



# 2021 Sustainability Report

Delivering for a  
sustainable future





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Aurizon staff at Hexham NSW with local indigenous artist John Robinson and his family

We acknowledge the Traditional Custodians of this land and pay our respects to the elders past, present and future for they hold the memories, the traditions, the culture and hopes of Aboriginal Australia. We must always remember that under the ballast, sleepers, rail systems and office buildings where Aurizon does business, the land was and always will be traditional Aboriginal land.

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**AURIZON'S SUSTAINABILITY  
PERFORMANCE - FY2021**

**80%**

of our employees work across regional locations in Australia

**23%**

of our workforce is female, up from 22% in FY2020

**Climate Strategy**

and Action Plan launched including a net-zero operational emissions target by 2050

**46 charities**

supported through our Community Giving Fund

**\$1.2 billion**

spent with suppliers

**6.6%**

of our workforce is Aboriginal or Torres Strait Islander, up from 6.2% in FY2020

**8%**

improvement in Lost Time Injury Frequency Rate (LTIFR)

**3%**

increase in our Total Recordable Injury Frequency Rate (TRIFR) against FY2020

**2%**

decrease in greenhouse gas emissions intensity against FY2020

**8%**

adverse performance in Rail Process Safety against FY2020

## MANAGING DIRECTOR AND CEO MESSAGE

On behalf of Aurizon, I am pleased to share our eighth Sustainability Report.



ANDREW HARDING, MANAGING DIRECTOR AND CEO

As Australia's largest rail freight operator, we are committed to being open and transparent on the environmental, social and governance (ESG) aspects of our business, with disclosures on how we operate and manage risks.

In May 2021, Aurizon maintained a 'Leading' rating for the seventh consecutive year by the Australian Council of Superannuation Investors for Corporate Sustainability Reporting in Australia. We also participate in the FTSE4 Good Index Series, MSCI and Sustainalytics ESG Ratings, and this will be our fifth year reporting against the Task Force on Climate-related Financial Disclosures.

We recognise that ESG is a matter of importance as the world works to slow climate change and transition to more renewable energy sources. In October 2020, we published our Climate Strategy and Action Plan, outlining our commitment and a clear plan to reduce our carbon footprint, with a target of net-zero operational emissions (Scope 1 & 2) by 2050. This includes a 10% reduction in greenhouse gas emissions intensity target between 2020 and 2030. We also have committed to a \$50 million investment over 10 years, in low-carbon technologies for our fleet and the use of more renewable energy for our electrified rail network. Work has started on a project to develop battery-powered heavy-haul locomotives, and Aurizon is also assessing the longer-term opportunity for hydrogen-powered freight movements.

As we move to a lower carbon future for Australia, rail can play a key role in the decarbonisation of transport

supply chains that serve our nation. Rail is already the safest and most environmentally friendly mode of land freight transport. Technology advances will consolidate these advantages and unlock further productivity, safety and environmental benefits for customers and the community.

At the Aurizon Investor Day in June 2021, we presented various scenarios on how we will continue to deliver sustained value for our customers and investors. Aurizon has a unique place in critical supply chains across the nation, and our involvement in improving these supply chains will support long-term demand for key commodities in global export markets. The key takeaway is that we have an adaptable business with our Coal and Network businesses, providing a resilient base to support the growth ambitions of our Bulk business.

Our Bulk business provides integrated supply chain services, including rail and road transportation, port services and material handling for a range of mining, metal, industrial and agricultural customers in Queensland, New South Wales and Western Australia. It is well positioned in markets serving the global uptake of electric vehicles, telecommunications and renewable energy infrastructure that is driving demand for Australian resources, such as cobalt, copper, lithium and nickel. With these markets expected to grow strongly, Aurizon will continue to identify growth opportunities and expand further across supply chains, including port and terminal services.

In FY2021, our safety performance results were mixed across the metrics of Total Recordable Injury Frequency

Rate, Lost Time Injury Frequency Rate and Rail Process Safety. We remain focused on continuing to drive improvements to our safety performance, with investments in new technology, processes and leadership capability together with enhancing safety culture. One such initiative is TrainGuard, which you can read about in this report.

As well as delivering products and commodities, we also recognise that as a business it is important that we contribute to the communities in which our employees live and work. Through our Community Giving Fund we provide cash grants to eligible community organisations with projects focused on community safety, environment, education or health and wellbeing. This year, 46 groups benefited, bringing the total number of local charities we have supported over the past 10 years to more than 450.

During the year, we also extended our reach into the community with two new partnerships. The first is a three-year partnership with Orange Sky Australia, which offers free laundry and shower services for people experiencing homelessness. Aurizon also became the new Principal Partner of the Queensland Firebirds who compete in the national Super Netball competition.

In our communities and along our supply chains, we are committed to responsible environmental management. We do this by employing proactive and evidence-based management measures covering key environmental issues, such as biodiversity and land management, waste management and resource use, and minimising emissions. You can read more about our measures in this report.

With the rapidly changing COVID-19 situation in Australia, Aurizon has maintained constant vigilance across our national footprint to protect the health of our employees, together with the customers we serve in our freight supply chains. As an essential service, we have been fortunate to continue operating throughout COVID-19. We understand the responsibility that comes with continued operation, and the important role we play in delivering freight across Australia.

I am proud of the outstanding efforts of our employees as we continue on the journey of building a stronger and more sustainable business.

# ABOUT AURIZON

Aurizon (ASX: AZJ) is Australia's largest rail-based transport business.

Our purpose is to grow regional Australia by delivering bulk commodities to the world. In FY2021, we transported more than 250 million tonnes of Australian commodities, connecting miners, primary producers, and industry with international and domestic markets.

We provide customers with integrated freight and logistics solutions across an extensive national rail, road and port network that traverses Australia. We have a fleet of around 600 locomotives and 12,500 wagons. We also own and operate one of the world's largest coal rail networks, the Central Queensland Coal Network (CQCN), a critical piece of infrastructure supporting approximately 90% of Australian metallurgical coal export volume.

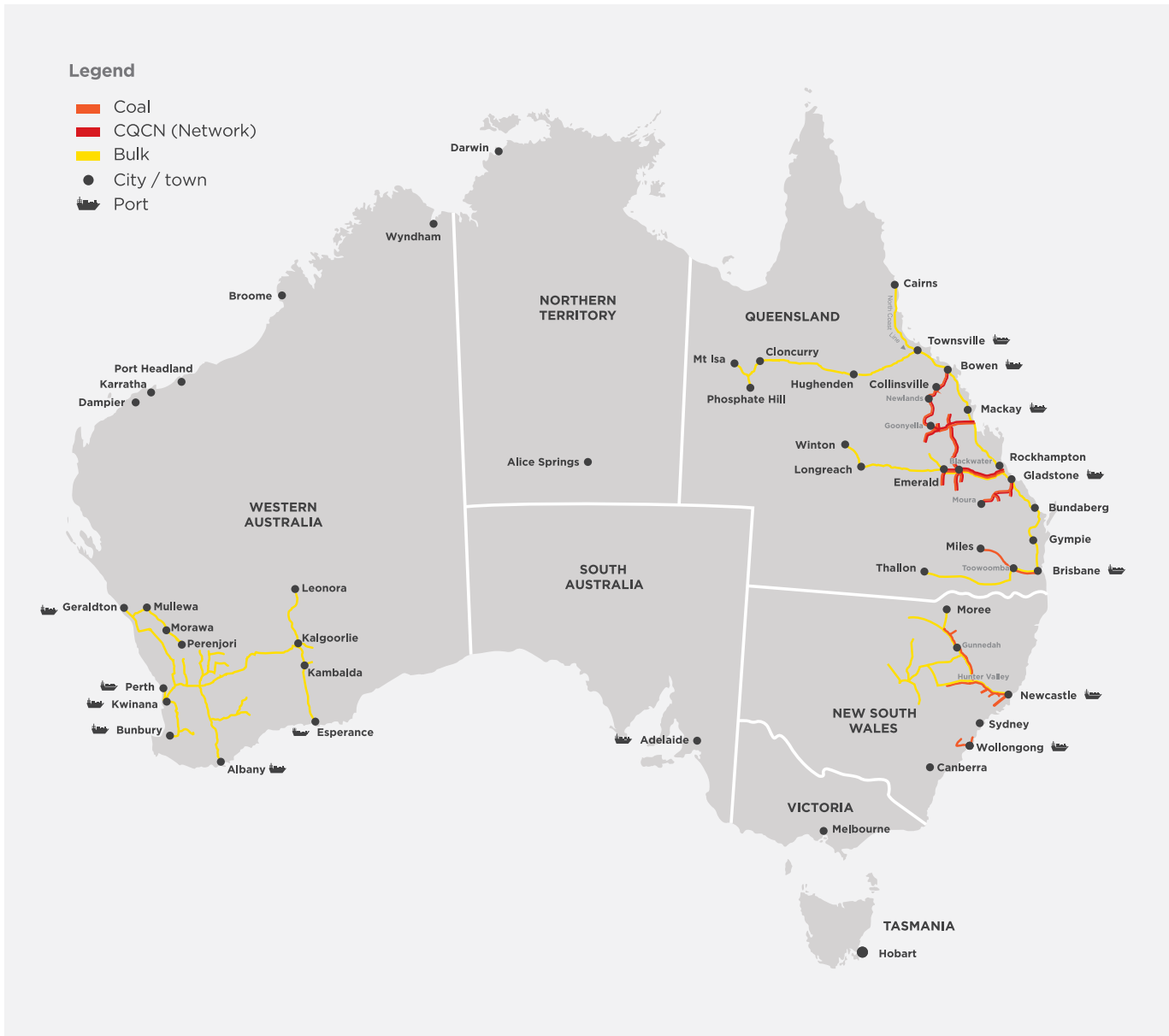
## What we deliver

As shown in figure 1, our operations primarily span Queensland (QLD), New South Wales (NSW), and Western Australia (WA). Our biggest economic footprint is in regional Queensland, where our employees support our coal haulage business, deliver bulk commodities, and ensure that the CQCN is running safely and efficiently. Our key operational areas are broken into three business units: Coal, Bulk and Network.

### Coal

Our Coal business provides a critical service to Australia's \$39 billion<sup>1</sup> export coal industry, the nation's second largest source of export revenue in FY2021. We haul around half of

FIGURE 1 AURIZON'S OPERATIONS





Australia’s export coal volume. As a supply chain partner for our customers, we transported 202 million tonnes of coal in FY2021.

Coal hauled is split approximately evenly between metallurgical coal and thermal coal, with demand linked to Asian steel production and energy generation, respectively. Through this business, we employ more than 2,000 people, with a large majority of these employees living and working in regional communities in QLD and NSW.

We connect mines in the Newlands, Goonyella, Blackwater, Moura and West Moreton systems in QLD, and the Hunter Valley and Illawarra coal systems in NSW, with domestic customers and coal export terminals. We are the only rail operator with services to all six coal export ports on Australia’s east coast.

**Bulk**

Our Bulk business includes haulage of a range of bulk commodities, such as iron ore, bauxite, alumina, base metals, grain, livestock and fertiliser-related products. During FY2021, our Bulk business delivered 51 million tonnes of commodities. The business also provides supply chain services to customers, including ballast cleaning, hook-and-pull, and port services.

In QLD, we service the North West Minerals Province from Mount Isa to the Port of Townsville, including bulk storage and handling services as part of Aurizon Port Services (APS). We also service the central and south-

west regions of the state. In December 2020, the Bulk business in NSW expanded its supply chain capability through the acquisition of ConPorts, a stevedoring, bulk storage, and handling business. The acquisition includes long-term leases at the Port of Newcastle with ship-loading facilities adjacent to rail lines. ConPorts has now been integrated into the APS business. To support WA’s strong export industry, we continue to deliver our customers’ products to the ports of Geraldton, Esperance, Fremantle, Kwinana, Bunbury, and Albany.

**Network**

We operate and manage the CQCN under a 99-year lease arrangement with the QLD Government. The CQCN connects over 40 mines to five export terminals, as well as to domestic customers (see figure 2).

The CQCN is a critical part of the global supply chain, with around half of all global seaborne export metallurgical coal travelling across the network. This 2,670-kilometre multi-user track network comprises four major coal systems: Newlands, Goonyella, Blackwater, and Moura. The Goonyella Abbot Point Expansion (GAPE) is the connecting system link for the Newlands and Goonyella systems. Around 70% of volume hauled across the network is considered metallurgical coal (remaining 30% is thermal coal), with demand linked to Asian steel production. Access to our rail network is managed under a process approved by the competition regulator, the Queensland Competition Authority (QCA).

Our Bulk business includes haulage of a range of bulk commodities, such as iron ore, bauxite, alumina, base metals, grain, livestock and fertiliser-related products.

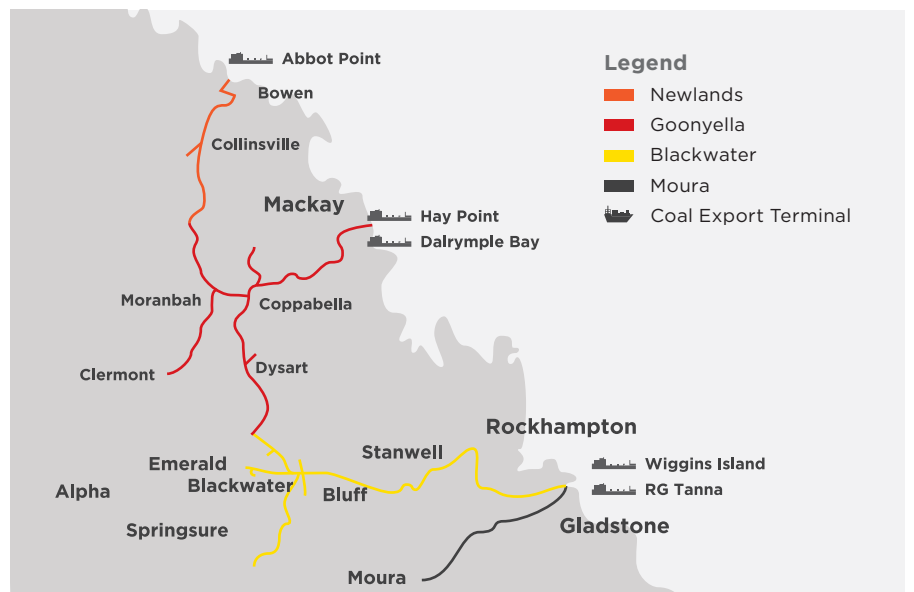


A loaded bauxite train in Western Australia



Loading of a cattle train in Townsville

**FIGURE 2** AURIZON’S CENTRAL QUEENSLAND COAL NETWORK (CQCN)



Together, our Coal and Bulk haulage businesses are referred to as 'above rail', while our Network business is referred to as 'below rail'. As shown in figure 3, approximately two-thirds of our above rail revenue relates to coal, with our Bulk business contributing to the remaining one-third.

FIGURE 3 AURIZON'S REVENUE (FY2021)<sup>2</sup>

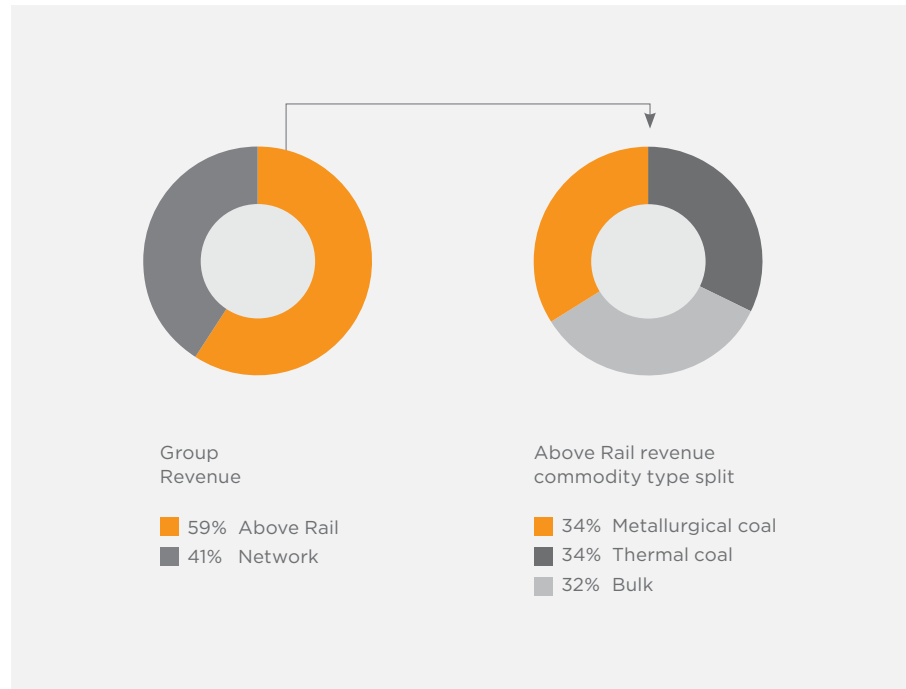


FIGURE 4 AURIZON'S STRATEGY IN ACTION FRAMEWORK



**Our strategy**

Our Strategy in Action framework provides a strategic guide for our business in our pursuit of both short- and long-term value creation (see figure 4).

Central to our strategy are our Strategic Levers, which help us prioritise key drivers of value, and execute on these priorities throughout the organisation.

Our strategic priorities are periodically reviewed by management and Board, and are adjusted to reflect our view of the current and future external environment and our organisational goals.

We are currently focused on the following priorities:

**Optimise: Progressing major transformation efforts**

We are continuing to progress major transformation efforts across our business, and are investing in operational technology programs, such as Condition Monitoring and TrainGuard, to support the optimisation of our cost base and improve our competitiveness. Our focus on continual improvement has contributed to Bulk improving from a loss-making business in FY2017, to providing a \$112 million Earnings Before Interest and Tax (EBIT) in FY2021. In addition, the capital-intensive nature of our operations makes improving our Return on Invested Capital (ROIC)



a priority to ensure sustainable and efficient returns. Project Precision is an example of how we are delivering on this focus by improving asset utilisation across above and below rail. In FY2021, we have delivered turnaround time improvements across all our CQCN corridors, enabling greater asset utilisation and productivity to be captured in our above rail operations and improving outcomes for our customers.

**Excel: Optimising capital proactively**

We are seeking to proactively optimise capital and fleet deployment to support Bulk growth and to maximise enterprise value. With more than 40% of our fleet readily interoperable between Coal and Bulk, we have the opportunity to best optimise the deployment of our rollingstock assets across the enterprise. Our ability to cascade fleet gives us a high degree of flexibility to respond to shifting market dynamics, and supports our focus on capital productivity and cash flow. We are committed to maintaining long-term, stable cash flows. This will be enabled by the stable and high-yielding nature of our core business operations and our ability to flex our cost base and fleet according to market conditions. As outlined at our Investor Day in June 2021, our modelled long-term cash flows can be resilient under multiple coal outlook scenarios by flexing operating expenditure, capital expenditure and growth levers.

**Extend: Growing our Bulk business**

While Coal and Network form our solid cash flow core, the Bulk business provides potential for growth outside coal markets. While we have traditionally focused on bulk rail markets across Australia, there is an opportunity to capture further growth by expanding our services into adjacent production-to-port value chain segments. By expanding the scope of what we do, we have increased our addressable market and continue to seek compelling end-to-end, multimodal solutions for our customers, thereby creating greater efficiencies, and reducing supply chain costs for all participants.

We are seeking to proactively optimise capital and fleet deployment to support Bulk growth and maximise enterprise value.

**AURIZON INVESTOR DAY**

In June 2021, we held an Investor Day in Newcastle, NSW, detailing our strategy to continue to deliver sustained value for investors and customers. The modelled cash flow scenarios indicated resilience across the business over the 20-year period, and identified the opportunity for the Bulk business to target new markets and expand across supply chains, including port and terminal services.

The Investor Day presentation, in addition to the transcript and webcast, is available on the Aurizon website.



**Resilient coal and network business**

Safety, cost, productivity and capital focus supports Bulk Growth.



**Growing bulk business with new markets**

Our aspiration to achieve 20-25% market share in 10 years within an approximately \$1.25bn market profit pool would imply \$250m-\$300m EBIT<sup>^</sup>.



**Evolving mix reduces thermal coal exposure**

Targeted bulk growth would result in revenue from thermal coal falling to less than 20% of Above Rail portfolio before 2030.

<sup>^</sup>Market share opportunities assume Aurizon secures a portion of an available range of organic and inorganic growth. There are no guarantees that Aurizon will secure any or all growth opportunities.

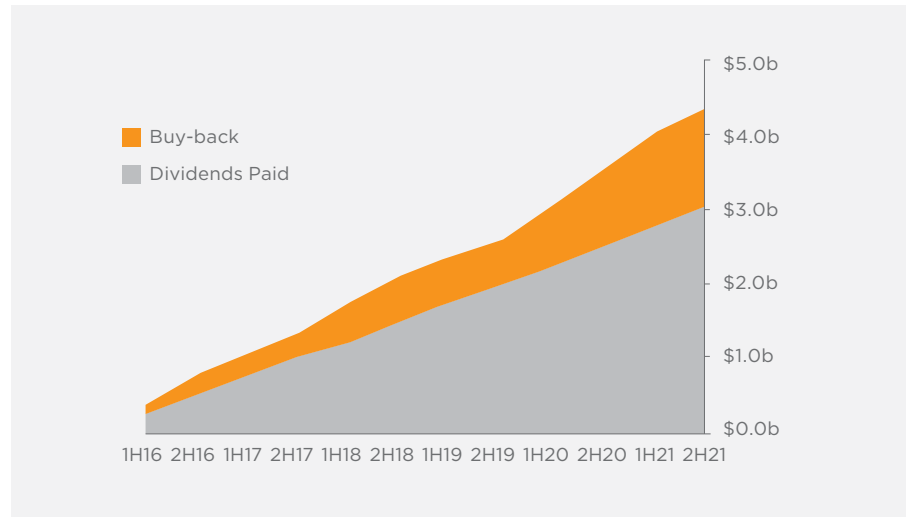


**How Aurizon creates value**

We create tangible and sustainable value for our primary stakeholders – including investors, customers, employees, and the community (see figure 5).

Our value creation record over the past five years, measured by dividends and share buy-backs, has been significant and provides a platform for the future (see figure 6). These efforts have resulted in a stable cash flow that has delivered over \$4 billion in distributions to our shareholders over the past six years through dividends and buy-backs.

**FIGURE 5** SHAREHOLDER RETURNS (CUMULATIVE)



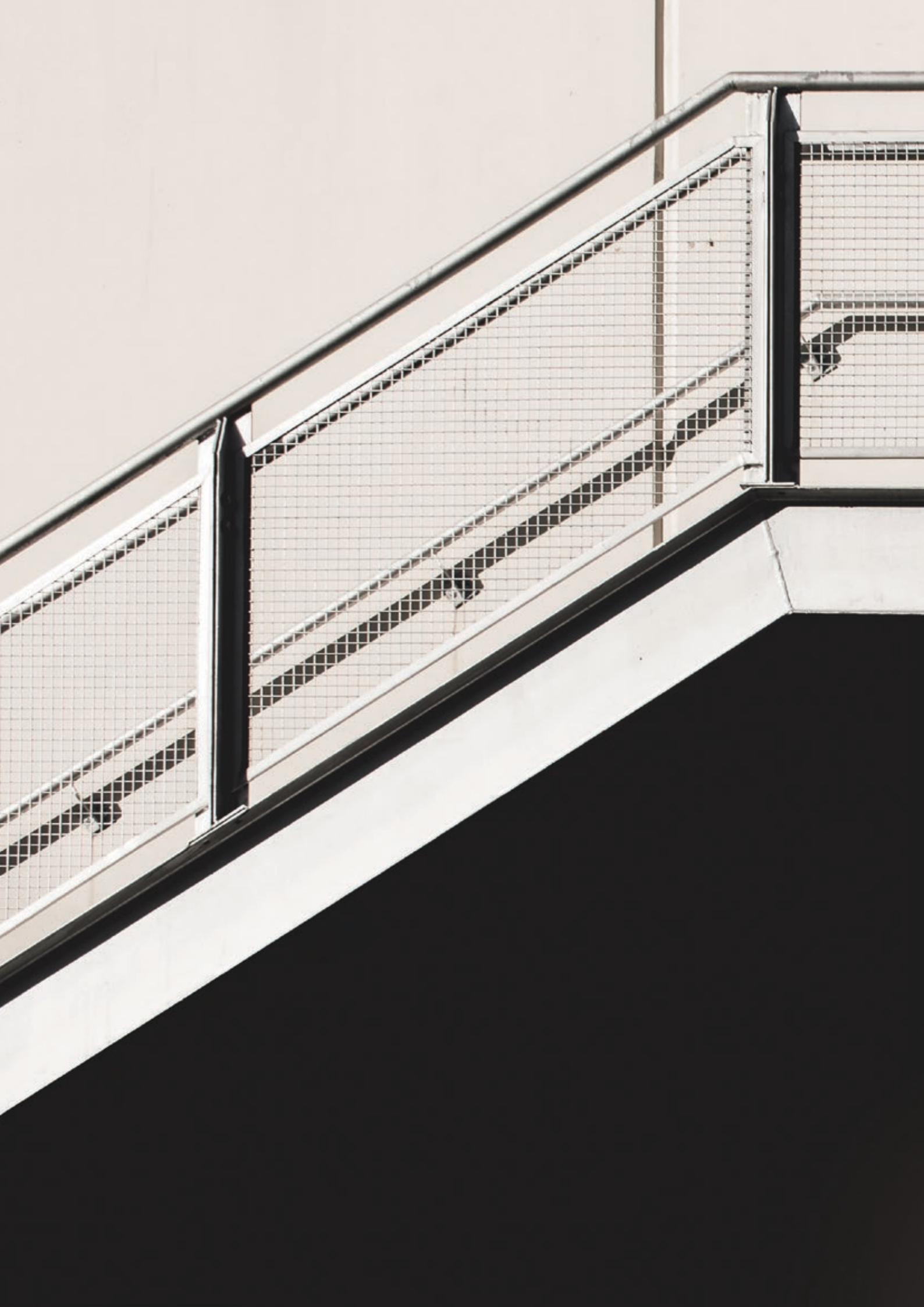
**FIGURE 6** HOW AURIZON CREATES VALUE

Stakeholder	Description	Value Created in FY2021
<b>Investors</b>	Our integrated business model provides a defensive stream of earnings from our regulated track infrastructure (the CQCN), while our rail haulage business is largely leveraged to Australia’s bulk commodity exports.	<ul style="list-style-type: none"> <li>– \$529 million has been returned to investors through dividends</li> <li>– \$300 million buy-back completed, increasing shareholders’ effective interest by approximately 4%</li> </ul>
<b>Customers</b>	We deploy our significant asset base, capital investments and industry-leading expertise to provide reliable, safe and efficient bulk transport solutions for our customers.	<ul style="list-style-type: none"> <li>– 253 million tonnes of bulk commodities transported at an estimated value of over \$30 billion for our customers</li> </ul>
<b>Employees</b>	We provide stable employment and rewarding career development in a safe and high-performing work environment, as well as the opportunity to contribute to the economic prosperity of Australia.	<ul style="list-style-type: none"> <li>– More than 4,800 people employed</li> <li>– \$836 million in wages and benefits paid</li> <li>– No JobKeeper payments received</li> </ul>
<b>Community</b>	Our key role in bulk supply chains enables economic prosperity and growth for all Australians. We help sustain regional communities by providing employment and economic benefits in areas where we operate.	<ul style="list-style-type: none"> <li>– Approximately 80% of our employees reside in regional areas</li> <li>– \$351 million in taxes collected and paid<sup>3</sup></li> <li>– \$1.2 billion spent with suppliers</li> </ul>

1 Australian Bureau of Statistics.

2 Group revenue pie chart: Above Rail excludes Coal track access revenue. Above Rail revenue pie chart: Track access revenue for both Coal and Bulk excluded. Revenue allocation for Coal based on estimated volume split.

3 Excludes PAYG income taxes.





# HOW WE OPERATE

Our business model supports sustainable business practices and enables us to operate efficiently and effectively.

We have worked hard to build a stronger, more sustainable business in recent years, and are committed to being open and transparent on the environmental, social and governance (ESG) aspects of our business. We aim to continuously improve and ultimately create value for the benefit of our employees, customers, communities, and investors.



## Our approach to sustainability

### Our approach to reporting

We keep stakeholders informed of our corporate governance and financial performance via announcements to the Australian Securities Exchange (ASX) and our website. Investors can access copies of announcements to the ASX, notices of meetings, annual reports, policies, investor presentations, webcasts, and transcripts of those presentations on our website. In addition to the above disclosures, we take a direct approach to reporting environmental, social and governance (ESG) disclosures to our stakeholders with the publication of our annual Sustainability Report. This report is prepared with reference to the Global Reporting Initiative's (GRI) standards to provide investors with comparable information relating to ESG performance. Our approach considers the GRI's principles for defining report content that covers stakeholder inclusiveness, sustainability context, materiality, and completeness.

We recognise that our climate change disclosures are one of the key interests to stakeholders. Since 2017, we have aligned our climate-related disclosures to the Task Force on Climate-related Financial Disclosures (TCFD) as recommended by the Financial Stability Board. This framework enables consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders. Our response to climate-related risks is outlined within the Governance and risk chapter of this report.

During FY2021, we published our first Climate Strategy and Action Plan (CSAP). The strategy builds on

## United Nations Sustainable Development Goals<sup>7</sup>

In 2015, the United Nations General Assembly adopted the 2030 Agenda for Sustainable Development, which includes the Sustainable Development Goals (SDGs). The 17 goals and related targets act to address significant ESG issues across the globe. We began mapping our operations against the SDGs in our 2018 Sustainability Report. Acknowledging that our business contributes to some SDGs more than others, we continue to focus on the five goals that are most aligned to our business, our values, and our operational environment.

**GOAL 3**  
Good health and well-being



We continue to develop and adopt safe practices, enabling us to build a resilient operation, an adaptive workforce, and agile systems of work to deliver safer outcomes. We will continue to make sure we are well placed to work with our people, our customers, and the communities in which we operate, providing safe and reliable rail operations now and into the future. In FY2021, we continued to embed our updated enterprise safety strategy to focus and prioritise improvements to our safety systems and culture, and to achieve our safety goal of protecting ourselves, each other, and the communities in which we operate. We also continued to focus on the mental health of our employees during the year. As outlined in our Safety and health chapter, we provide Employee Assistance Program (EAP) services to our employees, and have trained over 150 Mental Health First Aiders who have formed the foundation of our Peer Support Network.

**GOAL 5**  
Gender equality



We continue to increase the diversity of our workforce, recognising diversity is a lever for better business performance and growing our business sustainably. As outlined in our People chapter, our female workforce representation has increased from 22% in FY2020 to 23% in FY2021 achieving our target.

This year on International Women's Day, we launched a three-year Gender Balance Action Plan that outlines initiatives aimed at creating gender balance through higher female participation in our workforce. We remain focused on closing the gender pay gap, through initiatives such as mentoring programs, facilitating career pathways into larger or more senior roles, annual analysis to monitor pay equity, and a data-driven approach to talent, succession, and remuneration decision-making. These initiatives are guided by our Gender Balance Reference Group, led by the Group Executive of our Coal business.



**GOAL 8**

Decent work and economic growth



Our operational footprint spans QLD, NSW, and WA, with the majority of our staff living and working in regional centres across these three states. Strong and economically stable communities are the backbone of a healthy regional Australia, and we are committed to continuing to develop strong local relationships with local businesses and suppliers across our regional footprint. We continue to invest in and develop regional facilities with a focus on development of safe workplaces, operational equipment, and capabilities that allow our people to do their job in the safest and most efficient way. See our Community chapter for more information.

In FY2021, we have spent approximately \$1.2 billion with suppliers from across our operations. This figure, however, does not consider the further economic benefits of our workforce living and working in regional communities. Our Coal business also provides a critical service to Australia's \$39 billion<sup>9</sup> export coal industry, the nation's second largest source of export revenue in FY2021.

**GOAL 9**

Industry, innovation and infrastructure



As a capital-intensive business, we aim to ensure our assets and infrastructure are high-quality, reliable, sustainable, and resilient. Our CSAP is underpinned by a range of targeted initiatives and investments to build supply chain resilience, decarbonise our operations, and contribute to a low-carbon freight transport sector in Australia. As outlined in our Climate change chapter, during 2021 our Fleet Decarbonisation team made significant progress in establishing forums for collaboration with key peers, manufacturers and research organisations focused on the development, trialling, and implementation of low-carbon technologies for Australia's heavy haul freight sector.

We see collaboration and partnerships as the key to achieving step-change emissions reductions through technology investment and innovative energy pathways. We also continue to improve our operations through the development of other innovative technologies. As shown in the Our future with technology section of this report, key projects such as TrainHealth and TrainGuard, as well as the integration of virtual reality technologies into our training processes, demonstrate how we are using technology to better assist our operations, our people and our safety capabilities.

**GOAL 13**

Climate action



As Australia's largest rail freight operator, we recognise our role and responsibility in helping to reduce global greenhouse gas (GHG) emissions. We accept the scientific consensus on climate change, and support the objective of finding a pathway to limit global warming to less than 2°C, aligned to the Paris Agreement<sup>9</sup>. We also acknowledge the Intergovernmental Panel on Climate Change's (IPCC) Special Report on the impacts of global warming of 1.5°C above pre-industrial levels<sup>10</sup>. We have already made progress towards reducing our operational GHG emissions, with a 20% reduction in our locomotive carbon footprint (GHG emissions intensity) since 2010. During FY2021, we published our CSAP, announcing our commitment to a target of net-zero operational emissions by 2050.

Supporting this goal, we have also set an emissions intensity reduction target of 10% by 2030<sup>11</sup>, and will invest \$50 million over 10 years through our Future Fleet Fund, targeting low-carbon technologies across our operational fleet. We continue to advocate for the significant role that rail contributes in the transition to a low-carbon economy. See our Climate change chapter for more detail.

our existing work in reducing our carbon footprint, as detailed in our Sustainability Report each year since 2014. We recognise that we all have a responsibility to act on climate change – government, business, and the general community – so we can achieve an effective transition to a low-carbon future. As Australia's largest rail freight operator, we can have a significant and positive influence on the decarbonisation of Australian rail freight supply chains, as supported by our new target of net-zero operational emissions by 2050. Progress on our emissions reduction efforts is outlined in our Climate change chapter. The greenhouse gas (GHG) emissions data (scope 1, 2 and 3) provided in this chapter has also been independently assured, and a statement of limited assurance is included in this report.

A lower-carbon future must go hand-in-hand with business sustainability, customer service and economic development. We are a crucial part of the supply chains for Australia's agricultural, industrial and resource sectors. This is also consistent with the Future of commodities hauled chapter in this report, which recognises that while the move to renewable energy sources continues, we expect demand for high-energy lower-emission Australian coal to be sustained for many years to come.

There are also strong opportunities for our Bulk business in the transition to a low-carbon future, supported by growing demand for inputs to renewables and batteries, infrastructure development and global food consumption.

**External participation and recognition**

With a focus on direct disclosures to stakeholders, we take a selective approach to participation in external initiatives. With an estimated 600 ESG ratings globally<sup>4</sup>, we consider each opportunity for participation, with a view to actively participate only where such initiatives significantly add value for our stakeholders. As at June 2021, we actively participate in the FTSE4Good Index Series, MSCI, and Sustainalytics ESG Ratings<sup>5</sup>.

In May 2021, we received a 'Leading' rating for the seventh consecutive year by the Australian Council of Superannuation Investors (ACSI) for corporate sustainability reporting in Australia<sup>6</sup>.

**Material priorities and relevant stakeholders**

As part of our business-as-usual processes, we engage directly with our key stakeholders (see figure 7). Our approach to stakeholder engagement involves both formal and informal mechanisms that are tailored to our audience and the engagement outcomes being sought. The following outlines a few of the primary methods of engagement with our key stakeholders.

Employees

We recognise that fostering trust with our people is a key enabler of a safety and high-performance culture. During the year, we have progressed a range of initiatives focused on fostering trust and engagement with our workforce. Employee surveys and leader-led communication play a key role in supporting and informing current and future safety and culture initiatives. Refer to our People chapter for more information.

Customers

We recognise the importance of clear and transparent communications with our customers. We treat the relationships with our customers with the utmost importance, and proactively look for ways to improve their experience. Through a continuous feedback loop, we seek to work with our customers to deliver the best service possible. This is achieved through internal reviews, combined with external feedback and discussions through scheduled meetings, customer forums, and ongoing customer relationship management.

Communities

We consider ourselves to be part of the local communities where we operate. Engaging with our communities is an integral component of operating each of our businesses. We consider our communities when making business decisions and taking actions.

We directly engage with our community groups through listening and responding to feedback, involving our employees in local community activities (e.g. helping a local Landcare association to plant saplings) and encouraging the local community in Central Queensland to report any safety issues relating to the operation of the CQCN.

Investors and financiers

We conduct regular market briefings, including half year and full year results

announcements, investor days, and site visits. We also attend regional and industry-specific conferences to facilitate effective two-way communication with investors and other financial markets participants. Access to senior executive and operational management is provided to investors and analysts at these events, with separate one-on-one or group meetings offered, whenever possible.

Briefings, including our Annual General Meeting (AGM), are also webcast live so they can be viewed by all shareholders, thereby ensuring investors receive information at the same time. Shareholders who are unable to attend our AGM can vote directly using electronic means. The presentation material provided at these events is sent to the ASX before commencement and subsequently posted on our website, including the webcast and transcript, if applicable.

We also continue to work with our financiers to ensure that we plan for the long-term funding needs of our business and that we manage our funding sources, and maturities. As our financiers become progressively more engaged with the concept of sustainability, we look to support their request for environmental, social and governance data, in particular through disclosure within our annual Sustainability Report.

Understanding our material impacts is necessary to develop our strategy and operate sustainably. Addressing these impacts is also key in continuing to create sustainable value for our stakeholders. We strive to ensure that our Sustainability Report reflects significant economic, environmental, and social priorities that may influence strategic decision-making and business performance. As such, we continuously assess the material issues that affect our business, our stakeholders, and our operating environment. Report content has been informed by our material priorities, as outlined in Table 1.

**We recognise that fostering trust with our people is a key enabler of a safety and high-performance culture.**



**FIGURE 7** KEY STAKEHOLDERS

Key stakeholders
Employees
Customers
Communities
Investors
Financiers and insurers
Industry analysts
Traditional owners and custodians
Rail network providers
Suppliers
Non-government organisations
Governments
Regulators
Unions
Joint venture partners
Industry groups

TABLE 1 MATERIAL PRIORITIES

Material Priority	Description	Chapter
<b>Business model</b>	How the structure of our business supports sustainable business practices and enables us to operate efficiently and effectively.	<b>About Aurizon</b> <b>How we operate</b>
	How we continuously improve through technology advancements, where possible, to reduce resource use, increase productivity, and ultimately create value for the benefit of our employees, customers, communities, and investors.	
<b>Customers</b>	How we ensure that we are the first choice for our customers' bulk commodity transport solutions by delivering innovative, efficient, and reliable services to help our customers compete in global commodity markets.	<b>How we operate</b>
	How we aim to maintain collaborative engagement with our customers to provide competitive solutions.	
<b>Regulation and policy</b>	How we continue to manage our operations and deliver value through regulatory processes, and advocate for policy improvements in areas such as energy and emissions policies, and rail versus road access pricing.	<b>How we operate</b> <b>Governance and risk</b>
<b>Business integrity and transparency</b>	How we operate with integrity and conduct business ethically through our governance structure and Code of Conduct.	<b>How we operate</b> <b>Governance and risk</b>
	How we remain transparent in our interactions with internal and external stakeholders.	
	How we promote transparency and sustainable procurement practices with our direct suppliers across our supply chain.	
<b>Sustainable governance and risk management</b>	How our Board provides oversight and strategic direction to sustainability through our clear governance structure.	<b>Governance and risk</b>
	How we manage risk within our strategic framework, including identification and mitigation of contemporary and emerging risks, and low-likelihood, high-impact risks.	
<b>Managing climate change impacts</b>	How we manage the climate-related risks to our business in alignment with the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) recommendations.	<b>Governance and risk</b> <b>Climate change</b>
	How we plan to decarbonise our operations in line with our target of net-zero operational emissions by 2050, through supporting commitments and action.	
<b>Safety, health, and wellbeing</b>	How we manage the safety, health and mental wellbeing of our employees, contractors and communities through promoting safety culture, avoiding workplace fatalities and injuries, promoting mental health and wellbeing initiatives, and ensuring public safety, recognising the key role that our safety performance plays in building and maintaining trust with our stakeholders.	<b>Safety and health</b>
<b>Portfolio resilience and growth opportunities</b>	How we continually monitor and evaluate the demand for and supply of Australian commodities and key market drivers to test the resilience of our business under divergent and plausible long-term scenarios, which in turn are used to inform strategic planning.	<b>Future of commodities hauled</b>
<b>Environmental management</b>	How we effectively manage our environmental performance by maintaining air quality, avoiding or offsetting impacts on native biodiversity, and minimising noise, waste to landfill, and water use through our operations.	<b>Environment</b>
<b>Employee engagement</b>	How we promote a diverse and inclusive workforce across all management levels, strengthen organisational capability and talent acquisition and retention, and career mentoring, and invest in knowledge transfer from longstanding employees.	<b>People</b>
<b>Sustaining communities</b>	How we focus on growing regional Australia through our economic contributions and local procurement, and our role in long-term community investment.	<b>Community</b>
	How we manage our impacts on the communities in which we operate through prioritising community employment opportunities and transparent and collaborative community engagement.	

**Our customers**

We strive to be the first choice for our customers’ bulk commodity transport solutions through the delivery of efficient, reliable, and flexible services, while always maintaining our focus on safety.

Our ability to design, build and operate rail infrastructure enables us to effectively manage our customers’ supply chains and interfaces between port and mine. We provide technological innovation and significant haulage experience for our customers each day to support the delivery of commodities.

**Above rail portfolio**

Our Coal business continues to invest in and develop initiatives that give our customers greater insight into their ordering, rail planning and daily activities. Project Precision seeks to increase capacity and improve asset productivity in the CQCN, as well as optimising maintenance practices to improve asset availability and reliability. With a strong contract book, we aim to improve Return on Invested

Capital (ROIC) and preserve cash flows for the Coal business while safely delivering excellent service for our customers. During FY2021, we had the following updates for our Coal business:

- Glencore: Existing agreement as primary hauler for Queensland mines extended for Newlands, Goonyella (excluding Hail Creek) and Blackwater mines
- Anglo American: Goonyella – new agreement across various mines; Blackwater – new agreement for German Creek mine; Moura – extension of Dawson mine.

Our above rail contracts are long-term, particularly in our Coal business, with 48% of the portfolio having a remaining contract life of 7 or more years (see figure 8). The long-term nature of our contracts provides greater certainty for our future revenue streams, as well as greater commercial and operational certainty for all stakeholders across the supply chains in which we operate.

Our Bulk business has been successfully turned around, with the next phase of growth underway. Our customers’ needs drive our broader focus on Bulk logistics (not just rail), to offer an integrated service with production-to-port capability.

Our goal includes a focus on growth markets, strategic partnerships, and better operational performance.

Contract updates from our Bulk business during the financial year include:

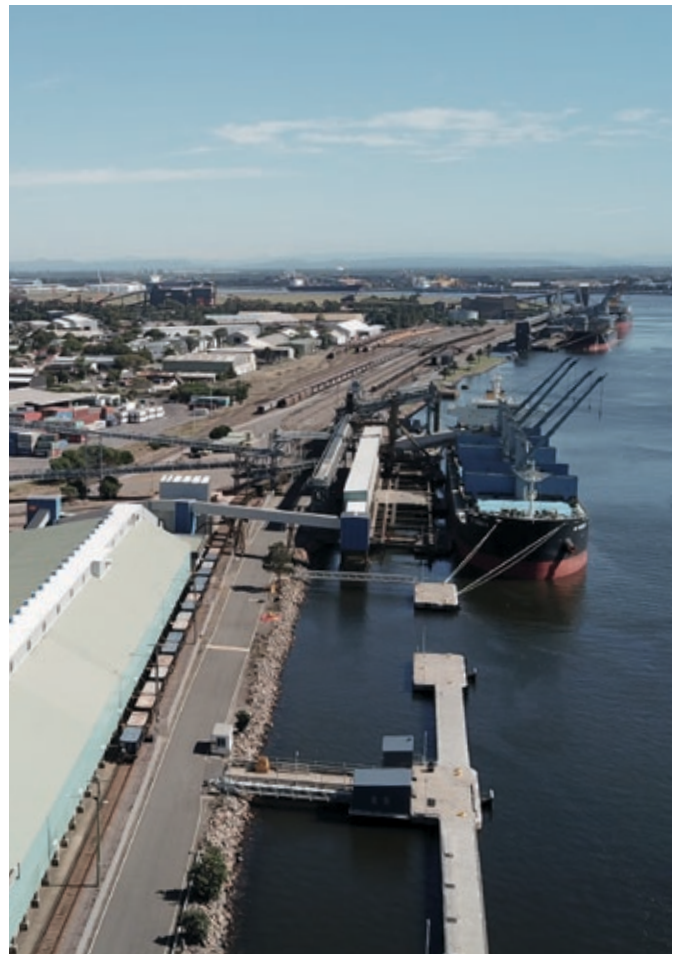
- Co-operative Bulk Handling Group (CBH): Ten-year grain haulage contract
- South32 Worsley: Three-year contract extension for alumina and associated inputs
- Mineral Resources: Expansion of services (beyond Esperance) with additional iron ore services into Kwinana.

**BULK ADDS MORE MUSCLE TO PORT SERVICES**

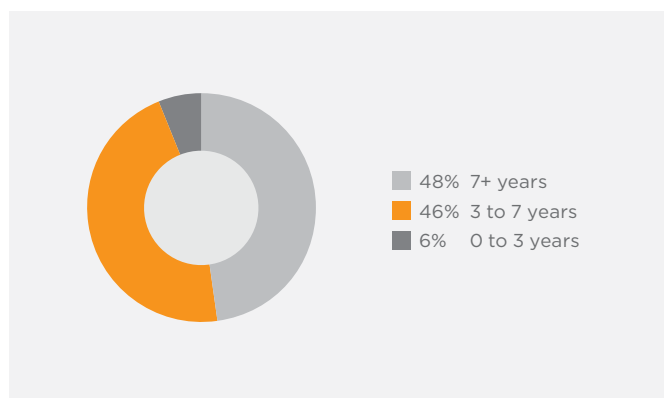
During FY2021, our Bulk business again signalled its growth ambitions with the acquisition of ConPorts, a stevedoring, bulk storage and handling business at the Port of Newcastle, NSW. Now a part of Aurizon Port Services (APS), the business currently provides services for export of about 500,000 tonnes of mineral concentrates annually. It includes a direct interface between rail and sea transport with a dedicated private rail siding where wagons can be unloaded adjacent to the shipping berth.

This is now the second business under the banner of APS. In March 2020, we acquired Townsville Bulk Handling and Storage, a bulk transport, handling, and stevedoring services business, with facilities at the Port of Townsville. These acquisitions aim to extend supply chain services beyond our core rail capability and to pursue growth opportunities in bulk haulage markets in Australia. We have been clear on our intent to profitably grow the Bulk business, through organic growth as well as strategic acquisitions. We have built a strong foundation in Aurizon Bulk, with rollingstock assets and facilities in strategic parts of regional Australia.

The growth outlook for bulk commodity markets in these areas remains strong, supported by the demands of the modern economy and a general increase in living standards throughout the world. The Future of commodities hauled chapter outlines the continued growth opportunities for the key commodities that we haul for both our Coal and Bulk customers.







**FIGURE 8** ABOVE RAIL COAL CONTRACT PORTFOLIO EXPIRY PROFILE (AS AT 30 JUNE 2021)<sup>2</sup>

In partnership with Croomo, we were this year awarded four platinum awards by the international LearnX 2020 award program for our virtual reality (VR) technology work.

### Our future with technology

We are continuously improving our operations by developing innovative technologies for the benefit of employees, customers, and shareholders. We deliver these prioritised technology investments in conjunction with people, process, and data change.

#### Application modernisations (AppsMod)

AppsMod is a multi-year program to decommission more than 10 legacy systems and replace them with three platforms that can be used on multiple devices.

The delivery of the first platform, Vista, for Mainline Operations has enabled situational awareness of train services when they are operating between yards. We have already seen improvements to our employees' ability to make informed decisions and do their work more effectively.

AppsMod continues to focus on improving use of assets while reducing operational losses. Introduction of new functionality will continue as we streamline and standardise business processes. We will enrich our customer experiences with real-time data and information. The remaining functions will be released incrementally over the coming years.

#### TrainHealth and TrainGuard

We continue to work on strategic technology investments designed to improve the safety and productivity of our rollingstock and people.

##### TrainHealth

TrainHealth provides Aurizon with capability to monitor performance of locomotives and train handling/ utilisation in real-time.

This initiative enables access to real-time asset data that is being used to

inform the health of the locomotive, enhance asset reliability and maintenance decisions for the fleet, in addition to providing greater visibility on driver variability and supporting business decisions for on-time running.

With installation completed for 99% of the CQCN Siemens electric locomotive fleet in FY2021, installation across the CQCN diesel fleet is scheduled to commence in FY2022.

##### TrainGuard

TrainGuard is a platform that uses European Train Control System (ETCS) technology to support driver decision-making, particularly in relation to speed control and signal enforcement.

TrainGuard will support safer and more efficient train operations with fewer rail process safety issues and better train handling. Operational demonstration of TrainGuard has been completed and preparations continue for the deployment on the Blackwater mainline (Callemondah to Bluff).

#### Recognition awards for our virtual reality technology

In partnership with Croomo, we were this year awarded four platinum awards by the international LearnX 2020 award program for our virtual reality technology work. Virtual reality training solutions via next-generation training technologies is an example of how we are using technology to better assist our people and safety capabilities.

This training tool enables training in a safe, simulated environment, reducing the reliance on operational resources needed for the practical components of the training.



community. Inclusion at Aurizon goes beyond what we do internally as an organisation.

Our operations primarily span QLD, NSW and WA. Given the regional nature of our business, we recognise the importance of contributing as partners in the communities where we operate. In FY2021, we spent an estimated \$1.2 billion with suppliers. See our Community chapter for more information.

Increasing our spending with Indigenous businesses is one way that we can create greater social value impact and support for the communities in which we operate.

As a part of our commitment within our Reconciliation Action Plan (RAP), we have committed to increase our procurement spend with Aboriginal and Torres Strait Islander-owned businesses to improve economic outcomes for those organisations and Indigenous Australians.

In FY2021, we had an overall spend of \$6.7 million, an increase of \$1.3 million from FY2020 and a \$2.6 million rise from FY2019.

Maintaining a membership with Supply Nation, which gives us access to Australia's leading database of verified Indigenous businesses, is key to allowing us to achieve this commitment.

**Our suppliers**

Our suppliers play a critical role in creating value and enabling a sustainable future for our employees, customers, communities, and investors. As such, we want to engage with like-minded businesses.

**Working sustainably with our suppliers**

We understand the importance of managing ESG considerations with our suppliers. Our Supplier Code of Conduct outlines our commitment to five key principles: Safety; Business Integrity; Labour and Human Rights; Communities; and Environment.

The code is available in the supplier portal on our website. Furthermore, in FY2021 the Supplier Code of Conduct was communicated to all existing suppliers, and we are actively working with our priority suppliers to gain their agreement to the code.

**Modern slavery and human rights**

Given that our business forms a key part of our customers' supply chains,

we recognise the importance of responsible procurement, not only for our business, but for our customers' operations as well.

We commit to supporting and respecting the protection of internationally proclaimed human rights, as set out in the Universal Declaration of Human Rights<sup>13</sup> and The Ten Principles of the United Nations Global Compact<sup>14</sup>. In October 2020, Aurizon published its first Modern Slavery Statement, which addresses the Company's obligations contained in the *Modern Slavery Act 2018* (Cth). A copy of this statement can be found on our website.

**Local procurement**

Our supplier relationships extend from local operators through to international suppliers. This gives us the flexibility to match supplier solutions to the specific needs of operational requirements or a project.

Through local procurement, we can generate employment opportunities and provide economic benefits to the

## Regulation and policy

The policies and regulations of governments and regulatory bodies have significant impacts on the current and future development, operation, and efficiency of transport supply chains. We engage directly with policy development processes that are relevant to our businesses and the industries in which we operate. We also participate in the policy and regulatory work of a number of industry associations (as outlined in our Governance and risk chapter).

### Embedding the UT5 customer agreement

Aurizon Network's Access Undertaking establishes the framework for access to the CQCN rail infrastructure. In December 2019, Aurizon Network received final approval from the Queensland Competition Authority (QCA) for its Revised Access Undertaking (UT5).

As a result of the landmark agreement reached with coal customers, we now have a regulatory model that delivers long-term investment certainty and promotes productivity and performance in the QLD coal supply chain. UT5 delivered significant regulatory reform and a range of material benefits for both our customers and Network business.

These include:

- a 10-year undertaking term (2017-2027)
- an independent capacity review and mechanisms to remedy any deficits
- an improved return that better reflects the risks of owning and operating the CQCN
- enhanced reporting and engagement on maintenance and renewals budgets
- operating cost efficiencies retained by our business
- rebate mechanisms to incentivise performance.

While embedding the Revised UT5 Access Undertaking, we aim to achieve stronger customer relationships and better outcomes for all stakeholders of the CQCN. These improved outcomes include a stronger linking of future investment to performance and allowing the CQCN to continue to be an efficient export supply chain while meeting future capacity requirements. The Initial Capacity Assessment by the Independent Expert has been delayed from the original target date in June 2021. We will continue to provide updates as we progress against the agreement.

## Energy policy

We are one of the largest energy consumers in QLD, and operate the only electrified heavy haul rail network in Australia. Reliable and affordable electricity is important for our business and our customers.

We have consistently advocated for the benefits of electric traction, and have made substantial investments to improve the electric infrastructure across the CQCN.

However, the realised efficiency and environmental benefits of electric traction over the medium to long term are dependent on clear and effective policies from the federal and state governments.

Policy actions taken by governments that are aimed at reducing the price of electricity and improving the reliability of supply are welcome. Lowering electricity costs reduces the risk of the replacement of electric traction locomotives by diesel locomotives.

At the same time, a clear and consistent long-term emissions reduction policy is also very important. Transport infrastructure and rail supply chain assets are underpinned by investments that have timeframes of up to 30 years. We prepared a submission and have engaged with the Australian Government on the development of its Investment Technology Roadmap, which was released October 2020.

The Technology Roadmap recognises the importance of better enabling industry to make longer term investments in the development and introduction of new energy technologies that offer emissions reduction, reliability, and efficiency benefits.

It is also important that current and short-term emissions reduction policies, including the Safeguard Mechanism<sup>15</sup> and the Climate Solutions Fund<sup>16</sup>, recognise the substantial benefits of electric traction, and are flexible and responsive in allowing access to emissions reduction incentive arrangements for freight operators that use electric traction.

We continue to contribute to consultation processes, and to engage directly with the federal and state governments on the need for further policy changes, including improvements to the Safeguard Mechanism.





**Rail freight policy**

We contribute to developing and advocating policy positions aimed at increasing the use of rail for freight supply chains in Australia.

In April 2021, our Managing Director and CEO Andrew Harding was appointed Chair of the Freight on Rail Group (FORG), which is an industry body representing rail freight industry businesses in Australia. As part of its advocacy, FORG is engaging with governments and regulators on benefits, such as:

- **Environment:** Road freight produces 16 times more carbon pollution than rail freight per tonne kilometre<sup>17</sup>.
- **Safety:** Rail transport is a far safer mode of transport than road, with the freight volume carried by one freight train equivalent to the volume carried by 150 semi-trailer trucks<sup>18</sup>. Over the course of a year, the freight task carried by one train removes the need for thousands of truck journeys on our roads, reducing congestion and enhancing safety outcomes.
- **Productivity:** Significant economic and productivity gains are achievable where there are large volumes of freight and/or where the freight is carried over longer distances.

Despite these important benefits, many bulk freight products, including some resources, processed minerals, and agricultural freight, have increasingly been transported by heavy road vehicles, even where a rail transport option is available.

There are different policy and regulatory approaches between road and rail freight infrastructure and operations. A number of policy settings place our business and other rail freight operators at a disadvantage when it comes to costs, infrastructure provision and regulation compared to truck operators, particularly on key regional freight corridors where rail and road compete to transport the same products.

Policy changes are required to address a number of substantial disadvantages for rail freight compared to road, including inequity in infrastructure costs, first mile barriers (including costly or inefficient links between production sites and rail infrastructure), and an inconsistent focus on enabling

improvements and investment in rail freight performance and competitiveness.

Informed by these challenges, we continue to focus our policy development and engagement efforts on improving the performance and the use of rail, considering the specific circumstances and requirements of different freight corridors. This includes advocacy to improve the use of bulk freight corridors through targeted infrastructure investments or development incentives, links between rail networks and ports, and prioritising improvements to applicable national and state-based regulatory frameworks and procedures to enable increased productivity and innovation within the rail freight industry.

We will continue to work closely with others in industry to advocate to governments the case to level the playing field for rail, enable rail freight to increase the volumes of freight carried on key regional corridors, and realise the benefits that rail freight offers to customers, the environment, and the communities in which we operate.

There are different policy and regulatory approaches between road and rail freight infrastructure and operations.





## Regional policy

In May 2020, we became a founding member of Regional Australia Council 2031 (RAC2031) with other leading Australian companies to give a greater voice and support to the future development of regional Australia. RAC2031 is an initiative of the Regional Australia Institute. Approximately 80% of our employees are based in regional and remote areas.

The Regional Australia Institute is the nation's first and only independent regional economic think tank specialised in developing and communicating the knowledge, policy and practical solutions required to lift the prosperity of people in regions and Australia overall.

An important benefit of our involvement in RAC2031 is the access to and insights provided from evidence-based research. This helps member companies like us, as well as policy makers and the general community, better understand the drivers of regionalisation across Australia.

Recent research shows that while the COVID-19 pandemic has significantly raised the desire to move to regional Australia for 22% of people surveyed, more than half said they were already considering relocation before the pandemic. When asked about the reasons for considering a move, 70% rated traffic congestion as a major factor, and 68% want to reduce their cost of living. But it's the positive aspects of life outside the city limits that resonate even more, with 77% of potential movers ticking both space and connection to nature as reasons for moving to live in regional communities.

The research by the Regional Australia Institute will inform the policies of federal and state governments as well as future decisions of our Company and others in industry in relation to regional employees and investments.



- 4 SustainAbility: *Rate the Raters 2020: Investor Survey and Interview Results*, March 2020.
- 5 In addition, Aurizon also participates in the Workplace Gender Equality Agency (WGEA) survey.
- 6 Australian Council of Superannuation Investors (ACSI), *ESG Reporting Trends in the ASX200* (May 2021).
- 7 United Nations Sustainable Development Goals Knowledge Platform.
- 8 Australian Bureau of Statistics.
- 9 *United Nations Framework Convention on Climate Change (2015)* Adoption of the Paris Agreement, 21st Conference of the Parties, Paris: United Nations.
- 10 IPCC, 2018: *Global warming of 1.5°C*. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.
- 11 From a 2021 baseline on a basis of tonnes of carbon dioxide per net tonne kilometre.
- 12 Announced contract tonnages may not necessarily align with current contract tonnages. Incorporates contract extension options where applicable. Includes immaterial variations to volume/term not announced to market.
- 13 United Nations, *Universal Declaration of Human Rights*.
- 14 United Nations Global Compact, *The Ten Principles of the UN Global Compact*. Available: <https://www.unglobalcompact.org/what-is-gc/mission/principles>.
- 15 The Safeguard Mechanism provides a framework for Australia's largest emitters to keep their emissions at or below emissions baselines set by the Clean Energy Regulator.
- 16 Under the Australian Government's Climate Solutions Fund (previously the Emissions Reduction Fund), we, along with other large energy emitters, are required to keep emissions within baseline levels as part of the Safeguard Mechanism.
- 17 Deloitte Access Economics 2017, *Value of Rail: The Contribution of Rail in Australia*.
- 18 NSW Government: Consultation Paper: *Clean Air for NSW* (2016).

# GOVERNANCE AND RISK

We see risk management as a value-adding process for our business to sustain and enhance performance for shareholders, customers, employees, and the broader community.

This is achieved through establishing the culture, processes, and structures to realise potential opportunities while managing adverse effects (see figure 9). We consider a wide range of social, environmental, and economic risks within our strategic planning by applying high-quality, integrated risk assessments to support informed decision-making.

FIGURE 9 AURIZON'S COMMITTEE STRUCTURE<sup>19</sup>



## Effective governance for sustainability

We believe corporate governance is a critical pillar on which our business objectives and, in turn, shareholder value must be built. The Board has adopted a suite of charters and key corporate governance documents that articulate the policies and procedures followed by our business.

Our Board is structured to include a range of optimum skills that enable the effective governance of our business. We carefully consider the character, experience, education and skill set as well as interests and associations of potential candidates for appointment to the Board, and conduct appropriate checks to verify the suitability of the candidate prior to their appointment. Our Board members possess a range of skills and experience from sectors such as transport and logistics, mining, finance, strategy, technology and innovation, government relations, energy, safety, health, and environment. As such, our Board is well equipped to consider a range of sustainability-related issues.

### Committees and meetings

Our Board provides oversight and strategic direction to sustainability and has ultimate responsibility for our Company's consideration of climate-related risk. It is guided by our Audit, Governance and Risk Management Committee (AGRC) and Safety, Health and Environment Committee (SHE) as part of our risk framework and broader corporate strategy and planning.

The AGRC includes several members of the Board, including the Chairman, and is responsible for reviewing our governance policies, framework, and compliance. The SHE Committee is responsible for reviewing and making recommendations to the Board on matters relating to safety, health, and environmental performance and policies.

The Board understands that climate change is one of the key interests for stakeholders. Following the launch of the Climate Strategy and Action Plan (CSAP) during FY2021, we have progressed laying the foundations for our climate resilience and decarbonisation roadmap. This has involved establishing a cross-functional CSAP Steering Committee, responsible for guiding the implementation of the CSAP and aligning initiatives under the three key pillars: Manage Risk



and Build Resilience; Deliver Decarbonisation; and Create Carbon Abatement Opportunities.

Discussions across a range of sustainability-related topics, including climate change, occur frequently at Board meetings. During FY2021, the Board:

- Provided guidance and approval of the Sustainability Report and CSAP
- Were directly engaged in identifying the scenarios for consideration under our Strategy in Uncertainty framework, as well as developing plans and initiatives to position the organisation to mitigate risks and take advantage of opportunities. This strategic process is repeated every six months to ensure that our strategic priorities are continually updated to proactively respond to emerging market dynamics and opportunities. This included the consideration of the six coal scenarios that were presented to shareholders at the Investor Day held in June (as outlined in the Future of commodities hauled chapter).

#### Embedding sustainability into decision making

The AGRMC Charter acknowledges the need for the Board, and in turn, management to maintain effective risk management so as to identify and manage risks. This includes, but is not limited to, contemporary or emerging risks, such as conduct risk, digital disruption, and cyber risks, and also climate change and sustainability risks. A copy of the charter is available in the Governance section of our website.

In that regard, climate change risk is incorporated into our Enterprise Risk Management Framework and is therefore specifically considered when making investment decisions. Our Executive Committee and AGRMC regularly review and update the enterprise risk profile that applies the Enterprise Risk Management Framework to identify and rate enterprise level risks for our Company.

The internal management process governing investment decisions, the Aurizon Investment Standard, has also been updated to ensure management considers climate change risk and carbon pricing on a materiality basis in decisions to recommend investment of capital.

#### Managing sustainability performance through targets and monitoring

We continue to manage our progress as an organisation by monitoring our performance against key sustainability targets and objectives. Examples to date have included (but are not limited to):

- A net-zero operational emissions (Scope 1 and 2) by 2050 target
- An additional emissions intensity reduction target of 10% by 2030<sup>20</sup> to maintain an emphasis on leveraging existing capabilities and assets in the near term
- Two primary safety metrics to measure safety outcomes across the enterprise: Total Recordable Injury Frequency Rate (TRIFR) and Rail Process Safety (RPS)
- Gender representation on the Board
- Representation of women in senior executive roles
- Representation of women in the workforce
- Representation of Aboriginal and Torres Strait Islander men and women in the workforce.

At the start of the performance year, the Board determines individual strategic measures for the Managing Director & CEO.

These individual measures are based on our strategy of continuing to optimise, excel and extend the business. Relevant measures are subsequently cascaded to the Executive Committee and throughout the organisation.

#### Government and regulatory engagement

Our Corporate Affairs Team manages a program of regular engagement with federal and state governments, federal and state Members of Parliament (MPs) (including opposition MPs), and ongoing engagement with local governments. Corporate Affairs also supports ongoing engagement between business units and regulators. This engagement program was implemented as planned over the last financial year; some engagement was modified to use video and/or teleconference in response to COVID-19 restrictions. We made no financial contributions to political

parties during FY2021 nor participated in any corporate observer programs, policy forums or events conducted by political parties that involved payment.

#### Industry association memberships

We are a member of several industry associations, and participate in some government industry forums alongside other companies.

These memberships are held for the following purposes:

- to contribute to the development and advocacy of policy and regulatory settings that promote and facilitate efficient and competitive infrastructure development, and that enable investment in new mining and resource project developments and efficient and cost-effective supply chain operations
- to enable engagement with customers and other industry stakeholders on policy and regulatory priorities
- to share updated information on emerging macroeconomic and policy issues.

We regularly review our participation in industry associations and government-industry forums to ensure our involvement continues to be aligned with these purposes, and that our involvement is an efficient and effective use of our company time and resources.





**How we manage risk**

**Risk Management Framework**

We foster a risk-aware culture through a combination of leadership focus, training and the application of high-quality, integrated risk analysis and management. The consideration of risk features heavily in our thinking, from the framing of strategy through to informing decision-making at the front line. Our Risk team, together with all leaders in the business, closely monitors the environment in which we operate to ensure key risk exposures and situational developments are well understood and proactively managed.

Over the past year, extensive analysis has been performed to better understand and, where possible, mitigate the impacts of a worsening geopolitical climate in the Asia-Pacific region and deteriorating trade relations between Australia and China. A core focus of this work has been enhancing our supply-chain risk management to build further resilience into our business during times of heightened uncertainty.

As the COVID-19 pandemic continues, the importance of effective and agile risk management remains at the fore. Throughout this rapidly evolving crisis, our Risk team has continued to play a central role in formulating and supporting crisis management and business resilience activities.

The primary focus of all key decision-making remains the welfare of our people, continuity of services to our customers, and regard to the communities in which we operate.

**We foster a risk-aware culture through a combination of leadership focus, training and the application of high-quality, integrated risk analysis and management.**

**Conduct**

Our values and Code of Conduct embody what it means to work at Aurizon. We expect our employees to be fit for work, work safely, act professionally, be lawful, ethical, and fair, and use our systems, equipment, property and tools appropriately. All employees are made aware of the Code before employment, and are required to complete online training modules to ensure a thorough understanding and continuous adherence.

We want to be known for how we treat each other and foster a working environment, where we have a shared understanding of respectful behaviour, and how our people feel empowered to stand up for each other.

Our Code of Conduct has a strong link to our values of Safety, People, Integrity, Customer and Excellence, and we set expectations for our employees to speak up when our values are not demonstrated. We regularly review our policies to support our operations and how we work.

A new conflict of interest policy has been introduced, building on our Code of Conduct, to provide employees with more information about how to manage potential, perceived, or actual conflicts of interest at work.

We promote our Whistleblower Hotline as a confidential avenue for employees to speak up. Our Whistleblower Policy, which has been updated to reflect the latest amendments to the Corporations Act<sup>21</sup>, details the protections we provide whistleblowers. We are strongly committed to complying with laws and to maintaining the highest ethical standards throughout all of our business conduct. This includes strict compliance with Australia's *Criminal Code Act 1995* (Cth) (Criminal Code), Australia's state and territory legislation, and international anti-corruption and anti-bribery standards. A copy of our Code of Conduct, Whistleblower Policy, and Anti-Bribery and Anti-Corruption Policy can be accessed on the Governance page of our website.



**Contemporary and emerging risks**

**Data privacy and cyber security**

Cyber risk management remains a critical challenge for most organisations, and we recognise the potential for cyber issues to affect operational efficiency and continuity. The increase in malicious attacks within our industry is concerning, and we monitor these events closely.

Our Cyber Security Strategy and Roadmap is reviewed and updated regularly to position ourselves to respond to external and internal threats. We assess emerging trends and employ modern technical controls to defend our business. In addition to preventative controls, we are focusing on response and recovery capability to minimise operational impacts of cyber security incidents.

Proposed changes to the *Security of Critical Infrastructure Act 2018* will impose specific obligations on the freight and logistics sector, and we are working closely with state and federal governments to address cyber security threats in the this sector.

We are also working closely with the Department of Home Affairs, and participating in the design of the industry-specific rules for the freight and logistics sector. We continue to maintain and further develop strong ties with the Australian Cyber Security Centre and our peers in the industry.

**Modern slavery and human rights**

We understand that modern slavery and human trafficking can occur in many forms. We are committed to operating responsibly, and ensuring that we have robust standards and processes to minimise and address modern slavery risks.

In October 2020, Aurizon published its first Modern Slavery Statement, which addresses the Company’s obligations contained in the *Modern Slavery Act 2018* (Cth). A copy of this statement can be found on our website.

For more information, see our How we operate chapter.

**Managing climate change risk**

We acknowledge that climate change is having direct and indirect impacts on industry and the global economy. Transition risks related to energy, policy, legal, regulation, technology, and market shifts (that are necessary to achieve the transition to a low-

carbon economy) will affect the demand for the commodities we haul. Acute physical risks related to extreme weather events will also continue to affect our business through supply chain disruptions.

In the longer term, (chronic) trends, such as average summer temperature increases, have the potential to disrupt the supply chain through heat stress and associated precautionary measures, such as track speed restrictions.

Since 2017, we have incorporated recommendations from the Financial Stability Board’s Final Report: Recommendation of the Task Force on Climate-related Financial Disclosures (TCFD) in our annual Sustainability Report. Table 2 describes the recommended disclosures under the TCFD framework and the respective content in this report. Table 3 and Table 4 summarise our response to climate-related risks and opportunities.

During FY2021, we published our first Climate Strategy and Action Plan (CSAP), outlining our position on climate change, underpinned by long-term strategies and associated actions to mitigate climate risk and take advantage of climate-related opportunities, including a target of net-zero operational emissions by 2050.

Although our business is exposed to transition and physical risks, we are also well positioned to take advantage of climate-related opportunities.

The CSAP is built on three key pillars:

1. Manage risk and build resilience
2. Deliver decarbonisation
3. Create carbon abatement opportunities.

Under the Manage risk and build resilience pillar, we commit to continually assess and enhance climate change considerations in the way we manage our business and key assets. We will achieve this by continuing to assess and enhance our processes for managing climate-related risk and leveraging opportunities, including:

- continuing to use scenario analysis to consider transition risks over short-, medium-, and long-term time horizons
- continuing to enhance capability to assess physical risk to key assets and operations
- embedding consideration of climate-related risk into risk frameworks and investment standards.

Scenario analysis is conducted under our Strategy in Uncertainty framework, which takes climate-related transition risks into consideration. The key drivers used in our scenario analysis are outlined in our Future of commodities hauled chapter. Our management of climate-related physical risks is addressed in the Climate change chapter of this report.

**CLIMATE-RELATED RISKS AND OPPORTUNITIES<sup>22</sup>**

**Climate-related risks:** The TCFD divides climate-related risks into two major categories:



**Transition risks** relate to a wide set of changes in policy, law, markets, technology, and prices that are necessary to achieve the transition to a low-carbon economy.



**Physical risks** stem from the direct impact of climate change on our physical environment through, for example, resource availability, supply chain disruptions, or damage to assets from severe weather. These risks can be chronic or acute.

**Climate-related opportunities:** Opportunities associated with climate change include the benefits from our efforts to mitigate and adapt, such as resource efficiency and cost savings, developing new products and services, accessing new markets, and building resilience along our supply chain.

**TABLE 2** CORE ELEMENTS – TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)

Core element	TCFD Recommended Disclosure	Index
<b>Governance</b>	Board’s oversight of climate-related risks and opportunities.	<b>Chapter:</b> <b>Governance and risk</b> Effective governance for sustainability (page 22)
	Management’s role in assessing and managing climate-related risks and opportunities.	
<b>Strategy</b>	Climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	<b>Chapter:</b> <b>Governance and risk</b> Response to climate-related risks and opportunities (page 27)
	Impact of climate-related risks and opportunities on the organisation’s businesses, strategy, and financial planning.	
	Resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	<b>Chapter:</b> <b>Future of commodities hauled</b> (page 36)
<b>Risk Management</b>	Organisation’s processes for identifying and assessing climate-related risks.	<b>Chapter:</b> <b>Governance and risk</b> Effective governance for sustainability (page 22)
	Organisation’s processes for managing climate-related risks.	<b>Chapter:</b> <b>Governance and risk</b> Response to climate-related risks and opportunities (page 27)
	How processes for identifying, assessing, and managing climate-related risks are integrated into the organisation’s overall risk management.	<b>Chapter:</b> <b>Governance and risk</b> Effective governance for sustainability (page 22)
<b>Metrics and Targets</b>	Metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	<b>Chapter:</b> <b>Governance and risk</b> Response to climate-related risks and opportunities (page 27)
	Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	<b>Chapter:</b> <b>Climate change</b> (page 50)
	Targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	



### RISK LEVEL AND TIME HORIZON

In assessing both the risk level and time horizon, consideration is given on the useful life of Aurizon’s infrastructure assets and rollingstock. The useful lives of infrastructure assets are determined based on the expected engineering life, capped at the remaining term of the infrastructure leases, and are reviewed annually. Infrastructure predominantly relates to assets associated with the Central Queensland Coal Network. Around 70% of volumes hauled across the Network is considered to be metallurgical coal (remaining 30% thermal coal), with demand linked to Asian steel production. Therefore, the useful life of infrastructure assets will be impacted primarily by the future demand for Australian metallurgical coal. Rollingstock assets are predominantly used by the Coal and Bulk business units to transport bulk commodities to end customers and ports.

TABLE 3 RESPONSE TO CLIMATE-RELATED RISKS

Risk	Description	Risk type	Potential impact to business	Strategic planning and risk management	Metrics
<b>Thermal coal demand</b>	Demand for seaborne thermal coal is subject to energy policy and fuel-mix decisions driven by energy costs, energy security, and regulation of GHG emissions.	Transition: Market, Policy & Legal, and Technology <b>Risk level: High</b>	Approximately one-third of above rail revenue and around 30% of Network revenue is related to the haulage of thermal coal. <b>Time horizon: Medium to long term</b>	<ul style="list-style-type: none"> <li>– The long-term nature of our contracts provides greater certainty for our future revenue streams. Approximately 48% of the Coal business portfolio has a remaining contract life of 7+ years.</li> <li>– Continue to undertake scenario analysis for coal demand, assessing the fundamental drivers of seaborne demand for metallurgical coal and thermal coal.</li> <li>– Continue to use scenario analysis to resilience test our fleet capacity, capital investments, haulage opportunities and impairment testing.</li> <li>– Continue to develop Bulk haulage opportunities including the identification of (and execution) of fleet cascade opportunities from the Coal fleet to support Bulk growth.</li> </ul>	<ul style="list-style-type: none"> <li>– Composition of Aurizon revenue (by commodity group).</li> <li>– Coal demand and supply projections and scenario analysis (refer to our Future of commodities hauled chapter).</li> <li>– Asian economic growth and climate policies.</li> <li>– Current and planned fleet of coal-fired generation and steel capacity in coal import nations.</li> <li>– Developments in hydrogen-based steelmaking projects (and other emerging lower carbon processes), including cost and infrastructure requirements.</li> <li>– Capital investment in Australian coal sector.</li> <li>– Development (and regulatory approvals) of new Australian coal mines.</li> <li>– Coal supply from competing nations and associated trade flows.</li> <li>– Port capacity/availability.</li> </ul>
<b>Metallurgical coal demand</b>	Demand for seaborne metallurgical coal is subject to economic development, steel-intensive growth, method of steel production (including emerging lower carbon processes), import reliance, and regulation of GHG emissions.	Transition: Market, Policy & Legal, and Technology <b>Risk level: Low to Moderate</b>	Approximately one-third of above rail revenue and around 70% of Network revenue is related to the haulage of metallurgical coal. <b>Time horizon: Long term</b>	<ul style="list-style-type: none"> <li>– Continue to advocate for the ability of Australia's metallurgical coal to underpin global metallurgical coal supply used in steel production.</li> <li>– Continue to advocate for the importance of Australia's thermal coal, used for energy generation and contributing to a reduction in GHG emissions when compared to lower quality coal alternatives.</li> <li>– Access a broad range of capital markets and diversify funding sources and/or extend tenure where possible.</li> <li>– Maintain open and transparent communication with stakeholders, including climate-related disclosures.</li> </ul>	<ul style="list-style-type: none"> <li>– Environmental planning approval timeframes.</li> <li>– Capital investment in coal mining capacity.</li> <li>– Developments in climate-related litigation.</li> </ul>
<b>Australian coal supply</b>	Australia's supply of both metallurgical and thermal coal to seaborne export markets is subject to factors such as global competitiveness, coal mine production, and domestic climate policies.	Transition: Market, Policy & Legal, and Technology <b>Risk level: Low to Moderate</b>	Approximately two-thirds of Australia's coal exports using our below rail Network and/or carried by our above rail business. <b>Time horizon: Medium to long term</b>	<ul style="list-style-type: none"> <li>– Continue to advocate for the ability of Australia's metallurgical coal to underpin global metallurgical coal supply used in steel production.</li> <li>– Continue to advocate for the importance of Australia's thermal coal, used for energy generation and contributing to a reduction in GHG emissions when compared to lower quality coal alternatives.</li> <li>– Access a broad range of capital markets and diversify funding sources and/or extend tenure where possible.</li> <li>– Maintain open and transparent communication with stakeholders, including climate-related disclosures.</li> </ul>	<ul style="list-style-type: none"> <li>– Environmental planning approval timeframes.</li> <li>– Capital investment in coal mining capacity.</li> <li>– Developments in climate-related litigation.</li> </ul>
<b>Changes in investor expectations</b>	Investor concern over climate-related risks may result in:  An inability for our business and customers to gain licences, funding or insurance for coal mining and transport.  Increased risk of litigation/social action against our business and customers.	Transition: Reputation and Legal <b>Risk level: Moderate to High</b>	A withdrawal (or reduction) of licences, funding or insurance will limit our growth opportunities.  Increased cost/time requirements associated with litigation. <b>Time horizon: Short, medium, and long term</b>	<ul style="list-style-type: none"> <li>– Continue to advocate for the ability of Australia's metallurgical coal to underpin global metallurgical coal supply used in steel production.</li> <li>– Continue to advocate for the importance of Australia's thermal coal, used for energy generation and contributing to a reduction in GHG emissions when compared to lower quality coal alternatives.</li> <li>– Access a broad range of capital markets and diversify funding sources and/or extend tenure where possible.</li> <li>– Maintain open and transparent communication with stakeholders, including climate-related disclosures.</li> </ul>	<ul style="list-style-type: none"> <li>– Environmental planning approval timeframes.</li> <li>– Capital investment in coal mining capacity.</li> <li>– Developments in climate-related litigation.</li> </ul>

TABLE 3 CONTINUED RESPONSE TO CLIMATE-RELATED RISKS

Risk	Description	Risk type	Potential impact to business	Strategic planning and risk management	Metrics
<b>Carbon emissions management and reporting</b>	Carbon liability under the Safeguard Mechanism Rule and potential penalties for inappropriate carbon reporting under the <i>National Greenhouse and Energy Reporting (NGER) Act 2007</i> .	Transition: Policy & Legal  <b>Risk level: Low to Moderate</b>	Safeguard baseline exceedances can necessitate offsetting with Australian Carbon Credit Units (ACCUs).  Inadequate strategic effort, commitment of resources and disclosure towards climate targets leading to loss of social licence, reputational damage and legal action.  <b>Time horizon: Short, medium and long term</b>	<ul style="list-style-type: none"> <li>– Implement CSAP targets and initiatives focused on operational decarbonisation through improved operational efficiency, renewable energy integration, and adoption of low-carbon fleet technologies.</li> <li>– Monitor and engage with government climate policy agendas, and advocate for a positive policy outcome for rail and energy-efficient freight services.</li> </ul>	<ul style="list-style-type: none"> <li>– Operational energy and emissions intensity.</li> <li>– Scope 1, 2 and 3 emissions.</li> <li>– Electricity consumption by source.</li> <li>– Procured goods and services.</li> <li>– Waste generation and disposal type.</li> <li>– Engagement with peers, researchers, and manufacturers on low-carbon technology development for the freight sector.</li> </ul>
<b>Climate change resilience and adaptation</b>	Operational disruption and damage arising from increased severity of extreme weather and related events, such as flooding, erosion bushfires and annual average summer temperature increases.	Physical: Acute & Chronic  <b>Risk level: Moderate to High</b>	May result in loss of revenue due to extreme weather events affecting mining operations/ production volumes, transport and port activities across the supply chain.  May result in higher costs associated with remedial actions to ensure asset availability.  <b>Time horizon: Short, medium and long term</b>	<ul style="list-style-type: none"> <li>– Continue to design infrastructure to recover quickly from extreme weather events, including positioning inventory such as ballast, flood rock, rail and formation material.</li> <li>– Annual seasonal planning for extreme weather events.</li> <li>– Localised real-time monitoring of track temperatures.</li> <li>– Build physical risk scenario analysis into network capacity planning and modelling across our fixed asset portfolio.</li> <li>– Engage policymakers regarding competitiveness of low-impact transport modes and enabling infrastructure (e.g. electrified rail) to ensure consistent treatment of transport systems within policy.</li> </ul>	<ul style="list-style-type: none"> <li>– Current/projected temperatures through our Network’s remote monitoring system.</li> <li>– Reflection of climate models in scenario analysis (e.g. network capacity and asset resilience). Refer to our Climate change chapter.</li> </ul>



TABLE 4 RESPONSE TO CLIMATE-RELATED OPPORTUNITIES

Opportunity	Description	Opportunity type	Potential impact to business	Aurizon's approach	Metrics
<b>Renewable energy and carbon offsets</b>	In addition to purchasing carbon offsets as needed, our business has the potential to create high-quality offsets by investing in improved land use, energy efficiency, low-carbon technology and renewable energy.	Energy source & markets	Less exposure to carbon costs by augmenting direct abatement initiatives with high-quality offsets to aid in addressing hard-to-abate emissions (linked to availability of low-carbon technology for the Australian rail freight sector in the near-term). <b>Time horizon: Medium term</b>	<ul style="list-style-type: none"> <li>— Install solar PV arrays across our largest operational depots.</li> <li>— Identify opportunities to increase renewable energy mix within energy procurement frameworks by engaging with suppliers and project developers.</li> <li>— Assess opportunities to build a carbon offset portfolio by engaging with project developers to either acquire or originate high-quality carbon offsets with environmental and social co-benefits aligned to key sustainability objectives.</li> </ul>	<ul style="list-style-type: none"> <li>— Electricity consumption and renewable energy generation (MWh).</li> <li>— Operational GHG emissions (absolute and intensity).</li> </ul>
<b>Development and/or expansion of low-emissions goods and services</b>	Our direct investment in fleet decarbonisation technologies could result in enhanced engagement and partnerships with participants across Australia's freight transport sector.	Products & services	Increased customer value proposition and alignment of supply chain decarbonisation objectives (e.g. by offering low-carbon freight transportation services).  Accelerated development of low-carbon technologies for our own use and potential adoption across Australia's freight transport sector. <b>Time horizon: Medium to long term</b>	<ul style="list-style-type: none"> <li>— Continue to implement our Tracking Towards Net-Zero Operational Emissions initiatives (supported by the establishment of a \$50m Future Fleet Fund, and the creation of forums for collaboration and partnerships to accelerate the development of low-carbon technologies).</li> </ul>	<ul style="list-style-type: none"> <li>— Operational GHG emissions (absolute and intensity).</li> <li>— Capital investment in low-carbon energy supply chains (e.g. green hydrogen) and storage (e.g. battery technology).</li> </ul>
<b>Access to new markets</b>	There are continued growth opportunities for our Bulk business in line with higher demand for the raw materials required for low-carbon, renewable energy, and storage technologies.	Markets & resilience	The global clean energy transition will have significant consequences for mineral demand over the next two decades, incentivising the development of new mines and downstream processing in Australia, creating opportunities for our Bulk business. <b>Time horizon: Short, medium and long term</b>	<ul style="list-style-type: none"> <li>— Provide end-to-end bulk haulage services in key mineral corridors augmented by integrated port services.</li> </ul>	<ul style="list-style-type: none"> <li>— % growth in the Bulk business's share of bulk market profit pool.</li> </ul>

19 Other Aurizon Committees not shown include the Nomination and Succession Committee, and the Remuneration and People Committee. For more information about our committee structures, see our FY2021 Annual Report.

20 From a 2021 baseline on a tonnes of carbon dioxide per net tonne kilometre basis.

21 Corporations Act. Expanded Whistleblower Protections July 2019.

22 Financial Stability Board, Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, June 2017.

# SAFETY AND HEALTH

In FY2021, we continued to embed our updated enterprise safety strategy as part of our Safety and Performance Culture program.

This strategy (Safety in Action) was implemented to focus and prioritise improvements to our safety systems and culture, and to achieve our safety goal of protecting ourselves, each other, and the communities in which we operate.

FIGURE 10 SAFETY IN ACTION

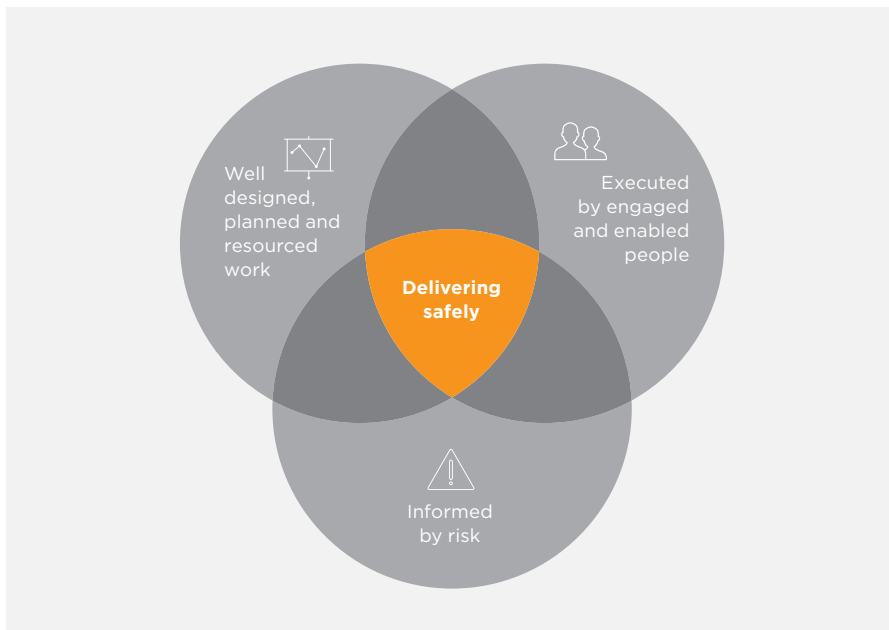


FIGURE 11 AURIZON'S CRITICAL CONTROL MANAGEMENT (CCM) FRAMEWORK



## Driving Safety in Action

Safety in Action leverages three key components that enable our people to be safe at work (see figure 10). The three components of the strategy are:

- well-designed, planned, and resourced work
- executed by engaged and enabled people
- informed by risk.

Safety in Action continues to drive our focus as we engage with our teams, identify, and execute improvements to our safe systems of work, and how we report on safety performance. Our safety leadership program, Leading for Safety, equips operational leaders with skills to effectively lead Safety in Action.

As part of our refreshed safety strategy, we also updated our safety value to “we know safe, we choose safe”, which challenges each and every one of us to think about the work we’re doing – knowing how to be safe, and choosing to do it. The updated safety value has been received positively by our people as a simple message that drives positive conversations and keeps each other accountable.

We continue to develop and adopt safe practices, enabling us to build a resilient operation, an adaptive workforce, and agile systems of work, to deliver safer outcomes. We will continue to make sure we are well placed to work with our people, our customers, and the communities in which we operate in, providing safe and reliable rail operations now and into the future.

In preparation for FY2022, we have focused on the continued implementation of Safety in Action and those initiatives that will continue to enhance performance. Importantly, we know that the underlying foundations of our strategy are resonating with our people. As such, our focus remains on how we can continue to support our people to be safe at work.

### Managing our critical risks: A strategic initiative

We have an established enterprise risk management approach, which includes the assessment of all risk types, including safety and health (see our Governance and risk chapter for more detail on how we manage risk). Our process enables us to identify

hazards, assess the risk, and eliminate or implement controls to manage the risk so far as is reasonably practicable. However, we recognise our activities and hazard exposures are many and varied. As such, our safety risk management approach needs to be agile, flexible, and adaptive to help us manage the risk of harm to our people and others so far as is reasonably practicable.

Recognising this challenge, one of our strategic actions for FY2021 was to continue developing and embedding our Critical Control Management (CCM) framework (see figure 11), focusing on incidents that have potential to cause a Serious Injury or Fatality (SIF). Our efforts are focused on the intersection between our safety hazard and risk management approach and our management of SIF. Since the start of CCM in late 2019, we have been building a new model for managing critical risks in our operations that could result in SIF.

We have identified 13 material risks inherent in our operations and defined minimum control expectations for each critical risk, which are being rolled out across the business. These controls can be verified in field by our leaders to confirm they are operating and effective. These verifications will soon be technology-enabled, meaning we will be able to understand whether our controls are effective where it matters – in the field.

### Employee health and wellbeing

#### Promoting the mental health and wellbeing of our people

The mental health and wellbeing of our employees has always been a priority for our business. Over the years, we have tried to break the stigma associated with mental health problems, and increase awareness by participating in events such as National R U OK? Day, Rail R U OK? Day, and Movember, and by actively promoting our Employee Assistance Program (EAP) services.

Our people have also held local activities to talk about mental wellbeing and to raise awareness.

Since 2019, volunteers from all parts of the business have taken part in Mental Health First Aid training, a 12-hour face-to-face workshop presented by TrackSAFE Foundation. So far, we have trained over 150 Mental Health First Aiders who have formed the foundation of our Peer Support Network. The peer supporters are connected through our internal social media platform and a shared mail group to support organisation-wide events in addition to providing support to employees in need of help.

This year, we have also conducted an internal Mental Wellbeing survey, with a pleasing level of participation from our employees. Using these

results, we held seven focus groups for different groups of employees, which provided further qualitative context to the results of the quantitative survey. These results are helping us shape our long-term Mental Wellbeing Strategy, which is being developed and will be launched in FY2022.

#### Managing through COVID-19

The impacts of COVID-19 have presented many challenges to our operations. In the early stages of the pandemic, we formed a Crisis Management Team that met twice a week to discuss the high-priority issues facing the business. We developed processes and procedures to keep our employees safe, and to ensure continuity of services for our customers. We responded to these challenges by providing flexible work arrangements where possible, supported by technology and a variety of new business processes. We recognise the situation continues to evolve, and we will continue to learn and adapt our approach as developments occur. Our priority remains the safety, health, and wellbeing of our employees.

Since 2019, volunteers from all parts of the business have taken part in Mental Health First Aid training.



### Getting our Safety, Health and Environment management system into our people’s hands

In FY2021, we modernised and mobilised our integrated Safety, Health and Environment (SHE) management system to improve the experience for our people. The initiative has improved the user experience while interacting with our SHE management system, primarily in desktop environments. Getting tools into employees’ hands when they need them has boosted our ability to engage our workers at the most important times.

Therefore, in FY2022 we will be implementing a new technology platform for all safety-related activities for our people, replacing a number of legacy systems.

### SAFETY METRICS: DEFINITIONS

- SIF** **Serious Injury and Fatality** is a work-related actual incident or near miss with potential to result in a fatality, a life-threatening or life-altering injury or illness.
- TRIFR** **Total Recordable Injury Frequency Rate** is the number of instances of Lost Time Injuries, Medical Treatment Injuries, and Restricted Work Injuries sustained by employees and contractors per million hours worked.
- TRI** **Total Recordable Injuries** is the sum of Lost Time Injuries, Medical Treatment Injuries, and Restricted Work Injuries sustained by employees and contractors.
- RPS** **Rail Process Safety** is the cumulative number of Signals Passed at Danger (SPAD), derailments, and rollingstock-to-rollingstock collision incidents, per million train kilometres over a given recording period.



### Recording our safety performance

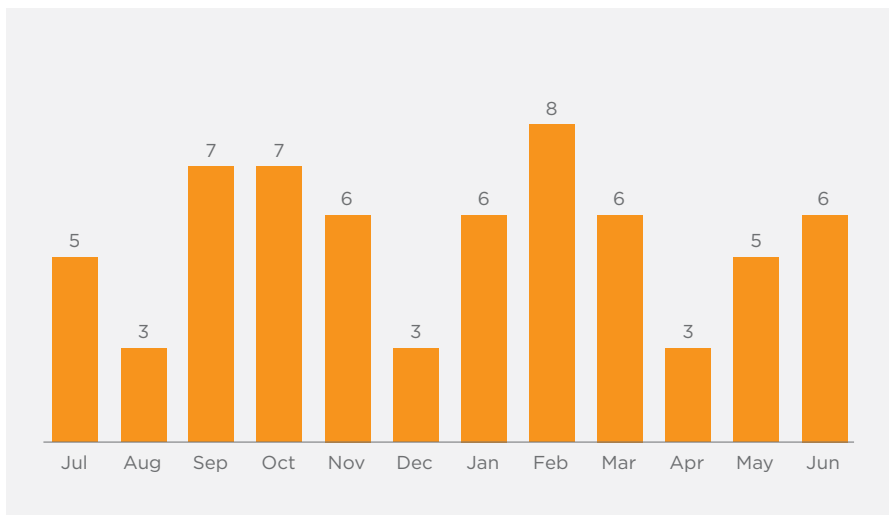
We record and investigate safety incidents to help us learn and improve. Our key operational safety metrics in FY2021 included:

- Serious Injury and Fatality (SIF) incidents, both actual SIF events and events with SIF potential
- Total Recordable Injury Frequency Rate (TRIFR)
- Rail Process Safety (RPS).

#### Serious Injury and Fatality (SIF)

To focus on managing what matters, we identify and learn from events that have the potential for SIF. The number of potential SIF incidents at Aurizon for FY2021 is shown in figure 12.

FIGURE 12 FY2021 POTENTIAL SERIOUS INJURY AND FATALITY (SIF) INCIDENTS



In February 2021, two of our employees sustained serious injuries in a level crossing collision with a road train in Kalgoorlie, WA.

These employees continue to recover from the incident. While the investigation identified that the actions of our employees did not contribute to the incident, we continue to work with industry bodies and internally to improve level crossing safety.



**Total Recordable Injury Frequency Rate (TRIFR)**

In FY2021, our TRIFR was 10.21 injuries per million hours worked, which was a deterioration of 3% when compared to FY2020 (see figure 13). While this result is disappointing, incident severity is continuing to reduce, with soft tissue injuries being the most common, and Lost Time Injury Frequency Rate (LTIFR) improving by 8% compared to FY2020. In FY2021, there were 101 TRIs, against 100 TRIs in FY2020. A reduction in the severity of employees' injuries was also seen from analysis of Workers' Compensation data. Actual injuries by body part are shown in figure 14. Injury prevention has been a key focus for FY2021 and will continue to be in FY2022, with our operational business units implementing a number of injury prevention initiatives, including:

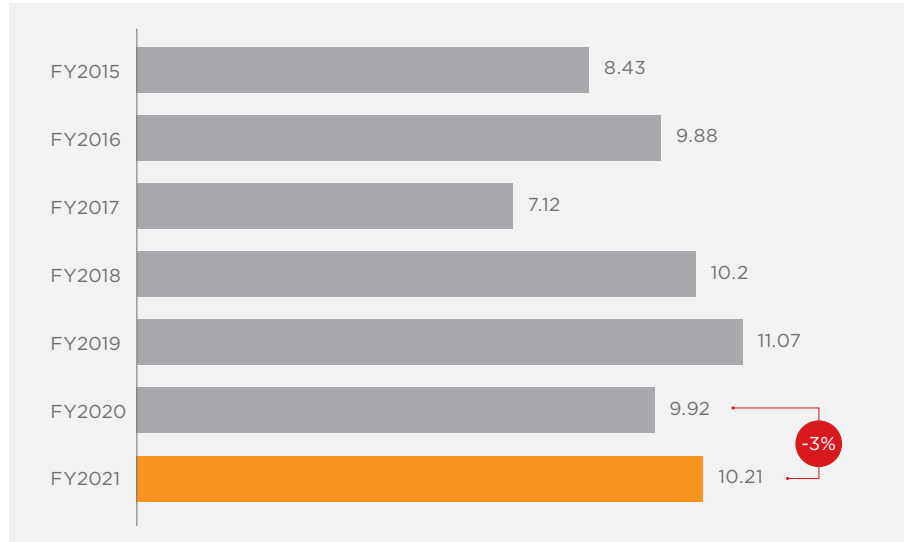
- using wearable technology and video analysis for risk assessment and employee education
- learning groups on manual handling techniques for train drivers
- educational sessions on prevention of injuries
- conducting Functional Capacity Assessments to ensure fitness for work.

In FY2022, we will be reviewing our injury management program holistically to improve our proactive and reactive injury management strategies, to address a continued occurrence of low-severity, high-frequency injuries.

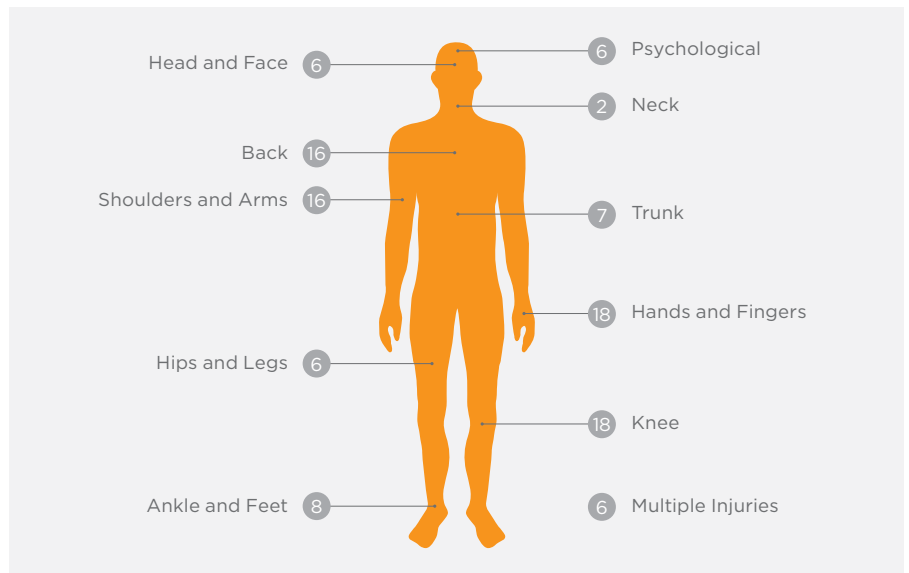
**Rail Process Safety (RPS)**

The metric for RPS, which measures operational safety, including derailments, signals passed at danger, and train-to-train collisions, deteriorated by 8%, at a total of 5.13 incidents per million train kilometres travelled (see figure 15). The significant contributor to RPS continues to be low-speed yard derailments where rollingstock has traversed derailing devices. While these incidents are undesirable, and we are working to eliminate them, they typically do not create SIF potential. In FY2021, we have focused on reducing yard safety incidents by addressing communications equipment and coverage issues, yard infrastructure quality, and increasing shunting capability by appointing shunt trainers in our more challenging yards.

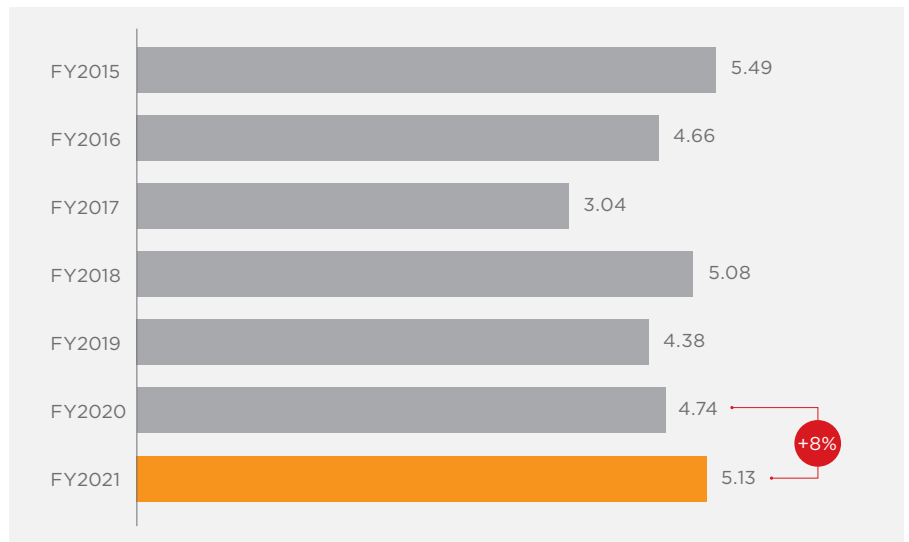
**FIGURE 13** TOTAL RECORDABLE INJURY FREQUENCY RATE (TRIFR)



**FIGURE 14** FY2021 TOTAL RECORDABLE INJURIES (TRI), BY BODY PART



**FIGURE 15** RAIL PROCESS SAFETY



## Keeping our communities safe

At Aurizon, our Safety goal is to protect ourselves, each other, and our communities. In FY2021, we continued to actively participate in industry-wide efforts to help reduce rail safety incidents, including through our participation in the Rail Industry Safety and Standards Board's Safety Critical Communications development group and Signals Passed at Danger working group. We also acknowledge and respect our responsibility to improve level crossing safety for everyone in the many communities in which we operate. In FY2021 we attended quarterly meetings of the Queensland Level Crossing Safety Group, which are organised and chaired by the Department of Transport and Main Roads (DTMR). DTMR's Safer Roads Sooner program is a key component of the Queensland Government's commitment to improving road safety through the implementation of high-benefit and cost-effective road engineering treatments that address known and potential crash locations on state-controlled roads. At these meetings, various road and rail safety initiatives are considered and developed.

## CASE STUDY: LEVEL CROSSING SAFETY AT ARDURAD ROAD

Since 2018, we have engaged with DTMR as part of their Safer Roads Sooner program on the need to improve a particular road-rail interface at Ardurad Road in the township of Blackwater in Central Queensland. We have been active in highlighting to DTMR the near misses and incidents that had occurred at this interface. DTMR has subsequently made the decision to invest in the road-rail interface at Ardurad Road, with the following two fundamental objectives:

- to signalise the intersection and reduce near misses and incidents between road vehicles and trains, and
- to extend the intersection distance from the level crossing to greater than 40m, to enable vehicles up to 40 metres in length to fit safely.

The project is now in progress, with an expected completion date in December 2021.

We fully support DTMR's current signalisation project because it will enable safer outcomes to be achieved. Once completed, we will continue to work with DTMR, monitor near misses and incidents, and consider any further actions required to improve both rail and road safety. We will provide the relevant updates to the Blackwater Community Reference Group, as the consideration of the options progresses.

It is critical that we continue to uphold the highest standards of safety, and that our employees and communities understand our unwavering commitment to safety. We look forward to continuing our engagement with the communities in which we operate to communicate our approach to level crossing safety.





# FUTURE OF COMMODITIES HAULED

Our business is linked to the demand for and supply of Australian commodities, almost entirely destined for export markets in Asia.

We draw upon scenario analysis to test market drivers and evaluate capital, fleet, and haulage opportunities.

FIGURE 16 AURIZON'S REVENUE BY COMMODITY GROUP (FY2021)<sup>23</sup>

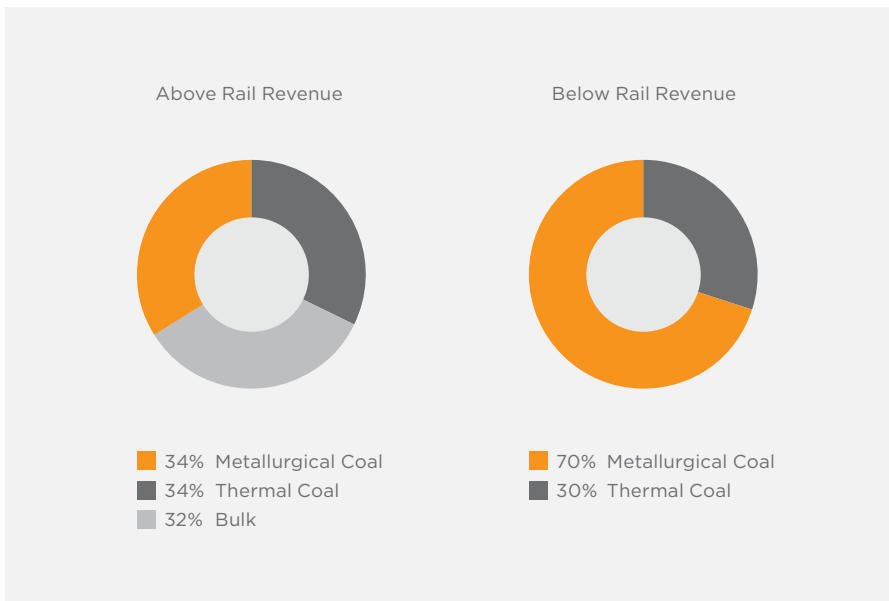
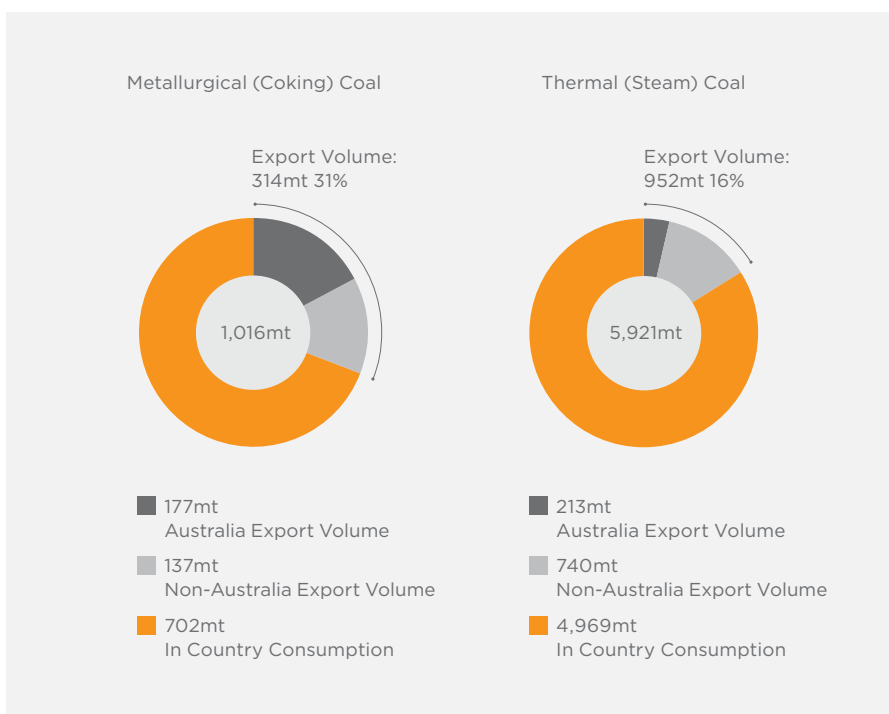


FIGURE 17 GLOBAL COAL PRODUCTION AND TRADE (2020)<sup>24</sup>



## Commodities we haul

Around half of our earnings and assets belong to the below rail Network business, which is our regulated infrastructure in Central Queensland. The Central Queensland Coal Network (CQCEN) is critical infrastructure that supports around 90% of Australian metallurgical coal export volume.

The other half of the group is above rail, with our Coal and Bulk businesses operating across Australia. Outside of metallurgical and thermal coal, we haul a range of bulk commodities, such as iron ore, bauxite, alumina, base metals, grain, livestock, and fertiliser-related products. The commodity split between our above and below rail haulage volumes are shown in figure 16.

## Coal

We play a significant role in Australia's coal supply chain, with approximately two-thirds of Australia's coal exports using our below rail Network and/or carried by our above rail business.

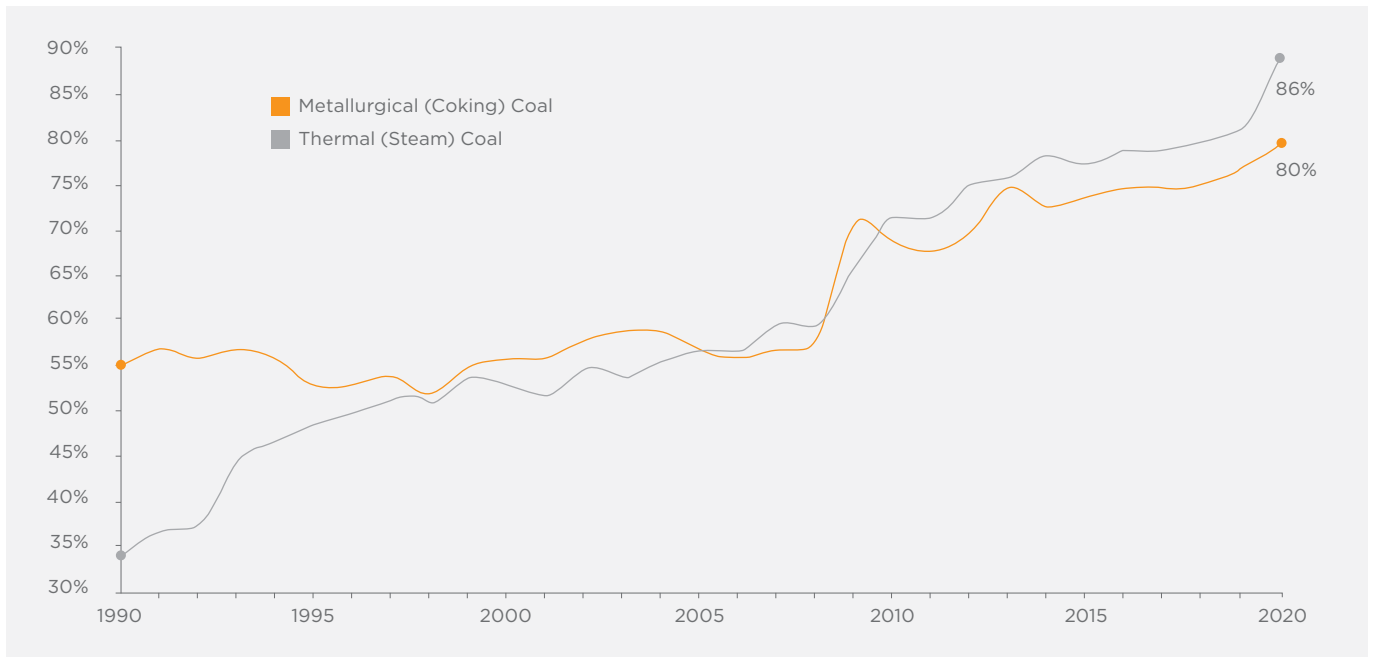
Given the quality and the cost competitiveness of Australian coal, the opportunity remains for Australia – and therefore, our business and our customers – to continue supplying the coal requirements of Asia.

Rather than global consumption, demand for Australian coal is dependent on seaborne-traded markets (see figure 17), which are increasingly concentrated in Asia (see figure 18). Although metallurgical and thermal coal are similar in terms of the method of extraction and preparation, the differing properties of the two coal types mean that there are distinct markets and, therefore, drivers of future demand.

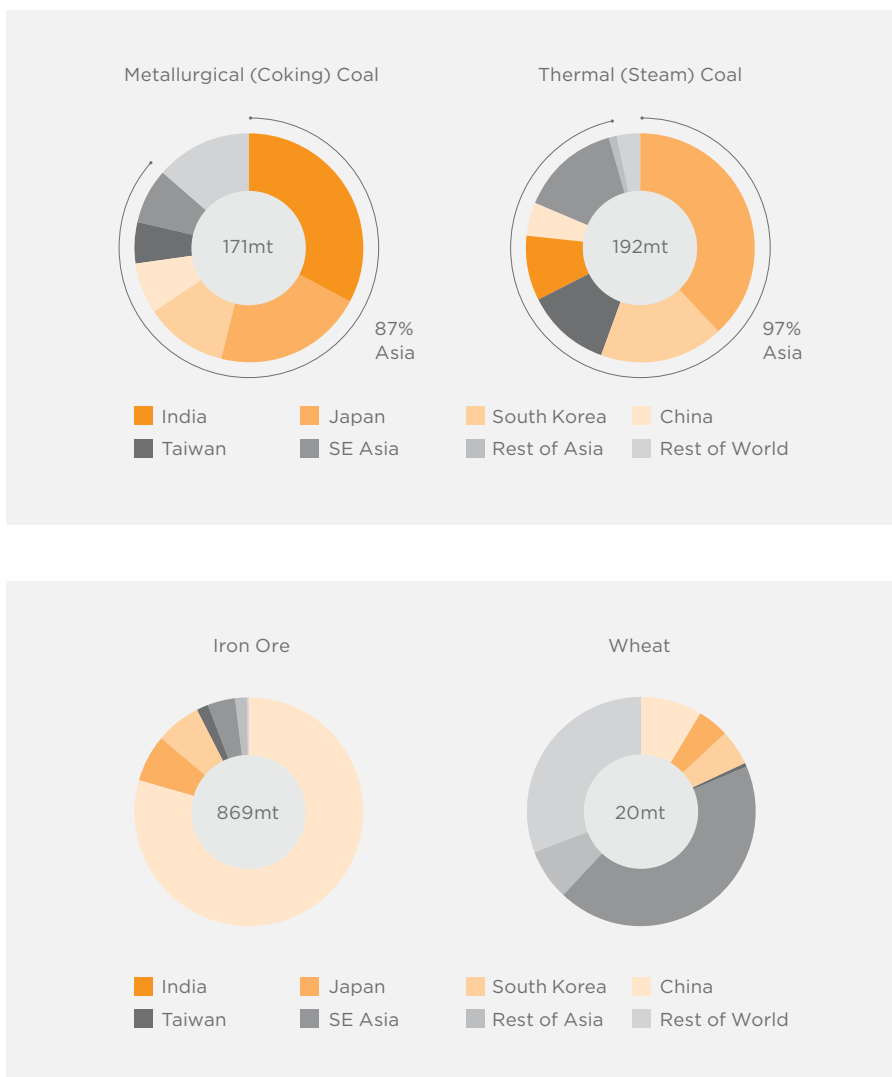
For **metallurgical coal**, steel-intensive growth in India is expected to be the single largest driver of seaborne trade demand over the coming decades. Crude steel production in India has grown at a compound annual growth rate (CAGR) of 3.8% over the past decade<sup>25</sup>. Steel production using the blast furnace-basic oxygen furnace (BF-BOF), method of production has almost doubled over the same period and holds a 45% share of production<sup>26</sup>. Although now the world's second largest steel producer, measured by steel use per capita (behind China), India is considered to be at an early stage of development. In 2019, India's apparent steel use per capita was 64 kg against a global average of 228 kg<sup>27</sup>. Faced with a deficiency of high-



**FIGURE 18 ASIA: PROPORTION OF GLOBAL COAL IMPORT VOLUME (1990-2020)<sup>28</sup>**



**FIGURE 19 EXPORT DESTINATIONS FOR SELECTED AUSTRALIAN COMMODITIES (FY2021)<sup>29</sup>**



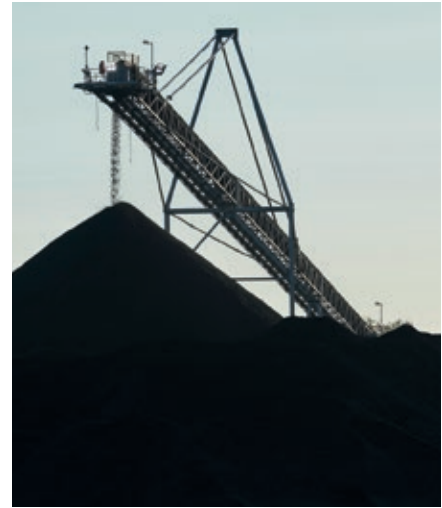
quality metallurgical coal, India turns to the seaborne market (and primarily Australia) for over 90% of demand<sup>30</sup>. India is already Australia’s largest metallurgical coal export nation, with export volume of 56 million tonnes in FY2021 representing one-third of total trade<sup>31</sup>.

For **thermal coal**, it is recognised that global consumption will reduce in the decades ahead. However, rather than global consumption, the demand for Australian coal is dependent on the traded market that is less than one-fifth of global consumption (see figure 17) and is increasingly dominated by Asian trade (see figure 19). Against an expected retirement age of 40 years<sup>32</sup>, the average age of coal-fired generation capacity in Asia is just 14 years<sup>33</sup>. Beyond existing capacity, there is currently 120 GW of power plant capacity considered under construction in Asia<sup>34</sup>. In FY2021, 97% of Australian thermal coal export volume was destined for Asia<sup>35</sup>.

## COAL TYPES

**Metallurgical coal** (or coking coal) is primarily used to produce steel, an integral link with economic development driving construction of urban infrastructure. Crude steel production occurs primarily via the BF-BOF, or integrated route, which accounted for 1.4 billion tonnes of crude steel production (73% of total global crude steel production) in 2020<sup>36</sup>. In this process, metallurgical coal currently has no economically viable substitute. Metallurgical coal is generally subdivided into hard coking coal, semi-hard coking coal, semi-soft coking coal, and pulverised coal injection (PCI). It takes about three-quarters of a tonne of metallurgical coal to produce one tonne of crude steel<sup>37</sup>.

**Thermal coal** (or steam coal) is primarily used as a heat source for energy generation, holding a 37% share of global generation in 2019<sup>38</sup>. Around 300,000 tonnes of coal equivalent are required per terawatt hour of generation<sup>39</sup>. Beyond energy generation, thermal coal is also a vital raw material in chemical and construction industries. Coal is used as a source of energy in cement production, where about 200 kg of coal is needed to produce one tonne of cement<sup>40</sup>.



### Bulk

The Bulk business contributes a third of our above rail revenue from the haulage of a range of bulk commodities and supply chain services to customers, including ballast cleaning, hook-and-pull, and port services.

Historically supported by more traditional drivers of bulk commodity demand such as infrastructure development, opportunities are now emerging in new economy markets and with increasing global food consumption.

New economy markets are driving the global energy transition, and require commodities used in the manufacture of wind turbines, battery development, electric cars, solar panels, and other high-tech applications. Key commodities include cobalt, copper, lithium, nickel, and rare earth elements.

In addition, increasing global food consumption per capita supports the export of agricultural products such as grain, but also associated bulk products, such as phosphate and potash, used as a fertiliser.

## BULK COMMODITIES

### Growing commodity markets of the future

**Copper, nickel, cobalt, and lithium:** The use of copper and nickel is currently supported by demand from the automotive, technology, and infrastructure sectors. The increased uptake of electric vehicles (EVs) is expected to expand the use of these commodities in addition to cobalt and lithium. Australia is well positioned to supply this emerging mineral demand, ranking in the top three countries globally for the largest ore reserves in copper, nickel, cobalt, and lithium<sup>41</sup>.

**Rare earth elements:** Rare earth elements, such as praseodymium (Pr) and neodymium (Nd), are growing in importance in many domestic, medical, industrial, and strategic applications. Rare earth elements can be used in applications including EVs, wind turbines, smartphones and computer components. Australia is ranked sixth in the world for rare earth resources, and fourth in production<sup>42</sup>.

### Infrastructure development

**Iron ore:** Iron ore is a bulk commodity that is key to the production of steel. Steel is largely used within the construction industry, along with the machinery and automotive sectors. China represents over two-thirds of global trade<sup>43</sup>. Australia is the largest exporter of iron ore<sup>44</sup> and is also the lowest cost (on average) export nation on a delivered basis to China<sup>45</sup>.

**Aluminium and bauxite:** Due to its light weight, aluminium is ideal for transport applications. Bauxite is the primary mineral for alumina and ultimately aluminium production. Australia is the world's largest producer<sup>46</sup> of bauxite and the second largest exporter (behind Guinea)<sup>47</sup>.

### Food consumption

The United Nations estimates that the world population will increase from 7.7 billion in 2019, to reach 9.7 billion by 2050<sup>48</sup>. Food consumption is expected to increase as a result of both this absolute growth in population and also the impact of growing income leading to more calorie-intensive diets.

**Grains:** On average, Australia produced 37 million tonnes of grains per annum over the past decade with around 65% of this volume exported<sup>49</sup>. Wheat is the dominant grain with average annual production of 24 million tonnes per annum over the same period, with around 70% exported representing around 10% of global trade<sup>50</sup>. Western Australia is the largest exporting state representing around 40% of total Australian export volume<sup>51</sup>.

**Fertilisers:** In response to limited growth in arable land, global fertiliser consumption (on a kilograms per hectare of arable land basis) has increased by 32% over the past two decades<sup>52</sup>, driving future opportunities for phosphate and potash deposit development in Australia.



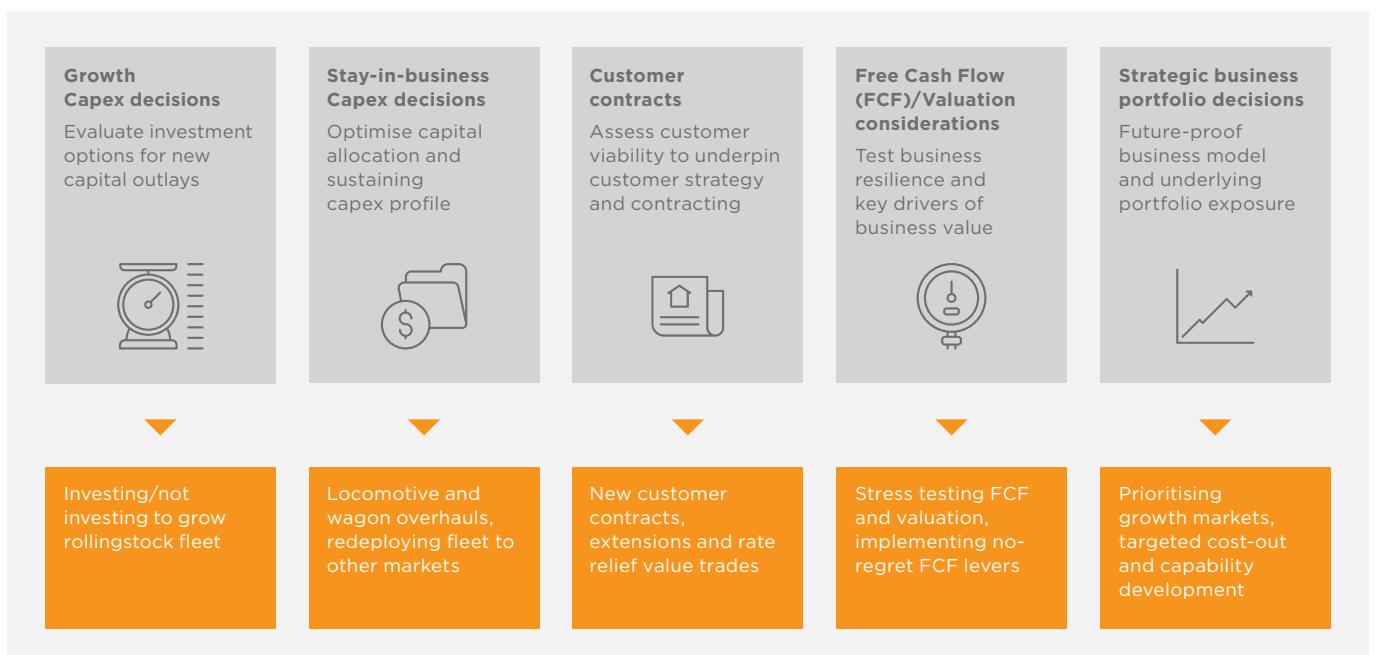
### Enterprise strategic planning

As part of our Strategy in Uncertainty framework, we undertake scenario analysis to enable the business to evaluate capital, fleet, and haulage opportunities, and importantly, sustainability in the context of climate change risks (see figure 20). A key component of this analysis is understanding the drivers of demand and supply for the commodities we haul.

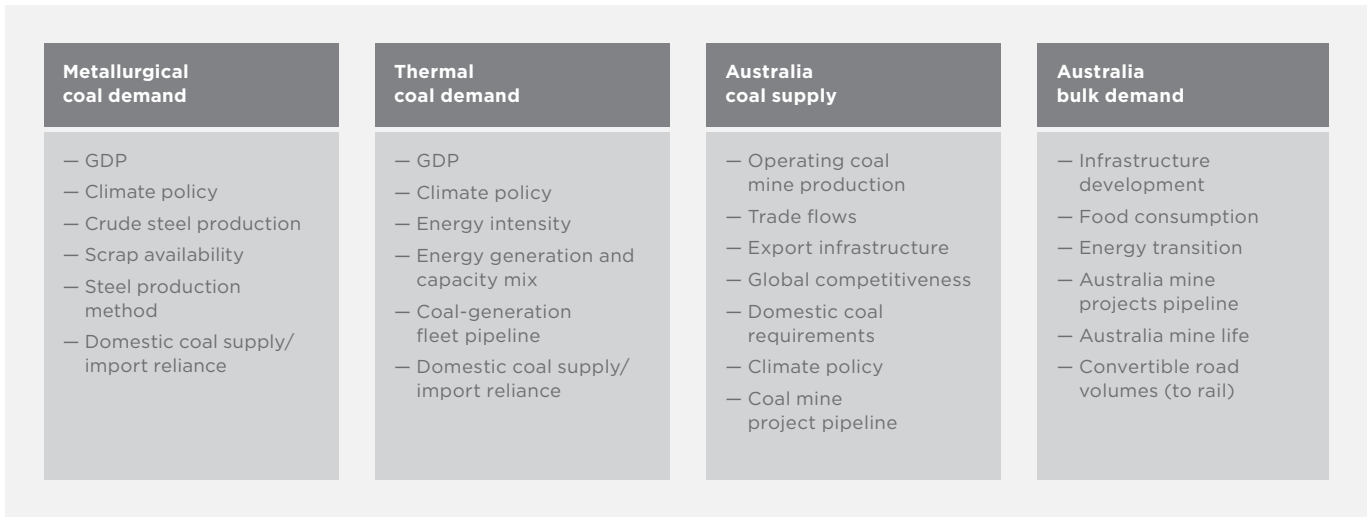
This process considers short-term impacts as well as risks that emerge over the medium to long term, where the timing and magnitude is less certain. In addition to the fundamental drivers of Australian coal and bulk commodities (see figure 21), we also consider more subjective factors, such as government policy and trade considerations.

Our management team and Board are directly engaged in identifying the scenarios for consideration, as well as developing plans and initiatives to position the organisation to mitigate risks and take advantage of opportunities. This strategic process is repeated every six months to ensure that our strategic priorities are continually updated to proactively respond to emerging market dynamics and opportunities.

FIGURE 20 WHERE WE USE STRATEGY IN UNCERTAINTY SCENARIOS



**FIGURE 21 STRATEGY IN UNCERTAINTY KEY DRIVERS**



**Application of scenarios**

The coal export volume scenarios developed in FY2021 are shown in figure 22. Focusing on the first 10 years, under all but one scenario, there is positive growth in Australian coal exports to 2030. However, there is naturally greater divergence in the second decade (2031-40) – export volumes fall under four of six scenarios over that 10-year period.

**External scenarios**

In addition to developing our own long-term outlook for seaborne coal demand, we consider scenarios developed by external organisations, such as the International Energy Agency (IEA), Bloomberg New Energy Finance, Wood Mackenzie, and the Intergovernmental Panel on Climate Change (IPCC).

One recommended disclosure from the Task Force on Climate-Related Financial Disclosures (TCFD) is to consider different climate-related scenarios, including a 2°C or lower scenario.

Although the Task Force does not recommend the use of a specific scenario, we continue to draw upon the best known and most widely used scenarios produced by the IEA in the annual release of the World Energy Outlook. This is used for comparison with our internal scenarios. In addition to the (central) Stated Policies Scenario<sup>53</sup>, the IEA also publishes the Sustainable Development Scenario: “a surge in clean energy policies and investment puts the energy system on track to achieve sustainable energy objectives in full, including the Paris

Agreement, energy access and air quality goals”<sup>54</sup>.

In the Stated Policies Scenario, the IEA projects global coal trade to reduce by 13% in 2040 compared with 2019:

- For global metallurgical coal trade, the volume projection reduces by 4% in 2040 compared with 2019, representing a compound annual growth rate of -0.2% across the period.
- For global thermal coal trade, the volume projection reduces by 17% in 2040 compared with 2019, representing a compound annual growth rate of -0.9% across the period.
- Despite reductions in global trade, Australia’s export volume is projected to increase by 5% in 2040 compared with 2019, representing a compound annual growth rate of 0.2% across this period. The IEA projects Australia’s market share (per million tonne coal equivalent) to increase from 33% in 2019 to 40% in 2040.

In the Sustainable Development Scenario, the IEA projects global coal trade to reduce by 58% in 2040 compared with 2019, representing a compound annual growth rate of -4.1% across the period. Based on our modelling, Australian export volume would reduce by 40% in 2040 compared to 2019, representing a compound annual growth rate of -2.4%<sup>57</sup>. This scenario would align between our Carbon-constrained Asia and Rapid Decarbonisation scenario.

However, it is recognised that there is no single pathway in reaching a decarbonised future. For example, the IPCC produced a report in 2018 projecting 90 pathways with at least a 50% chance of limiting warming to 1.5°C in 2100, each with different implications for global coal consumption<sup>58</sup>.

In addition, in May 2021, the IEA published a Net-Zero Emissions by 2050 report<sup>59</sup>. Included in this scenario was a global phase-out of unabated coal power plants by 2040, with the remaining coal plants still in use being retrofitted with technology such as carbon capture, utilisation, and storage (CCUS)<sup>60</sup>. The IEA notes that “the steel industry remains one of the last sectors using significant amounts of coal in 2050, primarily due to its importance as a chemical reduction agent, albeit mostly in conjunction with CCUS. The technology has the potential to facilitate the emissions reductions of existing assets within the harder-to-abate industry sectors, extending the useful life of younger facilities and reducing stranded assets under a 1.5°C scenario”<sup>61</sup>.

The following pages describe the indicators we use to monitor the future of metallurgical coal, thermal coal, and bulk commodities.



FIGURE 22 STRATEGY IN UNCERTAINTY COAL VOLUME SCENARIOS<sup>56</sup>



## INVESTOR DAY

In June 2021, we held an Investor Day in Newcastle that included additional information about our Strategy in Uncertainty framework. As part of this presentation, we modelled free cash flow under the six scenarios, and highlighted the levers available to preserve free cash flow under volume downside scenarios:

- operating expenditure efficiency
- capital expenditure optimisation
- incremental free cash flow via fleet cascade opportunities
- asset disposal.

The flexibility of our fleet capacity enables our business to respond to shifting market dynamics, and supports our focus on capital productivity and free cash flow. Modelling of our scenarios at a detailed coal type, mine and rail corridor level enables us to stress test key decisions. For example, in a lower thermal coal demand scenario, we have the ability to shift standard gauge fleet units from our thermal coal operations in NSW across to our Bulk business in WA, avoiding an additional capital spend<sup>55</sup>. The modelled cash flow scenarios indicated resilience across the business over the 20-year period and identified the opportunity for the Bulk business to target new markets and expand across supply chains, including port and terminal services. The Investor Day presentation, transcript and webcast are available on the Aurizon website.

The flexibility of our fleet capacity enables our business to respond to shifting market dynamics.



**Future of Bulk commodities**

**Transition to clean energy technologies driving mineral demand**

Figure 23 shows the International Energy Agency’s (IEA) long-term projection for mineral demand from clean energy technologies. By 2040, total mineral demand from clean energy technologies is projected to double in the Stated Policies Scenario, and quadruple in the Sustainable Development Scenario from current demand (2020). Minerals include key commodities of cobalt, copper, lithium, nickel, and rare earth elements.

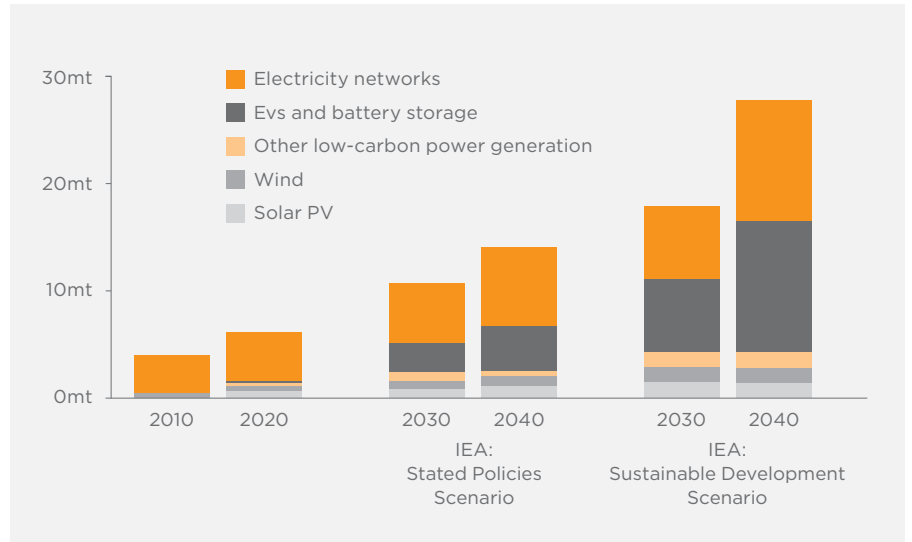
**Increasing global food consumption per capita, led by developing Asia**

Food consumption per capita is increasing, with rising wealth in developing countries (particularly in Asia) leading to more calorie-intensive diets, and supporting the demand for agricultural and livestock products (see figure 24). At the same time, arable land is limited, requiring fertilisers to increase crop yields, resulting in greater demand for fertilisers containing phosphorus and potassium.

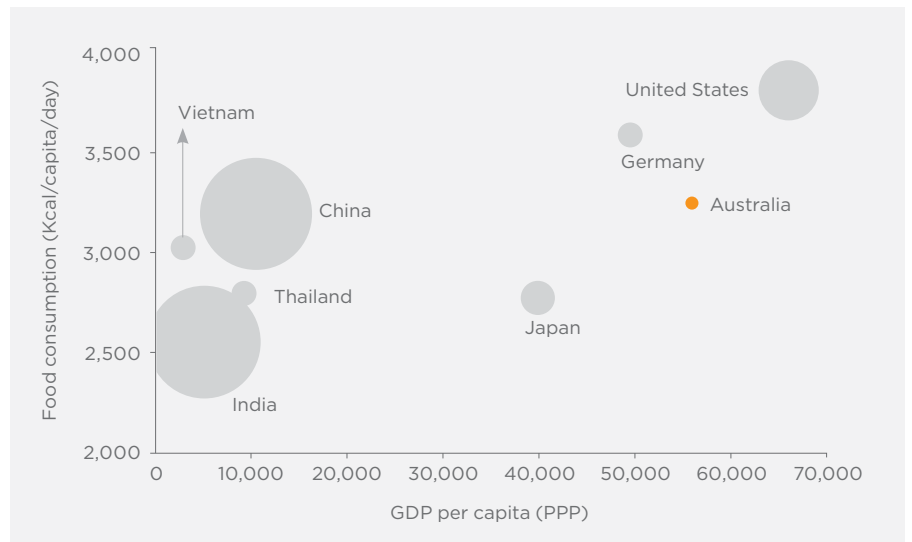
**Australian commodity export volume growth**

In addition to projected export volume growth across key Australian commodities over the next six years, the Australian Government (Office of Chief Economist) holds a list of 181 major projects<sup>62</sup> (resource commodities), of which 89 are at the feasibility stage and 33 committed, supporting Australian supply growth in the longer term (see figure 25).

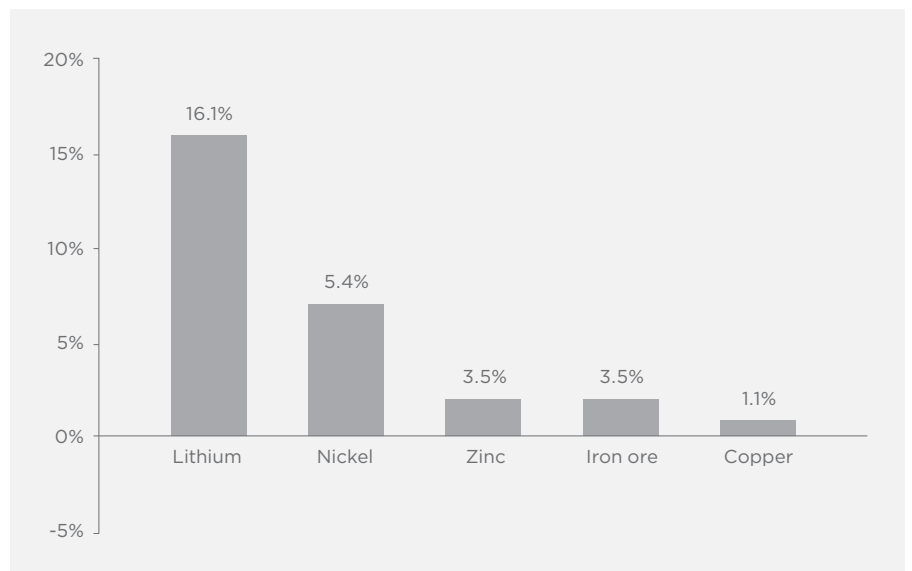
**FIGURE 23** TOTAL MINERAL DEMAND FROM CLEAN ENERGY TECHNOLOGIES<sup>63</sup>

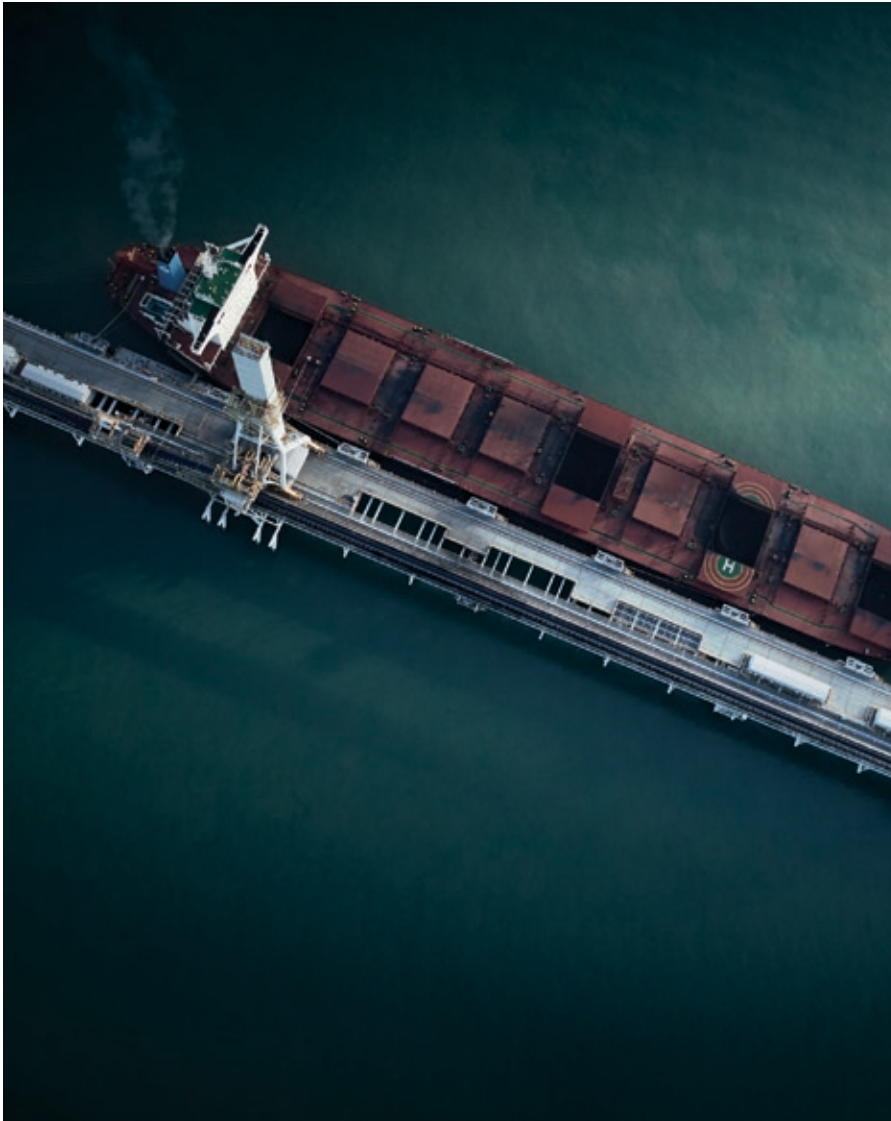


**FIGURE 24** FOOD CONSUMPTION (CALORIE CONSUMPTION PER CAPITA)<sup>64</sup>



**FIGURE 25** AUSTRALIA SUPPLY GROWTH (CAGR 2020-2026), SELECTED COMMODITIES<sup>65</sup>





**The future of seaborne metallurgical coal**

**Increasing demand for steel in Asia**

Driven by urbanisation and associated infrastructure development, the opportunity remains for India and South-East Asian nations to increase steel usage, as measured per capita (see figure 26).

**India**

Crude steel production has grown by 6.8% per annum in India over the past two decades, driving demand for metallurgical coal (see figure 27).

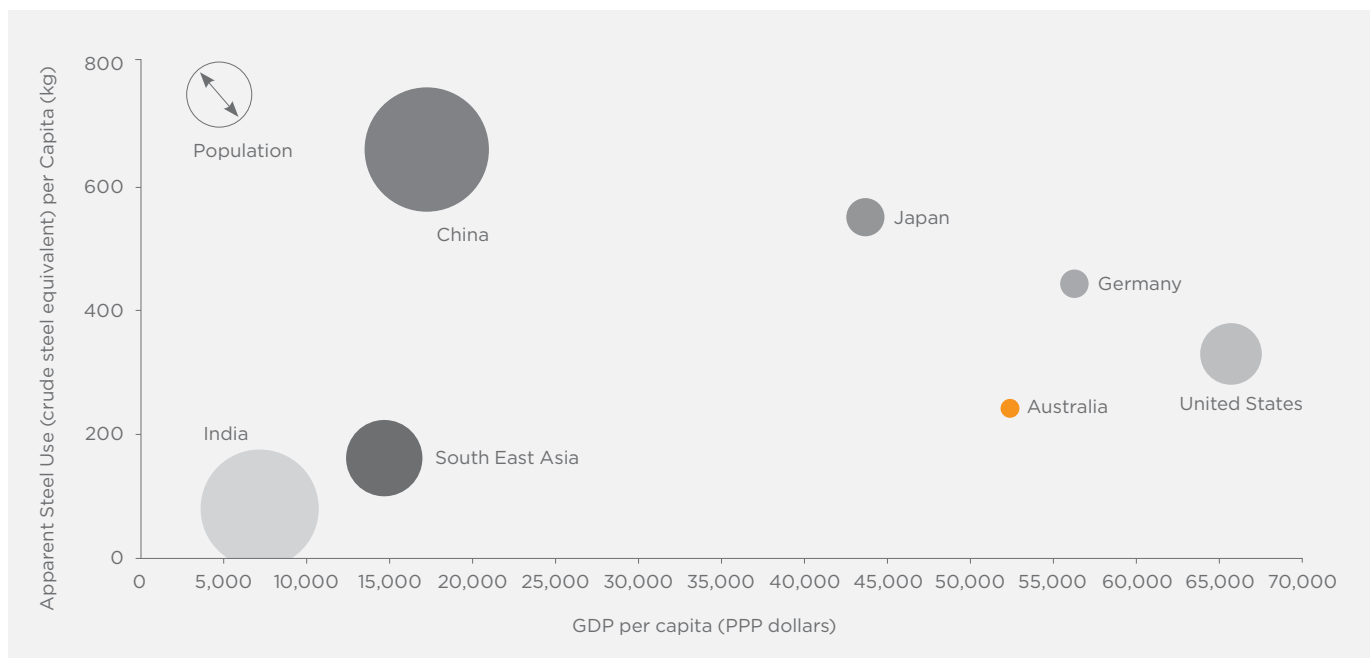
With the exception of COVID-impacted 2020, crude steel production has grown sequentially each year over this period. Faced with a deficiency of high-quality metallurgical coal, India turns to the seaborne market (and primarily Australia) for over 90% of demand<sup>66</sup>.

**Australia's export infrastructure advantage**

As shown in figure 28, Australia has the lowest average transportation and port costs compared to other major seaborne metallurgical coal export nations.

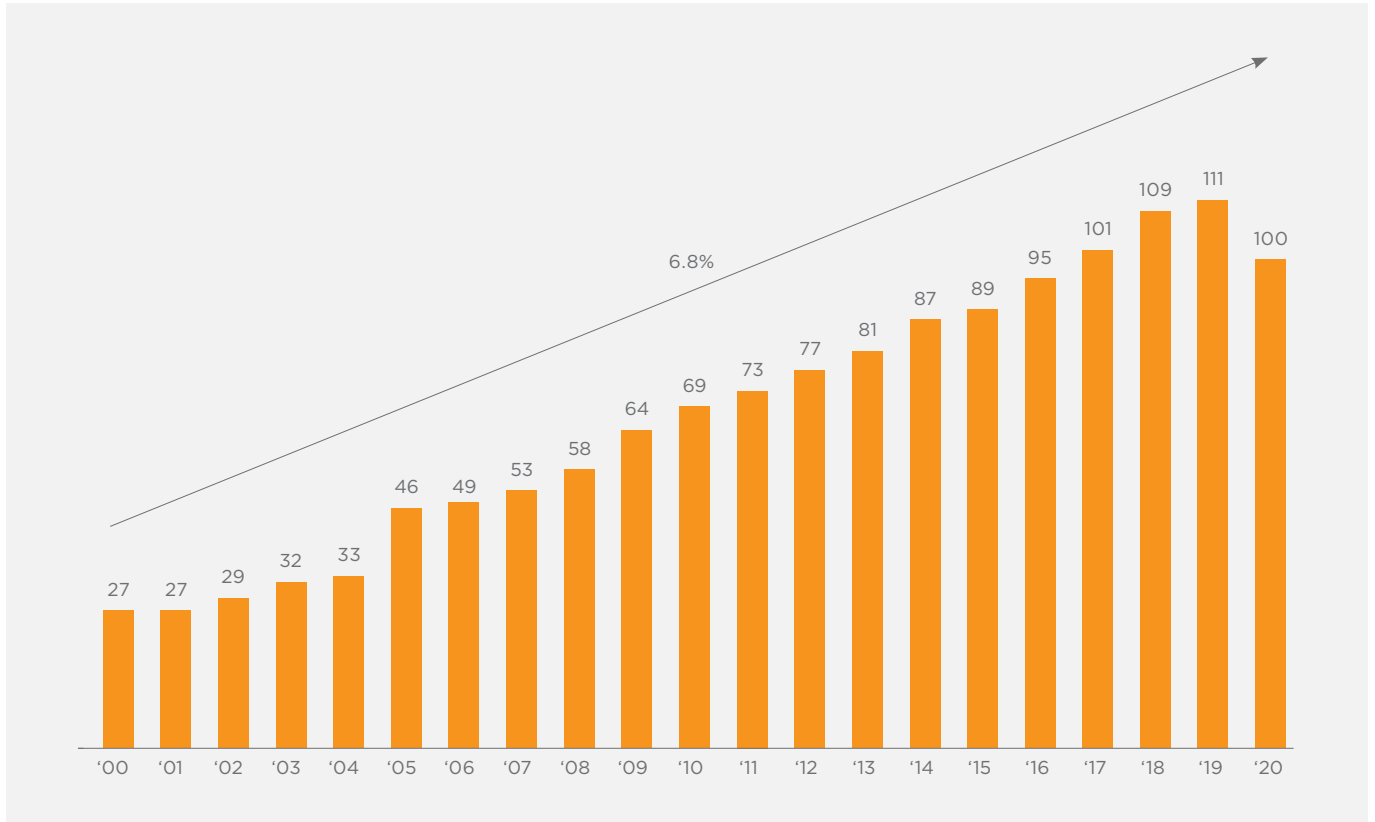
This advantage is underpinned by the shorter distances between mines and ports, as well as significant port and rail capacity to exclusively service coal exports. Australia's longest coal haulage from a mine to the closest export terminal is around 450 kilometres (km). This compares metallurgical coal

**FIGURE 26** APPARENT STEEL USE (CRUDE STEEL EQUIVALENT) PER CAPITA | GDP PER CAPITA: 2019<sup>67</sup>





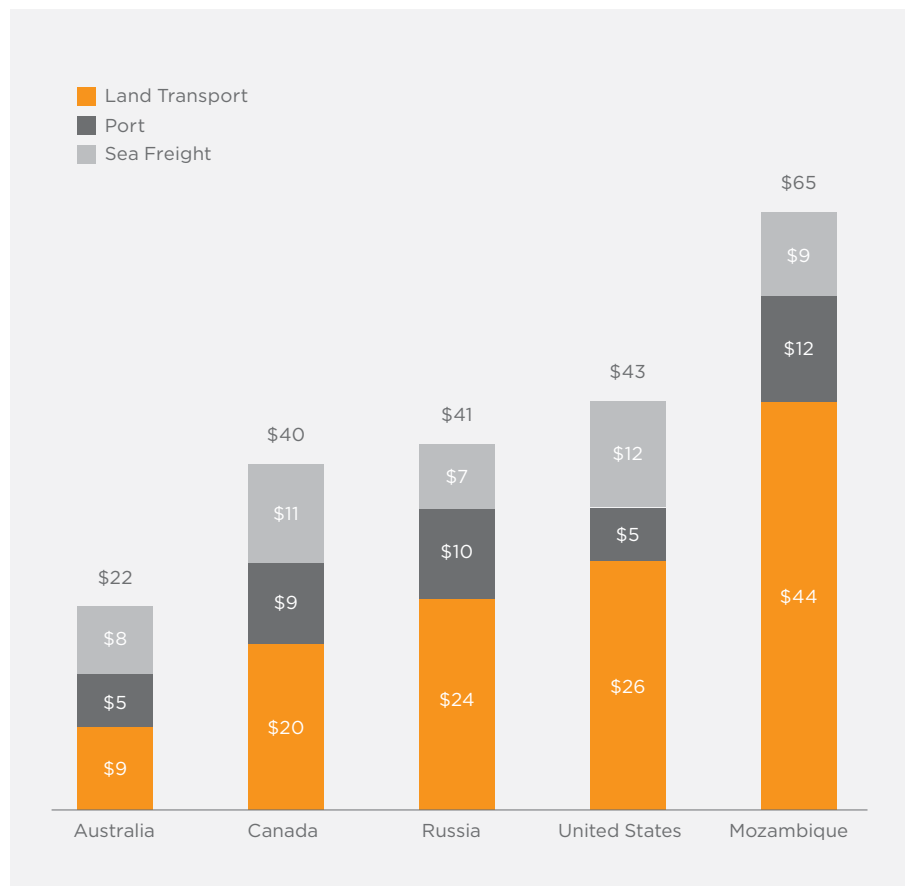
**FIGURE 27** INDIA CRUDE STEEL PRODUCTION (MILLION TONNES)<sup>68</sup>



supplier Russia, where the average haulage to reach major seaborne export terminals is between 4,750 and 6,000 km from its main production centre in the Kuznetsk Basin (Kuzbass)<sup>69</sup>.

The increased haulage contributes to both higher haulage costs and greater transport emissions.

**FIGURE 28** LAND TRANSPORT, PORT, AND SEA FREIGHT COSTS FROM MAJOR METALLURGICAL COAL EXPORT COUNTRIES TO INDIA (USD/T)<sup>70</sup>



## ALTERNATIVES TO METALLURGICAL COAL IN STEEL PRODUCTION

There are two primary methods for producing steel:

1. The BF-BOF method draws upon metallurgical coal and commands 73% of global crude steel production<sup>71</sup>. This share is four percentage points higher than a decade earlier (2010: 69%), and is 14 percentage points higher than at the start of the century (2001: 58%)<sup>72</sup>.
2. The electric arc furnace (EAF) method draws upon direct reduced iron (DRI) or recycled (scrap) steel, and uses less (or nil) metallurgical coal. The method holds a 26% share of global crude steel production<sup>73</sup>.

Globally, steel production based on the EAF method using recycled steel is expected to increase share in future decades but is limited by the availability of scrap material. Of the total global steel production in the last 120 years, over a quarter has been produced within the last decade<sup>74</sup>, and the average life for steel products is approximately 40 years<sup>75</sup>. Considered a long-term alternative, green hydrogen-based steel production, either as an alternative injection material to PCI<sup>76</sup> or as a reductant to produce DRI, is not yet operating on a commercial scale. In addition to supply of low-cost green hydrogen, there are more challenges related to the supply of high-quality iron ore, electrolyser capacity, and associated hydrogen distribution infrastructure. Even if overcome, it is anticipated that the incentive will remain for nations in Asia to continue to run their respective young fleet of blast furnace capacity through to end of the typical lifetime rather than retire capacity early to invest in alternative production. To produce two million tonnes of hydrogen-based steel, McKinsey & Company estimates<sup>77</sup> that 144,000 tonnes of green hydrogen is required, combined with 900 MW of electrolysis capacity, which is three times the capacity of the single largest plant currently under consideration in Europe<sup>78</sup>. Bloomberg NEF<sup>79</sup> projects that hydrogen-based steel production could be cost competitive (in Europe) from 2030 in a scenario where the cost of renewable hydrogen falls below US\$2.20/kg and:

- the coking coal price is US\$310/t with no carbon price, or
- the coking coal price is US\$60/t and a carbon price of US\$86/tCO<sub>2</sub>.

The impact of the above indicators, and other factors that may emerge, on the uptake of alternative methods of steel production, are uncertain. Consequently, there is a risk (both upside and downside) to metallurgical coal demand. For further information about this risk, see Table 3: Response to Climate-Related Risks.

## Future of seaborne thermal coal

### Asian current operating fleet

While renewables and other clean energy sources will undoubtedly grow in significance, the age of the Asian coal-fired energy generation fleet provides insight into the continuing demand from operating assets.

As noted in figure 29, compared with a typical economic life of 40 years<sup>80</sup>, the average age of operating coal-fired generation capacity across the largest thermal coal import nations is relatively young.

### Continued reliance on coal-fired generation in Asia

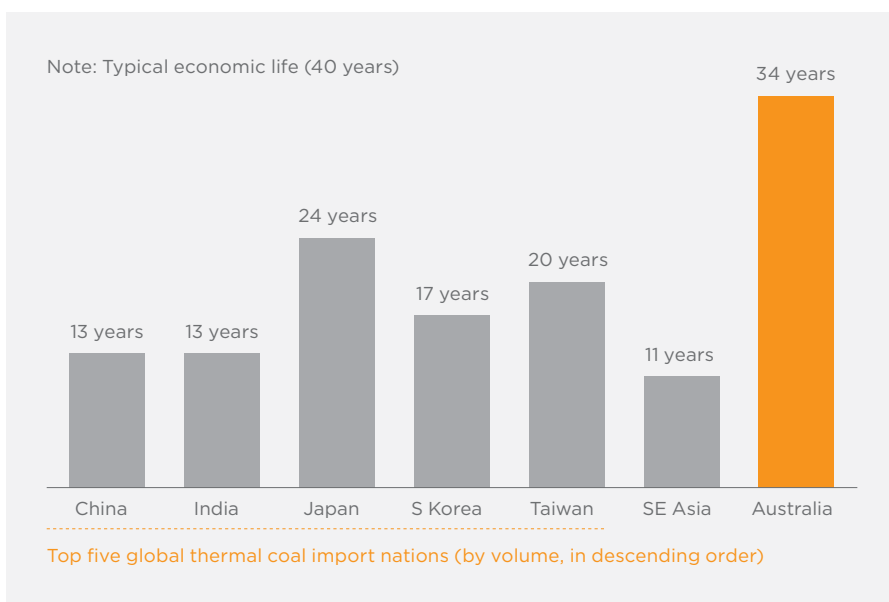
Although it is recognised that thermal coal-fired power generation will reduce as a percentage in the global energy mix, thermal coal generation in Asia is likely to be more resilient because it is driven by a relatively young existing coal-fired generation fleet and new capacity under development (see figure 30).

### Importance of high-quality coal

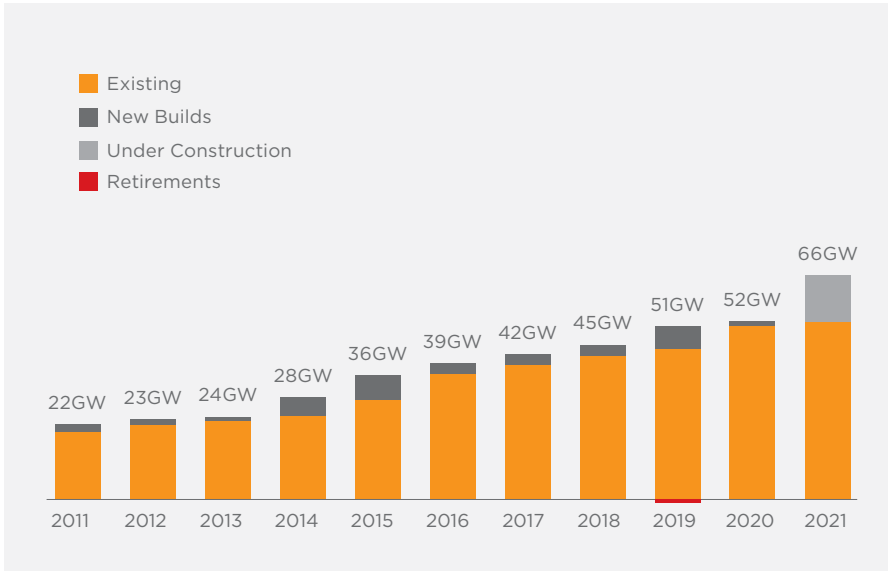
Higher energy and relatively low ash content of Australian coals enables less coal to be burnt per kilowatt hour (kWh) of power station output, which reduces CO<sub>2</sub> emissions in comparison to lower quality coals (see figure 31).

Beyond coal quality, the IEA notes that out of the 10 largest coal-producing countries, Australia had the second lowest emissions intensity regarding the extraction and transportation of coal. This is less than half of Russia's emissions intensity, and about a third lower than the United States<sup>82</sup>.

FIGURE 29 AVERAGE AGE OF COAL-FIRED ELECTRICITY CAPACITY<sup>81</sup>

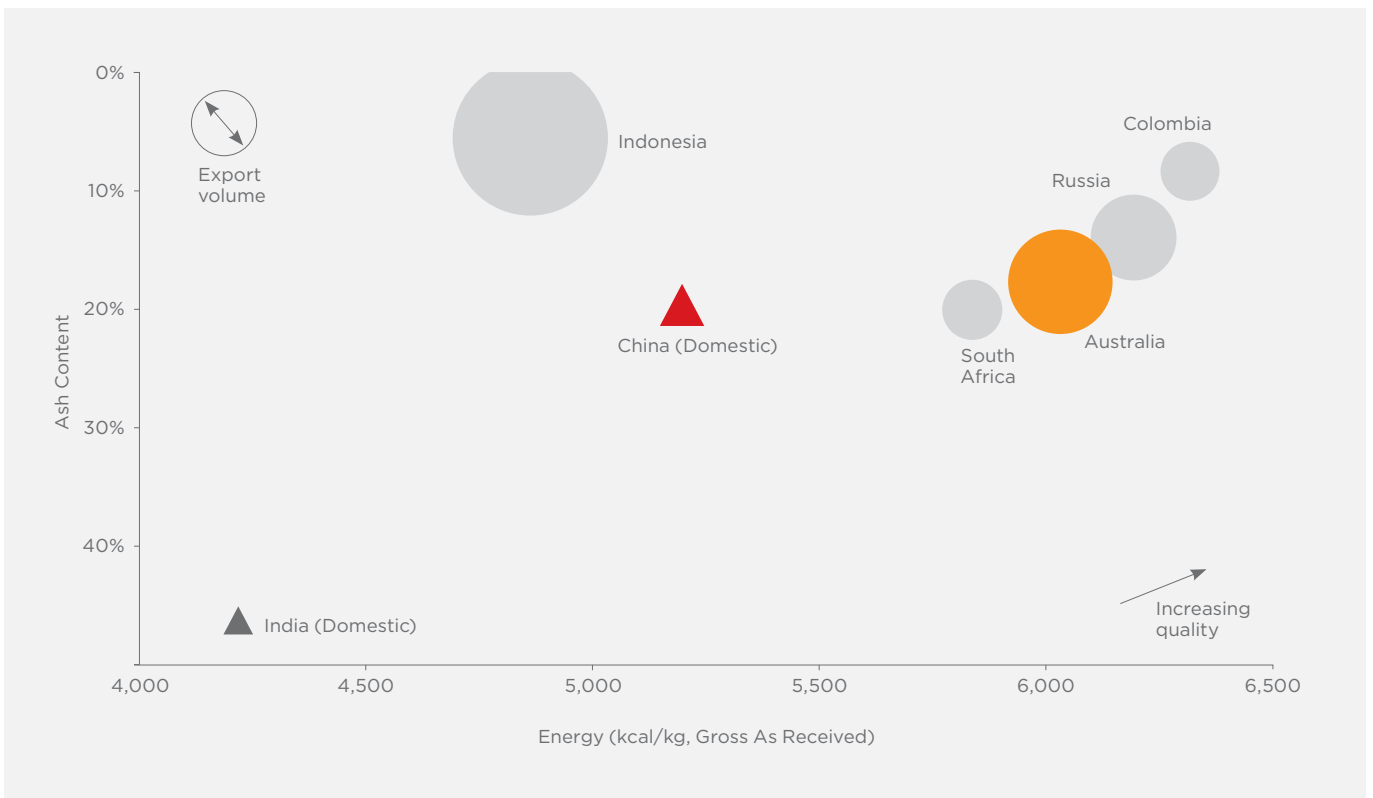


**FIGURE 30** SOUTH EAST ASIA (EX-INDONESIA) COAL ELECTRICITY CAPACITY (GW)<sup>83</sup>



While renewables and other clean energy sources will undoubtedly grow in significance, the age of the Asian coal-fired energy generation fleet provides insight into the continuing demand from operating assets.

**FIGURE 31** THERMAL COAL ENERGY AND ASH CONTENT<sup>84</sup>



23 Above Rail Revenue excludes track access. Coal revenue by coal type for both Above Rail and Below Rail based on estimated volume split.  
 24 International Energy Agency, *Coal Information* (July 2021). Production includes primary extraction and recovered product from slurries, middlings and coal dust. Thermal (Steam) Coal includes all anthracite and bituminous coals not considered coking coal, and also includes sub-bituminous coal. In Country Consumption is production less export volume. No energy adjustment applied. Trade is export volume, and includes both seaborne and land-borne markets. Coking (Metallurgical) coal seaborne market was 88% of total trade in 2019, and Thermal (Steam) coal seaborne market was 94% of total trade in 2019 (International Energy Agency, *Coal*, 2020). Due to rounding, the sum of components may not equal the corresponding total.  
 25 World Steel Association.  
 26 World Steel Association.  
 27 World Steel Association, *World Steel in Figures (2021)*.  
 28 International Energy Agency *Coal Information* (July 2021). Thermal (Steam) Coal includes all anthracite and bituminous coals not considered coking coal, and also includes sub-bituminous coal.  
 29 Australian Bureau of Statistics.  
 30 India Ministry of Coal, *Coal Directory of India (2019-20)*. Domestic washed coal (only) included in calculation.

- 31 Australian Bureau of Statistics.
- 32 International Energy Agency, *World Energy Investment 2018*.
- 33 S&P Global Market Intelligence, World Electric Power Plants Database (March 2021) as at 2021, capacity weighted.
- 34 S&P Global Market Intelligence, World Electric Power Plants Database (March 2021).
- 35 Australian Bureau of Statistics.
- 36 World Steel Association, *World Steel in Figures 2021*.
- 37 World Steel Association, *Steel and Raw Materials* (Fact Sheet).
- 38 International Energy Agency, *World Energy Outlook 2020*.
- 39 Based on Japan in 2019, International Energy Agency, *World Energy Outlook 2020*.
- 40 World Coal Association, *Basic Coal Facts*.
- 41 Geoscience Australia, *Australia's Identified Mineral Resources 2020*
- 42 Geoscience Australia, *Australia's Identified Mineral Resources 2020*
- 43 Office of the Chief Economist, *Resources and Energy Quarterly March 2021*
- 44 Office of the Chief Economist, *Resources and Energy Quarterly March 2021*
- 45 Minerals Council of Australia, *Australian Iron Ore: Where Quality Meets Opportunity* (February 2021).
- 46 Geoscience Australia, *Australia's Identified Mineral Resources 2020*
- 47 Office of the Chief Economist, Resources and Energy Quarterly March 2021. Republic of Guinea, Ministry of Mines and Geology, *Mining & Statistics Bulletin* (February 2021)
- 48 United Nations, Department of Economic and Social Affairs: World Population Prospects 2019: Highlights.
- 49 Department of Agriculture, Water and the Environment, Agricultural commodities, June quarter 2021.
- 50 Department of Agriculture, Water and the Environment, Agricultural commodities, June quarter 2021.
- 51 Western Australia Department of Primary Industries and Regional Development.
- 52 Food and Agriculture Organisation.
- 53 "The Stated Policies Scenario (STEPS), in which COVID-19 is gradually brought under control in 2021 and the global economy returns to pre-crisis levels the same year. This scenario reflects all of today's announced policy intentions and targets, insofar as they are backed up by detailed measures for their realisation."  
Source: International Energy Agency, *World Energy Outlook 2020*.
- 54 International Energy Agency, *World Energy Outlook 2020*.
- 55 Approximately 40% of the thermal coal-dominant Hunter Valley fleet is considered interoperable, meaning that it can be shifted to any standard gauge Bulk market in Australia.
- 56 These are scenarios, not predictions or forecasts, and do not constitute definitive outcomes for Aurizon. It is difficult to predict which, if any, of these scenarios might eventuate. Further details of the scenarios, assumptions, and levers to model free cash flow are described in detail in our June 2021 Investor Day presentation. BF-BOF: Blast Furnace-Basic Oxygen Furnace. DRI/EAF: Direct Reduction Iron/Electric Arc Furnace.
- 57 For the IEA Sustainable Development Scenario, the global trade volume projection has been split into individual metallurgical coal and thermal coal projections based on the equivalent production projections (published by IEA) in the same scenario. Australian volume has then been calculated using the 2019 market share (by coal type) before applying a market share gain, aligned with IEA's Stated Policies Scenario. Finally, mtce is converted to mt based on *IEA Coal Information 2019*.
- 58 Intergovernmental Panel on Climate Change (IPCC), *Special Report on Global Warming of 1.5°C (2018)*.
- 59 According to the IEA, achieving net-zero CO2 emissions from the energy sector by 2050 is consistent with around a 50% chance of limiting the long-term average global temperature rise to 1.5°C without a temperature overshoot.
- 60 International Energy Agency (IEA), *Net Zero by 2050: A Roadmap for the Global Energy Sector* (May 2021).
- 61 International Energy Agency (IEA), *Net Zero by 2050: A Roadmap for the Global Energy Sector* (May 2021).
- 62 Office of the Chief Economist, *Resources and Energy Major Projects Report* (December 2020).
- 63 Mineral demand from clean energy technologies: International Energy Agency (IEA), The role of critical minerals in clean energy transition. Key minerals included: cobalt, copper, lithium, nickel, and rare earth elements.
- 64 GDP (Purchasing Power Parity; international dollars): International Monetary Fund (2019 data). Population: International Monetary Fund (2019 data). Food Supply: Food & Agriculture Organization of the United Nations (kcal/capita/day, 2018 data).
- 65 Office of the Chief Economist, *Research and Energy Quarterly* (March 2021).
- 66 India Ministry of Coal, *Coal Directory of India (2019-20)*. Domestic washed coal (only) included in calculation.
- 67 GDP (Purchasing Power Parity; international dollars) - International Monetary Fund; Population - International Monetary Fund; Apparent Steel Usage & Apparent Steel Use per Capita - World Steel Association. South East Asia (Selected nations): Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam.
- 68 World Steel Association.
- 69 IEA Clean Coal Centre, *Coking Coal - The Strategic Raw Material* (CCC/306 September 2020).
- 70 Wood Mackenzie Coal Cost Curves (Data: May 2021; Reference Year: 2021). Wood Mackenzie Global Coal Markets Tool (Data: 2020 2H, Reference Year: 2021), Sea freight export terminal assumptions: US - East Coast; Canada - West Coast; Australia - Hay Point.
- 71 World Steel Association, *World Steel in Figures 2021* (Reference year: 2020).
- 72 World Steel Association, *World Steel in Figures 2002, 2011*.
- 73 World Steel Association, *World Steel in Figures 2021*.
- 74 World Steel Association, annual production data.
- 75 World Steel Association, *Steel Facts*.
- 76 pulverised coal injection.
- 77 McKinsey & Company, *Decarbonisation challenge for steel* (June 2020).
- 78 250 MW water electrolysis project under feasibility study by BP, Nouryo, and Port of Rotterdam (as at September 2019).
- 79 Bloomberg NEF, Sector Coupling in Europe: Powering Decarbonisation (February 2020). Bloomberg NEF *Hydrogen Economy Outlook (Key messages)*, March 2020.
- 80 International Energy Agency, *World Energy Investment 2018*.
- 81 S&P Global Market Intelligence, World Electric Power Plants Database (March 2021) as at 2021, capacity weighted. Australia included as reference. South East Asia excludes Indonesia. Economic life sourced from International Energy Agency, *World Energy Investment 2018*.
- 82 International Energy Agency, *World Energy Outlook 2019* (Reference year: 2018).
- 83 Indonesia excluded, given availability of domestic coal reserves to supply requirements. Current is as at March 2021. Source: S&P Global Market Intelligence World Electric Power Plants Database (March 2021).
- 84 Wood Mackenzie, India Ministry of Coal (*India Coal Directory 2019-20*).







# CLIMATE CHANGE

As Australia’s largest rail freight operator, we have a key role to play in contributing to the ongoing resilience and decarbonisation of the supply chains we support.

This chapter outlines our response to climate change and our greenhouse gas emissions profile, following the establishment of a net-zero operational emissions target by 2050 and the release of our inaugural Climate Strategy and Action Plan (CSAP) in October 2020.

## CASE STUDY: CORRIDOR ENERGY CYCLE ANALYSIS

We are focused on accelerating the development of low-carbon technologies for adoption in an Australian rail freight setting and across its operations. To frame this challenge, it is essential we understand the significant energy requirements across our diverse rail operations in detail. An energy cycle analysis across key corridors has provided useful insights into decarbonisation potential and diesel displacement (figure 32). In diesel locomotives, the tractive energy to drive the locomotive wheels originates from electricity generated by the onboard diesel engine. When the train needs to slow down or is travelling downhill (particularly when it is fully loaded), the dynamic braking system is applied, which generates electricity that is dissipated as heat and therefore lost. We have identified opportunities to capture and store electricity generated by the dynamic braking process via battery technology for re-use in traction. This has the potential to significantly reduce the tractive energy (and diesel) requirement. Two options are available to displace the remaining diesel energy (net tractive energy requirement):

- provide more onboard batteries that are charged externally with green electricity (like an electric vehicle)
- use integrated fuel cells that generate electricity from green hydrogen.

Our analysis has found that, currently:

- if small amounts of energy need to be carried on board (Corridors 1, 2, 3, 4 in figure 32), batteries present the lowest cost solution.
- If large amounts of energy need to be carried on board (Corridor 5 in figure 32), hydrogen presents the lowest cost solution.



## Climate Strategy and Action Plan

As outlined in our Governance and risk chapter, our CSAP provides a foundation for our long-term response to climate change, and identifies actions to mitigate risk and leverage climate-related opportunities.

Decarbonising our operations and achieving net-zero operational emissions by 2050 is being pursued through a range of initiatives and investments set out in our CSAP, including:

- a) Leveraging our existing energy efficiency capabilities and assets, such as electrified rail in the CQCN
- b) Investing in development and adoption of low-carbon technologies through our \$50m Future Fleet Fund
- c) Integrating renewable energy into our current energy mix
- d) Using carbon offsets through project development/investment and/or purchase where required to meet our decarbonisation goals.

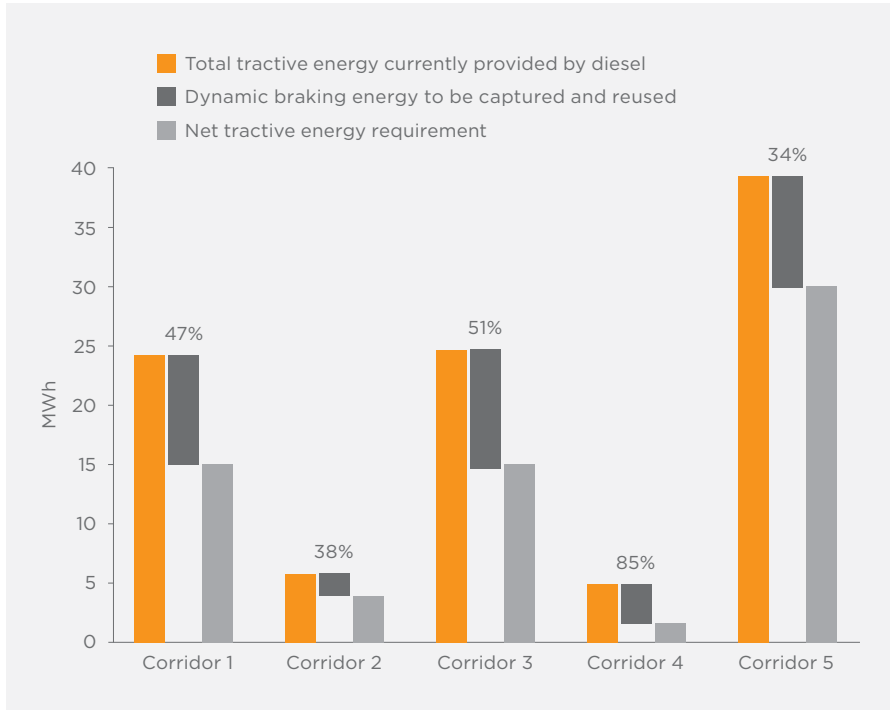
To support our net-zero ambitions, we have set an interim 10% operational emissions intensity reduction target by 2030<sup>85</sup>, after reducing emissions intensity by 20% between 2010 and 2020. Following the launch of the CSAP, we have progressed laying the foundations for our climate resilience and decarbonisation roadmap. This has involved establishing a cross-functional steering committee responsible for guiding the implementation of the CSAP.

## Tracking towards net-zero

To support the implementation of our decarbonisation initiatives, in 2021 we established a Fleet Decarbonisation team of project management and engineering specialists dedicated to delivering initiatives aligned to the objectives of our Future Fleet Fund. This team has made significant progress in establishing forums for collaboration with key peers, manufacturers and research organisations focused on the development, trialling, and implementation of low-carbon technologies for Australia’s heavy haul freight sector.

While we are technology agnostic, our objective is to identify low-carbon technologies that can be adopted at scale to augment our existing fleet of diesel locomotives.

FIGURE 32 ENERGY CYCLE ANALYSIS FOR DIESEL TRAINS



Following the launch of the CSAP, we have progressed laying the foundations for our climate resilience and decarbonisation roadmap.

**CASE STUDY:**  
RESEARCH PROGRAM FOR BATTERY AND FUEL CELL TECHNOLOGIES TO DISPLACE DIESEL

We are investing in the development of analytical tools, alongside emerging technology, to support the deployment of low-carbon technologies. This will enable us to understand the potential for and application of key technologies as they advance. In this regard, specific consideration is given to performance (including in-service), response to environmental conditions, and real-world operational constraints.

To support our objectives, we have developed a multi-year research program that has been designed to run alongside our focus on battery and green hydrogen fuel cell technologies, to understand their suitability for our high-energy, heavy haul railway environment. The program has been established through university engagement and is currently underway in the following three areas.

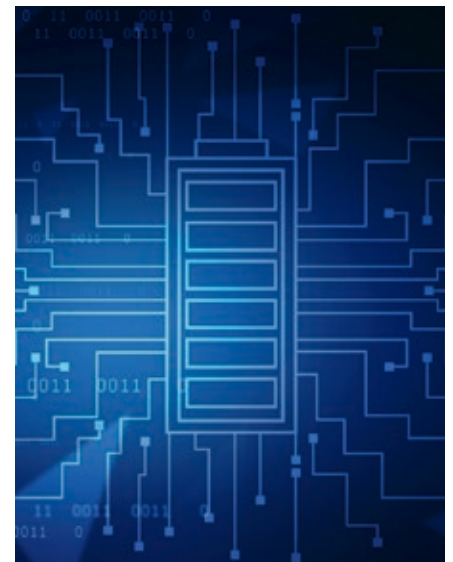


**Focus area one**

Battery technology and supply chain identification (UQ)

This program will:

- define mainline rail system requirements
- identify battery technology/system/chemistry that best meets mainline applications
- identify optimum combinations of battery technologies that best meet mainline applications
- identify future potential sources for identified battery systems/technologies
- seek industry participation/engagement during this research phase
- provide information on expected energy density, life, and costs for input into techno-economic modelling (the techno-economic modelling will be performed by others).





**Focus area two**

Fuel cell technology and supply chain identification (UQ)

This program will:

- define mainline rail system requirements
- identify fuel cell technology/systems that best meets mainline applications
- identify future potential sources for identified fuel cell systems/technologies
- seek industry participation/engagement during this research phase
- provide information on expected power density, life, and costs for input into techno-economic modelling.



**Focus area three**

Analysis of current operating cycle data across selected routes/corridors to calculate energy cycle parameters (CQU)

This program will:

- perform energy cycle analysis for each trip, and calculate the following parameters (not limited to): tractive energy/power, dynamic braking energy/power, number and depth of traction/dynamic braking cycles, and rate of change of energy
- for each route/corridor, analyse multiple trips and calculate statistical energy cycle parameters
- provide a comparative analysis of the energy cycles parameters between routes/corridors, and develop a methodology for automating this analysis.

**CASE STUDY:  
NEAR-TERM PROJECTS**

Aligned to our decarbonisation objectives, we recognise that we need to make effective changes to our current operations to lower emissions and to reduce our energy consumption in the near term. In lieu of scalable emerging technologies, we have identified and are rolling out a number of initiatives that leverage available technologies to achieve this, including the following.

**Li-ion locomotive battery replacement project**

We are trialling lithium-ion (Li-ion) battery technology to replace lead-acid/gel batteries currently used across our locomotive fleet to start engines and power auxiliary systems, such as air conditioning, lights, and communication equipment.

The newer generation battery technology has the potential to significantly reduce maintenance requirements, reduce waste, and improve reliability. Trial results to date indicate that this initiative has the potential to provide savings. A significant portion of our fleet is equipped with an automatic engine start stop (AESS) feature that, when activated, reduces excessive idling and fuel consumption. This system has not been used to its full capacity because of the limitations of lead-acid battery technology and the risk of failure.

Our Fleet Decarbonisation team have worked closely with a specialist local battery supplier to develop the replacement battery before initiating on-track trials in June 2021. The trials were aimed at verifying that the increase in battery capacity of the Li-ion technology will enable better use of AESS technology, higher fuel efficiency, and lower GHG emissions across our locomotive fleet.

**Building efficiency and renewable energy**

In 2021, we developed a Real Estate Sustainability Roadmap covering our facility portfolio. The Roadmap is underpinned by a multi-year program of initiatives aligned to our CSAP and broader sustainability objectives, such as energy, waste, and water conservation across our facilities (see our Environment chapter for an overview of our circular economy initiatives).

The energy efficiency initiatives include installing solar panels, replacing traditional lights with light-emitting diodes (LED), and installing control systems. Several initiatives have already been completed, including:

- detailed energy and solar capacity assessments across our top eight facilities ranked by energy intensity
- changing yard lighting to LEDs at our Kalgoorlie facility
- replacing hi-bay and flood lighting with LEDs at Hexham and Willowburn depots
- installing LED yard lighting at Hexham, which has reduced lighting energy usage by 40%
- installing solar arrays at our Callemondah facility, and more solar capacity currently being installed at our Stuart and Jilalan depots.

Over the coming financial year, we will be installing more solar capacity and LED yard lighting replacements at our Kwinana, Forrestfield and Pring sites. We are also committed to completing energy and sustainability assessments across 13 other sites based on energy intensity to underpin future initiatives.

Accounting for our existing and fully scoped facility-based sustainability initiatives, we are set to reduce our overall scope 2 emissions by more than 5,000 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>-e) per year (on a 2021 baseline<sup>86</sup>) by 2024 through direct action. We continue to investigate new measures to decarbonise our facility portfolio in line with our decarbonisation objectives.





The energy efficiency initiatives include installing solar panels, replacing traditional lights with light-emitting diodes (LED), and installing control systems.

### Carbon offsets

While we are focused on decarbonising our operations through direct action, aligned to our target of net-zero operational emissions by 2050, we also acknowledge that, in the medium term, carbon offsets will play a key role.

This will be in addressing hard-to-abate emissions associated with long-life assets, and developing low-carbon technologies for adoption at scale across our operational portfolio.

Our key Tracking Towards Net-Zero Operational Emissions initiatives incorporate carbon offsetting as part of our medium-term strategy.

Our approach to carbon offsetting is to identify opportunities to participate in carbon markets, and to build a high-quality carbon offset portfolio by generating and/or buying credible and verified carbon offsets.

We will prioritise offsets that have associated environmental and social

co-benefits, in association with our operational ecosystem and community catchments across Australia, and that align to our broader sustainability goals.

In 2021, we completed an initial pilot study assessing key sites across our national land asset portfolio to determine carbon abatement potential as well as environmental and social co-benefits. The pilot study represents early-stage development of our carbon offsetting strategy, and the findings will guide our ongoing approach to carbon market participation.

We also seek to promote the development of co-beneficial carbon abatement projects within our broader operational catchments.

We will continue to explore carbon abatement opportunities to complement our direct abatement initiatives, and offset hard-to-abate emissions only as needed.

### Building resilience

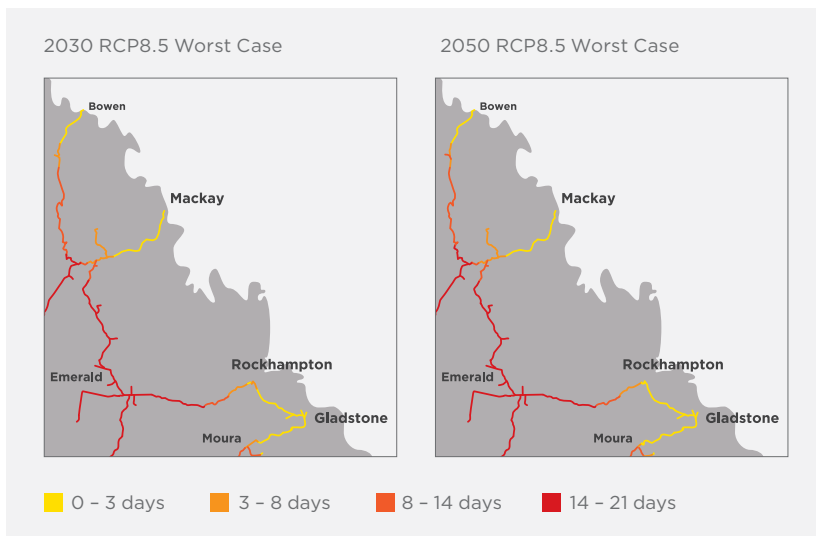
As outlined in our CSAP, our goal is to leverage the best available information to build capability, and continually improve our understanding of the potential impacts of climate change under multiple scenarios for our business, supply chains, and the communities in which we operate.

### PHYSICAL RISK ON THE CENTRAL QUEENSLAND COAL NETWORK

Our operations and associated infrastructure are largely concentrated in climatic regions that could trend towards hotter and drier conditions. The key regions in which we operate, such as North and Central Queensland, might also experience increasingly severe weather events across a broader geographic region over the coming decades.

To better understand the potential impacts of the changing climate on the capacity or availability of the Central Queensland Coal Network (CQCN) train and track assets, we undertook a forward-looking assessment of climate-related factors informed by robust models. This work was supported by an external climate modelling consultancy Energetics to assess key climate conditions out to 2030 and 2050, using climate projection data developed specifically for Queensland. Our approach considered 'best' and 'worst' case scenarios derived from applicable global climate models (GCMs)<sup>87</sup>, which were then analysed under the Intergovernmental Panel on Climate Change's (IPCC) high global emissions pathway (RCP 8.5). A temperature threshold of 38°C is the trigger for the application of Heat-Related Temporary Speed Restrictions (TSRs) that reduce the usable capacity of the affected rail area for the duration of the heat-related TSR. This analysis indicated an increase in days with a maximum temperature above 38°C (when compared with the baseline number of days)<sup>88</sup>. This information was then mapped against the railway locations in Central Queensland.

The below image highlights an increase in the annual average number of days over 38°C above the baseline.



As can be seen, the change (increase) in annual average days above 38°C is most pronounced in the western section of the railway, with only a moderate change in areas nearer to the coast. We already experience over 30 days per year with temperatures above 38°C in most of the western sections, and as such, have developed hot weather precaution management processes and standards.

To date, an adaptive design approach and incremental experience-driven improvements have added to the resilience of our fixed network assets. Existing controls are likely to prove robust in areas that are already subject to climatic extremes. However, under hotter, drier conditions and with the potential for extended, and more geographically dispersed severe weather events, we acknowledge that existing controls in regions where extreme weather events are currently less prevalent are likely to be less developed. Building our understanding of climate models and exposures will aid in the development of new adaptive measures or expansion of existing controls across broader geographic regions to improve operational resilience.

Under the Australian Government's Safeguard Mechanism, we are incentivised to keep emissions below baseline.

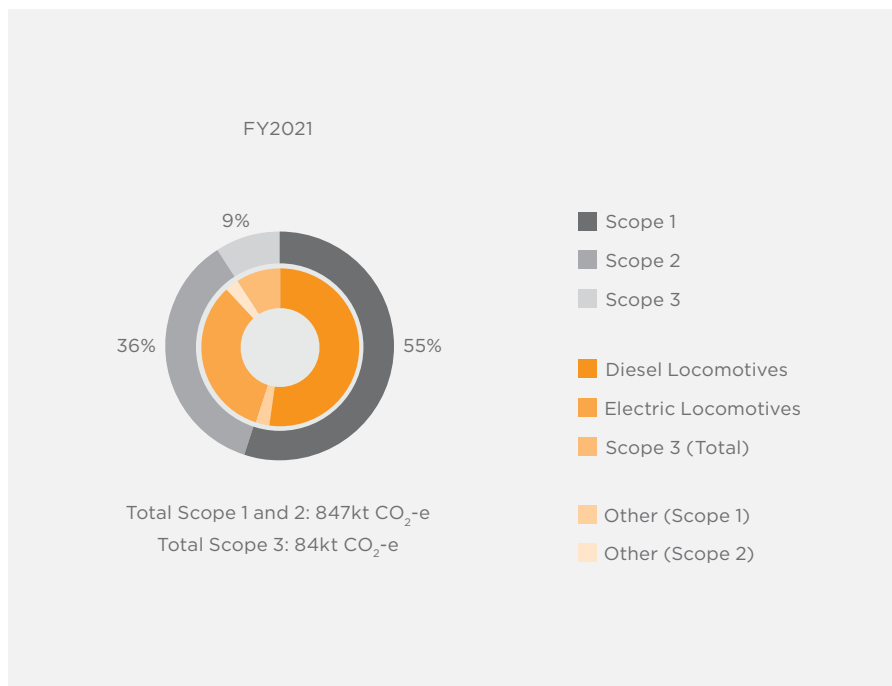


### Greenhouse gas emissions

In FY2021, our total GHG emissions (scope 1 and 2) were 847 ktCO<sub>2</sub>-e, representing a 2% decrease from the previous reporting period (see figure 33). This decrease was driven by a shift towards less emissions-intensive rail services. We also recognise 84 ktCO<sub>2</sub>-e of scope 3 emissions. Given the nature of our business, these emissions predominantly relate to supplier activity that our business does not own or control, and are not related to products hauled for our customers. Approximately 90% of our scope 3 emissions are linked to fuel- and energy-related sourcing and supply activities. To this end, reducing our operational scope 1 and 2 emissions will also contribute to material scope 3 emissions reductions. A breakdown of our calculated scope 3 emissions is provided in our Sustainability metrics table towards the end of this report. Our scope 3 emissions reporting boundary and identification of relevant activity sources have been informed by the Greenhouse Gas Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard<sup>89</sup> and received external assurance by Deloitte (a statement of limited assurance is available at the end of this report).

Under the Australian Government's Safeguard Mechanism, we are incentivised to keep emissions below baseline. In March 2021, the Clean Energy Regulator released results for the compliance period to 30 June 2020. We remained below our respective safeguard baselines (four in total) and were not required to purchase and retire any ACCUs to meet our obligations.

FIGURE 33 AURIZON'S GREENHOUSE GAS PROFILE



### GREENHOUSE GAS EMISSIONS INTENSITY

Between 2010 and 2020, we reduced our emissions intensity by 20% across our locomotive operations. In 2020, the Aurizon Board endorsed a target to reduce our operational (scope 1 and 2)<sup>90</sup> emissions intensity by a further 10% by 2030<sup>91</sup>. The 2030 target is designed to support our longer-term target of net-zero operational emissions by 2050.

Our approach emphasises direct abatement by supporting the development and adoption of low-carbon technology across our operations and Australia's freight sector. This report will be the first year that we report against our 2030 target. For comparison with FY2020 performance, we note that our emissions intensity decreased by 2%, driven by a shift to less emissions-intensive rail services. A year-on-year comparison of these metrics is provided in the Sustainability metrics table towards the end of this report.

85 From a FY2021 baseline on a basis of tonnes of carbon dioxide per net tonne kilometre.  
 86 In 2021, our facility-related scope 2 emissions were 25k CO<sub>2</sub>-e.  
 87 The Queensland Government, following work completed by the CSIRO and Bureau of Meteorology's evaluating GCMs (<https://www.climatechangeinaustralia.gov.au/en/communication-resources/reports/>), selected 11 models for further downscaling to improve capture of local conditions (<https://longpaddock.qld.gov.au/qld-future-climate/data-info/tern/>).  
 88 Projections aggregated into 20-year averages, centred on 2030 and 2050, with changes relative to a baseline period of 1986-2005 (termed "absolute change").  
 89 Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard (September 2011).  
 90 Our revised target has been expanded to cover all operational emissions sources, including scope 1 and 2 emissions linked to the operation of locomotives, machinery, road vehicles, buildings, infrastructure, and other fixed assets.  
 91 From a FY2021 baseline on a basis of tonnes of carbon dioxide per net tonne kilometre.

# ENVIRONMENT

We recognise that we are responsible for helping our local communities and supply chains to deliver environmental value through effective management of environmental risks and improved enterprise environmental performance.

We employ proactive and evidence-based management measures covering key environmental issues, such as climate change, resource use, and clean air.

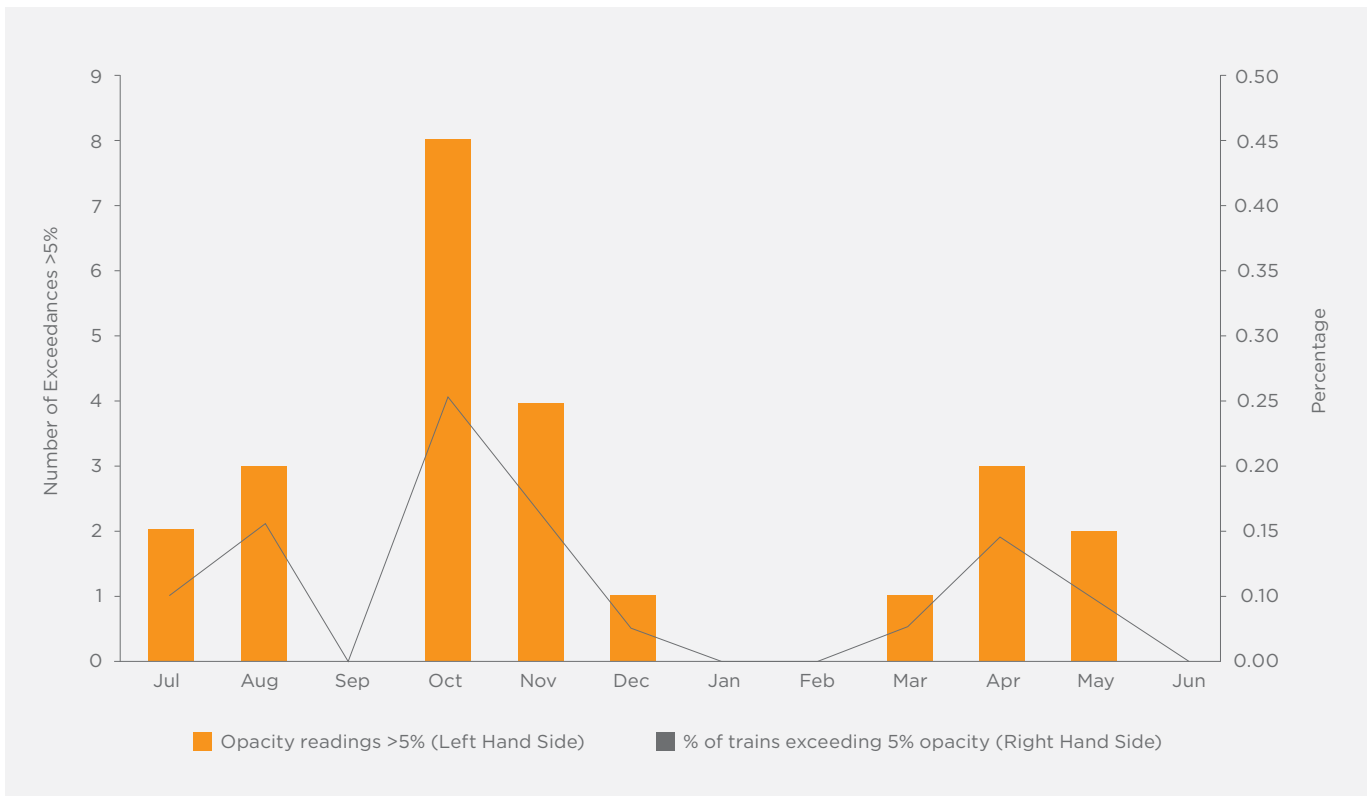
## Clean air

### Diesel locomotives

As a rail freight operator with a national footprint and a large diesel locomotive fleet, we recognise that we have a responsibility to ensure that our operations contribute to maintaining and improving Australia's world-leading air quality.

After playing a leading role in its development and implementation in 2018, we continue to implement the

**FIGURE 34** PERCENTAGE OF VALID AURIZON TRAIN SERVICES EXCEEDING 5% OPACITY ON THE CQCN (FY2021)



Rail Industry Safety and Standards Board's (RISSB) Code of Practice for the Management of Locomotive Exhaust Emissions (the CoP) across our diesel locomotive fleet. It requires operators to report progress annually via the Australian Railway Association's freight website<sup>92</sup>. In FY2021, we implemented additional management measures in NSW aligned to the introduction of Environmental Protection Licences<sup>93</sup> (EPLs) for rollingstock operators (RSO). These measures include annual compliance reporting, routine noise testing of locomotives following major engine overhauls, monthly reporting of community complaints, and completion of pollution studies.

As an example of industry-led best practice, we were encouraged by the NSW EPA's integration of the CoP standards as part of the RSO EPL framework. We continue to engage with key stakeholders to ensure positive air quality outcomes are achieved through proportionate, proactive and evidence-based management measures.

### Coal dust

We continue to work collaboratively with our supply chain partners across our operations to minimise coal dust emissions from our coal haulage. As part of this approach, we focus on maintaining world-leading solutions tailored to suit the unique needs of each coal supply chain.

### Central Queensland Coal Network (CQCN)

The CQCN supply chain has built on its strong performance in FY2020 by continuing to implement effective key controls documented in the CQCN Coal Dust Management Plan (CDMP), which was reissued in 2020. The CDMP recognises each part of the supply chain has a role to play in minimising emissions, including load profiling and veneering of coal wagons before haulage on the CQCN to port. We continue to monitor opacity (a measure of air quality) on each of the four rail systems in the CQCN, and actively track opacity trends, including investigating any exceedance of the Department of Environment and



Science's agreed 5% opacity threshold. In FY2021, the number of validated exceedances recorded on the CQCN increased from the historical low of 16 (FY2020) to 24. This is the second lowest number of exceedances since 2010 and represents less than 0.06% of approximately 44,000 recorded coal train movements in FY2021.

As noted in previous years, external factors affect opacity. Opacity exceedances generally tend to be aligned with the onset of warmer months (September – January) and the drier weather that precedes the onset of extended periods of rain and cooler weather (February – June). We note a continuing small proportion of trains exceeding the opacity threshold (figure 34).

#### South-West System (QLD)

We continue to work with the South-West System Users Group (SWUG) to implement controls outlined in the South-West Supply Chain Coal Dust Management Plan (CDMP). The results of monitoring by the Department of

Environment and Science continue to demonstrate rail transport (including coal haulage) to comply with air quality criteria (PM2.5, PM10, TSP and dust deposition). Despite forecast reduction in coal tonnes on the South-West System, together with Queensland Rail, we have committed to continue monitoring air quality to demonstrate ongoing compliance with air quality criteria along the South-West System.

#### Hunter Valley (NSW)

We continue to work with the Hunter Valley coal chain, our respective stakeholders and industry groups, such as the Hunter Valley Steering Group on Rail Corridor Air Quality, to improve environmental performance. A continual focus on these actions has facilitated our compliance with requirements of the Environment Protection Licences (EPLs) in NSW for rollingstock operation on licensed rail networks, introduced in August 2020, for the operation and management of rollingstock to minimise the generation of dust.

## Noise

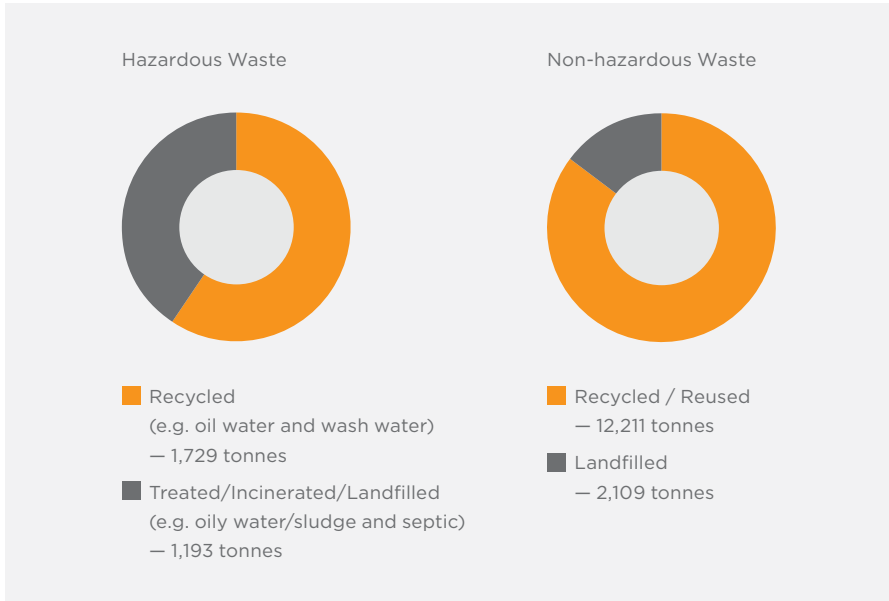
With the introduction of EPLs covering rollingstock operators in NSW, rollingstock operators are required to complete annual testing, monitoring and remedial regimes for locomotives and wagons to meet noise thresholds, along with progressive improvements to address current rail noise generated through horns, braking and idling<sup>94</sup>. We recently submitted our first Annual Rolling Stock Performance Report to the NSW EPA, confirming all locomotives that had major engine overhauls in 2020 were compliant with required noise thresholds, and that all of our freight wagons in operation comply with specifications for Angle of Attack (a key contributor to wheel squeal).

## Biodiversity and land management

In late 2020, we gained approval to extend our High-Risk Species Management Plan for another three years. Issued under Queensland's *Nature Conservation Act 1992*, the management plan enables employees and contractors that predominantly work on the CQCN to engage with an appropriately licensed wildlife recovery specialist to remove "colonial breeders" (i.e. bats and certain species of nesting birds) from fixed infrastructure (e.g. culverts, bridges, overhead electrical structures) and relocate them to suitable alternative habitat. The management plan extends across the entirety of the 2,670-kilometre CQCN, in addition to the yards, depots and facilities in Central Queensland. Built infrastructure critical to the safe operation of railways has the unintended function of replicating habitat of adjoining vegetation (i.e. overhead electrical structures provide similar nesting opportunities and sight lines, as larger trees and culverts provide cool, sheltered and secure spaces similar to caves, and hollow-bearing trees). The management plan provides another tool to help our employees and contractors to responsibly interact with wildlife during the course of their day-to-day activities. As outlined in our Climate change chapter, we are also focused on identifying opportunities to participate in carbon markets through nature-based carbon offsetting. To this end, we acknowledge that carbon offsetting will form part of our medium-term decarbonisation work. Our aim is to support projects that have environmental and social co-benefits as a means of supporting biodiversity and the communities in which we operate.



**FIGURE 35** AURIZON'S FY2021 WASTE PROFILE (TONNES)<sup>95</sup>



**Waste and resource management**

At Aurizon, we continue to seek out opportunities to improve operational efficiency, including the resources we consume and the waste we produce. Figure 35 shows our FY2021 waste output, including landfill, recycled, treated and incinerated wastes.

**Compliance reporting**

In FY2021, Aurizon Port Services Pty Ltd incurred a monetary fine of \$10,008, issued under the *Environmental Protection Act 1994* (Qld), related to the discharge of prescribed contaminants, namely wastewater generated from outdoor cleaning, to receiving waters at the Port of Cairns following a ship unloading event. The matter was investigated internally, and appropriate management measures enacted to avoid potential for recurrence.

Three notifiable environment incidents were required to be reported to applicable state government regulators. The derailment of a fertiliser service in December 2020 near Charters Towers resulted in a spillage of 900t of product. Although the incident affected land adjoining the corridor, impacts to the environment were largely minimised due to the capture of product runoff in an adjacent dam. Several months of remedial efforts were undertaken to rectify the impact.

None of the incidents caused ongoing harm to people or the environment, nor required ongoing remediation.

**CIRCULAR ECONOMY**

During 2021, we piloted the introduction of circular economy principles to material usage and waste management at our Callemondah depot in Central Queensland. Through the application of a Circular Economy model, we are seeking to find opportunities to design out waste and pollution, and to keep products and materials at their highest value for as long as possible, and/or regenerate natural systems.

This initiative has the potential to reduce our waste footprint, and transform the traditional consumption of raw materials. It also strongly aligns with our Climate Strategy and Action Plan.

The work at Callemondah comprised a detailed material flow analysis. This pilot is intended to map current material inputs and outputs from this site. Our ongoing objective is to identify any opportunities to reduce or design waste out through collaboration within our supply chain and in our local communities.

Where applicable, we intend to apply the learnings from this exercise across our broader operational and real estate portfolio. We note that as an organisation with a long-life asset base, many of our existing processes embody circular economy principles.

For example, the condition-based monitoring and maintenance strategies used across our rollingstock fleet are geared towards extending asset lifetimes and preventing waste outputs through proactive maintenance based on high-quality data.

**TABLE 5** NOTIFIABLE INCIDENTS IN FY2021

Location	Volume/Extent	Material
Sellheim, QLD	900 t	Fertiliser
Hexham, NSW	2,220 L	Hydrocarbon
Gibson, WA	800 L	Hydrocarbon



## WATER AT AURIZON

Australia has only recently emerged from one of the lowest rainfall periods in 50 years<sup>96</sup>, which has significantly affected many of the regional communities in which we operate. In FY2020, we used 173ML of potable water nationally. This is equivalent to the annual water consumption of about 911 Australian households. While the transport sector is not as water intensive as many of the other supply chains it supports, we acknowledge that we have a role to play in reducing water stress and preventing pollution.

We consume potable water across our operations, including in offices, depots, fleet maintenance and wash-down facilities. At several locations, including our head office, and heavy maintenance facilities in QLD, NSW and WA, we use water-sensitive design principles, and augment our water supply with rainwater harvesting (for use in amenities) and wastewater recycling systems (for use in locomotive wash-down facilities).

We acknowledge there are opportunities to adopt water conservation measures more broadly and as a component of our circular economy initiative. We are incorporating an assessment of water consumption at pilot locations to identify opportunities to conserve water. We operate several wastewater and pollution treatment plants across our operational portfolio. These systems are managed in strict accordance with relevant regulatory obligations and site-specific operational environmental management plans.

92 Australasian Railway Association website.

93 [aurizon.com.au/sustainability/environmental-management](http://aurizon.com.au/sustainability/environmental-management)

94 Rollingstock operators were required to meet noise requirements under previous licensing arrangements; however, these were cascaded to operators via EPLs held by rail infrastructure providers.

95 Scrap steel included in recycled non-hazardous figures, leading to increase from previous year's data.

96 Australian Government, Bureau of Meteorology, *Water in Australia 2018-19*.



# PEOPLE

At Aurizon, our people are our greatest asset. We have more than 4,800 employees, with around 80% living and working in regional Australia, including more than 20% of our senior management.

Our purpose of growing regional Australia by delivering bulk commodities to the world is underpinned by a workplace culture of connection to enable great outcomes. Through our commitment to safe and efficient delivery for our customers, we are building our workforce for the future. This includes investing in our people, partnerships and creating an inclusive workplace.



## Creating a values-driven safety and performance culture

We strive to create a culture where people live our values and are engaged and enabled to do their best work. Strong leadership, culture and values-aligned people practices are our foundation to achieve this.

### Delivering through our values

Our values are the cornerstone of the culture we want to create. They create clear expectations about how we work at Aurizon. Our Delivering through our Values framework sets out clear values-aligned behavioural expectations. Throughout the year, we have continued to embed our values into our programs and frameworks, including leadership development and performance management.

### Safety and Performance Culture

Our Safety and Performance Culture program is integral to delivering both our safety and our people strategies. It integrates culture-focused initiatives to prioritise and achieve sustainable cultural change.

These initiatives are informed by a series of surveys. In a recent survey conducted with employees, 68% indicated that they felt positively towards the culture and are proud to work for Aurizon.

Read more in the Safety and health chapter of this report.

## Leadership development

Leadership capability is fundamental to creating a safety and performance culture. We have continued to progress our three core leadership programs spanning FY2020 and FY2021:

- Approximately two-thirds of leaders completed a Frontline Leader program, which creates a common language and framework for leaders to influence performance and safety outcomes.
- We continued to deliver a Safety Leadership program that equips operational leaders with skills to effectively lead Safety in Action and continually improve safety in their teams (refer to our Safety and health chapter for more information). At the end of FY2021, 64% of leaders have commenced the program.
- For leaders at all levels, we have continued to deliver a program that

provides targeted development based on feedback about leadership style and the effect leaders have on team performance, along with understanding leadership team effectiveness. Approximately 90% of our senior leaders and middle management have undertaken the program, which includes targeted and ongoing capability development.

A future focus of leadership development is to embed Just and Fair principles<sup>97</sup> within core people and safety frameworks, and to equip our leaders with the knowledge, skills, and support to create a learning culture.

Flexible delivery approaches, implemented in response to COVID-19, including webinars, videos and virtual check-ins, have continued to ensure leaders remained supported and engaged in their development.

## Building capability

Our workforce capability is crucial to maintaining sustainable performance through accelerating technological, social, and demographic change. Harnessing the potential of our people against targeted strategic business capabilities enables us to grow the business sustainably. Ensuring we have people with the right skills operating within a values-based culture is key to building the capability of our workforce. During the year, we progressed key initiatives, including:

- Increasing the diversity of our workforce, recognising diversity is a lever for better business performance and growing our business sustainably. Our female workforce representation has increased from 22% in FY2020 to 23% in FY2021, achieving our FY2021 target (see figure 36). Our Aboriginal and Torres Strait Islander workforce representation has



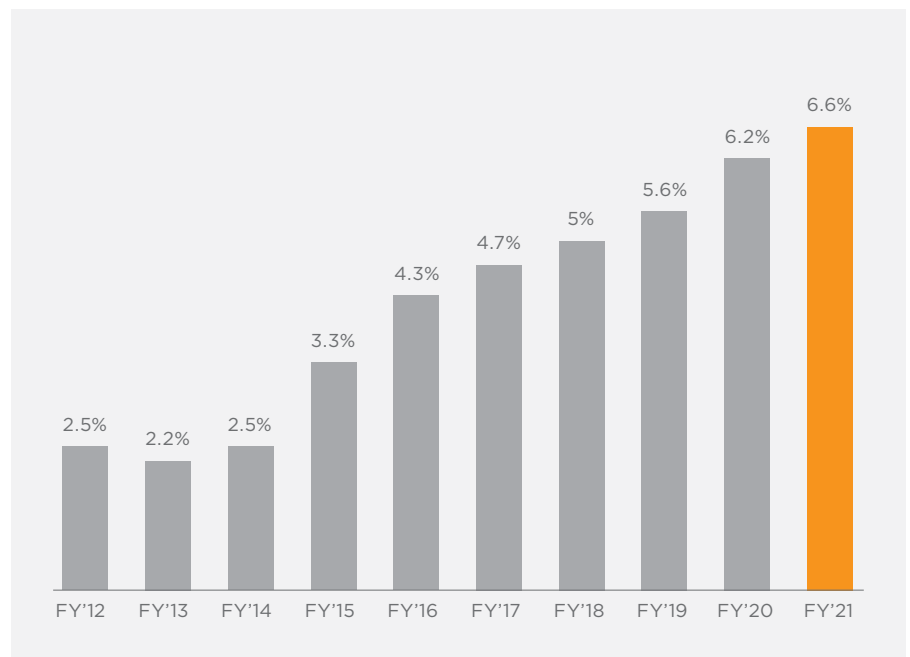
increased from 6.2% in FY2020 to 6.6% in FY2021, exceeding our 5.5% target (see figure 37).

- Introduction of a platform with online learning content to support the learning and development of employees in three pilot groups, to be rolled out across the Company in FY2022.
- Our annual performance, talent and succession process facilitating the development of our internal talent pool. This engages and retains valued employees, and their knowledge, while reducing external recruitment costs.
- Continued focus on our future workforce, by assessing our strengths and opportunities against key capabilities needed for sustainable business performance. This informs the design and execution of leadership programs and recruitment.
- Our development framework strongly encourages on-the-job learning and development, recorded in our performance management system. This facilitates knowledge sharing by employees acquiring job-specific skills for their current and future roles.
- As a Registered Training Organisation (RTO), this year we have progressed 136 certifications and 599 statements of attainment across Train Driving and Rail Infrastructure qualifications from the Transport and Logistics Industry Training Package. We are continuously improving our programs to align with the latest industry standards and exploring further use of innovative technologies such as virtual reality training.
- A rollout of next-generation virtual reality (VR) technology, used in our training schools where employees learn skills of shunting and marshalling trains, to continue to produce a pipeline of highly skilled train drivers and freight operators. We are beginning the next phase of our VR training tools, which will enable drivers to experience and respond to emergency and abnormal situations, and for rail infrastructure workers to practise safe working and Protection Officer skills safely in a virtual environment. These training schools are led by valued employees who have extensive knowledge and experience they share with trainees.

**FIGURE 36 FEMALE WORKFORCE REPRESENTATION (%)**



**FIGURE 37 ABORIGINAL AND TORRES STRAIT ISLANDER WORKFORCE REPRESENTATION (%)**



A future focus in FY2022 is to introduce a capability framework to enable targeted selection and development of our employees. This will involve identifying key competencies across our job types using a data-driven approach. The capability framework will support an inclusive culture, inform development program priorities, and provide employees with clear development and career pathways.

**Employee relations**

Our long-term employee relations strategy is focused on enabling the achievement of our Strategy in Action and aligned with our company values.

Over the past year, we undertook a diagnostic to assess the opportunities and barriers to this strategy. Since then, we have been working across a range of initiatives focused on fostering trust and engagement with our workforce. We recognise that fostering trust with our people is a key enabler of a safety and high-performance culture and will underpin our approach to enterprise bargaining. This year, we have successfully received a positive employee ballot for one of our maintenance enterprise agreements in WA. On the east coast, we are preparing to engage the workforce on a further three enterprise agreements across NSW and QLD.

**Career pathways**

We have continued to invest in career and development initiatives to build career pathways to create talent in key capability areas.

A cohort of 22 employees are currently participating in our Careers in Action program, a two-year professional development program that aims to build the capabilities of our future leaders and technical specialists. This includes 11 graduates who joined the program from January this year, across engineering, data science, people, and finance disciplines.

**Inclusion**

At Aurizon, inclusion is centred on the premise that human connection enables us to deliver great outcomes. Our strength lies in our diversity underpinned by an inclusive culture that helps us achieve better business outcomes and positively engage our employees. We have continued to strive towards creating an inclusive environment by:

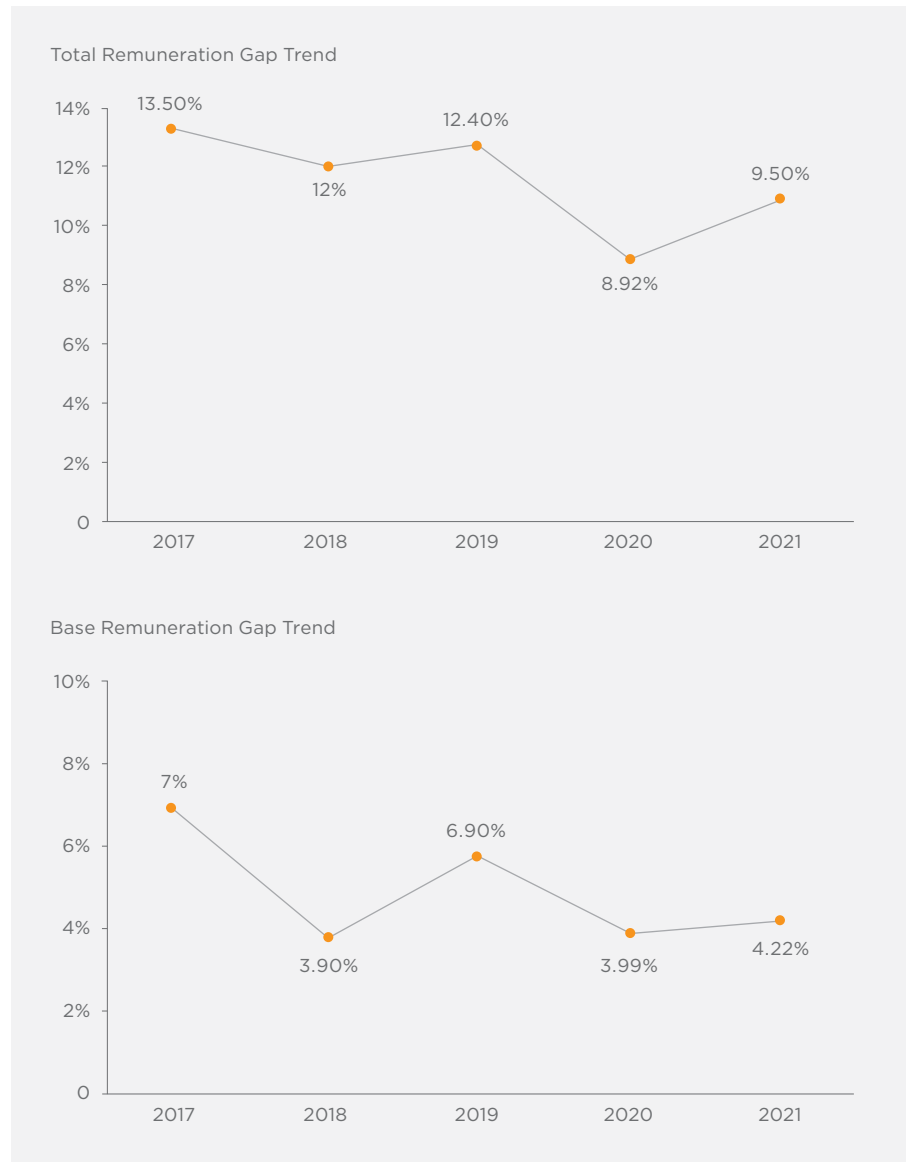
- embedding flexible work practices, such as remote working for office-based employees, as a key lever. This includes a focus on exploring a sustainable approach to creating flexible work options for non-office-based employees.
- creating awareness and driving action around inclusion through employee representative groups across gender, Aboriginal and Torres Strait Islander, and LGBTQ inclusion.
- continued commitment to employment of veterans through the Veterans Employment Commitment, an Australian Government Initiative.

**Achieving gender balance at Aurizon**

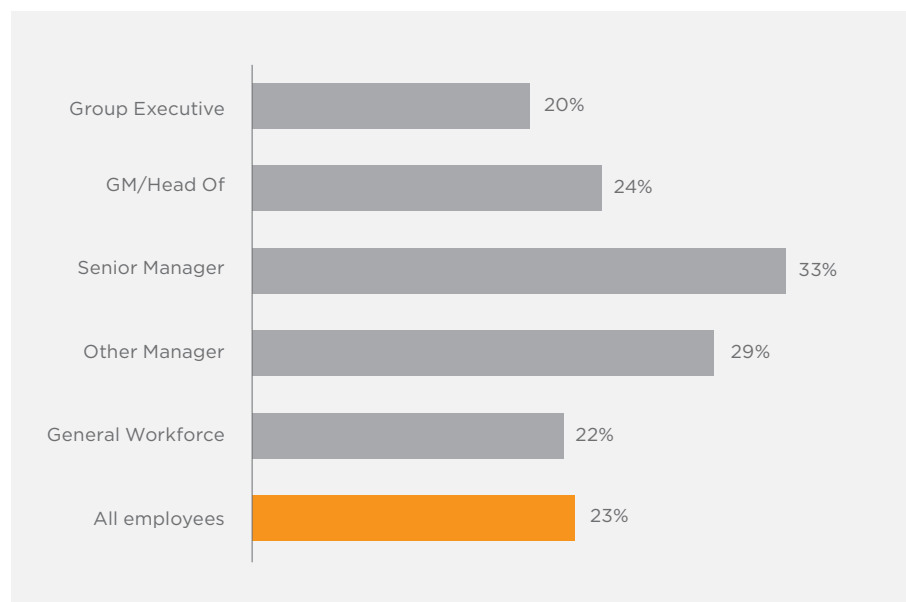
In FY2020, we established and launched the Gender Balance Reference Group, led by the Group Executive of our Coal business, with representatives from across our Company. This year on International Women’s Day we launched a three-year Gender Balance Action Plan that outlines initiatives aimed at creating gender balance through higher female participation in our workforce.

We remain focused on closing the gender pay gap, reporting a decreasing trend from 7.0% in 2017 to 4.2% in

**FIGURE 38 GENDER PAY GAP (WGEA)<sup>98</sup>**



**FIGURE 39 FEMALE WORKFORCE REPRESENTATION (%)**



2021 (base remuneration). During the same period, our total remuneration gender pay gap also decreased, from 13.5% (2017) to 9.5% (2021) (see figure 38). We recognise one of the key levers to closing the gender pay gap is to increase female representation in larger roles (see figure 39). We have progressed the following initiatives to support this, including:

- the launch of an Executive Mentoring program to provide mentorship and create sponsorship of female employees, facilitating career pathways into larger or senior roles
- annual analysis to monitor pay equity and to inform gender diversity initiative
- data-driven approach to talent, succession, and remuneration decision-making.

**Taking action toward reconciliation**

We acknowledge and respect the Traditional Owners of the land and the communities where our operations are based. As a company with a large national footprint, we can contribute positively to our nation’s reconciliation efforts. We have continued our reconciliation journey in FY2021, achieving a number of significant commitments as part of our second endorsed Reconciliation Action Plan (RAP), including:

- welcoming five CareerTrackers interns for the fifth year of our 10-year partnership.
- our Executive team, Indigenous Reference Group (IRG), and Leadership Teams across the business completing cultural learning and immersion activities delivered by Supply Nation-Certified company, The Black Card. The activities are aimed at increasing knowledge and understanding of Aboriginal and Torres Strait Islander cultures, histories, and achievements.
- launching our Indigenous Cultural Protocols document, which guides particular situations and is designed to recognise, respect and value the cultures, histories, and rights of Aboriginal and Torres Strait Islander people.
- delivering our Indigenous Leadership Development program (scheduled for the second half of the 2021 calendar year).

Our RAP commitments form an integral part of our reconciliation journey and create a culture of inclusion. We are working to develop and seek endorsement for a third RAP with Reconciliation Australia. Our IRG continues to lead our reconciliation journey, aiming to make sustainable change and embed reconciliation as core to how we operate.

**Cultural heritage**

Aboriginal cultural heritage is diverse, including tangible elements such as objects or artefacts (e.g. stone tools, rock paintings, scarred trees), sites containing objects or artefacts (e.g. quarries, camp sites, burial sites, rock shelters, shell middens), and built places valued by Aboriginal people for cultural, spiritual, or historic reasons (e.g. reserves). It also includes natural landscapes of significance to Aboriginal people, through ceremonies, Dreamtime stories, language, dance, and music.

We acknowledge the interface that our operational footprint shares with cultural heritage. We have an enduring obligation to put in place reasonable and practical measures to ensure our activities do not harm any cultural heritage. We have existing tools and resources available to our workers that outline the way in which Aboriginal cultural heritage is to be appropriately identified and protected during conduct of activities that have highest likelihood of intersecting with these areas. We are currently undertaking a comprehensive review of this framework with a goal of building upon and developing what is available to our workers. This cultural heritage management framework reset will be delivered in FY2022, and a more detailed overview presented in next year’s Sustainability Report.



**FOSTERING RESPECT THROUGH ARTWORK AND IMAGERY**

We are committed to developing a workplace that encourages and values shared understanding and respect for Aboriginal and Torres Strait Islander history, cultures and customs. In August 2020, we expanded our engagement with Traditional Custodians to commission artwork on locomotives (pictured), within depots, and on fleet vehicles. Visual display of artwork and imagery is an important part of our commitment to connect and support local Indigenous communities, and acknowledges that the land on which we operate was and always will be Aboriginal and Torres Strait Islander people’s land. In November 2020, teams across our business came together to celebrate NAIDOC week, which was postponed from July due to COVID-19. With the introduction of new COVID-safe protocols, our teams identified new ways to safely celebrate the history, culture and achievements of Aboriginal and Torres Strait Islander peoples, with art galleries, online quizzes, digital assets and donations to local schools.

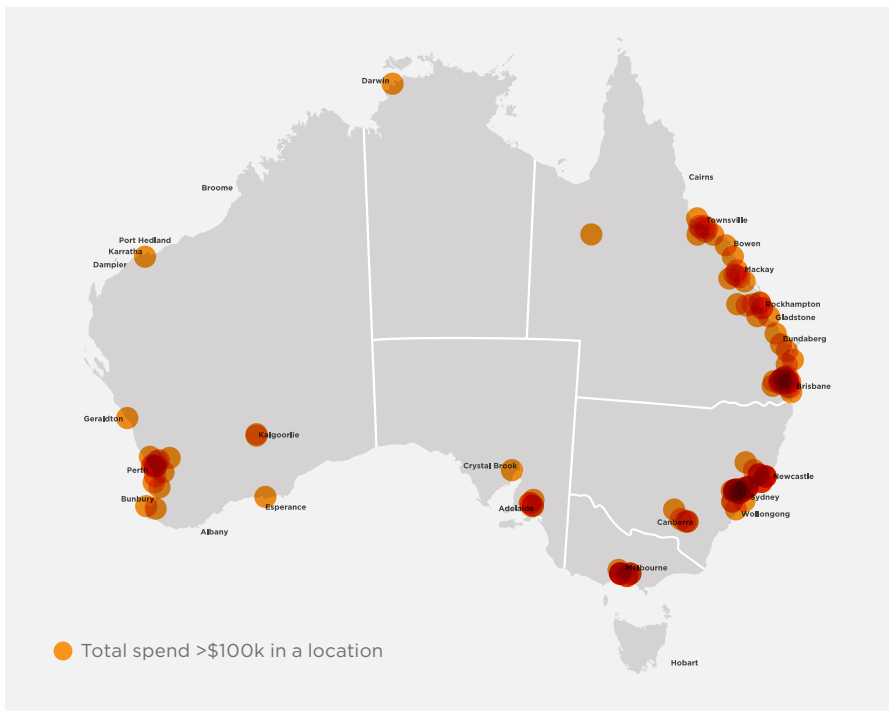
97 Just and Fair principles refers to the application of procedural fairness within an environment that encourages learning and continuous improvement.  
 98 WGEA reporting period is from 1 April (the previous year) to 31 March (the current year). Aurizon’s gender pay gap data analyses both base and total remuneration for each employee, excluding the Managing Director and CEO. Employee earnings are annualised and converted to full time equivalent.

# COMMUNITY

Our operational footprint spans NSW, QLD, and WA, with the majority of our staff living and working in regional centres across these three states.

We recognise that as a business it is vitally important that we are a genuine contributor to our communities, in addition to being a local employer.

**FIGURE 40** AURIZON'S REGIONAL SPEND (FY2021)



## Regional focus

Strong and economically stable communities are the backbone of a healthy regional Australia, and we are committed to continuing to develop strong local relationships with local businesses and suppliers across our regional footprint.

We continue to invest in and develop regional facilities with a focus on development of safe workplaces, operational equipment, and capabilities that enable our people to do their job in the safest and most efficient way.

### Spending in our communities

As a national company with a large regional footprint, we know that local product and service suppliers are key parts of our supply chain that help us run our business. We have allocated funding to spend in local communities with locally based suppliers for many years. In FY2021, we have spent approximately \$1.2 billion with suppliers from across our operations (see figure 40).

## Sponsorship support

### Orange Sky Australia

In April 2021, we announced the signing of a three-year national sponsorship agreement with charitable organisation Orange Sky Australia, the world's first mobile laundry and shower service for people experiencing homelessness. Orange Sky began in 2014 with a single van providing services in the Brisbane city area, and now operate a fleet of 31 vans across Australia, delivering not just clean clothes and safe hot showers, but also genuine and non-judgemental conversations.

We understand that mental health is an ongoing issue within our regional communities where our people live and work, and our partnership with Orange Sky Australia is one way we can help

those most vulnerable members of our communities. We operate in many locations where Orange Sky have vans and volunteers located, and we share a common interest in playing a positive and supportive role within our local communities.

We are providing funding, as well as volunteering and fundraising opportunities for our employees across Australia, that will help Orange Sky to continue to provide vital services to some of the most vulnerable members of our community.

### Queensland Firebirds

In 2021, we were proud to announce that Aurizon would be the new Principal Partner of the Queensland Firebirds for the next three years. The Queensland Firebirds champion

success and excellence in their field, contributing immensely to the growing participation rates for young women in netball across QLD. We see great alignment with the Firebirds across our QLD operations, with their dedication to building the profile of women's sport from grassroots all the way up to the elite level.

With our commitment to grow a more inclusive and diverse team across our operations and developing a pipeline of young women leaders, we look forward to building on this successful partnership with the Queensland Firebirds and Queensland Netball over the next three years.

### Clontarf Foundation

As an official partner of the Clontarf Foundation, we are helping Clontarf



with their mission to improve the education, discipline, self-esteem, life skills and employment prospects of young Indigenous men in their academies throughout Australia. The academies encourage greater attendance and academic performance from their students by providing sporting and training opportunities, as well as guidance through a network of support officers based in each location.

Our contribution to the Clontarf Foundation extends beyond financial support, and to on-the-ground engagement with tours of our facilities, academy visits by Aurizon team members, and engagements through Clontarf-organised events and employment forums. Aurizon and Clontarf teams also engage regularly throughout the year for culturally significant events, such as NAIDOC week and National Reconciliation Week.



Aurizon's MD & CEO Andrew Harding with Orange Sky Australia staff



Firebirds captain Gabi Simpson, Aurizon's MD & CEO Andrew Harding, and Firebirds CEO Catherine Clark



Community Giving Fund recipient, Foodbank WA volunteers

### Your community is our community

The Aurizon Community Giving Fund provides grants of up to \$20,000 to eligible charities and community organisations from areas in which we operate. Since 2011, the Giving Fund has supported over 450 initiatives. In FY2021, we supported 46 organisations throughout our areas, from WA, NSW and QLD. Some of the wonderful organisations and initiatives we have supported include:

#### Life Education Illawarra: Wollongong

For more than 30 years, Life Education Illawarra has played a critical role in educating young children about the benefits of a healthy lifestyle. The Life Education program is designed to help children develop the social skills and knowledge necessary for effective decision-making, communication, negotiation, and refusal skills in drug-related situations. They are given the skills to resist peer group pressure in drug-related situations and the knowledge so that they can make informed decisions. Support from the Aurizon Community Giving Fund has directly subsidised parents in the Illawarra, lowering the cost of the lessons delivered for the students involved.

#### Foodbank WA: Mullewa, WA

Funds from the Aurizon Community Giving Fund helped Foodbank WA provide food relief to individuals and families living in the regional town of Mullewa, about an hour east of Geraldton, where unemployment and lack of transport has limited access to affordable food. This Aurizon Community Giving Fund grant enabled the Foodbank Geraldton branch to provide emergency food relief hampers filled with essential items to families over a six-month period.

#### TEC-NQ: Townsville, QLD

Each year TEC-NQ recognises local top-performing trade and academic award categories for trade students in Years 11 and 12, and for full-time apprentices through their TEC-NQ awards. Individual scholarships are awarded to top-performing apprentices and students in the plumbing, carpentry, light vehicle, heavy vehicle, electrotechnology, engineering, and IT trades. This grant from the Aurizon Community Giving Fund helped to ensure that each award winner received a scholarship in 2021, ensuring that top-performing local trade students at TEC-NQ were rewarded for their efforts.

### Working together

At Aurizon, we are committed to building on our history of working with our local communities while continuing to be an active and contributing member of these communities. Our approach to achieving this goal is through the following:

- ensuring we know safe, and choose safe every day, and that our communities understand safety is our number one priority (see our Safety and health chapter for more detail)
- regular engagement and mutual understanding, continuing to build new and maintain existing long-term relationships with our community stakeholders
- focusing on continuous improvement through an ongoing dialogue with stakeholders
- upholding our corporate responsibility for all legislative and regulatory obligations
- engaging with Australian local, state, and federal governments and their agencies to inform them of our work with local communities
- understanding and helping where we can support the priorities of local communities, including through our Community Giving Fund and working with other relevant partners.

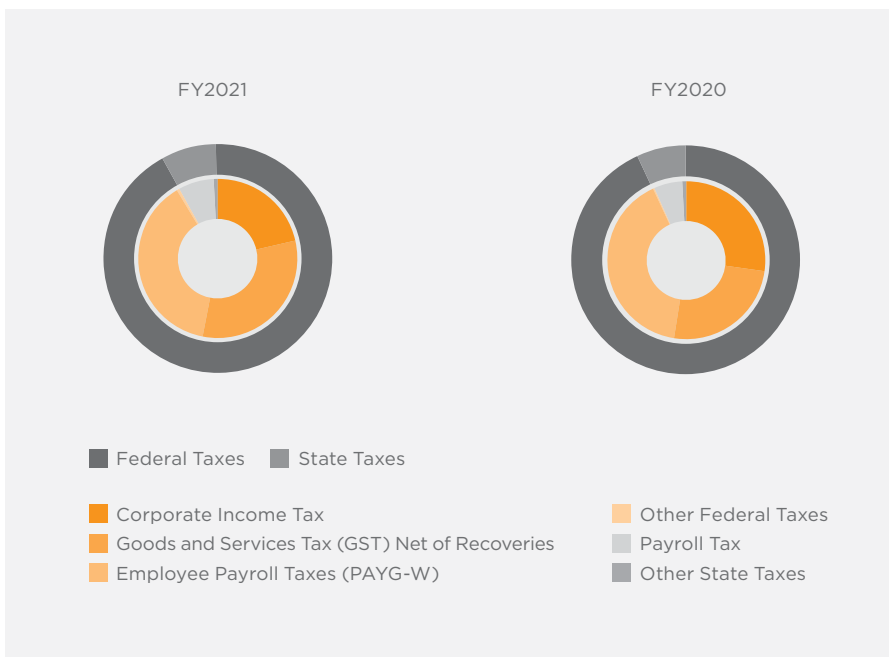
We encourage our communities to engage directly with us on any concerns so we can work together on solutions. We provide feedback channels through our website so that members of our communities can easily contact us.

# TAX AT AURIZON

As an ASX-listed company predominantly operating in Australia, and as an industry leader, we understand the importance of tax transparency.

We continue to have a positive, open, and constructive relationship with the Australian Tax Office (ATO), and continue to voluntarily adopt the Tax Transparency Code, demonstrating our commitment to paying our fair share of tax.

**FIGURE 41 TAXES COLLECTED AND PAID BY AURIZON**



## Taxes paid and collected

As we predominately operate in Australia, we pay various taxes to federal and state governments, and collect various tax payments on behalf of federal and state governments. We also pay taxes in the overseas jurisdictions in which we operate, and report our international activities under the country-by-country reporting regime.

As demonstrated in figure 41, Australian corporate income tax represents the largest component of taxes we pay. Corporate income tax is payable in instalments throughout the income year, with a balancing payment made in the December following the end of the income year to reflect the final income tax liability for that income year. The corporate income tax represented in figure 41 reflects taxes paid in respect of the income year, rather than taxes actually paid during the income year.

As also demonstrated in figure 41, Pay As You Go Withholding taxes collected in respect of employees' salary and wages represent the largest component of taxes we collect (on behalf of the Australian Government). Figure 41 excludes a number of taxes that are considered immaterial for our business, including (but not limited to), customs duty, withholding taxes, taxes paid to foreign governments, and taxes paid by controlled Australian entities that do not form part of the Aurizon income tax consolidated group.

### Tax strategy, tax policy, and governance

Our tax strategy focuses on:

- providing accurate and timely tax compliance and reporting
- enhancing shareholder value through principled tax planning
- building a positive and transparent relationship with the ATO.

This strategy is implemented through our Board-approved Tax Policy and our broader Enterprise Risk Management Framework. Our Tax Team has primary responsibility for implementing our tax strategy, with oversight by the Chief Financial Officer (CFO), the Audit, Governance and Risk Management Committee, and the Board.

### Accurate and timely tax compliance and reporting

Our Tax Team is responsible for identifying and complying with our tax obligations, including lodging returns and making tax payments on time. Confirmation of accurate and timely tax compliance and reporting is provided to the CFO and the Board.

### Enhancing shareholder value through principled tax planning

Our tax strategy aims to enhance shareholder value through principled tax planning. Broadly, principled tax planning includes:

- ensuring operations, transactions and funding are tax efficient
- utilising tax concessions, where available

- ensuring we make appropriate tax elections when given a choice under the tax law
- ensuring tax positions adopted by our business are in accordance with parliamentary intention and guidance provided by the revenue authorities, and do not breach published safe harbour limits.

Our Tax Policy prohibits conducting transactions for the specific purpose of obtaining a tax benefit. Our Tax Team collaborates with our business units to identify and mitigate any tax risks.

Tax positions adopted by our business are considered by at least two qualified tax professionals, with material positions verified by external independent advice.

### Building a transparent relationship with the ATO

We actively manage our relationship with the ATO to foster transparency, taking a 'no surprises' approach, and ensuring the ATO is aware of all significant tax positions and transactions.

### Income tax

The following information has been derived from the audited financial statements prepared for our business for FY2021. Our financial statements reflect our Australian corporate income tax position (applying the 30% corporate tax rate). Any income tax attributable to overseas operations is negligible.

Australian tax law and Australian accounting standards have different rules in respect of the timing of recognition of income and expenses. Under the accounting standards, differences between accounting and tax rules are classified as:

- temporary differences - which reverse over time
- non-temporary differences - which are permanent differences that do not reverse over time, or temporary differences that do not meet the recognition criteria under the accounting standards.

The accounting standards require us to calculate income tax expense, which includes a current tax component and a deferred tax component. The current tax component represents the expected tax liability for the income year. The deferred tax component represents taxes to be paid, or deductions available in future income years.

The deferred tax component is recognised as a net deferred tax asset (future deductions available) or a net deferred tax liability (future tax payable) on the balance sheet.

### Reconciliation of accounting profit to income tax payable

Table 6 provides a reconciliation of our accounting profit/(loss) before tax to income tax expense and income tax payable. Income tax expense is calculated as the accounting profit/(loss) before tax, multiplied by the applicable tax rate, and adjusted for non-temporary differences.

Income tax payable is calculated as the accounting profit/(loss) before tax, multiplied by the applicable tax rate,

**TABLE 6** RECONCILIATION OF ACCOUNTING PROFIT TO INCOME TAX PAYABLE

(\$m)	FY2021	FY2020
Current Tax <sup>^</sup>	121.9	187.7
Deferred Tax	89.8	77.5
<b>Total Income Tax Expense</b>	<b>211.7</b>	<b>265.2</b>
Underlying Profit/(Loss) Before Tax	772.7	773.2
Significant Items	169.3	107.9
Statutory Profit/(Loss) Before Tax	942.0	881.1
Tax at Australian Tax Rate of 30%	282.6	264.3
Tax effect of amounts that are not (taxable) deductible in calculating taxable income:		
Unrecognised deferred tax asset arising from previous impairment	(67.8)	0.0
Capital Losses Not Recognised	0.0	1.1
Other	(1.2)	2.4
Adjustments for tax of prior periods	(1.9)	(2.6)
<b>Income Tax Expense/(Benefit)</b>	<b>211.7</b>	<b>265.2</b>
<b>Temporary Differences</b>		
Provisions / Accruals	5.6	(2.6)
Customer Contracts	0.0	(7.3)
Property, Plant and Equipment	(76.3)	(58.4)
Other	12.4	(10.3)
<b>Income Tax Paid</b>	<b>153.4</b>	<b>186.6</b>

<sup>^</sup>Current tax includes the income tax expense relating to the respective period (FY2020: \$186.6m, FY2021: \$153.4m), adjusted for any income tax expense or benefit relating to the prior respective period (FY2021: \$31.5m benefit, FY2020: \$1.1m expense).

and adjusted for non-temporary and temporary differences.

The key adjustment in our tax calculation is for temporary differences arising from the different accounting and tax treatment of fixed asset-related costs. This is because we are a capital-intensive business, with a significant portion of our asset base comprised of property, plant and equipment.

#### Effective income tax rate

The Australian accounting standards define 'effective tax rate' as the income tax expense for the income year, divided by the accounting profit/(loss) before tax. Our effective income tax rate is outlined in Table 7.

Our effective tax rate for FY2021 of 22.5% is less than the 30% Australian corporate tax rate. This is primarily due to the Group selling its shares held in Aquila Resources Limited on 26 May 2021. As a result of the sale, the Group has recognised a tax benefit of \$67.8 million relating to an unrecognised deferred tax asset associated with the impairment of the carrying amount of the shares held in FY2016. The FY2021 net income tax benefit (including the tax effect of the net gain on sale) is \$65.3 million.

#### ATO declaratory relief proceedings

Prior to the Initial Public Offering in 2010, the Queensland Government made an equity contribution to Aurizon of \$4.4 billion. Following on from engagement with the ATO in relation to the technical tax treatment of the state's capital contribution, Aurizon commenced proceedings in the Federal Court seeking a declaration from the Court that the Capital Distribution account is share capital for the purposes of tax law. The matter is expected to be heard in the Federal Court in March 2022.

**TABLE 7** AURIZON'S EFFECTIVE INCOME TAX RATE (FOR CONTINUED AND DISCONTINUED OPERATIONS COMBINED)

	FY2021	FY2020
Underlying Profit before Tax (PBT)	\$772.7	\$773.2m
Significant Items	\$169.3	\$107.9m
Statutory PBT/(LBT)	\$942.0	\$881.1m
Statutory Income Tax Expense/(Benefit)	\$211.7	\$265.2m
Statutory Effective Tax Rate	22.5%	30.1%
Underlying Income Tax Expense	\$228.8	\$232.8m
Underlying Effective Tax Rate	29.6%	30.1%





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CONSISTE E LOUD

170 Km/h

# SUSTAINABILITY METRICS

Financial Results (Underlying and continuing basis)	Unit	FY2021	FY2020
Total Revenue	\$m	3,019.3	3,064.6
EBITDA	\$m	1,482.2	1,467.6
EBIT	\$m	903.1	909.0
Income Tax (expense)/benefit	\$m	(224.6)	(229.1)
NPAT	\$m	533.2	531.4
Earnings per share <sup>99</sup>	cents per share	28.5	27.2
Return on invested capital (ROIC) <sup>100</sup>	%	10.7	10.9
EBITDA margin	%	49.1	47.9

Operating metrics	Unit	FY2021	FY2020
Above rail revenue/NTK <sup>101</sup>	\$/'000 NTK	24.7	25.2
Labour costs <sup>102</sup> /Revenue	%	27.2	25.3
Above rail opex/NTK (excluding access)	\$/'000 NTK	21.2	20.9
Above rail NTK (Coal)	billion	47.1	50.0
Above rail tonnes	million	253.3	262.0
Below rail tonnes	million	208.3	226.9

Safety	Unit	FY2021	FY2020
Total Recordable Injury Frequency Rate	TRIFR	10.21	9.92
Rail Process Safety	Incidents per million train kilometres travelled	5.13	4.74

Community	Unit	FY2021	FY2020
Total estimated spend with suppliers	\$b	1.2	1.3
Taxes collected and paid <sup>103</sup>	\$m	351	408
Number of supported charities	#	46	58

People	Unit	FY2021	FY2020
Full-time equivalent employees	#	4,825	4,883
Wages and benefits paid	\$	836	792
Regional workforce representation	%	80	79
Senior management <sup>104</sup> regionally based	%	21	26
<b>Inclusion and diversity</b>			
Aboriginal and Torres Strait Islander workforce representation	%	6.6	6.2
Female workforce representation	%	23	22
Female appointees into manager roles <sup>105</sup>	%	35	40
Female promotions <sup>105</sup>	%	31	39
Parental leave uptake <sup>106</sup>	#	Managers: 23	Managers: 16
Parental leave uptake	#	Non-managers: 178	Non-managers: 156

Females in senior leadership roles	Unit	FY2021	FY2020
Board	%	38	38
Senior executive leadership team <sup>107</sup>	%	20	33
Executive leadership team <sup>108</sup>	%	25	22
General managers <sup>109</sup>	%	26	17
Senior leadership team <sup>110</sup>	%	35	41

Environment	Unit	FY2021	FY2020
<b>Emissions<sup>111</sup></b>			
<b>Total GHG emissions (scope 1 and 2)</b>	<b>Metric tonnes of CO<sub>2</sub>-e</b>	<b>847,312</b>	<b>867,863</b>
<b>Direct GHG emissions (scope 1)</b>	<b>Metric tonnes of CO<sub>2</sub>-e</b>	<b>513,755</b>	<b>509,775</b>
Diesel locomotives	Metric tonnes of CO <sub>2</sub> -e	487,174	481,480
Road vehicles	Metric tonnes of CO <sub>2</sub> -e	12,819	14,030
Miscellaneous fuel emissions	Metric tonnes of CO <sub>2</sub> -e	13,762	14,265
<b>Indirect GHG emissions (scope 2)</b>	<b>Metric tonnes of CO<sub>2</sub>-e</b>	<b>333,557</b>	<b>358,088</b>
Electric locomotives	Metric tonnes of CO <sub>2</sub> -e	308,268	331,556
Facilities (electricity purchased)	Metric tonnes of CO <sub>2</sub> -e	25,289	26,532
<b>Total indirect GHG emissions (scope 3)</b>	<b>Metric tonnes of CO<sub>2</sub>-e</b>	<b>83,516</b>	<b>86,996</b>
Purchased goods and services	Metric tonnes of CO <sub>2</sub> -e	27	0.076
Fuel and energy-related activities	Metric tonnes of CO <sub>2</sub> -e	75,373	78,821
Waste generated	Metric tonnes of CO <sub>2</sub> -e	3,014	2,853
Business travel	Metric tonnes of CO <sub>2</sub> -e	1,131	1,351
Employee commuting	Metric tonnes of CO <sub>2</sub> -e	3,924	3,971
Operational GHG emission intensity	Metric tCO <sub>2</sub> -e /'000 NTK	13.58	13.81
<b>Energy</b>			
Total direct and indirect energy consumed within the organisation	Megawatt hours	2,444,939	2,454,935
Total direct energy consumed	Megawatt hours	2,032,511	2,012,203
Diesel (used for locomotives)	Megawatt hours	1,922,248	1,897,094
Diesel (other)	Megawatt hours	99,620	108,337
Natural gas	Megawatt hours	0	0
Other fuels (propane, gasoline, kerosene, stove oil, furnace oil)	Megawatt hours	10,643	6,772
Total indirect energy consumed - electricity	Megawatt hours	412,428	442,732
Energy intensity	Megawatt hours per million AUD of rail freight revenue	1,016	1000
Fuel efficiency	NTK per '000 litres of fuel consumed	334,669	314,545



<b>Effluents and waste</b>			
Total weight of waste generated <sup>112</sup>	Metric tonnes	17,242	7,225
Total hazardous waste generated	Metric tonnes	2,922	2,858
<b>Disposal methods</b>			
Sent to landfill (non-hazardous)	Metric tonnes	2,109	2,096
Recycled	Metric tonnes	13,940	4,107
Incinerated/treated/landfilled (hazardous)	Metric tonnes	1,193	2,096
<b>Water</b>			
Water consumption	Million litres	173	193

99 Calculated on weighted average number of shares on issue – 1,869m FY2021 and 1,953m FY2020.

100 ROIC is defined as underlying rolling twelve-month EBIT divided by the average invested capital. The average invested capital is calculated as the rolling twelve-month average of net assets (excluding cash, borrowings, tax, derivative financial assets and liabilities).

101 Above Rail includes both Coal above rail revenue and Bulk freight transport revenue.

102 FY2021 excludes \$13.9m redundancy costs (FY2020 excludes \$16.0m redundancy costs).

103 Excludes PAYG income taxes included in wages and benefits paid.

104 Includes Managing Director & CEO, Group Executives, and Head of/General Manager direct reports to Group Executives.

105 Data from annual WGEA report, reporting period of 1 April (the previous year) to 31 March (the current year).

106 Data from annual WGEA report, reporting period of 1 April (the previous year) to 31 March (the current year).

107 Group Executives reporting to Managing Director & CEO.

108 Group Executives, and Head of/General Manager direct reports to Group Executives.

109 Head of/General Manager.

110 Direct reports to Head of/General Manager.

111 Aurizon's Scope 1 and 2 emissions are reported in accordance with the National Greenhouse and Energy Reporting legislation. Aurizon's identification of relevant Scope 3 emissions activity sources is informed by the GHG Protocol Corporate Value Chain (Scope 3) Standard and includes: purchased goods and services (paper purchased and water consumption), capital goods, fuel- and energy-related activities (including consumption and upstream transportation and distribution), waste generated in operations, business travel (air and ground-based travel and accommodation), employee commuting, and upstream leased assets. The reporting boundary for the Scope 3 emissions data for the FY2021 period includes the categories listed above, with the remaining activity sources excluded due to current data availability issues. Scope 3 emissions from employee commuting, which represent ~4% of the total reported Scope 3 emissions, have been excluded from the limited assurance over this dataset, however will be considered for inclusion in future reporting period once the methodology for calculation has been strengthened/formalised.

112 Scrap steel included in waste from FY2021, resulting in an increase compared with FY2020.

# STATEMENT OF LIMITED ASSURANCE



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## Independent Limited Assurance Report to the directors and management of Aurizon Holdings Limited

### Conclusion

We have undertaken a limited assurance engagement on Aurizon Holdings Limited’s ‘Subject Matter Information’ disclosed in the 2021 Aurizon Holdings Limited Sustainability Report detailed below for the year ended 30 June 2021.

Based on the procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that, the ‘Subject Matter Information’ is not prepared in all material respects, in accordance with the ‘Reporting Criteria’ detailed below for the year ended 30 June 2021.

### Subject Matter Information and Reporting Criteria

The ‘Subject Matter Information’ and ‘Reporting Criteria’ for our limited assurance engagement for the year ended 30 June 2021 is as follows:

Sustainability Performance Indicators ('Subject Matter Information')	Reporting Criteria
Total Scope 1 and 2 GHG emissions (tCO <sub>2</sub> -e)	The National Greenhouse and Energy Reporting Act 2007 ('NGER Act'), the National Greenhouse and Energy Reporting Regulations 2008 ('NGER Regulations') and the National Greenhouse and Energy Reporting (Measurement) Determination 2008 (collectively referred to as the 'NGER Legislation')
Total direct and indirect energy consumption (MWh)	NGER Legislation
Basis for the selection of Scope 3 GHG emissions sources (reporting boundary and identification of relevant activity sources), which include:	
<ul style="list-style-type: none"> <li>Purchased goods and services: paper purchased and water consumption</li> <li>Capital goods</li> <li>Fuel and energy related activities, including consumption and upstream transportation and distribution</li> <li>Waste generated in operations</li> <li>Business travel: air and ground-based travel and accommodation</li> <li>Employee commuting</li> <li>Upstream leased assets</li> </ul>	The Greenhouse Gas ('GHG') Protocol Corporate Value Chain (Scope 3) Standard

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### Sustainability Performance Indicators (‘Subject Matter Information’)

### Reporting Criteria

Scope 3 GHG emissions (tCO<sub>2</sub>-e), which are comprised of:

- Fuel and energy related activities
- Business travel (air and car hire)
- Waste generated in operations
- Paper purchased

The Greenhouse Gas (‘GHG’) Protocol Corporate Value Chain (Scope 3) Standard and Aurizon’s Scope 3 Emissions Basis of Preparation

### **Basis for Conclusion**

We conducted our limited assurance engagement in accordance with Australian Standard on Assurance Engagements ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information* (‘ASAE 3000’), issued by the Australian Auditing and Assurance Standards Board.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

### **Management’s Responsibilities**

Management is responsible for:

- a) ensuring that the ‘Subject Matter Information’ is prepared in accordance with the ‘Reporting Criteria’;
- b) confirming the measurement and evaluation of the underlying subject matter against the ‘Reporting Criteria’, including that all relevant matters are reflected in the ‘Subject Matter Information’;
- c) designing, establishing and maintaining an effective system of internal control over its operations and financial reporting, including, without limitation, systems designed to assure achievement of its control objectives and its compliance with applicable laws and regulations; and
- d) the electronic presentation of the ‘Subject Matter Information’ and our limited assurance report on their website.

### **Our Independence and Quality Control**

We have complied with the independence and other relevant ethical requirements relating to assurance engagements, and applied Auditing Standard ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, Other Assurance Engagements and Related Services Engagements* in undertaking this assurance engagement.

### **Assurance Practitioner’s Responsibilities**

Our responsibility is to express a limited assurance conclusion on the Aurizon Holdings Limited’s ‘Subject Matter Information’ as evaluated against the ‘Reporting Criteria’ based on the procedures we have performed and the evidence we have obtained. ASAE 3000 requires that we plan and perform our procedures to obtain limited assurance about whether, anything has come to our attention that causes us to believe that the ‘Subject Matter Information’ is not properly prepared, in all material respects, in accordance with the ‘Reporting Criteria’.

A limited assurance engagement in accordance with ASAE 3000 involves identifying areas where a material misstatement of the ‘Subject Matter Information’ is likely to arise, addressing the areas identified and considering the process used to prepare the ‘Subject Matter Information’. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.



The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion about whether the 'Subject Matter Information' has been properly prepared, in all material respects, in accordance with the 'Reporting Criteria'.

Our procedures included:

- Inquiries with Subject Matter data owners and sustainability report responsible management to understand and assess the approach for collating, calculating and reporting the respective 'Subject Matter Information' across the reporting period ended 30 June 2021
- Inspection of documents as part of the walk throughs of key systems and processes for collating, calculating and reporting the respective 'Subject Matter Information' for the 2021 Aurizon Holdings Limited Sustainability Report.
- Selection on a sample basis items to test from the selected sustainability performance indicators and agree to relevant supporting documentation.
- Analytical reviews over material data streams to identify any material anomalies for the 'Subject Matter Information' and investigate further where required
- Agreeing overall data sets for the 'Subject Matter Information' to the final data contained in the 2021 Aurizon Holdings Limited Sustainability Report.

#### ***Inherent Limitations***

Because of the inherent limitations of an assurance engagement, together with the inherent limitations of any system of internal control there is an unavoidable risk that it is possible that fraud, error, or non-compliance with laws and regulations, where there has been concealment through collusion, forgery and other illegal acts may occur and not be detected, even though the engagement is properly planned and performed in accordance with Standards on Assurance Engagements.

#### ***Restricted use***

The applicable criteria used for this engagement was designed for a specific purpose of assisting the directors and management report on the 'Subject Matter Information' presented in the 2021 Aurizon Holdings Limited Sustainability Report, as a result, the 'Subject Matter Information' may not be suitable for another purpose.

This report has been prepared for use by the directors and management for the purpose of reporting on the 'Subject Matter Information' presented in the 2021 Aurizon Holdings Limited Sustainability Report.

We disclaim any assumption of responsibility for any reliance on this report to any person other than the directors and management or for any purpose other than that for which it was prepared.

*Deloitte Touche Tohmatsu*

DELOITTE TOUCHE TOHMATSU

Chi Mun Woo  
Partner  
Sydney, 5 October 2021





# GLOSSARY

Some terms and abbreviations used in this document, together with industry-specific terms, have defined meanings.

These terms and abbreviations are set out in this glossary and are used throughout this document. A reference to dollars, \$ or cents in this document is a reference to Australian currency unless otherwise stated.

## above rail

Includes the business unit segments of Coal and Bulk

## ABS

Australia Bureau of Statistics

## ACCUs

Australian Carbon Credit Units

## ACSI

Australian Council of Superannuation Investors

## ACSC

Australian Cyber Security Centre

## AESS

automatic engine start stop

## AGM

Annual General Meeting

## AGRMC

Audit, Governance and Risk Management Committee

## AppsMod

Application modernisations

## APS

Aurizon Port Services

## ASX

Australian Securities Exchange

## ATO

Australian Taxation Office

## AUD

Australian dollar

## Aurizon

Aurizon Holdings Limited (ABN 14 146 335 622) and where the context requires, includes any of its subsidiaries and controlled entities

## below rail

The business unit segment of Network

## Board

The Board of Directors of Aurizon Holdings Limited

## BF-BOF

Basic Furnace – Basic Oxygen Furnace method of steelmaking

## Bulk

The above rail freight haulage operating division of Aurizon Holdings Limited

## CAGR

Compound Annual Growth Rate, expressed as a percentage per year

## CCM

Critical Control Management

## CDMP

Coal Dust Management Plan

## CFO

Chief Financial Officer

## CMT

Crisis Management Team

## CO<sub>2</sub>

Carbon dioxide

## CO<sub>2</sub>-e

Carbon dioxide equivalent

## Coal

The above rail coal haulage operating division of Aurizon Holdings Limited

## CoP

Code of Practice

## CQCN

Central Queensland Coal Network

## Derailment

Derailment occurs when one or more rollingstock wheels leave the rail or track during railway operations

## DRI

Direct reduced iron

## DTMR

Queensland Department of Transport and Main Roads

## EA

Enterprise Agreement

## EAF

Electric Arc Furnace method of steelmaking

## EAP

Employee Assistance Program

## EBIT

Earnings Before Interest and Taxes

## EBITDA

Earnings Before Interest, Taxes, Depreciation and Amortisation

## EPL

Environmental Protection Licences

## ETCS

European Train Control Systems

## ESG

Environmental, social and governance

## EV

electric vehicles

## FORG

Freight on Rail Group

## FSB

Financial Stability Board

## FY

Financial Year ended 30 June, as the context requires

## GAPE

Goonyella Abbot Point Expansion

## GDP

Gross domestic product

## GHG

Greenhouse gas

## GRI

Global Reporting Initiative

## GTK

gross tonne kilometres

## HCC

Hard coking coal

## IEA

International Energy Agency

## IPO

Initial Public Offering

## IRG

Indigenous Reference Group

## IVMS

In-Vehicle Monitoring System

## kg

kilograms

## kWh

kilowatt hour

## L

litres



**LTI**

Lost Time Injury

**m**

million

**MD & CEO**

Managing Director and Chief Executive Officer

**MHFA**

mental health and first aid

**MPs**

Members of Parliament

**mt**

millions of tonnes

**mtpa**

millions of tonnes per annum

**MW**

megawatts

**Network**

Aurizon Network Pty Ltd (ACN 132 181 116) a wholly owned subsidiary of Aurizon Holdings

**NGER**

National Greenhouse Energy Reporting

**NGER Act**

*National Greenhouse Energy Reporting Act 2007* (Cth)

**NPAT**

net profit after tax

**ntk**

net tonne kilometre, unit of measure representing the movement over a distance of one kilometre of one tonne of contents, excluding the weight of the locomotive and wagons

**PCI**

pulverised coal injection

**PPP**

purchasing power parity

**QCA**

Queensland Competition Authority

**RAC2031**

Regional Australia Council 2031

**Rail Process Safety**

The cumulative number of Signals Passed at Danger (SPAD), derailment and rollingstock-to-rollingstock collision incidents, per million train kilometres, over a given recording period

Note: Infrastructure-Caused SPADs have been removed from the SPAD

element of Aurizon's Rail Process Safety metric

**RAP**

Reconciliation Action Plan

**ROIC**

return on invested capital

**rollingstock**

Equipment that provides transportation capability on our railways, such as locomotives and wagons

**SDGs**

United Nations Sustainable Development Goals

**share**

A fully paid ordinary share in Aurizon Holdings

**SIF**

serious injury or fatality

**SHE**

Safety, Health and Environment

**SPAD**

Signals Passed at Danger: reflects an instance in which a train has entered a section of the track without the correct authority

**SWUG**

South-West System Users Group

**TCFD**

Task Force on Climate-related Financial Disclosures

**tonne**

one metric tonne, being 1,000 kilograms

**tonne kilometres**

the product of tonnes and distance

**TRI**

Total Recordable Injuries

**TRIFR**

The cumulative number of Lost Time Injuries, Medical Treatment Injuries, and Restricted Work Injuries sustained by employees and contractors, per million hours worked, over a given recording period

**TSF**

Train Support Facility

**Turnover**

Total number or rate of employees who ceased employment with Aurizon during a specified period

**TWh**

terawatt hour

**UQ**

The University of Queensland

**USD**

United States dollar

**UT5**

Aurizon Network fifth Access Undertaking

**WACC**

Weighted Average Cost of Capital, expressed as a percentage

**WGEA**

*Workplace Gender Equality Act 2012*

