2022 UPDATE

WEL Networks Asset Management Plan

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Our Vision

To create and support an ***innovative and sustainable energy future***

Our Purpose

Enabling our ***communities to thrive***

FOREWORD

3 March 2022

Dear Stakeholders,

Thank you for taking the time to review the WEL Networks Limited 2022 Asset Management Plan (AMP Update).

The 2022 AMP update is an overview of our capital and operational expenditure over the next decade. It outlines the investment rationale and performance measurement of our assets that enables our community to thrive through the provision of a strong, safe, efficient and reliable electricity supply.

The Waikato region has shown incredible resilience in the face of uncertainty from the ongoing Covid-19 global pandemic. In 2020 and 2021, the Waikato saw unprecedented growth across a wide swathe of residential, commercial and industrial sectors. Strong indicators point to momentum in this growth continuing over the next few years.

Layered over the top of this growth in customers is transformational change in energy technology and consumer behaviour. WEL is now beginning to experience the impacts of these changes at a network level. This exciting future will bring new challenges and opportunities for WEL and our customers.

Growth and innovation in the energy industry, managed cost effectively, will be increasingly important for the wellbeing of our community. The AMP reflects our vision to create an innovative and sustainable energy future that will enable the opportunities for WEL, our customers, and our communities. This vision is clearly demonstrated through WEL's investments focused on safety, continuous improvement and an increasing focus on understanding and integrating new technologies so that we can achieve the best outcomes for our network, our customers, and our community.

Your feedback is essential for our business to progress and I'd invite you to comment on the initiatives outlined by emailing me (**garth.dibley@wel.co.nz**).

Garth Dibley
Chief Executive

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1 EXECUTIVE SUMMARY

1 | EXECUTIVE SUMMARY

The 2022 Asset Management Plan (AMP) Update communicates to our stakeholders the material changes in key investments for the next 10 years, to maintain a quality network whilst innovating to enhance the service and value we provide our customers and stakeholders. Changes have been made so that WEL can meet future customer demands within the context and drivers of the energy industry.

The city of Hamilton and the wider Waikato region within WEL's network have shown stronger than forecast economic recovery from the global pandemic. WEL has received a record number of enquiries from potential customers across residential, commercial and industrial sectors. This has translated to a twofold increase in committed customer-initiated work in the last 12 months. This has driven the need for a step change in our expenditure.

Growth in the Waikato has consistently been greater than the NZ wide average. This significant growth being experienced in Hamilton and the Waikato District is expected to continue through the 10 year AMP period.

Customer Initiated Works (CIW) expenditure for the AMP period is forecast to increase to $409M. This increase is determined by committed customer works, enquiry trends, and recently announced densification plans for Hamilton. Enquiries about connecting distributed generation to the network and electrifying industrial processes have risen considerably in the past 12 months. We expect this to continue given supportive regulatory and macro-economic factors, and environmental sustainability goals.

Network Development expenditure has been increased to $223M for the AMP period to support the revised growth forecasts and to maintain a reliable network that underpins economic activity in the region. This budget includes specific work for customer projects of regional and national importance, as well as bolstering capacity from our Grid Exit Points (GXPs) into Hamilton. This requires acceleration of existing GXP load transfer projects, introduction of new GXP transfer capacity projects and a new zone substation.

Asset Renewal expenditure remains constant for all but three asset classes; ring main units, poles and crossarms. These asset classes require a quantity uplift to address the growing number of aged assets and delivery delays due to the impacts of the Covid-19 pandemic.

Overall Network OPEX remains relatively constant once inflationary pressures are considered. The forecast includes increases that are proportional to the growth of the network. These are balanced by a slight decrease in per-unit maintenance costs as a result of economies of scale and operational efficiency improvements enabled by various Operational Excellence initiatives.

Non-network CAPEX has been increased by $20M and Non-network OPEX has been increased by $21M across the AMP period. This reflects WEL's continued investment in growing our technology capability to enable an innovative energy future that allows our community to thrive.

Due to the pandemic and ongoing response in NZ and abroad there have been large logistical challenges, economic volatility and cost inflation. These factors are expected to persist through 2023. Underlying delivery, unit and traffic management costs have contributed to the increase in overall expenditure.

Further discussion of the above can be found in Section 3 Material Changes.

Purpose of this document

The purpose of this AMP Update is to inform and communicate to our stakeholders the material changes in asset management from the 2021 AMP. These changes are provided to support the accelerated growth in the Waikato District with a balanced approach to meet our stakeholder requirements in accordance with our asset management strategy and objectives.

Information Disclosure Requirements

This AMP Update identifies any material changes from the last AMP, with respect to:

- Network development plans
- Lifecycle asset management plans
- Forecast capital and operational expenditure
- Asset management practices of WEL, and
- Drivers underlying those changes.

Full disclosure requirements are set out in the Electricity Distribution Information Disclosure Determination 2012 (consolidated December 2021).

Structure

This AMP Update focuses on material changes from the 2021 AMP, and is structured in the following order to aid legibility:

- Inflation forecasts inform our expected underlying costs to provide service to new and existing customers
- Underlying growth factors shape the scenarios in our electricity demand and customer base forecasts and subsequent Customer Initiated Works expenditure forecast
- Network Development plans are then formed to support the growth forecasts
- Lifecycle Asset Management
- Asset Management Practice outlines any changes to our Asset Replacement and Renewal Strategy
- This is followed by regulatory disclosures reports in the Commerce Commission Schedules.

This AMP Update should be read in conjunction with the 2021 AMP. The 2021 AMP contains a greater level of detail. For the purpose of this AMP Update we have not attempted to duplicate the detailed explanations as set out in the full 2021 AMP.

Intended Audience

The intended audience for this AMP includes: our stakeholders, community, customers, the Commerce Commission, the Electricity Authority, our staff and contractors, and other interested parties.

Period Covered by the AMP

This plan covers a ten year period from 1 April 2022 to 31 March 2032 (AMP period). As with any long-term plan, the integrity and accuracy of the details tend to be more accurate in the earlier years as it is easier to predict the near-term state of our assets and required actions, plans and expenditure.

Approval Date

This plan was reviewed and approved by the WEL Networks Limited Board of Directors on 3 March 2022.

2 OVERVIEW OF WEL NETWORKS

2 | OVERVIEW OF WEL NETWORKS

WEL Networks (WEL) is owned by the WEL Energy Trust. WEL supplies electricity to the northern Waikato and small networks in Cambridge and Auckland. The network area includes Hamilton, Raglan, Gordonton, Horotiu, Ngaruawahia, Huntly, Te Kauwhata and Maramarua (Figure 1).

Our network is supplied by three Grid Exit Points (GXP) owned by Transpower and two large embedded generators at Te Rapa and Te Uku. The GXPs are Hamilton, Te Kowhai and Huntly. Our 33kV subtransmission connects the GXPs with zone substations, which in turn supply our 11kV distribution network. This network then feeds our low voltage network supplying the majority of our customers.

Figure 1: WEL Networks boundary and small embedded networks in Cambridge and Auckland

As of 31 March 2021, there are approximately 96,000 connections across WEL's network areas, including over 1,900 connections within our embedded networks located in Auckland and Cambridge. The breakdown of load by customer group is set out in table 1 below.

Customer Group	Number of Active ICPs	Electricity Delivered (GWh)	Demand (MW)
Domestic	80,515	555	280
General	12,485	210	
Streetlights and Unmetered	339	9	
Small Scale Distributed Generation	1,041	13	
Large Commercial	873	510	
Total	**96,114**	1,283	
Traditional Network	*94,212*	1,268	
Embedded Networks	*1,902*	15	

Table 1: Customer Group and Electricity Delivered (as of 31 March 2021)

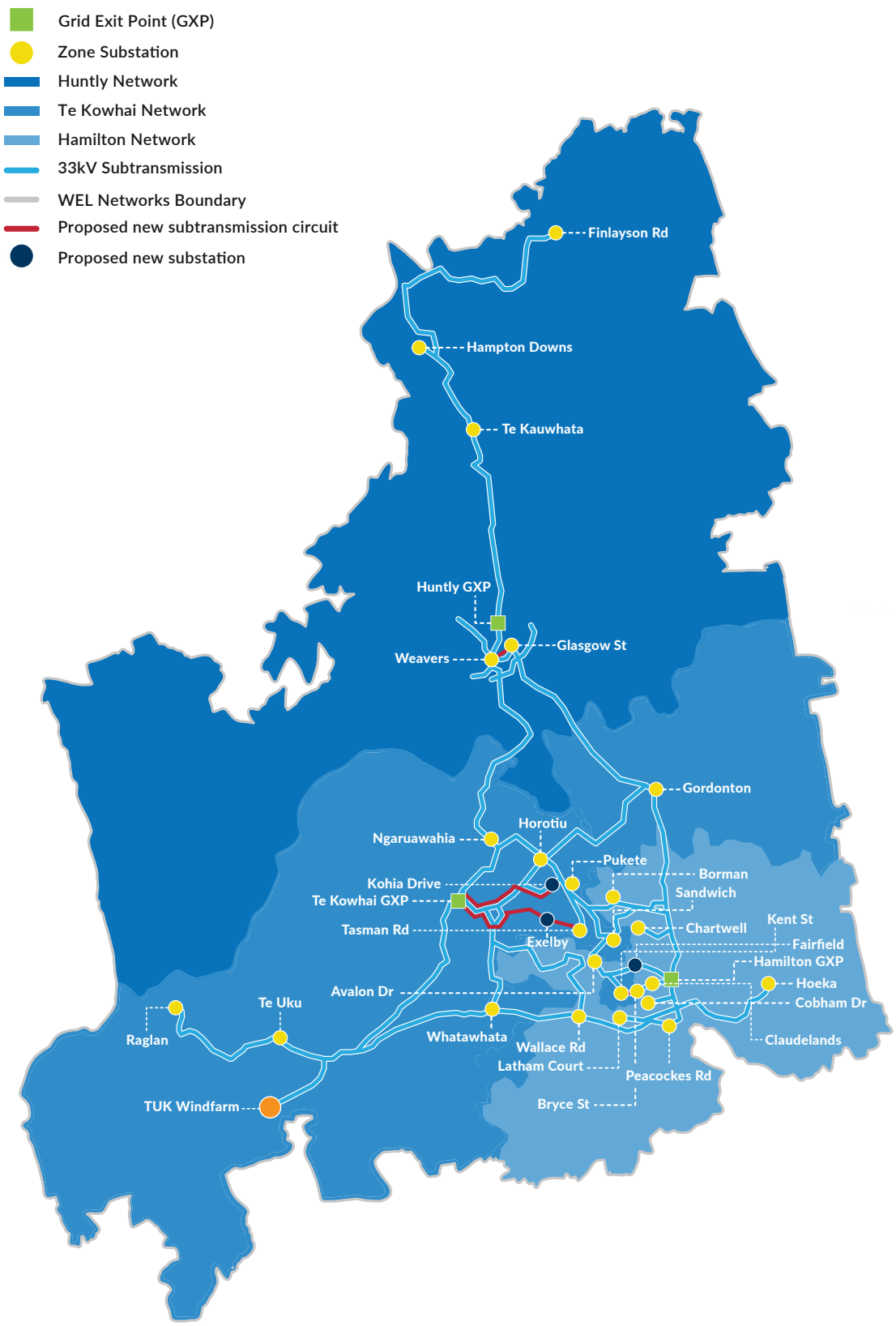

Figure 2: WEL Network Boundary, 33kV Subtransmission, GXP and Zone Substations (existing and proposed)

3 MATERIAL CHANGES

3 | MATERIAL CHANGES

This section provides an overview of the material changes to network development plans, asset lifecycle plans and asset management practices.

Hamilton and the wider Waikato region within WEL's network has shown tremendous growth and a healthy pipeline of development, which has driven the need for a step change in our expenditure. Our forecasts have been significantly uplifted compared to our 2021 AMP. The investment in the network presented in this AMP update is a realistic view of electrical infrastructure required to support the cumulative medium-long term outlook.

3.1 Material Changes to Inflation Forecast

Under normal circumstances WEL would expect year-on-year inflation of input costs to be around 2% - 3%. Continued pandemic related supply chain challenges and high general demand have substantially increased delivery times and price of materials received by WEL. To-date, WEL has seen material aggregate cost increase by 10%. Other factors contributing to cost increases are: generation and traffic management; transportation and logistics, increase in labour and service rates, and complexity of replacement works.

The full impact of these inflationary pressures are yet to be confirmed due to the lagging nature of reporting of Producer Price Indices. WEL has used a forecast of annual CPI of 5% for financial year ending 2022 and 3% for 2023. The impact on total capital expenditure due to increased cost indexation over the previous AMP period is $27M.

3.2 Material Changes to Underlying Growth Factors

Economic Growth

Overall Hamilton's GDP in 2020 grew at a rate of 3.1% against national GDP growth of 1.6%. This increase was experienced against a backdrop of Covid-19 impacts[1].

Growth is also being experienced in the broader Waikato District. GDP in 2020 in grew 2.7% with the biggest contributors being manufacturing, construction, agriculture, forestry and fishing.[2] Despite the continued effects of the pandemic, we expect growth to be led by residential construction and industrial growth.

Population Growth

Our central forecasts for population growth over the next 10 years is 3% p.a. population growth with corresponding approximately 2,500 – 3,000 new dwelling connections per annum. The population forecast is extrapolated from growth trends in WEL Networks customer base in the preceding 10-year and 5-year periods. Historic growth has consistently exceeded forecasts and the national average. Growth in Hamilton population over the last 5 years has been between 2.4%-3.1% and consistently above Hamilton City Council (HCC) and Statistics NZ forecasts of 1.3%.[3] We expect this momentum to carry through the 10 year AMP planning period.

Residential Development

Strong population growth will drive dwelling connections, and we expect that this is likely to continue beyond the 10 year AMP planning period.

Greenfield residential and commercial developments including Rototuna, Ruakura, Greenhill (Chartwell), Te Kauwhata and Temple View continue to expand. Other greenfield areas in Peacockes, Horotiu, Raglan, Te Kowhai and Huntly are expected to gain momentum in the middle of the AMP period.

Intensification of existing residential areas has considerable activity in areas around the central city. For example, areas such as Nawton, central city, St Andrews, Fairfield, Chartwell and Hamilton East. We expect residential densification construction activity to continue over the longer term.

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[1] https://ecoprofile.infometrics.co.nz/Hamilton%2bCity/Gdp

[2] https://ecoprofile.infometrics.co.nz/Waikato%20District/Gdp

[3] https://ecoprofile.infometrics.co.nz/Hamilton%2bCity/Population
https://openwaikato.co.nz/for-business/economic-data/

Local & Central Government Policy

Supportive local government policies can be found in HCC's response[4] to the "National Policy Statement for Urban Development" or "NPS-UD" (2020). It includes significant residential densification around the CBD and other centres of economic or social activity. Further support has been given in the form of favourable changes to HCC developer contributions for social housing, and central city high-rise development.[5]

The NPS-UD has since been bolstered by the Resource Management Amendment Act 2021. This reduces restrictions for dwelling heights and densities within Hamilton city.[6]

General Construction Activity

Construction activity continues to be elevated across Hamilton, with Customer Initiated Works (CIW) demand for 2020 and 2021 exceeded pandemic expectations. Localised construction sector data shows some $4.8B of planned construction projects commencing within the next two years. A further $9B of projects are in the planning or tendering phases.

Industrial Development & Electrification of Process Heat

WEL Networks aims to enable new industry and developments in the Waikato to support the ongoing growth and prosperity of our community.

Major industrial developments, current and near future, within the Waikato include:

- Ruakura Inland Port (TGH SuperHub)
- Ohinewai Sleepyhead Industrial & Residential Estate
- Northgate Industrial Park
- Airport industrial zone
- Te Rapa industrial zone

The New Zealand electricity industry is heading into a period of unprecedented change and growth driven largely by the necessity to meet international carbon reduction requirements to ensure reasonable outcomes for the environment. This is creating two key factors which are driving change in our network:

1. The electrification of process heat and transport
2. Growing customer adoption of renewable energy sources

Enquiries to WEL have increased substantially over the last two years, driven by upcoming regulation, carbon pricing, and high fossil fuel costs.

In addition to committed customer projects, WEL have also included in the forecast, small to medium heat process electrification at a rate of 5MW every 3-4 years, with an allowance for non-electrical decarbonisation options.

Capital expenditure to accommodate electrification of process heat is forecast under the Consumer Connection category.

Electrification of Transport

Central government has given support to the uptake of electric vehicles (EV) in the private sector through incentives such as the Clean Car Discount, and disincentives to purchases of new internal combustion engine (ICE) vehicles. Regardless of the incentives, global factors mean that the offerings into the NZ market will likely be weighted towards battery electric vehicles (BEV) in the future.[7]

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[4] https://www.hamilton.govt.nz/our-council/council-publications/districtplans/ODP/Plan-Change-12/Pages/default.aspx

[5] Source: Hamilton City Council Development Contributions Policy 2021/22 Section 18 – Remissions (S201(1)c, S200(2) LGA)

[6] https://environment.govt.nz/acts-and-regulations/national-policy-statements/national-policy-statement-urban-development/

[7] https://www.iea.org/commentaries/electric-cars-fend-off-supply-challenges-to-more-than-double-global-sales?utm_content=buffer0660a&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer

EV uptake in the Waikato has been growing, driven by the central government incentives, and higher oil prices. We expect EVs to comprise 24% of the total Waikato private and commercial fleet by 2032 (with private light passenger vehicles reaching 40%). As use of electricity is expanded to more private consumer and commercial applications, the value of reliability and system availability will increase, further driving network investment.

This intensification of EV will add significantly to existing peak demands on network infrastructure. Network upgrades to resolve overloaded lines and poor power quality caused by EV charging demand will likely fall under the Quality of Supply category. WEL's investment requirement over the next 10 years without some form of control is estimated to be around $250 million to cater for EV's alone.

WEL is investing in dynamic energy resource management technology, which will be a key capability to allow WEL to smooth demand such that major network capacity upgrades are manageable and cost effective.

Distributed Generation (DG) and other Distributed Energy Resources (DER)

The current trend in energy generation is towards de-centralised renewable distributed energy resources embedded within local distribution networks, particularly those being added onto dwellings within the low voltage network.

This trend is growing with a large increase in solar connections to WEL's network, and a growing number of connection enquiries for small scale, as well as large scale connections. Prior conventions of one way power flow and blunt demand response solutions will be increasingly challenged as consumer choices drive net demand and generation in previously unseen possibilities. This quantum shift to two way power flows, never envisaged when the network was built, is now beginning to be experienced.

Increasing DER, quantum of individual connections, and demand, bring new challenges and opportunities to network planning and system operation for WEL and its existing customers.

Possible challenges include:

- annual volumes of energy received from the national grid and distributed to customers may decrease
- increasing peak demand and increasing reverse power flows may require more capacity
- increasing power quality and public safety issues
- complexity of connections and forecasts at the distribution level

WEL's network and non-network investment is targeted at increasing the network's flexibility and cost effectiveness of providing network capacity, and ensuring value for consumers and opportunities for communities.

Possible opportunities include:

- localised demand side response solutions may result in greater flexibility to respond to supply disruptions
- localised DG and storage may offer more cost effective ways of meeting energy demand and reliability needs compared to central source solutions
- localised DER markets and DSO operation may lower barriers to market participation from smaller scale DER, and allow more efficient value realisation
- greater visibility of the LV network, and opportunities for WEL to enhance safety and reliability for customers
- flexibility in reactive power offered from distributed fast acting inverters may offer more cost effective and stable voltage management compared to current technology

3.3 Material Changes to the Demand Forecast

In addition to the upcoming changes in underlying growth factors, WEL is already experiencing strong growth in new customer connections and higher network peak demand. Our base case planning reflects that this trend will continue for the foreseeable future.

Revised demand projections are shown in Figure 3, including known industrial customer projects up to FY25, underlying growth from population, and electrification of transport and process heat.

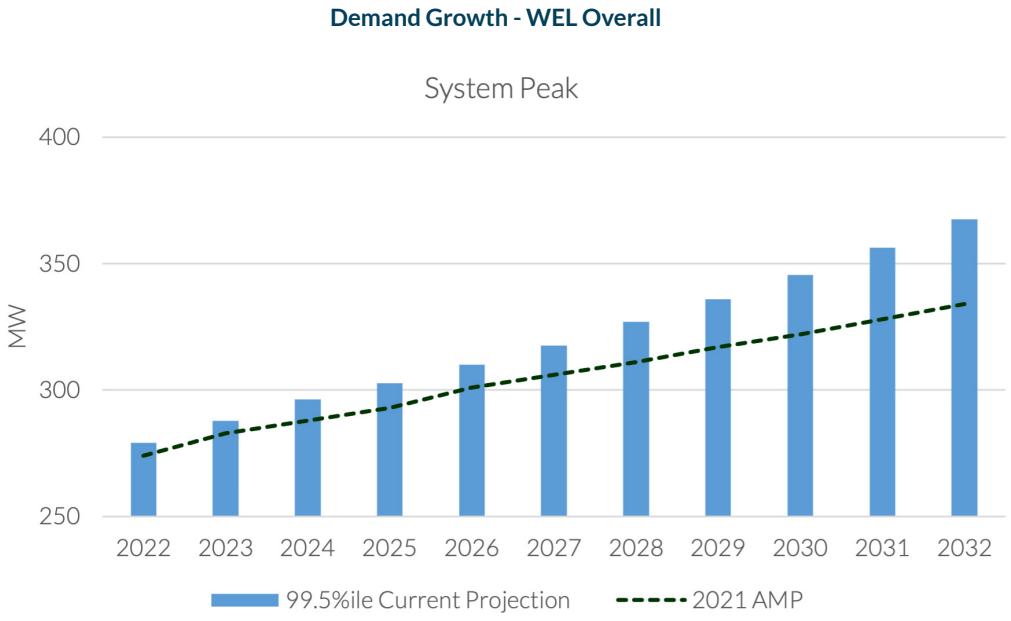

Figure 3: WEL Overall System Demand Growth – Forecast Comparison

The forecast load growth has driven the significant forecast expenditure for reticulation upgrades provided in subsequent sections of this AMP. Embedded in these forecasts is the estimated impact of future distributed energy management systems (DERMS), pricing incentives and flexibility markets that WEL are exploring and developing. WEL expect these future services would lower the effective peak demand and more cost effectively supply the anticipated growth in electricity demand.

GXP	Security	Firm Capacity	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Hamilton 11kV (HAM11)	N-1	44	30	34	37	39	41	44	45	47	49	51
Hamilton 33kV (HAM33)	N-1	132	132	109	111	113	116	119	122	125	129	134
Huntly 33kV (HLY)	N-1	82	30	36	37	38	38	52	54	56	58	60
Te Kowhai 33kV (TWH)	N-1	136	100	121	123	125	127	117	120	123	126	129
System Peak			275	289	299	313	321	329	337	345	354	364

Table 2: GXP Demand Forecast excl. embedded generation (MVA)

In addition to reticulation upgrades, the load growth will impact WEL's security of supply, especially at the two largest Transpower Grid Exit Points (GXP) that supply the city of Hamilton: Hamilton 33kV (HAM33) and Te Kowhai (TWH). The required security of supply is N-1, the level at which the system can withstand the loss of a single component and continue to supply electricity to customers.

This year the HAM33 GXP was at risk for 30 hours, up from 4 hours last year. Last year's growth figures predicted our unmitigated exposure to be 120 hours by 2031. This is now predicted to be 120 hours by 2027 however our capital program will increase our effective GXP capacity to mitigate this risk.

Currently at HAM33 and TWH, the main determining factor on the security of supply level is the rating of the power transformers that steps-down voltage from the national grid to 33kV. Each GXP has two transformers, the lowest rating of the two forms the firm capacity for that GXP. WEL is willing to exceed the GXP limits for short periods of time as load can be transferred between GXPs. Thus WEL is able to maintain supply to all customers in the event of a transformer trip. WEL's planned work increases this ability to transfer load between GXPs.

3.4 Material Changes in Customer Initiated Works

The Customer Initiated Works (CIW) forecast includes consumer connections, new subdivision reticulation, asset relocation expenditure and now a provision for electrification and the uptake of solar PV and electric vehicles. Growth forecasts and associated CIW spend have been revised upwards to accommodate known and committed customer works, enquiry trends, and recently announced densification plans for Hamilton CBD.

The total change in CIW expenditure, from the 2021 AMP (indexed to this year's costs), over the previous AMP period, is an increase of $167M (including $56M provision for electrification).

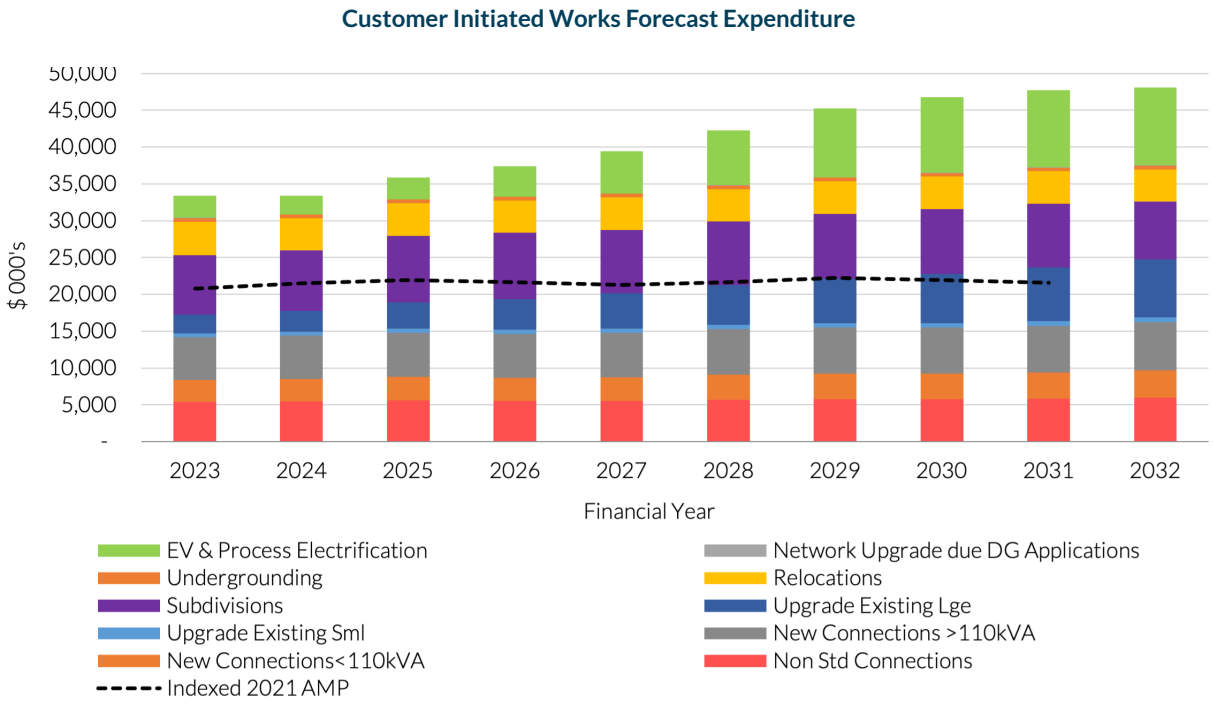

Figure 4: Customer Initiated Works Forecast Expenditure (constant $)

WEL is experiencing a significant increase in new connection requests and commercial activity. Some of these projects are of a size not seen in our network before including: Ruakura Inland Port, Te Awa Lakes, Peacockes, Hamilton Airport industrial estate, and Sleepyhead Estate. There is also strong continuation of expansion and densification of existing areas such as the Hamilton CBD.

Hamilton's GDP and population growth are outstripping the national average. Hamilton's proximity to the other major population centres of Auckland and Tauranga, along with being in an area of low natural hazard risk is seeing business growth. For the upcoming AMP period, WEL is forecasting a substantial lift in developer activity and demand for electricity within the Waikato driven by:

- Increasing new residential areas + densification of existing areas within Hamilton CBD
- Commercial growth in the Waikato
- Uptake of electric vehicles
- Increase in electrification of industrial process heat
- Increase in connections of distributed energy resources.

This forecast is supported by current activity, economic trends, and leading economic indicators:

- HCC and Waikato District Council (WDC) zoning changes and subsequent consents issued to-date increased by 30-50% compared to the previous 5 years
- Approx. 9,500 residential dwellings within the next 4 years
- Local construction sector consents and activity – $13B of activity over the upcoming decade, with some $4.8B of projects to commence within the next two years
- Over 200 mid-to-large commercial projects
- Historical trend of >2% per annum population growth for Hamilton over the last 5 years compared to 1.3% forecast by StatisticsNZ
- Connection enquiries to WEL increase of 80% for 2021
- 40% increase in WEL CIW expenditure in 2021 compared to 2019/2020
- Central government policy and incentives
- Fuel supply constraints and high prices.

For the design, build and funding of new connections to meet demand, WEL has provisioned $237M for the AMP period, an increase of $64M over the previous AMP period.

There has also been an increased demand from existing commercial customers and densification of existing residential areas. In response, WEL has provisioned $57M for the AMP period, an increase of $47M over the previous AMP period.

The increasing electrification of industry, combined with the foreseeable demand from home EV charging installations places an additional call on WEL Networks capital. For the upcoming AMP period, an annual provision starting from $3M increasing to $10M, has been made for customer specific EV reticulation upgrade works. This provision is based on two independent external reports commissioned by WEL.

The Waikato has also seen a significant lift in asset relocation expenditure in recent years as subdivisions continue to be developed along the fringe of the city boundaries and large infrastructure projects move into construction phases (roads, rail, water/waste water) thereby requiring WEL assets to be relocated. WEL has provisioned $49M for the AMP period, an increase of $4M over the previous AMP period.

3.5 Material Changes to Network Development

The Network Development forecast includes system growth, legislative and regulatory, reliability, safety and environment. Network Development expenditure has been increased to reflect the electrical infrastructure required to support Waikato growth outlined by territorial authority plans and customer developments.

Adjustments include the acceleration of GXP load transfer projects already within the AMP as well as new 33kV transfer capacity projects, bolstering capacity from our Grid Exit Points (GXPs) to areas of intensification, and new zone substations.

Figure 5 shows the 10 year expenditure forecast compared to the indexed 2021 AMP network development forecast. The overall spend across the previous AMP period has been increased by $128M:

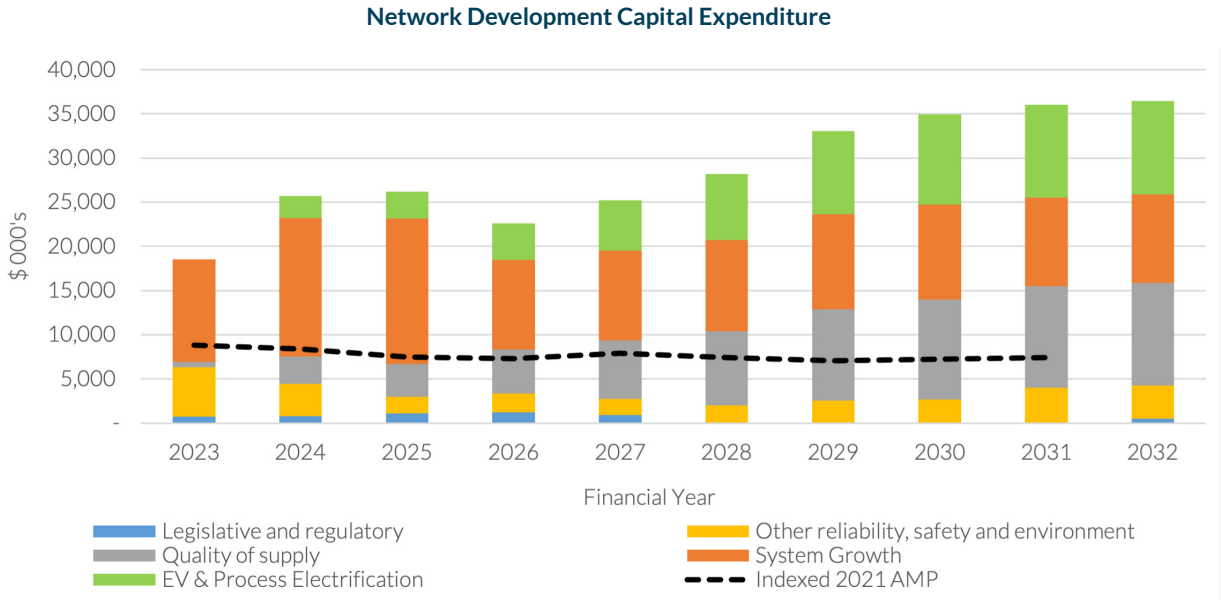

Figure 5: Network Development Forecast Expenditure (constant $)

WEL is restructuring the Works Programme division and bringing on service providers to support the additional work forecast within the AMP.

3.5.1 Network Development Projects

The following is a summary of proposed AMP adjustments and additional projects to supply the increased growth forecast for the Waikato.

Project Name	New / Adjusted	GXP	Need addressed	Options considered	Cost	Timing FY
New Fairfield zone substation	New	HAM33 / TWH	HAM33 & TWH GXP security. Intensification around CBD Hamilton East & Ruakura.	3rd HAM33 220/33kV transformer + early Crosby zone substation	$22.0M	2022 – 2026
33kV reinforcement Tasman to Avalon	New	TWH	Security for Te Rapa industrial growth and inter-GXP security	(see below)	$3.8M	2023 – 2024
33kV reinforcement Te Kowhai to Avalon	New	TWH	Security for Hamilton CBD intensification area. Inter-GXP security	(see below)	$11.9M	2024 – 2027
33kV Reinforcement Kent – Bryce – Latham	New	HAM33 / TWH	Inter-GXP security, Hamilton CBD growth, Industrial zone growth	(see below)	$4.7M	2029 – 2032
Te Uku Transformer Upgrade	New	TWH	Security in Te Akau / Raglan area	Second transformer at Raglan	$1.1M	2031
GXP Transfer: Gordonton to Huntly	Accelerated	TWH / HLY	TWH GXP Security	(see previous AMP)	$0.5M	2024
GXP Transfer: Avalon to Te Kowhai	Accelerated	HAM33 / TWH	HAM33 & TWH GXP security	(see previous AMP)	$0.6M	2023
New Crosby zone substation	Deferred	HAM33	Chartwell greenfield residential and brownfield intensification	(see previous AMP)	$4.8M	2029 – 2031
New Airport Industrial Park Zone Substation	New	HAM33	New industrial zone	New 4 express 11kV feeders from Peacockes	$21.1M	2028 – 2032
33kV reinforcement Weavers – Glasgow	New	HLY	Huntly township security and Ohinewai growth	New 33kV circuit from Te Kauwhata New separate 33kV circuits from Huntly GXP to Weavers/ Glasgow	$3.5M	2027 – 2028
Weavers Zone Substation Relocation	Accelerated	HLY	Site seismic stability. Enabling works for zone substation renewal	(see previous AMP)	$2.1M	2031 – 2032
EV & Process Electrification	New	All	Distribution equipment overload, customer low voltage,	N/A	$2.5M - $10.6M	2024 – 2032

Table 3: summary of prop osed AMP adjustments

Alternatives Considered - 33kV Reinforcement Projects

These projects increase the inter-GXP transfer capacity to existing load centres, thereby increasing the effective security of each GXP, as discussed in the previous section.

Alternatives to these projects considered but not selected include combinations of the individual projects below:

- 3rd Avalon to Sandwich Rd 33kV feeder + Upgrade existing circuits
- New 33kV cable Tasman to Sandwich zone substations
- 33kV reinforcement HAM33 to Peacockes zone substation
- 33kV reinforcement Te Kowhai to Whatawhata
- Upgrade 33kV between Wallace Rd and Latham zone substations
- 33kV reinforcement HAM33 to Borman Rd zone substation
- 33kV reinforcement Kohia Drive (formerly Te Rapa North) zone substation to Pukete zone substation
- 33kV reinforcement TWH to Excelby new zone substation
- 3rd HAM33 220/33kV transformer + early Crosby zone substation
- New GXP
- Multiple 100MWh Grid BESS installed around Hamilton City
- 110kV subtransmission ring around Hamilton city

The preferred development path was selected as it provides the lowest cost, and greater flexibility and benefits to address demand in a timely manner.

3.5.2 GXP Security

To support new connections and increasing electricity usage on WEL Networks, we are accelerating and adapting projects to allow quick and flexible transfer of load between GXPs. This is a departure from the traditional approach which would be to install a 3rd 220/33kV transformer at HAM33.

The additional transfer capacity effectively allows for quick transfers of load from a GXP in the event of a GXP asset failure. Thus the firm capacity becomes the smallest transformer plus any load that can be transferred upon failure of any asset. This transfer strategy allows WEL to defer the expensive 3rd 220/33kV transformer from Transpower, which will be under-utilised in the short-medium term. The projects that allow this transfer also improve the overall reliability of the network.

By taking the capacity increases in smaller steps, it allows more flexibility in dealing with growth timings; and spreads deliverability risks compared to the other options. Overall this is lower risk compared to the risk of not being able to supply new connections. It also allows some flexibility to procure non-network alternatives for each stage of the subtransmission development plan, as these become more cost effective.

For example, Battery Energy Storage Systems (BESS) may be deployed in modules that closely match the demand growth in size, location, and timing. Localised storage can smooth electricity demand from the grid throughout the day, reducing effective peak pressure on GXP capacity. The flexibility in sizing and placement of such a non-network solution allows more efficient deployment of capital, and may defer or displace need for network upgrades.

WEL will explore market procurement of alternatives to building new network infrastructure with favourable reliability, lifecycle cost efficacy, and flexibility to ensure the increase to supply capacity can meet not only current demand but future demand. WEL expect this will become an important addition to WEL's supply and operational capability to meet changing customer expectations, rapid technological change, and rapid growth.

3.5.3 Fairfield Zone Substation

The inter-GXP transfer capacity strategy relies on having load that can be shifted between GXPs quickly upon failure of an asset at the GXP. This requires strong 33kV ties between the load centres and GXPs. The new Fairfield zone substation is ideally situated close to the existing HAM33-Avalon-TWH 33kV circuits, thereby lowering the cost of connection. The new zone substation will also service the growth from residential densification occurring around Hamilton CBD and Fairfield areas. The load on existing surrounding zone substations can be shifted to the new Fairfield zone substation, thereby freeing up capacity to supply new residential load in adjacent areas.

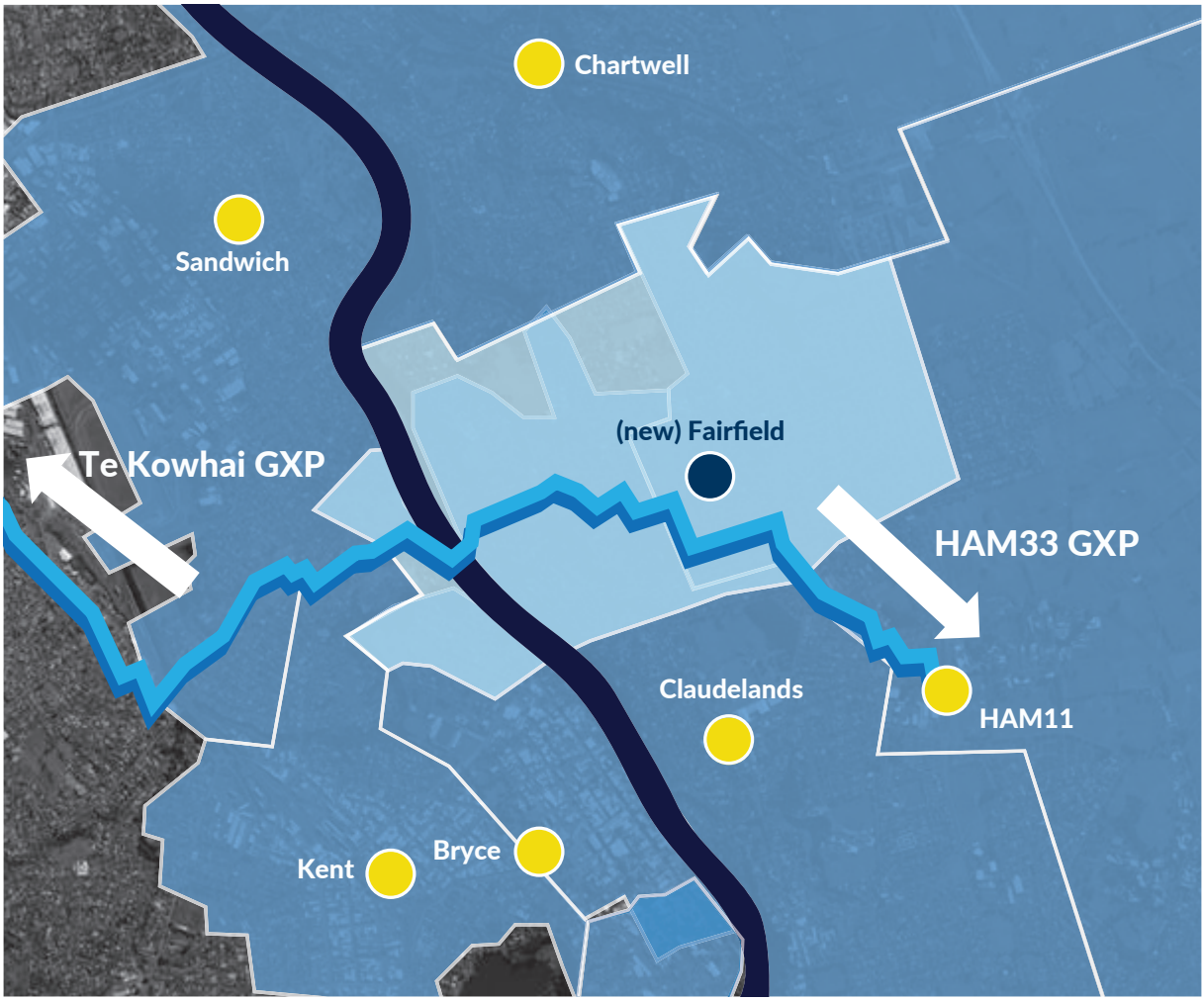

Figure 6: New Fairfield zone substation 11kV supply area (shown in light blue)

3.6 Material Changes to Lifecycle Asset Management

Our asset renewal philosophy remains aligned to our previous AMP. Spend is relatively flat for the initial five years and then increases to address ageing fleets, predominantly poles and crossarms. There has been an overall lift in budget. The increase is driven by the following:

- Increases in cost per unit: This incorporates increases in material costs, services cost and complexity of replacement works
- Increases in number of units addressed: There are three asset classes that have had increases in the number of assets to be replaced. These are:
    - *Poles and crossarms:* Pole and crossarm replacements has been lifted to cover under delivery resulting from Covid-19 and other delivery pressures. The requirement to lift delivery is also evidenced by our improved data collection processes and notifications. This lift has been smoothed over the 20 year timeframe to ease resourcing challenges
    - *Ring Main Units:* There is a one-off increase in FY23 from six to nine units to be replaced. This will address three additional high risk units
- Increase in provision for faults and notification repairs: The asset replacement philosophy balances the cost between asset renewal and faults including the cost of lost load. Over the next 10 year period this results in an increase in the age and risk of most asset classes. This results in a slight increase in the number of notifications and capitalised faults but an overall cost optimisation.

These increases are somewhat offset due to efficiency improvements enabled by the various Operational Excellence initiatives, notably more efficient grouping of work on multiple assets.

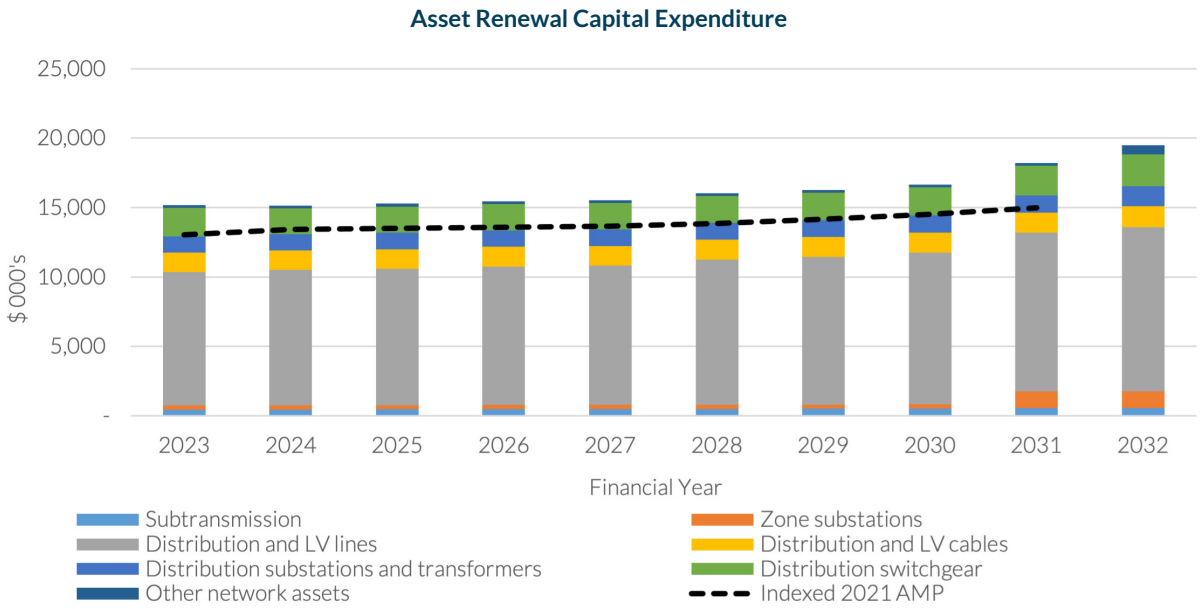

Figure 7: Asset Renewal Forecast Expenditure (constant $)

3.7 Material Changes in Report on Expenditure

The changes to our capital and operational expenditure is discussed below.

3.7.1 Material Changes in Schedule 11a Capital Expenditure

The growth in residential, commercial and industrial developments experienced in Hamilton and the Waikato District has accelerated over the previous few years, and is expected to continue through the 10 year AMP period. To support this growth, we have increased our network capital expenditure and non-network capital expenditure.

Expected inflation over the current year accounts for $43M of increased CAPEX.

Total Capital Expenditure Summary

The changes in capital expenditure, from the 2021 AMP (indexed to this year's costs), over the previous AMP period, can be summarised as a total increase of $321M, as illustrated in Figure 8 below.

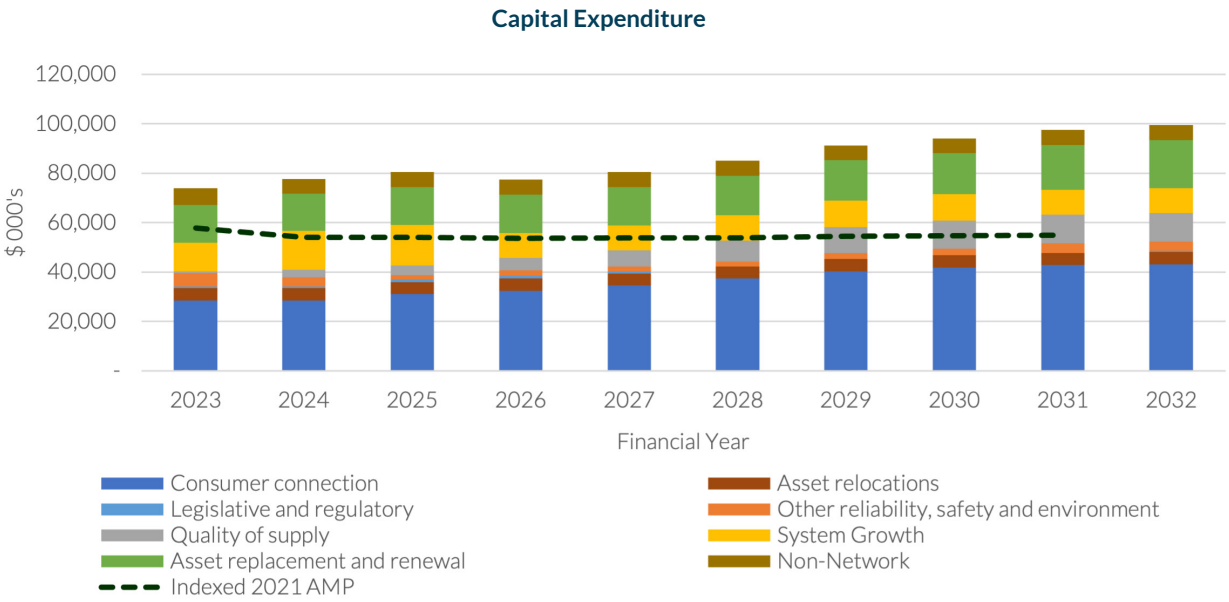

Figure 8: Network + Non-Network capital expenditure forecast comparison (constant $)

Change In Network Capital Expenditure Summary

The changes in capital expenditure, from the 2021 AMP (indexed to this year's costs), over the previous AMP period, can be summarised as:

- Customer Initiated Works +$111M
- Asset Renewal +$19M
- Network Development +$75M
- EV & Process Electrification +109M

This has resulted in a total increase of $313M, across the previous AMP period, as illustrated in Figure 9 below.

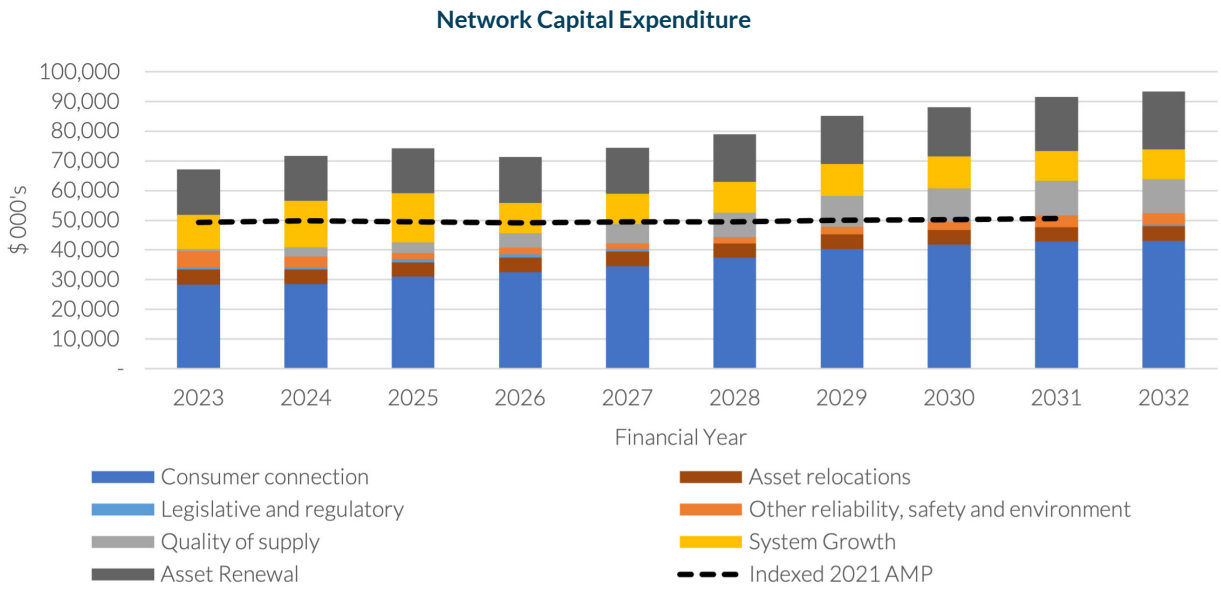

Figure 9: Network capital expenditure forecast comparison (constant $)

Note that Customer Contributions are expected to be $9.2M to $10.1M per annum which is an increase of $23M over the previous AMP period.

Non-Network Capital Expenditure Summary

The changes in capital expenditure, from the 2021 AMP (indexed to this year's costs), over the previous AMP period, can be summarised as:

- Strategic Projects +$12M
- Routine Non-Network +$5M
-

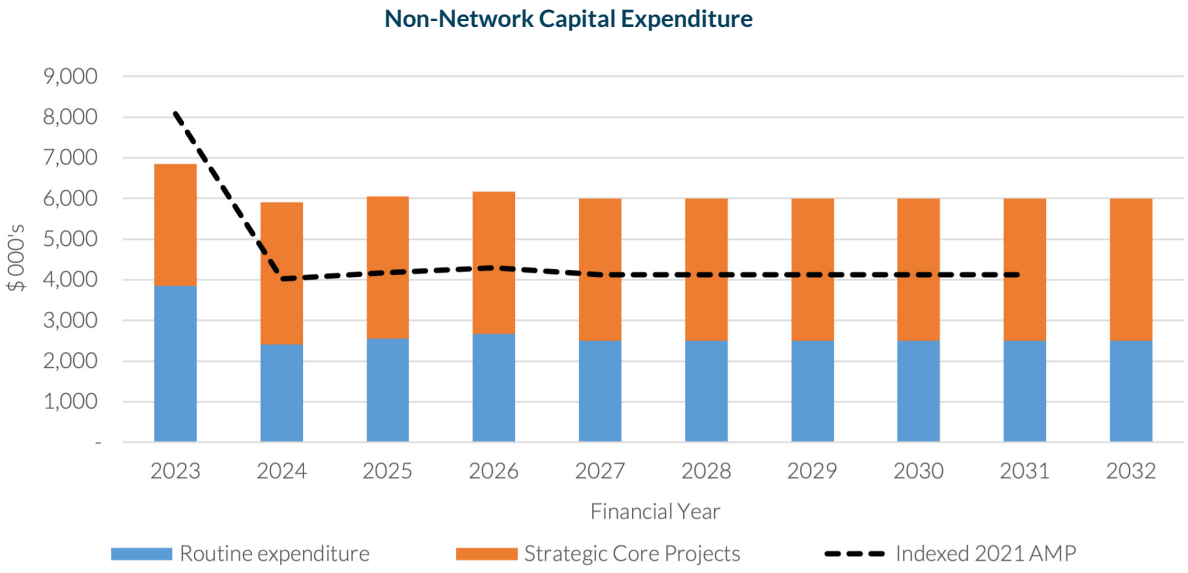

Figure 10: Non-Network capital expenditure forecast comparison (constant $)

The $17M increase is comprised of strategic initiatives targeted at improving WEL business capability and includes:

- Mobility in the field
- Development of LV works management capability
- GIS transition to ESRI
- Data management, acquisition, and platform
- Distributed system operator and distributed energy management system development

3.7.2 Material Changes in Schedule 11b Operational Expenditure

Total Operational Expenditure Summary

The changes in operational expenditure, from the 2021 AMP (indexed to this year's costs), over the previous AMP period, can be summarised as a total increase of $19M, as illustrated in Figure 11 below.

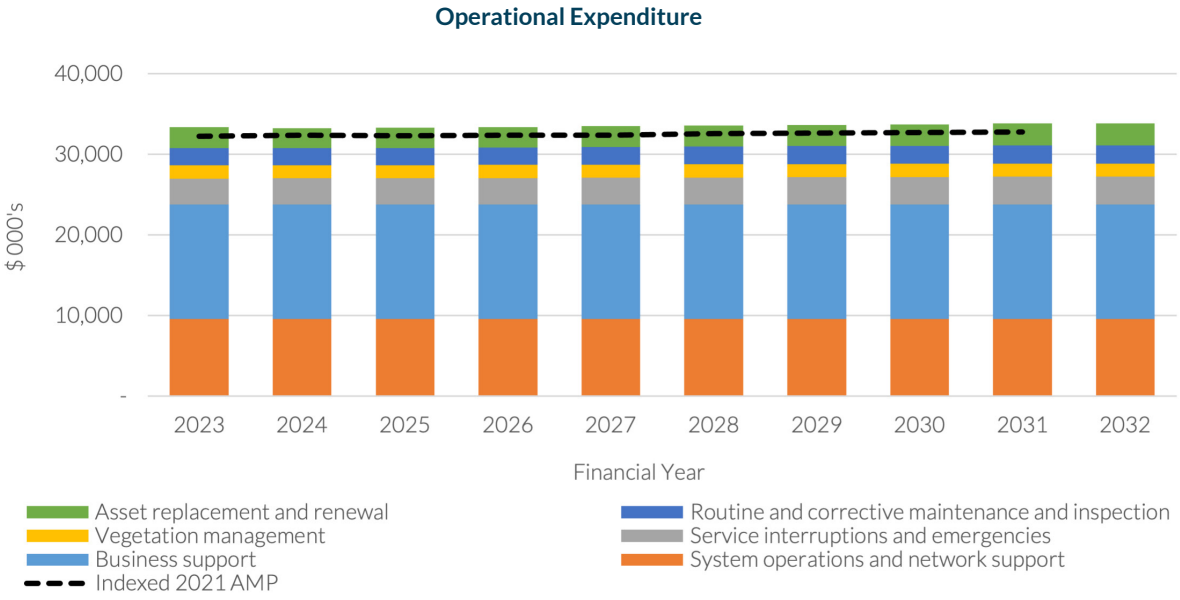

Figure 11: Network + Non-Network operational expenditure forecast comparison

Change In Network Operational Expenditure Summary

The changes in operational expenditure, from the 2021 AMP (indexed to this year's costs), over the previous AMP period, can be summarised as a total increase of $0.9M, across the previous AMP period, as illustrated in Figure 12 below.

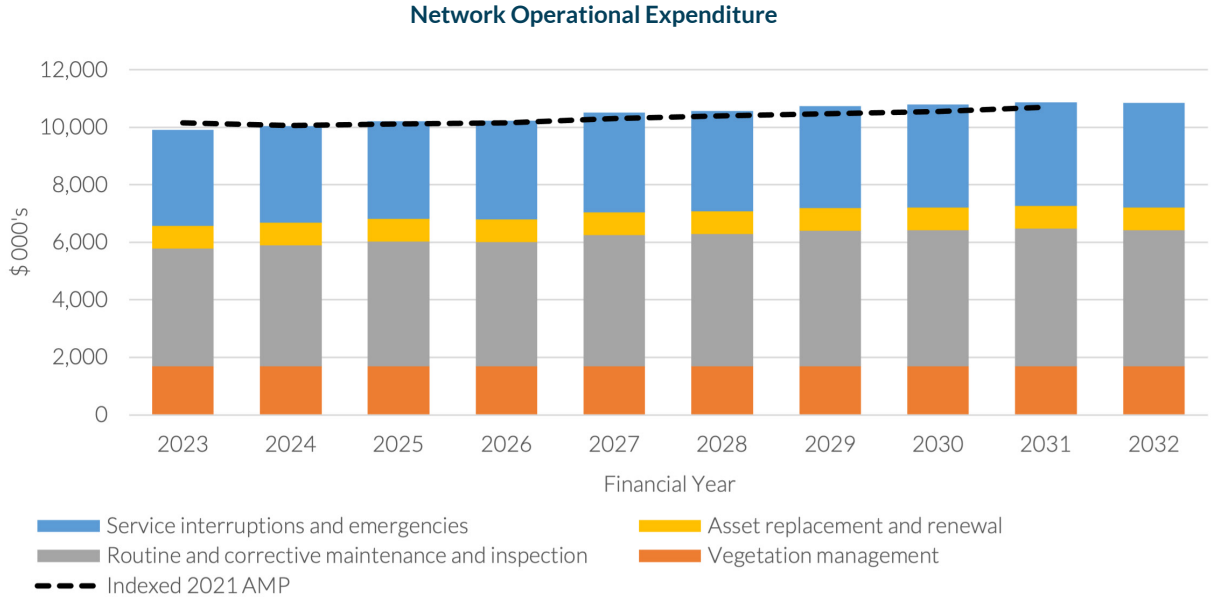

Figure 12: Network operational expenditure forecast comparison

Operational expenditure is in line with our 2021 AMP forecasts. The overall trend is increasing, in-line with the growing network. However, cost per unit is expected to decrease due to operational efficiency improvements.

There have been slight increases in:

- traffic management costs
- the number and costs of substation building remedial works (from CP5 Operational Excellence initiative)
- number of RMUs requiring major maintenance and targeted inspection regime from the recommendations of recent oil leak investigations

Non-Network Operational Expenditure

The changes in operational expenditure, from the 2021 AMP (indexed to this year's costs), over the previous AMP period, can be summarised as:

- System Operations +$9M
- Business Support +$10M

This has resulted in a total increase of $19M, across the previous AMP period, as illustrated in Figure 13 below

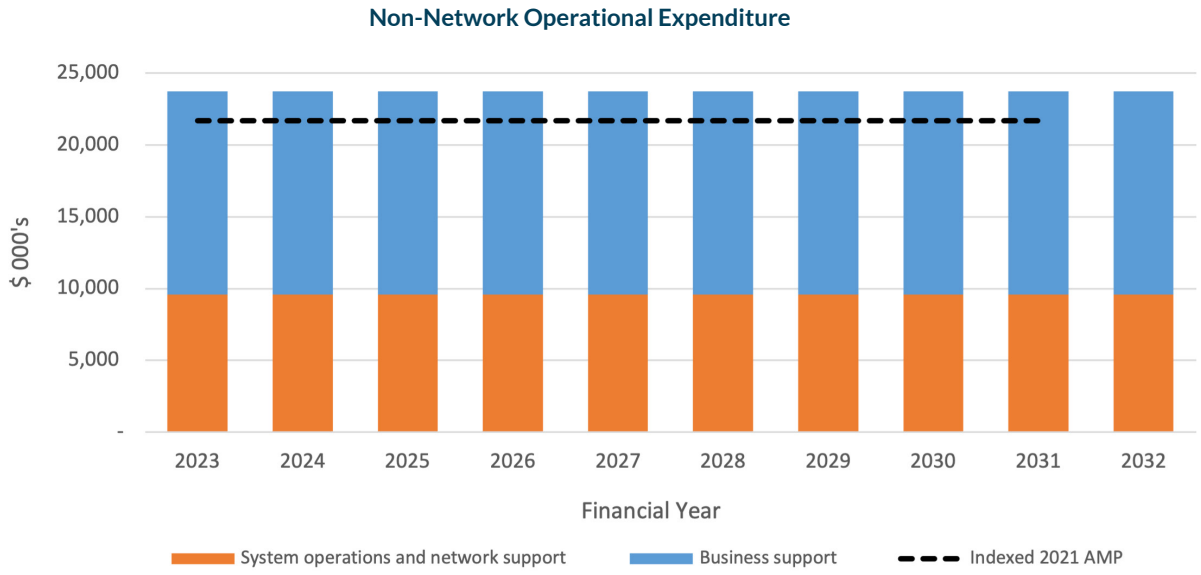

Figure 13: Non-Network operational expenditure forecast

The increases are comprised of staff recruitment to support WEL strategic initiatives:

- Additional IT staff to deliver strategic projects
- Additional Distribution System Operator staff
- Inflation adjustments to salaries
- IT server and storage infrastructure replacement to support the above

These improvements will allow WEL to develop distribution system operator capability, achieve operational efficiency goals; and allow WEL the capability to meet environmental, safety, and regulatory obligations.

3.8 Material Changes in Schedule 12

3.8.1 Schedule 12a – Asset Condition

Current asset condition profiles indicate an overall improvement in the fleets compared to previous years. This is due to the proactive renewal programme targeting high risk, poor condition assets, and equipment reported through the defect notification process.

Going forward, as part of our asset replacement strategy, we are accepting a small increase to our failure rates. While this results in a small increase in operational costs and cost to our community due to additional outages, the reduction in capital expenditure greatly outweighs this. This ultimately benefits our community through an overall reduction in cost.

The replacement programme in the next five years will continue to prioritise assets that have been identified through WEL's CBRM and Notification processes.

3.8.2 Schedule 12b – Forecast Capacity

For projects identified in this year's AMP to address network capacity, refer to section 3.5 Network Development Projects. These are additional to other projects identified in the 2021 AMP.

The only change to the capacity of existing zone substations within the AMP period is the replacement of the existing 5MVA Te Uku transformer due to age. The new transformer will be sized to match the existing 10MVA transformer on site. This will provide the required security to the Raglan, Te Uku, and Te Akau areas.

3.8.3 Schedule 12c - Forecast Network Demand

Historic growth data, number of new connections to WEL networks, economic expansion, combined with analysis of upcoming construction work in committed and planning phase, support our predictions that growth will continue through the 10 year AMP planning period and beyond.

There has been a substantial uplift to forecast network demand driven by:

- Greater certainty of electrification of transport and process heat
- Migration of businesses from Auckland seeking relief from comparatively higher costs
- Expansion of existing businesses within the Waikato
- Population growth
- Expansion of agricultural sector related demand (irrigation, refrigeration etc.)
- General growth in economic activity from the above.

3.8.4 Schedule 12d - Forecast Interruptions and Duration

A thorough review of WEL SAIDI and SAIFI targets has been carried out leading to a change in targets. The forecast targets are based on the methodology outlined in the Commerce Commission's Electricity Distribution Services Default Price-Quality Path Determination 2020.

Planned SAIDI is forecast to increase in-line with the increases in capital expenditure over the 10 year AMP planning period, to enable the additional work to be carried out.

The unplanned SAIDI and SAIFI targets are set above our 5-year average performance. This higher target accounts for the increase in inclement weather driven by climate change. These storm events greatly increase the SAIDI impact of outages due to both the number of simultaneous outages and the health and safety impact of working in a storm.

The unplanned targets are flat across the five years. This is driven by two counteracting components. The first is a small reduction in reliability due to our ageing network; with a significant portion of our overhead network nearing end of life. To manage the resourcing requirements we are ramping our asset replacement over the next 10 years (Section 3.6). The second component is the continuing roll out of automated switchgear which reduces both the number of customers impacted and the average duration of outages.

Table 4 and Table 5 detail our SAIDI and SAIFI targets for the next 5 years.

Categories	FY23 SAIDI target	FY24 SAIDI target	FY25 SAIDI target	FY26 SAIDI target	FY27 SAIDI target
Planned outages	34.9	35.6	36.4	36.5	36.8
Unplanned outages	69.5	69.5	69.5	69.5	69.5

Table 4: SAIDI targets

Categories	FY23 SAIFI target	FY24 SAIFI target	FY25 SAIFI target	FY26 SAIFI target	FY27 SAIFI target
Planned outages	0.34	0.34	0.35	0.35	0.35
Unplanned outages	1.02	1.02	1.02	1.02	1.02

Table 5: SAIFI targets

Innovation in future network performance management

WEL is adopting new technologies and applying innovative solutions to improve network performance. WEL has been working on a transitioning model, which includes a future network management strategy by following a Distribution System Operator (DSO) model that will be improving low voltage (LV) network reliability and resilience.

The key features offered by the DSO model are:

- Improving peak demand management and asset reliability to reduce asset stress due to higher demand from electrification
- Adopting LV energy storage solutions at both LV network and customer levels to harness renewable energy resources and provide supply backup during upstream interruptions, especially for supply dependent customers and high value load like rural farming
- Coordinating DER control and planned outages to prepare equipment so outage impact to customers can be minimised
- Enabling high voltage outage prediction and early warning systems using smart meter data to reduce fault finding durations.

The actual reliability improvements from the DSO model so are yet to be quantified so it hasn't been included in the next five year's forecast. However, it is expected that the new operating model will improve the future LV network performance.

3.9 Schedule 14a Mandatory Explanatory Notes on Forecast Information

3.9.1 Commentary on difference between nominal and constant price capital expenditure forecasts (Schedule 11a)

WEL has used the cost index of 3% in FY23 (taking into account the latest inflation trends), and 2% from FY24 onwards, based on the mid-point of the RBNZ target inflation range (1% to 3%), for both network and non-network spend, to determine the nominal value of expenditure.

3.9.2 Commentary on difference between nominal and constant price operational expenditure forecasts (Schedule 11b)

WEL has used the cost index of 3% in FY23 (taking into account the latest inflation trends), and 2% from FY24 onwards, based on the mid-point of the RBNZ target inflation range (1% to 3%), for both network and non-network spend, to determine the nominal value of expenditure.

3.10 Material Changes to Asset Management Practice

WEL is undertaking a project to align with ISO55000 as part of a continuing effort to improve WEL's systems and capability to deliver the appropriate balance of risk management, cost, and asset performance for the communities WEL serves.

3.10.1 Changes in Asset Replacement and Renewal Strategy

Our asset renewal strategy remains unchanged but we continue to refine our scoping and selection of work through our new Asset Replacement Works List Tool. This tool uses our CBRM output to create a list of equipment to be reviewed and scoped. To optimise the delivery of the field scoping and to align this with our inspection strategy, we integrated the scoping with our routine inspection programme which are merged into the mobility platform.

Transformers and ring mains are scoped via a desktop study that considers previous inspections and test results. Line assets such as poles and crossarms are grouped into outage envelopes; smallest outage possible to access that equipment. The whole outage envelope is then scoped by walking the length of the outage and entering defective equipment into a GIS linked mobility tool. This scoping also picks up constraints and additional considerations such as trees, schools, highway requirements and landowner details.

Grouping allows efficient delivery of asset replacements and outages. The guidelines are that for each section of line we want to replace all assets that will need replacement within the next five years. This grouping will allow efficient delivery of the work with lower per unit costs and SAIDI.

The tool risk ranks the groups so that the year's expenditure can focus on the assets/groups that result in the largest reduction of risk per dollar spent. Ranking considers asset health, network risk, disposal costs, replacement cost and Value of Lost Load.

The work list is provided with all of the scoping information, photos, budget, hours for each work type, estimated outage length and SAIDI. Therefore the new tool provides more accurate budget figures, allow better job planning and a quicker job delivery. We will also be able to track delivery to a finer level and optimise our job size and delivery processes.

4 INFORMATION DISCLOSURE SCHEDULES

SCHEDULE 11a: Report On Forecast Capital Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

This schedule requires a breakdown of forecast expenditure on assets for the current disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms. Also required is a forecast of the value of commissioned assets (i.e., the value of RAB additions)

EDBs must provide explanatory comment on the difference between constant price and nominal dollar forecasts of expenditure on assets in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27	31 Mar 28	31 Mar 29	31 Mar 30	31 Mar 31	31 Mar 32
11a(i): Expenditure on Assets Forecast	$000 (in nominal dollars)										
Consumer connection	14,451	29,199	29,913	33,198	35,475	38,487	42,479	46,811	49,501	51,675	53,121
System growth	7,738	11,987	16,478	17,649	11,141	11,280	11,755	12,470	12,695	12,090	12,381
Asset replacement and renewal	15,642	15,626	15,921	16,375	16,897	17,319	18,222	18,882	19,715	21,991	23,981
Asset relocations	4,396	5,174	5,148	5,251	5,356	5,463	5,572	5,684	5,797	5,913	6,032
Reliability, safety and environment:											
Quality of supply	520	587	3,285	4,009	5,416	7,427	9,509	12,027	13,341	13,910	14,249
Legislative and regulatory	832	773	806	1,181	1,332	1,041	-	-	-	-	615
Other reliability, safety and environment	1,450	5,747	3,822	1,975	2,324	1,976	2,308	2,922	3,183	4,808	4,625
Total reliability, safety and environment	**2,802**	**7,106**	**7,913**	**7,164**	**9,072**	**10,445**	**11,817**	**14,950**	**16,524**	**18,718**	**19,490**
Expenditure on network assets	**45,030**	**69,092**	**75,374**	**79,637**	**77,941**	**82,994**	**89,845**	**98,797**	**104,233**	**110,388**	**115,004**
Expenditure on non-network assets	6,210	7,050	6,199	6,483	6,744	6,689	6,823	6,960	7,099	7,241	7,386
Expenditure on assets	**51,239**	**76,142**	**81,572**	**86,120**	**84,686**	**89,684**	**96,668**	**105,757**	**111,332**	**117,629**	**122,390**
plus Cost of financing	-	-	-	-	-	-	-	-	-	-	-
less Value of capital contributions	6,951	9,896	10,043	10,456	10,485	10,486	10,695	10,884	10,965	11,065	11,032
plus Value of vested assets	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure forecast	**44,288**	**66,246**	**71,529**	**75,664**	**74,200**	**79,198**	**85,974**	**94,873**	**100,367**	**106,564**	**111,358**
Assets commissioned	43,883	65,148	71,265	75,457	74,273	78,948	85,635	94,428	100,092	106,254	111,118

SCHEDULE 11a: Report On Forecast Capital Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27	31 Mar 28	31 Mar 29	31 Mar 30	31 Mar 31	31 Mar 32
	$000 (in constant prices)										
Consumer connection	14,451	28,349	28,472	30,979	32,455	34,521	37,354	40,356	41,839	42,820	43,155
System growth	7,738	11,637	15,685	16,469	10,193	10,117	10,337	10,751	10,730	10,018	10,058
Asset replacement and renewal	15,642	15,171	15,155	15,281	15,459	15,534	16,024	16,279	16,664	18,222	19,481
Asset relocations	4,396	5,023	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900
Reliability, safety and environment:											
Quality of supply	520	570	3,127	3,741	4,955	6,662	8,362	10,369	11,276	11,526	11,576
Legislative and regulatory	832	750	768	1,102	1,219	934	-	-	-	-	500
Other reliability, safety and environment	1,700	5,578	3,637	1,842	2,126	1,773	2,029	2,519	2,690	3,984	3,757
Total reliability, safety and environment	**3,052**	**6,898**	**7,532**	**6,685**	**8,300**	**9,369**	**10,391**	**12,888**	**13,966**	**15,510**	**15,833**
Expenditure on network assets	**45,280**	**67,079**	**71,743**	**74,315**	**71,307**	**74,441**	**79,005**	**85,174**	**88,098**	**91,471**	**93,428**
Expenditure on non-network assets	6,210	6,845	5,900	6,050	6,170	6,000	6,000	6,000	6,000	6,000	6,000
Expenditure on assets	**51,489**	**73,924**	**77,643**	**80,365**	**77,477**	**80,441**	**85,005**	**91,174**	**94,098**	**97,471**	**99,428**

Subcomponents of expenditure on assets (where known)

Energy efficiency and demand side management, reduction of energy losses		-	-	-	-	-	-	-	-	-	-
Overhead to underground conversion	4,900	5,023	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900	4,900
Research and development	-	-	-	-	-	-	-	-	-	-	-

SCHEDULE 11a: Report On Forecast Capital Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
Difference between nominal and constant price forecasts	$000					
Consumer connection	-	850	1,441	2,218	3,020	3,967
System growth	-	349	794	1,179	948	1,163
Asset replacement and renewal	-	455	767	1,094	1,438	1,785
Asset relocations	-	151	248	351	456	563
Reliability, safety and environment:						
Quality of supply	-	17	158	268	461	765
Legislative and regulatory	-	23	39	79	113	107
Other reliability, safety and environment	(250)	168	185	132	198	204
Total reliability, safety and environment	(250)	208	382	479	772	1,077
Expenditure on network assets	**(250)**	**2,013**	**3,631**	**5,322**	**6,635**	**8,554**
Expenditure on non-network assets	-	205	299	433	574	689
Expenditure on assets	**(250)**	**2,218**	**3,929**	**5,756**	**7,209**	**9,243**

SCHEDULE 11a: Report On Forecast Capital Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
11a(ii): Consumer Connection	$000 (in constant prices)					
*Consumer types defined by EDB**						
Residential Customers	12,251	16,617	16,846	17,930	17,845	17,528
Business Customers	1,530	367	450	424	421	444
Large Customers - Low Voltage 400V	670	8,365	8,676	9,625	10,089	10,799
Large Customers - Medium Voltage 11kV	-	3,000	2,500	3,000	2,900	4,550
Large Customers - High Voltage 33kV	-	-	-	-	1,200	1,200
*include additional rows if needed						
Consumer connection expenditure	14,451	28,349	28,472	30,979	32,455	34,521
less Capital contributions funding consumer connection	3,740	6,051	6,173	6,560	6,561	6,534
Consumer connection less capital contributions	10,711	22,297	22,299	24,420	25,894	27,987
11a(iii): System Growth	$000 (in constant prices)					
Subtransmission	2,566	4,281	6,737	5,130	6,084	5,722
Zone substations	4,188	5,116	7,929	10,057	2,445	115
Distribution and LV lines	-	-	-	-	-	1
Distribution and LV cables	985	2,240	1,019	1,282	1,663	4,280
Distribution substations and transformers	-	-	-	-	-	-
Distribution switchgear	-	-	-	-	-	-
Other network assets	-	-	-	-	-	-
System growth expenditure	**7,738**	**11,637**	**15,685**	**16,469**	**10,193**	**10,117**
less Capital contributions funding system growth						
System growth less capital contributions	**7,738**	**11,637**	**15,685**	**16,469**	**10,193**	**10,117**
11a(iv): Asset Replacement and Renewal	$000 (in constant prices)					
Subtransmission	860	459	466	471	479	481
Zone substations	1,015	300	300	300	300	300
Distribution and LV lines	8,595	9,592	9,738	9,834	9,979	10,027
Distribution and LV cables	1,359	1,390	1,398	1,406	1,413	1,421
Distribution substations and transformers	1,015	1,174	1,180	1,187	1,193	1,200
Distribution switchgear	2,138	2,055	1,872	1,883	1,895	1,906
Other network assets	660	200	200	200	200	200
Asset replacement and renewal expenditure	15,642	15,171	15,155	15,281	15,459	15,534
less Capital contributions funding asset replacement and renewal	656	667	679	690	702	713
Asset replacement and renewal less capital contributions	14,987	14,504	14,476	14,591	14,758	14,821

SCHEDULE 11a: Report On Forecast Capital Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
11a(v): Asset Relocations	$000 (in constant prices)					
*Project or programme**						
Undergrounding	-	500	500	500	500	500
Other Relocations	2,396	-	2,900	4,400	4,400	4,400
Peacockes Development	1,500	2,000	1,500	-	-	-
Hamilton City Council	500	1,023	-	-	-	-
Chedworth Properties (Spine Road)	-	1,500	-	-	-	-
**include additional rows if needed*						
All other project or programmes - asset relocations						
Asset relocations expenditure	**4,396**	**5,023**	**4,900**	**4,900**	**4,900**	**4,900**
less Capital contributions funding asset relocations	2,556	3,158	3,158	3,158	3,158	3,158
Asset relocations less capital contributions	**1,840**	**1,866**	**1,743**	**1,743**	**1,743**	**1,743**
11a(vi): Quality of Supply	$000 (in constant prices)					
*Project or programme**						
Network Work Ugrade Due To DG applications	20	-	-	-	-	-
Distribution transformer and LV feeder upgrade projects identified via smart meters	500	570	627	741	855	912
EV & Process Electrification		-	2,500	3,000	4,100	5,750
**include additional rows if needed*						
All other project or programmes - quality of supply						
Quality of supply expenditure	**520**	**570**	**3,127**	**3,741**	**4,955**	**6,662**
less Capital contributions funding quality of supply						
Quality of supply less capital contributions	**520**	**570**	**3,127**	**3,741**	**4,955**	**6,662**
11a(vii): Legislative and Regulatory	$000 (in constant prices)					
*Project or programme**						
AUFLS scheme changes	-	-	-	157	-	-
NER protection changes through TWH Network	-	-	518	-	-	-
Low lines mitigation		250	250	250	250	250
Seismic upgrades of substations	472	500	-	695	969	684
**include additional rows if needed*						
All other projects or programmes - legislative and regulatory	360	-	-	-	-	-
Legislative and regulatory expenditure	**832**	**750**	**768**	**1,102**	**1,219**	**934**
less Capital contributions funding legislative and regulatory						
Legislative and regulatory less capital contributions	**832**	**750**	**768**	**1,102**	**1,219**	**934**

SCHEDULE 11a: Report On Forecast Capital Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
11a(viii): Other Reliability, Safety and Environment	$000 (in constant prices)					
*Project or programme**						
Air-conditioning for substations	101	-	115	125	114	-
CBD IOT Fault Indication	-	72	72	-	-	-
Confined spaces	201	144	239	-	239	-
Distribution System Operator enabling	-	200	285	285	342	342
Fibre installation (Discretionary)	50	58	58	63	63	63
Fibre routes	270	506	399	285	342	342
Garden Place Switching Station Bypass	778	1,251	-	-	-	-
Gordonton Zone Substation Upgrade	-	891	-	-	-	-
LV Visibility	-	-	200	228	285	285
Massey	-	782	-	-	-	-
Network Reliability Project	-	456	604	741	741	741
S&C Link Replacement	250	250	250	-	-	-
Substation Door Upgrade	51	-	58	58	-	-
Te Uku Zone Substation Upgrade		969	1,357	57	-	-
**include additional rows if needed*						
All other projects or programmes - other reliability, safety and environment						
Other reliability, safety and environment expenditure	**1,700**	**5,578**	**3,637**	**1,842**	**2,126**	**1,773**
less Capital contributions funding other reliability, safety and environment						
Other reliability, safety and environment less capital contributions	**1,700**	**5,578**	**3,637**	**1,842**	**2,126**	**1,773**

SCHEDULE 11a: Report On Forecast Capital Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
11a(ix): Non-Network Assets	$000 (in constant prices)					
Routine expenditure						
*Project or programme**						
Computer Equipment	575	700	383	445	383	383
Computer Software	1,655	3,000	1,917	1,905	1,917	1,917
Plant and Equipment	100	100	100	100	100	100
Motor Vehicles	295	45	-	100	270	100
**include additional rows if needed*						
All other projects or programmes - routine expenditure						
Routine expenditure	**2,625**	**3,845**	**2,400**	**2,550**	**2,670**	**2,500**
Atypical expenditure						
*Project or programme**						
**include additional rows if needed*						
All other projects or programmes - atypical expenditure	3,585	3,000	3,500	3,500	3,500	3,500
Atypical expenditure	3,585	3,000	3,500	3,500	3,500	3,500
Expenditure on non-network assets	**6,210**	**6,845**	**5,900**	**6,050**	**6,170**	**6,000**

SCHEDULE 11b: Report On Forecast Operation Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

"This schedule requires a breakdown of forecast operational expenditure for the disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms.

EDBs must provide explanatory comment on the difference between constant price and nominal dollar operational expenditure forecasts in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27	31 Mar 28	31 Mar 29	31 Mar 30	31 Mar 31	31 Mar 32
Operational Expenditure Forecast	$000 (in nominal dollars)										
Service interruptions and emergencies	3,619	3,429	3,533	3,640	3,750	3,863	3,980	4,100	4,224	4,351	4,482
Vegetation management	1,532	1,742	1,777	1,812	1,849	1,886	1,923	1,962	2,001	2,041	2,082
Routine and corrective maintenance and inspection	1,969	2,290	2,385	2,497	2,538	2,716	2,784	2,907	2,974	3,060	3,089
Asset replacement and renewal	2,036	2,741	2,854	2,989	3,037	3,250	3,331	3,478	3,559	3,662	3,697
Network Opex	**9,156**	**10,203**	**10,548**	**10,938**	**11,174**	**11,715**	**12,017**	**12,447**	**12,758**	**13,114**	**13,350**
System operations and network support	8,914	9,868	10,066	10,267	10,472	10,682	10,896	11,113	11,336	11,562	11,794
Business support	12,849	14,595	14,887	15,185	15,488	15,798	16,114	16,436	16,765	17,101	17,443
Non-network opex	**21,763**	**24,464**	**24,953**	**25,452**	**25,961**	**26,480**	**27,010**	**27,550**	**28,101**	**28,663**	**29,236**
Operational expenditure	**30,919**	**34,666**	**35,501**	**36,390**	**37,134**	**38,195**	**39,027**	**39,997**	**40,859**	**41,777**	**42,586**

SCHEDULE 11b: Report On Forecast Operation Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27	31 Mar 28	31 Mar 29	31 Mar 30	31 Mar 31	31 Mar 32
	$000 (in constant prices)										
Service interruptions and emergencies	3,619	3,330	3,363	3,396	3,430	3,465	3,499	3,534	3,570	3,605	3,641
Vegetation management	1,532	1,691	1,691	1,691	1,691	1,691	1,691	1,691	1,691	1,691	1,691
Routine and corrective maintenance and inspection	1,969	2,224	2,270	2,331	2,322	2,436	2,448	2,506	2,514	2,536	2,509
Asset replacement and renewal	2,036	2,661	2,716	2,789	2,779	2,915	2,929	2,999	3,008	3,034	3,003
Network Opex	**9,156**	**9,906**	**10,040**	**10,207**	**10,222**	**10,508**	**10,568**	**10,730**	**10,783**	**10,866**	**10,845**
System operations and network support	8,914	9,581	9,581	9,581	9,581	9,581	9,581	9,581	9,581	9,581	9,581
Business support	12,849	14,170	14,170	14,170	14,170	14,170	14,170	14,170	14,170	14,170	14,170
Non-network opex	**21,763**	**23,751**	**23,751**	**23,751**	**23,751**	**23,751**	**23,751**	**23,751**	**23,751**	**23,751**	**23,751**
Operational expenditure	**30,919**	**33,657**	**33,791**	**33,958**	**33,973**	**34,259**	**34,319**	**34,481**	**34,534**	**34,617**	**34,596**
Subcomponents of operational expenditure (where known)	$000 (in constant prices)										
Energy efficiency and demand side management, reduction of energy losses	375	385	385	385	385	385	385	385	385	385	385
Direct billing*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Research and Development	102	109	109	109	109	109	109	109	109	109	109
Insurance	696	702	750	760	770	770	770	770	770	770	770
** Direct billing expenditure by suppliers that direct bill the majority of their consumers*											

SCHEDULE 11b: Report On Forecast Operation Expenditure

AMP Planning Period 1 April 2022 – 31 March 2032

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27	31 Mar 28	31 Mar 29	31 Mar 30	31 Mar 31	31 Mar 32
Difference between nominal and real forecasts	$000 (in constant prices)										
Service interruptions and emergencies	-	100	170	243	319	398	480	565	654	746	841
Vegetation management	-	51	86	121	157	194	232	271	310	350	391
Routine and corrective maintenance and inspection	-	67	115	167	216	280	336	401	460	524	580
Asset replacement and renewal	-	80	137	200	259	335	402	480	551	628	694
Network Opex	**-**	**297**	**508**	**731**	**951**	**1,207**	**1,450**	**1,716**	**1,975**	**2,247**	**2,505**
System operations and network support	-	287	485	686	891	1,101	1,315	1,532	1,755	1,981	2,213
Business support	-	425	717	1,015	1,318	1,628	1,944	2,266	2,595	2,930	3,273
Non-network opex	**-**	**713**	**1,202**	**1,701**	**2,210**	**2,729**	**3,259**	**3,799**	**4,350**	**4,912**	**5,485**
Operational expenditure	**-**	**1,010**	**1,710**	**2,432**	**3,161**	**3,936**	**4,709**	**5,515**	**6,325**	**7,159**	**7,990**

SCHEDULE 12a: Report On Asset Condition

AMP Planning Period 1 April 2022 – 31 March 2032

This schedule requires a breakdown of forecast operational expenditure for the disclosure year and a 10 year planning period. The forecasts should be consistent with the supporting information set out in the AMP. The forecast is to be expressed in both constant price and nominal dollar terms.

EDBs must provide explanatory comment on the difference between constant price and nominal dollar operational expenditure forecasts in Schedule 14a (Mandatory Explanatory Notes).

This information is not part of audited disclosure information.

ASSET CONDITION AT START OF PLANNING PERIOD (PERCENTAGE OF UNITS BY GRADE)

Voltage	Asset category	Asset class	Units	H1	H2	H3	H4	H5	Grade unknown	Data accuracy (1–4)	% of asset forecast to be replaced in next 5 years
All	Overhead Line	Concrete poles / steel structure	No.	0.02%	0.23%	1.79%	12.17%	79.19%	6.60%	3	17.56%
All	Overhead Line	Wood poles	No.	-	1.33%	5.55%	12.31%	76.47%	4.34%	3	44.74%
All	Overhead Line	Other pole types	No.	-	4.17%	4.17%	4.17%	50.00%	37.50%	2	-
HV	Subtransmission Line	Subtransmission OH up to 66kV conductor	km	-	-	-	56.18%	43.82%	-	1	-
HV	Subtransmission Line	Subtransmission OH 110kV+ conductor	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (XLPE)	km	-	-	2.00%	11.15%	86.85%	-	1	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Oil pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Gas pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (PILC)	km	-	-	-	3.43%	96.57%	-	1	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (XLPE)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Oil pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Gas Pressurised)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (PILC)	km	-	-	-	-	-	-	N/A	-
HV	Subtransmission Cable	Subtransmission submarine cable	km	-	-	-	-	-	-	N/A	-
HV	Zone substation Buildings	Zone substations up to 66kV	No.	-	-	8.51%	65.96%	25.53%	-	4	-
HV	Zone substation Buildings	Zone substations 110kV+	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	22/33kV CB (Indoor)	No.	-	-	-	-	100.00%	-	4	-
HV	Zone substation switchgear	22/33kV CB (Outdoor)	No.	-	-	6.06%	6.06%	87.88%	-	4	-
HV	Zone substation switchgear	33kV Switch (Ground Mounted)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	33kV Switch (Pole Mounted)	No.	-	-	-	-	10.00%	90.00%	4	-
HV	Zone substation switchgear	33kV RMU	No.	-	-	-	4.55%	22.73%	72.73%	4	-
HV	Zone substation switchgear	50/66/110kV CB (Indoor)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	50/66/110kV CB (Outdoor)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (ground mounted)	No.	-	-	-	-	-	-	N/A	-
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (pole mounted)	No.	-	-	-	-	-	-	N/A	-

SCHEDULE 12a: Report On Asset Condition

AMP Planning Period 1 April 2022 – 31 March 2032

ASSET CONDITION AT START OF PLANNING PERIOD (PERCENTAGE OF UNITS BY GRADE)

Voltage	Asset category	Asset class	Units	H1	H2	H3	H4	H5	Grade unknown	Data accuracy (1–4)	% of asset forecast to be replaced in next 5 years
HV	Zone Substation Transformer	Zone Substation Transformers	No.	-	-	-	18.37%	81.63%	-	3	-
HV	Distribution Line	Distribution OH Open Wire Conductor	km	-	0.01%	1.54%	13.08%	85.36%	-	3	1.83%
HV	Distribution Line	Distribution OH Aerial Cable Conductor	km	-	-	-	-	-	-	N/A	-
HV	Distribution Line	SWER conductor	km	-	-	-	-	-	-	N/A	-
HV	Distribution Cable	Distribution UG XLPE or PVC	km	-	-	12.52%	12.12%	75.36%	-	1	-
HV	Distribution Cable	Distribution UG PILC	km	-	-	-	47.26%	52.74%	-	1	-
HV	Distribution Cable	Distribution Submarine Cable	km	-	-	-	-	-	-	N/A	-
HV	Distribution switchgear	3.3/6.6/11/22kV CB (pole mounted) - reclosers and sectionalisers	No.	-	-	-	-	37.99%	62.01%	4	25.22%
HV	Distribution switchgear	3.3/6.6/11/22kV CB (Indoor)	No.	-	1.61%	10.34%	6.90%	81.15%	-	4	11.25%
HV	Distribution switchgear	3.3/6.6/11/22kV Switches and fuses (pole mounted)	No.	0.02%	0.10%	2.27%	7.15%	90.47%	-	4	0.91%
HV	Distribution switchgear	3.3/6.6/11/22kV Switch (ground mounted) - except RMU	No.	-	-	-	-	-	-	N/A	-
HV	Distribution switchgear	3.3/6.6/11/22kV RMU	No.	0.09%	-	1.63%	20.17%	50.04%	28.07%	4	10.01%
HV	Distribution Transformer	Pole Mounted Transformer	No.	0.07%	0.62%	2.64%	4.42%	73.73%	18.52%	3	4.75%
HV	Distribution Transformer	Ground Mounted Transformer	No.	0.29%	0.38%	3.84%	25.52%	48.10%	21.86%	3	4.17%
HV	Distribution Transformer	Voltage regulators	No.	-	-	-	-	47.83%	52.17%	4	8.33%
HV	Distribution Substations	Ground Mounted Substation Housing	No.	-	-	-	-	-	-	N/A	-
LV	LV Line	LV OH Conductor	km	-	0.05%	1.61%	10.76%	87.58%	-	1	-
LV	LV Cable	LV UG Cable	km	-	-	21.90%	35.34%	42.76%	-	1	-
LV	LV Streetlighting	LV OH/UG Streetlight circuit	km	-	0.65%	8.90%	8.04%	82.41%	-	1	-
LV	Connections	OH/UG consumer service connections	No.	-	-	-	-	-	-	N/A	-
All	Protection	Protection relays (electromechanical, solid state and numeric)	No.	-	4.29%	8.34%	10.25%	77.12%	-	3	9.99%
All	SCADA and communications	SCADA and communications equipment operating as a single system	Lot	-	-	9.26%	17.90%	72.84%	-	3	2.93%
All	Capacitor Banks	Capacitors including controls	No.	-	-	-	-	100.00%	-	4	-
All	Load Control	Centralised plant	Lot	-	-	-	-	-	100.00%	3	-
All	Load Control	Relays	No.	-	-	-	-	-	-	N/A	-
All	Civils	Cable Tunnels	km	-	-	-	-	-	-	N/A	-

SCHEDULE 12b(i): System Growth - Zone Substations

AMP Planning Period 1 April 2022 – 31 March 2032

This schedule requires a breakdown of current and forecast capacity and utilisation for each zone substation and current distribution transformer capacity. The data provided should be consistent with the information provided in the AMP. Information provided in this table should relate to the operation of the network in its normal steady state configuration.

Existing Zone Substations	Current Peak Load (MVA)	Installed Firm Capacity (MVA)	Security of Supply Classification (type)	Transfer Capacity (MVA)	Utilisation of Installed Firm Capacity %	Installed Firm Capacity +5 years (MVA)	Utilisation of Installed Firm Capacity + 5yrs %	Installed Firm Capacity Constraint +5 years (cause)	Explanation
Avalon Dr	19.6	23.8	N-1	10	82%	23.8	88%	No constraint within +5 years	
Borman	20.8	20.6	N-1	11	101%	20.6	108%	No constraint within +5 years	Limited by the 33kV OH conductor. Some offload to Gordonton once 11kV feeder strength improved. Some offload to Chartwell once new Fairfield or Crosby zone substation and associated 11kV feeders configured
Bryce St	28.0	22.9	N-1	5	122%	22.9	131%	No constraint within +5 years	Peak loading reflects transfers from Kent St under contingency
Chartwell	18.1	25.9	N-1	11	70%	25.9	75%	No constraint within +5 years	Planned offload to new Fairfield zone substation
Claudelands	23.2	22.9	N-1	15	101%	22.9	108%	No constraint within +5 years	Planned offload to new Fairfield zone substation
Cobham	14.7	25.9	N-1	7	57%	25.9	61%	No constraint within +5 years	
Finlayson Rd	3.7	-	N	3		-	-	No constraint within +5 years	
Glasgow St	9.3	-	N	5		-	-	No constraint within +5 years	
Gordonton	7.7	5.0	N	6	154%	5.0	162%	Transformer	Currently meets WEL network security criteria. Transformer capacity will be reviewed when transformer renewals due at end of AMP period.
Hampton Downs	2.0	-	N	1		-	-	No constraint within +5 years	
Hoeka Rd	8.3	-	N	8		-	-	No constraint within +5 years	
Horotiu	14.1	18.0	N-1	10	78%	18.0	82%	No constraint within +5 years	New substation planned to support industrial development
Kent St	23.5	22.9	N-1	8	103%	22.9	108%	No constraint within +5 years	Peak loading reflects transfers from Bryce St under contingency
Latham Court	19.9	22.9	N-1	10	87%	22.9	93%	No constraint within +5 years	

SCHEDULE 12b(i): System Growth - Zone Substations

AMP Planning Period 1 April 2022 – 31 March 2032

Existing Zone Substations	Current Peak Load (MVA)	Installed Firm Capacity (MVA)	Security of Supply Classification (type)	Transfer Capacity (MVA)	Utilisation of Installed Firm Capacity %	Installed Firm Capacity +5 years (MVA)	Utilisation of Installed Firm Capacity + 5yrs %	Installed Firm Capacity Constraint +5 years (cause)	Explanation
Ngaruawahia	6.1	7.5	N-1	5	81%	7.5	86%	No constraint within +5 years	
Peacockes Rd	17.4	25.9	N-1	10	67%	25.9	72%	No constraint within +5 years	
Pukete - Anchor	17.3	30.0	N-1	-	58%	30.0	58%	No constraint within +5 years	3-winding TX - owned Contact Energy.
Pukete - WEL's 11kV	11.1	12.6	N-1	9	88%	12.6	93%	No constraint within +5 years	3-winding TX - owned Contact Energy.
Raglan	5.2	-	N	3		-	-	No constraint within +5 years	Transfer capacity is limited due to voltage constraints.
Sandwich Rd	23.6	28.2	N-1	14	84%	28.2	88%	No constraint within +5 years	
Tasman	22.4	30.0	N-1	18	75%	30.0	79%	No constraint within +5 years	New substation planned to support Industrial and residential development
Te Kauwhata	7.0	10.0	N-1	3	70%	10.0	75%	No constraint within +5 years	
Te Uku	2.0	5.0	N	2	40%	5.0	42%	No constraint within +5 years	
Wallace Rd	11.6	30.0	N-1	9	39%	30.0	41%	No constraint within +5 years	
Weavers	9.8	9.0	N-1	7	109%	9.0	116%	Transformer	Load can be transferred to the adjacent Glasgow St Substation in the event of a transformer outage
Whatawhata	5.0	-	N	3	-	-	-	No constraint within +5 years	

[1] Extend forecast capacity table as necessary to disclose all capacity by each zone substation

SCHEDULE 12c: Report On Forecast Network Demand

AMP Planning Period 1 April 2022 – 31 March 2032

This schedule requires a forecast of new connections (by consumer type), peak demand and energy volumes for the disclosure year and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumptions used in developing the expenditure forecasts in Schedule 11a and Schedule 11b and the capacity and utilisation forecasts in Schedule 12b.

NUMBER OF CONNECTIONS

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
12c(i): Consumer Connections						
Number of ICPs connected in year by consumer type						
*Consumer types defined by EDB**						
Residential Customers	1,119	2,868	3,147	3,143	3,006	3,006
Business Customers	188	150	150	150	150	150
Large Customers - Low Voltage 400V	36	20	20	20	20	20
Large Customers - Medium Voltage 11kV	1	-	-	-	-	-
Large Customers - High Voltage 33kV	-	-	-	-	-	-
Asset Specific Customers	-	-	-	-	-	-
Unmetered Customers	1	-	-	-	-	-
Connections total	**1,345**	**3,038**	**3,317**	**3,313**	**3,176**	**3,176**
**include additional rows if needed*						
Distributed generation						
Number of connections	195	250	312	391	488	510
Capacity of distributed generation installed in year (MVA)	1	1	1	2	2	2
12c(ii) System Demand						
Maximum coincident system demand (MW)						
GXP demand	183	224	233	238	243	251
plus Distributed generation output at HV and above	96	50	50	50	50	50
Maximum coincident system demand	**279**	**274**	**283**	**288**	**293**	**301**
less Net transfers to (from) other EDBs at HV and above						
Demand on system for supply to consumers' connection points	**279**	**274**	**283**	**288**	**293**	**301**
Electricity volumes carried (GWh)						
Electricity supplied from GXPs	998	1,061	1,103	1,146	1,189	1,233
less Electricity exports to GXPs	70	80	78	75	73	71
plus Electricity supplied from distributed generation	427	436	437	439	439	439
less Net electricity supplied to (from) other EDBs	(15)	(15)	(15)	(15)	(15)	(15)
Electricity entering system for supply to ICPs	**1,370**	**1,432**	**1,478**	**1,524**	**1,570**	**1,616**
less Total energy delivered to ICPs	1,313	1,375	1,419	1,464	1,508	1,552
Losses	**57**	**57**	**58**	**60**	**62**	**64**
Load factor	**56%**	**60%**	**60%**	**60%**	**61%**	**61%**
Loss ratio	**4.2%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**	**4.0%**

SCHEDULE 12d: Report Forecast Interruptions and Duration

AMP Planning Period 1 April 2022 – 31 March 2032

This schedule requires a forecast of SAIFI and SAIDI for disclosure and a 5 year planning period. The forecasts should be consistent with the supporting information set out in the AMP as well as the assumed impact of planned and unplanned SAIFI and SAIDI on the expenditures forecast provided in Schedule 11a and Schedule 11b.

	Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5
for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
SAIDI						
Class B (planned interruptions on the network)	27.0	34.9	35.6	36.4	36.5	36.8
Class C (unplanned interruptions on the network)	69.7	69.5	69.5	69.5	69.5	69.5
SAIFI						
Class B (planned interruptions on the network)	0.31	0.34	0.34	0.35	0.35	0.35
Class C (unplanned interruptions on the network)	1.05	1.02	1.02	1.02	1.02	1.02

5 DIRECTORS' CERTIFICATE

APPENDIX B

CERTIFICATION FOR YEAR-BEGINNING DISCLOSURES

Pursuant to clause 2.9.1 of Section 2.9

We, Robert James Campbell, and Carolyn Mary Steele, being directors of WEL Networks Limited certify that, having made all reasonable enquiry, to the best of our knowledge:

a) The following attached information of WEL Networks Limited prepared for the purposes of clauses 2.4.1, 2.6.1, 2.6.3, 2.6.6 and 2.7.2 of the Electricity Distribution Information Disclosure Determination 2012 in all material respects complies with that determination.

b) The prospective financial or non-financial information included in the attached information has been measured on a basis consistent with regulatory requirements or recognised industry standards.

c) The forecasts in Schedules 11a, 11b, 12a, 12b, 12c and 12d are based on objective and reasonable assumptions which both align with WEL Networks Limited's corporate vision and strategy and are documented in retained records.

_____ _____

Director Director

3 March 2022 3 March 2022

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