Orion

Orion New Zealand Ltd

1 April 2022 to 31 March 2023

Climate Statement

Powering a cleaner and brighter future with our community

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Cover Photo: Sun rising over New Brighton Pier.

Introduction

Orion is ready to play our part for our community in the transition to a low carbon, climate resilient economy.

This, our second climate statement, shares a snapshot of some of the challenges and opportunities we believe are involved in that transition. It builds on the consensus being reached across the energy sector and more broadly: that the electricity sector has a key role to play to decarbonise Aotearoa New Zealand.

In 2023 we better understand how our future climate and the low carbon transition will impact our business and the service we provide our community. We look forward to using this information to work with our community to plan and deliver a future service that meets their needs. As with many others in NZ, we will evolve how we report on climate impacts over time to include more detailed consideration of future climate scenarios.

We're proud to be stewards of infrastructure that can make such a positive difference to our community and look forward to working together to help our region prosper.

Ehara taku toa i te toa takitahi, engari, he toa takitini – success is not the work of an individual, but the work of many.

1. Our climate challenge

We are already feeling the real time impacts of climate change globally, nationally and within the Canterbury region and the science is clear – the world must reduce its emissions to keep warming within 1.5˚C. Doing so will give us all the best chance to avoid the worst impacts of climate change.

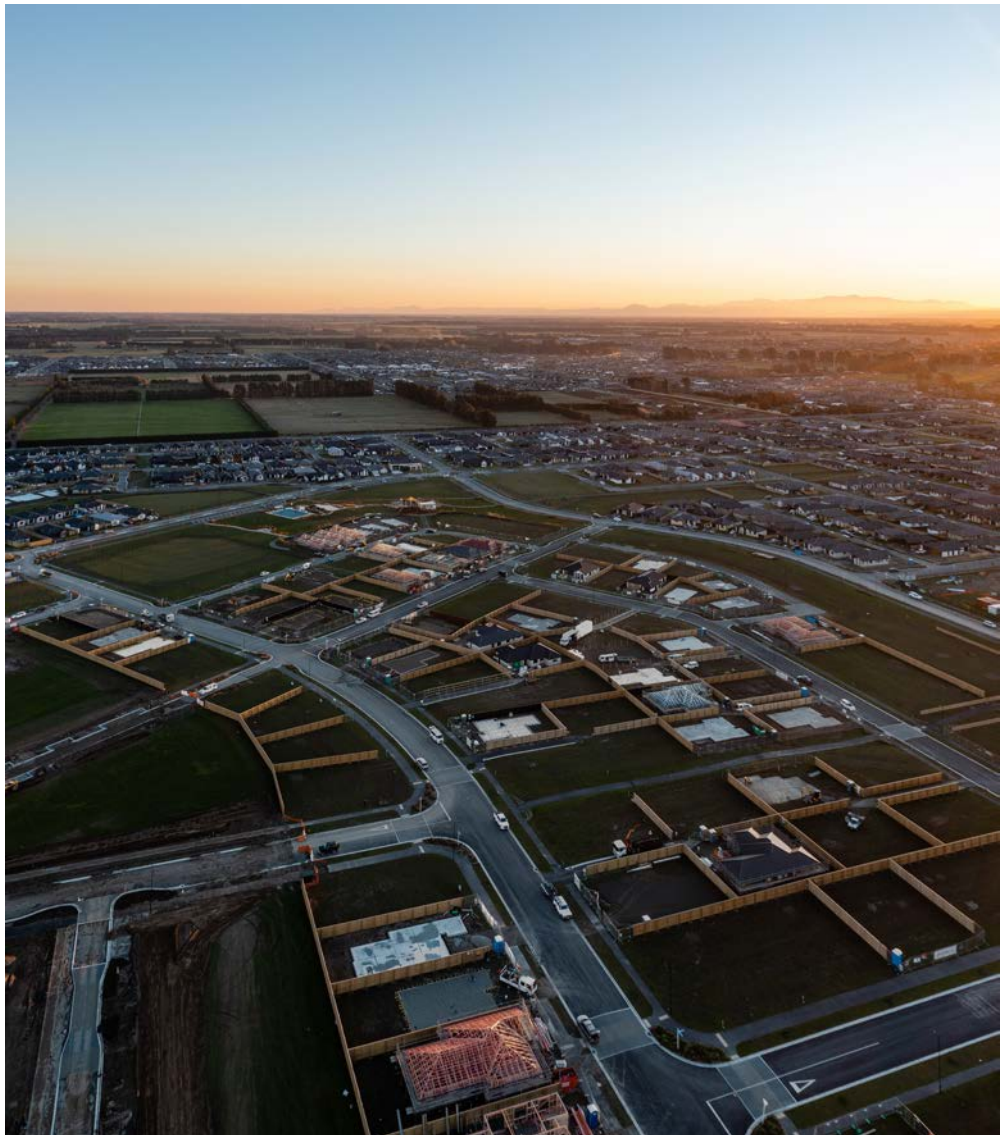
This challenge requires substantive action prior to 2030 and will have both global and local implications. At the same time, we are now facing an uncertain climate and as extreme weather events will continue to impact our region, we are adapting our service to be resilient to these events.

Climate change means central Canterbury (covering Orion's network) is likely to experience an increasing number of hot days, more severe droughts and increased mean temperatures. Warmer summers may change traditional energy consumption patterns and we can expect the number of extreme weather events to increase. Sea level rise will affect our coastal communities and the assets that serve them.

Like most businesses, over the past two years we've learned to be more flexible and agile in how we operate to keep the power on during challenging times.

We've also been preparing for a different future – one that focuses on partnering and collaborating with our community. While placing our feet firmly on the ground, we're excited to be exploring new opportunities that will set a new, dynamic direction for our future contribution to powering a cleaner and brighter future with our community.

Orion has a key role to help our community understand and use their energy resource wisely, to facilitate reduction of their emissions and improve their wellbeing. Supporting the transition in a way that ensures energy does not become unreliable or unaffordable for our customers is a key focus of our team and something that our business strategy is built around.



1.1 Climate-related financial disclosures

In October 2021 legislation came into force that made disclosure of climate-related risks and opportunities mandatory for some organisations (Climate Reporting Entities) in New Zealand. Orion New Zealand Ltd is not subject to this legislation and reports on climate risk voluntarily.

The External Reporting Board (XRB) issued Standards containing general requirements for climate-related disclosures in December 2022. Our FY23 Climate Statement is our first step toward aligning with the Standards and follows the broad thematic areas shown in Figure 1.1.

Our FY23 Climate Statement includes risks and opportunities associated with the Orion electricity distribution business, including the Energy Academy and Energy Futures Lab. It does not include disclosures associated with Connetics Limited, our wholly owned subsidiary and the Primary Service Delivery Partner for Orion, except where indicated. For matters such as strategy and measurement of emissions we may refer to 'Orion Group' to indicate where Connetics has been included in development or measurement.

Orion has taken an iterative approach to develop how we describe, quantify and plan for climate-related impacts. Our network planning already covers a 10-year timeframe, so we have existing methods to forecast customer use and asset lifecycle requirements over that period. This analysis, along with our existing transitional scenario analysis, is shared on a yearly basis in our Asset Management Plan (AMP).

Figure 1.1

1.2 What's new, what's changed?

Our FY23 Climate Statement is the next step in our climate disclosure journey. Since our first disclosure we have:

- Teamed up with NIWA to model the potential impact of 4 warming scenarios on our overhead network
- Explored the potential impact of electric vehicle uptake and electrification of process heat on our network, detail on this can be found in our AMP
- Adjusted our climate reporting to cover three short, medium and long-term timeframes
- Qualitatively explored business impact in our risk assessments, except in instances where our existing scenario modelling or better intelligence allows us to make a more specific assessment, we indicate where this is the case
- Refreshed our Orion Group strategy to ensure we are 'match fit' to support our community through the climate transition.

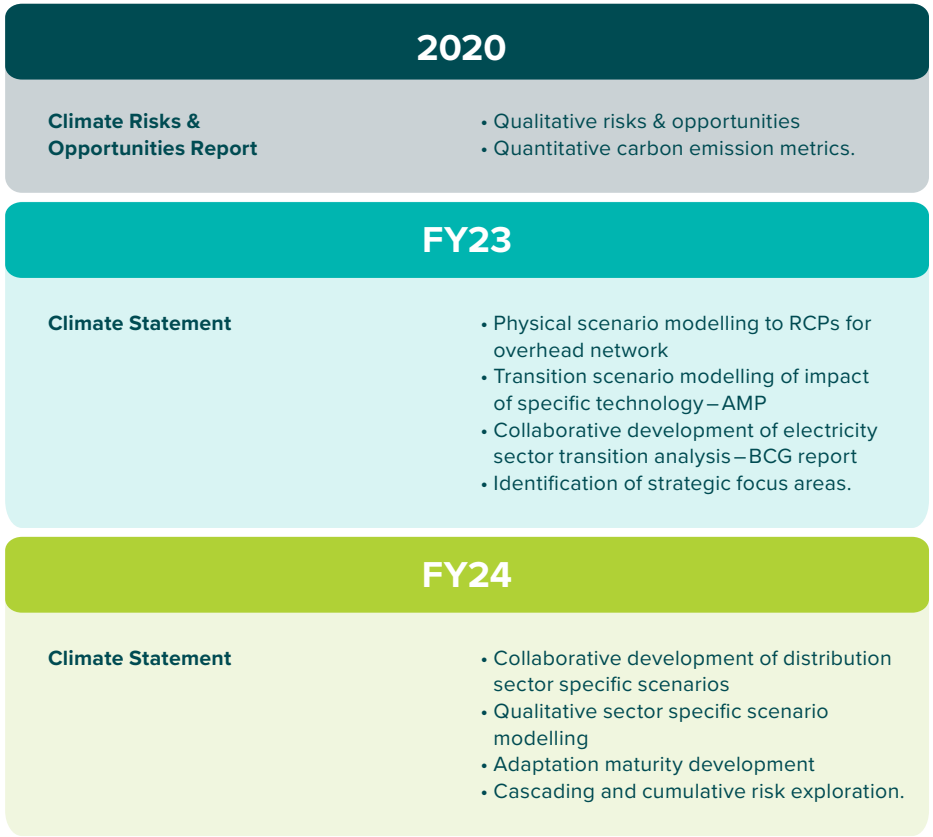


Figure 1.2

Figure 1.2 sets out our climate disclosure journey so far and how we intend to develop our climate statements over time.

2. Governance

NZ CS1 Governance disclosure objective
6. To enable primary users to understand both the role an entity's governance body plays in overseeing climate-related risks and climate-related opportunities, and the role management plays in assessing and managing those climate-related risks and opportunities.

We face huge change in coming years and a rate of growth in demand for electricity which is unprecedented. Our management structure and Board of Directors provide the support and guidance to ensure Orion has the agility and capability to continue to serve its customers well, at lowest possible cost, in the evolving energy environment.

2.1. Our structure

Consideration of climate change and its effects is integrated throughout our key governance documents.

Orion's decisions, plans, and actions are all aligned to our Purpose, our Group Strategy and the goals, objectives and targets of our Statement of Intent and our Annual Business Plan.

2.1. Our structure

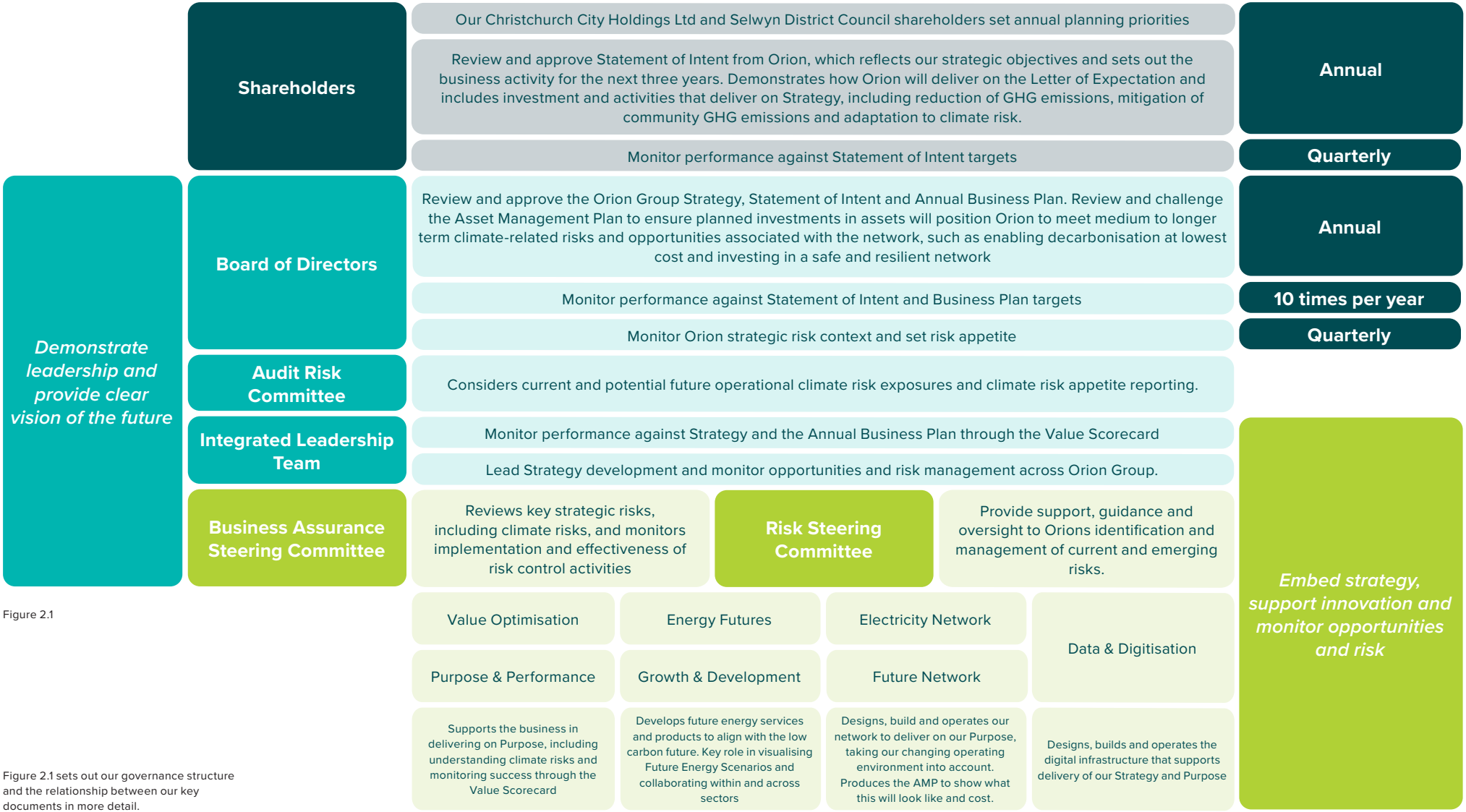


Figure 2.1

Figure 2.1 sets out our governance structure and the relationship between our key documents in more detail.

3. Strategy

NZ CS1 Governance disclosure objective
10. To enable primary users to understand how climate change is currently impacting an entity and how it may do so in the future. This includes the scenario analysis an entity has undertaken, the climate-related risks and opportunities an entity has identified, the anticipated impacts and financial impacts of these, and how an entity will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future.

As Aotearoa New Zealand transitions to a low carbon economy, the energy sector has a critical part to play. Orion has established its Purpose to be a vital player in that transition for our community and our region. We are focused on helping our community realise its dreams for a better future that's more sustainable over the long term.

While it remains critical for Orion to provide our community with confidence in their energy supply, we have also challenged ourselves to think about what a changed future holds, and how Orion Group needs to assist the community it serves to proactively harness opportunities in a fast-changing energy landscape.

3.1 Our strategy

Purpose	Powering a cleaner and brighter future with our community				
Impact	Driving prosperity for our region through balancing energy affordability, energy security and sustainability				
Focus Areas	Facilitating decarbonisation and hosting capacity at lowest cost	Investing to maintain a safe, reliable, resilient network at lowest total lifecycle cost	Being a force for good in the community we serve, enabling the net zero transition	Creating the preferred workplace	Fit for purpose capital structure

Figure 3.1

Orion Group is focused on ensuring we are ready to enable our community to transition to a low carbon economy.

Our Purpose – powering a cleaner and brighter future with our community, talks to the positive impact we want to enable on regional prosperity through a balance of improvements in energy equity, energy security and sustainability.

Orion's priority for the next five years is to get 'match fit'. This means our business will be ready to serve increased demand as electricity plays a crucial role in decarbonising Aotearoa New Zealand. Our AMP contains additional detail on how our strategy is embedded within our network investment.

This section outlines our top three opportunities, transitional risks and physical risks, based on our current understanding of our exposure and vulnerability to the impacts of climate change.

We have considered a number of physical risks to our network, including sea level rise. The three examples provided are discussed as the most relevant in our current context. Mapping of the impact of sea level rise on our network is underway currently, but as with flooding, the impact is not anticipated to be felt until the latter part of this century.

Uncertainty around variables including New Zealand's Energy Strategy and adaptation plans pose challenges in the meaningful financial quantification of risks and opportunities, however work is ongoing to bring specific metrics to our disclosure through detailed scenario modelling. We will continue to explore our risks, including understanding the cascading and cumulative impact of physical and transitional risks, in future reporting. Until then, our largely qualitative assessment of business impacts is provided and will be updated in future Climate Statements as our understanding improves.

3.2 Opportunities

Facilitating decarbonisation and hosting capacity at lowest cost

In 2022, Orion participated in analysis carried out by the Boston Consulting Group. The resulting report, **'The Future is Electric'**, highlighted the urgency of action required by electricity distribution businesses like Orion, to help our customers decarbonise. Accelerated electrification to assist Aotearoa New Zealand's transition to net zero carbon requires an unprecedented level of investment in the electricity sector, including at least $22 billion in the electricity distribution sector – all before 2030.

Our approach to this period of significant change, increased complexity and growth in our sector includes embracing the benefits of new technology, enhancing our knowledge and skill base, and doing things smarter and more efficiently to keep costs down for our customers. Orion aims to maximise the scope for customer participation in our future network through 'flexibility', and other market-based solutions, to ensure our network enables the path to decarbonisation and to maximise the use of our existing network with smart technologies and better data.

Being agile, responsive to change and embracing innovation are key to Orion serving its community well, now and into the future.

Investing to maintain a safe, reliable, resilient network at lowest total lifecycle cost

A big element of our role in supporting the decarbonisation of the economy is leveraging the power of integrated systems and data analytics to make our network smarter and more intuitive. To support this ambition and realise the efficiencies associated with embracing new technologies, Orion is upgrading and developing new systems and processes and our **2023 AMP** reflects significant investment to lift our asset management platforms and customer management tools to state of the art levels.

Our step change in Orion's use of data and digitisation will deliver greater operational efficiency and better outcomes for our customers by enabling Orion to:

- 'Flex' load on the network, using existing and new assets in the most efficient way
- Automate and generally improve response times in network emergencies
- More efficiently dispatch and manage jobs sent to field workers
- Support more efficient decision making and planned release work by our Network Controllers.

Being a force for good in the communities we serve

As our community becomes more reliant on electricity our customers will also increasingly need a resilient and affordable energy system to support their wellbeing.

Orion has an opportunity and a responsibility to support an affordable, resilient energy supply for our customers in the face of increasing physical events caused by climate change. As with all complex issues, the solution will not come from one initiative and a 'one size fits all' policy will not be optimal. Rather a system-wide, multi-faceted approach is needed.

We are committed to being a force for good in the communities we serve – it is a key element of Orion Group's strategy to deliver on our Purpose. Towards achieving this we are partnering with community groups such as Community Energy Action and engaging with our customers to address energy equity and community resilience.

A closer relationship with our community through support for community energy projects and local area energy solutions can improve the efficiency of the transition (and lower costs), improve energy self-determination for customers and support community resilience.

3.3 Transitional risks

Facilitating decarbonisation and hosting capacity at lowest cost

Risk: Low Voltage (LV) constraints from electrification of transport

Road transport accounts for more than 16% of Aotearoa New Zealand's carbon emissions. A 'mode shift' to grow the share of travel by public transport, walking and cycling, reducing the reliance on private vehicles, and the electrification of transport are critical to Aotearoa New Zealand achieving its net zero emissions target by 2050. Central Canterbury accounts for approximately 10% of the New Zealand vehicle fleet, and we expect around half a million vehicles will be fuelled by our network in the future.

The impact of increasing numbers of electric vehicles (EVs) on electricity demand is highly uncertain, as it is subject to multiple factors including:

- Number of EVs in a network area
- Use of charging infrastructure
- Public infrastructure vs residential charging
- Frequency and time of charging
- kW rate of charging.

Based on analysis to date, Orion's view is that it may be possible for us to achieve as low as 0.5kW per EV network-wide peak impact from EV charging. However, localised impacts at the low voltage level may be higher than 0.5kW per EV, depending on the number of EVs on a street LV feeder, which could lead to constraints in certain areas, depending on EV uptake. Additional detail, including exploration of charging scenarios, can be found in our 2023 AMP.

We are confident the potential impact of EVs on peak demand can be managed by effectively encouraging owners to charge their EVs across off-peak hours. We are exploring various ways to achieve this, principal among them is pricing that encourages charging of EVs across the 2am to 6am period. We are also exploring other low-cost measures such as customer education and engagement of flexibility services to facilitate transport electrification while keeping costs down.

Investing to maintain a safe, reliable, resilient network at lowest total lifecycle cost

Risk: Regulatory structure

Our existing regulatory structure was largely created to suit a linear electricity system, subject to limited or predictable amounts of change. This type of structure relies on the ability to easily forecast capital expenditure and stable operating expenditure over 5-year periods that will remain largely similar to historic levels.

This means current regulatory rules and mechanisms place a degree of funding constraint on climate related investment. This could limit our ability to respond to uncertainty and customer need during the 5-year regulatory period to deliver on our strategy.

The regulator is exploring solutions to this issue and Orion is taking a dual approach. We are actively engaging with the regulator alongside others in the energy industry to provide the best possible understanding of the level and rate of change we expect in the future, for instance, through the analysis in the report 'The Future is Electric'.

We are also exploring a range of non-network solutions in collaboration with the energy industry and customers to ensure the transition is kept as efficient and agile as possible. In that instance, safe and resilient adaptation to physical hazards goes hand in hand with our 'enabling decarbonisation and hosting capacity at lowest cost' focus area.

We have created the Future Energy Lab as our key forum to explore future energy scenarios, so we can improve our own understanding and provide decision useful information to the regulator and our network planning team. Building capability in this area is an important control for future uncertainty.

Creating the preferred workplace

Risk: Supply of people and skills

We recognise the need to grow our industry's capability and workforce size to meet the transition challenge is pressing, significant and is a shared responsibility across the industry. Orion is working with others in our sector to explore ways to address ways to build external capability, including:

- **Cross sector collaboration:** we are in discussion with industry bodies, training organisations and government agencies to develop ways to address this issue
- **Energy Academy:** Energy Academy is an initiative of the Orion Group with the purpose of galvanising the industry to work on common challenges, such as redefining the roles of industry in tertiary training
- **Supporting other industry competency initiatives:** Ara Trades Innovation Centre, which has an electricity distribution trades training centre, and University of Canterbury's Power Engineering Excellence Trust
- Established an **Energy Hub** and E**nergy Futures Lab** to facilitate sector collaboration across the sector
- Designed the **LUMO Global Energy Quest** to build a culture of collaboration and innovation across the energy sector globally – supported by EECA, Ara Ake and Business NZ Energy Council.

Key focus areas for Orion's internal workforce development over the next five years are:

- **Our people –** ensuring we understand the capability needs for the future and develop our talent profile to meet the needs of tomorrow's workforce
- **Our place –** creating an environment that supports employee wellbeing and lifts performance through ensuring our workforce reflects the diverse communities we serve and embraces our differences
- **Our performance –** supporting our people to have the capability and confidence to continuously seek opportunities to increase performance.

3.3 Transitional risks

	Regulatory structure	Supply of people & skills	Low voltage constraints due to electrification of transport
Current risk rating	Very high	Very high	Very high
Risk description	Regulatory rules and mechanisms place a degree of funding constraint on climate related investment. They could limit our ability to respond to uncertainty and customer need during the regulatory period to deliver on our strategy.	Increased and ongoing demand for electricity will require more people with the skills to build, manage and maintain the network. A changing network will also require different skills to the past. There is sector-wide consensus that the industry workforce will need to increase and new capabilities be developed. It will be a challenge to adequately provide the skilled workforce to deliver our plan as our sector competes nationally and internationally for resources to deliver decarbonisation.	Low voltage constraints due to the amount and type of electric vehicles owned, operated and charged by our community.
Likelihood	Likely – will probably occur	Likely – will probably occur	Possible – might occur at some time
Business impact	**Serious** Impedes our ability to support decarbonisation and provide network resilience.	**Major** The operating costs of employing staff will increase and staff shortages may impede our ability to carry out the activities necessary to serve increasing demand. This could have cascade impacts on our ability to retain staff and the wellbeing of staff that remain working for us as they carry an increased workload.	**Major** As electric vehicles are adopted by more households and businesses, the way in which those vehicles are charged could cause localised constraints on our low voltage network.
Financial impact	Uncertainty makes this difficult to quantify as likelihood relates to current structure, which is undergoing change.	Uncertainty makes this difficult to quantify due to ongoing flux in the labour market.	Uncertainty makes this difficult to quantify as EV uptake and usage is impacted by a number of factors including government regulation and market availability.
Timeframe to emerge	Short 1 – 2 years	Medium to long 2025 – 2050	Medium to long 2025 – 2050
Response	• Engagement with the regulator • Develop of non-network solutions in conjunction with industry and customers.	• Creation of energy sector collaboration to develop long-term capability • Short term focus on employer branding proposition.	• Real-time LV monitoring for better decision intelligence • Engagement with customers to shift time of charging engagement with flexibility services.

Table 3.1

3.4 Physical risks

Investing to maintain a safe, reliable, resilient network at lowest total lifecycle cost

Risk: Outages from increases in acute wind speeds in inland areas

Climate change is projected to bring slight increases in annual mean wind speed across Canterbury with the main impact occurring in inland areas. Wind can already impact our network, particularly during extreme weather events where high wind speeds can result in outages to our customers. We note that often these outages are most often caused by airborne debris or vegetation, rather than the wind itself.

Winds above 50km/h can be potentially damaging for the network by creating load on overhead lines and increasing the likelihood of vegetation impacting overhead lines. Work undertaken by NIWA for Orion indicates a higher probability of the 50km/h threshold being exceeded in inland areas mainly in the latter half of this century, with little change or decreasing wind in coastal areas. The research also indicates increasing westerly winds, which have been historically more damaging for our network.

To improve the resilience of our overhead inland network, we will:

- Replace end-of-life poles with more resilient designs that are fit for the future. This reduces the long-term cost impact of climate change, and our recently improved condition-based assessment work has identified a step change in the number of end-of-life poles needing replacement from 2027
- Upgrade the resiliency of poles that have been identified as at high risk of wind/fire damage, but which aren't at the end of their life, in the lowest cost manner
- Increase our vegetation management programme to reduce the incidence of trees damaging our network, particularly in windstorms
- Replace more of our higher altitude poles.

Additional detail about forecast adaptation expenditure for this risk can be found in Section 2 of our 2023 AMP.

Investing to maintain a safe, reliable, resilient network at lowest total lifecycle cost

Risk: (in the long term) asset damage and outages caused by heavy rainfall events and associated flooding

Our network area can generally expect hotter, windier summers and wetter winters. The intensity of severe rainfall events is expected to increase, by between 15 and 40% in some locations, particularly in RCP 4.5 (around 2.4 degrees of warming) and 8.5 (increasing over 3 degrees of warming and rising) scenarios **in the latter half of this century.** Extreme rainfall events are associated with elevated flood risk and as our assets are long-lived, it is good to plan adaptation to this risk now.

Flooding and heavy rain in the past has resulted in predominantly vegetation-based outages. Assets that are located close to rivers and waterways such as poles and other equipment may also be affected or require isolation. Rainfall compounds vegetation issues, making trees heavier or undermining root systems, thereby increasing the likelihood of damage to overhead lines. Flooding can also impact our ability to attend to outages and support our community.

When designing new equipment, we take into consideration the most current climate projections from NIWA to inform the equipment design standards. We also have contingency plans and procedures to electrically isolate parts of our network in areas affected by flooding to ensure safety and protect the network components. This electrical isolation is usually only required when flooding is so severe that residents have to evacuate, so it does not significantly increase disruptions to customers.

We also have an extensive vegetation clearance programme, which we have forecast to expand. For vegetation that is located outside our regulated 'cut zone', but that could still fall and damage our network, we have a proactive approach of engaging with landowners to achieve positive vegetation management outcomes.

Investing to maintain a safe, reliable, resilient network at lowest total lifecycle cost

Risk: Fire conditions

Drier conditions brought about by climate change will lead to longer and more severe periods of fire risk across wider areas in the region. Vegetation growth rates are also expected to increase as a result of warmer and wetter winters and along with increasing westerly winds, we expect to see a greater risk of ignition from incidents where trees and other vegetation contact overhead lines and equipment.

Whilst fire ignition from vegetation strikes will be an increasing risk to Orion as a direct result of climate change, other ignition risks will remain and their impact will be amplified as drier conditions will create a more flammable environment for fire to spread. This may increase the frequency and severity of network impacts from fire and exposure to potential third-party liability.

Orion takes a proactive approach to reduce the risk of fires from the network, including:

- Increased expenditure on tree trimming and encouraging responsible vegetation management around overhead lines
- Smart network solutions linking our auto-reclosers to FENZ localised fire weather notifications
- Provided it does not compromise resilience, investigating removal of network in areas with high vegetation risk
- Introduction of equipment that reduces the risk of fire where appropriate.

3.4 Physical risks

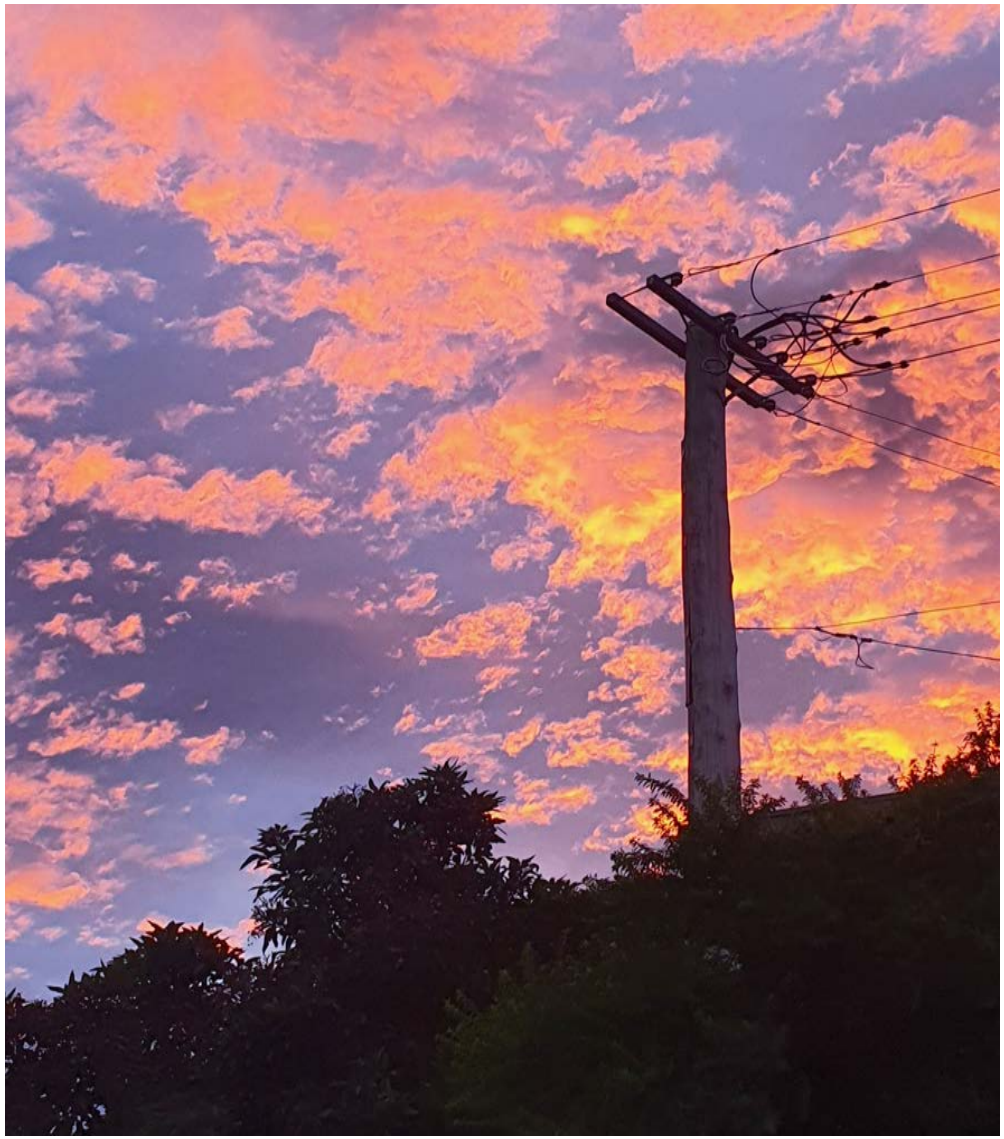
	Outages from increases in acute wind speeds in inland areas	Damage from extreme rainfall & flooding	Fire
Current risk rating	Very high	Very high	High
Risk description	High winds impact our overhead network directly (in terms of physical load) but also increase the likelihood of vegetation outside the regulated cut distance, or other items impacting our overhead lines. Current modelling suggests that inland areas could experience large changes in design speeds (99% speeds) later in the century due to changes in the severity of lee-slope windstorms. Further investigation on this issue is underway.	Assets that are located close to rivers and waterways such as poles and other equipment may be affected or require isolation in flood events. Rainfall compounds vegetation issues, making trees heavier or undermining root systems, thereby increasing the likelihood of damage to overhead lines. Flooding can also impact our ability to attend to outages and support our community.	Hotter, windier weather increasing the frequency of conditions in which fire can more easily ignite or spread.
Likelihood	Possible – might occur at some time	Likely – will probably occur	Possible – might occur at some time
Business impact	**Major** High wind can cause outages directly, or by blowing vegetation or other objects into our overhead network. The extent of the impact depends on the event, but repairs and increased maintenance requires expenditure and manpower.	**Major** Heavy rain can cause flooding that may inundate and damage our network, requiring repair. It also compounds vegetation impacts which could cause contact, damage and outages associated with our overhead network. The extent of the impact depends on the event.	**Serious** The impact of vegetation strikes and other ignition risks will be amplified as drier conditions will create a more flammable environment for fire to spread. This may increase the frequency and severity of network impacts from fire and exposure to potential third-party liability.
Financial impact	Uncertainty makes this difficult to quantify as impact will depend on the nature of the event.	Uncertainty makes this difficult to quantify as impact will depend on the nature of the event.	Uncertainty makes this difficult to quantify as impact will depend on the nature of the event.
Timeframe to emerge	Long 2030 – 2050	Long 2030 – 2050	Medium to long 2025 – 2050
Response	• Network reinforcement and replacement • Design review and adjustment • Vegetation control.	• Network reinforcement and replacement • Design review and adjustment • Vegetation control.	• Network removal • Design review and adjustment • Vegetation control.

Table 3.2

4. Risk Management

NZ CS1 Governance disclosure objective
17. To enable primary users to understand how an entity's climate-related risks are identified, assessed, and managed and how those processes are integrated into existing risk management processes.

Orion Group uses an Enterprise Risk Management (ERM) approach. This ensures we have a complete and integrated focus on managing our strategic and operational risks.



4.1 Our risk management approach

Orion provides a flexible and purpose-built approach to the application of risk management and is consistent with ISO31000:2018 Risk Management Guideline.

Our risk management processes and tools are embedded within our business operations, to drive consistent and accountable decision-making. In accordance with our risk management framework, all identified climate related risks are assessed using a consistent set of criteria. These criteria cover both consequence and likelihood defined in the Orion risk consequence and likelihood matrix and our Risk Management Guideline.

Climate-related issues currently considered in our risk analysis include extreme weather events, dry conditions, regulatory changes, emerging technologies, emerging market solutions, carbon price impacts on the network, equipment costs, insurability, market changes and reputation. We prioritise risks with the largest potential consequences and aim for proportionate risk management. Proportionate means that we identify, assess, evaluate and treat our significant risks in timely and reasonably practicable ways.

Figure 4.1

4.1 Risk management approach

At Orion the starting point for risk identification is being clear on both our risk context and the expectations of our community, and this includes our approach to climate change. Our climate change programme of work informs the climate parameters which are relevant to our business, including both physical (such as wind, temperature or sea level rise) and transitional (such as EV uptake or smart networks) parameters as well as how they relate to our business operations, assets and services. Understanding our climate change context improves our identification and assessment of the risks.

Our risk management culture (consistent with international best practice – ISO31000:2018) is integral to how we identify, assess and manage climate change risks. It accommodates the continually evolving knowledge of both physical and transitional impacts, the sector and cross-sector implications of climate risks and therefore the need to collaborate; and a recognition that at some points we need to make decisions with imperfect information.

Consequence						
Likelihood	**Minor**	**Moderate**	**Serious**	**Major**	**Severe**	**Risk ratings**
Almost certain 95 to 100%	6	13	18	23	25	Extreme
Likely 65 to 94%	5	9	15	21	24	Very high
Possible 35 to 64%	3	8	14	19	22	High
Unlikely 6 to 34%	2	7	11	16	20	Medium
Rare 0 to 5%	1	4	10	12	17	Low

Table 4.1

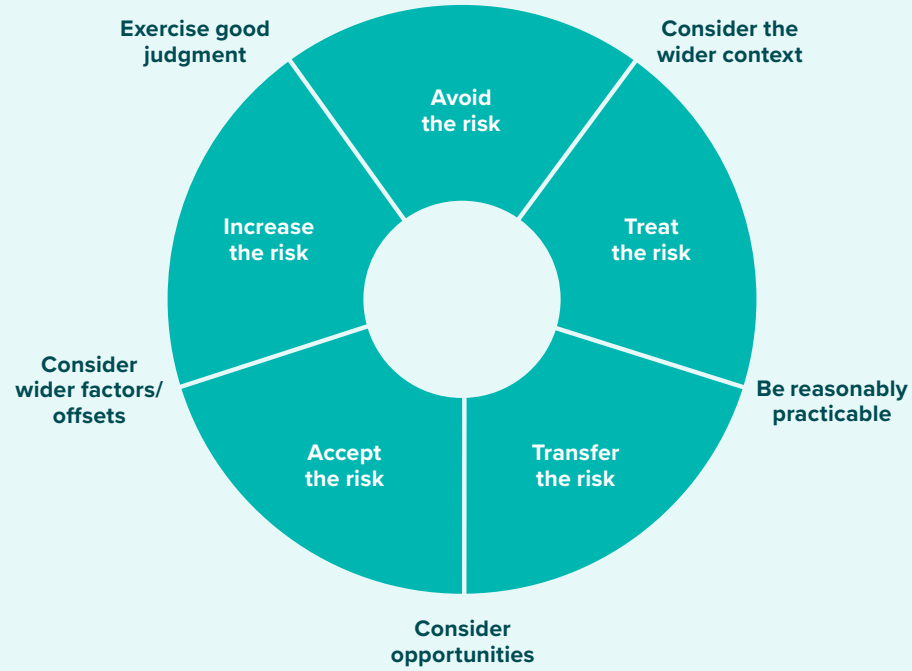


Figure 4.2

5. Metrics and targets

NZ CS1 Governance disclosure objective
20. To enable primary users to understand how an entity measures and manages its climate-related risks and opportunities. Metrics and targets also provide a basis upon which primary users can compare entities within a sector or industry.

Orion Group recognises the need for urgent and game changing action on climate change.

- Responsibility for measuring and managing greenhouse gas (GHG) emissions is approached at an Orion Group level and includes GHG emissions from Connetics Ltd, based on an 'equity share consolidation' approach to our measurement and reduction activities. This section of the report will report GHG emissions at the Orion Group level
- A detailed explanation of the Orion Group strategy, with associated metrics and targets, can be found in our Statement of Intent, available on our website. As our strategy is directed toward becoming 'match fit' for the climate transition, the metrics and targets discussed are also relevant for this Climate Statement. Reporting on Statement of Intent metrics can be found in our Annual Report disclosures.

5.1 Greenhouse gas emissions

We measure and manage our GHG emissions across Orion Group and have set ourselves targets across the short, medium, and long term.

- We aim to reduce GHG emissions from the operational sources identified in figure 5.1 by 50% from 2020 levels by 2030. Based on our current operational boundary and baseline, this would result in an absolute reduction of Orion Group operational emissions to 1630tCO2e.
- We offset our operational GHG emissions and achieved Toitū Envirocare CarbonReduce status for Orion Network and CarboNZero status for Connetics Ltd in 2022.
- Our short to medium term operational GHG emission reduction targets (FY24 – FY26) are contained in our FY24 Statement of Intent. Our progress on these targets is reported to the Board and our shareholders in the cadence described in Figure 2.1.

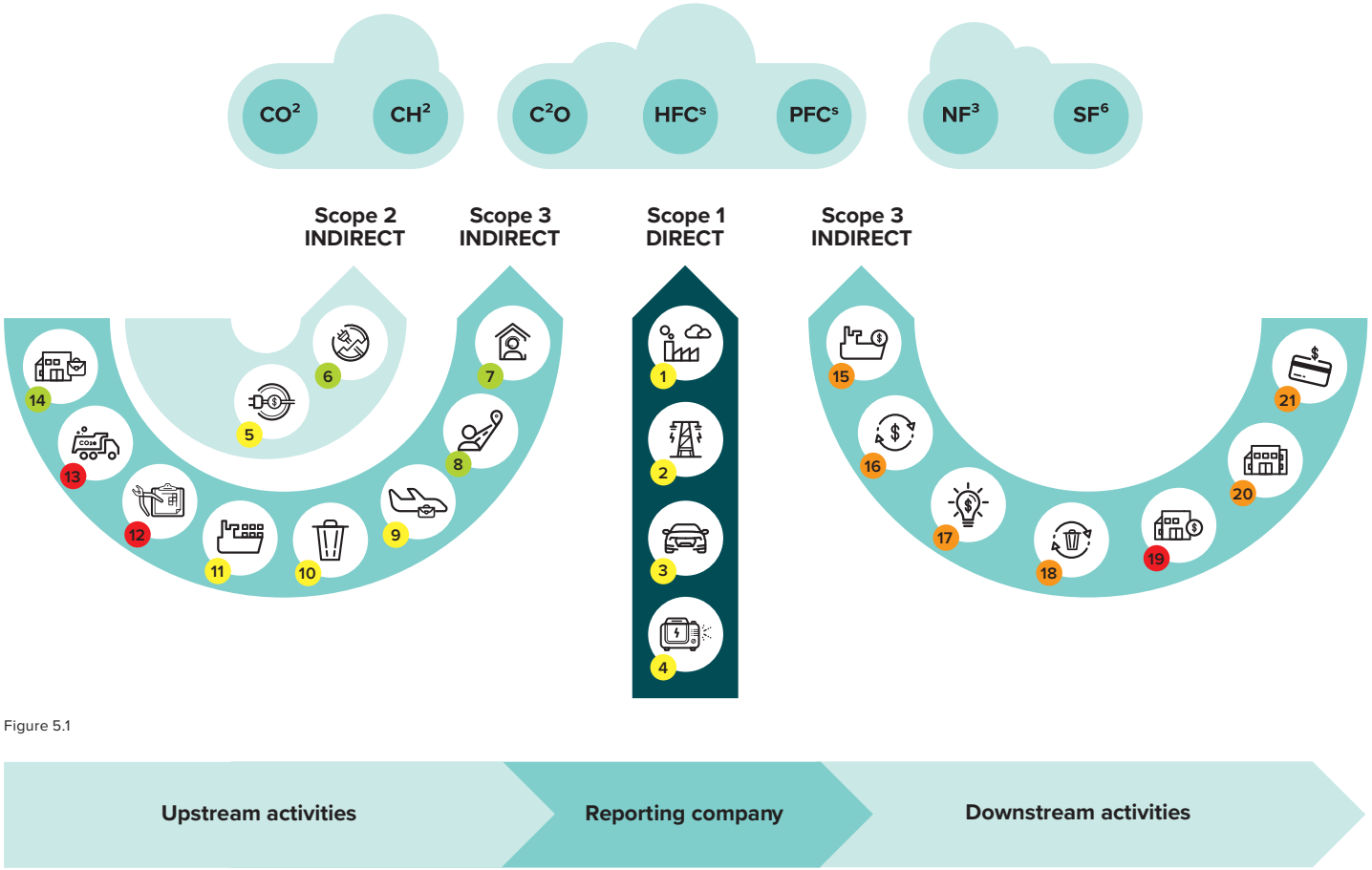


Figure 5.1

Legend

- Operational
- Measured
- Not currently measured & likely to be material
- Not currently measured & unlikely to be material

Key

1. Fugitive emissions from A/C, LPG
2. Fugitive SF6 emissions from circuit breakers
3. Fuel used in company vehicles and rental cars
4. Fuel used in generators
5. Purchased electricity for buildings & public EV chargers
6. Electricity lost as it travels along our network
7. Working from home
8. Employee commuting
9. Business travel – including taxis & staff car claims
10. Waste from Orion & Connetics
11. Freight
12. Contracting emissions in addition to Connectics
13. Embodied carbon in network equipment
14. Business travel accomodation
15. Transportation & distribution of sold products
16. Processing of sold products
17. Use of sold products
18. End of life treatment of sold products
19. Leased assets
20. Franchises
21. Investments.

5.1 Greenhouse gas emissions

We take a continuous improvement approach to the measurement and management of our GHG emissions. This means we are always looking to improve the extent and quality of our measurements, which in turn allows us to analyse and design impactful interventions to reduce our GHG emissions and set targets accordingly. It also means that what we consider 'operational' emissions may expand over time. We recognise that the reporting of GHG emissions can be complicated and are also exploring ways to continually make our reporting jargon free and engaging. A detailed report on how our emissions footprint is calculated, including assumptions and emissions factors, is available on our website.

We have provided a summary of our operational GHG emissions to date, along with how we forecast these emissions will reduce in Figure 5.2 below.

2007
First measured

2018
Orion Network Toitū Envirocare CarbonReduce certification

2020
Orion Group Toitū Envirocare CarbonReduce certification

2022
Orion Group offsets operational emissions.

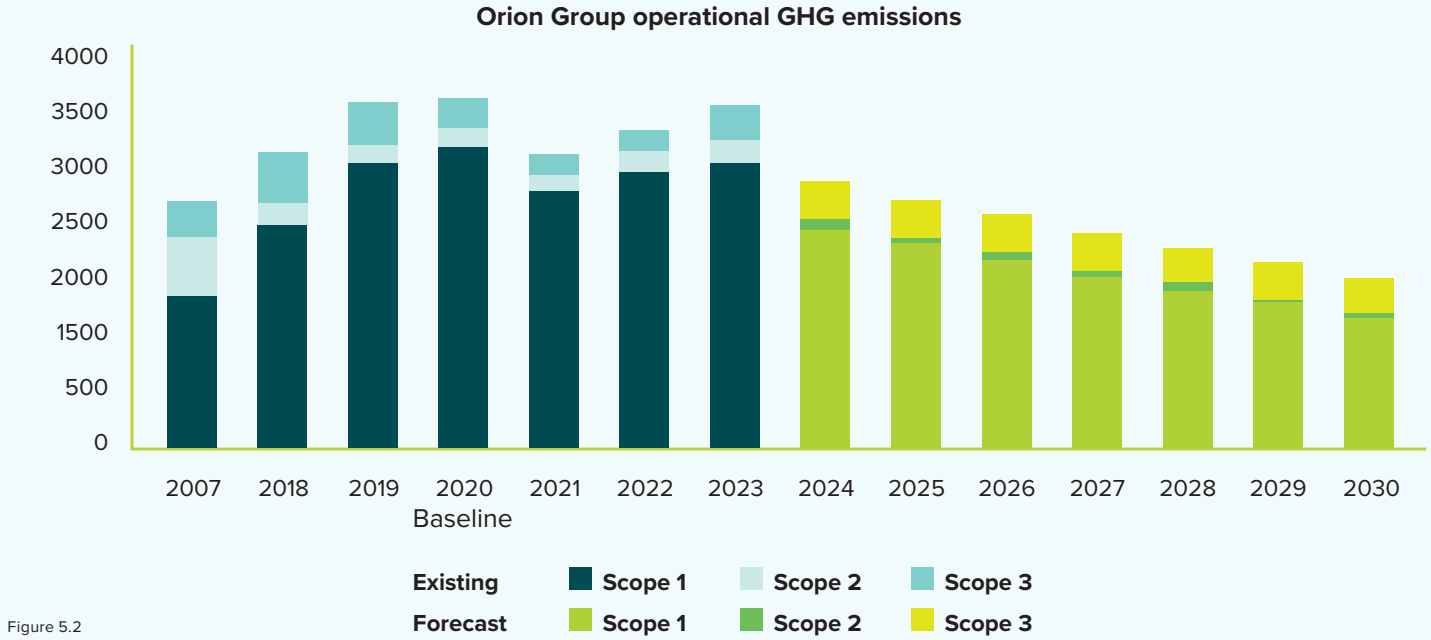


Figure 5.2

5.1 Greenhouse gas emissions

Toitū Envirocare are engaged by Orion Group to certify our footprint, check our emissions management approach and certify that we have surrendered sufficient carbon units to have offset our operational emissions. Our emissions are audited on an annual basis to ISO 140064:2018 standard.

In total, our Scope 1 emissions are significantly smaller than our Scope 2, due to the impact of distribution losses – electricity lost as it travels around our network. We report these emissions, but they are largely dependent on the generation mix that makes up the electricity that travels our lines. As this mix lowers in emissions, so will our distribution losses. Electrifying our fleet provides our best operational emission reduction opportunity. Table 5.1 below provides specifics of our carbon emissions measured since our baseline year.

	Scope 1	Scope 2	Scope 3	Offset
2020 baseline	2979	15,429	295	None
2021	2531	16,305	184	None
2022	2747	16,394	210	3199
2023	2824	17,502	317	3,363 Not complete at time of publication
Emission sources included in table	Vehicle fuels (diesel, petrol), generator diesel, rental car use, refrigerants, LPG, SF6.	Electricity used in Orion Group controlled buildings and EV chargers around our Network, Distribution losses.	Taxi use, air travel, freight, waste, staff private car claims.	
Measured emission sources excluded and why	None	None	Working from home, accommodation, commuting, embodied carbon – we do not believe the data quality is adequate to report these sources but anticipate including them in our FY24 Statement as embodied carbon in particular will be material to our footprint.	
Unmeasured emission sources excluded	None	None	Refer to figure 5.1 for unmeasured sources.	
Commentary for 2023	Diesel use and an SF6 leak caused emissions to increase above our carbon budget, but keep below our baseline.	The increase in distribution emissions is associated with a change in the national electricity emissions factor, not an increase in the amount of electricity lost.	An upsurge in international travel caused emissions to increase above our Scope 3 carbon budget.	

Table 5.1

5.1 Greenhouse gas emissions

Our biggest reduction impact can be realised in our downstream value chain through the energy we deliver. We have a responsibility to ensure our service is carried out in the most environmentally and socially effective way, to optimise its positive impact.

To put this in context, in FY23 the GHG emissions associated with Orion Network's operations (excluding Connetics) were in the region of 1030 tCO2e. In 2022, we carried out an investigation of how much carbon is consumed in constructing our Belfast substation and this totalled 620 tCO2e. It was important to also note that the construction of the Belfast substation benefitted from significant carbon savings (~97%) from using national material suppliers where possible, instead of importing materials. Building less or building smart by enabling smart network and flexible solutions benefits both our community, through reduced costs and supporting local businesses, and our environment, through reduction of physical resources allocated to the decarbonisation of our economy.

Orion Group has also made the decision to offset our operational emissions, using verified emission reduction units from wind and solar projects in the short term while our local offset projects develop. In the long term, we are privileged to partner with landowners in our network area to establish 300ha of indigenous forest. The units created from these forests will be shared between the landowner and Orion Group, but the true value is in the relationships we develop with our community through this process and the living biodiversity legacy it will create for future generations.

5.1 Greenhouse gas emissions

Analysis of the drivers of material operational greenhouse gas emissions in our business revealed that significant emission reductions can be made by 2030, with a combination of continuous improvement, some new technology and behaviour change. The cost of these initiatives is largely neutral, with the majority of cost being in the early adoption of new technology.

Our biggest opportunity to increase the speed of decarbonisation comes through our heavy vehicle fleet. Alternative fuels offer an interim solution during the period while our fleet transitions into more efficient or battery technology. New technology such as drones and remote switching also has the ability to reduce kilometres travelled by our staff, with a cascade effect on fuel use.

Our biggest risk to our reduction ambitions comes from the use of SF6, a potent greenhouse gas, in our high voltage circuit breakers. We are removing this whenever possible, but it will remain a risk for some years to come.

Figure 5.3

Orion

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