



Asset Management Plan Update

1 April 2022 to 31 March 2032

Submitted in accordance with Information Disclosure 2012

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1. Introduction

1.1. Purpose of the AMP Update

The purpose of this Asset Management Plan (AMP) Update is to reflect any material changes in Marlborough Lines Limited's (MLL's) asset management for the planning period from that outlined in the 2021 AMP¹. Full recent AMPs were disclosed on 31 March 2020 and 31 March 2021. This AMP Update covers the period of 1 April 2022 to 31 March 2032. MLL last disclosed an AMP update on 31 March 2019.

For the purposes of this AMP Update, the interpretation of material change² is any significant deviation from the full AMP published 31 March 2021 (2021 AMP). Rescheduling projects, re-categorisation of expenditure types, minor adjustments to forecast amounts and values for example, are not deemed by MLL to be material changes.

MLL's AMPs are disclosed in accordance with regulatory requirements, but more importantly, they underpin MLL's strategy for managing its assets to meet consumer demands.

1.2. Information disclosure requirements

Section 2.6 of the Commerce Commission's Information Disclosure Determination 2012 (ID 2012) requires that Electricity Distribution Businesses (EDBs) disclose a full Asset Management Plan (AMP) one year after the start of the Default Price Path (DPP) and two years before the start of the next DPP period. In the other years EDBs may elect to complete and publicly disclose an AMP update which presents less information than a full AMP, to reduce compliance costs.

MLL produced a full AMP for 31 March 2021; this allows for the disclosure of an AMP Update for 31 March 2022, based on the aforementioned provision. As such, we have elected to prepare an AMP Update. We consider this approach appropriate considering the lack of material changes from the 2021 AMP.

Clause 2.6.3 in ID 2012 requires MLL to complete and publicly disclose an AMP Update before 1 April 2022. Clause 2.6.5 states that the AMP Update must:

- Relate to the electricity distribution services supplied by the EDB;
- Identify any material changes to the network development plans disclosed in the last AMP;
- Identify any material changes to the lifecycle asset management (maintenance and renewal) plans disclosed in the last AMP;
- Provide the reasons for any material changes to the previous disclosures in the Report on Forecast Capital Expenditure set out in Schedule 11a and Report on Forecast Operational Expenditure set out in Schedule 11b; and

¹ MLL's Asset Management Plan 1 April 2021 to 31 March 2031, available from <https://www.marlboroughlines.co.nz/About-us/Disclosures/Asset-Management.aspx>

² A material project and programme by definition "means projects or programmes with actual forecast total expenditure greater than the materiality threshold that is developed by the EDB" (Information Disclosure, 2012).

- Identify any changes to the asset management practices of the EDB that would affect a Schedule 13 Report on Asset Management Maturity disclosure.

In addition, clause 2.6.6 requires MLL to publicly disclose:

- a) The Report on Forecast Capital Expenditure in Schedule 11a;
- b) the Report on Forecast Operational Expenditure in Schedule 11b;
- c) the Report on Asset Condition in Schedule 12a;
- d) the Report on Forecast Capacity in Schedule 12b;
- e) the Report on Forecast Network Demand in Schedule 12c; and
- f) the Report on Forecast Interruptions and Duration in Schedule 12d.

1.3. Structure

This AMP Update has been prepared in accordance with Section 2.6 of ID 2012. This AMP Update is much more concise than the 2021 AMP. Where further detail is sought, the reader is encouraged to view the 2021 AMP.

This AMP Update reports on the following:

- Section 2 - A commentary on developments in MLL's asset management approach that highlights future challenges, in particular, due to technology and de-carbonisation developments.
- Section 3 - Material changes from the 2021 AMP, including:
 - Network development plans;
 - Lifecycle asset management; and
 - Asset management practices.

Where applicable, Section 3 also provides the reasons for any material changes presented in the Report on Forecast Capital Expenditure (Schedule 11a) and Forecast Operational Expenditure (Schedule 11b) from the 2021 AMP.

- Section 4 - An overview of any changes between the schedules accompanying this AMP Update to those disclosed with the 2021 AMP. The schedules include:
 - Schedule 11a – Forecast Capital Expenditure;
 - Schedule 11b – Forecast Operational Expenditure;
 - Schedule 12a – Asset Condition;
 - Schedule 12b – Forecast Capacity;
 - Schedule 12c – Forecast Network Demand; and
 - Schedule 12d – Forecast Interruptions and Duration.

The completed schedules are appended to this AMP Update.

MLL has not identified any material changes to its asset management practices that would affect its Schedule 13 Report on Asset Management Maturity disclosure, therefore it has not been updated and included with this AMP Update.

2. High Level Strategy

This section provides commentary on developments in MLL's objectives that will impact on MLL's asset management approach in the future and highlights future challenges including those related to technology and de-carbonisation developments.

2.1. Revised Statement of Corporate Intent

MLL significantly revised its Statement of Corporate Intent (SCI) during 2021. The SCI and MLL's vision were referred to in section 4.3 of the 2021 AMP. A number of aspects of the revised SCI will impact upon MLL's Asset Management Strategy.

MLL's defined Mission is to:

Deliver sustainable regional growth and equity through people, technology, and environmental leadership

The electricity industry is at a point where substantial change is occurring largely due to technological progress and concerns about the climate combining to alter the way in which MLL's network is being used such as:

- Increased uptake of electric vehicles;
- Residential consumers becoming electricity generators through installation of solar (PV) arrays on their homes;
- Industrial consumers looking to decarbonise their processes;
- Major transport services moving to electricity;
- Increased medium scale (>0.5 MW) embedded generation network connections; and
- Consumers wanting to store energy in batteries and trade electricity across MLL's network.

In a decarbonised world, for Marlborough to grow, MLL needs to provide a **resilient, reliable, and future-proofed electricity network**.

To achieve MLL's mission and vision of the future, in 2021 MLL developed the following six **Strategic Objectives** that are at the core of MLL's business:



Assets

Optimise our assets to provide a flexible, dynamic, and resilient network to accommodate future technologies and promote regional growth.



Technology and Innovation

Empower our consumers and region by deploying technology and commercial innovation to accelerate electrification and provide for future load growth.



Financial Objectives

Deliver value to all of our consumers through efficient operations and investment success.



Our People

Provide a workplace where our people are valued, engaged, and inspired to deliver positive personal and Company outcomes for the benefit of all consumers.



Community

Improve energy equity and support regional growth through education, employment, sponsorship and investments.



Environment

Minimise our environmental footprint through operational efficiencies, reducing net carbon emissions, and supporting regional environmental initiatives.

To measure MLL's performance against these Strategic Objectives MLL developed the following **Performance Targets**. These strategic objectives and performance targets will impact on MLL's Asset Management Planning. MLL's Group performance targets that may impact upon the Asset Management Plan for the next three financial years assuming a normalised operating environment are:

	Performance Targets	2022 Target	2023 Target	2024 Target
	Assets <ul style="list-style-type: none"> Asset Maturity rating Total SAIDI 	3.2 150 min	3.4 150 min	3.5 145 min
	Technology and Innovation <ul style="list-style-type: none"> Cumulative number of deployed non-network solutions MLL Owned Renewable generation 	2 1 MW	4 4 MW	8 8 MW
	Our People Number of serious harm incidents	0	0	0
	Community Overall consumer satisfaction score	> 85%	> 85%	> 85%
	Environment MLL net GHG tonnes (negative = removals > emissions)	(750)	(800)	(1000)

MLL has reviewed the Energy Trilemma as presented by the World Energy Council. The World Energy Council's definition of energy sustainability is based on three core dimensions:

1. Energy Security;
2. Energy Equity; and
3. Environmental sustainability of energy systems.

MLL intends to advance Marlborough's energy sustainability through objectives encompassing each of the core dimensions of the trilemma as shown in the following figure.

Severe flooding that occurred in Marlborough in July 2021 (reported in 4.6 below) has also heightened awareness of the potential for more extreme weather events linked to climate risks. The need for good network resilience and recovery response has been highlighted by this series of events.

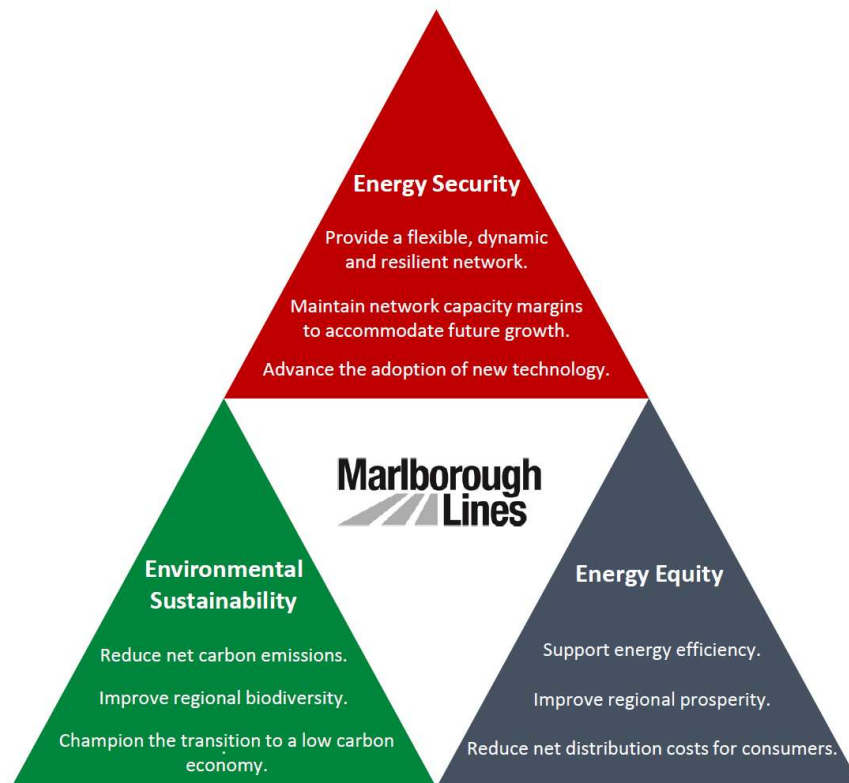


Figure 1: The Energy Trilemma - Advancing Marlborough's Energy Sustainability

2.2. Planning for Change

Over recent years and in the immediate future, MLL's network improvement plan is focused on the resilience of its core backbone infrastructure, including meshing its existing 33kV network. This involves building new 33kV line sections, rebuilding some circuits, reconfiguring others and upgrading substations with new circuit breakers, protections and control systems. The reconfigured 33kV network will support power supply to continue uninterrupted to urban

substations when single 33kV line or transformer faults occur, improving power supply reliability and power quality.

MLL is examining its own journey towards a low carbon electrified economy and working with local enterprises to understand their journeys. MLL is well positioned to support significant reductions in carbon emissions within Marlborough. A key part of enabling the region to reduce its carbon footprint is to understand the quantum of fossil fuel and thermal fuel load to be displaced, as this will influence network strategy and investment.

MLL undertook an industrial consumer survey in May 2021³ to better understand the potential for decarbonisation load growth. There is significant fossil fuel (gas, coal and some diesel) heating and other load in Marlborough, primarily wineries, food processing and hospital load. The survey attempted to form a view on the potential to displace fossil fuels by options such as the conversion of solid fuel boilers to electrical options. Although electrical load growth due to decarbonisation may be substantial, timing of changes and details such as seasonality and load diversity require further investigation. MLL will continue to engage with its consumers with high thermal loads and modify network planning when appropriate to do so.

The way forward with transport decarbonisation is becoming clearer. MLL is supporting Sounds Air's industry leading journey to electrical commercial flights to and from Marlborough. The anticipated increase in demand from this initiative is being factored into network planning.

KiwiRail's partial electrification of new Cook Strait ferries is another significant electrification project. KiwiRail's initiative requires major upgrades to network capacity to the Picton Port, which will deliver significant environmental benefits through removing the need to run diesel generators while in Picton Harbour. KiwiRail has now ordered two diesel electric ferries that will require approximately 7 MW while in port from late 2025. This new load combined with expected related new loads at the port will double Picton's existing peak load. MLL is studying options to deal with this known step change in demand. The level of security required for the new port load, and the electric ferry battery upgrade path and resulting load increase is unclear. Future AMPs will describe MLL's strategy to supply the new load in an efficient and cost-effective manner.

The drive to reduce New Zealand's carbon emissions is accelerating the adoption of small-scale solar photovoltaics, stationary batteries and electric vehicles. Along with the transition of process heat from non-renewable fuels, these changes will result in increased demand on MLL's electricity network.

MLL is actively working with EDBs across New Zealand, and other industry participants to consider the likely impacts from the rise of Distributed Energy Resources (DERs) and options for its management. MLL will embrace and adopt new technologies when it believes there will be benefit to the network and/or consumers.

³ MLL initiated this work to be proactive in reaching out to consumers and understanding their current and future needs, with emphasis on changes arising from decarbonisation. Separately, MLL engaged DETA Consulting Ltd in late 2021 to engage with large consumers in further detail around their decarbonisation aspirations, and potential implications for MLL's network.

MLL conducted a high level EV and/or PV hosting capacity assessment in late 2021. This study showed a good level of capacity available in some parts of the LV network, and quite limited capacity available in other parts of the LV network. It suggested simple investments that may lift capacity in some areas, such as rephasing ICPs. MLL is considering its response to the study.

As per the 2021 AMP, whilst the installation of distributed generation within the network is increasing (solar in particular), the levels are still small in total and a concerning rate of increase is not yet evident. The current level of secure network capacity is also allowing MLL time to assess the effects of electric vehicle (EV) load as it arises. It is not expected that EV numbers in Marlborough will increase at such a rate that MLL will not be able to respond to meet the demand. MLL will consider alternative line delivery price structures, if deemed appropriate⁴, to manage potential significant increased demand from EVs. A close watch will be maintained on these new technologies to continuously assess their effects through monitoring and modelling.

MLL currently has a small amount of embedded medium scale generation connected to its network. This includes an existing hydro station (from 1927), three small windfarms (2010, 2011, and 2014), and a solar farm (2020). Recent reports commissioned by the Ministry of Business, Innovation and Employment⁵ suggest that Marlborough is a relatively attractive location for further wind and solar generation development. Undeveloped flat land is relatively scarce in Marlborough due to extensive viticulture. It is therefore difficult to predict where and when new generation development will occur.

TrustPower operates the Branch Power Scheme and was granted resource consents in 2008 to extend this scheme. Six new power stations were proposed with one connecting to the existing Branch scheme infrastructure, four connecting to a new substation on the 110kV Kikiwa to Blenheim line and one connecting to MLL's existing network in the Wairau Valley. TrustPower put the proposals on hold in 2012, due to low electricity prices combined with rising construction costs. Land use consents for the scheme lapsed in 2021. The consent to take water expires in 2046.

MLL plans to develop its network to satisfy generation needs as they become evident and appropriate.

⁴ From 1 April 2022 consumers may elect to install dedicated EV chargers or charge points as MLL controllable load. MLL has offered this option as a mitigation for potential load increases, and the consumer benefits through a lower c/kWh energy price.

⁵ "Wind Generation Stack Update", June 2020, Roaring40s Wind Power Ltd.
"Economics of Utility-Scale Solar in Aotearoa New Zealand" May 2020, Dr Allan Miller.

3. Material Changes

This section provides a summary of material changes from the 2021 AMP to the network development plans, lifecycle asset management and asset management practices at MLL. The schedules relating to this are summarised in Section 4 (with the schedules themselves disclosed separately with this AMP Update).

MLL considers that the forecasts set out in the schedules provide an accurate summary of the expected required investment and network performance for this planning period.

3.1. Network development plans

Relative to MLL's 2021 AMP, there are few material changes to MLL's forecast capital expenditure other than unanticipated high inflation.

As discussed in section 2, the medium-term growth needs at the Picton wharf are unclear. It is however known that due to KiwiRail's changing needs, a new zone substation (Waitohi Wharf Substation) will be required at the Picton wharf within the planning period.

Section 7.3.3.2 of the 2021 AMP described the Sounds gateway area zone substation forecasts. Table 1 below provides an indicative update of this table, however discussions are ongoing with KiwiRail over KiwiRail's likely demand and desired security level. KiwiRail's requirements are expected to trigger some sub transmission upgrades required in addition to the new Waitohi Wharf zone substation and its connections to the network.

Substation	Security rating	Secure capacity (MVA)	2020 (actual)	2021	2026	2031
Havelock	N-1	5.0	2.9	2.9	2.9	2.9
Linkwater	N	5.0	3.4	3.4	3.4	3.4
Picton	N-1	15.0	7.5	7.6	7.7	7.8
Rai Valley	N	3.0	2.3	2.3	2.3	2.3
Waitohi	-	-	-	-	10	14

Table 1: Sounds gateway area zone substation maximum demand forecasts

As discussed in section 2.2, there is an increasing number of solar and wind generators in the region and MLL is maintaining a close watch on generation growth in order to determine constraints as they arise. However, it is difficult to forecast with any certainty, as in MLL's experience, applications to connect medium scale distributed generation to the network can come with little warning, and it is difficult to forecast whether they will build even after the completion of an application.

As Figure 2 shows, small scale distributed generation connected at low voltage continues to grow at a similar rate as seen in 2018 and 2019.

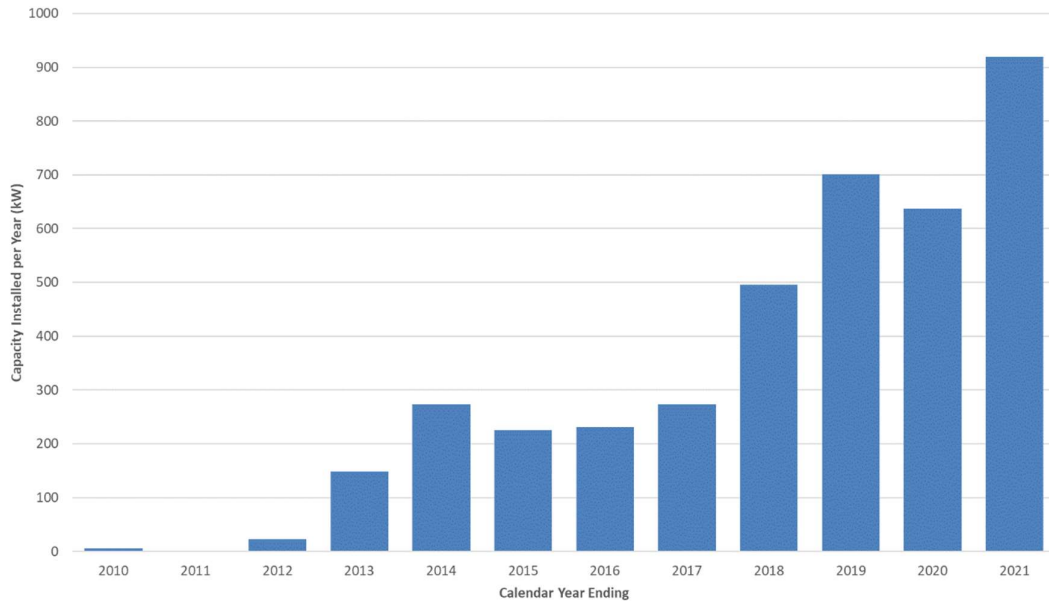


Figure 2: Solar SSDG (<10kW) installed capacity per year

Generation connected at higher voltage levels has seen growth due to the addition of Kea Energy’s solar plant in the Wairau Valley which was commissioned in January 2021 as shown in Figure 3.

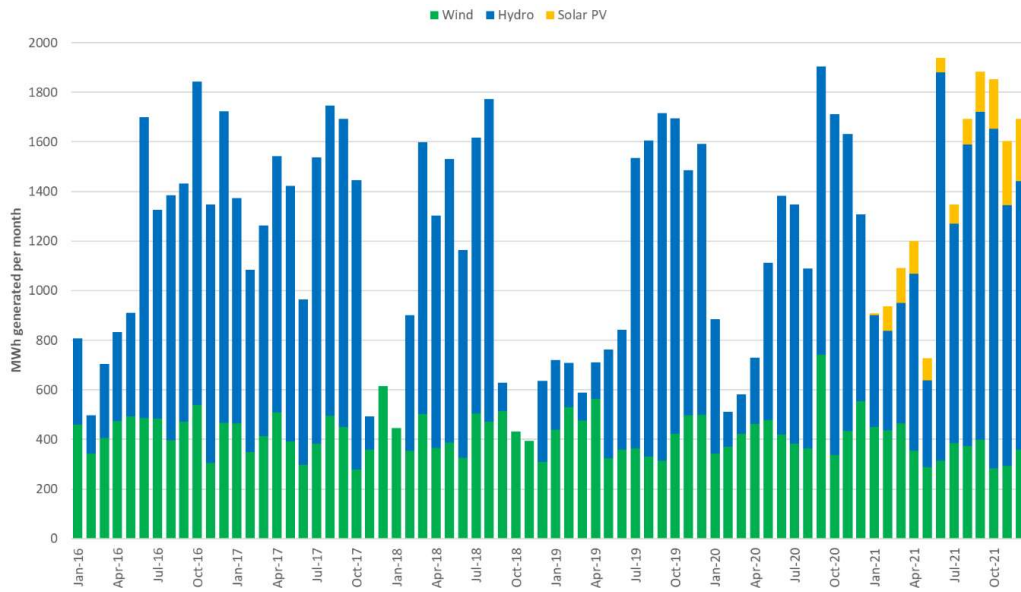


Figure 3: Electricity supplied from MV connected distributed generation in MWh

At present there are no firm plans for network upgrades in response to third party generation connection requests. Publicly disclosable new generation inquiries that may impact on network development if they progress include:

- Ranui Solar Limited has applied for Resource Consent for a large solar PV generation plant near Riverlands, Blenheim.

- MLL’s subsidiary Energy Marlborough Limited is considering the development of a solar plant in the Witherlea area that may be up to 1 MW in maximum output. This development is not anticipated to require changes to the existing network beyond its connection assets.

Further information on the current year’s capital expenditure, plus minor changes to forecast amounts for the planning period is outlined in Section 4.1.

3.2. Lifecycle asset management

For the planning period covered in this AMP update, there are no material changes for lifecycle asset management.

3.3. Asset management practices

There are no material changes to the organisation’s asset management practices from the 2021 AMP.

It was noted to MLL that the inspection intervals for pole mounted transformers in Table 39 of the 2021 AMP but not described the inspection intervals for ground mounted distribution transformers in the 2021 AMP. MLL’s inspection intervals are the same for ground mounted and pole mounted transformers as shown in the table below.

Item	Action	Period	Maintenance level
Distribution transformers in public places	Distribution transformer visual inspection	1 Year	SHI
All other distribution transformers	Distribution transformer visual inspection	6 Year	SHI

Table 2: Maintenance schedule for distribution transformers

4. ID schedules

This section provides details on the ID Schedules which are disclosed with this AMP Update. Where there are material changes from the 2021 AMP, or where there are significant variations between the 2021 AMP forecast costs vs the actual costs for the current disclosure year, these have been identified and are accompanied by explanatory notes.

4.1. Schedule 11a – Forecast Capital Expenditure

4.1.1. Current year

COVID-19 impacted the capital works plan with most capital projects put on hold during Alert Levels 3 and 4 in August and September 2021, pushing work into 2022. This has had a knock-on effect which is continuing to impact on project and capex forecasting. In parallel with the pandemic, MLL is noticing an increased tightness in the labour market and a substantial increase in prices for the services that it contracts in. Supply constraints have not materially impacted project delivery.

Statistics NZ reported that annual NZ inflation to 31 December 2021 was 5.9% which is the highest annual inflation (when measured between quarters) since 1990. The 2021 September quarter inflation of 2.2% was the highest measured by Statistics NZ since the June 1987 quarter⁶. MLL has noticed that it has been difficult to meet approved project budget costs at the tendering stage with tender offers being higher than expected.

Consumers price index, quarterly percent change, September 2017-September 2021

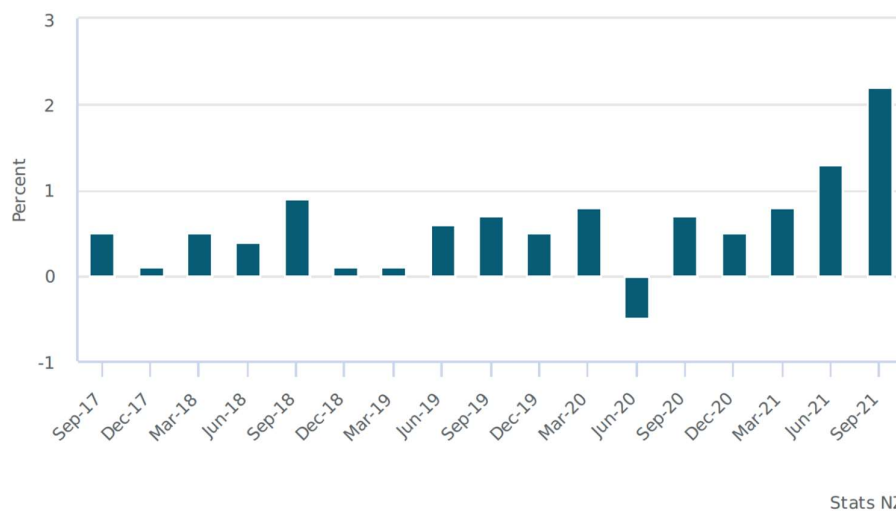


Figure 4: CPI Quarterly Changes from Statistics NZ⁷

The combined impacts of inflation and labour resource shortages moving forward are hard to forecast due to the uncertainty caused by the pandemic. They may have a somewhat balancing impact on capex forecasts whereby MLL's projects have been delayed by lockdowns

⁶ <https://www.stats.govt.nz/information-releases/consumers-price-index-september-2021-quarter>

⁷ <https://www.stats.govt.nz/information-releases/consumers-price-index-december-2021-quarter>

and constrained supply chains and insufficient human resources, however the delayed investment in the reported year may be somewhat balanced by inflationary effects. MLL is making efforts to complete projects that were planned for the year ending 2022, with some rolled forward into the following year. It is not expected that these delays will materially impact the quality of MLL’s service.

4.1.2. Forecast years – regulatory years 2023 to 2032

Figure 5 shows past actual capital expenditure and future forecast capital expenditure.

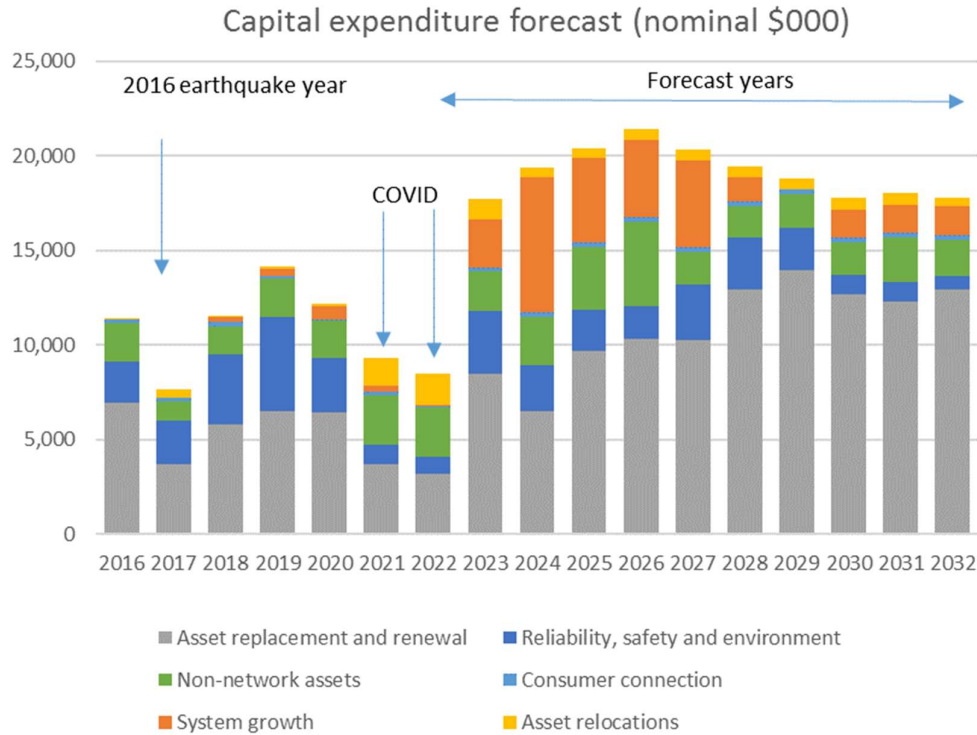


Figure 5: 2022 AMP update Capex forecasts (nominal dollars)

Discussions with KiwiRail have clarified the system growth driven capital expenditure that is required for the Waitohi Zone Substation build to supply the hybrid ferries along with project timelines. Estimated project costs have increased by 41% as a result of significantly increased construction cost inflation and project scope. This project accounts for most of the system growth capital expenditure included in the forecast for DY23 and DY24.

MLL has also inflated the forecast costs of its projects to renew the Woodbourne Zone Substation switchgear (DY23 Asset Replacement and Renewal project) and the cost to upgrade the Tapp Zone Substation to Woodbourne Zone Substation 33kV line (DY23 Reliability project) as a result of significantly increased construction costs.

There are no material changes to other projects or programmes for years 2023 to 2031. The forecast values may vary slightly from the 2021 AMP due to the rescheduling of projects that were not completed this regulatory year, or the reordering of projects over the forecast period.

There is an increase in capex across the planning period to allow for higher costs, as discussed above. Figure 6 shows the 2022 AMP Update Capex forecast compared against the 2021 AMP forecast values.

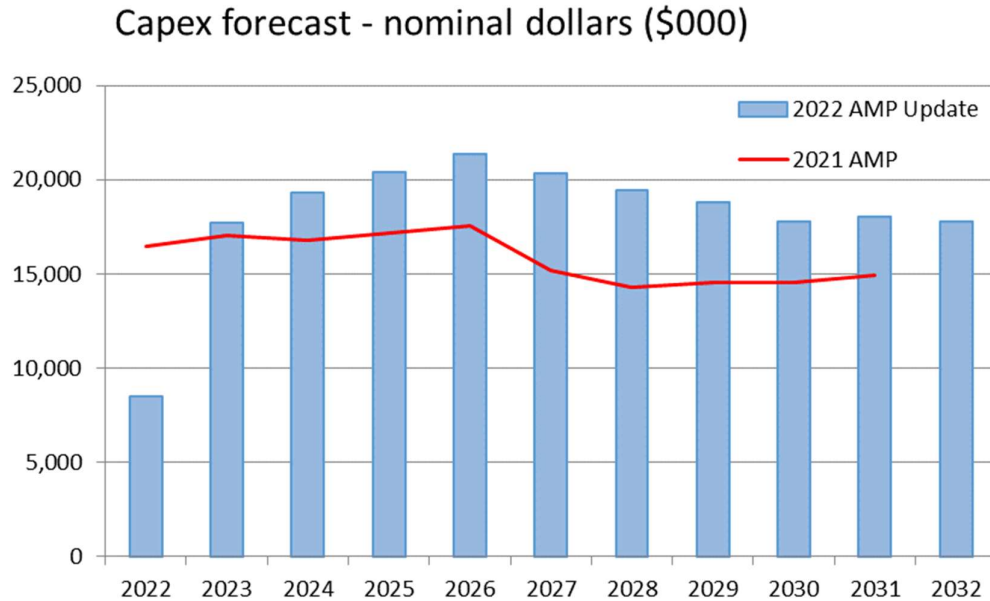


Figure 6: 2021 AMP vs 2022 AMP update Capex forecasts (nominal dollars)

Not included in the capital forecast are projects which could materialise as a result of further large-scale customer developments. MLL has elected to omit these due to the uncertainty surrounding these projects. MLL is considering how these projects might impact on the network, and what additional capital expenditure may be required to facilitate these developments (and how those costs should be recovered).

Non-system Capex

MLL has incorporated \$1m into the non-network asset forecast for 2023 to build an accommodation base at Elaine Bay. MLL currently uses a range of accommodation providers in the Marlborough Sounds, but they are not purpose built to provide a staging post for line construction activities requiring bucket trucks, poles and conductor, utes and multiple work crews. MLL already owns land at Elaine Bay for its backup generation site and intends to build accommodation and gear storage at this site. It is expected that this facility will provide efficiencies to undertake fault and line-rebuild activity in the years to come.

The values forecast for non-system capex are relatively consistent throughout the planning period, with the exception of the above-mentioned project.

4.2. Schedule 11b – Forecast Operational Expenditure

As discussed in 4.1.1, MLL is experiencing an increase in costs and a tightness in the supply and employment markets. This is anticipated to also have an impact on MLL’s opex.

The forecast actual operational expenditure for the current regulatory year is ahead of the forecast value from the 2021 AMP, driven by a number of factors including: higher costs;

significant storms in July 2021 requiring significant fault response; and COVID-19 lockdowns disrupting the RY22 work programme resulting in both unproductive time and a greater maintenance focus as big projects were delayed and rescheduled.

MLL has also undergone a restructure during DY22 to bolster its project management capability and also has plans to increase its expenditure in the Information Technology space as information systems become even more critical to managing MLL’s electricity network.

There has been an increase to the forecast operational expenditure for the planning period from those set out in the 2021 AMP. These are summarised in Figure 7.

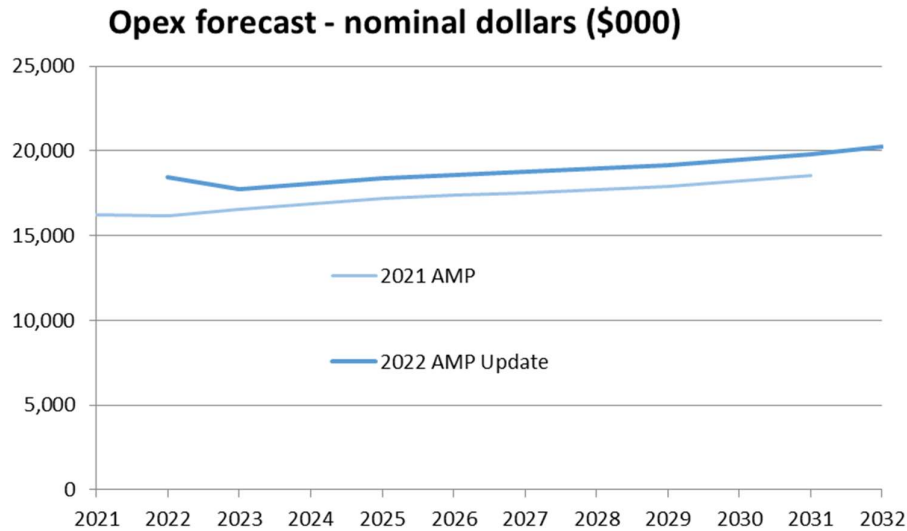


Figure 7 2021 AMP vs 2022 AMP update Opex forecasts (nominal dollars)

4.3. Schedule 12a – Asset Condition

There are minor changes to the asset condition values from those presented in the 2021 AMP. This is largely a result of the work on assets undertaken throughout the 2021 disclosure year, as well as ongoing efforts to improve the quality of data being held by MLL.

The below subsections provide more detail on where there are discrepancies between the 2021 AMP published schedule AHI values and this year’s schedule values, and the reasons for those discrepancies.

4.3.1. Poles

The AHI scores for poles have been assigned based primarily on the EEA’s AHI guide age-based methodology, however, in early 2018 MLL adopted the EEA’s AHI condition assessment criteria. Over 82% of our poles have been inspected since 2018 using this method, and for those poles, the condition based assessed AHI scores have been used in place of the age-based AHI scores.

The EEA’s AHI guide age-based methodology returns a significant portion of MLL’s softwood poles (of which there are approximately 10,400 on the network) lower than the H3 range. Since 2018 approximately 53% of our wooden poles have been assessed and assigned an AHI

score based on the EEA's condition assessment criteria for wooden poles. These condition values generally place the softwood poles in much better condition than what the age-based criteria does.

Similar to wooden poles, the condition-based AHI scores for concrete and steel poles, particularly for reinforced concrete poles for which there is a large population size, resulted in a higher condition ranking compared to the age-based analysis of these poles.

4.3.2. Conductor

As reported in MLL's 2021 AMP, no age-based criteria are specified for conductor in the EEA's AHI Guide (2016). MLL chose to adopt what it considers to be relatively conservative values (based on surveillance of the network and experience) taking into account safety issues together with potential unreliability. It is anticipated that a new EEA guide for conductor assessment will be published in 2022. MLL expects to review the condition profile of its conductor fleet during RY2023 based on the new industry guidance.

4.4. Schedule 12b – Forecast Capacity

There are only minor changes to the forecast capacity values in this AMP Update from the 2021 AMP. It is likely that due to KiwiRail's changing needs, a new zone substation (Waitohi Wharf Substation) will be required at the Picton wharf within the planning period and this is reported separately and reflected in the capex plans (Schedule 12b reports on existing zone substations only).

4.5. Schedule 12c – Forecast Network Demand

There are only minor changes to the forecast network demand values in this AMP update from the 2021 AMP.

The electricity demand is increasing as well as distributed generation. However, MLL believes that the rate of demand growth will exceed that of DG growth and therefore incremental increases of system demand (through the GXP) are anticipated over the planning period.

There are a few remaining areas of land in Marlborough suitable for viticulture development and therefore MLL anticipates a drop off in the growth of new irrigation connections, however we anticipate some conversions of diesel driven irrigation schemes to electrical supply over time.

Grid Exit Point maximum coincident demand is anticipated to continue its very gradual increase, however as discussed in sections 2.2 and 3.1, new diesel electric ferries are anticipated to be supplied from the Picton port in 2025. The forecast impact on electrical demand is subject to ongoing information disclosure by KiwiRail. Potential impacts on the Picton zone substation are less clear. Port Marlborough has indicated a desire from its customers to move towards electrification of further port infrastructure and vessels, however there are no firm plans. If these aspirations become clearer, MLL would anticipate that next year's AMP will indicate forecast load changes at the Picton zone substation. MLL has included the current estimate of the impact on maximum GXP demand in its forecast.

4.6. Schedule 12d – Forecast Interruptions and Duration

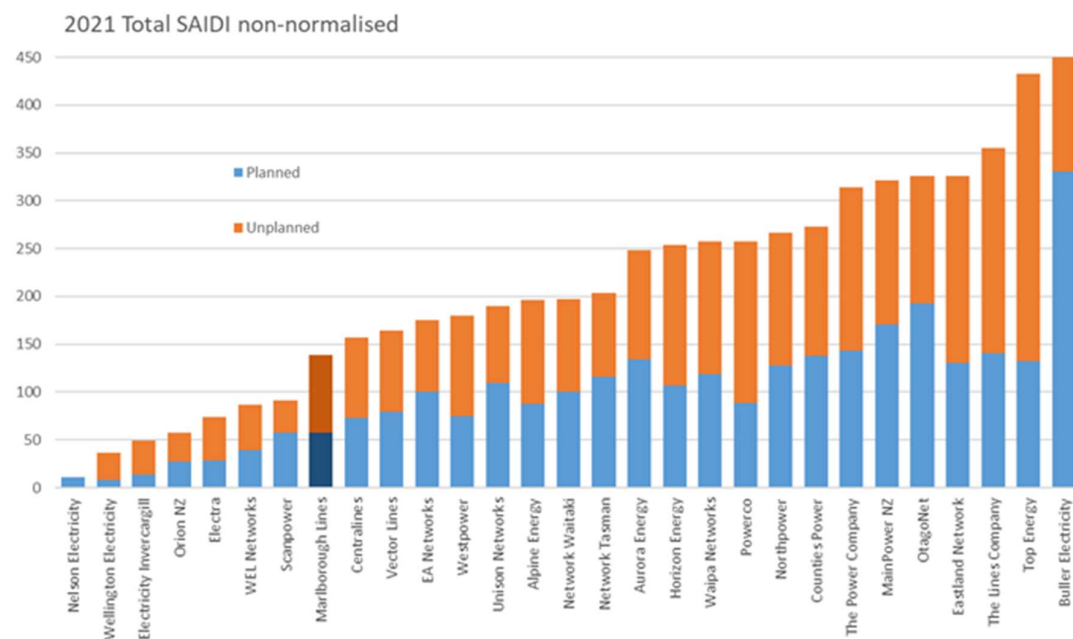
Forecast interruptions and durations are included in Schedule 12d for the reporting period.

Section 5 of the 2021 AMP described MLL’s quality of supply. The average duration of non-supply per consumer per annum (SAIDI)⁸ is the key measure of the “average” consumer’s experience of supply reliability. In the 2021 AMP, unplanned SAIDI targets were 85 minutes for the RY2021 to RY2024 years, reducing to 80 minutes in RY2025. MLL’s RY2021 actual unplanned SAIDI was 81 minutes, therefore meeting the target.

For the current year, unplanned SAIDI will exceed the 85 minutes forecast. 97.53 minutes of this unplanned SAIDI to date (as of 17th March 2022) can be attributed to a severe storm event which occurred in the South Island in July 2021. A state of local emergency was declared for the Marlborough district from 17 July to 28 July. Parts of Marlborough are still recovering from this event and in particular, parts of the Marlborough Sounds still have limited road access. The SAIDI impact from this storm has been normalised, and using the boundary value of 34.54, the calculated normalised SAIDI value over the impacted period (16 July to 23 July) is 42.09 SAIDI minutes.

Figure 8 shows a comparison of all NZ EDBs’ SAIDI results for the year to 31 March 2021, where MLL had a total of 138 minutes outperforming many of its peers. Note as shown in section 2, MLL previously had a target of 150 minutes for total SAIDI for RY2024 however the revised SCI has reduced this to 145 minutes (a year earlier than previously targeted).

MLL is considering a reduction in the use of its fleet of mobile generators that are currently used to minimise disruption to consumers during large, planned outages. A reduction in use of the generators would reduce MLL’s greenhouse gas production but increase SAIDI. As per the revised SCI, MLL is not forecasting a material change to SAIDI and SAIFI.



⁸ SAIDI = System Averaged Interruption Duration Index expressed in minutes per consumer.

Figure 8: Comparison of EDB SAIDI Results to 31 March 2021

Also notable is the unplanned SAIDI due to defective equipment to 31 March 2021 relative to other NZ EDBs shown in Figure 9.

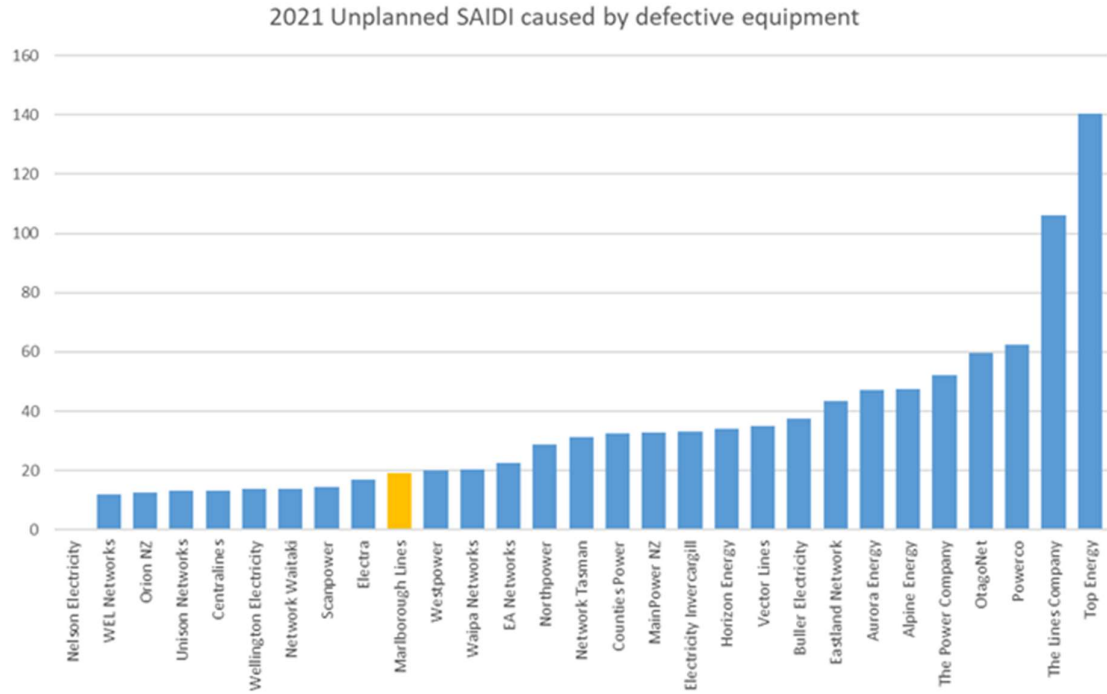


Figure 9: Comparison of Unplanned SAIDI Due to Defective Equipment



**EDB Information Disclosure Requirements
Information Templates
for
Schedules 11a–13**

Company Name	Marlborough Lines Limited
Disclosure Date	31 March 2022
AMP Planning Period Start Date (first day)	1 April 2022

Templates for Schedules 11a–13 (Asset Management Plan)
Template Version 4.1. Prepared 21 December 2017

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Information disclosure asset management plan schedules

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12d	<u>REPORT FORECAST INTERRUPTIONS AND DURATION</u>
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Disclosure Template Instructions

These templates have been prepared for use by EDBs when making disclosures under subclauses 2.6.1(1)(d), 2.6.1(1)(e), 2.6.1(2), 2.6.5(6), 2.6.6(1) and 2.6.6(2) of the Electricity Distribution Information Disclosure Determination 2012. The EDB may include a completed Schedule 13: Report on Asset Management Maturity table with its disclosures made under subclause 2.6.6(1) and 2.6.6(2), but this is not required. Schedule 13 tables that are not completed should be removed from disclosures made under subclause 2.6.6(1) and 2.6.6(2).

Company Name and Dates

To prepare the templates for disclosure, the supplier's company name should be entered in cell C8, the date of the first day of the 10 year planning period should be entered in cell C12, and the date on which the information is disclosed should be entered in cell C10 of the CoverSheet worksheet.

The cell C12 entry (planning period start date) is used to calculate disclosure years in the column headings that show above some of the tables. It is also used to calculate the AMP planning period dates in the template title blocks (the title blocks are the light green shaded areas at the top of each template).

The cell C8 entry (company name) is used in the template title blocks.

Dates should be entered in day/month/year order (Example -"1 April 2013").

Data Entry Cells and Calculated Cells

Data entered into this workbook may be entered only into the data entry cells. Data entry cells are the bordered, unshaded areas (white cells) in each template. Under no circumstances should data be entered into the workbook outside a data entry cell.

In some cases, where the information for disclosure is able to be ascertained from disclosures elsewhere in the workbook, such information is disclosed in a calculated cell.

Validation Settings on Data Entry Cells

To maintain a consistency of format and to guard against errors in data entry, some data entry cells test entries for validity and accept only a limited range of values. For example, entries may be limited to a list of category names or to values between 0% and 100%.

Where this occurs, a validation message will appear when data is being entered.

Conditional Formatting Settings on Data Entry Cells

Schedule 12a columns G to K contains conditional formatting. The cells will change colour if the row totals do not add to 100%.

Inserting Additional Rows

The templates for schedules 11a, 12b and 12c may require additional rows to be inserted in tables marked 'include additional rows if needed'.

Additional rows must not be inserted directly above the first row or below the last row of a table. This is to ensure that entries made in the new row are included in the totals.

For schedule 12b the formula for column J (Utilisation of Installed Firm Capacity %) will need to be copied into the inserted row(s).

Column A schedule references should not be entered in additional rows.

Schedule References

The references labelled 'sch ref' in the leftmost column of each template are consistent with the row references in the Electricity Distribution ID Determination 2012 (as issued on 21 December 2017). They provide a common reference between the rows in the determination and the template.

Description of Calculation References

Calculation cell formulas contain links to other cells within the same template or elsewhere in the workbook. Key cell references are described in a column to the right of each template. These descriptions are provided to assist data entry. Cell references refer to the row of the template and not the schedule reference.

Company Name **Marlborough Lines Limited**
 AMP Planning Period **1 April 2022 – 31 March 2032**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

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.

sch ref

	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	96	206	210	214	219	223	227	232	237	241	246
System growth	64	2,544	7,135	4,474	4,099	4,599	1,279	-	1,479	1,509	1,539
Asset replacement and renewal	3,197	8,637	6,665	9,855	10,486	10,422	13,128	14,173	12,904	12,528	13,164
Asset relocations	1,637	1,122	504	514	547	557	569	580	592	603	492
Reliability, safety and environment:											
Quality of supply	542	2,224	-	-	478	397	2,132	-	370	377	-
Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
Other reliability, safety and environment	353	854	2,446	2,175	1,270	2,550	611	2,197	636	649	662
Total reliability, safety and environment	895	3,078	2,446	2,175	1,748	2,947	2,744	2,197	1,006	1,026	662
Expenditure on network assets	5,888	15,587	16,960	17,233	17,099	18,748	17,947	17,182	16,217	15,907	16,102
Expenditure on non-network assets	2,597	2,242	2,196	2,266	3,320	4,457	1,757	1,666	1,817	1,733	2,308
Expenditure on assets	8,485	17,829	19,156	19,499	20,419	23,205	19,704	18,848	18,033	17,640	18,410
plus Cost of financing	-	-	-	-	-	-	-	-	-	-	-
less Value of capital contributions	1,051	-	-	-	-	-	-	-	-	-	-
plus Value of vested assets	-	-	-	-	-	-	-	-	-	-	-
Capital expenditure forecast	7,434	17,829	19,156	19,499	20,419	23,205	19,704	18,848	18,033	17,640	18,410
Assets commissioned	8,565	17,609	16,964	23,006	20,013	20,452	21,057	18,943	17,892	18,158	17,950
	\$000 (in constant prices)										
Consumer connection	96	200	200	200	200	200	200	200	200	200	200
System growth	64	2,472	6,791	4,175	3,750	4,125	1,125	-	1,250	1,250	1,250
Asset replacement and renewal	3,197	8,394	6,344	9,196	9,594	9,348	11,544	12,219	10,906	10,381	10,694
Asset relocations	1,637	1,090	480	480	500	500	500	500	500	500	400
Reliability, safety and environment:											
Quality of supply	542	2,162	-	-	438	356	1,875	-	313	313	-
Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-
Other reliability, safety and environment	353	830	2,328	2,030	1,162	2,287	538	1,894	538	538	538
Total reliability, safety and environment	895	2,992	2,328	2,030	1,600	2,643	2,413	1,894	850	850	538
Expenditure on network assets	5,888	15,147	16,143	16,081	15,643	16,816	15,781	14,813	13,706	13,181	13,081
Expenditure on non-network assets	2,597	2,043	2,440	3,109	4,092	1,582	1,470	1,572	1,470	1,919	1,555
Expenditure on assets	8,485	17,190	18,583	19,190	19,735	18,398	17,251	16,385	15,176	15,100	14,636
Subcomponents of expenditure on assets (where known)											
Energy efficiency and demand side management, reduction of energy losses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Overhead to underground conversion	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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Company Name **Marlborough Lines Limited**
 AMP Planning Period **1 April 2022 – 31 March 2032**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

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.

sch ref

	for year ended	Current Year CY 31 Mar 22	CY+1 31 Mar 23	CY+2 31 Mar 24	CY+3 31 Mar 25	CY+4 31 Mar 26	CY+5 31 Mar 27	CY+6 31 Mar 28	CY+7 31 Mar 29	CY+8 31 Mar 30	CY+9 31 Mar 31	CY+10 31 Mar 32
Difference between nominal and constant price forecasts												
		\$000										
Consumer connection	-	6	10	14	19	23	27	32	37	41	46	
System growth	-	72	344	299	349	474	154	-	229	259	289	
Asset replacement and renewal	-	243	321	659	893	1,074	1,584	1,954	1,998	2,147	2,470	
Asset relocations	-	32	24	34	47	57	69	80	92	103	92	
Reliability, safety and environment:												
Quality of supply	-	63	-	-	41	41	257	-	57	65	-	
Legislative and regulatory	-	-	-	-	-	-	-	-	-	-	-	
Other reliability, safety and environment	-	24	118	145	108	263	74	303	98	111	124	
Total reliability, safety and environment	-	87	118	145	149	304	331	303	156	176	124	
Expenditure on network assets	-	439	817	1,152	1,456	1,932	2,165	2,369	2,510	2,726	3,021	
Expenditure on non-network assets	-	199	(244)	(843)	(772)	2,875	287	94	347	(186)	753	
Expenditure on assets	-	638	573	309	683	4,807	2,453	2,463	2,857	2,540	3,774	

	for year ended	Current Year CY 31 Mar 22	CY+1 31 Mar 23	CY+2 31 Mar 24	CY+3 31 Mar 25	CY+4 31 Mar 26	CY+5 31 Mar 27
11a(ii): Consumer Connection							
<i>Consumer types defined by EDB*</i>							
		\$000 (in constant prices)					
Residential	96	65	65	65	65	65	65
General	-	65	65	65	65	65	65
Commercial and Industrial	-	70	70	70	70	70	70
Irrigation	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
<i>*Include additional rows if needed</i>							
Consumer connection expenditure	96	200	200	200	200	200	200
less Capital contributions funding consumer connection	-	-	-	-	-	-	-
Consumer connection less capital contributions	96	200	200	200	200	200	200

	for year ended	Current Year CY 31 Mar 22	CY+1 31 Mar 23	CY+2 31 Mar 24	CY+3 31 Mar 25	CY+4 31 Mar 26	CY+5 31 Mar 27
11a(iii): System Growth							
Subtransmission	22	859	2,734	-	-	-	-
Zone substations	-	1,613	4,058	4,175	3,750	4,125	-
Distribution and LV lines	-	-	-	-	-	-	-
Distribution and LV cables	-	-	-	-	-	-	-
Distribution substations and transformers	-	-	-	-	-	-	-
Distribution switchgear	42	-	-	-	-	-	-
Other network assets	-	-	-	-	-	-	-
System growth expenditure	64	2,472	6,791	4,175	3,750	4,125	-
less Capital contributions funding system growth	-	-	-	-	-	-	-
System growth less capital contributions	64	2,472	6,791	4,175	3,750	4,125	-

Company Name **Marlborough Lines Limited**
 AMP Planning Period **1 April 2022 – 31 March 2032**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

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)
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	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(iv): Asset Replacement and Renewal	\$000 (in constant prices)					
Subtransmission	210	1,752	-	-	-	-
Zone substations	176	2,568	144	2,576	500	63
Distribution and LV lines	1,607	2,770	3,270	4,470	6,219	7,188
Distribution and LV cables	215	-	180	180	313	475
Distribution substations and transformers	294	-	570	-	713	773
Distribution switchgear	671	954	1,830	1,620	1,500	500
Other network assets	24	350	350	350	350	350
Asset replacement and renewal expenditure	3,197	8,394	6,344	9,196	9,594	9,348
less Capital contributions funding asset replacement and renewal	-	-	-	-	-	-
Asset replacement and renewal less capital contributions	3,197	8,394	6,344	9,196	9,594	9,348
	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)					
<i>Project or programme*</i>						
Roading	1,476	1,090	480	480	500	500
Other	161	-	-	-	-	-
<i>*Include additional rows if needed</i>						
All other project or programmes - asset relocations						
Asset relocations expenditure	1,637	1,090	480	480	500	500
less Capital contributions funding asset relocations	-	-	-	-	-	-
Asset relocations less capital contributions	586	1,090	480	480	500	500
	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(vi): Quality of Supply	\$000 (in constant prices)					
<i>Project or programme*</i>						
33kV network development and enhancement	-	2,112	-	-	-	356
Network Automation	119	50	-	-	-	-
Generators	-	-	-	-	-	-
Digital Radio Network	11	-	-	-	-	-
Other	413	-	-	-	438	-
<i>*Include additional rows if needed</i>						
All other projects or programmes - quality of supply						
Quality of supply expenditure	542	2,162	-	-	438	356
less Capital contributions funding quality of supply	-	-	-	-	-	-
Quality of supply less capital contributions	542	2,162	-	-	438	356

Company Name **Marlborough Lines Limited**
 AMP Planning Period **1 April 2022 – 31 March 2032**

SCHEDULE 11a: REPORT ON FORECAST CAPITAL EXPENDITURE

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.

sch ref

	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(vii): Legislative and Regulatory						
<i>Project or programme*</i>	\$000 (in constant prices)					
<i>*Include additional rows if needed</i>						
All other projects or programmes - legislative and regulatory						
Legislative and regulatory expenditure	-	-	-	-	-	-
less Capital contributions funding legislative and regulatory	-	-	-	-	-	-
Legislative and regulatory less capital contributions	-	-	-	-	-	-
	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						
<i>Project or programme*</i>	\$000 (in constant prices)					
Earthing (NERS and Resonant)	42					
Tee Joint Removal	121					
Transformer OH to UG conversion	-					
SCADA	25					
Other	164	830	2,328	2,030	1,162	2,287
<i>*Include additional rows if needed</i>						
All other projects or programmes - other reliability, safety and environment						
Other reliability, safety and environment expenditure	353	830	2,328	2,030	1,162	2,287
less Capital contributions funding other reliability, safety and environment	-	-	-	-	-	-
Other reliability, safety and environment less capital contributions	353	830	2,328	2,030	1,162	2,287
	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						
Routine expenditure	\$000 (in constant prices)					
<i>Project or programme*</i>						
Test Equipment	28	50	50	50	50	50
Plant and Tools	125	350	350	350	350	350
Vehicles	442	988	1,285	729	637	627
Radio Equipment	-	5	5	5	5	5
Office Furniture & Equipment	53	25	25	25	25	25
Land and buildings	1,753	125	125	125	125	125
IT Hardware	62	400	500	225	300	300
Software	134	100	100	100	100	100
<i>*Include additional rows if needed</i>						
All other projects or programmes - routine expenditure						
Routine expenditure	2,597	2,043	2,440	1,609	1,592	1,582
Atypical expenditure						
<i>Project or programme*</i>						
NOC Building	-	-	-	1,500	2,500	-
<i>*Include additional rows if needed</i>						
All other projects or programmes - atypical expenditure						
Atypical expenditure	-	-	-	1,500	2,500	-
Expenditure on non-network assets	2,597	2,043	2,440	3,109	4,092	1,582

Company Name **Marlborough Lines Limited**
 AMP Planning Period **1 April 2022 – 31 March 2032**

SCHEDULE 11b: REPORT ON FORECAST OPERATIONAL EXPENDITURE

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.

sch ref		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
9	Operational Expenditure Forecast	\$000 (in nominal dollars)										
10	Service interruptions and emergencies	1,631	1,235	1,261	1,286	1,312	1,338	1,365	1,392	1,420	1,448	1,477
11	Vegetation management	2,303	2,315	2,311	2,304	2,295	2,286	2,274	2,262	2,248	2,233	2,277
12	Routine and corrective maintenance and inspection	4,360	4,106	4,082	4,051	4,017	3,980	3,940	3,897	3,975	4,055	4,136
13	Asset replacement and renewal	715	720	735	750	765	780	796	812	828	845	862
14	Network Opex	9,008	8,376	8,389	8,391	8,389	8,384	8,376	8,363	8,471	8,580	8,752
15	System operations and network support	4,300	4,538	4,743	4,951	5,050	5,151	5,254	5,359	5,466	5,576	5,687
16	Business support	5,140	4,836	4,938	5,037	5,137	5,240	5,345	5,452	5,561	5,672	5,785
17	Non-network opex	9,440	9,374	9,681	9,988	10,187	10,391	10,599	10,811	11,027	11,248	11,473
18	Operational expenditure	18,448	17,750	18,070	18,378	18,576	18,775	18,974	19,174	19,498	19,828	20,225
19		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
20	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
21		\$000 (in constant prices)										
22	Service interruptions and emergencies	1,631	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
23	Vegetation management	2,303	2,250	2,200	2,150	2,100	2,050	2,000	1,950	1,900	1,850	1,850
24	Routine and corrective maintenance and inspection	4,360	3,990	3,885	3,780	3,675	3,570	3,465	3,360	3,360	3,360	3,360
25	Asset replacement and renewal	715	700	700	700	700	700	700	700	700	700	700
26	Network Opex	9,008	8,140	7,985	7,830	7,675	7,520	7,365	7,210	7,160	7,110	7,110
27	System operations and network support	4,300	4,410	4,515	4,620	4,620	4,620	4,620	4,620	4,620	4,620	4,620
28	Business support	5,140	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
29	Non-network opex	9,440	9,110	9,215	9,320	9,320	9,320	9,320	9,320	9,320	9,320	9,320
30	Operational expenditure	18,448	17,250	17,200	17,150	16,995	16,840	16,685	16,530	16,480	16,430	16,430
31	Subcomponents of operational expenditure (where known)											
32	Energy efficiency and demand side management, reduction of energy losses	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
33	Direct billing*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
34	Research and Development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
35	Insurance	415	420	420	420	420	420	420	420	420	420	420
36		<i>* Direct billing expenditure by suppliers that direct bill the majority of their consumers</i>										
37		Current Year CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7	CY+8	CY+9	CY+10
38	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
39		\$000										
40	Difference between nominal and real forecasts											
41	Service interruptions and emergencies	-	35	61	86	112	138	165	192	220	248	277
42	Vegetation management	-	65	111	154	195	236	274	312	348	383	427
43	Routine and corrective maintenance and inspection	-	116	197	271	342	410	475	537	615	695	776
44	Asset replacement and renewal	-	20	35	50	65	80	96	112	128	145	162
45	Network Opex	-	236	404	561	714	864	1,011	1,153	1,311	1,470	1,642
46	System operations and network support	-	128	228	331	430	531	634	739	846	956	1,067
47	Business support	-	136	238	337	437	540	645	752	861	972	1,085
48	Non-network opex	-	264	466	668	867	1,071	1,279	1,491	1,707	1,928	2,153
49	Operational expenditure	-	500	870	1,228	1,581	1,935	2,289	2,644	3,018	3,398	3,795

Company Name	Marlborough Lines Limited
AMP Planning Period	1 April 2022 – 31 March 2032

SCHEDULE 12a: REPORT ON ASSET CONDITION

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref

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Asset condition at start of planning period (percentage of units by grade)

% of asset
forecast to be
replaced in
next 5 years

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.	0.13%	4.82%	25.01%	52.96%	17.08%	0.17%	3	3.00%
All	Overhead Line	Wood poles	No.	0.29%	3.20%	53.62%	39.61%	3.28%	0.23%	3	5.00%
All	Overhead Line	Other pole types	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Line	Subtransmission OH up to 66kV conductor	km	6.17%	7.87%	38.83%	13.40%	33.73%	0.09%	3	4.00%
HV	Subtransmission Line	Subtransmission OH 110kV+ conductor	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Cable	Subtransmission UG up to 66kV (XLPE)	km	-	-	0.23%	4.80%	94.97%	-	3	-
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Oil pressurised)	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Cable	Subtransmission UG up to 66kV (Gas pressurised)	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Cable	Subtransmission UG up to 66kV (PILC)	km	-	-	-	-	100.00%	-	3	-
HV	Subtransmission Cable	Subtransmission UG 110kV+ (XLPE)	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Oil pressurised)	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Cable	Subtransmission UG 110kV+ (Gas Pressurised)	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Cable	Subtransmission UG 110kV+ (PILC)	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Subtransmission Cable	Subtransmission submarine cable	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Zone substation Buildings	Zone substations up to 66kV	No.	-	-	-	50.00%	50.00%	-	4	-
HV	Zone substation Buildings	Zone substations 110kV+	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Zone substation switchgear	22/33kV CB (Indoor)	No.	-	-	-	-	100.00%	-	4	-
HV	Zone substation switchgear	22/33kV CB (Outdoor)	No.	-	-	-	41.67%	58.33%	-	4	-
HV	Zone substation switchgear	33kV Switch (Ground Mounted)	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Zone substation switchgear	33kV Switch (Pole Mounted)	No.	-	-	5.17%	27.59%	67.24%	-	3	10.00%
HV	Zone substation switchgear	33kV RMU	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Zone substation switchgear	50/66/110kV CB (Indoor)	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Zone substation switchgear	50/66/110kV CB (Outdoor)	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (ground mounted)	No.	-	-	-	22.58%	77.42%	-	3	-
HV	Zone substation switchgear	3.3/6.6/11/22kV CB (pole mounted)	No.	-	-	-	8.33%	91.67%	-	3	-

Company Name

Marlborough Lines Limited

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SCHEDULE 12a: REPORT ON ASSET CONDITION

This schedule requires a breakdown of asset condition by asset class as at the start of the forecast year. The data accuracy assessment relates to the percentage values disclosed in the asset condition columns. Also required is a forecast of the percentage of units to be replaced in the next 5 years. All information should be consistent with the information provided in the AMP and the expenditure on assets forecast in Schedule 11a. All units relating to cable and line assets, that are expressed in km, refer to circuit lengths.

sch ref

36
37

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	
38												
39	HV	Zone Substation Transformer	Zone Substation Transformers	No.	-	6.45%	6.45%	29.04%	58.06%	-	4	6.50%
40	HV	Distribution Line	Distribution OH Open Wire Conductor	km	3.13%	16.48%	34.10%	17.00%	29.29%	0.27%	3	7.00%
41	HV	Distribution Line	Distribution OH Aerial Cable Conductor	km	-	-	-	-	100.00%	-	4	-
42	HV	Distribution Line	SWER conductor	km	-	13.86%	62.22%	19.33%	4.59%	0.03%	3	-
43	HV	Distribution Cable	Distribution UG XLPE or PVC	km	2.37%	0.99%	0.77%	16.52%	79.35%	0.70%	3	1.00%
44	HV	Distribution Cable	Distribution UG PILC	km	-	-	-	84.88%	15.12%	-	3	-
45	HV	Distribution Cable	Distribution Submarine Cable	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
46	HV	Distribution switchgear	3.3/6.6/11/22kV CB (pole mounted) - reclosers and sectionalisers	No.	-	3.88%	12.62%	18.45%	65.05%	-	3	4.00%
47	HV	Distribution switchgear	3.3/6.6/11/22kV CB (Indoor)	No.	-	-	52.38%	-	47.62%	-	3	20.00%
48	HV	Distribution switchgear	3.3/6.6/11/22kV Switches and fuses (pole mounted)	No.	2.03%	6.18%	20.27%	41.84%	29.68%	2.00%	3	2.00%
49	HV	Distribution switchgear	3.3/6.6/11/22kV Switch (ground mounted) - except RMU	No.	-	3.80%	58.50%	30.20%	7.50%	-	3	4.00%
50	HV	Distribution switchgear	3.3/6.6/11/22kV RMU	No.	-	4.70%	34.60%	31.40%	29.30%	-	3	4.00%
51	HV	Distribution Transformer	Pole Mounted Transformer	No.	-	12.10%	42.70%	29.60%	15.60%	0.50%	3	2.00%
52	HV	Distribution Transformer	Ground Mounted Transformer	No.	-	2.80%	25.20%	49.80%	22.20%	0.80%	3	2.00%
53	HV	Distribution Transformer	Voltage regulators	No.	-	-	3.33%	70.00%	26.67%	-	3	3.00%
54	HV	Distribution Substations	Ground Mounted Substation Housing	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
55	LV	LV Line	LV OH Conductor	km	7.86%	19.74%	48.71%	11.21%	12.48%	29.80%	2	-
56	LV	LV Cable	LV UG Cable	km	3.14%	2.74%	3.25%	28.33%	62.54%	2.52%	3	1.00%
57	LV	LV Streetlighting	LV OH/UG Streetlight circuit	km	-	0.32%	8.29%	22.83%	68.56%	2.84%	2	1.00%
58	LV	Connections	OH/UG consumer service connections	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
59	All	Protection	Protection relays (electromechanical, solid state and numeric)	No.	-	4.67%	53.33%	18.67%	23.33%	-	4	20.00%
60	All	SCADA and communications	SCADA and communications equipment operating as a single system	Lot	-	-	100.00%	-	-	-	3	100.00%
61	All	Capacitor Banks	Capacitors including controls	No.	-	100.00%	-	-	-	-	2	-
62	All	Load Control	Centralised plant	Lot	-	-	-	33.00%	67.00%	-	4	-
63	All	Load Control	Relays	No.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
64	All	Civils	Cable Tunnels	km	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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SCHEDULE 12b: REPORT ON FORECAST CAPACITY

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.

sch ref

sch ref	12b(j): System Growth - Zone Substations	Current Peak Load (MVA)	Installed Firm Capacity (MVA)	Security of Supply Classification (type)	Transfer Capacity (MVA)	Utilisation of Installed Firm Capacity		Utilisation of Installed Firm Capacity + 5yrs		Installed Firm Capacity Constraint +5 years (cause)	Explanation
						Capacity %	Capacity +5 years (MVA)	Capacity %	Capacity +5 years (MVA)		
9	Cloudy Bay	4	17	N - 1	8	26%	17	47%	No constraint within +5 years	Load shift from Riverlands Substation	
10	Havelock	3	5	N - 1	2	50%	5	55%	No constraint within +5 years		
11	Leefield	2	5	N	1	35%	5	39%	No constraint within +5 years		
12	Linkwater	4	5	N	1	81%	5	89%	No constraint within +5 years		
13	Nelson St	14	17	N - 1	10	84%	20	76%	No constraint within +5 years	Planned installation of fans to increase TX rating to 20MVA ONAF	
14	Picton	8	17	N - 1	-	46%	17	51%	No constraint within +5 years		
15	Rai Valley	2	3	N	1	74%	5	49%	No constraint within +5 years	Planned TX replacement, T1 increases from 3MVA to 5MVA	
16	Redwoodtown	11	17	N - 1	8	64%	17	70%	No constraint within +5 years		
17	Riverlands	7	10	N - 1	8	74%	10	52%	No constraint within +5 years	Load shift to Cloudy Bay Substation	
18	Seddon	6	10	N - 1	1	65%	10	72%	No constraint within +5 years		
19	Spring Creek	4	5	N - 1	4	74%	5	82%	No constraint within +5 years		
20	Springlands	9	17	N - 1	10	54%	17	59%	No constraint within +5 years		
21	Tapp	9	17	N - 1	5	58%	17	63%	No constraint within +5 years		
22	Ward	1	5	N	1	22%	5	24%	No constraint within +5 years		
23	Waters	7	17	N - 1	10	44%	17	48%	No constraint within +5 years		
24	Woodbourne	8	10	N - 1	5	77%	10	85%	No constraint within +5 years		
25						-					
26						-					
27						-					
28						-					
29	¹ Extend forecast capacity table as necessary to disclose all capacity by each zone substation										

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SCHEDULE 12C: REPORT ON FORECAST NETWORK DEMAND

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.

sch ref

12c(i): Consumer Connections		Number of connections					
		Current Year CY for year ended 31 Mar 22	CY+1 31 Mar 23	CY+2 31 Mar 24	CY+3 31 Mar 25	CY+4 31 Mar 26	CY+5 31 Mar 27
<i>Number of ICPs connected in year by consumer type</i>							
<i>Consumer types defined by EDB*</i>							
	Residential	126	160	180	180	180	180
	General	32	20	20	20	20	20
	Commercial and Industrial	1	3	3	3	3	3
	Irrigation	13	8	8	7	7	7
	Other (MLL, unmetered, Street lights etc)	-	1	1	1	1	1
	Connections total	172	192	212	211	211	211
<i>*include additional rows if needed</i>							
Distributed generation							
	Number of connections	181	200	220	240	260	280
	Capacity of distributed generation installed in year (MVA)	3	3	4	16	3	4
12c(ii) System Demand							
Maximum coincident system demand (MW)							
	GXP demand	73	75	75	80	80	81
plus	Distributed generation output at HV and above	3	3	3	3	3	3
	Maximum coincident system demand	75	78	78	83	83	84
less	Net transfers to (from) other EDBs at HV and above	-	-	-	-	-	-
	Demand on system for supply to consumers' connection points	75	78	78	83	83	84
Electricity volumes carried (GWh)							
	Electricity supplied from GXPs	395	398	399	394	395	397
less	Electricity exports to GXPs	-	-	-	-	-	-
plus	Electricity supplied from distributed generation	19	23	25	46	47	47
less	Net electricity supplied to (from) other EDBs	-	-	-	-	-	-
	Electricity entering system for supply to ICPs	414	421	424	440	441	444
less	Total energy delivered to ICPs	397	404	407	422	423	426
	Losses	17	17	18	18	18	18
	Load factor	63%	62%	62%	61%	60%	60%
	Loss ratio	4.1%	4.1%	4.1%	4.1%	4.1%	4.1%

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Network / Sub-network Name

SCHEDULE 12d: REPORT FORECAST INTERRUPTIONS AND DURATION

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.

<i>sch ref</i>		<i>Current Year CY</i>	<i>CY+1</i>	<i>CY+2</i>	<i>CY+3</i>	<i>CY+4</i>	<i>CY+5</i>
	for year ended	31 Mar 22	31 Mar 23	31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27
8							
9							
10	SAIDI						
11	Class B (planned interruptions on the network)	58.0	65.0	65.0	65.0	65.0	65.0
12	Class C (unplanned interruptions on the network)	175.0	85.0	85.0	80.0	80.0	80.0
13	SAIFI						
14	Class B (planned interruptions on the network)	0.40	0.50	0.50	0.50	0.50	0.50
15	Class C (unplanned interruptions on the network)	1.20	1.20	1.20	1.10	1.10	1.10

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For Year Ended 31 March 2022

Schedule 14a Mandatory Explanatory Notes on Forecast Information

(In this Schedule, clause references are to the Electricity Distribution Information Disclosure Determination 2012 – as amended and consolidated 3 April 2018.)

1. This Schedule requires EDBs to provide explanatory notes to reports prepared in accordance with clause 2.6.6.
2. This Schedule is mandatory—EDBs must provide the explanatory comment specified below, in accordance with clause 2.7.2. This information is not part of the audited disclosure information, and so is not subject to the assurance requirements specified in section 2.8.

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

3. In the box below, comment on the difference between nominal and constant price capital expenditure for the current disclosure year and 10 year planning period, as disclosed in Schedule 11a.

Box 1: Commentary on difference between nominal and constant price capital expenditure forecasts
Please refer to section 10.1.1 of the 2021 AMP.

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

4. In the box below, comment on the difference between nominal and constant price operational expenditure for the current disclosure year and 10 year planning period, as disclosed in Schedule 11b.

Box 2: Commentary on difference between nominal and constant price operational expenditure forecasts
Please refer to section 10.1.1 of the 2021 AMP.