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Firstlight Network submission on Default Price-Quality Path Draft Decision

Firstlight Network (Firstlight) is pleased to make this submission on the draft decision for the 2025-2030 Default Price-Quality Path (DPP4) for Electricity Distribution Businesses (EDBs). Firstlight is a member of Electricity Networks Aotearoa (ENA), and we support the ENA's submission. Firstlight is a part of Clarus, a group of energy companies.

We acknowledge that the Commission faces a unique challenge at this reset to meet the growing need for expenditure on electricity lines over the coming years within the low-cost framework of the DPP. The draft decision resolves this challenge in various ways (such as capping increases in total opex and capex and applying proportionate scrutiny to step changes in expenditure).

Firstlight faces a unique set of challenges over the coming years

Firstlight is the only EDB to have changed ownership during the course of DPP3, with the network having been sold by Eastland Group (a community trust-owned organisation) to Clarus. This change has brought new perspectives on asset management, investment, and network reliability for the business. As a result, historical performance and approaches do not provide a good guide to the future.

Firstlight is facing several challenges that require a change to the management and investment approach taken by the previous owners of the network. These challenges include an asset age profile, forestry corridors that pose increased risk of vegetation related outages, [REDACTED] and the need for more asset inspections and maintenance.

How we intend to respond to these challenges during the DPP4 period

Our preference is to address these challenges within the allowances provided under the DPP (rather than apply for reopeners during the period or apply for a Customised Price-quality Path). This will allow us to focus the resources of our network team on addressing underlying issues, rather than making regulatory submissions.

In summary, we believe that:

- Our main challenge is to meet reliability expectations and regulatory quality standards within the expenditure allowances provided under the DPP. Firstlight has breached unplanned SAIDI limits in both of the past two years due a combination of more extreme weather conditions, increased vegetation, and asset failures.
- Our regulatory year 2024 (RY24) AMP responds to these challenges and plans to bring outages back within regulatory limits. However, the expenditure allowances in the draft decision do not fund all of the planned work presented in our RY24 AMP. In this submission we provide further information on expenditure presented in our RY24 AMP that we believe is a clear priority for the next five-year period.
- Historical spending is not an appropriate starting point for forecasting future Firstlight expenditures. Moreover, identifying an efficient base year is crucial when using the base-step-trend method for opex forecasting and there must be an opportunity to make reasonable adjustments to base year opex to provide for the specific requirements facing our network. This approach will help ensure that the starting point for the forecast is representative of efficient operational costs that we will incur.

Structure and key points made in this submission

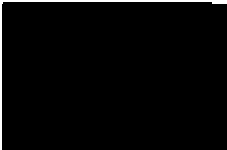
This submission is divided into three parts:

- Part A: Capital expenditure
 - Asset Replacement and Renewal (ARR) and System Growth through DPP4
- Part B: Operating expenditure
 - Service Interruptions and Emergencies (SIE), Routine Corrective Inspections (RCI) and Vegetation Management through DPP4
- Part C: Regulatory approaches
 - Alternative methods of approach for Firstlight through DPP4

Contact details

Firstlight would welcome the opportunity to meet with the Commission to discuss any points made in this submission. To arrange this meeting or if you have any questions, please contact me via email at [REDACTED]

Yours sincerely



Saba Malik
Regulatory & Policy Manager

Part A: Capital expenditure

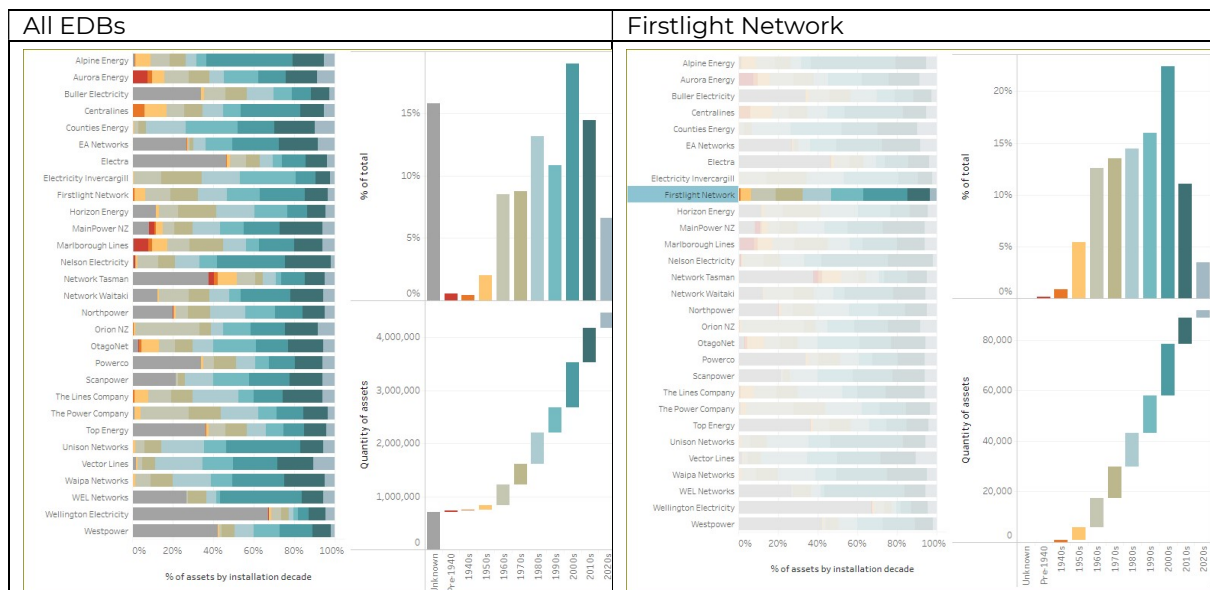
Asset Replacement and Renewals (ARR) and Reliability, Safety and Environmental (RSE)

Firstlight exceeded our reliability limit for unplanned SAIDI in RY2024 and we are currently progressing a report into that breach. The report (supported by investigations from PBA Consulting Group) states that: "It is imperative that ARR and RSE are not sacrificed for any System Growth to improve the asset base of the network to mitigate future breaches".

The expenditure for ARR proposed in our RY24 AMP is required to support asset replacement in the forecast period as stated in schedule 12a

<https://www.firstlightnetwork.co.nz/assets/Documents/FLN-AMP-Update-2024.pdf>.

The graphic below shows that Firstlight has a similar asset age profile to other networks (all EDBs) with Firstlight's profile showing a slightly enhanced peak in the period 2000-2002 where we understand that the previous owner undertook a programme of accelerated pole replacements.



Graphic source [Performance accessibility tool - New Zealand electricity distributors]

The recent acquisition of Firstlight by Clarus has led to an improvement in asset health forecasting. This was previously derived from static data (ETL) and workbook linking. Our asset health forecasts based on the Distributed Network Operators (DNO) methodology are now generated directly from our Maximo data warehouse (through Power Query) supported with Esri (built and natural environment variables) and informed from ODK (field inspection of asset fleet). These system changes and enhancements have identified expenditure needs that were previously overlooked.

System Growth

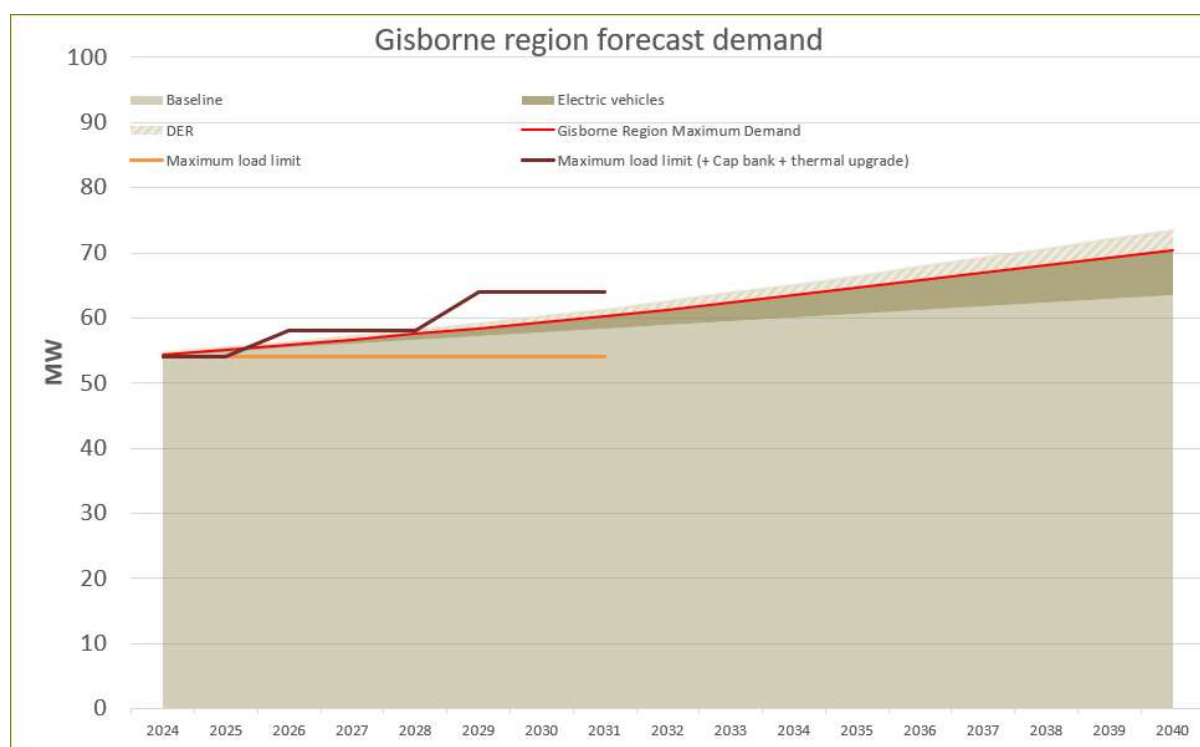
Firstlight requires an uplift to our capex allowance for DPP4 (against the draft decision) to support system growth projects.

The draft capex allowance for DPP4 would materially constrain our ability to invest in required system growth projects during the regulatory period. These growth projects are associated with:

- Increasing the transmission line capacity into Gisborne.
- Providing peak consumption capacity.
- The electrification of a large customer's processes in Gisborne.
- Increasing Wairoa substation transformer capacity.
- Replacing under capacity transformers and conductors.

Reducing our allowance below our planned expenditure will cause a bottleneck of work and load constraint issues, with growth-related work deferred into the next DPP period. We expect that this will result in increased capacity risk and will reduce our ability to support customer needs.

The graph below shows that existing capacity is closely matched with peak demand in the region. We expect peak demand to grow (due to a mixture of general growth and the electrification of transport), and the growth projects we intend to complete will enable us to meet that growth.



Based on the draft decision capex allowance, the following growth projects are potentially deferred.

Project	RY 2026 (millions)	RY 2027 (millions)	RY 2028 (millions)	RY 2029 (millions)	RY 2030 (millions)
Gisborne capacity strengthening (capacitor banks)	\$0.75				
Gisborne capacity strengthening (thermal upgrade)	\$0.40	\$2.23	\$2.23	\$2.23	\$0.50
Massey substation	\$1.60	\$1.60			
Wairoa substation		\$0.50	\$0.50	\$2.00	\$2.00

Based on our asset management strategy, system growth capex forecasts reflect expenditure drivers that are aligned to two distinct phases in the AMP planning period. During the upcoming DPP4 period we will primarily concentrate on bolstering the security and resilience of the network to respond to existing risks and constraints.

- **Gisborne capacity strengthening (capacitor banks and thermal upgrade).** The 110kV lines into Gisborne (from Tuai) are rated at 55.5MW (two circuits) Firstlight supports demand peak supplied from GXPs through diesel generation injection and shedding controlled load. Electrification and peak increases through DPP4 are expected to exceed within the DPP period.
- **Massey substation.** a large customer has applied to increase load by 1 MVA annually over two years. This load increase (associated with facility improvements and alterations to process heat) will exceed the carrying capacity of the existing 11kV circuits.
- **Wairoa substation.** The Wairoa substation transformer capacity is insufficient to meet our long-term demand forecast. Reconfiguration of the site is required with work planned between RY 2025 and RY 2033.

Electrification and peak demand increases through DPP4 are expected to lead to peak network demands that exceed the existing capacity within the DPP period. The maximum load limit (shown in the graph above) illustrates the planned capacity strengthening (thermal upgrade to lines and additional capacitor banks) required to ensure that growth is met.

Part B: Operating expenditure

Firstlight requests an uplift to our opex allowance for proposed DPP4 to support increased RCI (targeted inspection program) and SIE (provision of additional generation support) to address future reliability risks. We are planning additional permanent generation assets on poorly performing feeders to address historic issues and have implemented new control room procedures to track avoided minutes due to generation.

Routine Corrective Inspections (RCI)

Throughout the first year of owning Firstlight, we noticed a lack of targeted inspection programs with recent breach report noting that we have inspected about approximately 50% of our wooden pole's assets since 2019 (noting that this figure is likely higher due to replacement poles being predominantly concrete).

To ensure we implement an effective program to renew and replace these assets and mitigate further breaches of quality standards, we need to change our inspection program to a more targeted risk-based approach, increase the use of technology such as drones and LIDAR and increase the scope of our inspections to include conductors, and improve inspection on cross-arms and insulators. We are concerned that the draft DPP allowance could prevent the identification of potential equipment failure and inhibit the program of work we have developed.

Inspections are expected to increase and although they will be targeted with more to inspect than the historical inspections cycles.

Firstlight notes that over the past year (RY 2024) RCI has been lower than forecast due to the focus being on SIE (replacing broken conductors and poles from land movements) and limited resources to complete work on sub-transmission systems due to the impact of the two cyclones.

Not allowing a step change increase in RCI risks constraining inspection resources to less than required to enable the planned increased volume of asset inspections. This has a potential flow on effect onto our ARR program aimed at limiting further SAIDI breaches.

System Interruptions and Emergencies (SIE)

From April to December 2023, the network suffered from 46 slip events, resulting in 101.07 SAIDI minutes (or 21.5% of total raw SAIDI minutes). Sustained raised groundwater has a longer-term impact as the bases of wooden poles and cable joints are exposed to higher moisture levels. This is of great importance when considering the age of these asset fleets.

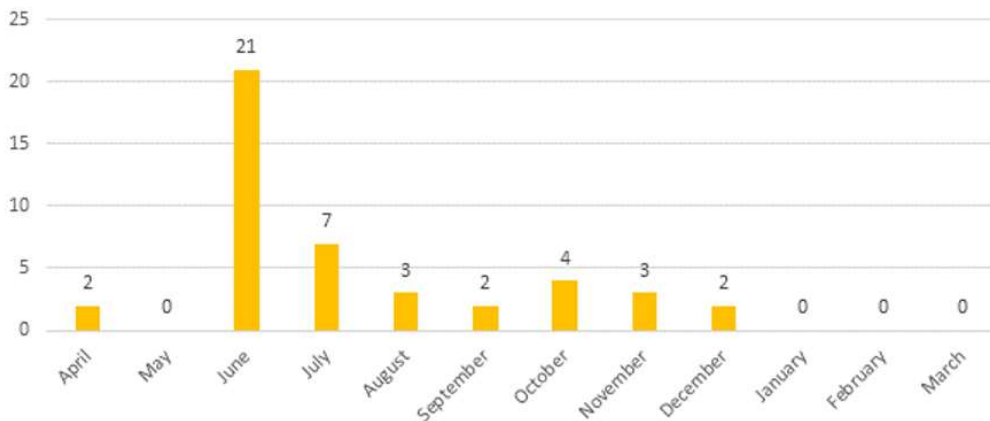
With the current condition of the regions and anticipated ongoing weather events, we are expecting to maintain a higher level of SIE due to ongoing ground instability and moisture retention, deploying additional call out staff, installing temporary generators and the extra time it takes to travel the region due to damaged roading networks.

The SIE related to ground movement is generally higher than historical SIE, this is because we are installing and maintaining temporary generators on feeders to ensure our consumers have power while we investigate new route options and gain consent from landowners and council for relocations where it is required.

Insufficient SIE expenditure will put us in a precarious position where we need to overspend on SIE to maintain power to consumers, taking spend away from RCI which is needed to inform the ARR program and ultimately the health and resilience of the network.



Figure 9: Number of unplanned interruptions per month caused by [slips](#)



In the draft decision, the Commission notes that a group of suppliers in a particular region of New Zealand may consider that they are increasingly susceptible to the impact of adverse weather events and likely to incur more resilience-related expenditure relative to DPP3. In this scenario, even though the step change is not relevant to all EDBs on the DPP, it may be still efficient to assess a step change application for the affected group of EDBs.

Immediately after the Gabrielle event Firstlight contacted Territorial Local Authorities (TLA) to begin building understanding of the regional impacts including long-tail effects on geology that may impact distribution assets. Liaison with TLA supports access to national datasets and analysis including the recently delivered “*Gisborne Morphometric Landslide Susceptibility and Connectivity Model*” (prepared by Landcare Research)”. Asset planning is actively building additional liaison to further inform our asset resilience.

Vegetation Management

Out-of-zone trees were a contributing factor to us exceeding our SAIDI limits in RY 2024. 57.98 raw SAIDI minutes were attributable to trees outside the growth limit zone falling into our lines (refer supporting graphics in **Appendix A**). Extreme wind and torrential rain were both contributing factors. A new vegetation plan was developed in RY23, this will include the deployment of LIDAR over the network. It is expected that the LIDAR will increase our requirement to clear vegetation across our network, this is due to the large area our network supplies, and the volume of forestry that has been planted in recent years.

A change in legislation of clear to sky will have serious impacts on the feeders that operate in forestry corridors enforcing more cost onto the network to absorb into the current opex allowances. In AMP 2024 we identified that both in-zone and out-of-zone vegetation generated contacts with our asset fleet, with this issue particularly challenging in areas with extensive forestry. Over 75% of vegetation related SAIDI is due to out-of-zone trees suggesting that regulatory changes are required to effectively address these outages. Revision of the Regulation may increase EDB ability to address increased clearance but without specific revisions and implementation dates we have not factored this into our vegetation budget in DPP4.

[REDACTED]

|

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

|

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Part C: Regulatory approaches

Historical spending is not an appropriate starting point for forecasting future Firstlight expenditures

Following the acquisition of Firstlight by Clarus it has become evident that the network infrastructure has not seen the investment needed to maintain reliability. As a result, we now see increased interruptions due to equipment failures. This situation necessitates a shift in operational focus towards more routine corrective actions and inspection expenditures, alongside increased spending on asset maintenance to ensure reliable service delivery. Consequently, the operational expenditures (opex) incurred in previous years do not accurately reflect an efficient base level for future forecasting. Hence, making adjustment to the base year opex for Firstlight becomes imperative to address the unintended consequences stemming from past underinvestment, allowing for a more realistic projection of ongoing operational needs and sustainable service improvements moving forward.

The Commission intends to deal with less certain changes through reopeners and CPPs and notes, “while we accept that over-reliance on reopeners may drive an increase in regulatory costs, we consider our draft decision (where more certain changes have been dealt with via opex allowances, and reopeners or CPPs will deal with less certain or more significant changes) strikes a balance between regulatory burden, cost impact on consumers, and the benefits of regulatory flexibility.”

The Commission notes that EDBs can use reopeners and/or apply for a CPP if the default settings in DPP4 are not appropriate. But these mechanisms have both time and cost implications associated with them, which should be recognised. Both mechanisms require time and resources from EDBs and the Commission to prepare and process. Ultimately, it is consumers who face the cost of this process (including the added cost of any inefficiencies in the processes), and who bear any delay. This is particularly true where existing risks and constraints need to be addressed. We strongly believe that our resources are best focused on improving network reliability at this time.

Capping step changes at 5% of total opex allowances is not appropriate for Firstlight

Firstlight agrees with the Commission's decision to allow step changes in opex for cost increases in areas such as insurance, LV monitoring and SaaS. However, capping step changes in opex allowances at 5% of total opex allowances is not appropriate for Firstlight for at least two reasons:

- Firstly, such a rigid cap does not account for the unique and potentially significant variations in operational needs of our network. [REDACTED]
[REDACTED]
[REDACTED]
However, our currently allowed step changes [REDACTED] exceed the 5% cap already. As described above, we also expect our SIE costs to be significantly higher than historical levels.
- Secondly, capping step changes at 5% of total opex is problematic for small EDBs due to the nature of certain expenses which can disproportionately impact overall opex. This includes step changes for SaaS, [REDACTED], LV monitoring, and RCI. These costs might represent a small percentage of total opex for larger EDBs but can constitute a significant portion of smaller EDBs opex, potentially exceeding a 5% cap. This is supported by the fact that the largest EDBs (Vector and Powerco) have not exceeded the 5% cap in the draft decision despite requiring 3-4 of the step-change categories.

While a 5% cap on opex step changes might seem reasonable for larger EDBs, with diverse and scalable expenses, it fails to consider the disproportionate impact on small EDBs. Small EDBs need a more flexible approach to step changes so they can maintain and improve their operations

effectively. We urge the Commission to either remove the cap or allow an adjustment to the cap for small EDBs with a total DPP4 opex allowances of under \$100M.

Firstlight's circumstances warrant an adjusted base year

The other way to avoid restricting necessary opex for our network is to adjust the base year used in the base step-and-trend model. Firstlight requests that the Commission uses a higher base year amount to determine our opex allowance during the DPP4 period. This request stems from the unique circumstances of the recent acquisition of the network from Eastland Group and our ongoing implementation of new asset management practices. In our view, planned opex for FY25 is a better representation of a prudent base amount for the future.

Firstlight is still in the process of analysing and modelling the network's condition and performance to inform refined asset management approaches. This transition period means that the current base year does not accurately reflect the steady-state opex requirements of the network. We have identified areas where increased maintenance is warranted (e.g. overhead conductor inspections) and where asset condition means increased susceptibility to weather events requiring increased fault response expenditure.

The above needs necessitate increased operational activities to address the underlying issues and ensure assets perform safely and reliably. This includes avoiding future breaches of our SAIDI and SAIFI limits.

Firstlight believes increased preventive maintenance and vegetation management are required to ensure prudent outcomes and maintain network reliability and safety. This approach aligns with good electricity industry practice and the Commission's principle of "no material deterioration" in quality standards. While it necessitates higher opex during DPP4, it has the potential to reduce long-term costs to customers by preventing asset failures, supporting improved interventions (including through better asset data), and reducing unplanned outages. We believe this would lead to long-term benefits through improved reliability, reduced reactive maintenance, and potentially deferred capital expenditure, thus aligning with the long-term interests of consumers.

The transition following an acquisition represents a unique circumstance that is not well matched to a 'one-size-fits-all' DPP base-step-trend approach.

Moreover, a base year for Base-step-trend model should be a true reflective of a typical year of operation without inconsistencies in expenditures and reprioritisation of projects due to a Catastrophic event response and remediation. We acquired the network when it was heavily impacted by Cyclone Gabrielle, which was the deadliest cyclone and weather event felt in New Zealand since Cyclone Giselle in 1968. During Gabrielle, flood waters breached stopbanks across Hawke's Bay. In our region, we had rivers breach and significant land and network damage. Consequently, we had significant power outages on our network. Dealing with the immediate as well as long-tail impacts of Gabrielle meant that RY2024 was not a typical year of operation for the following reasons:

- We modified and reprioritised our work programs to deal with the network damage and remediate Gabrielle impact. This included deferral of routine projects and increase in inspections, corrective maintenance and repairing activities to manage the cyclone impact.
- We updated our routine maintenance programs to reflect the state of our network post-Cyclone Gabrielle.

Consistent with making adjustments to achieve an efficient base year under an expenditure proposal, this would justify a one-time adjustment to the base year to better reflect Firstlight's opex requirements during DPP4 and beyond.

High correlation between opex drivers in the Commission's opex forecasting models

We are concerned over the use of lines and ICP as predictors in a linear model due to their correlation, which appears to introduce multi-collinearity problems into the regression. This multicollinearity undermines the purpose of the model by inflating the variances of the coefficient estimates and potentially leading to unreliable and unstable results.

We believe that opex forecasts should reflect efficient and prudent expenditure for managing and operating the asset base and maintaining quality of supply and reliability. We encourage the Commission to explore using RAB as a driver for opex forecasting since RAB directly measures the assets that must be managed to maintain quality of supply and reliability. Using a RAB opex driver may help solve multi-collinearity issues with the model and is also consistent with how industries often estimate opex (i.e. as a proportion of the capital invested).

Moreover, the data under consideration is hierarchical, in simple words the observations are not independent. This hierarchical structure leads to non-independent residuals, as confirmed by residual plots against fitted values showing clear clustering patterns. Additionally, a Durbin-Watson test indicated the presence of residual autocorrelation, further validating this concern. Therefore, we encourage the Commission to explore other models, e.g., a Linear Mixed Model (LMM) to account for the clustering effects of the EDBs and to produce more accurate estimates.

Another critical issue is the exclusion of data from 2013 to 2017 in the model-building process which limits the opportunity to test the model fitness on out-of-sample data points. Using the full available dataset would enhance the robustness and reliability of the model and the model fit can be tested on recent years data. We believe that the Commission should use full data set so that there are sufficient observations to test an out of sample fit of the model. Alternatively, we recommend that the Commission uses RY2018 to RY2022 data to fit the model and test the model fit using RY2023's data.

Revenue smoothing mechanism and wash-up recovery should continue into future periods

Firstlight supports the Commerce Commission's proposed revenue smoothing mechanism in principle and believe a few improvements would make it more workable for DPP4 and future periods.

The investment by Clarus necessary to build resilience and capacity into the Firstlight will increase costs to consumers. Whilst the revenue smoothing mechanism delays our recovery of allowable revenues, we consider it provides a reasonable balance between minimising price shocks and pricing volatility while still returning allowed revenues to EDBs over time.

With the introduction of the smoothing mechanism however, it is important to consider how any accrued wash-up account balance will be recovered in DPP4 and future DPP periods. We agree with the concerns raised by ENA around the ability to recover the accrued washup account balance in the first year of the DPP4 regulatory period. With the possibility of the wash-up amount accruing for three years it will potentially increase price volatility, the very thing the Commission is trying to avoid. We support the small amendment to the wording in the input methodologies proposed by ENA to overcome this issue.

Our second concern relates to having confidence over how any accrued washup account balance in DPP4 will be recovered in DPP5. With a proposed revenue smoothing limit of 10% expected to bind EDBs 4 out of 10 years¹, it is essential that there is a clear process to recover any accrued wash-up account in the next DPP period.

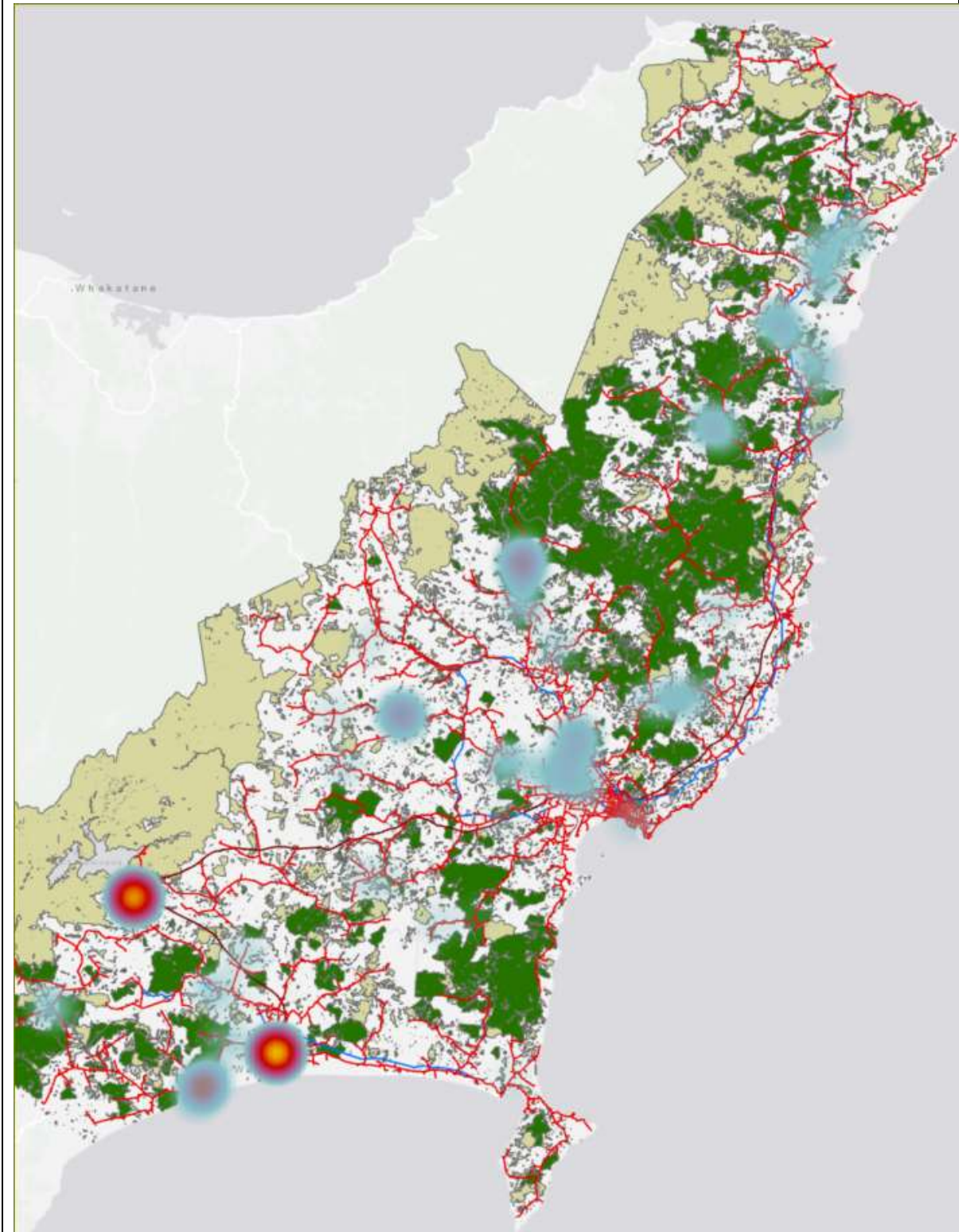
¹ Draft Decision.....F163, p444

The draft decision for DPP4 is to set the starting price for EDBs such that full recovery of BBAR and previously accrued wash-up balances [from DPP3] is achievable². We recommend that where revenue smoothing be applied in future price resets, this same approach be applied to minimise the risk that revenue recovery be deferred for extended periods.

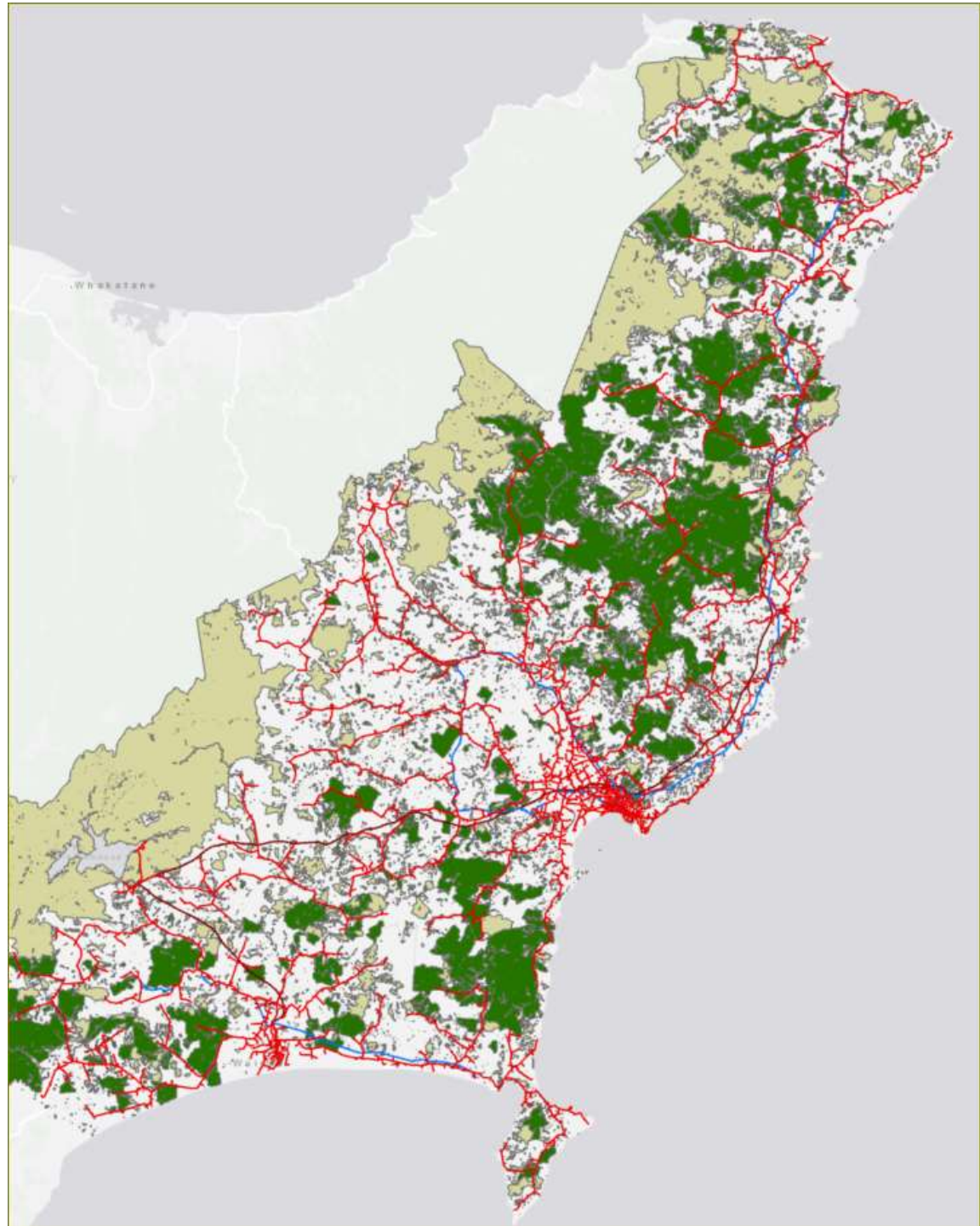
² Draft Decision.....4.42, p83

Appendix A: Vegetation maps

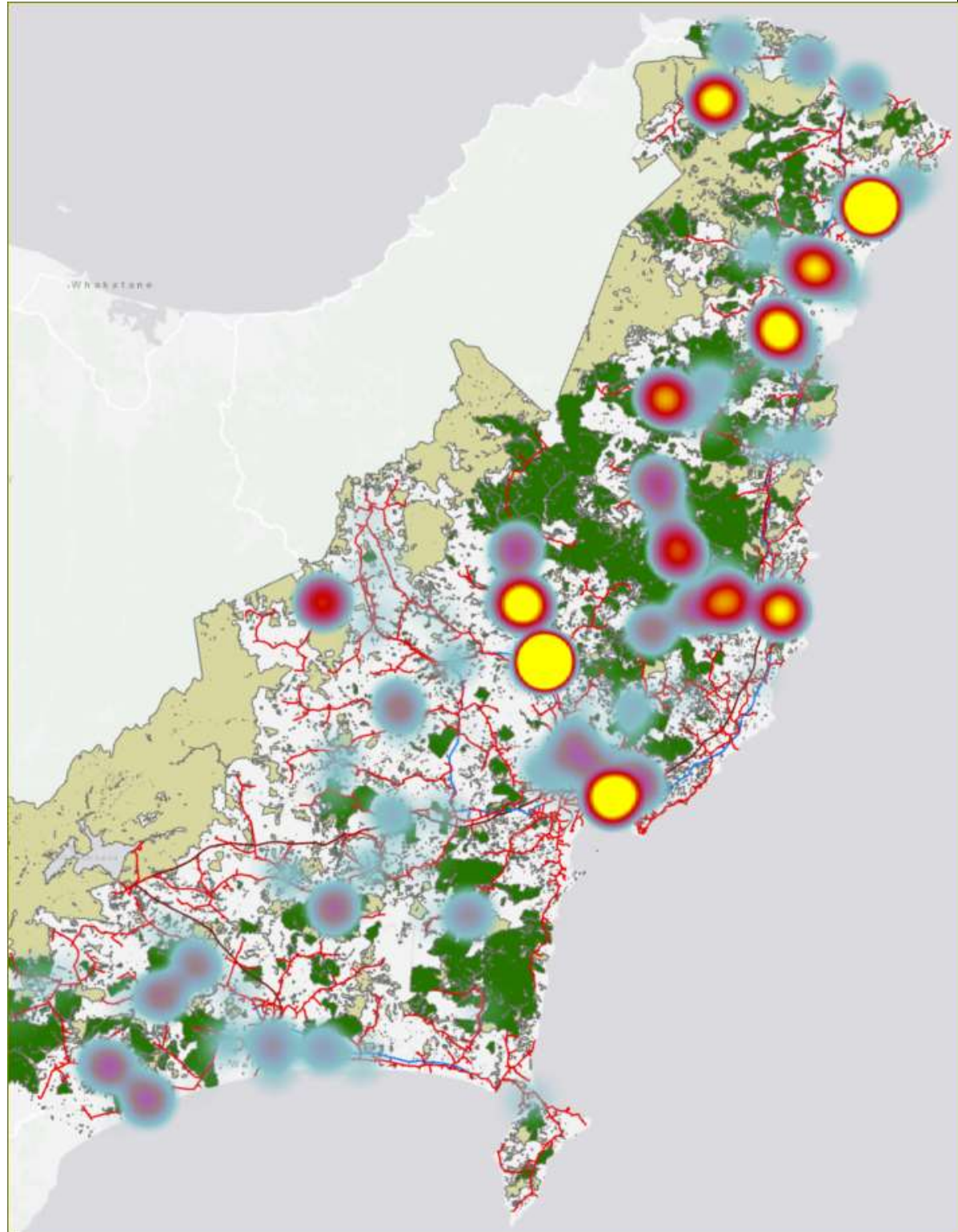
Region map showing lines (by voltage) overlaid on forestry and native canopy layers (forestry and native canopy coverage source LINZ) overlaid with heat map illustrating **In Zone** tree contacts (three year data range)



Region map showing lines (by voltage) overlaid on forestry and native canopy layers (forestry and native canopy coverage source LINZ)



Region map showing lines (by voltage) overlaid on forestry and native canopy layers (forestry and native canopy coverage source LINZ) overlaid with heat map illustrating **Out of Zone** tree contacts (three year data range)



Region map showing lines (by voltage) overlaid on forestry and native canopy layers (forestry and native canopy coverage source LINZ) overlaid with heat map illustrating **In Zone** tree contacts (three year data range)

