A journey towards net zero emissions: our action plan

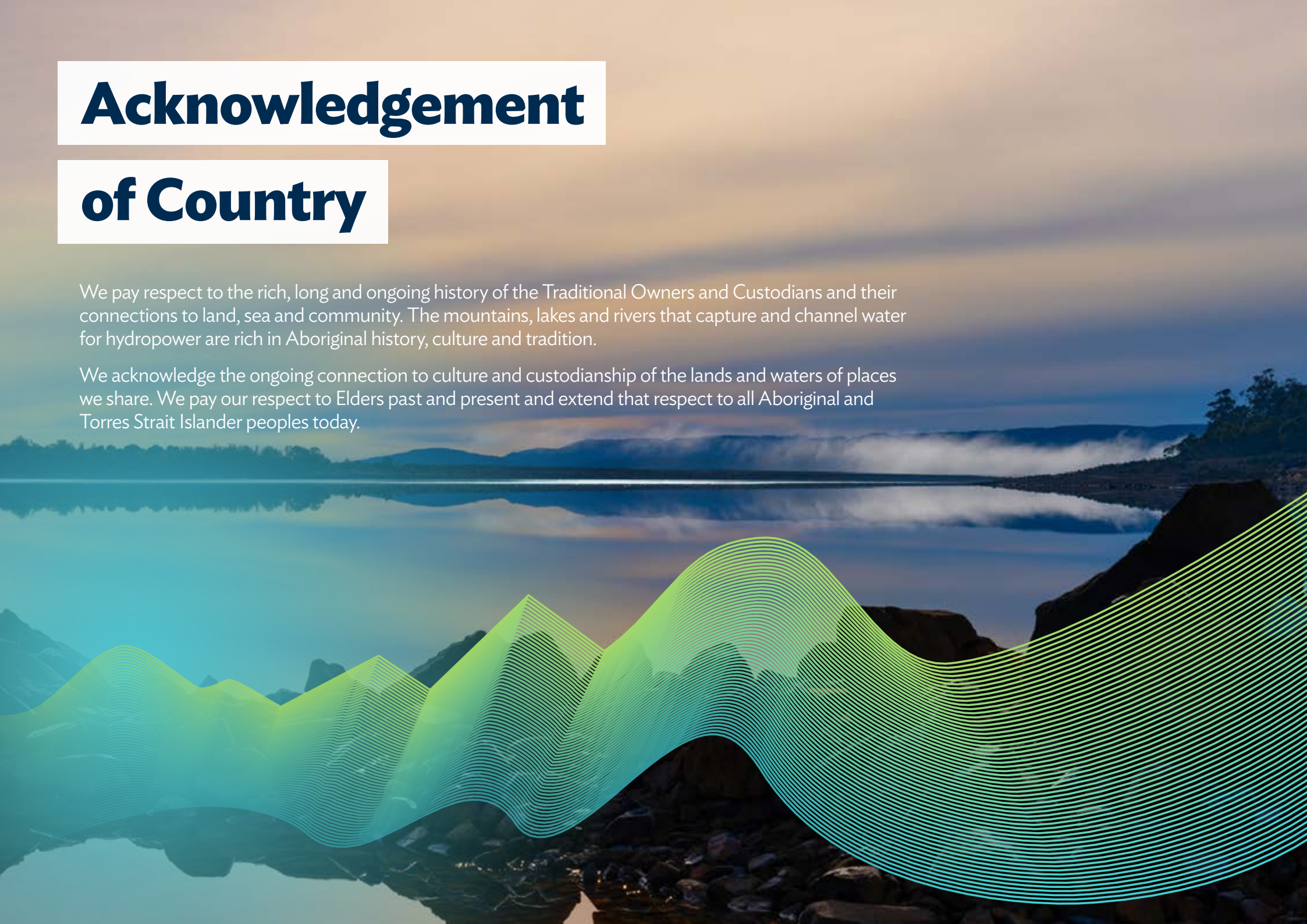
Joint Statement

Hydro Tasmania
Entura
Momentum Energy

Acknowledgement of Country

We pay respect to the rich, long and ongoing history of the Traditional Owners and Custodians and their connections to land, sea and community. The mountains, lakes and rivers that capture and channel water for hydropower are rich in Aboriginal history, culture and tradition.

We acknowledge the ongoing connection to culture and custodianship of the lands and waters of places we share. We pay our respect to Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.



Foreword

Our action plan sets us on a path to achieve net zero emissions for reportable scope 1 and 2 emissions and to quantify our scope 3 emissions by 30 June 2025. We have a bold vision to maximise Tasmania's hydropower capacity through Battery of the Nation and will lead the industry on a journey towards net zero emissions.

Renewable energy has never been more critical to a sustainable future as Australia and the world seek to reduce emissions to combat climate change.

For more than 100 years, Hydro Tasmania has generated renewable energy to support Tasmania's prosperity and growth. We take pride in today being Australia's largest generator of renewable energy and one of the lowest carbon emitters in the sector. We acknowledge the responsibility that brings in continuing to lead the way in our industry.

We can – and must – do more. I am pleased to present this action plan that outlines our roadmap for a journey towards net zero emissions for our businesses – Hydro Tasmania, Entura and Momentum Energy.

While not required to be reported under the National Greenhouse and Energy Reporting scheme, scope 3 emissions are important to us.

Other non-reportable emissions like those from lakes and wetlands are the topic of growing discussion by international scientists and climatologists. Our staff actively participate in these conversations, given the large hydropower system we manage in Tasmania.

This action plan is a tangible and visible way for us to show our reportable emissions profile now, highlight the challenges and opportunities, and recognise that while we don't have all the answers yet, we have the commitment, resources and technology to achieve this goal.

We will build on our strong heritage as Australia's biggest generator of renewable energy. We have a bold vision to maximise Tasmania's hydropower capacity through Battery of the Nation and will lead the industry with a bold target to achieve net zero scope 1 and 2 emissions by 2025.

I joined the renewable energy industry to make a difference. I am proud to be on this path as we seek to play our part in global change.

Ian Brooksbank
Chief Executive Officer

About this action plan

This action plan presents the Hydro Tasmania group's journey towards net zero emissions. It includes our rationale, motivation, objectives and the technical details associated with what we need to measure and modify to progress.

We acknowledge that while we will make every effort to work towards net zero emissions according to this action plan, there may be factors that limit our ability to progress as planned. We will use industry best practice and be open and honest in our reporting and progress.

'Renewable energy and sustainability are in Momentum's DNA. We're determined to support Australia's drive to net zero emissions by providing the education and products our customers, both large and small, need to help them reduce emissions and switch to renewable energy'

Ms Lisa Chiba
Managing Director, Momentum Energy

'Entura plays a unique role sharing expert skills and knowledge honed over a century on Tasmania's hydro schemes. We work in Australia and around the world helping communities to transition to renewable energy and reduce their carbon emissions'

Ms Tammy Chu
Managing Director, Entura

Climate solutions for a sustainable future

Our climate is changing

Human activities, such as burning fossil fuels and land use change, release greenhouse gases into our atmosphere. The consequences include increasing temperatures, sea level rise, ocean acidification, melting snow and ice, and changes in extreme events such as storms, floods, drought and bushfires.

The devastating bushfires and floods experienced by Australia over recent years are a timely reminder of why climate change requires urgent action.

Countries around the world have committed to climate change action

World leaders adopted the Paris Agreement in 2015. The Agreement set global targets to limit temperature rise to 2 °C above the pre-industrial era, with ambitions to limit temperature rise to 1.5 °C.

Since then, the world has started on a path towards decarbonisation.

The Tasmanian Government has legislated an emissions reduction target of net zero emissions, or lower, from 2030, while the Australian Government has committed to net zero emissions by 2050. It has also proposed a new national Net Zero Authority, responsible for promoting the orderly and positive economic transformation associated with achieving net zero emissions.

Our towards net zero emissions pathway supports the Tasmanian Government's emission reduction target and aligns with the state's climate change policies.

Renewable energy is critical for our clean energy transformation

Electricity generation from burning fossil fuels produces a significant proportion of the world's greenhouse gas emissions. In Australia, according to the CSIRO, the burning of fossil fuels produces 33.6% of our emissions. Replacing fossil fuels with renewable energy will play an important role in our energy transformation.

Hydro Tasmania's emissions are already very low but we can do more

Our first hydropower station was built more than a century ago and we now manage and maintain a portfolio of 30 hydro power stations, 54 large dams and one gas-fired power plant, as well as a joint venture partnership in three Tasmanian wind farms.

As Australia's largest generator of renewable energy, our emissions are already very low compared to other generators – at just 0.1% of the biggest carbon emitter in the sector according to a 2021-22 report by the **Clean Energy Regulator**. This is a great place to start. We are committed to better understanding and reducing our emissions, planning for the future and continuing to be part of Australia's climate solution.

Hydro Tasmania scope 1 and 2 greenhouse gas emissions

Figure 1. Hydro Tasmania's annual reportable scope 1 and 2 emissions (tCO2e) across all three businesses. (Data from Australian Government's National Greenhouse and Energy Reporting (NGER) scheme Corporate emissions and energy data, 2021-22)

This graph shows the relatively high scope 1 and 2 emissions from 2016–19 driven by an increase in our scope 1 and 2 emissions from 2016 to 2019, driven by periods of extremely low rainfall and an extended outage of the Basslink interconnector (which transfers energy between Tasmania and the mainland). This meant an increase in the use of the gas-fired Tamar Valley Power Station (TVPS) was required. By 2020, we had replenished hydro storages and new wind farms came online, and Tasmania was able to proudly claim 100% net self-sufficiency in renewable energy.

Emission Sources

To reduce emissions, we need to know what they are and where they come from.

Scope 1: 43,385 – 64%

Scope 2: 24,303 – 36%

Figure 2. The proportion of Hydro Tasmania's reportable scope 1 and 2 emissions (tCO2e) for 2021-22

What are scope 1, 2 and 3 emissions?

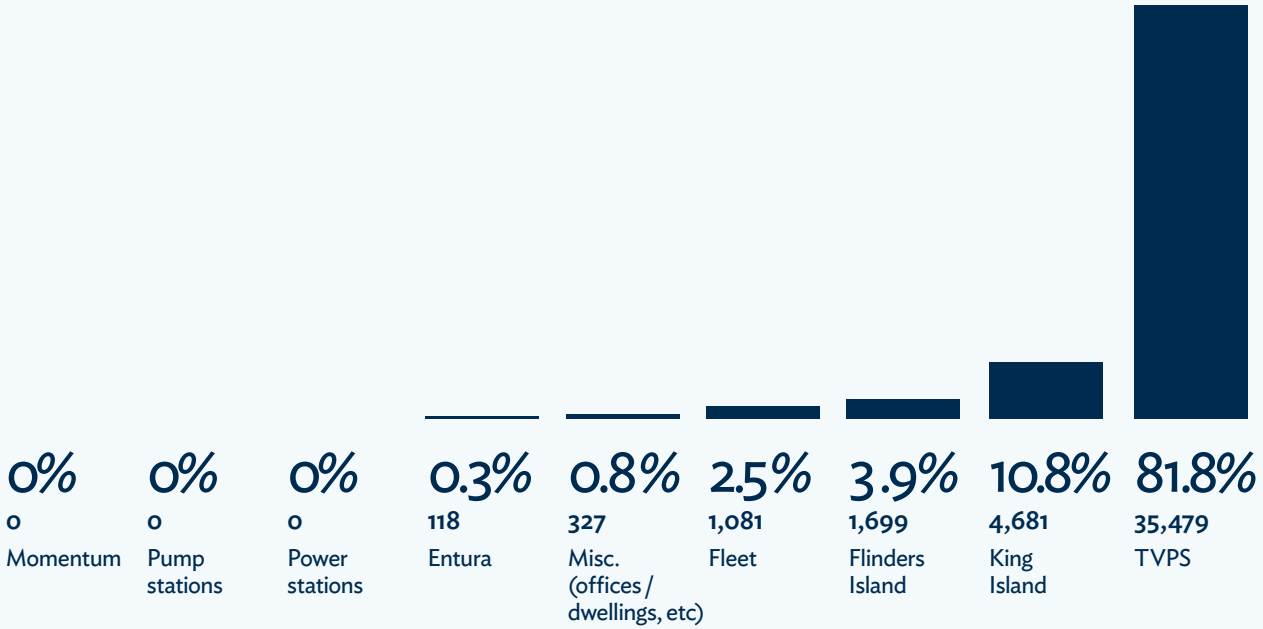
Scope 1 emissions: produced as a direct result of activities at a facility. For example: emissions from electricity production at a power station.

Scope 2 emissions: indirectly produced to power a company's work. For example: emissions from electricity used to heat or cool a building.

Scope 3 emissions: indirect emissions produced when a company's goods or services are used. For example: emissions from suppliers or customers.

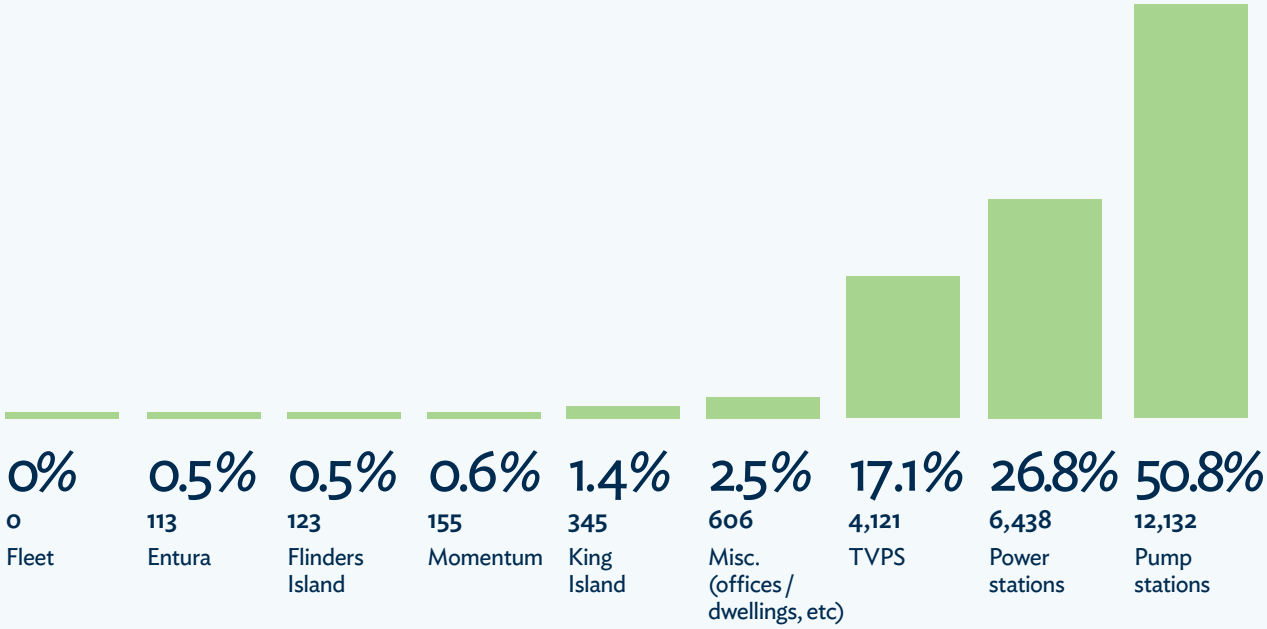
Hydro Tasmania's scope 1 emissions by source, 2021-22

Figure 3. The percentage contribution of scope 1 emission sources for 2021-22. (Data source: NGERs)



Hydro Tasmania's scope 2 emissions by source, 2021-22

Figure 4. The percentage contribution of scope 2 emission sources for 2021-22. (Data source: NGERs)



Towards our net zero emissions target

The Hydro Tasmania group is already one of the lowest carbon emitters in the Australian energy sector. But we can – and must – do more. Sustainability is part of our DNA. Our journey towards net zero emissions is the next step in our story, and our contribution to helping Tasmania, Australia and the world to limit global warming.

Our initial target is to achieve net zero reportable scope 1 and 2 emissions and to quantify and track our scope 3 emissions by 30 June 2025.

We will focus on reducing scope 1 and 2 emissions where practicable and offsetting the remaining emissions.

Our target also includes scope 3 emissions quantification. These emissions are not required to be reported under the NGER scheme, but they are important to understand and track if we are to truly move towards net zero emissions.

Our approach

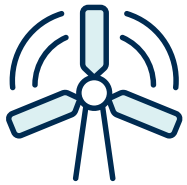
We'll adopt the following approach:

Action 1:
Reduce the emissions we can

We are reducing our emissions by replacing our passenger vehicle fleet with electric vehicles, reducing reliance on diesel fuel (particularly in the Bass Strait Islands), increasing the generation of renewable energy through Battery of the Nation projects and enabling Australia's transition to renewable energy.

Action 2:
Plan for change

We are quantifying and measuring scope 3 emissions and lake emissions, developing a scope 3 emissions reduction plan, assessing the development and optimisation of renewable infrastructure on the Bass Strait islands and identifying carbon reduction initiatives for our major new construction projects. We will plan for external factors that influence our emissions profile.



Action 3:
Purchase renewable energy

We will reduce our remaining scope 2 emissions by purchasing renewable energy through Large-scale Generation Certificates and other emerging renewable energy incentive schemes, such as the Renewable Energy Guarantee of Origin certificates when they become available.

Action 4:
Offset our remaining emissions

We will offset our remaining scope 1 emissions with projects that deliver emission reductions that are measurable, verifiable and long-term, prioritising Tasmanian offset projects.

Action 5:
Build awareness and support others

We'll provide information, products and services to inform and empower our customers, clients and the community to help reduce power usage, increase energy efficiency and reduce greenhouse gas emissions.

Tracking our progress

Our target: By 2025, net zero scope 1 and 2 emissions and quantification and tracking of scope 3 emissions

2023
Setting our target and getting on with it

- First electric vehicles purchased
- King Island solar farm commissioned
- Start quantifying scope 3 emissions
- Ongoing lake emissions measurements and research
- Offset strategy developed
- Momentum Energy customer insights and tools

2024
Delivering on our commitments

- Revamp King Island infrastructure and assess expansion feasibility
- Carbon reduction initiatives for major construction projects
- Investigate Tamar Valley Power Station future options
- Energy efficiency initiatives in buildings and facilities
- Offset tender finalised
- New energy efficiency products and services for Momentum Energy customers

2025
Initial target achieved

- Remaining reportable scope 1 and 2 emissions offset
- Scope 3 emissions quantified and reduction plan developed
- More electric vehicles and charging stations
- Electrification and gas transition plan developed for Momentum Energy customers

beyond 2025 ...
Setting the bar higher

- Goal for all passenger vehicles to be electric by 2030
- Implement scope 3 emissions reduction plan
- Momentum Energy continues electrification journey for customers
- Entura continues to expand its client services to help reduce emissions and energy usage

Roadmap actions towards net zero

Action 1: Reduce the emissions we can

We aim to reduce our greenhouse gas emissions at the source where we can. We are prioritising activities that lead to long-term emission reductions, meaning we will have fewer emissions to offset as we progress along our journey.

Switch to electric vehicles

Hydro Tasmania's fleet comprises a mix of passenger vehicles, light commercial vehicles, heavy vehicles and machinery. For the safety of our staff and contractors, vehicles in our fleet must be appropriate and safe for remote locations and winter conditions, be able to carry heavy loads and have AWD or 4WD.

Electric vehicles have not advanced to the stage where we can replace our commercial and heavy vehicles and some machinery, but we can introduce electric passenger vehicles.

Our goal is to replace our fleet of almost 130 diesel passenger vehicles with electric vehicles by 2030 and build our own network of charging stations around the state.

And we've already made a start. In 2023, we purchased six new electric vehicles and installed four charging stations at locations around the state to ensure maximum charging coverage for our EV fleet.

We'll monitor technological advances and new products in Australia and internationally as part of our work on fully electrifying our vehicle fleet.

Action 1: Reduce the emissions we can

Begin operation of the new King Island solar farm

Remote island communities on the Bass Strait islands aren't connected to the mainland grid and so rely heavily on diesel. The King Island Renewable Energy Project is a world-leading, hybrid off-grid power system that supplies approximately 65% of the island's energy through renewable sources.

We will further decrease reliance on diesel-generated electricity on the Bass Strait islands.

The new 1.5 MW solar installation at Huxley Hill Wind Farm on King Island will be operational in 2023. It will increase the renewable energy produced on King Island, replace 300,000 litres of diesel annually, and offset an estimated 800 tonnes of carbon dioxide emissions each year.

Upgrade King Island ageing assets

We are refurbishing and replacing ageing renewable and supporting infrastructure on King Island, such as wind turbines and batteries, helping to reduce greenhouse gas emissions.

Renewable infrastructure on Flinders Island is newer, so doesn't require refurbishment or replacement.

However, we'll continue to investigate, assess and trial further opportunities to increase renewable energy and reduce emissions on both King and Flinders Islands.

Help Momentum Energy customers to understand their usage

Momentum Energy is our mainland energy retail business, supplying electricity and gas to households and businesses. Momentum Energy's customer consumption represents the majority of our scope 3 emissions.

Momentum Energy is on a journey to educate customers about the important role renewable energy plays in tackling climate change and how the choices they make in their homes and businesses can make a difference.

Helping customers reduce their energy consumption (and therefore scope 3 emissions) is a key part of Momentum Energy's focus. Providing customers with access to a personalised visualisation tool helps them understand how and when they consume electricity. This will help to drive behavioural change, encouraging customers to be energy efficient and reduce their energy usage and greenhouse gas emissions.

Action 2: Plan for change

While we are starting from a very low emissions base, there is still a lot we can do to progress towards net zero emissions. We need to plan our next steps and identify new opportunities to reduce our greenhouse gas emissions further.

Quantify our scope 3 emissions and plan for mitigation

Quantifying our scope 3 emissions is challenging, as no standard methodology exists in Australia.

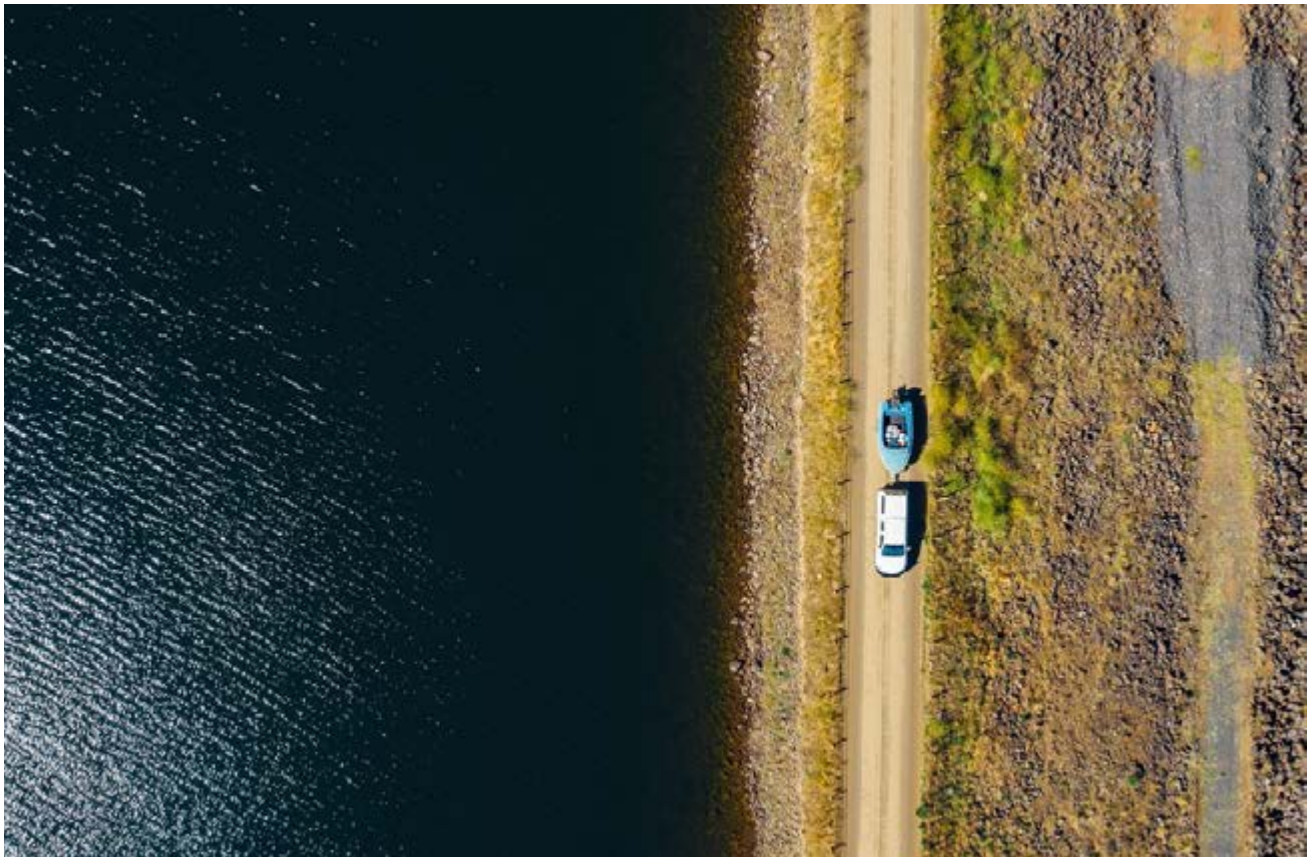
However, we've been working to better understand and estimate scope 3 emissions. We use methodology consistent with the international **Greenhouse Gas Protocol**.

An estimate of our scope 3 emissions has helped us to test our methodology and improve future quantifications. We'll continue to refine and improve our methods and widen the scope of emissions we include in the quantification process. This will allow us to determine how and when we can mitigate these emissions.

We aim to have further analysis completed, and consensus reached, on scope 3 variables by the end of 2023. We will then set strategies to further reduce these emissions.

The decarbonisation of the energy market in Australia and internationally is likely to result in continued declines in scope 3 emissions.

We'll develop an emissions reduction plan to continue reducing our scope 3 emissions beyond 2025.



Action 2: Plan for change

Contribute to international research on lake emissions

In lakes, the decomposition of organic matter in sediments releases methane, carbon dioxide and nitrous oxide. While this is a natural process, dams that modify natural ecosystems can change the profile of lake emissions.

Emissions from lakes are classified as scope 1 emissions. However international climate agencies are starting to understand that a small proportion of these emissions will be counted as scope 3 – depending on how the energy they create is consumed. Emissions from lakes are not required to be reported under the Australian Government's NGER scheme.

The quantification of lake emissions is an ongoing global research challenge and is in its infancy. While some modelling methods exist, they have limitations and their accuracy is not guaranteed.

We are working to measure gross emissions at some of our lakes in collaboration with researchers from the University of Queensland.

We're participating in national and international research to better understand the biogeochemical mechanisms of lake emissions and to improve the models and methods to quantify these emissions. We need a better understanding of how lake emissions are caused before determining ways to reduce these emissions.

Carbon reduction initiatives for Battery of the Nation construction projects

As the electricity market rapidly changes to using more variable renewable energy sources like wind and solar, hydropower is a critical way to enable reliable supply for customers. With our rich hydropower heritage and extensive hydropower system, we are well-positioned to help meet the needs of the future market.

Battery of the Nation is Hydro Tasmania's bold vision to maximise Tasmania's hydropower capacity. It involves the potential redevelopment of the Tarraleah hydropower scheme and pumped hydro at Lake Cethana.

Construction projects have high emissions. We are aligning our project development process to international sustainability standards for hydropower. We aim to achieve positive environmental, social and governance outcomes for these projects.

We want to ensure leading construction environmental management, enhance biodiversity outcomes and minimise project carbon emissions, pursuing carbon reduction initiatives through our procurement process.

Action 3: Purchase renewable energy

Our priority is to reduce our emissions where practicable. We will reduce our remaining scope 2 emissions by purchasing renewable energy through Large-scale Generation Certificates and other emerging renewable energy incentive schemes, such as the Renewable Energy Guarantee of Origin certificates when they become available.

Purchase renewable energy to reduce our scope 2 emissions

We have developed an offset strategy for our scope 1 and 2 emissions, seeking to procure a combination of renewable energy and carbon offsets.

We've adopted a **market-based accounting approach** for our scope 2 emissions. This approach is supported by the Clean Energy Regulator and aligns with current leading practice, market trends and industry leaders.

The market-based accounting approach allows total electricity consumption to be reduced by the renewable electricity consumed by a company (megawatt hour) before applying an emissions factor to grid-imported electricity.

Adopting a market-based approach promotes grid decarbonisation and enhances the value of renewable energy.

We'll seek to reduce our scope 2 emissions through the purchase and use of renewable energy. This includes surrendering our Large-scale, Generation Certificates (LGCs) to compensate for energy usage and, in future, participating in the proposed Renewable Energy Guarantees of Origin (REGO) scheme (subject to its adoption in Australia).

Buying renewable energy is generally considered a better option than buying carbon offsets because it directly reduces the emissions released into the atmosphere.

Adopting this approach demonstrates our commitment to environmental sustainability and supports the transition to a low-carbon economy.

Action 4: Offset our remaining emissions

We will offset our remaining scope 1 emissions with Australian Carbon Credit Units (ACCU) from projects that deliver additional, measurable, verifiable and long-term emission reductions. We will prioritise ACCUs from Tasmanian projects.

Our carbon offset approach

Our carbon offset strategy aligns with industry-leading practice by prioritising renewable energy procurement over carbon credits, where possible (see Action 3).

Scope 1 emissions that remain after our emission reduction activities will be offset with ACCUs. The Clean Energy Regulator issues ACCUs, with each one representing one tonne of carbon dioxide equivalent (tCO_2-e) stored or avoided.

Our carbon offset projects will be required to deliver emission reductions that are additional, measurable, verifiable and long-term. We will prioritise Tasmanian carbon offset projects.

We'll bank any unused offsets each year to protect against reversal through bushfires or above-forecast emissions. We will audit all emissions data and banked offsets twice yearly and report this information annually. This buffer will be held for future year emissions reporting or, if not required, sold on the offset market.

We will issue a carbon offset tender for scope 1 emissions this year, with offset projects to be contracted in 2024.

Hydro Tasmania's offset strategy (market-based accounting)

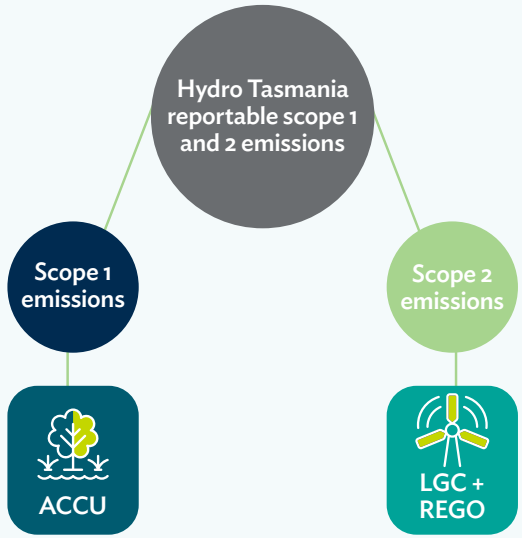


Figure 5. Our offset strategy to reduce and offset reportable emissions.

Action 4: Offset our remaining emissions

Annual review of offset strategy and reporting

We will review our carbon offset strategy annually to ensure it reflects our goals and current market best practice.

We'll continue to report our emissions under the NGER scheme and will also report our net zero commitments under the Corporate Emissions Reduction Transparency (CERT) program guidelines.

Action 5: Build awareness and support others

We will support, inform and empower our customers, clients and the community to decrease power usage and increase energy efficiency, ultimately helping to reduce greenhouse gas emissions.

Support and seed the Tasmanian offset industry

We will support and seed the local offset industry to deliver added economic value to Tasmania.

Tasmania's carbon offset industry is growing. Examples of current Tasmanian offset projects include restoring our forests, planting native forests and seaweed farming.

We will prioritise new and existing Tasmania offset projects to support the local industry and deliver community co-benefits.

Supporting Momentum Energy customers

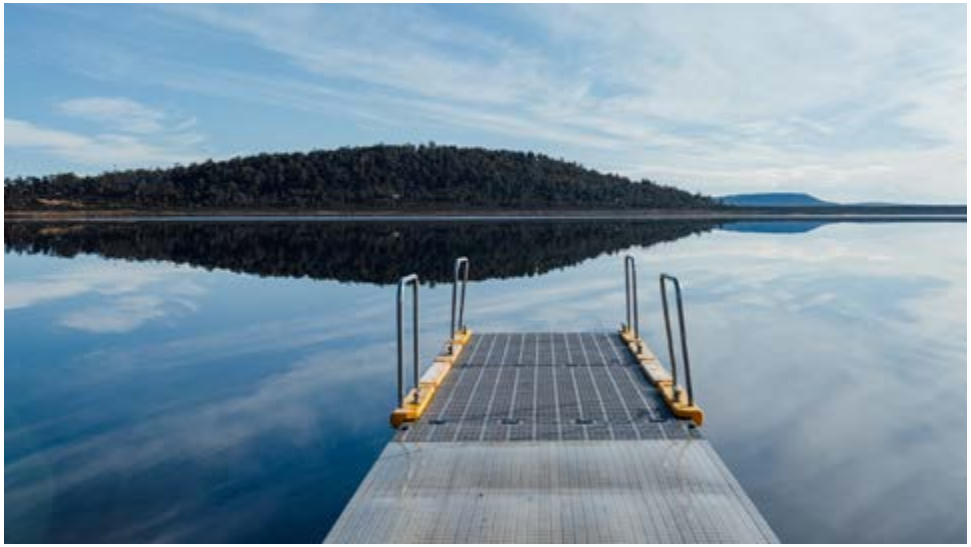
Momentum Energy is committed to empowering its customers to reduce their emissions.

Momentum Energy was rated 4.5 in the 2022 Greenpeace Green Electricity Guide and was highly commended in the Green Energy Retailer category of the Finder Green Awards 2023.

We are developing services that offer customers energy efficiency and carbon audits, including an independent assessment of solutions and actions to help them better understand their usage, reduce their energy use and associated emissions, and increase their energy efficiency.

This will expand to further new products and services, such as energy insights, solar and battery partner referrals, solar sharing and electric vehicle charge plans.

Action 5: Build awareness and support others



Ensure clients align with sustainability goals

Our specialist consulting firm, Entura, is a trusted power and water consultancy that helps its clients to create safe and sustainable renewable energy.

As part of Entura's commitment to sustainability, all clients, partners and infrastructure projects are screened to evaluate them against sustainability principles, including their impact on environmental, social and ethical factors.

This screening ensures that Entura helps clients who contribute positively to national and international action to improve sustainability and the transition to renewable energy. This approach aligns with Hydro Tasmania's journey towards net zero emissions.

Encourage other renewable and low-emission initiatives in Tasmania

As leaders in renewable energy generation, we strongly encourage others in Tasmania and Australia to start (or accelerate) towards their net zero emissions ambitions. We'll assist wherever possible, and share information and communicate transparently about our own challenges and successes.

By encouraging Tasmania's low-emission and renewable future, we're supporting the decarbonisation of our economy and strengthening Tasmania's reputation as a great place to live and do business.

Our challenges

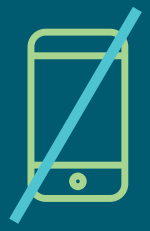
As Australia's largest generator of renewable energy, we already have a low emissions profile. But we can – and must – do more.

For more than a century, Tasmanians have relied on our hydropower to grow and support the state's communities and economy. We've led clean energy innovation in Australia – building 54 major dams, 30 hydropower stations and 2 major wind farms. We offer world-leading consulting services through our consulting business, Entura, as well as retail energy to customers on mainland Australia through Momentum.

The Hydro Tasmania group has the skills, experience and passion to help create an energy future that's clean, reliable and affordable. But we know there will be challenges along the way.

With more than 90% of the energy we generate coming from renewable sources, we already have a very low emissions profile. This makes reducing our remaining emissions harder.

While our action plan reflects what we can do, we also need to look at our key challenges. Our key challenges include the lack of quantification methodology for scope 3 and lake emissions, emissions from the Tamar Valley Power Station and pump stations, and reducing Momentum Energy's scope 3 emissions.



Lack of quantification methodology for scope 3 and lake emissions

The lack of consistent methodology for quantifying scope 3 and lake emissions is an ongoing challenge for Hydro Tasmania and other energy companies. We're participating in national and international research to better understand and quantify lake emissions, but it takes time. Quantifying these emissions will be critical for identifying the best actions to mitigate them as part of our journey towards net zero emissions.

Emissions from the Tamar Valley Power Station and pump stations

The Tamar Valley Power Station is our largest source of scope 1 emissions and the way we manage this asset in future will be an important factor for us to consider. For now, the station provides backup for energy security. It is also an important consideration in Tasmania's overall energy transition and timing of new renewable energy projects, new customer loads and additional interconnection.

Pump stations are core infrastructure that transfer water between some of our lakes and streams to the power stations to produce renewable energy but they contribute significantly to our scope 2 emissions.

Given the critical nature of this infrastructure, these emissions will be offset while we develop longer-term strategies to directly reduce emissions.

Reducing Momentum Energy's scope 3 emissions

We have not yet fully quantified our scope 3 emissions, but we know that all energy retailers have relatively high scope 3 emissions due to the contribution of fossil fuels to Australia's energy supply until it decarbonises. The push to decarbonise the energy market in Australia and internationally is likely to result in continued declines in scope 3 emissions. Momentum Energy will continue to support its customers on their decarbonisation journey.

Looking to the future

We have set an ambitious and achievable path to 2025 and beyond. We don't yet have all the answers and we recognise that a lot may change, not just within our businesses but within the broader energy market.

Hydro Tasmania aims to accelerate the renewable energy transition and create renewable energy for future generations. The target and actions set out in this document are the first steps along our journey. We will strive to go even further.

It will be critical to keep an eye on the changing market conditions and adjust our action plan as needed along the way. Rigorous and transparent monitoring and reporting on progress are key to any net zero target or journey – and ours is no different.

We commit to:

- ✓ tracking and reporting our greenhouse gas emissions
- ✓ reporting our net zero commitments under the Corporate Emissions Reduction Transparency program guidelines
- ✓ communicating openly on our progress, challenges and solutions.

Our journey towards net zero emissions is one we promise to pursue with passion and commitment.

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