

**Lord Consulting Discussion Submission on the Proposed New Innovation Incentives contained within the “Default price-quality paths for electricity distribution businesses from 1 April 2020 – Draft decision Reasons paper Date of publication: 29 May 2019”**

*We have proposed new incentives for innovation*

*X68 In addition to this equalising of incentives, to further promote innovation, we are also proposing a new targeted innovation recoverable cost.*

Lord Consulting welcomes the proposed inclusion of a new Innovation Incentives mechanism within the Draft Default Price-Quality Paths for electricity distribution businesses from 1<sup>st</sup> April 2020. Traditionally New Zealand Lines Companies tend to be late adopters, or laggards with respect to new technology adoption within the Electricity Distribution sector, preferring to see definitive benefits from others within New Zealand, before engaging in tentative trials themselves. Unfortunately, this leads to the situation where the benefits of new technology are very slow to permeate through the sector for benefit of end customers, often being years behind other equivalent markets overseas, if ever. To facilitate successful innovation as a business as usual practice, it is therefore a requirement of any mechanism to facilitate a ‘**cultural change**’ within the industry within NZ which places new technology investigation as a business as usual practice.

We believe that the intent of such a mechanism for cost recovery for new technology investment related projects is a positive approach from the Commission in focusing and facilitating the exploration of new technology, which, if applied successfully, will bring this culture change and ultimately the cost and/or performance improvement efficiencies to the end consumers as is in line with other regulatory mechanisms for New Technology Incentives overseas.

*X69 We have set the limit of the funding available at 0.1% of allowable revenue for the period, and a requirement for half the funding to come from a distributor’s regular opex or capex allowances.*

Under the proposal, at least 50% must be met by the lines company with the remainder ineligible for RAB inclusion. Traditional recovery for system monitoring and analysis technology under the ‘*COMMERCE COMMISSION Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses 30 August 2004*’ is defined at 15 years for the full value of the applied asset as per table 1 below. Practically, this mechanism favours larger projects, of which the full value can be entered onto the RAB and recovered over the 15 year life of the asset.

			Pole Type	
			Concrete	Wood
Outdoor Structure if not included above	Lot	**	60	45
SCADA and Communications Equipment	Lot	**	15	
Ripple Injection Plant	Lot	**	20	
DC Supplies, Batteries and Inverters	Lot	**	20	
Other Items		**	40	

Table 1: Extract from ‘*COMMERCE COMMISSION Handbook for Optimised Deprival Valuation of System Fixed Assets of Electricity Lines Businesses 30 August 2004*’ Zone Substation Equipment.

As previously mentioned, there is a culture of slow adopters for new technology projects within New Zealand, so larger project investments are rare. The proposed mechanism of 50% direct funding allowance on the total allowable revenue will undoubtedly assist lines companies in considering smaller 'trial' projects of new technologies.

Lord Consulting is concerned however, that the application of a cap of 0.1% of allowable revenue will prove restrictive and quite possibly a disincentive for the majority of lines companies included under the Default Price Control regime.

Typically for electricity infrastructure projects, the actual technology purchase price equates to approximately 40% of the total budget, with the remaining 60% being design, review and implementation costs.

**Table X1 Proposed net allowable revenue and rates of change**

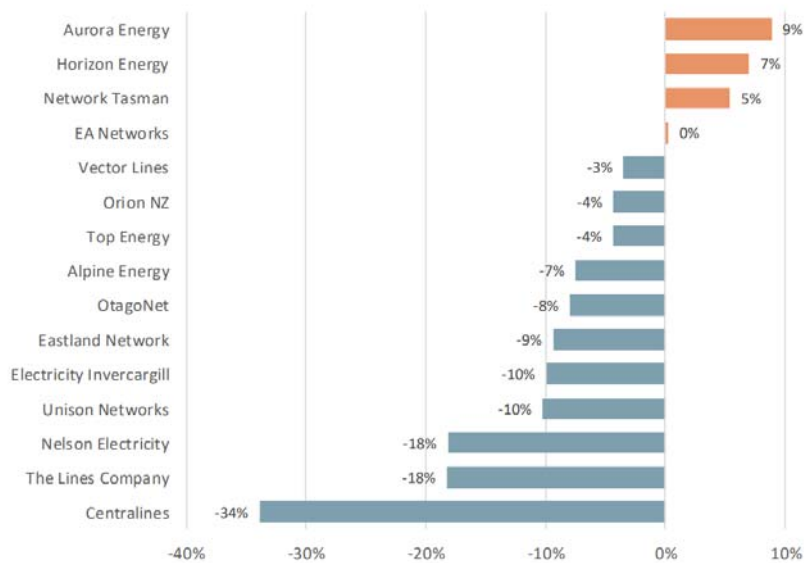
Distributor	Allowable revenue in 2020/21 (\$m)	Rate of change relative to CPI
Alpine Energy	45.36	–
Aurora Energy	72.03	+8.90% <sup>2</sup>
Centralines	9.40	–
EA Networks	37.70	–
Eastland Network	25.06	–
Electricity Invercargill	12.29	–
Horizon Energy	25.01	–
Nelson Electricity	5.59	–
Network Tasman	28.78	–
Orion NZ	161.17	–
OtagoNet	25.08	–
The Lines Company	33.94	–
Top Energy	42.19	–
Unison Networks	102.25	–
Vector Lines	403.35	–

Table X1 above defines the proposed net allowable revenue for each non exempt distributor within NZ. With the price cap set at 0.1% of allowable revenue, this provides the following investment allowances for each EDB:

	Allowance		Allowance
Vector	\$403,350	Network Tasman	\$28,780
Orion	\$161,170	OtagoNet	\$25,080
Unison	\$102,250	Eastland Network	\$25,060
Aurora Energy	\$72,030	Horizon Energy	\$25,010
Alpine Energy	\$45,360	Electricity Invercargill	\$12,290
Top Energy	\$42,190	Centralines	\$9,400
EA Networks	\$37,700	Nelson Electricity	\$5,590
The Lines Company	\$33,940		

The experience of Lord Consulting demonstrates that for typical 'new technology devices' or the like, average costs for the purchase and install of new technology are within the \$80k to \$120k per device commissioned, with equipment purchase costs being in the region of \$20k to \$40k. This would limit all but Vector, Orion and Unison from realistically investing in new technology trials under this mechanism. Even within these three distributors, trial projects would be limited to a very small size, across a limited number of sites, which from our experience is detrimental in delivering engagement from the distributor and provision of both qualitative and quantitative data for future justification of further investment potential.

**Figure X9 Proposed changes in allowable revenue from 2019/2020 to 2020/2021**



As can be seen from Figure X9 above, all the three distributors who could feasibly utilise the allowance, have proposed allowable revenue reductions of between 3% and 10%. When faced with a revenue reduction and the need to rationalise expenditure, it is invariably the case that the distributor seeks to reduce planned Opex expenditure in the form of a reduction in operational maintenance and overhead expenditure costs. It is also highly likely that as 50% of the proposed new technology allowance will be required to be covered by the distributors regular opex or capex requirement, then allocation of opex for technology trials will be deferred indefinitely.

In addition, as the revenue and investment strategy for each distributor is locked in for the 5 year period under the DPP, the distributors are unlikely to budget for anything further than an initial trial project within the DPP period. This will in fact act to disincentivise the wider adoption of new technology projects within New Zealand within each DPP reset period.

*X70 We have set this conservatively, as there will be only limited scrutiny over how the allowance is spent. Circumstances where a distributor wishes to undertake substantial changes to the way it manages its network are more appropriately considered as part of a CPP application. A CPP allows us the ability to apply greater scrutiny, and to vary the way the price-quality path functions to account for innovative approaches.*

Whilst Lord Consulting understands and accepts the intent of the Commission to facilitate some form of incentive for new technology trials within the electricity industry, without opening the door for frivolous over-expenditure under the banner of 'new technology', we feel that in this case the mechanism has been set too restrictively to successfully work in practice.

The provision of an incentive for new technology trials should encourage a distributor to explore ways in which both innovation and technology can be used to deliver tangible customer benefits, either financial or operational performance, on their networks. They are, by their inherent nature, investigative and therefore not major strategic change projects. Technology trials and innovation at the initial stages are therefore not generally of a size which would require a distributor to make a 'substantial change' in the way that it operates. It is not something that, in isolation, would be the primary reason for the choice of a preparation of a CPP application. It may be included within a CPP, but would generally be a very small section, or have the documented evidence from a prior trial to support the larger investment. The only practical mechanism for investigation of new technology benefits therefore needs to sit within the DPP framework and not rely on the possible use of a CPP.

To successfully drive innovation for the benefit of the end customer, it has arguably been demonstrated in other jurisdictions that the regulatory body cannot 'opt out' of providing scrutiny and guidance over expenditure that is applied to new technology. Lord Consulting is currently working with three UK DNO's on a new technology innovation trial project, facilitated as part of UK OFGEM RIIO NIA funding scheme. From a supplier perspective, whilst a rigorous process, the engagement of the UK DNO's under the NIA has been substantially greater than we have thus far experienced within the New Zealand industry.

OFGEM believe that innovation is a key element of the RIIO (Revenue = Incentives + Innovation + Outputs) model for price controls. The RIIO framework provides strong incentives for Network Licensees to innovate as part of normal business. However, certain Research, Development, and Demonstration Projects are speculative in nature and yield uncertain commercial returns. Over time, OFGEM expect the incentives within the RIIO framework to encourage Network Licensees to innovate as part of business as usual. In the meantime, they have introduced a time-limited innovation stimulus package within the RIIO framework to provide additional funding to kick-start a **cultural change** where Network Licensees establish the ethos, internal structures and third party contacts that facilitate innovation as part of business as usual practice.

The innovation stimulus under RIIO consists of three measures:

1. A Network Innovation Allowance (NIA) – to fund smaller innovation Projects that will deliver benefits to Customers as part of a RIIO-Network Licensee's price control settlement;
  2. A Network Innovation Competition (NIC) – an annual competition to fund selected flagship innovative projects that would deliver low carbon and environmental benefits to Customers;
- and

3. An Innovation Roll-out Mechanism – to fund the roll-out of proven innovations which will contribute to the development in GB of a low carbon energy sector or broader environmental benefits.

Lord Consulting are currently working within the first phase of this innovation incentives mechanism, within three of the larger UK DNO's, who have collaboratively submitted a joint application to trial a new technology project on their systems. One of the key features of the scheme, is that all project documentation, experiences, outcomes and findings are freely available to all other UK DNO's, which facilitates engagement and information sharing.

More details on the scheme can be found at:

[https://www.ofgem.gov.uk/system/files/docs/2017/07/final\\_elec\\_nia\\_gov\\_doc\\_v3\\_0.pdf](https://www.ofgem.gov.uk/system/files/docs/2017/07/final_elec_nia_gov_doc_v3_0.pdf)

### **Summary and Recommendation**

1. Lord Consulting are highly supportive of the introduction of a mechanism to incentivise the exploration and trial of new technologies for the end benefit of connected customers.
2. In our view, any new technology incentives scheme should encourage and should facilitate:
  - a. A clear identification of the goals of the implementation of the new technology;
  - b. A view that the technology provides tangible end benefits to the customers, not just seen as a potential investment strategy for future revenue;
  - c. An understanding that new technology/R&D investigation is both a business as usual practice and a legitimate cost of conducting business, which should be a recoverable expense.
  - d. A financial mechanism for the recovery of costs associated with new technology investigation;
  - e. A realistic target project size (delivered and commissioned) of at least NZ\$500k to allow flexibility for sufficient mass and engagement to be achieved for tangible results.
  - f. A governance overview on the process by which the cost/benefit justification has been conducted;
  - g. The view of new technology investigation being for the benefit of the whole industry within NZ, not just for the local customers of that particular distributor;
  - h. Collaboration between utilities to share information and experience of new technology initiatives;
  - i. Drive a culture change for new technology investigation as a business as usual practice;
  - j. Ultimately, to deliver consistent and continuous improvement financial and performance benefits to the end customer.

3. In our opinion, it is not feasible for the Commission to deliver the outcomes above facilitated by a mechanism which has limited scrutiny, controlled only by a limited annual individual budget allocation. The proposed approach and financial limits are likely to disincentivise collaboration and sharing of R&D/New Technology experience between distributors, whilst the allocated investment allowance will restrict all but the largest distributors from effectively trialling new technologies on their networks.
  
4. It is the recommendation of Lord Consulting that the Commission should consider two alternative options. Either:

- a. Facilitate a mechanism similar to the New Investment Agreement (NIA) process within the UK RIIO regulation which does not specify a financial limit, but allows for Lines Companies to either singularly or collaboratively apply for provision within their pricing mechanism to fund trials of new system technology which would potentially directly lead to customer cost savings or performance improvement.

As with the UK, any grant under this scheme would be fully scrutinised to provide some risk/reward for the company concerned to ensure that outcomes achieved meet a minimum projected standard. Encouragement should be made for lines companies who choose to work together to share experience and information.

This would then disincentivise expenditure on non essential activities and encourage investment in technology aimed specifically at delivering end customer tangible benefits.

- b. Extend the current allowance to a minimum of 2.5% for individual projects or 2% for collaborative (inter distributor) projects, within the pricing mechanism for distributors to use exclusively for R&D and trialling new technology. This would provide sufficient investment potential for each of the distributors to seriously consider new technology investment as part of their business as usual process.

	\$,000		
	0.1%	2.0%	2.5%
Vector	403,350	8,067,000	10,083,750
Orion	161,170	3,223,400	4,029,250
Unison	102,250	2,045,000	2,556,250
Aurora Energy	72,030	1,440,600	1,800,750
Alpine Energy	45,360	907,200	1,134,000
Top Energy	42,190	843,800	1,054,750
EA Networks	37,700	754,000	942,500
The Lines Company	33,940	678,800	848,500
Network Tasman	28,780	575,600	719,500
OtagoNet	25,080	501,600	627,000
Eastland Network	25,060	501,200	626,500
Horizon Energy	25,010	500,200	625,250
Electricity Invercargill	12,290	245,800	307,250
Centralines	9,400	188,000	235,000
Nelson Electricity	5,590	111,800	139,750

The allowance would be a 'use it or lose it' mechanism, whereby it would ideally be applied for as part of the AMP planning process, and be subject to approval as part of the existing DPP input methodologies and reset process. Actual investment would be approved based on the projected performance improvement, capital/operational savings and overall tangible value to the NZ electricity distribution industry. Savings not realised or delivered by the utilities could then be re-adjusted within future DPP resets to provide a 'payback' provision for customers. In this way, there is a defined 'risk/reward' for the distributor, whilst at the same time being a net zero 'risk' for the connected customer.

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