

Department of Planning, Industry and Environment

# NSW Net Zero Pathways Pilot

Lessons learned and next steps

December 2021



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# Executive summary

**Between January and October 2021, the NSW Government brought together 36 organisations to participate in the *Net Zero Pathways Pilot* (the ‘pilot’). In the pilot, each organisation worked with a specialist consultant to develop net zero pathways that outline the energy efficiency, renewable energy and carbon offset initiatives they could implement to achieve net zero emissions.**

The net zero pathways process was used by participating organisations to formally establish net zero targets, prioritise the implementation of greenhouse gas reduction projects and build an

understanding within their organisations of how best to respond to the risks and opportunities associated with climate change.

**To develop the pathways, a consultant worked collaboratively with each organisation to:**

-  Analyse emissions data
-  Conduct a climate change risk assessment
-  Identify opportunities to reduce greenhouse gas (GHG) emissions
-  Develop a ‘business as usual’ projection of GHG emissions and one or more alternative pathways to achieve ‘net zero’
-  Assess implementation capability and develop an action plan.

Underpinning the approach was a stakeholder engagement process that included meetings, workshops, site visits and management presentations.

**The pilot was independently evaluated by Sustainable Business Group to establish the benefits of the process and the lessons learned along the way. Key findings from the evaluation were:**

1

Many investors, customers and other stakeholders expect organisations to establish a net zero target, support the target with a structured plan and demonstrate that they are actively implementing emissions reduction initiatives

2

The development of net zero pathways informs an organisation's net zero strategy by outlining the costs and benefits of the emissions reduction initiatives that an organisation could implement to achieve net zero

3

Good preparation is essential. Organisations that had previously conducted a climate change risk assessment and established a greenhouse gas inventory developed more comprehensive pathways reports

4

High levels of interaction and engagement between the consultant and internal stakeholders enhanced the value of the process for the organisations involved

5

The pathways reports were typically based on mitigation options that had already been identified. However, there were examples where they have been used by Sustainability Advantage to facilitate collaborations between organisations to co-create innovative solutions and to evaluate emerging technologies

6

Variations in the emphasis, approach and experience of the different consultants involved in the pilot presents an opportunity to identify best practices and establish a standardised approach to support wider uptake of net zero pathways planning.

The evaluation concluded that the development of net zero pathways can assist organisations to navigate the significant economic and market transformations that are underway due to climate change. There is value in scaling up the pilot to assist more organisations to develop 'best practice' net zero pathways.

**The key recommendations from the evaluation are to:**

	Develop best practice tools, guidance and capacity building support for organisations to build a foundation for net zero in line with international standards
	Facilitate industry-led collaborations to develop net zero pathways and address sector specific challenges
	Leverage government initiatives by encouraging organisations to include information about their net zero target and strategy when applying for NSW Government grants and contracts.

The NSW Government will act on these recommendations through its \$22 million investment in the [Business Decarbonisation Program](#). This is currently being refined in consultation with industry stakeholders. It aims to help businesses take practical steps towards net zero emissions as NSW works toward the target of a 50% reduction in emissions by 2030 and net zero by 2050.



Through the net zero pathways process we have developed a **plan that helps us to prioritise our efforts and to progress the investments required** to reduce greenhouse gas emissions in a way that is aligned with our business objectives.

**Richard Morton, Group Financial Controller, Konica Minolta**



In order to build on our success in reducing emissions, we need to keep an open mind about new technologies like using heat pumps rather than gas boilers for our thermal energy needs. It has been important to start our investigations now by analysing our heating and cooling flows in detail right across the production process. **By building our knowledge today, we create support throughout the business and we will be better prepared to deploy new technologies** when we replace old equipment and as the financials for new technologies begin to really stack up.

**Justin Merrell, Group Environment Director, Lion**





# About the pilot

**Consistent with the 2015 Paris Agreement, the NSW Government has set a long-term policy objective to achieve net zero emissions by 2050 and an interim target of a 50% reduction in emissions by 2030 compared to 2005 levels.**

Acknowledging that NSW cannot meet its net zero commitments without significantly transforming its economy and industries, the NSW Government wants these targets to be achieved in a way that enables businesses to:

- maintain their competitiveness in the global transition to net zero
- leverage opportunities to offer low emissions products and services
- reduce the risk of stranded assets.

To assist the NSW Government to identify the best ways to support businesses in the transition to net zero, the pilot was delivered between January and October 2021.

The pilot involved 36 organisations that are participants in the NSW Government’s [Sustainability Advantage](#) program.

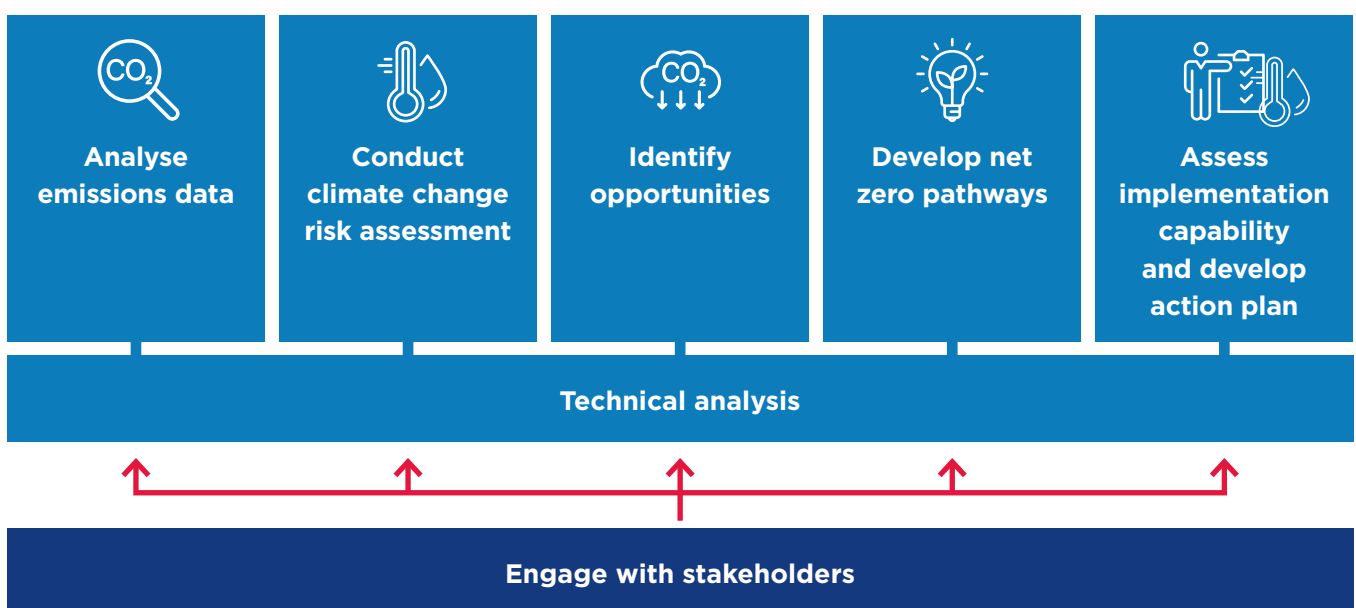
Pilot organisations represented a diverse range of industry sectors including aged care, chemicals, food and beverage manufacturing, hospitality, retail, local government, technology, waste management and ports.

Each organisation was supported by one of 8 consulting organisations.

The outcome for each participating organisation was a ‘net zero pathways report’. To develop the report, a consultant worked collaboratively with each organisation to:

- analyse emissions data
- conduct a climate change risk assessment
- identify opportunities to reduce GHG emissions
- develop a ‘business as usual’ projection of GHG emissions and one or more alternative pathways to achieve ‘net zero’
- assess implementation capability and develop an action plan.

Underpinning the approach was a stakeholder engagement process that included meetings, workshops, site visits and management presentations (Figure 1).



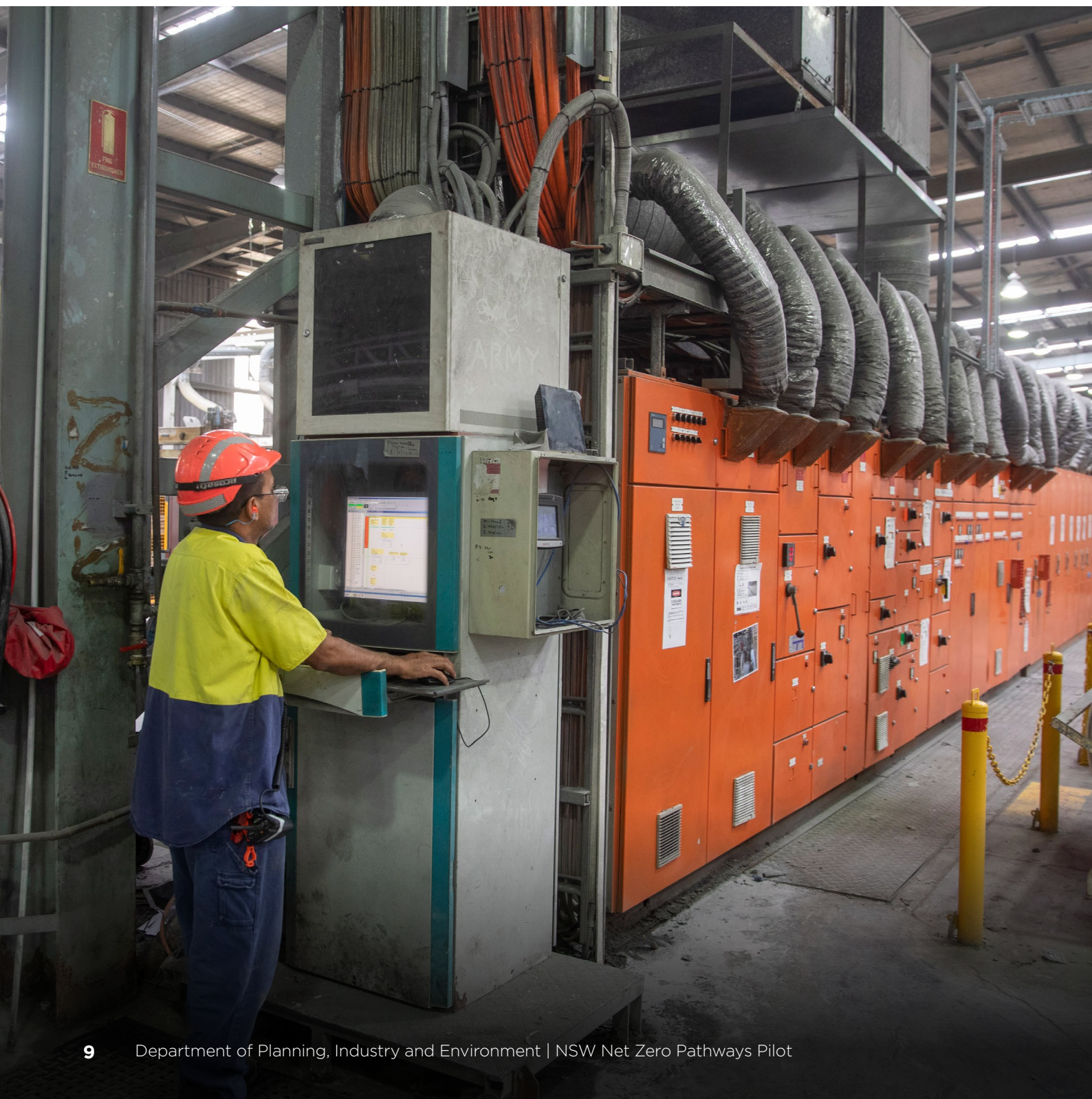
**Figure 1**  
The net zero pathways process



An independent evaluation of the pilot was conducted by Sustainable Business Group. The evaluation involved:

- a desktop review to identify relevant international standards that can inform the net zero pathways process
- a review of the net zero pathways reports developed for each organisation
- interviews with personnel from 28 of the 36 organisations involved in the pilot.

This summary report shares the main findings from the evaluation. It begins by considering how net zero can be defined for organisations. It then presents the lessons learned in the pilot for each of the activities involved in the net zero process. Finally, the conclusions from the evaluation are described together with key recommendations.



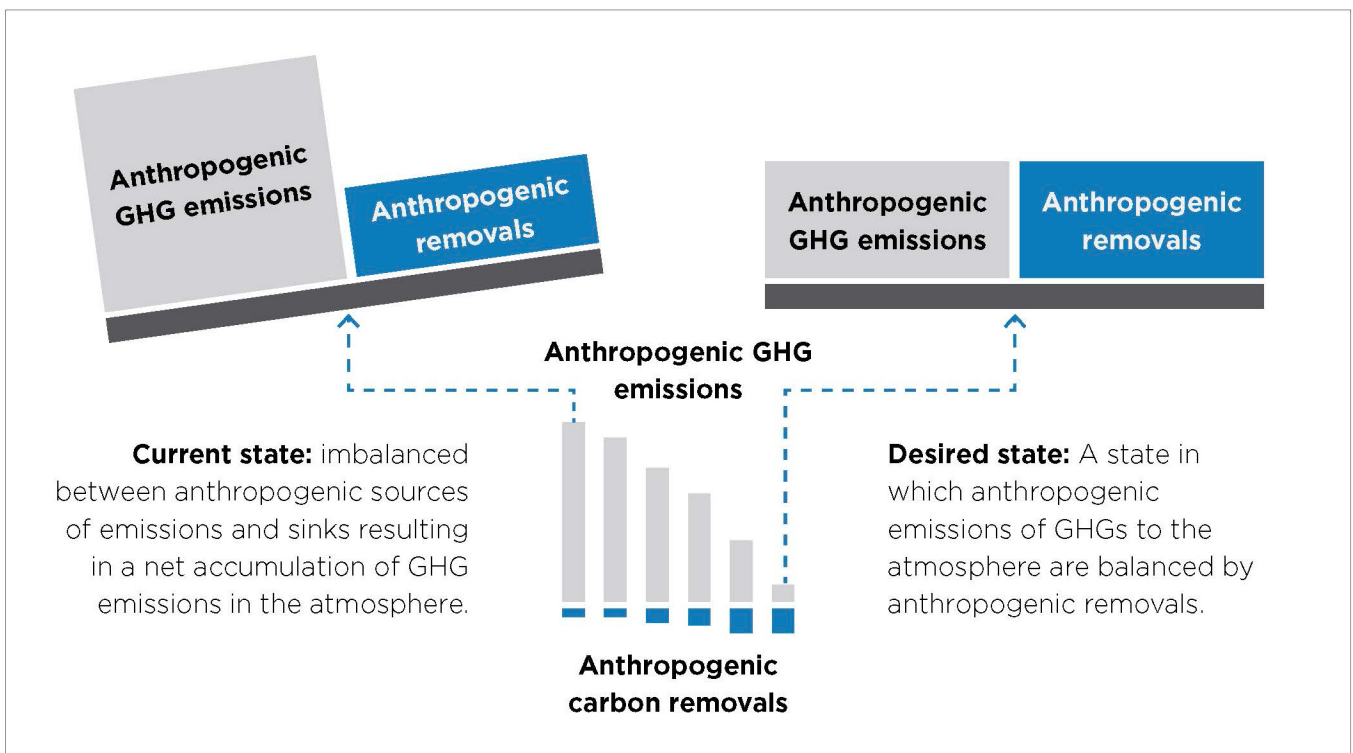




# Defining net zero for organisations



The notion of net zero has risen to prominence since governments around the world pledged in the 2015 Paris Agreement to achieve ‘a balance between anthropogenic emissions by sources and removals by sinks’<sup>1</sup> (Figure 2). Scientists suggest that achieving this balance by 2050 is necessary to maintain average global temperature increases below 1.5°C.



**Figure 2**

Net zero emissions at the global level<sup>2</sup>

In recent years there has been a rapid rise in the number of organisations announcing their own net zero pledges. However, many of these pledges are difficult to compare due to variations in the emission sources that are included and the extent to which indirect emissions across the value chain have been considered.

To address this lack of consistency, the Science-Based Targets Initiative (SBTi) has developed the global Net-Zero Standard<sup>3</sup> to boost the credibility of net zero targets. The standard defines a science-based net zero target as one that:

- covers a company’s entire value chain emissions including those produced by their own processes (scope 1), purchased electricity and heat (scope 2), and generated by suppliers and end-users (scope 3)

- includes near- and long-term ambitions (e.g., 50% reduction by 2030 and net zero by 2050 or earlier)
- has a focus on rapid, deep emission cuts rather than carbon offsets.

The approach outlined in the SBTi Net-Zero Standard is consistent with analysis by ClimateWorks Australia that examined over 200 corporate net zero pledges made by Australian-based companies to identify the best practice principles that inform corporate net zero commitments.<sup>4</sup>

The following sections summarise the key activities involved in the net zero pathways process and the lessons learned.

1. United Nations Framework Convention on Climate Change (2015), Adoption of the Paris Agreement, 21st Conference of the Parties, Paris: United Nations. Available from: [unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement](https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement). Article 4, paragraph 1

2. CDP on behalf of the Science Based Targets Initiative SBTi (2020). Foundations for science-based net-zero target setting in the corporate sector. Available from: [sciencebasedtargets.org/net-zero](https://sciencebasedtargets.org/net-zero)

3. Available from [sciencebasedtargets.org/net-zero](https://sciencebasedtargets.org/net-zero)

4. ClimateWorks Australia (2021). *Corporate action for 1.5 degrees: Best practice for Australian company net zero commitments*. Available from [www.climateworksaustralia.org/resource/corporate-action-for-1-5-degrees-best-practice-for-australian-company-net-zero-commitments/](https://www.climateworksaustralia.org/resource/corporate-action-for-1-5-degrees-best-practice-for-australian-company-net-zero-commitments/)

# 1. Engaging with stakeholders

**A structured stakeholder engagement process builds a common understanding of net zero and helps organisations to reduce GHG emissions in a way that develops personal ‘buy in’ and maximises business value.**

Stakeholder engagement was frequently mentioned by participating organisations as an essential and valuable part of the process. That is because meetings, workshops, site visits and presentations helped to inform staff and management of the meaning of net zero and drew on their unique perspectives on how it could best be achieved.

The table below illustrates how stakeholder engagement overcame a range of challenges that emerged during the net zero pathway process.

**Table 1.** Stakeholder engagement outcomes

Common challenges at the start of the process	How the engagement process helped
Varied understanding of net zero concepts	By communicating clearly and consistently throughout the process, management and staff built a common understanding of net zero terms and concepts and its relevance to their organisation
Varied understanding of the relevance of net zero to the organisation	Bringing key personnel together to examine the climate change risks and opportunities for the business at a strategic level highlighted the drivers, risks and benefits of working towards net zero
Some staff had ideas for emissions reduction initiatives but did not have a mechanism to share them with others	Drawing on staff suggestions and analysing them further encouraged individuals to pursue initiatives once the pathway process was completed
GHG emissions data was dispersed across different parts of the organisation	Constructive relationships developed between the consultant and ‘data owners’ in each organisation streamlined the data gathering process





Stakeholder engagement could be incorporated more systematically into the development of pathways in the future by:

- asking organisations to nominate an executive sponsor to endorse the process and build support for the outcomes with other senior managers
- establishing how and when key stakeholders will be involved in the pathway process, before it begins.



As we developed our pathway, we built a **shared understanding of what we needed to do** to achieve net zero. The collaborative process is essential because it supports action right across our business.

**Michael Mathias, Environmental Sustainability Manager, Uniting (NSW.ACT)**



## 2. Analysing emissions data

**A greenhouse gas inventory that includes operational emissions together with indirect emissions across the value chain provides an important foundation for the development of a net zero pathway.**

An early step in the pathways process is to gather and analyse GHG emissions data. This was a challenge for many organisations, particularly when the required data was dispersed across different parts of the organisation. Prior to their involvement in the pilot relatively few organisations had begun to capture and analyse indirect emissions (scope 3) generated by suppliers and end-users across their value chain.

The inclusion of both operational and indirect emissions is important for many reasons:

- indirect value chain emissions can make up a significant proportion of an organisation's overall emissions
- a focus on value chain emissions highlights opportunities to collaborate with suppliers to reduce GHG emissions, which can also lead to lower input costs and other business benefits
- proactively engaging with customers that are themselves committed to achieving net zero can enhance customer relationships and business reputation

- a comprehensive inventory is required by 2 high profile standards, the SBTi's Net-Zero Standard and the Australian Government's Climate Active program.<sup>5</sup>

Opportunities to enhance the pathway process in the future include:

- requiring organisations to develop a plan to improve their GHG emissions data over time, including scope 3 emissions
- assisting organisations to review and update the assumptions that informed their initial net zero pathway as their data improves. For example, twelve months after developing the initial pathway organisations should reassess the cost/benefit analysis of emission reduction opportunities, include new technological developments and/or update their emissions inventory.



The net zero pathways process has **assisted Fujitsu in its ongoing decarbonisation journey towards net zero** – particularly in our energy-intensive data centres. This work is fundamental to Fujitsu for 2 related reasons: to meet the growing demand from our customers for low carbon solutions, and to make meaningful, visible progress towards our purpose of a more sustainable world.

**Richard Clifton-Smith, Sustainability Manager, Fujitsu Oceania**

5. [www.climateactive.org.au/](http://www.climateactive.org.au/)



### 3. Conducting a climate change risk assessment

**A climate change risk assessment consistent with the guidelines of the Task Force on Climate Related Disclosures (TCFD) assists organisations to adopt a strategic response to climate change and establish senior management support for net zero pathways.**

The requirement to conduct a climate change risk assessment was included in the scope of work for the pilot. However, few of these assessments were undertaken because many of the participating organisations had already conducted climate change risk assessments prior to commencing the pilot. Some organisations did not conduct a climate change risk assessment because they saw greater value in utilising the available assistance to focus on other aspects of the process such as evaluating opportunities in greater detail.

The evaluation found that organisations that had previously completed a climate change risk assessment, typically had stronger board and senior management support for reducing GHG emissions in their business. This was due to the strategic context that was established through the assessment process and the focus that it placed on business risks and opportunities associated with climate change.

Given the significant benefits of a climate change risk assessment, i.e., in establishing the strategic context and building senior management support, the evaluation considered how they could be encouraged in more organisations.

Options identified for a future program include:

- requiring organisations to complete a climate change risk assessment prior to commencing the pathways process
- providing a senior management briefing on climate change risks and opportunities at the start of the pathways process
- working with industry associations to bring organisations together to develop a climate change risk assessment for their sector, the findings of which could then be communicated to senior management at the start of the pathways process.



## 4. Identifying opportunities

**Presenting GHG emission reduction opportunities in the context of achieving net zero highlights the benefits of early action and the need for organisations to periodically review the costs and benefits of available and emerging technologies.**

Consultants used a variety of approaches to identify opportunities to reduce GHG emissions in each organisation. For example, they:

- reviewed energy audits and project opportunity lists from prior investigations
- explored the suitability of Power Purchase Agreements (PPAs) for renewable energy
- considered the use and costs associated with carbon offsets
- consulted with internal staff through interviews and workshops to elicit additional opportunities
- contributed ideas based on their direct experience.

The pathways were typically based on emission reduction options that had already been explored by the organisations and relatively few new and innovative opportunities were identified through the process. However, an early review of the pathways reports identified a number of emerging technologies of interest to multiple organisations. This led to a separate collaborative initiative facilitated by the Sustainability Advantage program through which a small group

of organisations are working together to evaluate the technologies they could use to transition from gas to electrically driven equipment powered by renewable energy.

Opportunities to improve the pathways process in a future program include:

- developing sector-specific background papers on current and emerging technologies and opportunities that should be considered by each organisation
- stronger promotion of the wider business benefits (such as improved productivity and reduced maintenance costs) associated with each opportunity rather than focusing narrowly on the cost of abatement
- encouraging collaboration at an industry sector level to explore the most relevant emerging technologies
- including an internal carbon price when assessing the viability of each opportunity
- ensuring that the benefits of early action are clearly articulated.



Developing the pathway has given us the **confidence to set a more ambitious target than we had initially considered.** We found that we could implement some initiatives sooner to reduce emissions while at the same time delivering a range of other business benefits.

**Euan Diver, Environmental Services Manager, Kosciusko Thredbo**



## 5. Developing net zero pathways

**Net zero pathways provide a practical, technology-based perspective on what it takes to achieve net zero.**

The following pathways were developed for each organisation:

- a 'business as usual' projection of emissions
- one or more 'net zero pathways' to illustrate the projects that an organisation could implement to achieve net zero within an agreed timeframe, such as 2030 or 2040.

Each pathway was built on an agreed set of assumptions about future business growth, the costs and benefits of potential emissions reduction initiatives, and the timeframe in which net zero could be achieved.

In some cases, multiple net zero pathways were developed based on a variety of technologies and timeframes. This helped organisations to explore different levels of ambition and to establish a net zero target year and interim targets.

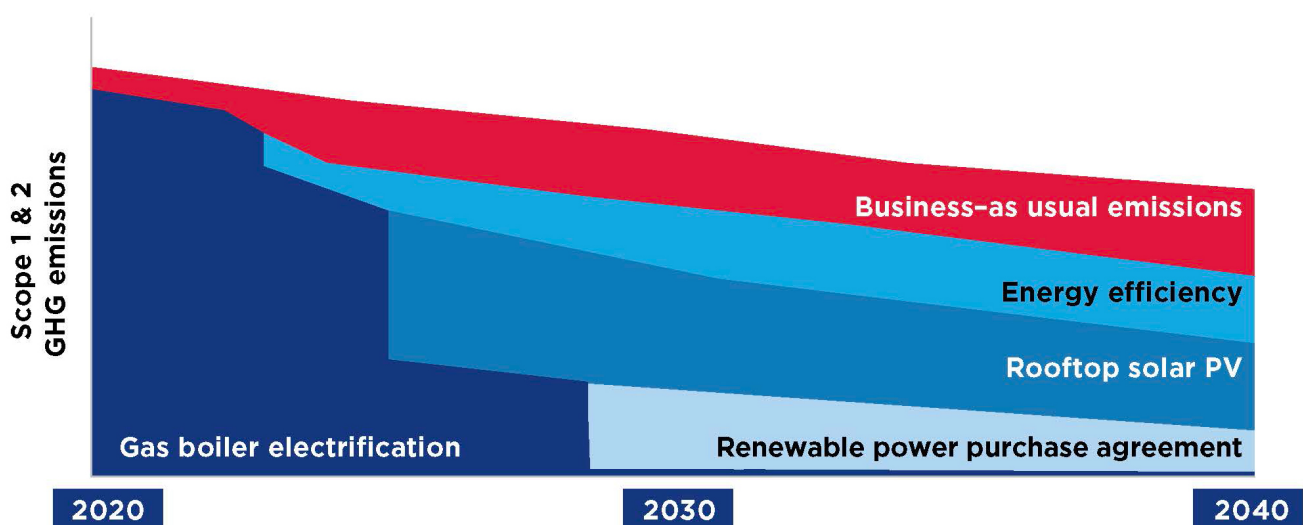
Participating organisations found that while it is difficult to know the future availability and costs of new technologies and energy sources, the net zero pathways process helped them to prioritise projects and identify the initiatives they could progress in the short term, while continuing to evaluate new and emerging technologies over time. The process also reinforced the importance

of integrating net zero considerations into procurement decisions in order to avoid capital investments in emissions-intensive equipment that could become an increasing emissions liability over time.

The pilot highlighted the need for organisations to carefully track their progress and update their pathways at regular intervals to account for the availability and reduced costs of new technologies and energy sources, changes in strategic planning, and shifts in the expectations of their stakeholders that may require them to accelerate progress towards net zero.

Opportunities to improve the pathways process include:

- requiring 2 or more net zero pathways to highlight the range of options available and to better inform the target-setting process
- integrating scope 3 emissions more consistently into the pathways process
- conducting a 12-month follow up to the initial process to assess progress, update the emissions inventory, and revisit assumptions about the availability, cost and benefits of new technologies.



**Figure 3**

Illustrative graph of a net zero pathway

## 6. Assessing implementation capability and developing action plans

**Organisations need to continually develop their capability, culture and management systems to achieve net zero in a way that maximises business value.**

Each net zero pathway is made up of a prioritised list of emissions reduction initiatives that the organisation could implement to progress towards net zero. However, implementation of these initiatives on an ongoing basis requires more than just technical and financial viability - organisations also need a constructive business culture and effective management systems to ensure that climate action remains an organisational priority.

All the companies involved in the pilot commenced their pathways process from a different starting point, depending on internal capabilities, the level of leadership support, and the maturity of the management systems they had in place to support continuous improvement.

The consultants were required to assess the implementation capability of each organisation and to develop an action plan to further develop these capabilities. Some of the key aspects of capability that were investigated included the availability and interpretation of emissions data, management systems, internal skills, and funding.

The desktop research conducted for the evaluation reinforced the importance of these considerations and highlighted other important enabling factors. For example:

- governance
- innovation
- engagement and influence across value chains
- enterprise transformation.

Opportunities to improve the pathways process in the future include:

- develop a net zero framework and associated diagnostic tool so that organisations can assess their current capabilities and prioritise the areas requiring further development
- use the framework to emphasise the business transformation that is needed to address the challenges and opportunities associated with climate change.



As more and more businesses move to commit to ambitious emissions reductions and net zero targets, we knew that we needed to begin setting targets beyond a 5-year time horizon, to consider our position in 2030 as well as a net zero future. The **guidance we received by being part of the pilot helped us to accelerate our efforts** by providing a pathway we could present to our board, gaining the confidence needed to sign-off on longer term targets.

**Alex Arnaudon, Corporate Responsibility Manager, Metcash**





# Conclusion and recommendations



**By developing net zero pathways, organisations are better placed to navigate the economic and market transformations that are underway due to climate change.**

The evaluation concluded that the pilot was an innovative, unique, and timely initiative. Through the development of net zero pathways, participating organisations were able to enhance their awareness, knowledge and capability to achieve net zero. This positions them to respond more strategically to the challenges presented by the economic and market transformations associated with climate change. The approach was most effective when the organisation and consultant viewed the achievement of net zero as an opportunity to add business value rather than simply focusing on least cost abatement options.

By assisting organisations to develop net zero pathways, the NSW Government can accelerate progress towards its net zero target while ensuring that businesses maintain their competitiveness in the global transition to net zero, leverage opportunities to offer low emissions products and services, and reduce the risk of stranded assets.



It's important that we **work together across our sector to set meaningful emissions reduction targets**. The more organisations across our industry that value suppliers who are committed to decarbonising their footprint, then the greater value our suppliers will see in embracing the transition to net zero. As well as having a greater impact on our supply chain resilience, it will help us to reduce our indirect (scope 3) emissions.

**Sally Townsend, Head of Sustainability, Blackmores**





The evaluation identified 3 key areas in which the NSW Government could work with industry stakeholders to accelerate the development of net zero pathways and climate change strategies.

## **1. Develop best practice tools, guidance and capacity building support for organisations to build a foundation for net zero in line with international standards**

Throughout the pilot, consultants and organisations applied varied approaches to develop net zero strategies. This presents an opportunity to learn from the different approaches and identify the most effective practices. This could be further informed by drawing on international standards such as the SBTi Net Zero Standard.

This should include development of:

- a net zero framework and good practice guide to inform and guide organisations on the actions needed to achieve net zero
- a net zero diagnostic for organisations to assess their strengths and weaknesses and establish the most important ‘next steps’ they should take towards developing a net zero pathway, plan and strategy
- training and peer to peer learning initiatives to build net zero capacity within organisations and the consulting community.

## **2. Facilitate industry-led collaborations to develop net zero pathways and address sector specific challenges**

The pilot highlighted that for many organisations there are shared, sector-specific challenges to achieving net zero. These include technological challenges (e.g., transitioning from gas to electrically driven equipment powered by renewable energy) and market-based challenges (e.g., engaging with suppliers and customers to reduce emissions across value chains). An effective way to address shared challenges is to facilitate collaborations between organisations to develop sector-specific solutions.

To facilitate industry-led collaborations, the NSW Government should:

- consult with industry associations, academic institutions and other organisations that can partner with the NSW Government to support the development of net zero pathways
- establish sector specific groups of organisations and work with them to develop net zero pathways in a way that utilises the net zero framework, supports peer-to-peer learning and identifies the shared challenges that are difficult for individual organisations to solve on their own
- develop industry-led working groups to address sector specific challenges including:
  - applying the SBTi Net Zero Standard to develop targets
  - working across value chains to gather GHG emissions data and to identify emission reduction opportunities
  - evaluating emerging technologies.

### 3. Leverage government initiatives by encouraging organisations to include information about their net zero target and strategy when applying for NSW Government grants and projects

The development of net zero strategies could also be accelerated by leveraging government initiatives. For example, the NSW Government could require a net zero diagnostic to be completed by businesses applying for grants for net

zero, energy efficiency or renewable energy projects. The government could also require organisations to include information about their net zero target and strategy as part of standard government procurement processes.

**The NSW Government will act on these recommendations through its investment of \$22 million in the Business Decarbonisation Program. This is currently being refined in consultation with industry stakeholders. It aims to help businesses take practical steps towards net zero emissions as NSW works toward the target of a 50% reduction in emissions by 2030 and net zero by 2050. In addition, the NSW Government's Sustainability Advantage program continues to support members to chart credible pathways to net zero.**





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