshold limits, (just as revenue targets are aligned with allowable regulated revenue). To set and then achieve performance targets that are below the regulated limits implies that additional investment, (and increased costs to consumers), would be required. This course of action would be in contravention of the wishes of the majority of ENL consumers, (as confirmed via annual surveys undertaken).

With reference to ENL SAIDI performance for the 8 years since the introduction of the Quality Threshold regime in 2005 it can be seen that for six of those years actual SAIDI was well below the threshold limits– hence this evidences that ENL does not manage SAIDI so as to reach threshold limits.

When regulatory limits are as low as those that for ENL then a target and an not to be exceeded limit almost inevitably become the same thing.

#### ***4.3.2 Extreme Weather***

***While we consider that severe weather is a contributor to ENL's performance limit breaches, we do not accept it as the root cause. It is more likely that the adverse weather conditions are triggers that cause some other weakness in the system to fail. Clearly, as identified by ENL, tree contacts are a prime example of this effect.***

***Accordingly, we conclude that extreme weather is a trigger but not the cause of the breach of SAIDI limits.***

ENL has never considered *Adverse Weather* as the root cause of performance though it does recognise it as a significant contributor to network performance in two ways.

Firstly it is ENL's experience that *Adverse Weather* does result in network faults which are not necessarily related to *system weaknesses* or asset condition. Extreme winds and prolonged rainfall frequently results in ground stability issues which affect the performance of pole assets, just in the same way that ice build-up affects the performance of conductors regardless of their age or condition.

Extreme winds also cause network faults from blown trees and vegetation that originates well outside the area where ENL has any legal ability to control.

Secondly, *Adverse Weather* effects fault restoration times, (eg. flooded/impassable roads, helicopters cannot fly to remote sites) and hence contributes to outage minutes and SAIDI.

### **5.1.2 Asset Maintenance**

***ENL is increasing planned capex during the first half of the next decade. However, this appears to be driven by an anticipated system growth requirement but not asset renewal, with average expenditure for this category not materially different from that planned for the last four years.***

As detailed in ENL's AMP and shown in Strata's Figure 18 the increase in capex from 2013/14 to 2018/19 is in part resultant from an increase in growth related expenditure, (remediation of localised capacity constraint issues). The increase in capex is also associated with an increase in reliability and safety expenditure which will maintain/enhance network performance.

Consistent with a steady state network replacement capex for the same period is forecast at a constant level equivalent to depreciation.

***Our conclusion is that ENL's response to address the breaches in SAIDI limits is to increase spending on vegetation management. However, in doing this, they seek to remain within a level total planned opex budget. In addition, ENL intends to manage performance limits by assessment of asset age, condition and performance, while not committing more capex than the equivalent of annual asset depreciation.***

ENL has not forecast an increase in vegetation management expenditure. The level forecast is equivalent to that budgeted in previous years, (\$900k which represents 30% of the total annual maintenance spend).

### **6.4 Conclusions on ENL's actions to address performance issues**

***Strata considers that while ENL's increased expenditure on vegetation management will likely reduce the incidence of vegetation-related faults, network performance is likely to struggle to remain within the current SAIDI and SAIFI limits. Rural service performance is likely to reflect a continued adverse trend under the current asset management strategy.***

***If planned expenditure is increased, the additional costs incurred will need to be recovered through distribution charges. Because of this, consumers should be made fully aware of the issues and the trade-offs being committed on their behalf.***

***Strata has observed that the network assets are being required to perform within tight SAIDI limits, a constrained expenditure budget, to an older age, and with a trend of increasing incidence of equipment failure. This, combined with ENL's historical underspend of its budgeted capex, suggests that achieving SAIDI and SAIFI limits will remain a challenge.***

As part of the ENL Board of Directors direction to undertake reviews into all aspects of asset management and operational strategies and practices, the above points raised by Strata will be considered.

### ***7 Organisational capability***

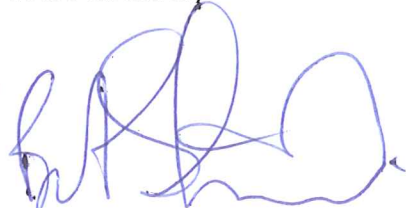
***Our major concern relates to strategic analysis and planning in the organisation. We consider that while the Eastland Group acts at a strategic level for the group, there appears to be a gap between this and the operational management at ENL. This gap relates to the strategic planning that needs to be applied to the ENL assets.***

***The GM's role includes management and operational components. He also has a governance role for Eastech. The day-to-day operational role has the benefit of bringing the GM closer to the people and assets but competes for time with the critical strategic planning aspects of the business.***

***Our view is that ENL should consider either reviewing the scope of the GM's role or providing additional support to the GM in the form of periodic strategic advice. Our preference would be the latter, as this would allow continuation of the benefits of having a GM who operates close to the coalface.***

As part of the ENL Board of Directors direction to undertake reviews into all aspects of asset management and operational strategies and practices, strategic planning and resourcing requirements will be considered.

Yours sincerely



Brent Stewart

General Manager Energy