

2019 SUSTAINABILITY REPORT

Delivering for a sustainable future



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OUR FY2019 SUSTAINABILITY HIGHLIGHTS

259 million tonnes
of commodities hauled

80%
of our employees work
across regional locations
in Australia

21%
of our workforce
is female, up from
12.4% in 2012

5.6%
of our workforce
is Aboriginal or
Torres Strait Islander,
up from 2.5% in 2012

54 supported
through our
charities Community
Giving Fund

\$1.2 spent with
billion suppliers



ABOUT AURIZON

Managing Director & CEO message



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

As a company, we are proud of the leading role we have played in the transport sector in being open and transparent in relation to the social, environmental and economic aspects of our business. We remain committed to continuing our strong track record in disclosing information about how we operate and how we manage our financial risks.

In May this year, the Task Force on Climate-related Financial Disclosures (TCFD) published their *2019 Status Report* for the Financial Stability Board, which focuses on companies' progress in disclosing information aligned with the TCFD's recommendations. With more than 1,000 global companies reviewed as part of the report, I was pleased that the way we report on managing climate-related risks was highlighted as an example of recommended disclosure practice.

In FY2019, our safety performance results were mixed. We improved 14% against the prior year in the key metric of Rail Process Safety, which includes derailments, signals passed at danger, and rollingstock collisions. These events, while low frequency, can potentially be of high consequence so our efforts to reduce risk are very important. However, the other key metric of Total Recordable Injury Frequency Rate (TRIFR), which captures the number of injuries to employees per million hours worked, deteriorated by 10%. While there are many underlying factors to this statistic, any number of injuries is unacceptable. All our employees should go home after each shift in the same condition they came to work in — it is that simple.

Across the business, I have reinforced that safety is our core value and as such, the highest priority for everyone in our company. We will continue to invest in the safety and capability of our people to build a stronger safety and performance culture underpinned by our values.

Our goal to achieve **ZERO**Harm extends to the communities where we operate. Earlier this year, we launched a public rail safety campaign — Don't put your life on the line — following an increase of illegal trespass on our rail corridor. While we recognise that everyone has their right to express their opinion, it should be done in an environment that is safe and legal. We wanted trespassers to understand that near misses with pedestrians have a long and lasting impact on the mental health of our train drivers.

We remain focused on building a strong and resilient business. This year, we continued to build on our core strengths of hauling bulk commodities and managing the Central Queensland Coal Network (CQCN).

In May 2019, we announced a commercial agreement with our customers who use the CQCN to transport their coal. This agreement provides greater commercial and operational certainty for all users of the CQCN, and we believe forms an important element in the long-term success of the Queensland coal supply chain. The proposed customer agreement is currently with the regulator for formal approval.

We forecast strong demand from Asia and the Indian subcontinent to continue for Australia's high-quality commodities. We see Aurizon having a critical role in supporting a highly efficient and globally competitive supply chain for Australian commodity exports, especially for coal. We are investing to support this demand by increasing our rollingstock capacity in both New South Wales and Central Queensland, and by investing in technology to support safe and efficient services for our customers.

As mentioned in our 2018 Sustainability Report, we have a deliberate strategy to focus on our core strengths in bulk commodities and in markets that will support a strong sustainable business. This resulted in our decision to divest the Intermodal freight business. We executed an important part of this divestment with the sale in January 2019 of our Queensland Intermodal business to Linfox. Under a separate agreement, our Bulk business provides the rail linehaul services using our locomotives and some terminal services to Linfox. This was a great contract outcome for our Bulk business and has helped support the strategy to turn the business around.

The final part of the Intermodal divestment was the proposed sale of our Acacia Ridge Terminal, located south of Brisbane, to Pacific National. While initially blocked by the Australian Competition and Consumer Commission (ACCC), in May 2019 the Federal Court handed down a judgement that cleared the way for the sale. However, in June 2019, the ACCC appealed against this decision. We will continue to operate the terminal in line with the current arrangements until this matter is finalised.

In Aurizon, it's important that we create a business that is not only strong commercially and performs well for customers, but also plays a positive role in the regional communities where our people live and work, and where our trains travel each day.

In the past year, our employees have supported their communities through grassroots sponsorship and volunteering opportunities, while at a Company level, we continued supporting local charities through our Community Giving Fund. Following extreme drought conditions in parts of Queensland and New South Wales and the devastating floods in North Queensland, we made additional funding available to support the long-term recovery and rebuilding of impacted communities. We are seeing some great outcomes from these projects.

I was humbled to see the support and empathy our employees showed to each other and members of their communities during the 2019 floods in North Queensland. While dealing with the weather event on a personal level, our employees also continued to deliver innovative bulk haulage services, using road and rail options for our customers while the damaged rail line was being repaired. I was also pleased to see that despite challenging conditions, safety and wellbeing remained a priority for our employees and for community members they were working with.

It is a genuine demonstration that while we develop our business and operations to ensure the Company's ongoing success, it is the strength, resilience and resourcefulness of our people that are key to our sustainability.

I welcome your feedback on our 2019 Sustainability Report and invite you to send any comments to sustainability@aurizon.com.au.

Andrew Harding
Managing Director & CEO

About Aurizon

Aurizon (ASX: AZJ) is Australia's largest rail-based transport business and an ASX50 company.

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

Our success and future value are linked to the key demand drivers of the Australian resources sector in global markets and the ongoing strength of the Australian economy.

Aurizon is well placed to benefit from the continued long-term demand for Australia's high-quality resources, such as the traditional exports of coal and iron ore, as well as inputs such as nickel that are supporting the rapid global growth in the battery industry. Australia's proximity to growing Asian economies continues to provide strong export opportunities for Australian commodities.

What we deliver

Our operations span Queensland, New South Wales and Western Australia. Our biggest economic footprint is in regional Queensland, where our employees support our coal haulage business, ensure that the Central Queensland Coal Network (CQCN) is running efficiently and safely, and deliver bulk commodities.

Our operations consist of three business units:

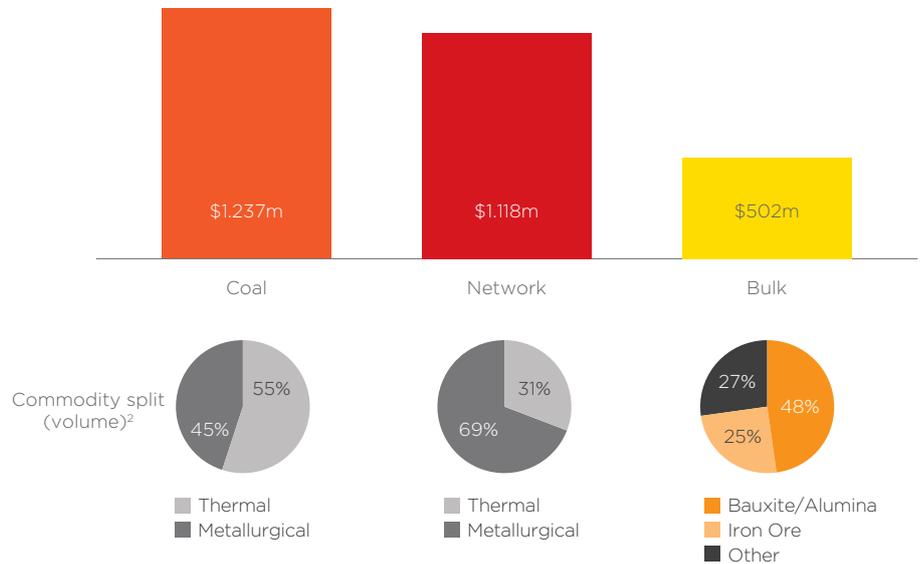


Coal: Aurizon's Coal business provides a critical service to Australia's \$69 billion³ export coal industry, the nation's second largest source of export revenue in FY2019.

As a supply chain partner for our customers, we transport more than 200 million tonnes of metallurgical and thermal coal annually from Queensland and New South Wales bound for export to global markets, and domestic customers. Around half of Australia's export coal volume is hauled by Aurizon, and around 10% of the coal we haul is for domestic use, contributing to Australia's energy generation.

Aurizon operates more than 330 locomotives and more than 8,700 coal wagons. A large majority of employees in our Coal business live and work in regional communities in Queensland and New South Wales.

Figure 1 - Aurizon's FY2019 revenue by major segment¹



Bulk: We currently operate our bulk rail services in Queensland, New South Wales and Western Australia. During FY2019, our Bulk business delivered 45 million tonnes of commodities, such as iron ore, alumina, bauxite, nickel, limestone, and industrial and agricultural products.



Network: Aurizon operates and manages the Central Queensland Coal Network (CQCN). It connects more than 40 mines to five major export terminals, as well as to domestic customers.

The CQCN is a critical part of the supply chain for Queensland's coal industry. 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. The network delivers over half of all global seaborne metallurgical coal.

Access to our rail network is managed under a detailed process approved by the competition regulator, the Queensland Competition Authority (QCA). Because the network is a regulated asset, network access charges are approved by the QCA at a level designed to compensate the business and shareholders adequately, reflective of the risk environment in which we operate and to ensure safe and efficient operations.

¹ FY2019 Revenue: Coal (Total revenue less track access), Network (Total revenue), Bulk (Total revenue)

² Aurizon analysis

³ Australian Bureau of Statistics, (Customised report)

Figure 2 - Aurizon's operations

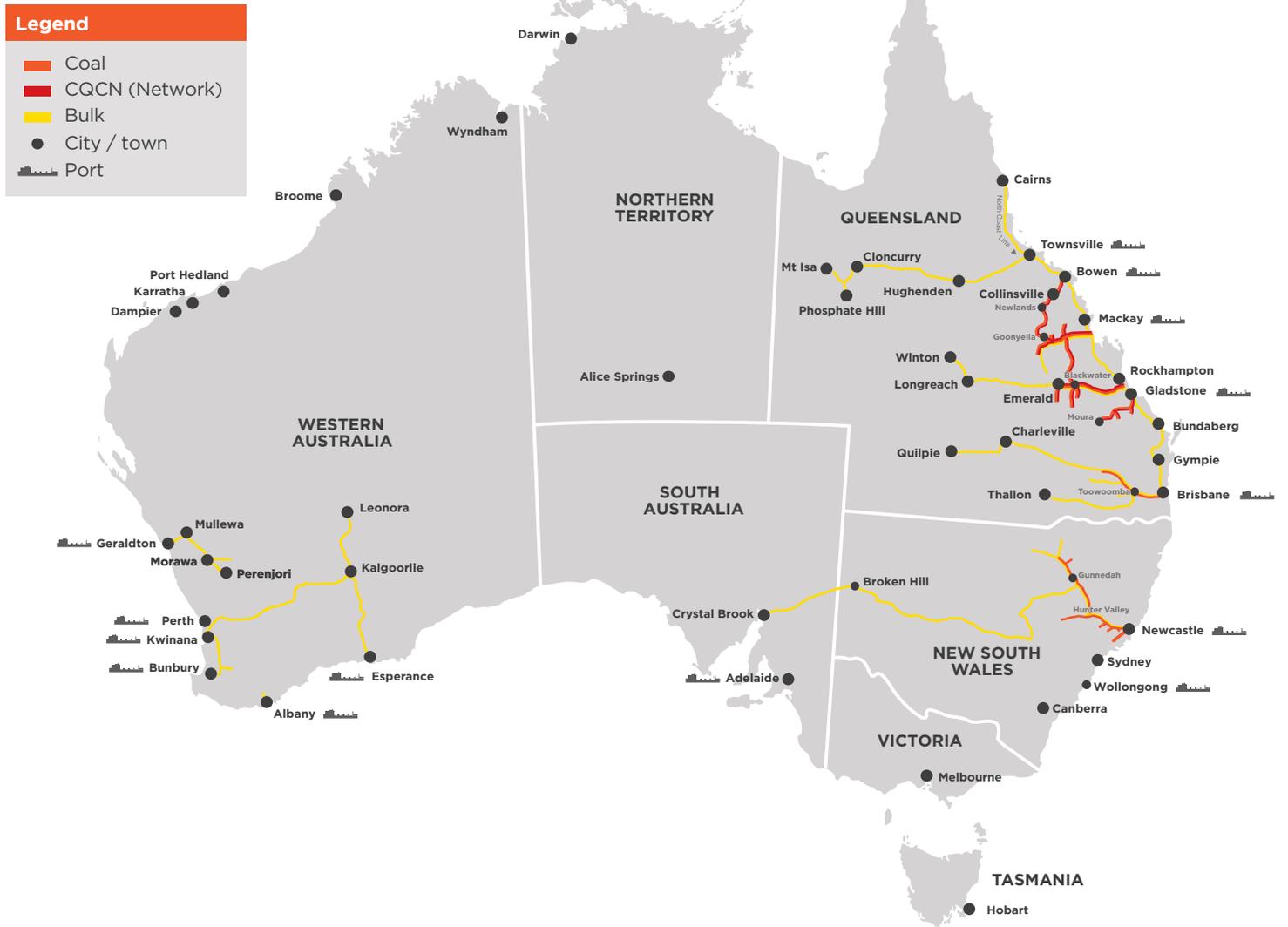


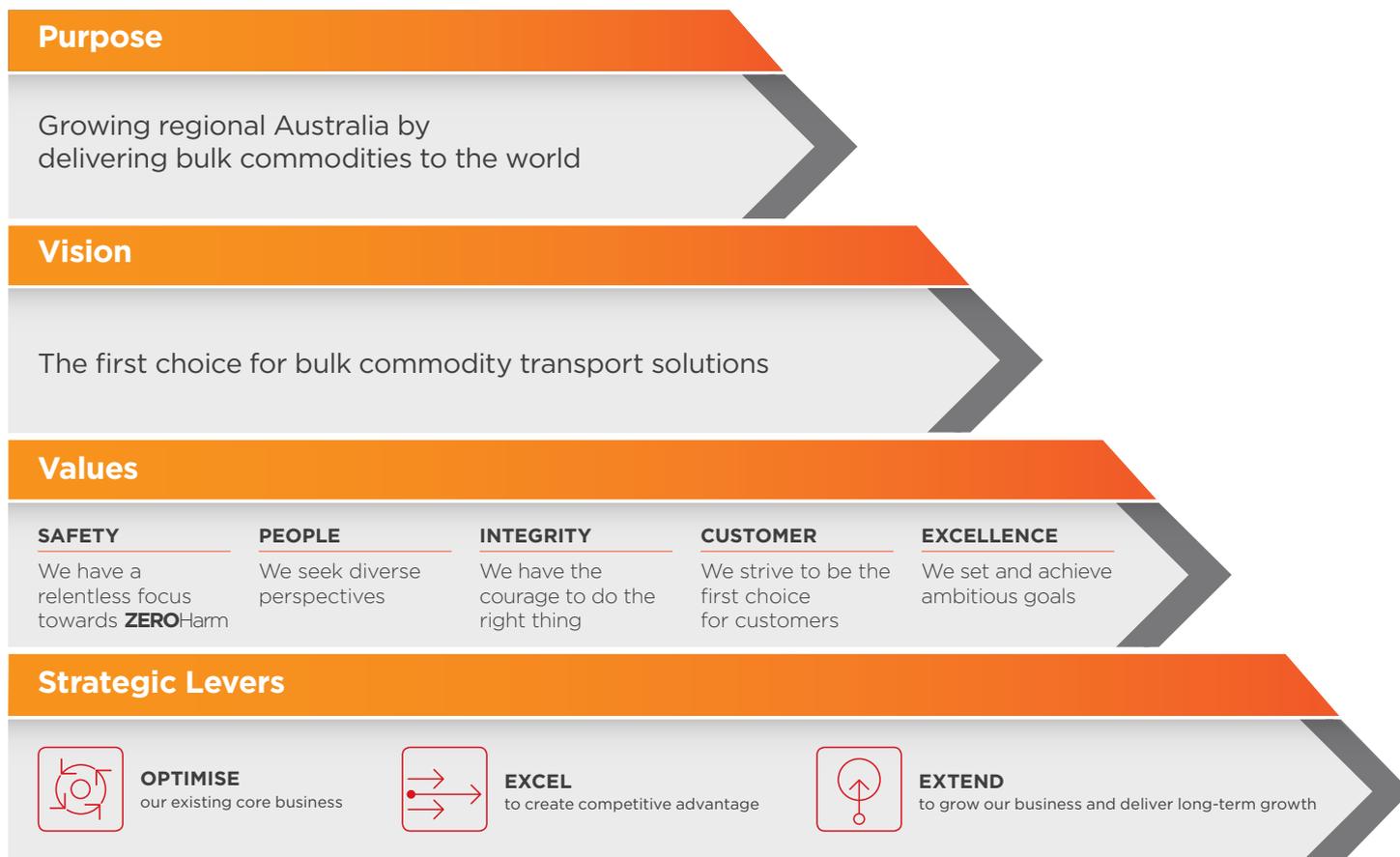
Figure 3 - Aurizon's Central Queensland Coal Network (CQCN)



Our strategy

In 2018, we reset our strategic framework to focus on three Levers (*Optimise, Excel, and Extend*) to guide value creation and ensure the sustainable success of our business. This framework, Strategy in Action, is aimed at driving focus in our short-term activity within a framework of what is required for long-term growth and success.

Figure 4 - Aurizon's Strategy in Action



In the past 12 months, we have been actively prioritising the *Optimise* and *Excel* levers because they are central to our competitiveness and ensure we deliver for our customers. By focusing on these levers, we have delivered clear milestones throughout the year, for example:

- We reached an agreement on a 10-year proposed revised Access Undertaking with our CQCN customers that provides greater commercial and operational certainty for all stakeholders across the Queensland coal supply chain (see the 'Regulation and policy' section of our 'How we operate' chapter). The proposed agreement is currently with the regulator for formal approval.
- We secured contract extensions for a number of above rail haulage agreements for our Coal business, and executed a 10-year (5+5 year option) agreement with Linfox for our Bulk business. (see the 'Our customers' section of our 'How we operate' chapter).

- We have progressed divestment through a sale and closure process of the underperforming Intermodal business (Interstate Intermodal, Queensland Intermodal and the Acacia Ridge Terminal) as we focused on core capabilities in delivering bulk commodity transport solutions.
- We reviewed our Company's vertically integrated structure to determine which structure created the most shareholder value. The review concluded that the benefits of remaining vertically integrated outweighed separation.
- We concluded a review to determine the optimal legal and capital structure of the Group. We have implemented a simplified legal structure that will provide the opportunity to optimise the Company's balance sheet and provide additional funding capacity for the Group.

See Aurizon's FY2019 Annual Report for more information on the above milestones.

How we create stakeholder value

Business inputs

We have three key inputs to our business, underpinned by a clear governance structure.

People

We employ industry-leading expertise in frontline, technical and central functions, and continue to develop the capability of our leaders to ensure we maximise the effectiveness and efficiency of our value chain.

Assets

We are a capital-intensive business, operating and managing the Central Queensland Coal Network with a significant fleet of active coal and bulk locomotives and wagons.

Capital

We allocate financial resources and capital investments in an efficient and effective way to create maximum value for our stakeholders.

Corporate structure and governance

We have governance structures, frameworks and corporate functions to guide effective decision-making, address regulatory and policy impacts, and implement controls that manage safety, risk and business integrity.

Our business model

Our business model draws on these inputs to provide essential services for our customers. 'Strategy in Action' provides the framework for the way we continually enhance our business. Examples include:

How we create value

- We optimise our operations to ensure efficient transportation.
- We apply best practice engineering and safety standards.
- We focus on cost and capital efficiency to balance long-term maintenance renewal and development requirements of the CQCN.
- We partner with our customers to fund, design, build and operate rail infrastructure in Queensland.

How we drive differentiation

- We provide full end-to-end rail solutions.
- We design, build, own and operate, allowing us to more efficiently and effectively manage our customers' supply chains and interfaces between port and mine.
- We actively manage our operational business portfolio, looking for opportunities to integrate supply chain adjacencies.
- We continuously monitor markets (particularly the future of coal), environmental and regulatory conditions, and adjust our business priorities accordingly.

Stakeholder value

We create tangible and sustainable value for our primary stakeholders including investors, customers, employees and the community.

Investors

We provide sustained return on investment through stable regulated Network returns, with upside growth potential through above-rail operations.

Value created in FY2019

- \$487.6 million has been returned to investors through dividends.

Customers

We generate business for our suppliers and convert their inputs into reliable, safe and efficient supply chain solutions for our customers.

Value created in FY2019

- 259 million tonnes of bulk commodities transported at an estimated value of over \$40 billion for our customers.⁴

Employees

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.

Value created in FY2019

- More than 4,700 people employed.
- \$810 million in wages and benefits paid.

Community

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.

Value created in FY2019

- Approximately 80% of our employees reside in regional areas.
- \$357 million in taxes collected and paid.⁵
- \$1.2 billion spent with suppliers.

⁴ Estimated value of customers' product, as calculated by Aurizon
⁵ Excludes PAYG income taxes included in wages and benefits paid

HOW WE OPERATE

Our approach to sustainability

Our approach to reporting

Aurizon keeps 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 this site.

In addition to the above disclosures, Aurizon takes a direct approach to reporting environmental, social and governance (ESG) disclosures to 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 takes into consideration 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, Aurizon has aligned our climate change-related disclosures to the Task Force on Climate-related Financial Disclosures (TCFD) 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.

In August 2019, Aurizon maintained a 'Leading' rating for the fifth consecutive year from the Australian Council of Superannuation Investors (ACSI) for corporate sustainability reporting in Australia. Having received this rating for four or more consecutive years, Aurizon has again been considered a 'Leader' by ACSI, along with 45 other ASX200 companies.

External participation

With a focus on direct disclosures to stakeholders, Aurizon takes a selective approach to participation in external initiatives. With an estimated 600 ESG ratings globally⁶, Aurizon considers each opportunity for participation with a view to actively participate only where such initiatives significantly add value for our stakeholders to our existing disclosures.

As at June 2019, Aurizon actively participates in the FTSE4Good Index Series, MSCI ESG Ratings and Sustainalytics.

Aurizon has chosen not to participate in CDP (formerly the Carbon Disclosure Project) in 2019. We have made this decision based on feedback from stakeholders that CDP information is not being used as a key mechanism to assess or engage with Aurizon on climate change.

Our primary channel for engaging with stakeholders on all ESG matters, including our climate-related disclosures, is through the publication of our Sustainability Report, which is updated and issued annually.

Material priorities and relevant stakeholders

At Aurizon, we know that understanding our material impacts is necessary to develop our strategy and operate sustainably, and that addressing these impacts is key in creating sustainable value for our stakeholders.

We strive to ensure that our report reflects significant economic, environmental and social priorities that may influence strategic

decision-making or have significant impacts on our business and our key stakeholders. As such, we continuously assess the material issues that affect our business, our stakeholders, and our operating environment.

As part of our process this year, we sought the views of internal relationship holders to ensure our report covers the current topics of interest to our key stakeholders (see figure 5). These internal representatives communicate with respective stakeholders on a regular basis, continually monitoring issues raised. Where possible, we subsequently address stakeholders' concerns through relevant channels. The key concerns raised by stakeholders this year were used to inform our material priorities, as outlined in table 1. These priorities have been used to design report content.

Figure 5 - Key stakeholders and topics of interest

Primary stakeholders				
Employees Business model, Customers, Safety, Future of coal, Environment, People, Communities	Investors Business model, Customers, Regulation and policy, Governance, risk and business integrity, Safety, Future of coal, Environment, People, Communities	Customers Business model, Customers, Regulation and policy, Safety, Future of coal, Environment, People, Communities	Communities Regulation and policy, Safety, Future of coal, Environment, Communities	
Active interests				
Industry analysts Business model, Regulation and policy, Governance, risk and business integrity, Safety, Future of coal	Rail network providers Business model, Regulation and policy, Governance, risk and business integrity	Suppliers Regulation and policy, Governance, risk and business integrity	Financiers Business model, Customers, Regulation and policy, Governance, risk and business integrity, Safety, Future of coal	Non-government organisations Regulation and policy, Governance, risk and business integrity, Safety, Future of coal, Environment, Community
Governments Regulation and policy, Safety, Environment, Community, Future of coal	Regulators Business model, Safety, Customers, Regulation and policy, Future of coal, Governance, risk and business integrity	Unions Regulation and policy, People	Joint venture partners Customers, Regulation and policy, Safety, Environment, Future of coal	Industry groups Safety, Environment, Customers

6 SustainAbility Rate the Raters 2019: Expert Views on ESG Ratings, February 2019

Table 1 - Material priorities

MATERIAL PRIORITY	DESCRIPTION	CHAPTER
Business model	How the structure of our business supports sustainable business practices and enables us to operate efficiently and effectively. How we continuously improve through technology advancements, where possible, to reduce resource use, increase productivity, and ultimately create value for the benefit of customers and shareholders.	'About Aurizon' and 'How we operate'
Customers	How we ensure that we are the first choice for our customers' bulk commodity transport solutions by delivering efficient and reliable services to help our customers compete in global commodity markets. How we maintain collaborative engagement and provide competitive solutions for our customers.	'How we operate'
Regulation and policy	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.	'How we operate'
Governance, risk and business integrity	How we operate with integrity and conduct business ethically through our clear governance structure and Code of Conduct. How our Board manages risk within our strategic framework, and how we address climate-related risks through alignment with the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) recommendations.	'Governance and risk'
Safety	How we manage the safety of our employees, contractors and communities, including avoiding workplace fatalities and injuries, and ensuring public safety.	'Safety'
Future of coal	How we continually monitor and evaluate the demand for and supply of Australian coal and key market drivers to test the resilience of our business under multiple long-term scenarios, informing strategic planning.	'Future of coal'
Environment	How we effectively manage our environmental performance by reducing our emissions, avoiding or offsetting impacts on native biodiversity, minimising waste to landfill, and managing the physical impacts to our business from climate change.	'Environment'
People	How we ensure the overall wellbeing of our employees, including diversity and inclusion in our workforce, organisational capability, talent acquisition and retention, and mental health and wellbeing.	'People'
Community	How we focus on growing regional Australia through our economic contributions and local procurement, and how we manage our impacts on the communities in which we operate through effective community engagement.	'Community'

United Nations Sustainable Development Goals

In September 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 environmental, social, and governance 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 have continued to focus on the five goals that are most aligned to our business, our values and our operational environment.



At Aurizon, we have a relentless focus towards achieving our goal of **ZERO**Ham. Our Seamless Safety initiative aims to strengthen our safety culture through developing the capability of our frontline leaders and empowering them to drive safety improvements. We continue to invest in the safety and capability of our people to build a mature and committed safety culture.



We are committed to creating a culture that is truly inclusive. As well as raising female representation in our workforce, we continue to address issues underpinning gender inclusion, including our approach to closing the gender pay gap and opening career pipelines through development initiatives.



Approximately 80% of our employees and their families live and work in regional centres, and we contribute to these communities through providing employment opportunities, and contracting local providers and suppliers for services such as equipment hire, accommodation and office services. We also play a critical role in Australia's coal supply chain, the second largest export industry (by value), valued at \$69 billion⁷ in FY2019.



With a focus on resilience, we continue to make incremental improvements to our CQCN infrastructure and systems. We aim to ensure our infrastructure is high-quality, reliable, sustainable and resilient. Aurizon is also committed to using technology to continuously improve our operations through reduced resource use, increased productivity and improved safety outcomes.



We continue to focus on cutting diesel emissions by reducing diesel consumption, using cleaner diesel, operating electric locomotives as part of our fleet, and promoting rail over road freight. We continuously investigate opportunities to improve our operational efficiency in reducing our GHG emissions. Beyond our operations, we recognise that the coal we haul is associated with greenhouse gas emissions. We also recognise that energy fuel-mix decisions are complex, balancing considerations for technology, stability of supply, emissions and cost-effectiveness. We hold the view that the higher quality coal (high energy, low ash and low sulphur) that Australia supplies will be a key part of the global transitional strategies.

7 Australian Bureau of Statistics (Customised report)

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 allows us to effectively manage our customers' supply chains and interfaces between port and mine. We bring capability, technological innovation, and our haulage experience to our customers each day to support the delivery of bulk commodities to markets in Australia and internationally.

Our Coal business continues to provide a customer-aligned service offering. We are investing in our fleet and technology with strategic investments in asset performance

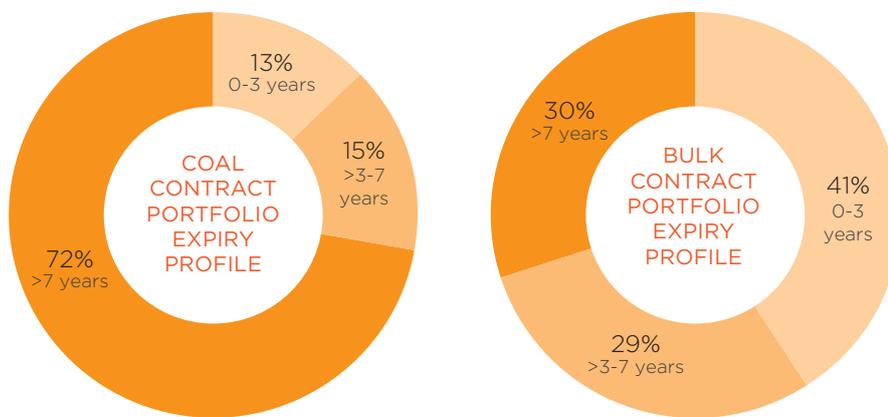
and utilisation. Aurizon Coal's engagement with current and prospective customers on innovative commercial and operational solutions continues to support confidence in growth for our business. During FY2019, we had the following updates for our Coal business:

- Jellinbah: Secured a contract extension for Jellinbah East and Lake Vermont mines.
- Glencore: Secured several contract extensions and greater volumes, most notably in the Newlands corridor.
- Baralaba Coal Company: Commenced railings from the Baralaba North Mine to RG Tanna Coal Terminal in 1H-FY2019.
- MACH Energy: Commenced railings from the Mt Pleasant mine in January 2019.

Our Bulk business is progressing a turnaround plan with a focus on continuous improvement. This includes the flexible deployment of the existing fleet to take advantage of near-term opportunities. Our end goal includes a focus on growth markets, strategic partnerships, and improved operational performance. Contract updates from our Bulk business during the financial year include:

- Glencore: Executed a variation to the mixed freighter and concentrate contract expiring August 2021.
- Linfox: Executed a 10-year agreement (5+5) for hook-and-pull services in Queensland commencing February 2019.
- Mt Gibson Mining: Short-term spot agreement to haul low-grade ore commenced in May 2019 following cessation of contract in January 2019, in line with end of mine life.

Figure 6 - Contract portfolio expiry profile (as at 30 June 2019)⁸



Our contract portfolio forms an important part of our efforts to operate our business sustainably. Our Above Rail contracts are long-term, particularly our Coal business, with 72% of the portfolio having a remaining contract life of >7 years (see figure 6).

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.

Case study: Queensland Intermodal sale to Linfox

During FY2019, Aurizon executed an agreement with Linfox to acquire Aurizon's Queensland Intermodal business (QIB). The QIB acquisition allowed Aurizon to continue the divestment of its Intermodal business announced in August 2017.

QIB customers and Queensland regional areas are benefiting from the service continuity preserved by this transaction. Approximately 190 Aurizon employees engaged in providing terminal operations and pick-up and delivery services have transferred to Linfox.

Aurizon continues to provide hook-and-pull rail services and some terminal and maintenance services to Linfox under a separate 10-year (5+5 year option) commercial, Take-or-Pay contract. Approximately 120 employees transferred to the Bulk business to support this contract, with Aurizon retaining the existing Intermodal locomotive fleet (subject to a sale option to Linfox at the end of five years). The Linfox transition enabled Aurizon to avoid having to shut down QIB, with the potential loss of more than 300 jobs and avoiding an estimated \$30-40 million in closure costs. The resulting contract now forms a key part of the Bulk contract portfolio.



⁸ Coal profile represents the contracted tonnes as at 30 June 2019 and includes nominations, options and other uncertain events that have the potential to cause variance in AZJ contracted tonnes. It also incorporates

the Glencore contract extensions and additional volume signed after 30 June 2019. Bulk profile based on estimated GTKs as a number of hauls in the Bulk portfolio are hook-and-pull and, accordingly, have no

corresponding tonnes and NTKs. Includes iron ore contracts. For the purposes of the chart, Linfox is classified as a five-year contract.



Our future with technology

Aurizon is committed to continuously improving our operations to reduce resource use, increase productivity for the benefit of customers and shareholders, and deliver improved safety outcomes for our employees, customers and the communities in which we operate.

We aim to improve efficiency through prioritised technology investments in conjunction with people, process, and data change. Further investment in technology and innovation will continue to feature in our operations, not only to drive productivity improvements, but to also deliver safety and environmental benefits.

TrainHealth

The TrainHealth project is one example of how we use condition monitoring and predictive analytics to improve our operational efficiency through better asset management.

The leading-edge technology is fitted to locomotives to monitor the condition of critical locomotive components, engine performance, and train handling, and will allow Aurizon to monitor our coal locomotives and drivers in real time. The technology taps into existing data sources, such as event recorders, to gather real-time data to help improve locomotive reliability, problem diagnosis, driving techniques, and operational safety.

Installation of the technology on the Siemens electric locomotive fleet in the CQCN will begin in the first half of FY2020. In-service failures (and therefore train cancellations) will be

reduced through real-time health monitoring of the locomotives.

Virtual reality classrooms for trainee drivers

An example of how we are using technology to better assist our people and safety capabilities is our Virtual Reality (VR) training solutions via Next Generation Training Technologies.

In what is believed to be an Australian rail industry first, Aurizon's Willowburn trainee drivers piloted VR training as part of their 10-week driver school. The new training tool enables training in a safe, simulated environment where trainees can

work with wagons and locomotives in VR before working with physical rollingstock.

The VR technology enables trainees to practise tasks in a simulated and safe environment. VR training reduces the reliance on the operational resources required for the practical components of the training, and has the potential to be used to improve learnings from previous incidents. We plan to embed the VR training as part of driver training certifications.



Regulation and policy

Rail transport in Australia is highly regulated, and government policy and regulatory processes can have significant impacts on our business. During FY2019, there have been several key developments in regulatory and policy issues that have been a major priority for our company.

UT5 customer agreement

On 3 May 2019, we announced an agreement with our Network customers on a proposed revised Access Undertaking for the Central Queensland Coal Network (CQCN). This followed the earlier publication by the Queensland Competition Authority (QCA) of draft and final decisions on a fifth Access Undertaking (UT5) for the CQCN that Aurizon believed did not adequately provide for future supply chain investment. The proposed Access Undertaking is supported by customers representing more than 90% of railed tonnes on the CQCN. The key points in the proposed revised Access Undertaking include:

- Extending the term of the Access Undertaking to 10 years (1 July 2017 to 30 June 2027).
- A Weighted Average Cost of Capital (WACC) increasing to 6.3% from 5.9% (subject to a reset on 1 July 2023) on completion of specified milestones, as compared to the WACC of 5.7% in the QCA's Final Decision on UT5.
- Development of mechanisms to provide supply chain value through improved supply chain stability and consultative maintenance and asset renewal programs.

The negotiated outcome with customers is an important step towards the development of an Access Undertaking that better addresses customer needs, provides for improved export supply chain performance and longer-term certainty for the Queensland resources sector. Aurizon Network and customers are engaging with the QCA for it to fully consider and, if appropriate, approve the revised Access Undertaking in accordance with its standard procedures. The ASX statement released on 3 May 2019 is available on our website.

Intermodal transactions

During the year, we continued the divestment of our Intermodal business by completing the sale of the Queensland Intermodal business to Linfox on 31 January 2019.

The final part of the divestment was the sale of the Acacia Ridge Intermodal Terminal (ART) to Pacific National (PN), which was blocked by the Australian Competition and Consumer Commission (ACCC) in July 2018. The ACCC commenced proceedings in the Federal Court alleging that the proposal would have the effect of substantially lessening competition.

In May 2019, the Federal Court of Australia dismissed the ACCC's applications. The decision by the Federal Court allowed us to progress the sale of the terminal to PN, pending receipt of regulatory approval by the Foreign Investment Review Board. However, on 27 June 2019, the ACCC lodged an appeal against the Federal Court's decision, which means the sale will not be settled until the matter is heard and finalised before the Federal Court. In the interim, we are continuing to operate the ART. The ASX statements are available on our website.

Energy and emissions

Aurizon is one of the largest energy consumers in Queensland, and operates the only electric heavy haulage traction rail network in Australia. Reliable and affordable electricity is not only important for our business, it is critical for our customers who compete globally.

As addressed in our 2018 Sustainability Report, our company is committed to advocating for the competitiveness of electric traction. Despite investments and commitments being made to improve the competitive position of electric traction, there continues to be inconsistency between policy intent and market outcomes.

We remain concerned that if changes to energy and emissions policies are not coordinated effectively, there is a risk to the future competitiveness of large energy consumers. A clear and consistent long-term emissions reduction policy is essential. It is also important emissions reduction policies, including the Safeguard Mechanism, are based on providing for parity in relation to the requirements and other impacts on the road and rail transport industries. Our position remains that energy policy should be based on a technology-neutral approach that maximises the role of innovation and industry investment facilitated by the market and stable government policies.

Road and rail policy

We directly advocate for policy actions to increase the use of rail freight on key corridors, recognising rail offers productivity and environmental benefits and is far safer than road transport. Policy changes are required to address different treatment that favours road over rail, including investment priorities for improving existing infrastructure, access pricing and regulation. One area of focus for this advocacy has been on the Mount Isa rail line.

Rail freight access prices on the Mount Isa line have been substantially higher than the road user charges paid for bulk freight products. This has contributed to a significant shift of bulk freight that is better suited to being carried by rail, moving to road. Reducing the difference in access charges between rail and road would encourage bulk freight customers to increase the use of rail freight and contribute to more investment and the potential for greater volumes carried by rail.

In the Queensland Budget handed down on 11 June 2019, the Government announced that it would provide \$20 million a year for four years, starting 1 July 2019, to reduce rail access charges on the Mount Isa line. The Government has also previously announced \$380 million of funding over five years to maintain and improve the line. Aurizon has welcomed these significant policy decisions to improve the cost and performance of rail infrastructure that is critical to the economic success of the North West Minerals Province, which relies on the Mt Isa line.

An increased use of rail freight as a proportion of mode share also brings inherent environmental benefits. For example, from a transport-sector Gross Value Added (GVA) perspective, railways contribute 27% while producing only 3% of the sector's GHG emissions. In comparison, the road sector has a 54% GVA contribution while producing 80% of the sector's GHG emissions⁹. Steady growth in Australia's freight transport sector emissions is projected, totalling an increase of approximately 10% by 2030¹⁰.

DID YOU KNOW?

Rail freight emits **75%** fewer greenhouse gas emissions per tonne of freight moved compared to the road freight transport sector.¹¹

Aurizon will continue to work openly with others in industry to advocate to governments the case for levelling the playing field for road and rail.

9 Ernst & Young (2019), Capitalising on Queensland's Opportunities in a zero net emissions future: A Queensland zero net emissions economy: Transport, 1, Available: https://www.qld.gov.au/_data/assets/pdf_file/0009/101700/ernst-young-qld-zero-net-emissions-economy-transport.pdf

10 Australian Government, Department of Environment and Energy (2018), Australia's emissions projections 2018, Available: <http://www.environment.gov.au/system/files/resources/128ae060-ac07-4874-857e-dced2ca22347/files/australias-emissions-projections-2018.pdf>

11 Australian Government, Department of Environment and Energy (2018), Rail transport overview, Available: <https://www.energy.gov.au/business/large-businesses/industries/rail-transport/rail-transport-overview>



GOVERNANCE AND RISK

We manage risk to enhance opportunities and reduce threats to sustain shareholder value. 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. Our Board is ultimately responsible for risk management.

Figure 7 - Aurizon's Committee Structure¹²



Effective governance for sustainability

Our Board provides oversight and strategic direction to sustainability, and is supported by the Safety, Health and Environment (SHE) Committee. The SHE Committee includes several members of the Board, including the Chairman and Managing Director & CEO.

Continuous improvement

We are progressing efforts to modernise our governance and management system to ensure that obligations and requirements are more readily accessible, understandable and practical, and that these and the supporting compliance activities are targeted to the areas of greatest risk.

In February 2019, the Australian Stock Exchange (ASX) released its fourth edition of the *Corporate Governance Principles and Recommendations* (principles). Aurizon will be required to report against these principles in the year commencing 1 July 2020. We have reviewed our corporate governance practices against the new principles and are confident that our practices are compliant.

Findings from the Australian Prudential Regulation Authority prudential inquiry were used to perform an internal review of our Governance, Risk, and Compliance (GRC) culture. We assessed our GRC culture against the seven pillars of

corporate governance: role of the Board; leadership and oversight; risk management and compliance; issue identification and escalation; commercial decision making; accountability; and remuneration. Overall, the review found actions and behaviours foster an effective GRC culture. Observations and areas for improvement identified during the review were presented to our Audit, Governance and Risk Management Committee, and actions are subsequently being taken to implement improvements.

Conduct

Our Code of Conduct embodies what it means to work at Aurizon. We expect our employees to be honest and fair, and to conduct business with the highest ethical standards. We aim to be respectful in all our dealings and enable our people to have the courage to do the right thing. Our Code of Conduct has a strong linkage to our values and is fostered through a strong workplace culture that upholds those values. All employees are made aware of the Code prior to employment, and are required to complete online training modules to ensure a thorough understanding and continuous adherence.

A copy of Aurizon's Code of Conduct can be viewed on the Governance page of our website.

Aurizon is always committed to operate and act within our values of Safety, People, Integrity, Customer and Excellence. Central to this is our commitment to compliance with laws, including strict compliance with Australia's state and territory legislation, and international anti-corruption and anti-bribery standards. For more information, see our Anti-Bribery and Anti-Corruption Policy on the Governance page of our website.

¹² Other Aurizon Committees not shown include the Nomination and Succession Committee, and the Remuneration and Human Resources Committee. For more information about our committee structures, see our FY2019 Annual Report.

How we manage risk

Risk management framework

Aurizon promotes a risk-aware culture with an emphasis on frontline accountability for effective risk management. The consideration of risk features heavily in Aurizon's thinking, from the framing of strategy through to informing decision-making. In late 2018, Aurizon reviewed and refreshed its Enterprise Risk Management Framework and Risk Appetite. The update aims to deliver a simpler and more practical format to support the identification, assessment and reporting of risk across the business, and includes both financial and non-financial risks.

Data privacy and cyber security

Aurizon continues to adopt new technical capabilities to improve operational efficiency in daily operations and enable data-driven decision-making. These new capabilities often involve collection and processing of large data sets and integration with customers and suppliers. We have a responsibility to protect these important data sets from misuse, loss, unauthorised disclosure or damage, so we continually assess the privacy and cyber security risks associated with all aspects of our operations.

Our strategies to manage our privacy and cyber security risks are evolving. Over FY2019, we have begun new initiatives to streamline IT systems and continue

investment in cyber security controls and tools. These initiatives will uplift our detection and response capabilities further. We have also been maturing our risk assessment and mitigation approaches using the Factor Analysis of Information Risk (FAIR) methodology. FAIR allows Aurizon to move from a compliance-based to a risk-based approach to cyber security risks. It allows us to quantify cyber security risks in financial terms, which gives Aurizon a robust approach to cyber security risk management.

Modern slavery, human rights and responsible procurement

To be the first choice for bulk commodity transport solutions, Aurizon relies on having strong partnerships with our suppliers. Consideration of human rights-related risks represents a key aspect of supply chain management, including the impact that supply chains have on forced or compulsory labour.

In November 2018, legislation was passed in the Australian Parliament to enact the *Modern Slavery Act*. The legislation requires applicable entities to report on the modern slavery risks in their operations and supply chains and outline how those risks are to be addressed through a Modern Slavery Statement (MSS). Aurizon is subject to the obligations contained in the *Modern Slavery Act 2018 (NSW)* and the *Modern Slavery Act 2018 (Cth)*.

Aurizon's first MSS will describe the modern slavery risks associated with our business activities and our proposed actions to address those risks. The statement is due by 31 December 2020, and we have begun reviewing our internal procurement processes to take the new legislation into consideration.

We have adopted a principle-based corporate governance framework designed to promote responsible management and conduct of our company across a range of disciplines. We will also implement a supplier Code of Conduct, which we will be expecting all existing and new suppliers to comply with.

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.

Aurizon commits to supporting and respecting the protection of internationally proclaimed human rights, as set out in the Universal Declaration of Human Rights and the 10 principles of the United Nations Global Compact. We understand our responsibility to respect human rights and commit to providing transparency on our slavery risks and how they are being addressed.

See our Human Rights Policy on the Governance page of our website for more information.



Climate change considerations for our business

We acknowledge that climate change is affecting a wide range of industries around the world, resulting in financial implications. Our business is exposed to both transition and physical risks; however, Aurizon is also positioned to take advantage of climate-related opportunities.

Our Board has ultimate responsibility for the Company’s consideration of climate-related risk. It is guided by the Board, SHE Committee, and our Audit, Governance & Risk Management Committee as part of our broader corporate strategy and planning. This is the third reporting period in which we have conducted a risk assessment approach using the Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD) recommendations. The Final TCFD Recommendations Report, released in June 2017, outlines four ‘core’ elements for disclosing climate-related risks: Governance, Strategy, Risk Management, and Metrics and Targets. Table 2 describes each recommended disclosure and provides an index to identify their location within this report.

In December 2018, the Australian Accounting Standards Board and Australian Auditing Standards Board released its guidance paper relating to the consideration of the financial accounting implications of risks associated with climate change. This has been incorporated within our FY2019 annual report.

For more information on how we manage our climate risks, see our ‘Future of Coal’ and ‘Environment’ chapters.

Climate-related risks and opportunities¹³

- **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** include our efforts to mitigate and adapt to climate change also producing benefits, such as resource efficiency and cost savings, development of new products and services, accessing new markets, and building resilience along our supply chain.



Task Force On Climate-related Financial Disclosures

Table 2 – Core elements: Task Force on Climate-related Financial Disclosures (TCFD)

CORE ELEMENT	TCFD RECOMMENDED DISCLOSURE	INDEX
Governance	Board’s oversight of climate-related risks and opportunities.	‘Governance and Risk’ chapter
	Management’s role in assessing and managing climate-related risks and opportunities.	
Strategy	Climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	Table 3 – Response to climate-related risks
	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.	
Risk management	Organisation’s processes for identifying and assessing climate-related risks.	Table 3 – Response to climate-related risks
	Organisation’s processes for managing climate-related risks.	
	How the processes for identifying, assessing, and managing climate-related risks are integrated into the organisation’s overall risk management.	
Metrics and targets	Metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	‘Environment’ chapter
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	
	Targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	

¹³ Financial Stability Board, *Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures*

Table 3 – Response to climate-related risks

RISK	DESCRIPTION	RISK TYPE	POTENTIAL IMPACT TO BUSINESS	STRATEGIC PLANNING, RISK MITIGATION AND OPPORTUNITIES	METRICS
Thermal coal demand	Demand for thermal coal is subject to energy policy and fuel-mix decisions driven by energy costs, energy security, and regulation of GHG emissions (including carbon pricing).	Transition: Market, Policy & Legal, and Technology Risk level: High	Approximately a third of Aurizon's network volumes and just over half of rail haulage volumes relate to continuing demand for thermal coal. Time horizon: Medium to long-term	<ul style="list-style-type: none"> Continue to undertake scenario analysis by examining and evaluating possible future events. Continue to compare Aurizon's scenario analysis with a range of external projections. Continue to undertake mine resilience analysis (based on coal quality, cost competitiveness and projected mine life) to inform investment decisions. 	<ul style="list-style-type: none"> Coal demand and supply projections and scenario analysis (refer to our 'Future of Coal' chapter) Seaborne market demand Australian export volume Capital investment in Australian coal sector Average age of coal-fired electricity capacity in coal import nations Global coal quality specifications Competitiveness of Australian coal supply Development of new Australian coal mines
Metallurgical coal demand	Demand for metallurgical coal is subject to factors such as economic development, steel-intensive growth, method of steel production (including emerging lower carbon processes), import reliance, and regulation of GHG emissions (including carbon pricing).	Transition: Market, Policy & Legal, and Technology Risk level: Low	Approximately two-thirds of Aurizon's network volumes and just under half of rail haulage volumes relate to continuing demand for metallurgical coal. Time horizon: Long-term		
Access to funding, insurance and licences	Investor concern over climate-related risks may result in an inability for Aurizon, our customers and end users of coal to gain licences, funding or insurance for coal mining, transport, and coal-fired generation and/or steel production capacity.	Transition: Reputation Risk level: Moderate to High	A withdrawal (or reduction) of licences, funding or insurance will limit Aurizon's growth opportunities. Time horizon: Short, medium and long-term	<ul style="list-style-type: none"> Continue to advocate for the ability of Australia's metallurgical coal (and Australia's export infrastructure advantage) to underpin global metallurgical coal supply, used in steel production. Continue to advocate the importance of Australia's thermal coal, used for energy generation in global markets and contributing to a reduction in GHG emissions when compared to lower quality coal alternatives. Continue climate-related disclosures. Access a broad range of capital markets and diversify funding sources and/or extend tenure where possible. 	<ul style="list-style-type: none"> Environmental planning approval timeframes Capital investment in coal mining capacity Global approvals of coal-fired generation and steel capacity
Climate change resilience and adaptation	Current and future disruption arising from increased severity and/or frequency of extreme weather events (higher temperatures, strong winds, flooding and associated erosion, bushfires and others).	Physical: Acute & Chronic Risk level: Moderate to High	May result in loss of revenue due to extreme weather events affecting mining, transport and port activities across the supply chain. May result in higher costs associated with ensuring asset availability, or to address damage to assets. Time horizon: Short, medium and long-term	<ul style="list-style-type: none"> Continue to design infrastructure to recover quickly from flooding and extreme weather events, including the positioning of inventory such as ballast, flood rock, rail and formation material. Reduce blanket heat-triggered speed restrictions through more localised real-time monitoring of track temperatures. Improve engagement with customers on the estimated recovery timelines by providing an initial range that is narrowed as certainty increases. Ensure an adaptive design approach to improve infrastructure resilience. Engage with land use planning and policymakers regarding incentivisation of low-impact transport modes and enabling infrastructure (e.g. electrified rail) to ensure consistent treatment of transport systems within policy. 	<ul style="list-style-type: none"> Current/projected temperatures through Aurizon Networks Remote Monitoring System, the Bureau of Meteorology, and CSIRO.
Carbon emissions management and reporting	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> . Increased opportunity under federal and state government energy/climate targets and policy instruments.	Transition: Policy & Legal Risk level: Low to Moderate	Facilities exceeding the emissions baseline may require the need to purchase Australian carbon credit units (ACCUs) per tonne of CO ₂ e exceeded. Time horizon: Medium to long-term	<ul style="list-style-type: none"> Assess future liability under the Climate Solutions Fund's (previously Emission Reduction Fund) Safeguard Mechanism (current analysis indicates Aurizon's baselines are not expected to be surpassed in the next reporting period, with provision to amend baselines or defer requirement to acquire ACCUs). Incorporate carbon prices into fleet purchase decisions when considering electric vs. diesel locomotives. Reduce GHG emissions through improved operational efficiency and initiatives targeting locomotive emissions intensity reduction. The Queensland Government's 2030 renewable energy target, if achieved, has the potential to materially reduce the emissions intensity of Aurizon's electric locomotive fleet. Better value provided to customers and stakeholders through increasing demand for energy efficient services. Monitor and engage with government climate policy agendas, and advocate for a positive policy outcome for rail. Identify opportunities to participate in renewable energy programs and energy efficiency initiatives. 	<ul style="list-style-type: none"> Locomotive emissions intensity. Aurizon's historical and targeted GHG emissions intensity reduction is expected to keep us below our Safeguard baseline over the coming reporting period. Please refer to our 'Environment' chapter.

SAFETY

At Aurizon, the safety of ourselves and others is our number one priority. We cannot achieve operational performance objectives or maintain our social licence to operate unless we ensure the safety of our employees, our contractors, and our communities. Safety is our core value, and we have a relentless focus to achieve our goal of ZERO^{Harm}.

Recording our safety performance

We record and investigate safety incidents to help us learn and improve. Our key safety metrics are:

- Total Recordable Injury Frequency Rate (TRIFR)
- Rail Process Safety.

Total Recordable Injury Frequency Rate (TRIFR)

In FY2019, our TRIFR, which includes contractors, was 11.07 injuries per million hours worked, which was a 10% increase against the prior year (see figure 8).

The data shows the actual number of total recordable injuries remained largely unchanged from the prior year and the increase can be attributed to a lower number of recordable hours. Nevertheless, the figure is disappointing and reinforces the importance of the continued rollout of the Seamless Safety program and other initiatives.

Aurizon continues to focus on contractor safety through our Contractor Safety Community of Competence. During FY2019 this group of subject matter experts helped with our goals of reducing injuries to contractors and making our TRIFR data more accurate by completing several initiatives, including:

- developing a standard approach to managing contractors
- developing internal training for leaders on managing contractors
- improving the capture of hours worked by contractors.

Through our Seamless Safety program, Aurizon will broaden our range of safety measures during FY2020, with specific focus on identifying and learning from events or near misses that have the potential for Serious Injury or Fatality (SIF).

Rail process safety

The metric for Rail Process Safety, which measures operational safety including derailments, signals passed at danger, and collisions, improved by 14% — at a total of 4.38 incidents per million train kilometres travelled (see figure 10). This is significant given these events, while low frequency, can potentially cause fatalities.

Aurizon continues to invest in derailment awareness training for operational staff in a bid to reduce derailments, with 187 operational staff having completed this rigorous two-day course. Aurizon also continues to actively participate in industry-wide efforts to help

Figure 8 - Total recordable injury frequency rate¹⁴

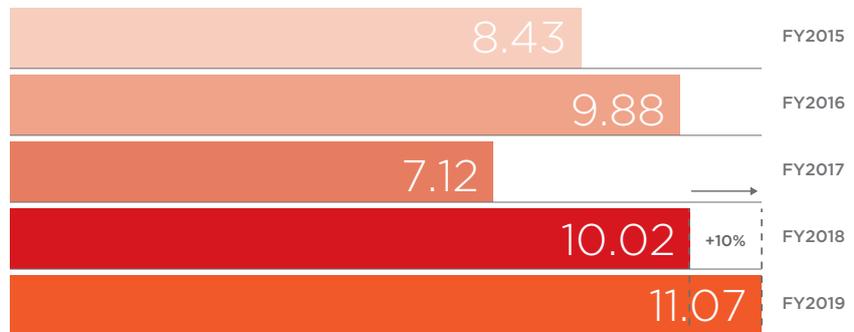


Figure 9 - FY2019 recordable injuries, by body part

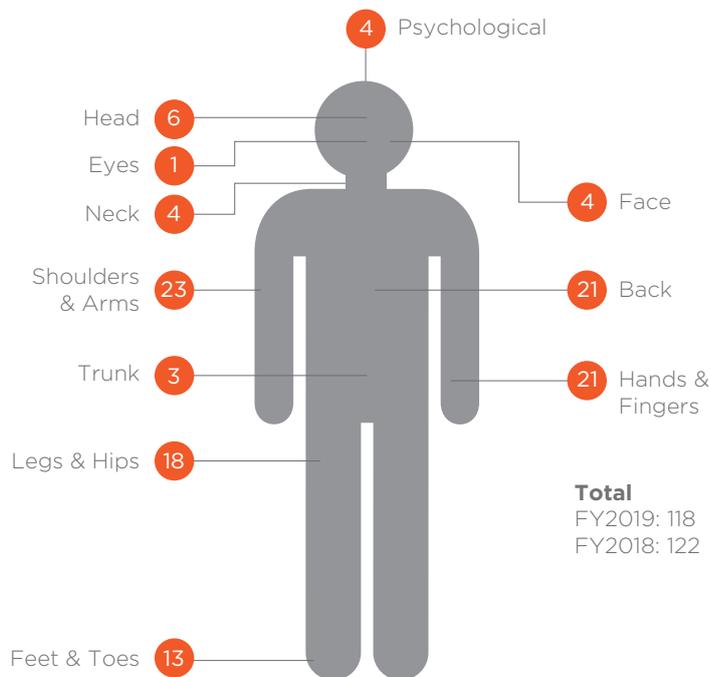
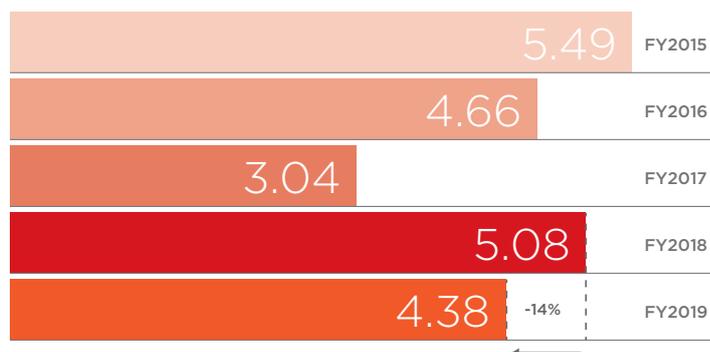


Figure 10 - Rail process safety¹⁵



¹⁴ From FY2018, TRIFR has been redefined and contractor statistics have been included. Historical performance has been restated to include the extended definition for FY2015 - FY2017.

¹⁵ Rail Process Safety was introduced from FY2018. FY2015 - FY2017 results are calculated retrospectively using previously collected data.

reduce signals passed at danger, such as our participation in the Rail Industry Safety and Standards Board's signals passed at danger working group.

Seamless Safety

As part of Aurizon's focus on continuous safety improvement, a long-term program of work called Seamless Safety commenced in FY2019. Seamless Safety aims to strengthen our safety culture and simplify our safety tools and processes. The program's focus is on developing the capability of our frontline leaders and empowering them to drive safety improvements. It is also aimed at enhancing our safety systems and technology.

The program strives to make safety seamless — it should be something that we innately do as part of our work rather than something we add to the end of our work plans. The Seamless Safety program encourages employees to think differently about safety in their day-to-day activities, emphasising the need to keep our people safe instead of focusing solely on compliance. We believe that our employees often know the safest way to perform their job. By tapping into this knowledge, we can help create a positive work environment that will lead to safer outcomes.

Seamless Safety is applying a continuous improvement mindset based on the three principles below:

- **People are the solution to harness**
Our teams know how to work best, including how to adapt to daily variations. Empowering our frontline to identify safety improvements based on their experiences will help build a culture where teams are confident to make judgement decisions.
- **Safety is about positive outcomes**
Taking the time to learn from when things are going well and seeking to replicate those conditions will build positive resilience in our workforce and ensure that we focus on the things that matter most.
- **Safety is an ethical responsibility**
Making decisions based on keeping people safe rather than a compliance frame builds more trust in our leaders and our teams to strengthen our approach to safety.

Over 95% of operational senior leaders have now been involved in an awareness session on Seamless Safety thinking. To support the changed mindset, Seamless Safety also aims to improve our internal safety processes and frameworks.

During FY2019, we have reviewed our safety tools and systems with a focus on critical risk management, particularly relating to



the potential for Serious Injury or Fatality (SIF). To ensure our work activities are planned appropriately, we are focusing on improving our critical risk management by introducing additional safety metrics for SIF and developing a central source for all our safety risk and control information. We are also developing a tool that will allow users to verify that critical controls are in place before they begin a task.

Additionally, we have adopted a new framework for the way we manage incidents. This framework moves away from a one-size-fits-all approach to a risk-based process that ensures resources are being assigned to activities that will add value across the business. The new framework supports a shift from a compliance to a learning culture, where the focus is on learning from incidents with the greatest SIF potential to ensure they are not repeated and allowing operational leaders to prioritise resources based on important safety and operational matters. The changes to the framework are expected to result in more attention on high-risk incidents that have the potential for serious injuries or fatalities.

Learning teams as a tool to engage our frontline

Learning teams are a structured process that connects our frontline with decision makers to ensure that we better equip our teams to undertake work safely. The main purposes of a learning team are to:

- learn from those closest to the work
- focus on the way work is done (versus the way work is planned)
- identify the tools, resources and systems that employees rely on to be successful as they adapt to daily variations in activities
- note opportunities for improvement or simplification of tasks.

We have conducted learning teams across the business, covering activities such as shunting in yards, driving in adverse conditions, and effectively managing communication between Network Control and track workers/drivers. Participants come from a range of operational backgrounds, and are often cross-functional, leading to a range of diverse opinions and learning opportunities.

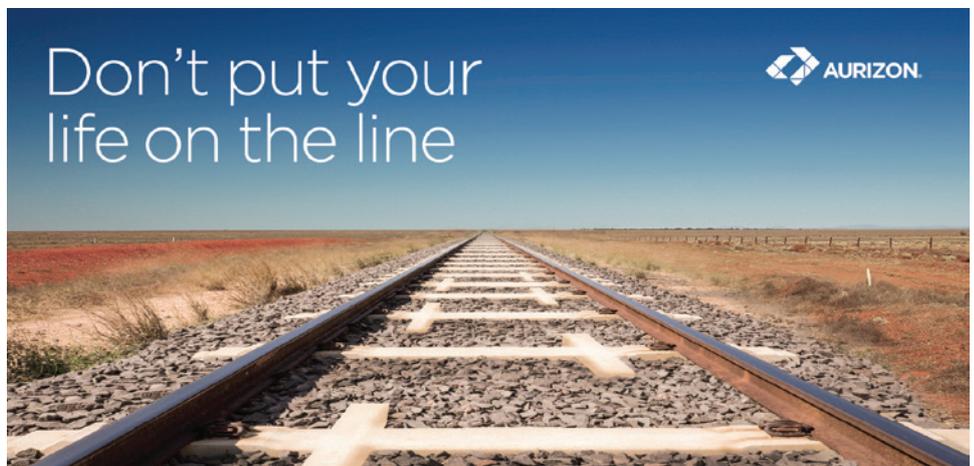
ZEROHarm

Keeping our communities safe

Aurizon recognises we have a responsibility to raise awareness about safe behaviour around the rail corridor in the communities where we operate. We need people in our communities to understand the importance of taking rail safety seriously and to not take risks with their lives, their passengers' lives, and the lives of our train drivers. For every near miss on the rail corridor, there is a very real and emotional impact for our drivers and their families.

To help raise awareness of safe behaviour around railway level crossings and in the rail corridor, we have developed targeted media, advertising, and social media campaigns.

For Rail Safety Week in August 2018, we joined forces with TrackSAFE and the Queensland Government to promote our level crossing safety message, 'Stop, Look, Listen and Think. Stay off the tracks.', through a series of billboards in Queensland. As part of this campaign, we worked with local media to raise awareness about safe behaviours at level crossings, which reached communities across Central Queensland, the Darling Downs and North Queensland through regional radio stations, TV networks and newspapers.



Don't put your life on the line

In April 2019, we launched a public rail safety campaign in Queensland — *Don't put your life on the line* — following an increase in unsafe and illegal trespasses in our rail corridors. The campaign messaging was targeted at anti-coal protesters, however, it also aimed to raise general community awareness of the dangers associated with trespassing in the corridor.

On-track protests are now one of the primary safety concerns for our Company. We are particularly concerned for our train drivers who can suffer trauma and mental health impacts following incidents on the rail corridor.

“We don't want our drivers bearing the emotional burden for something that could have been prevented, and potentially being so traumatised they can't return to work or drive a train again.”

Andrew Harding, Managing Director & CEO



Rail Safety Program with the Newcastle Knights at Metford Public School in NSW

We have continued delivering our award-winning rail safety program to primary schools in the Hunter Valley in partnership with the Newcastle Knights rugby league team. In 2018, this program reached more than 2,000 students.

During the year, we also launched a Rail Safety and You program, which provides our employees with all the resources and materials they need to facilitate a short presentation on the importance of rail safety to primary school children in our communities.

As a Company, we actively encourage our employees to share our rail safety social media campaigns with their friends and family to help raise awareness about level crossing safety.



FUTURE OF COAL

Our business is linked to the continued demand for and supply of Australian coal. We continually monitor and evaluate coal-related drivers to test the resilience of our business under multiple long-term scenarios.

For **metallurgical coal**, steel-intensive growth in India is expected to be the single largest driver of seaborne trade demand over the coming decades. After surpassing annual production of more than 100 million tonnes for the first time in 2017, India's crude steel production was 106 million tonnes in 2018, almost double that of a decade earlier¹⁶. The Indian Government's *National Steel Policy (2017)* projects annual crude steel production to reach 255 million tonnes by 2030-31. India is already Australia's largest metallurgical coal trading partner.

For **thermal coal**, 98%¹⁷ of Australian exports are destined for Asia. It is this region (rather than global consumption) that is projected to use coal-fired generation assets for a prolonged period, in addition to increased renewables and other energy sources.

Coal types

- **Metallurgical coal** (or coking coal) is primarily used to produce steel, an integral link with economic development driving the construction of modern economies and urban infrastructure. Crude steel production occurs primarily via the blast furnace-basic oxygen furnace (BF-BOF) route, which accounted for 71% of global crude steel production in 2018.¹⁸ The BF-BOF route remains the most economic means to produce steel and, within this process, hard coking coal currently has no economically viable substitute. Metallurgical coal is generally subdivided into coking coal, pulverised coal injection (PCI), and semi-soft coal. It takes about three-quarters of a tonne of hard coking coal to produce one tonne of crude steel.¹⁹
- **Thermal coal** (or steam coal) is primarily used as a heat source for energy generation, holding a 38% share of global generation in 2017.²⁰ Around 300,000 tonnes of coal equivalent are required per terawatt hour of generation.²¹ Beyond energy generation, thermal coal is also a vital raw material in chemical and construction industries. Coal is used as the main source of energy in cement production, where about 200 kilograms of coal is required to produce one tonne of cement.²²

Importance of coal to Aurizon

Approximately 80% of our revenue relates to coal. As illustrated in figure 11, metallurgical coal is the major contributor because it represents about two-thirds of the volumes on our below rail Network, and just under half of our above rail haulage volumes.

We play a significant role in Australia's coal supply chain, with approximately two-thirds of Australia's coal exports using our 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.

Why is coal important to Australia?

- **Trade:** Coal is Australia's second largest export industry, earning \$69 billion of revenue in FY2019.²³
- **Royalties:** Coal royalty payments to the state governments of Queensland and New South Wales contributed \$5.4 billion in FY2018²⁴, which is used to fund schools, roads and hospitals.
- **Employment:** The coal industry directly employs more than 38,000 people²⁵ with a further 120,000 indirect jobs supported²⁶ by the industry.

Figure 11 - Aurizon's coal volumes (FY2019)²⁷

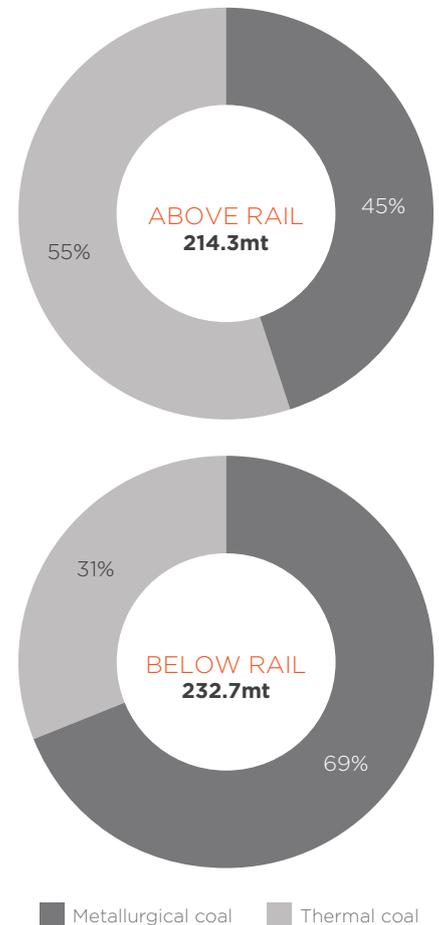
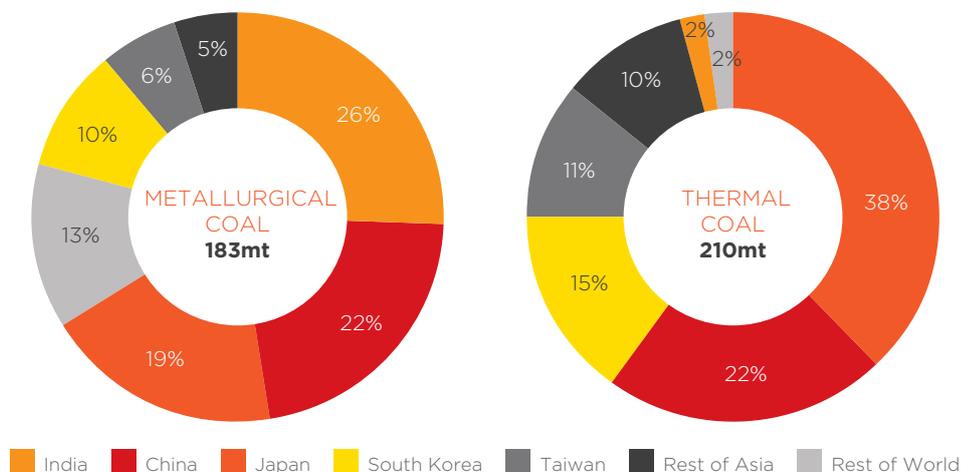


Figure 12 - FY2019 Export destinations for Australian coal (million tonnes)²⁸



16 WorldSteel [2008 India crude steel production: 57.8 million tonnes]

17 Australian Bureau of Statistics (Customised report)

18 WorldSteel, *World Steel in Figures 2019*.

19 World Coal Association website

20 International Energy Agency, *World Energy Outlook 2018*.

21 Based on Japan in 2017, International Energy Agency, *World Energy Outlook 2018*

22 World Coal Association website

23 Australian Bureau of Statistics (Customised Report)

24 Queensland Treasury, Mid-Year Fiscal & Economic Review 2018-19, New South Wales Department of Planning & Environment.

25 Australian Bureau of Statistics, *ABS Labour Account Australia, year ended 30 June 2018 (Coal mining filled Jobs)*

26 Minerals Council of Australia, <https://minerals.org.au/minerals/coal>

27 Aurizon analysis. Represents coal tonnes hauled on the CQCN by all operators

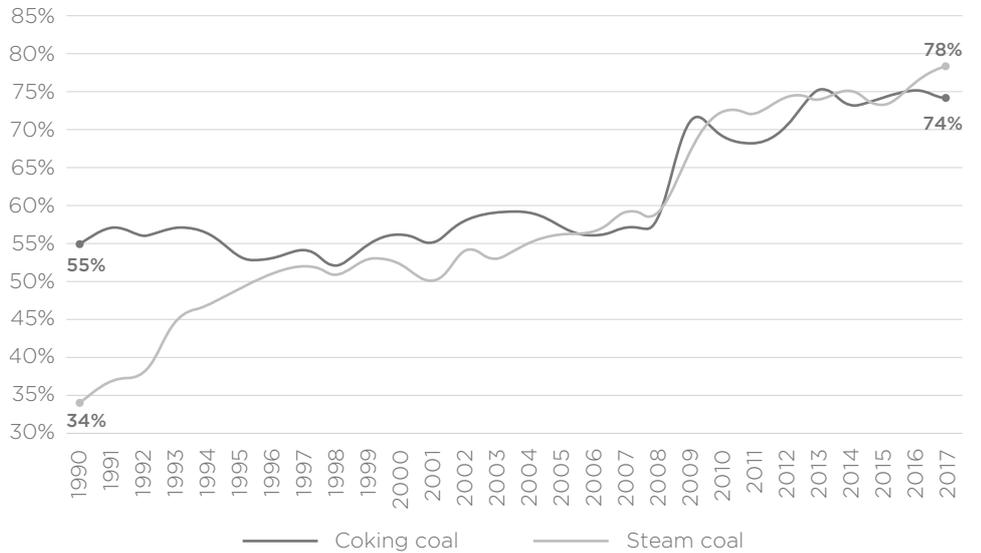
How much coal is traded globally?²⁹

In 2017, global coal production was 7.5 billion tonnes, with 1.4 billion tonnes (or 18%) traded.

- For **metallurgical coal** (or coking coal), 327 million tonnes (or 33% of global consumption) was traded, with 74% of this trade concentrated in the Asia region.
- For **thermal coal** (or steam coal), 1,030 million tonnes (or 18% of global consumption) was traded, with 78% of this trade concentrated in the Asia region.

For Australia, 98% of Australian thermal coal export volume and 87% of metallurgical coal volume was exported to Asia in FY2019³⁰.

Figure 13 - Asia: Proportion of global coal import volume³¹



28 Australian Bureau of Statistics, (Customised Report). Note: Due to rounding, the sum of the individual elements may not equal the total value.
 29 International Energy Agency, *World Coal Information 2018*

30 Australian Bureau of Statistics (Customised report)
 31 International Energy Agency, *World Coal Information 2018*

Enterprise strategic planning (including scenario analysis)

Aurizon develops its own position about the future of coal through our Strategy in Uncertainty framework, which includes scenario analysis, taking climate-related transition risks into consideration. 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.

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 Aurizon’s strategic priorities are continually updated to proactively respond to emerging market dynamics and opportunities.

Scenario analysis and Aurizon’s resilience

Given our customers’ exposure (almost entirely) to export markets, in developing our scenario analysis we assess global seaborne demand for metallurgical coal and thermal coal driven primarily by Asian steel production and energy generation, respectively. Based on this addressable market, Australian supply is assessed considering the risks and opportunities for both current and future coal production.

In constructing our scenarios, we draw upon economic indicators and projections, such as Gross Domestic Product (GDP), steel production (including method of production), energy demand (and intensity), cost-effectiveness of Australian coal supply, and the current (and future) coal-fired generation fleet. We also consider more subjective factors, such as government policy and trade considerations, given their impact on seaborne coal markets. The key drivers used in our scenario analysis are shown in figure 14.

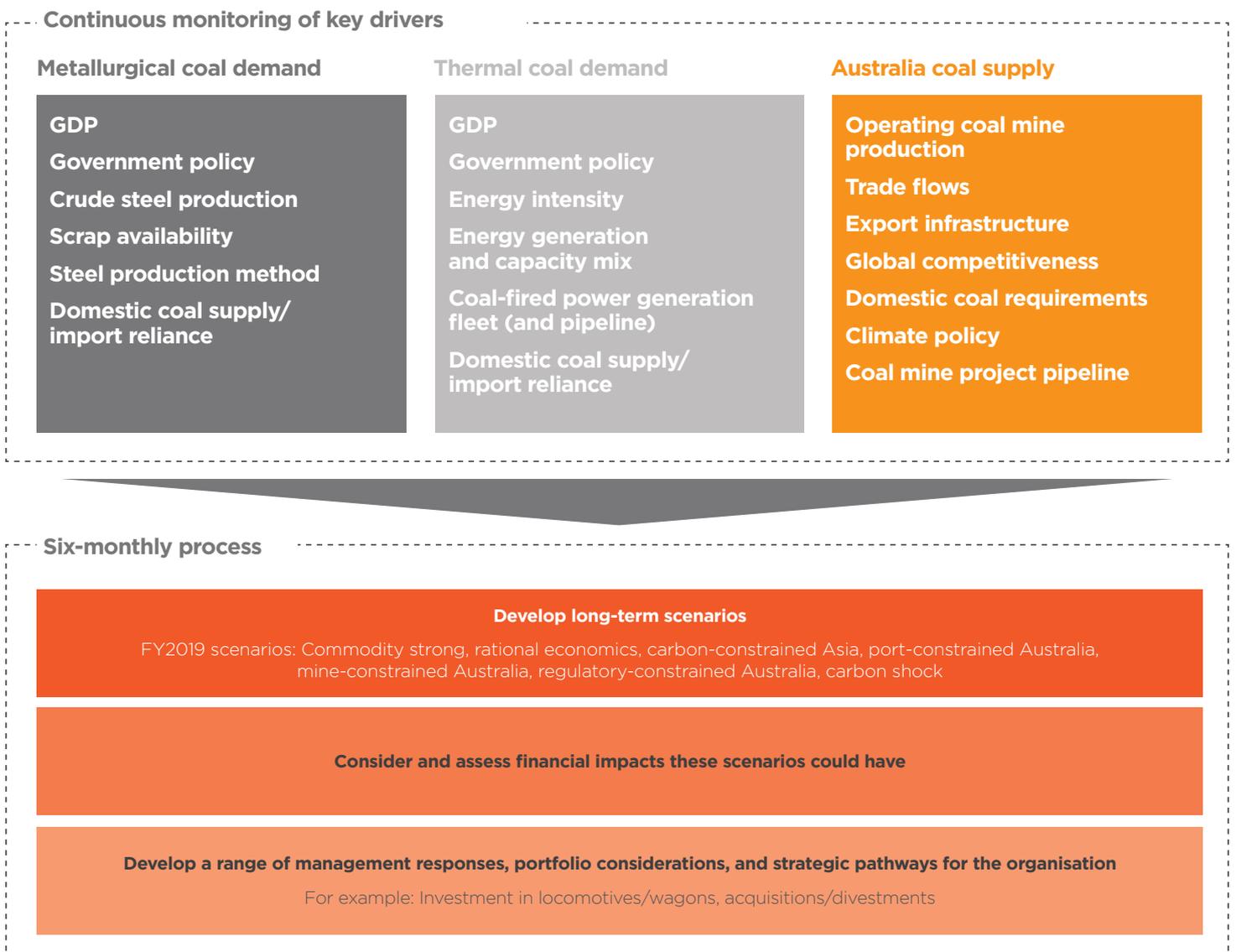
In 2019, seven scenarios were developed and considered by Aurizon’s Board, including projections that limited Australian thermal coal export growth as a result of an earlier shut down of global coal-fired power generation fleet, lower economic growth (and import reliance), and limited investment in new Australian coal production as a result of regulatory challenges.

Under all these scenarios, Australia’s coal exports — and therefore Aurizon’s coal-related customers and business — are resilient over the next decade. Longer-term modelling beyond this period unsurprisingly leads to a much more diverse range of scenario outcomes. These scenarios are used to inform portfolio considerations and strategic decisions for Aurizon.

The following sections describe:

- the indicators Aurizon uses to monitor the future of metallurgical coal
- the indicators Aurizon uses to monitor the future of thermal coal
- scenario analysis based on external forecasts, which Aurizon uses to compare with our own internal forecasts.

Figure 14 – Aurizon’s Strategy in Uncertainty framework

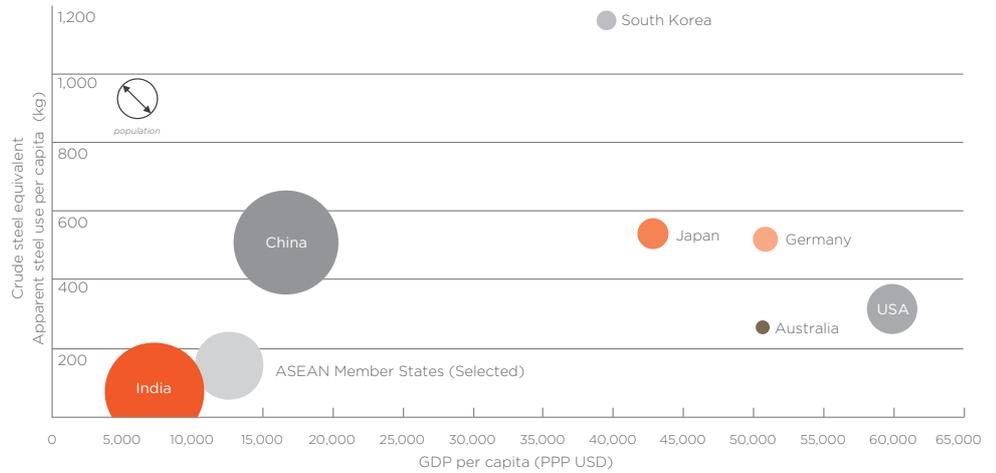


The future of seaborne metallurgical coal

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).

Figure 15 - Apparent (crude steel equivalent) steel use per capita vs. GDP per capita, by key countries³²



India

Already Australia's largest metallurgical coal export nation (by volume), steel production has grown by almost 6% per annum in India over the past decade, driving demand for metallurgical coal. Faced with a structural deficiency of high-quality metallurgical coal³³, India turns to the seaborne market (and primarily Australia) to meet requirements.

Figure 16 - India: crude steel production³⁴

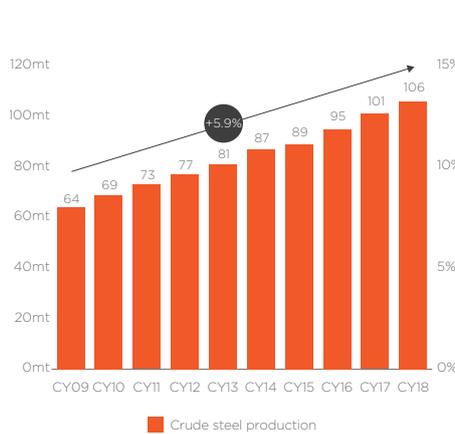
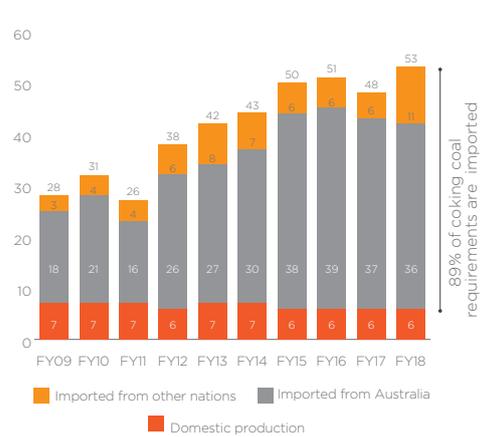


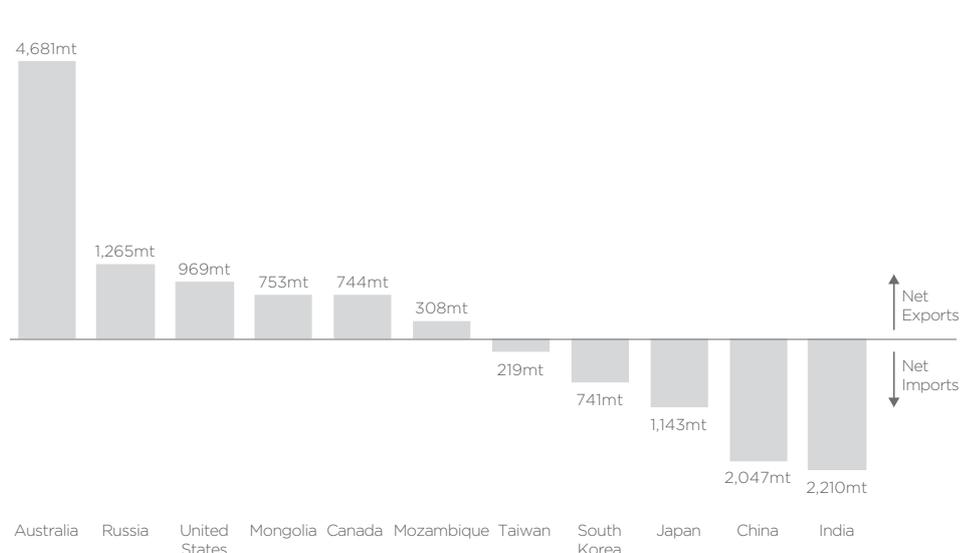
Figure 17 - India: coking (metallurgical) coal requirements³⁵



Scarcity of metallurgical coal

Around one-third of global metallurgical coal demand is met through international trade³⁶, with Australia commanding over half of this market³⁷. This is almost entirely railed across the Central Queensland Coal Network³⁸.

Figure 18 - Aggregate metallurgical coal trade balance, by major countries (2019-2040)³⁹



32 GDP (Purchasing Power Parity) - International Monetary Fund, *World Economic Outlook April 2019* (2017 data); Population - International Monetary Fund *World Economic Outlook April 2019* (2017 data); Apparent Steel Usage - World Steel Association (2017 data). ASEAN member states (Selected, based on data availability): Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam.

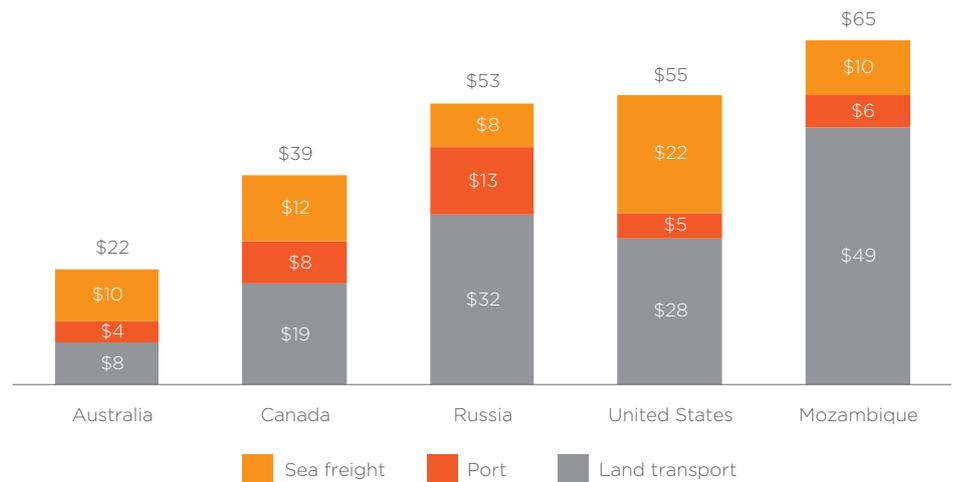
33 Government of India, *Coal Directory of India 2016-17* (page 81)
 34 World Steel Association, CEIC
 35 India Ministry of Coal, *Coal Directory of India* (multiple years), *Provisional Coal Statistics (2017-18)*. Note: Financial year is April to March. Total Requirements is the sum of Domestic Production plus Total Imported volume. Domestic Production includes washed coal only (not raw).

Due to rounding, the sum of the individual elements may not equal the total value.
 36 International Energy Agency, *World Coal Information 2018*
 37 International Energy Agency, *World Coal Information 2018*
 38 Wood Mackenzie, *Coal Cost Curves Tool* (May 2019), reference year 2019
 39 Wood Mackenzie, *Global Coal Markets Tool* (2019 1H).

Australia’s export infrastructure advantage

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. Aurizon is a key contributor to the land transport (grey) component, where Australia leads in terms of competitiveness.

Figure 19 – Land transport, port, and sea freight costs from major seaborne metallurgical coal export countries to India (USD/t)⁴⁰

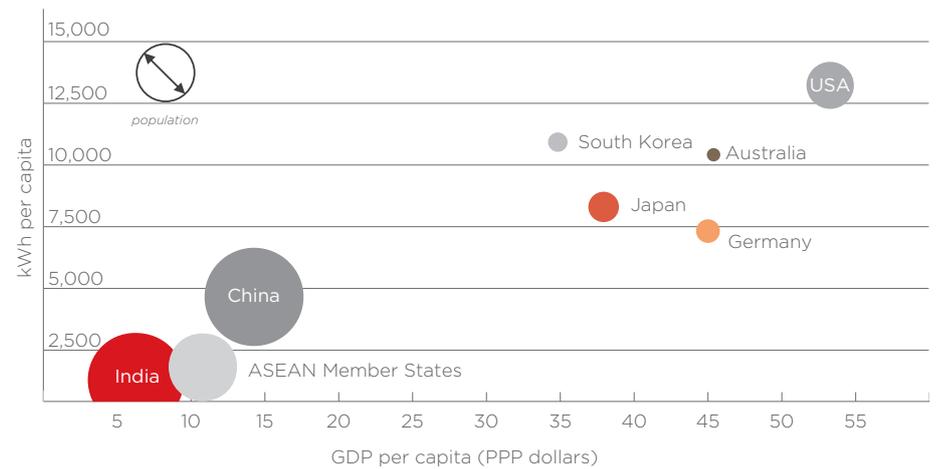


The future of seaborne thermal coal

Increasing electricity demand in Asia

Energy demand in Asia is projected by Bloomberg to increase by 152% by 2050, driven by GDP and population growth.⁴¹ The United Nations projects that India’s urbanisation rate will increase to 40% in 2030 compared to 34% in 2018, lifting the urban population from 461 million to 607 million.⁴²

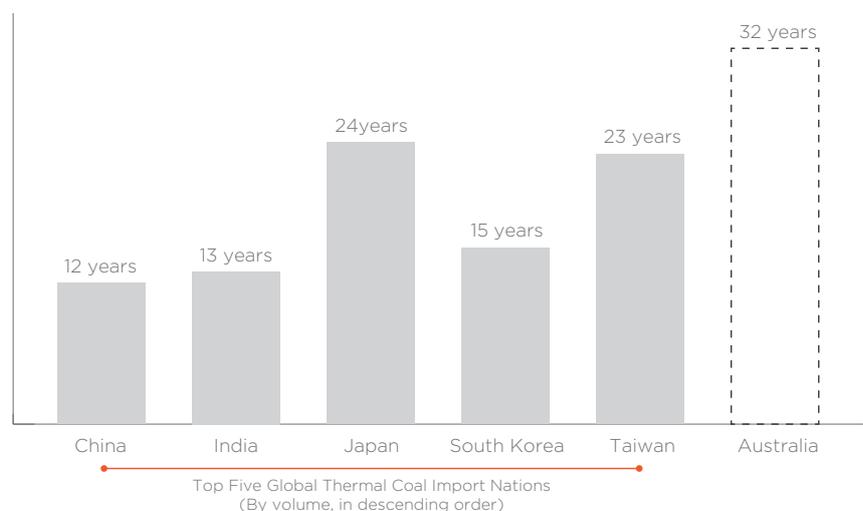
Figure 20 – Per capita electricity consumption vs. per capita income, by key countries⁴³



Asian current operating fleet

While renewables and other cleaner 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 21, and compared with a typical economic life of 40 years⁴⁴, the average age of operating coal-fired generation capacity across the largest thermal coal import nations is relatively young.

Figure 21 – Average age of coal-fired electricity capacity⁴⁵



40 Wood Mackenzie Coal Cost Curves (May 2019, reference year 2019); Wood Mackenzie Global Coal Markets Tool (2018 2H), Sea freight export terminal assumptions: United States – East Coast; Canada – West Coast; Australia – Hay Point; Russia – East. Note: Due to rounding, the sum of the individual elements may not equal the total value.

41 Bloomberg NEF, *World Energy Outlook 2019: Executive Summary*

42 United Nations, Department of Economic and Social Affairs, Population Division (2018).

World Urbanization Prospects: The 2018 Revision, online edition.

43 GDP (Purchasing Power Parity) – International Monetary Fund *World Economic Outlook April 2019* (2016 data), Population – International Monetary Fund *World Economic Outlook April 2019* (2016 data), Electricity Consumption (KWh) – United States Energy Information Administration (2016 electricity consumption data), ASEAN Member States: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam.

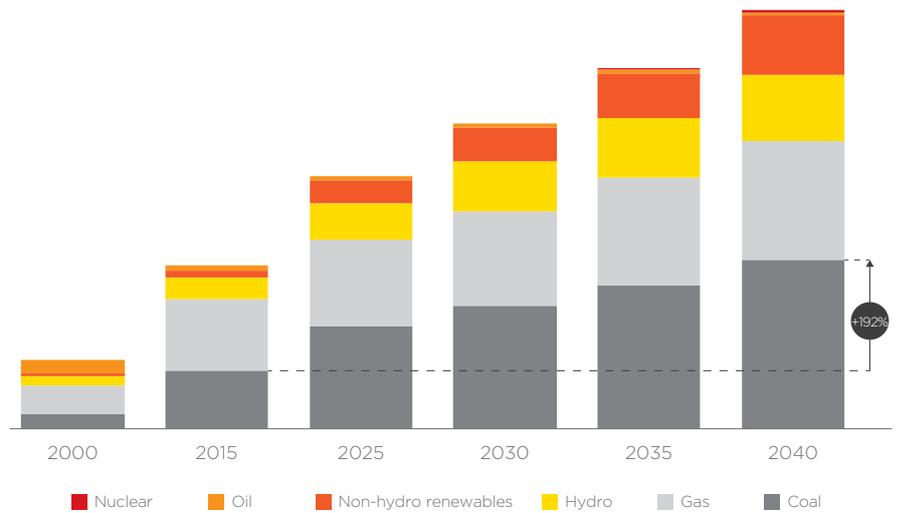
44 International Energy Association, *World Energy Investment 2018*

45 Platts UDI Electric Power Plants Database (March 2019), capacity weighted. Australia included as reference

Continued reliance on coal-fired generation in Asia

Although it is recognised that thermal coal 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 coming online in developing nations.

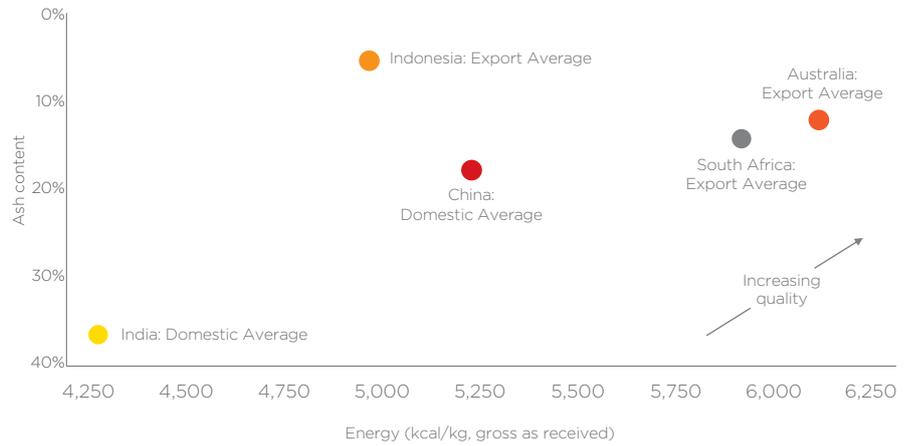
Figure 22 - International Energy Agency (IEA) outlook (New Policies Scenario) for electricity generation in South-East Asia, by source (TWh)⁴⁶



Importance of high-quality coal

On average, Australia’s export thermal coal has the highest energy content and relatively low ash content, when compared to most other major sources of seaborne thermal coal. Additionally, when combined with high-quality Australian coal, ultra-supercritical technology can reduce greenhouse gas emissions by up to 50% compared to using average-quality coal from India in subcritical plant technology.⁴⁷

Figure 23 - Thermal coal energy and ash content⁴⁸



46 International Energy Association, *World Energy Outlook 2018*
 47 *Independent Review into the Future Security of the National Electricity Market*, Commonwealth of Australia (June 2017)
 48 Australia (Export Average): Wood Mackenzie Coal Cost Curves (Year: 2019, Data: Feb 2019). India Domestic

Average Source: India Ministry of Coal Provisional Coal Statistics 2017-18. China Domestic Average Source: IEA Coal Medium-Term Market Report 2016, Wood Mackenzie 'China Limits Coal Ash Content' (April 2017). Indonesia Export Average Source: Wood Mackenzie Coal Cost Curves (Year: 2019, Data: Feb 2019), Indonesia Coal Mining

Association. South Africa Export Average Source: Wood Mackenzie Coal Cost Curves (Year: 2019, Data: Feb 2019), Richards Bay benchmark specifications (Platts)

Scenario analysis: International Energy Agency

One recommended disclosure from the Task Force on Climate-related Financial Disclosures (TCFD), is to take into consideration different climate-related scenarios, including a 2°C or lower scenario. Although the Task Force does not recommend the use of a specific scenario, Aurizon has drawn upon the best known and most widely used scenarios produced by the International Energy Agency (IEA) in the annual release of the *World Energy Outlook*. This is used for comparison purposes with Aurizon's internal scenarios, as described above. In addition to the central *New Policies Scenario*⁴⁹, the IEA also publishes the *Current Policies Scenario*⁵⁰ and the *Sustainable Development Scenario*⁵¹, the latter aligned with the Paris Agreement's goal of holding the increase in the global average temperature to well below 2°C.

In the central *New Policies Scenario*, the IEA projects global coal trade to reduce by 1% by 2040 compared with 2017:

- For global metallurgical coal trade, the volume projection increases by 15% by 2040 compared with 2017, representing a compound annual growth rate of 0.6% across the period.
- For global thermal coal trade, the volume projection reduces by 6% by 2040 compared with 2017, representing a compound annual growth rate of -0.2% across the period.
- Australia's export volume is projected to increase by 22% to 2040 compared with 2017, representing a compound annual growth rate of 0.9% across this period. The IEA notes that, *Australia is the only export-oriented country projected to significantly ramp up coal production over the period to 2040... benefiting from its strong resource base and its proximity to growing markets in Asia.*

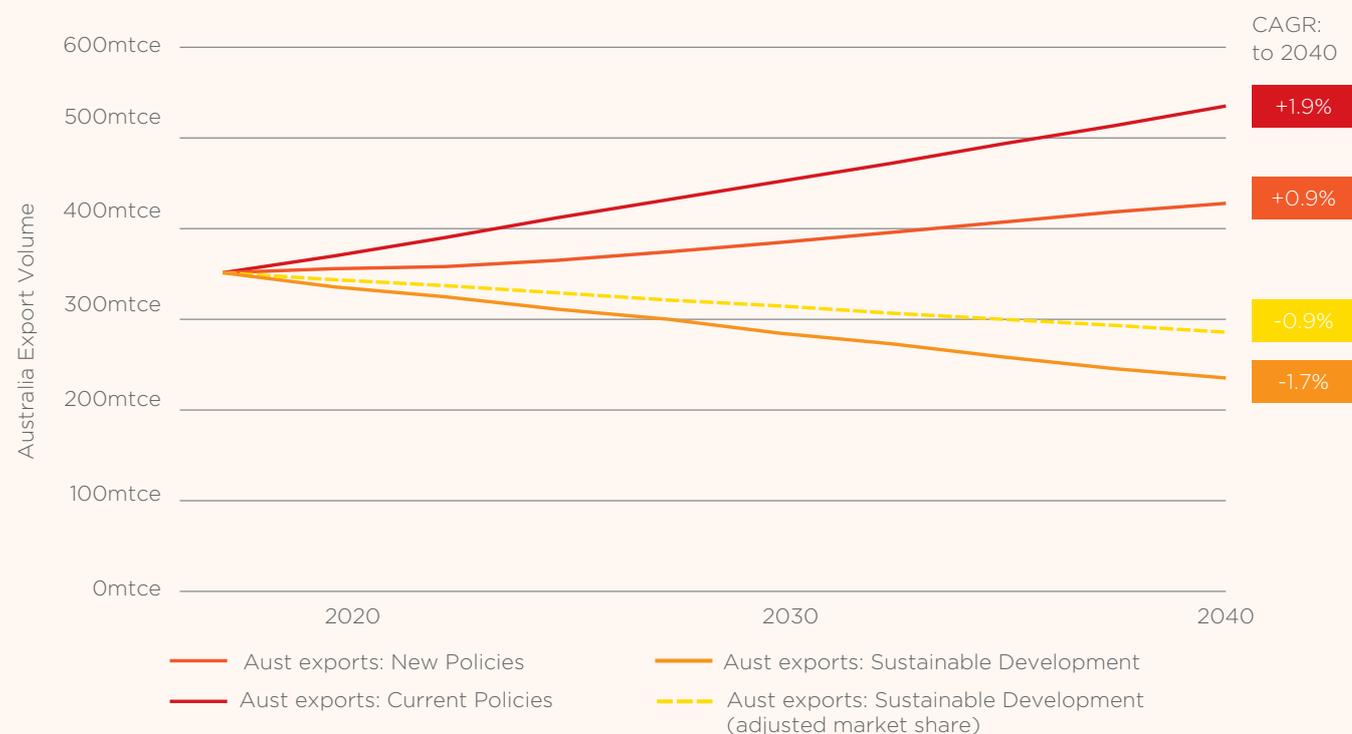
In the Sustainable Development Scenario, the IEA projects global coal trade to reduce by 53% by 2040 compared with 2017.

As the *Sustainable Development Scenario* (and *Current Policies Scenario*) do not provide country-level trade projections, we have applied market share assumptions for Australia in the analysis below (figure 24).

Based on Australia's export volumes in 2017 and assuming Australia's participation in the trade market aligns with the *New Policies Scenario*, Australia's export volume would be projected to reduce by 33% in 2040 compared to 2017, representing a compound annual growth rate of -1.7%.

However, given an expected preference for higher quality coal⁵², which Australia supplies, it can be projected that Australia could command a higher market share in such a scenario. As such, we have modelled an increased market share (+10 percentage points compared to the *New Policies Scenario* in both the metallurgical and thermal coal trade markets in 2040). In this projection, Australia's export volume would reduce by 62mtce in 2040 (-18% compared to 2017). This represents a compound annual growth rate of -0.9% across the period, as illustrated as 'sustainable development' (adjusted market share) in figure 24.

Figure 24 - Projected Australian export volumes under IEA scenarios⁵³



49 The New Policies Scenario provides a measured assessment of where today's policy frameworks and ambitions, together with the continued evolution of known technologies, might take the energy sector in the coming decades. The policy ambitions include those that have been announced as of August 2018 and incorporate the commitments made in the Nationally Determined Contributions under the Paris Agreement. World Energy Outlook 2018.

50 The Current Policies Scenario is based solely on existing laws and regulations as of mid-2018. World Energy Outlook 2018

51 The Sustainable Development Scenario is fully aligned with the Paris Agreement's goal of holding the increase in the global average temperature to 'well below 2°C', including achieving universal access to modern energy by 2030 and reducing dramatically the premature deaths due to energy-related air pollution. World Energy Outlook 2018

52 For metallurgical coal, higher quality coal is typically considered to have low Coke Reactivity Index (CRI) results and a high Coke Strength after Reaction (CSR). For thermal coal, higher quality coal is generally considered

to be high energy, low ash and low sulphur. 53 IEA World Energy Outlook (2018), Aurizon analysis. Note: The IEA projection for Australian export market share for metallurgical and thermal coal in 2040 (New Policies Scenario) has been applied to calculate projections in the Current Policies Scenario and the Sustainable Development Scenario.

Comparison of projections

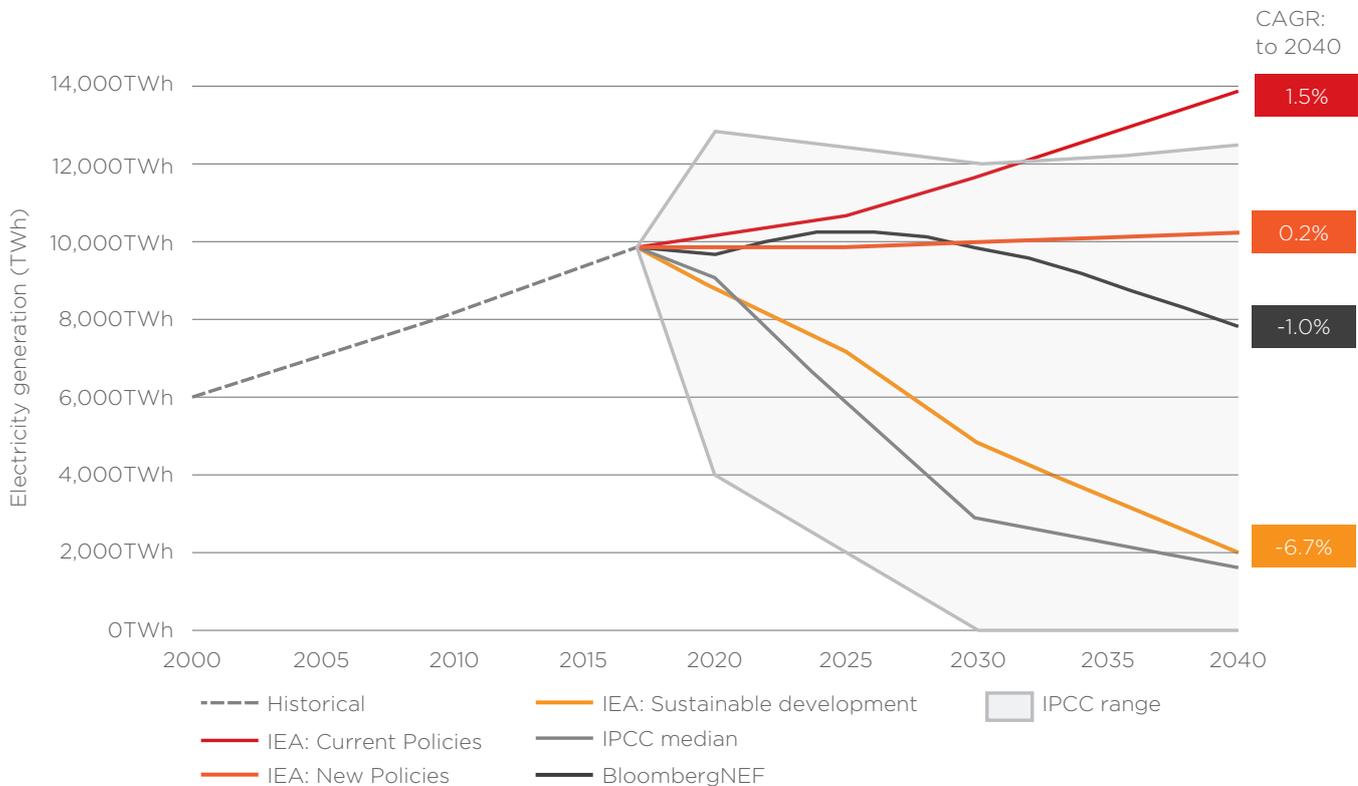
In addition to developing our own long-term outlook for seaborne coal demand, we consider scenarios developed by external organisations, such as the International Energy Agency (IEA), Bloomberg New Energy Finance, Wood Mackenzie, and the Intergovernmental Panel on Climate Change (IPCC).

Released in October 2018, the *IPCC Special Report on Global Warming of 1.5°C* includes pathways that could limit the increase of global mean surface temperature to 1.5°C above pre-industrial levels. Built upon 85 scenarios, the report incorporates projections (and trade-offs) for energy and land use, as well as assumptions about future socio-economic developments, including economic and population growth, equity and sustainability. The resultant contribution of coal to global electricity generation varies from stable generation (from 2020) through to a reduction to zero at 2030.

For comparison purposes, figure 25 shows IEA projections for global electricity generation from coal against the IPCC's range of scenarios (in addition to the median scenario). Also included is the central scenario from the Bloomberg New Energy Outlook 2019.



Figure 25 - Global electricity generation from coal⁵⁴



⁵⁴ Source: IEA *World Energy Outlook (2018)*, *IPCC Special Report on Global Warming of 1.5°C*, *BloombergNEF New Energy Outlook 2019: Executive Summary*. Note: Chart compares the IEA's Sustainable Development Scenario with IPCC's scenarios under a less than 1.5°C temperature rise in 2100. IPCC projections are 1.5°C consistent pathways with no, low and high overshoot. Data has been converted to TWh from EJ using conversion factors provided

by the IEA (1 EJ = 277.8 TWh). IPCC data is provided for 2020, 2030 and 2050. Where individual year projections are not published, figures have been extrapolated (straight line). CAGR to 2040 calculated by Aurizon.

ENVIRONMENT

As a rail operator, we acknowledge that there are several ways we are responsible for helping our local communities maintain a sustainable environment. We aim to effectively manage our material environmental risks and improve our enterprise environmental performance.

To manage our various material environmental issues, we use an evidence-based approach. These issues include reducing our emissions, avoiding or offsetting impacts on native biodiversity, minimising waste to landfill, and considering the impacts to our business because of climate change.

How we operate in our environment

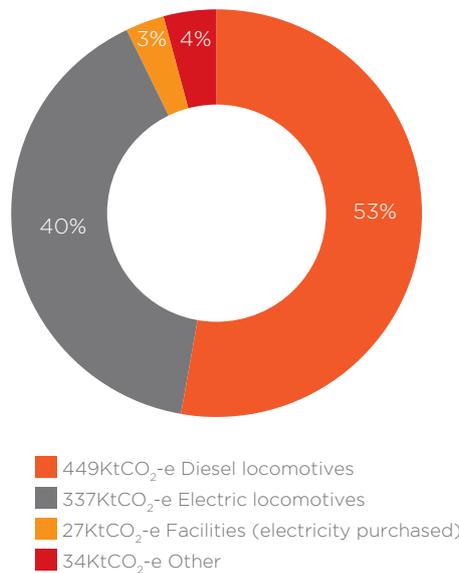
Diesel emissions

We have continued to be proactive in reducing diesel emissions from freight locomotives. Although locomotive emissions have a relatively minor impact on local air quality, we acknowledge that as a rail operator with a diesel locomotive fleet we have a role in helping our local communities maintain a high level of leading air quality.

As outlined in our 2018 Sustainability Report, we played a large role in contributing to the Code of Practice for Management of Locomotive Exhaust Emissions (CoP) by the National Rail Safety and Standards Board. The CoP outlines that emissions standards must be met within 10 years of the effective date (1 December 2018), and we are now implementing the standards across our locomotive fleet. This forms part of our focus on reducing fuel and using cleaner diesel fuel, and we provide annual reporting on CoP implementation through the Australasian Railway Association’s website.

We will also continue to focus on cutting diesel emissions at the source by reducing diesel consumption, continuing to use cleaner diesel, operating electric locomotives as part of our fleet, and promoting rail over road freight as part of our efforts in maintaining Australia’s excellent air quality standards.

Figure 26 – Aurizon’s FY2019 greenhouse gas profile⁵⁵



Emissions reporting⁵⁶

- **Scope 1** emissions are GHG emissions released into the atmosphere as a direct result of an activity, for example, emissions associated with combustion of diesel in locomotives.
- **Scope 2** emissions are GHG emissions released into the atmosphere from the indirect consumption of an energy commodity, for example, emissions derived from the consumption of purchased electricity.
- **Scope 3** emissions are indirect GHG emissions, other than Scope 2 emissions, that are generated in the wider economy, for example, emissions derived from the extraction, production and transportation of purchased materials, such as fuel and electricity, as well as emissions associated with employee travel and commuting.

Greenhouse gas emissions

In FY2019, our total greenhouse gas (GHG) emissions (Scope 1 and 2) were 848 ktCO₂e, representing a 10% reduction from the previous year. This reduction was driven by lower Bulk volumes and the cessation of Intermodal services during the year.



⁵⁵ Note: Due to rounding, the sum of the individual elements may not equal the total value.
⁵⁶ The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard

We also recognise more than 97 ktCO₂e of Scope 3 GHG emissions. These emissions predominantly relate to supplier activity, such as diesel delivery, electricity transmission, waste services, and employee air travel that our business does not own or control. A breakdown of our calculated Scope 3 emissions is provided in our Financial, Environmental, Social and Governance Metrics at the back of this report. Aurizon's Scope 3 emissions reporting boundary and identification of relevant activity sources has been informed by the *Greenhouse Gas Protocol Corporate Value Chain (Scope 3)* Standard, and has received external assurance by Deloitte.

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. We support the principles underpinning the Safeguard Mechanism and believe it will continue to play a key role in driving Australia's emissions trajectories in line with international commitments.

The Safeguard Mechanism is monitored by the Clean Energy Regulator (CER), who, in March 2019, released results for the compliance period to 30 June 2018. The three facilities we are required to report on were not required to purchase or generate offsets to meet our abatement obligations.

Amendments were made to the Safeguard Mechanism in March 2019, and we are currently preparing for these changes.

Emissions intensity performance

In recognising the risks associated with climate change, we acknowledge our responsibility to reduce our GHG emissions intensity.

In 2016, our Board endorsed a 15% reduction in the GHG emissions intensity of our locomotive fleet by FY2020 (from a FY2015 baseline). Our emissions intensity target was developed in alignment with public commitments made by industry leaders in the rail and freight transportation sector. A focus is placed on emissions intensity targets that drive emission reductions per unit of production (in our case, Gross Tonne Kilometres). We are continuously investigating opportunities to improve our operational efficiency while improving our resilience to the transitional and physical impacts of climate change. As illustrated in the figure below, since FY2015 we have reduced our locomotive emissions intensity by 7%. In total since 2010, we have reduced our locomotive emissions intensity by 20%.

These improvements have been made principally through a combined approach of retiring ageing fleet, substituting fuel (moving from diesel to electric fleet), and improving fuel efficiency and productivity. However, we have also learnt how our above-rail emissions intensity is directly impacted by infrastructure constraints, terrain, climatic conditions, weather events, and service mix. These factors contribute to a high level of variability (>30%).

For example, our weighted emissions intensity can be impacted by a shift in service mix. In June 2018, the cessation of one of our most fuel-efficient iron ore services led to a levelling out of our overall emissions intensity.

In February 2019, North Queensland was saturated by a slow-moving monsoonal trough that broke regional average rainfall records for the North-Coast Herbert rainfall division⁵⁷. The extended weather event caused severe flooding and damage to the Mount Isa line, and an 11-week closure. This event resulted in a greater than 11% increase in emissions intensity for Aurizon's Bulk East operation over May and April 2019, during the ramp-up following track repair works.

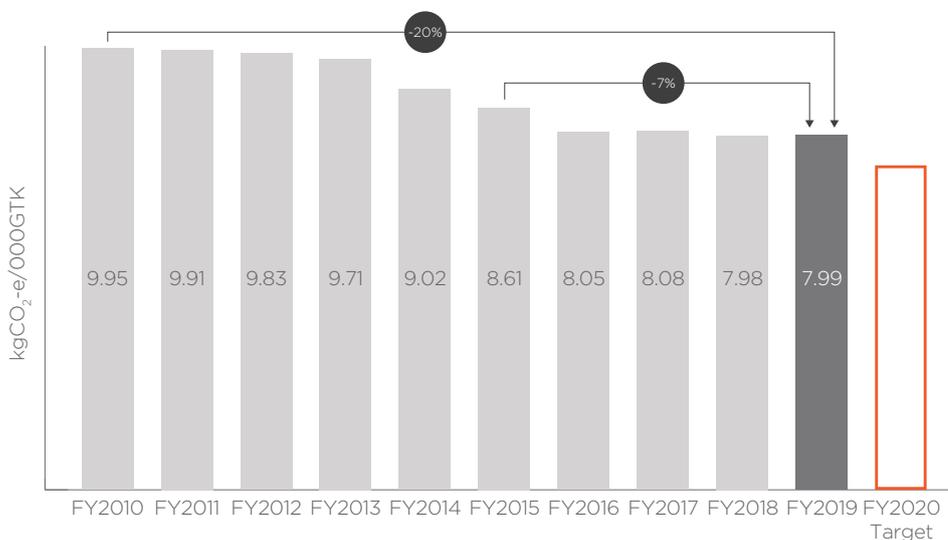
Despite these constraints, we have maintained a stable emissions intensity trajectory, and have continued to implement initiatives to drive improved operational efficiency. We continue to advance our condition monitoring and TrainHealth programs, which will deliver a step change in both the quality and quantity of operational and sensor data, allowing us to optimise fleet performance and energy efficiency.

Despite significant reductions made to date, we acknowledge that we are unlikely to achieve a 15% emissions intensity reduction in FY2020. We are currently reviewing our target and objectives to ensure that we have the appropriate settings in place aligned to our corporate strategy. Our commitment to continuous reduction in GHG emissions intensity remains.

Advocating for the environmental benefits of rail

We recognise the importance of transport infrastructure and operations that contribute to environmental sustainability, as well as the development and maintenance of resilient infrastructure. We advocate for the use of rail freight as a mechanism to improve environmental outcomes while reducing strain on public infrastructure. Our 'Regulation and policy' section in our 'How We Operate' chapter provides more detail on the benefits of using rail to carry freight versus road transport.

Figure 27 - Emissions intensity performance



57 Bureau of Meteorology, Special Climate Statement 69: <http://www.bom.gov.au/climate/current/statements/scs69.pdf>

Facilities, renewable energy and energy efficiency

Over the past year, we have completed a detailed program of energy audits across our eight largest facilities (ranked by energy consumption). The audit program identified multiple opportunities to improve energy efficiency and offset energy consumption with a combination of solar, LED lighting, control systems, and upgrades. These studies also informed the development of a full energy efficiency implementation program across FY2019 – FY2022, and we have established an internal energy efficiency target to drive energy reductions.

An example of programs being implemented across the business include the replacement of existing 1000W metal halide fittings with 600W LED fittings at our Hexham Depot in New South Wales, resulting in a 40% reduction in energy use. Hexham is our New South Wales operation's largest rail facility, requiring 88 high-wattage yard lights. Our corporate office at

900 Ann Street in Fortitude Valley (where we tenant eight floors) was built to a Green Star Rating of 5 and has a 5 Star NABERS Energy Rating. The building is equipped with 207 solar panels that offset -8% of our total annual electricity consumption, equalling about 63 tonnes of avoided carbon dioxide emissions.

We have also completed a solar energy feasibility assessment across our real estate portfolio. Our next step will be to progress installing a 165kW solar array trial at our Callemondah rail facility. The installation will have the potential to prevent approximately 170tCO₂e annually by offsetting -10% of the total annual electricity consumption. As part of this trial, we will closely monitor the facility's energy consumption profile to improve our understanding, and enhance our ability to target energy offsetting opportunities across our key operational facilities. The trial is intended to help refine the remainder of our energy efficiency program.

Climate-related physical risk and resilience

We recognise that physical risks related to climate change have the potential to impact Aurizon's operations, infrastructure, and associated supply chains, particularly within central and northern Queensland regional operational areas.

For example, in February 2019, record rainfall and severe flooding severely impacted communities and infrastructure in North Queensland, including Queensland Rail's Mt Isa line, which services the North-West Minerals Province and surrounding communities. The event resulted in an 11-week closure of the Mount Isa line. During this period, we demonstrated our resilience by working with customers to find interim haulage solutions (where feasible).

Building resilience into our operations is a fundamental component of the sustainability of our business, and we have applied an adaptive approach to enhancing our response capability and resilience to physical risks associated with climate change. We continue to make incremental improvements to our Central Queensland Coal Network (CQCN) infrastructure and systems.

Previously, when power loss occurred in the CQCN, rollingstock operators had to immediately stop trains on impacted track sections, which required the use of emergency braking. This could lead to rollingstock wear and damage to tracks, in addition to network delays. With the Power Resilience Initiative (PRI), a generator starts to provide power to affected signalling equipment when mains power supply is interrupted (e.g. during storms). During the initial loss of power, any signals that were set to clear restore to red (indicating the track is not clear). This means there is a continuous power supply to signalling equipment over affected areas.

The project includes the installation of Uninterrupted Power Supplies (UPS) to fill short-term power supply gaps until backup generators come online or mains supply is restored. In the absence of UPS, Aurizon has regularly experienced multiple supply failures during the storm season in Central Queensland. Since PRI sites have been completed across the CQCN, we have already seen a significant reduction in signal interruptions during storms and will continue to roll this technology out to other sites over the coming year.

We understand that our operations and infrastructure are situated in areas that can be exposed to climate-related risk. To build a robust approach to adapting to the physical impacts of climate change, we recognise that there is an opportunity to improve our understanding of physical impacts by using better and higher resolution datasets. Our objective is to use a risk-based approach to continually improve our operational and infrastructure resilience planning processes.



Hexham facility in NSW



Lobby entrance at 900 Ann Street, Fortitude Valley

Case study: Continual improvement — track condition, temperature and weather-related data visualisation

Rail infrastructure is vulnerable to extreme temperature variation, particularly with record high temperatures in successive summers recently. Our Remote Monitoring System uses real-time data from various sources, including weather stations, temperature sensors, and the Bureau of Meteorology, to identify potential temperature-related risks to the CQCN.

We are improving this process by making data more reliable and targeting high-risk areas, such as the Black Mountain range in the CQCN. Building on better rail temperature measurement and stress-free temperature management measures (see our 2018 Sustainability Report), we are now improving real-time track temperature reporting capability to allow for proactive spacing of rail traffic to prevent adverse impacts to the track. This capability reduces the likelihood of delays due to track failure, such as misalignment.

We plan to leverage findings from Black Mountain and move to a real-time data-driven targeted speed restriction system, as opposed to the traditional system of blanket speed restrictions. This improvement will help maintain CQCN capacity while reducing the risk of track faults under high temperature conditions.



Coal dust

We 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 implementing world-leading solutions tailored to suit the unique needs of each coal supply chain.

Central Queensland Coal Network (CQCN)

The CQCN supply chain has continued its concerted long-term focus on minimising rail-related coal dust emissions by implementing key controls outlined in the CQCN Coal Dust Management Plan (CDMP). The CDMP recognises that 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.

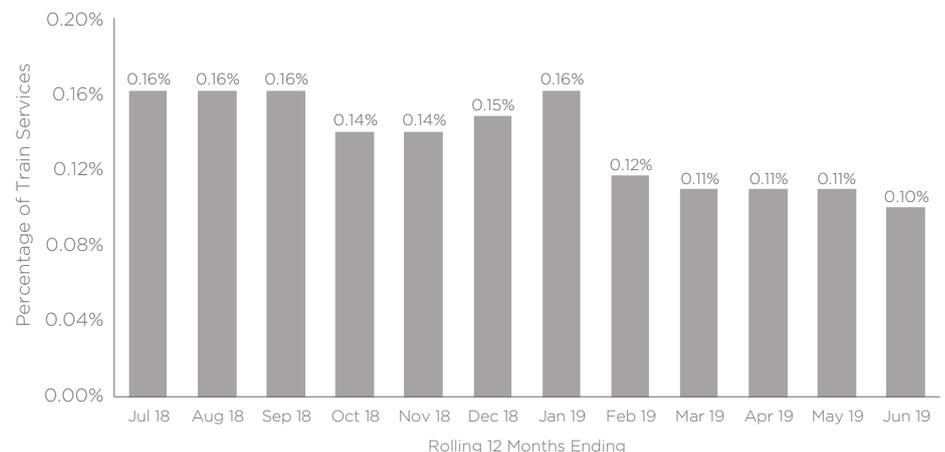
We continue to monitor opacity (a measure of air quality) on each of the four rail systems in the CQCN, and actively track opacity trends, including investigating any exceedance of the Department of Environment and Science’s agreed 5% opacity threshold. In FY2019, the number of validated exceedances recorded on the CQCN fell by 38%, from 78 (FY2018) to 48 (FY2019). This represents less than 0.13% of approximately 47,000 coal train movements in FY2019.

We note that external factors can affect opacity. In FY2019, opacity exceedances tended to coincide with the onset of warmer months (September — January) and the corresponding drier weather, before declining with the onset of extended periods of rain (February — March). We are pleased to see a general downwards trend in the already small proportion of trains that exceed the opacity threshold (refer to figure 28), particularly given the record tonnes hauled across the Network during FY2019

(232.7 million tonnes), leading to an increase in the number of train services. This demonstrates that CQCN coal producers are highly engaged with the CDMP objectives.

In FY2019, we reviewed the CDMP to better reflect current operating practices (rather than discuss actions that were achieved four to five years ago). We have discussed the review with industry bodies and will share with the CQCN supply chain participants before it is finalised.

Figure 28 - Percentage of train services exceeding 5% opacity on the Central Queensland Coal Network



South-West System (Queensland)

We continue to work with the South-West System Users Group (SWUG) by the Department of Environment and Science to implement the controls outlined in the South-West Supply Chain Coal Dust Management Plan (CDMP). In February 2019, an update to the CDMP (first released in 2013) was published and is available online.⁵⁸

The results of monitoring undertaken on behalf of the SWUG by the Department of Environment and Science have consistently demonstrated rail transport (including coal haulage) along the system to be compliant with air quality criteria (PM2.5, PM10, TSP and dust deposition). The Queensland Department of Health has concluded that dust levels along the system are unlikely to result in any adverse health effects.⁵⁹ The supply chain has a long-term commitment to demonstrate ongoing compliance with air quality criteria along the South-West System.

Hunter Valley (New South Wales)

We are working with the Hunter Valley coal supply chain as part of ongoing efforts to improve environmental performance. As part of this work, we continue to participate in industry forums, and have implemented several control measures, such as optimising wagon design to mitigate the potential loss of coal from our wagons. The New South Wales Minerals Council maintains a summary of studies and initiatives implemented by the supply chain on their website.⁶⁰

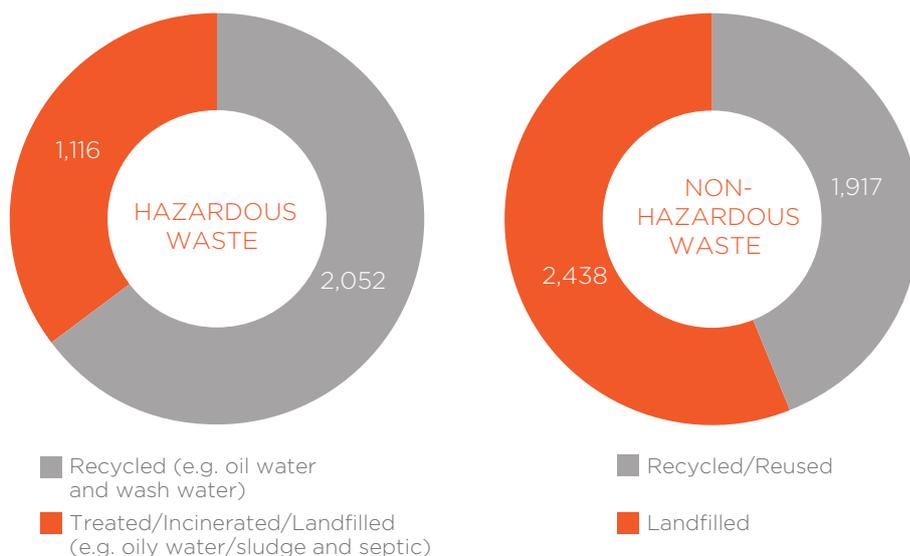
We note that the New South Wales Department of Planning, Infrastructure and Environment monitors air quality through two networks in the Hunter Valley: the Lower Hunter Air Quality Monitoring Network, and the Newcastle Local Air Quality Monitoring Network. Real-time monitoring data is available through their website.⁶¹ This monitoring is supplemented by previous studies, such as the New South Wales Environment Protection Authority's Lower Hunter Dust Deposition Report, that demonstrated that from 72 samples across 12 sites, on average, the composition of dust particles was mainly soil or rock, averaging 69%. Other components were coal 10%, rubber 4%, and soot 3%.⁶²

58 Queensland Resources Council: *South West Supply Chain Coal Dust Management Plan* (February 2019), available https://www.qrc.org.au/wp-content/uploads/2019/03/190228-SWSC-CDMP_Final.pdf

Waste

We recognise that landfill diversion is a waste management priority across Australia, and in July 2019, the Queensland Government commenced a landfill levy. Disposal rates are also set to increase across other jurisdictions. At Aurizon, we continue to seek out opportunities to reduce our waste footprint. Figure 29 shows our FY2019 waste output, including landfill, recycled, treated and incinerated wastes.

Figure 29 - FY2019 waste profile



Compliance reporting

In FY2019, we did not incur any monetary fines or sanctions for non-compliance. However, two notifiable environment incidents were required to be reported to the regulator. One incident involved a hydrocarbon spill, which was appropriately remediated. The second incident was notified on a precautionary basis. It involved intercepting a natural gas pocket during geotechnical drilling as part of an engineering assessment. Neither incident caused ongoing harm to people or the environment, nor required ongoing remediation.

Table 4 - Notifiable environment incidents in FY2019

LOCATION	VOLUME	MATERIAL
Branxton, New South Wales	Up to 2,000 litres	Hydrocarbon
Hexham, New South Wales	Unknown (intercepted a natural gas pocket during drilling)	Natural gas

59 Queensland Government, Department of Information Technology, Science, Innovation and the Arts (2013), *Western-Metropolitan Rail Systems Coal Dust Monitoring Program, Final Report* https://www.qld.gov.au/__data/assets/pdf_file/0033/68775/rail-coal-dust-final-report.pdf

60 NSW Mining website: Rail corridor air quality: <http://www.nswmining.com.au/environment/rail-corridor-air-quality/further-research-to-improve-coal-train-dust-manage>
 61 NSW Government, *Air quality monitoring network*, <https://www.environment.nsw.gov.au/aqms/uhunteraqmap.htm>
 62 NSW EPA website: Lower Hunter air quality studies.



PEOPLE

At Aurizon, our greatest asset is our people. We seek diverse perspectives, and strive to ensure the right people are working to their potential, safely and efficiently, to deliver for our customers. We have a team of more than 4,700 full-time employees, with approximately 80% living and working in regional Australia. Our employees work together to serve our customers 24 hours a day, seven days a week.

Figure 30 - Aurizon's values



Creating a values-driven safety and performance culture

We strive for a safety and performance workplace culture where people live our values and are engaged and enabled to do their best work. To achieve this culture, we are taking a coordinated and deliberate approach through three major programs of work, underpinned by our values.

Leadership development

To contribute to our desired workplace culture, we have developed one set of clear and simplified behavioural expectations aligned to our values. The values are the cornerstone of the culture we want to create, and these behavioural expectations are being embedded in how we go about our work. Leadership capability is fundamental to creating a safety and performance culture.

During the year, to improve the capability of our frontline leaders in operational areas, we rolled out a leadership training program to approximately 300 leaders. The program aims to improve the quality of safety and performance conversations that frontline leaders are having with their teams, and is creating a common language and framework across the business. The program will continue to be delivered in FY2020.

Looking at the longer term, to improve leadership capability we are investing in our leaders, so they can support the rollout of the Company's strategy and create the desired values-driven culture. This program provides feedback for leaders on their leadership style and the impact they're having on team performance, as well as targeted and ongoing capability development.

Seamless Safety

Seamless Safety is a long-term program of work that redefines our approach to keeping our people safe. At its core, it will engage our staff through resetting expectations by increasing autonomy and responsibility to work safely. Our 'Safety' chapter outlines the initiatives that are being rolled out to strengthen the safety culture. Seamless

Safety will increase engagement with frontline staff to better define how work can be performed safely and successfully.

Simplifying our governance and compliance

In 2019, we are implementing a new enterprise-wide governance and compliance framework that will efficiently guide how we make decisions, without unnecessary rules, procedures and practices. This framework will be a simple, consistent set of company requirements, and will be easily available through an online portal.

Inclusion and diversity

Creating an inclusive workforce

At Aurizon, we are committed to creating a culture that is truly inclusive. We know that when our workplaces are more inclusive and diverse, we achieve better performance, not only in the outcomes we deliver but also in our safety culture and employee engagement.

We need to ensure that each employee feels valued, engaged and respected. We recognise that inclusion and diversity are two separate things, but both are paramount to achieving our business strategy and creating a culture within our workforce that all our employees want to be a part of.

We continue to build greater diversity in our workforce – with a focus on representation of women and Aboriginal and Torres Strait Islander men and women. As of FY2019, the representation of women in our workforce was 21.0%, up from 12.4% in FY2012. We have also increased the representation of Aboriginal and Torres Strait Islander men and women from 2.5% in FY2012 to 5.6% in FY2019.

Our Diversity Policy is reviewed annually, and sets out objectives and reporting practices with respect to inclusion and diversity. The policy is available on the Governance section of our website.

Figure 31 - Female workforce representation

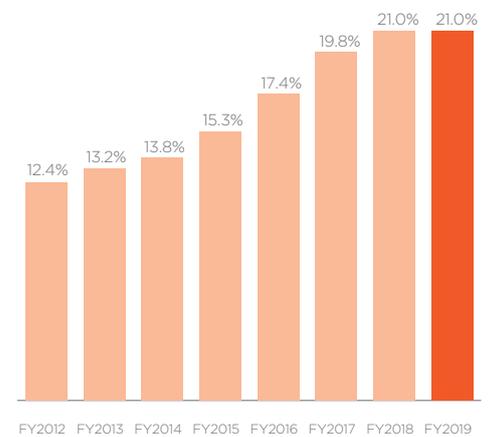
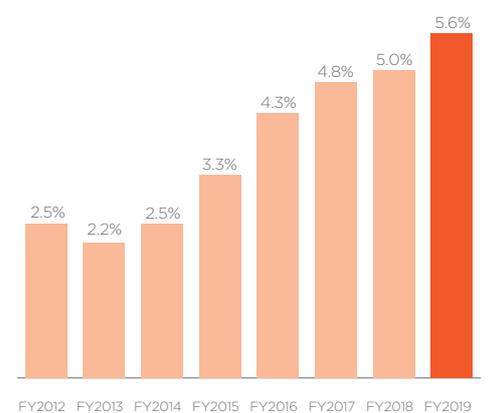


Figure 32 - Aboriginal and Torres Strait Islander workforce representation



Gender pay gap

As an organisation, we realise that a constant focus is required to achieve full gender parity, and therefore remains an ongoing commitment for Aurizon. During FY2019, we implemented 10 initiatives to continue to build on and improve our gender pay gap and to make progress, particularly in our like-for-like gap.

Creating gender balance

We recognise that to effect real change and create gender balance within our organisation, we need a long-term strategy that goes beyond focusing on just the numbers to achieve a multi-dimensional solution. As such, throughout FY2020 we will be establishing a Gender Balance Reference Group to specifically help address issues and embed initiatives at a grassroots level. This group will help achieve our overall strategy.

Committing to our Aboriginal and Torres Strait Islander employees

Continuing to lead our business in a socially responsible way and connecting to the communities in which we operate has not only allowed us to further increase the representation of Aboriginal and Torres Strait Islander men and women, but to also make genuine connections with our communities more broadly. Our commitments to reconciliation are included in our Reconciliation Action Plan (RAP).

We continue to implement and monitor progress against our 'Stretch' RAP, which has been in place since July 2018. Our primary focus as a part of this RAP is to implement long-term strategies, and work towards defined measurable targets and goals. To date, the Business has been active in making progress against the commitments as noted below:

Building relationships

- Developing relationships with external partners, such as the Clontarf Foundation, community groups, local Traditional Owners and Elders, and schools.

Fostering respect

- Developing cultural awareness training for employees.
- Showing greater recognition of Country in our major regional sites and depots. Aboriginal and Torres Strait Islander flags are now in each location, and we have re-named meeting rooms to names of Indigenous significance.
- Continuing our recognition and support of key events, such as National Reconciliation Week and NAIDOC Week.

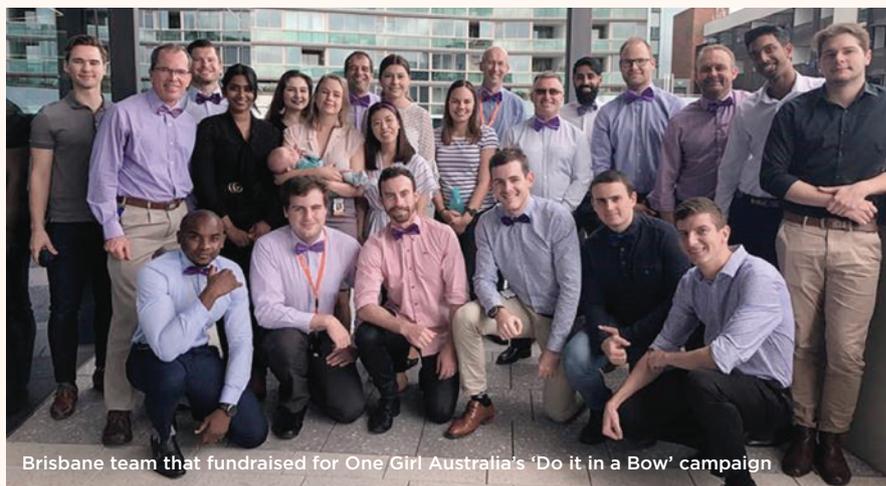
There are several opportunities and potential focus areas that have been identified for FY2020:

Celebrating inclusion and diversity

As a business, we continually challenge ourselves on how we create an inclusive environment that not only contributes to creating a high-performance and diverse culture, but also allows each individual to feel they can bring their whole self to work. One of the ways in which we achieve this is through recognising significant events each year, including International Women's Day (IWD). In line with the 2019 IWD theme of Balance for Better, teams from both our regional depots and corporate offices across the country came together to not only celebrate the achievements of women, but also to consider how everyone can make a difference in achieving a better-balanced workforce.

This year our graduates focused on raising money for One Girl Australia through their 'Do it in a Bow' campaign that raised money to help provide education to young girls in Africa. Some of our female leaders across the business also shared their insights on gender diversity with schools in South East Queensland.

Events and key engagement opportunities like this not only allow us to shift the dialogue and think about how we can create an attractive and welcome workplace for women, but to also translate ideas into actions that can make a positive difference.



Brisbane team that fundraised for One Girl Australia's 'Do it in a Bow' campaign

- Maintain employment levels above 5%.
- Increase expenditure with Indigenous suppliers, such as those through Supply Nation.
- Develop a pipeline of leadership talent through our Emerging Leaders Program.
- Continue our long-term partnership with CareerTrackers.
- Appoint Aboriginal and Torres Strait Islander apprentices and trainees.

Notably, our valued long-term partnership with CareerTrackers has ensured a minimum of five Aboriginal and Torres Strait Islander undergraduates on internships each summer. We believe this important initiative forms a pathway into our graduate program for these young men and women, and ultimately, will increase representation of Aboriginal and Torres Strait Islander men and women in our leadership pipeline.

ALLin

In May 2019, we marked the fourth anniversary of our ALLin Network — our employee-led network for Aurizon's Lesbian, Gay, Bisexual,

Transgender, Intersex and Queer (LGBTIQ+) and Allies Community.

Since inception, the network has actively engaged our people throughout the year across our sites and depots, strengthening a culture so that everyone feels they can bring their whole self to work. Over the past 12 months, the network has continued to raise awareness and education by hosting events across our business, including the rollout of an online learning module.

In May 2019, we partnered with Pride in Diversity to host an event in Central Queensland. It was part of a cross-organisational program for the local employers and the LGBTIQ+ community to not only help drive awareness of inclusion in our regional areas, but to also help better understand what we need to do differently to better engage this community. Together with other regional businesses, the team identified the challenges faced in our regional areas to help us create a safe and inclusive environment for all.

Capability and succession

Building capability

At Aurizon, we pride ourselves in building the capability of our workforce. The way we work has evolved, and workplace change is expected to accelerate, both within Aurizon as well as in the broader industry. This can be attributed to increased automation, robotics, operational technologies, flexible working agreements and environments, an ageing workforce, and changing expectations from younger employees. Harnessing the potential of our workforce against our strategic business capabilities enables us to grow the business sustainably.

Over FY2019, we have implemented several systems and changes to how we manage our workforce capability. Some of the outcomes to date include:

- Delivering changes to how we screen for candidates for safety-critical roles.
- Changes to our use of psychometric assessments have created wider talent pools and opened more career pathways to our core operational roles.
- Delivering more than 100 'ready now' trainee locomotive drivers and more than 200 candidates for other operational roles for the Business through a proactive sourcing campaign.

Aurizon's innovative approach to bringing people and technology together is reflected in key operational technology projects:

- TrainLink
- Next Generation Training Technologies
- TrainHealth.

TrainLink: Earlier this year, Aurizon began investing in modernising systems, tools and processes to standardise elements of Aurizon's traincrew planning and rostering capability. These technology improvements will simplify and improve operational employee experiences and deliver major enhancements within the planning and rostering environment. Each of these solutions and future phases will:

- Streamline and integrate with payroll systems and processes, improving pay accuracy and timeliness
- Align planning with Enterprise Agreement rules to ensure compliant rosters
- Support 'point in time' decision-making based on KPIs, including lifestyle factors.

Next Generation Training Technologies:

To improve the capability of our train drivers, we are embracing virtual reality (VR) training solutions via Next Generation Training Technologies. The VR training is planned to be rolled out across a number of our training centres.

TrainHealth: Aurizon is investing in technology through the TrainHealth project that will enable the ability to monitor our coal locomotives and drivers in real time. This data will be used to improve train handling, reduce maintenance costs, improve on-time performance, and reduce locomotive-related cancellations.

For more information on the above technologies, see 'Our Future with Technology' in our 'How We Operate' chapter.

Enterprise agreements

Approximately 75% of Aurizon's workforce are covered by collectively bargained Enterprise Agreements (EAs). One of these EAs was successfully renegotiated in FY2018 and a further four in FY2019.

The Queensland Coal EA received approval through an employee ballot in July 2019. We were pleased to conclude bargaining with a positive vote for the new agreement, which covers more than 1,200 Queensland Coal employees. The agreement is with the Fair Work Commission for approval.

Work continues in Queensland in relation to the Bulk EA. Through ongoing bargaining, Aurizon is seeking to balance productivity improvements with wage outcomes.

We are committed to achieving fair and reasonable outcomes in enterprise bargaining, and are pleased our employees have voted positively for five EAs since

September 2018. This provides certainty for our employees, our business and, importantly, for our customers.

Prioritising our employees' mental health and wellbeing

At Aurizon, we care about the health and wellbeing of all our employees. It is part of our journey towards **ZERO**Harm to ensure no one gets injured – physically or psychologically.

In the rail industry, our people can be exposed to different risks and pressures. Our drivers can experience high stress with near misses with motorists, pedestrians, and trespassers on the rail corridor.

In April this year, we once again used Rail R U OK? Day to raise awareness of the significance of mental health problems for workers at different sites, mainly in regional and remote areas.

Rail R U OK? Day encourages rail employees to check in on one another to ensure that everyone feels connected and supported at work. The focus this year was on 'train of thought'. A range of local activities was held across the Company, including seminars, shutdowns, site BBQs and morning teas.

Aurizon also offers a free comprehensive independent Employee Assistance Program designed to support employees with the challenges and demands of work and personal life.



The maintenance team at Jilalan, Mackay celebrating Rail R U OK? Day



COMMUNITY

As a large Australian company with a predominantly regional footprint, we understand we need to create value in the communities where we operate. While our business adapts to changing market conditions, we continue to build upon a mutual understanding of obligations and responsibilities between us and our communities.

Regionally focused

Our operations span Queensland, New South Wales and Western Australia and, given the nature of our business, we recognise the importance of contributing as partners in the communities where we operate.

With approximately 80% of our employees and their families living and working in regional centres, we are focused on sustaining strong communities.

We contribute to these communities by providing employment opportunities and contracting local providers and suppliers for services such as equipment hire, accommodation and office services. These communities also benefit from the flow-on effects from our employees and their families, who buy groceries, attend schools and use local services.

Spending in our communities

Beyond Queensland, we have a significant presence as a national company in many other regions in Australia. One measure of our contribution to communities is our spend through local businesses for goods and services related to our operations in that region. In FY2019, we spent an estimated \$1.21 billion with suppliers, a large percentage of which was in regional Australia (see figure 33).

These figures do not account for the further spend by our employees and their families who live and work in these areas.

Working together as one community

Aurizon has had a long and proud history of working with and supporting local communities. We are considered an active member in every community in which we operate.

Our approach to engaging with our communities is based on the following:

- maintaining the safety of our communities is our number one priority
- building sustainable long-term positive relationships between ourselves and our community stakeholders
- establishing ongoing dialogue with community stakeholders to improve our performance
- upholding our corporate responsibility with respect to legislative and regulatory obligations.

We understand there are some impacts our operations can have on our communities.

For example, in relation to our environmental impacts, we actively participate in supply chain forums and associated coal dust studies to understand how, as a supply chain, we can minimise our potential impact on the community.

Community engagement is a critical and integral part in carrying out the Aurizon business, and is undertaken with genuine and honest intent. We seek to adequately address community stakeholder concerns and to encourage participation in their resolution.

Feedback channels are readily accessible and managed in a consistent and respectful manner.

Your community is our community

Over the past 12 months, Aurizon's communities have been challenged with extraordinary weather-related events. Most of New South Wales and Queensland continued to suffer severe drought, and North Queensland witnessed a major flood that affected not only our own operations, but the lives of many residents, businesses and community groups.

Aurizon responded to these dramatic weather events with welcome relief through our Community Giving Fund. During the financial year, our traditional cash grants program was extended to include a special contribution towards drought-affected communities. For the North Queensland region, Aurizon established an extraordinary round dedicated to recovery and rebuilding efforts.

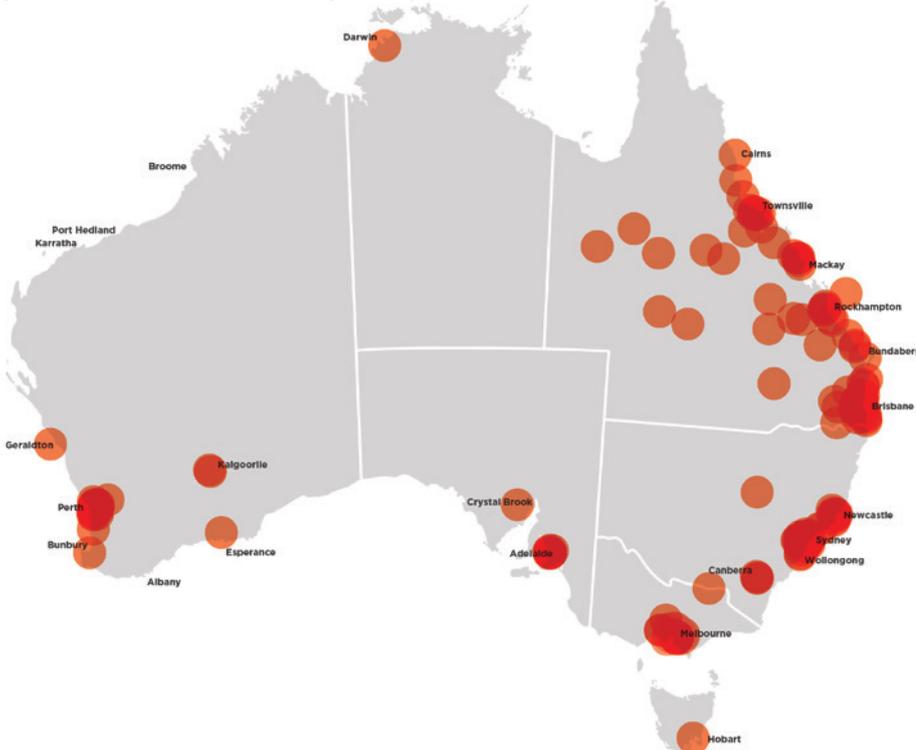
Outside of these special rounds, the Community Giving Fund continued to support charities in the areas of health and wellbeing, education, environment, and community safety. During FY2019, Aurizon distributed funding to a total of 54 charities. Some examples of our successful recipients in FY2019 include:

University of Newcastle — Centre for Rural and Remote Mental Health (CRRMH)

Regional New South Wales has endured one of the most intense droughts on record. With such adversity affecting the livelihoods of farming communities, rural enterprises, hospitality and schools, it is important to ensure the social connectedness of a community is upheld during these tough times.

Funds received from Aurizon's Community Giving Fund enabled the CRRMH, through their Rural Adversity Mental Health Program (RAMHP), to organise and provide a free community family event in Muswellbrook. The event featured a pop-up outdoor cinema, kids' entertainment and an opportunity for community members to access helpful information about family mental wellbeing. Most importantly, it helped lift the spirits of our farmers, business owners, and all those affected by the drought.

Figure 33 - Aurizon's FY2019 regional spend⁶³



BlazeAid – fence repair

In February, record rainfall from a slow-moving monsoon trough across North Queensland caused unprecedented flooding. As the floodwaters receded, the sheer devastation across the land became apparent, particularly in rural areas. Fences were destroyed, topsoil was removed, debris strewn across the region, and there was significant casualty to cattle numbers. To help the communities recover, Aurizon's grant to BlazeAid ensured that several volunteer-led camps were established to rebuild fence lines and any other structures that had been devastated or destroyed. The camps were in Richmond, Julia Creek and Winton.

Further examples of our Community Giving Fund grants during FY2019 are available on our website.

Building vibrant, sustainable and resilient communities

With approximately three-quarters of our workforce and their families living in regional centres across the country, we're proud of the active contribution our employees make in their local communities.

This community service ranges from promoting the importance of rail safety in schools and at community events, raising awareness of social issues, providing mentoring opportunities for young people, and volunteering their time to support local charities.

As one example, every second month our Central Queensland Coal leadership team meets at one of our depots across the region, and the Operations Manager from the hosting depot will look for an opportunity in the community where the leadership team may be able to help. In the past year, they've painted the local Community Hall in Bluff, helped with some gardening and manual tasks at Sarina Aged Residential Care Facility, helped stock shelves at Rockhampton Food Bank, and joined in with children at Coppabella Primary School by undertaking STEM activities.

Image courtesy BlazeAid



Central Queensland coal leadership team at the Sarina Aged Residential Care Inc



Clontarf Foundation

The Clontarf Foundation improves the education, discipline, self-esteem, life skills, and employment prospects of young Aboriginal and Torres Strait Islander men. The Foundation has been highly successful in attracting boys to school and retaining them through its primary vehicle of either Aussie Rules or Rugby League football.

This unique and effective program has been successful in placing graduates in permanent full-time employment. Throughout our partnership in FY2019, we have worked together with Clontarf to engage the students in a variety of initiatives, including attendance and participation in NAIDOC events, Academy presentations by our employees, as well as student workplace visits and employment forums. Our support for Clontarf is countrywide, with interaction and support ranging from Townsville in North Queensland to the Goldfields in Western Australia.

Clontarf Foundation's Super Training clinic at Harristown State High School



TAX AT AURIZON

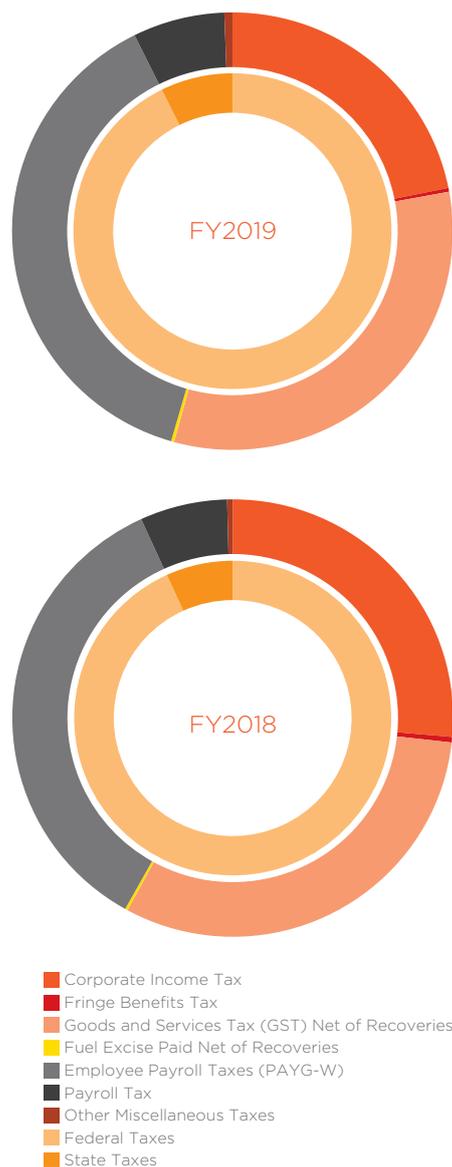
As an ASX-listed company predominantly operating in Australia and as an industry leader, we understand the importance of tax transparency. We continue to have a positive, open and constructive relationship with the Australian Taxation Office (ATO) and continue to voluntarily adopt the Tax Transparency Code, demonstrating our commitment to paying our fair share of tax.

Taxes paid and collected

We pay various taxes to federal, state and local governments, and collect various tax payments on behalf of federal and state governments.

As demonstrated in figure 34, 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

Figure 34 - Taxes collected and paid by Aurizon



tax represented in figure 34 reflects taxes paid in respect of the income year, rather than taxes actually paid during the income year.

As demonstrated in figure 34, taxes collected in respect of employees represent the largest component of taxes we collect (on behalf of the Australian government). These include Pay As You Go withholding from employees' salary and wages, and superannuation contributions for employees. Figure 34 excludes a number of taxes that are considered immaterial for our business, including (but not limited to) stamp duty, 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, CFO-approved Tax Corporate Principle, and our broader Enterprise Risk Management Framework.

Our Tax Team has primary responsibility for implementing Aurizon's tax strategy, with oversight by the 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 Aurizon's 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 Aurizon makes appropriate tax elections when given a choice under the tax law

- ensuring tax positions adopted by Aurizon are in accordance with parliamentary intention and guidance provided by the ATO, 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 with external independent advice.

Building a positive and 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 FY2019. 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** — these differences reverse over time.
- **Non-temporary differences** — these 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 5 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, 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. Aurizon's effective income tax rate is outlined in table 6.

Our effective tax rate for FY2019 of 30.6% is more than the 30% Australian corporate tax rate. This is primarily due to the derecognition of the deferred tax asset in respect of net capital losses.

Table 5 – Reconciliation of accounting profit to income tax payable

(\$M)	FY2019	FY2018
Current tax	126.1	167.9
Deferred tax	74.7	51.7
Total income tax expense	200.8	219.6
Underlying profit/(loss) before tax (LBT)	688.6	751.6
Significant items (impairments etc.)	(11.3)	(49.0)
Statutory profit/(loss) before tax	677.3	702.6
Tax at Australian tax rate of 30% (2018: 30%)	203.2	210.8
Tax effect of amounts that are not (taxable) deductible in calculating taxable income:		
- Research and development	0.0	(0.7)
- Capital losses not recognised	3.6	8.0
- Other	(5.8)	1.9
- Adjustments for tax of prior periods	(0.2)	(0.4)
Income tax expense/(benefit)	200.8	219.6
Temporary differences:		
Provisions/accruals	(12.6)	(9.5)
Customer contracts	(7.4)	(7.8)
Property, plant and equipment	(69.5)	(54.0)
Other	14.8	19.6
Income tax payable	126.1	167.9

Table 6 – Aurizon's effective income tax rate (for continued and discontinued operations combined)

	FY2019	FY2018
Underlying Profit before Tax (PBT)	\$688.6m	\$751.6m
Significant Items (Impairments etc)	\$11.3m	\$49.0m
Statutory PBT/(LBT)	\$677.3	\$702.6m
Statutory Income Tax Expense/(Benefit)	\$200.8	\$219.6m
Statutory Effective Tax Rate	29.6%	31.3%
Underlying Income Tax Expense	\$210.6m	\$226.3m
Underlying Effective Tax Rate	30.6%	30.10%

Financial, environmental, social and governance metrics

RESULT HIGHLIGHTS	UNIT	FY2019	FY2018
Total Revenue	\$M	2,907.6	3,112.7
EBITDA	\$M	1,371.6	1,466.1
EBIT	\$M	829.0	940.6
Income Tax (expense)/benefit ⁶⁴	\$M	(208.6)	(233.5)
NPAT	\$M	473.3	542.1
Earnings per share ⁶⁵	cents per share	23.8	26.9
Return on invested capital (ROIC) ⁶⁶	%	9.7	10.9
Operating Ratio	%	71.5	69.8

OPERATING METRICS	UNIT	FY2019	FY2018
Above Rail Revenue/NTK ⁶⁷	\$/'000 NTK	37.7	38.1
Labour costs ⁶⁸ /Revenue	%	26.0	24.4
NTK/FTE	MNTK	12.5	13.2
Above Rail opex/NTK (excluding access)	\$/'000 NTK	20.3	18.5
Above Rail NTK	bn	59.0	63.8
Above Rail Tonnes	m	258.9	267.1

SAFETY	UNIT	FY2019	FY2018
Total Recordable Injury Frequency Rate	TRIFR	11.07	10.02
Rail Process Safety	Incidents per million train kilometres travelled	4.38	5.08

COMMUNITY	UNIT	FY2019	FY2018
Total estimated spend with suppliers	\$b	1.2	1.3
Taxes collected and paid ⁶⁹	\$M	357	413
Number of supported charities	#	54	43

PEOPLE	UNIT	FY2019	FY2018
Number of full-time equivalent employees	#	4,728	5,199
Wages and benefits paid	\$	810	835
Regional workforce representation	%	80	75
Female workforce representation	%	21	21
Aboriginal and Torres Strait Islander workforce representation	%	5.6	5.0

Females in senior leadership roles	UNIT	FY2019	FY2018
Board	%	33	29
Executive leadership team	%	15	17
General managers	%	33	33
Senior leadership team	%	28	32
Total	%	26	29

64 Income Tax (expense)/benefit reflects only income tax expense from continuing operations

65 Calculated on weighted average number of shares on issue.

66 ROIC is defined as underlying rolling twelve-month EBIT divided by the average invested capital. The average invested capital is calculated by taking the rolling twelve-

month average of net property, plant and equipment, including assets under construction plus investments accounted for using the equity method plus current assets less cash, less current liabilities plus net intangibles.

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

68 FY2018 excludes \$16.5m redundancy costs (FY2017 excludes \$5.1m redundancy costs).

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

ENVIRONMENT		FY2019	FY2018
Emissions⁷⁰			
Total GHG emissions (Scope 1 and 2)	Metric tonnes of CO₂e	847,603	945,988
Direct GHG emissions (Scope 1)	Metric tonnes of CO ₂ e	482,790	578,617
Diesel Locomotives	Metric tonnes of CO ₂ e	448,971	533,947
Road Vehicles	Metric tonnes of CO ₂ e	15,759	13,711
Miscellaneous fuel emissions	Metric tonnes of CO ₂ e	17,859	30,959
Indirect GHG emissions (Scope 2)	Metric tonnes of CO ₂ e	364,813	367,371
Electric Locomotives	Metric tonnes of CO ₂ e	337,418	335,699
Facilities (electricity purchased)	Metric tonnes of CO ₂ e	27,395	31,672
Total indirect GHG emissions (Scope 3)		97,368	108,272
Purchased goods and services	Metric tonnes of CO ₂ e	10	57
Fuel and energy-related activities	Metric tonnes of CO ₂ e	83,786	94,406
Waste generated	Metric tonnes of CO ₂ e	3,966	3,944
Business travel	Metric tonnes of CO ₂ e	5,761	5,933
Employee commuting	Metric tonnes of CO ₂ e	3,845	3,932
Targets (Rail Emission Intensity)			
Measure (Locomotive GHG emission intensity)	Metric tonnes of CO ₂ e per 1000 Gross Tonne Kilometres	0.00796	0.00798
GHG emissions intensity target	% of progress towards target	8	7

⁷⁰ 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 FY2019 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.

ENVIRONMENT		FY2019	FY2018
Energy			
Total direct and indirect energy consumed within the organisation	Megawatt hours	2,364,210	2,755,604
Total direct energy consumed	Megawatt hours	1,907,694	2,290,113
Diesel (used for locomotives)	Megawatt hours	1,768,995	2,103,808
Diesel (other)	Megawatt hours	62,886	124,409
Natural gas	Megawatt hours	7	116
Other fuels (propane, gasoline, kerosene, stove oil, furnace oil)	Megawatt hours	9,053	14,377
Total indirect energy consumed - electricity	Megawatt hours	456,516	465,491
Energy intensity	Megawatt hours per million \$AUD dollars of rail freight revenue	813	885
Fuel efficiency	GTKs per '000 Litres of fuel consumed	324,131	326,860
Fuel efficiency savings(m)	\$ million	0	2.3
Effluents and Waste			
Total weight of waste generated	Metric tonnes	7,523	12,571
Total hazardous waste generated	Metric tonnes	3,169	5,460
Disposal methods			
Sent to landfill (non-hazardous)	Metric tonnes	2,438	3,000
Recycled	Metric tonnes	3,969	7,519
Incinerated/treated/landfilled (hazardous)	Metric tonnes	2,438	2,052
Water			
Water consumption	Million litres	357,486	343,551

Independent Assurance Practitioner’s Limited Assurance Report on the 2019 Sustainability Report to the Directors of Aurizon Holdings Limited

We have undertaken a limited assurance engagement relating to the selected Sustainability Performance Indicators and the basis for selecting the sources of Scope 3 emissions for inclusion in the Sustainability Report detailed below (the ‘Subject Matter’) reported in the Aurizon Sustainability Report for the year ended 30 June 2019 (‘2019 Sustainability Report’).

Subject Matter and Reporting Criteria

The Subject Matter and Reporting Criteria for our limited assurance engagement for the year ended 30 June 2019 is as follows:

Subject Matter	Reporting Criteria
Total Scope 1 and 2 Greenhouse Gas (‘GHG’) emissions (tCO ₂ -e)	The <i>National Greenhouse and Energy Reporting Act 2007</i> (‘NGER Act’), the <i>National Greenhouse and Energy Reporting Regulations 2008</i> (‘NGER Regulations’) and the <i>National Greenhouse and Energy Reporting (Measurement) Determination 2008</i> (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"> • 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, including air and ground-based travel, and accommodation • Employee commuting • Upstream leased assets. 	The Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Standard
Scope 3 GHG emissions (tCO ₂ -e), which comprise: <ul style="list-style-type: none"> • Fuel and energy related activities 	The Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Standard and Aurizon’s Scope 3 Emissions Basis of Preparation

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Subject Matter	Reporting Criteria
<ul style="list-style-type: none">• Business travel (air and car hire)• Waste generated in operations• Paper purchased.	

Responsibilities of Management

Management of Aurizon is responsible for:

- Ensuring that the Subject Matter is properly prepared and presented in accordance with the Reporting Criteria
- Preparing the Scope 3 emissions basis of preparation in accordance with the applicable criteria
- Confirming the measurement or evaluation of the underlying subject matter against the applicable criteria, including that all relevant matters are reflected in the Subject Matter information
- Designing, establishing and maintaining internal controls to ensure that the Subject Matter is properly prepared and presented in accordance with the Reporting Criteria.

Assurance Practitioner's Independence and Quality Control

We have complied with the independence and other relevant ethical requirements relating to assurance engagements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies 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*, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Assurance Practitioner's Responsibility

Our responsibility is to express a limited assurance conclusion on the Subject Matter based on the procedures we have performed and the evidence we have obtained.

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 in order to express a conclusion whether, based on the procedures performed and the evidence obtained, anything has come to our attention that causes us to believe that the Subject Matter has not been reported, in all material respects, in accordance with the Reporting Criteria. That standard requires that we plan and perform this engagement to obtain limited assurance about whether the Subject Matter is free from material misstatement.

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. 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 we performed were based on our professional judgement and consisted primarily of:

- Interviewing respective Subject Matter data owners and management responsible for the Sustainability Report to understand and assess the approach for collating, calculating and reporting the respective Subject Matter across the reporting period ended 30 June 2019
- Interviewing the Subject Matter process owner to understand the entity's activities and identification of the Scope 3 emissions reporting boundary

- Undertaking a sample of detailed walkthroughs of key systems and processes relied upon to compile the Subject Matter for the 2019 Aurizon Sustainability Report
- Assessing the supporting process documentation developed to support the collation, calculation and reporting process in accordance with the NGER Legislation and GHG Protocol Corporate Value Chain (Scope 3) Standard as applicable
- Completing analytical reviews over material data streams to identify any material anomalies and gaps for the Subject Matter and investigate further where required
- Agreeing overall data sets for the Subject Matter to the final data contained in the 2019 Aurizon Sustainability Report.

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 we performed a reasonable assurance engagement. Accordingly, we do not express an opinion providing reasonable assurance about whether the Subject Matter has been reported, in all material respects, in accordance with the Reporting Criteria.

Inherent Limitations

There are inherent limitations in performing an assurance engagement - for example, assurance engagements are based on selective testing of the information being examined - and it is possible that fraud, error or non-compliance may occur and not be detected. An assurance engagement is not designed to detect all misstatements, as an assurance engagement is not performed continuously throughout the year that is the subject of the engagement and the procedures performed on a test basis. The conclusion expressed in this report has been formed on the above basis.

Additionally, non-financial data may be subject to more inherent limitations than financial data, given both its nature and the methods used for determining, calculating and sampling or estimating such data.

Limitations of Use

This report has been prepared for use by Directors of Aurizon for the purpose of assisting the directors and management of Aurizon assess the accuracy of the data reported in the 2019 Aurizon Sustainability Report for the agreed Subject Matter. We disclaim any assumption of responsibility for any reliance on this report to any person other than the Directors of Aurizon, or for any purpose other than that for which it was prepared.

Conclusion

Based on the procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the Subject Matter have not been reported, in all material respects, in accordance with the Reporting Criteria in the GHG Protocol Corporate Value Chain (Scope 3) Standard and the NGER Legislation.

Deloitte Touche Tohmatsu

DELOITTE TOUCHE TOHMATSU

Chi Mun Woo

Chi Mun Woo

Partner

Sydney, 10 October 2019



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