AURIZON®

2018
SUSTAINABILITY
REPORT

**Delivering for a
sustainable future**

OUR FY2018 SUSTAINABILITY HIGHLIGHTS

$762 million

was returned to our shareholders through dividends and share buybacks

$1.3 billion

estimated spend in the economy

21%

of our workforce is female, up from 11.6% in 2011

6%

reduction in operational GHG emissions (Scope 1 and 2) since FY2017

267 million tonnes

of commodities hauled[*]

~75%

of our people now work in regional locations across Australia

[*]Excludes Intermodal

2018 SUSTAINABILITY REPORT

ABOUT AURIZON

Managing Director & CEO Message

On behalf of Aurizon, I am pleased to share our 2018 Sustainability Report. This is our fifth report and we remain committed to being open and transparent in relation to the social, environmental and economic aspects of our business.

This was recognised in June by the Australian Council of Superannuation Investors who represent 38 Australian and international asset owners and institutional investors that collectively manage more than $2.2 trillion in assets. In their *Corporate Sustainability Reporting in Australia* report, we were identified as one of 35 companies in the ASX 200 that has consistently outperformed in sustainability disclosure over the past four years.

We are committed to creating a strong business and a sustainable future that creates value for our employees, customers, communities, and shareholders. I recognise that each of these stakeholder groups measure this value in different ways.

For employees, I believe value means coming to work and being recognised and respected for different skills, experiences and perspectives. We are proud of the positive steps we have made to make Aurizon a more inclusive workplace. It's important that all our employees recognise their individual thoughts and ideas collectively contribute to positive outcomes for our customers and for our business. Most importantly, our employees value working in an environment where their safety is the Company's number one priority.

For our customers, value can be translated into competitive pricing for haulage contracts, however, equally important is knowing that the services we deliver are completed safely and efficiently. Changes to our operating structure have provided us with greater agility to deliver customers with better end-to-end services, which is the first step in achieving our vision of being the first choice for bulk commodity transport solutions for our customers.

As a large Australian company with a predominantly regional footprint, we understand the need to create value in the communities where we operate. Given the quality and cost competitiveness of Australian coal, the opportunity remains to continue supplying the growing coal needs of Asia and in turn create value for our business, our customers and the regional communities where we operate.

We contribute economically to these communities by providing employment opportunities and supporting local businesses, and we are working to bring more roles closer to our operations over the coming years.

Each year we give back to local charities through our Community Giving Fund, and I am proud of the work we have supported that helps make these communities better places to live.

Value for our shareholders is about receiving a good return on their investment, by managing our capital effectively and, where possible, returning surplus capital to investors. This has been demonstrated by the $762 million distributed to our shareholders through dividends and share buybacks during FY2018.

While creating value may have different meanings across our stakeholder groups, the one thing that doesn't change is safety. Safety remains our core value. Safety is not a target you set and achieve and that's the end. It's an ongoing and very conscious journey. This year we rolled out Seamless Safety, a new program of work that particularly focuses on developing leadership behaviours and capabilities of our frontline leaders and giving them better tools to support them in their operations.

Also ongoing is our transformation journey. While I'm proud that we achieved our $380 million three-year transformation target, I believe that to create a strong and sustainable business we must always look to do things better. Over the next few years, we will see technology investment at the forefront of our commitment to continuous improvement.

We remain committed to being open and transparent, and operating responsibly. I welcome your feedback on our 2018 Sustainability Report and invite you to send any comments to sustainability@aurizon.com.au.

Regards

Andrew Harding
Managing Director & CEO

About Aurizon

Aurizon (ASX: AZJ) is Australia's largest rail freight operator and a top ASX 100 company. Each year, we transport more than 260 million tonnes of Australian commodities – connecting miners, primary producers, and industry with international and domestic markets.

Every day we move more than 700,000 tonnes of freight across the nation with our fleet of locomotives, wagons and trucks. Our team of dedicated transport operators is entrusted with Australia's wealth for both export and domestic delivery. Our reputation for delivery has cemented our position as a leading transporter of bulk commodities from mine to port for the export market.

Strategy In Action

In order to ensure the ongoing success and sustainability of our business, we continually assess our strategy in the context of our evolving external and internal environments. To better respond to changes in these environments, we 'reset' our enterprise strategic framework over the course of FY2018.

The strategic framework provides a clear and shared view across our employees of three elements: why we do what we do (Purpose); what we are seeking to achieve in the near term (Vision); and our guiding principles that underpin our behaviours and how we operate (Values).

Importantly, the framework provides a renewed focus on our activities and decision making around three Strategic Levers: Optimise, Excel and Extend. These levers are aimed at guiding our businesses and functions as to how, where, and when they will seek to deliver for our various stakeholders.

Given the action-orientated nature of the levers, we have called the framework **Strategy In Action**. Execution against the Strategy In Action framework will be measured using Key Performance Indicators and our Governance Model.

Strategy In Action ensures that our value proposition is not eroded over time, and that we are always providing efficient and differentiated services and solutions. Executing on this strategy means we are continuously enhancing our business, and it is directly linked to how we create value for our stakeholders. 'How we Create Value' on page 8 outlines how our strategy reinforces value creation for our key stakeholders and addresses our material priorities.

PURPOSE

Growing regional Australia by delivering bulk commodities to the world

VISION

The first choice for bulk commodity transport solutions

VALUES

Safety
We have a relentless focus towards **ZERO**Harm

People
We seek diverse perspectives

Integrity
We have courage to do the right thing

Customer
We strive to be the first choice for customers
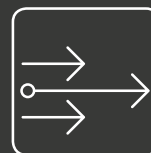
Excellence
We set and achieve ambitious goals

STRATEGIC LEVERS

OPTIMISE

our existing core business

EXCEL

to create competitive advantage

EXTEND

to support long-term sustainable growth

How we Create Value

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

1. People
We employ industry-leading expertise in front-line, technical and central functions to ensure we maximise the effectiveness and efficiency of our value chain.

2. Assets
We are a capital-intensive business, operating and managing Australia's largest export coal rail network with a significant fleet of active coal and bulk locomotives and wagons.

3. Financial
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 for safety, risk and business integrity.

How we Create Value

Our business model draws on these inputs to provide essential services for our customers.

Value creation

- Our operations across the value chain optimise the movement of goods to ensure that they are transported efficiently and on time.
- We apply best practice engineering and safety standards to:
  – Ensure best in class productivity and utilisation of our fleet.
  – Maximise network track access and efficiency, and minimise disruptions.
- Our focus on cost and capital efficiency ensures value for money for customers, while balancing long-term maintenance and development requirements of the Central Queensland Coal Network (CQCN).
- We partner with our customers to fund, design, build and operate rail infrastructure in Queensland.
- Our transition to a Business Unit model has driven greater transparency of our operations, better customer centricity and more focused operational performance.

How we drive differentiation

- We are a business providing 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 actively monitor markets (particularly the future of coal), environmental and regulatory conditions, and adjust our business priorities accordingly.

How we Ensure Continuous Value Creation

We will not stand still and allow erosion of our value proposition. 'Strategy in Action' provides the framework for how we continually enhance our business and value proposition.

Key examples of 'Strategy in Action':

Optimise

- Portfolio optimisation – strengthening our haulage portfolio by continually focusing on reviewing and improving performance of key hauls.
- Cost Reduction – continual transformation to improve our cost structure and deliver value for money for our customers, ensuring that we remain an efficient, competitive and sustainable business.

Excel

- Precision operations – striving to increase the precision of our CQCN operations, on-time performance and schedule adherence through planning and productivity improvements.
- Asset utilisation – initiatives delivering increased payloads and longer trains moving faster.

Extend

- Adjacencies – logical expansions of our operations into close adjacencies to extend our supply chain participation.
- Supply chain management – positioning our Bulk business unit as a supply chain manager, leveraging strategic partnerships, volume aggregation and smart terminals to drive long-term value.

Note: Highlighted text identifies some of our material priorities. See page 15 for more details.

OUR OUTPUTS
We create tangible and sustainable value for all our primary stakeholders – 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 FY2018
$762 million has been returned to investors through dividends and share buybacks.

Customers
We offer reliable, safe and efficient bulk supply chain solutions for our customers.

Value created in FY2018
267 million tonnes of bulk commodities transported at an estimated value of over $40 billion for our customers.

Employees
We provide our employees with stable regional 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 FY2018
- More than 4,500 people employed in 39 locations.
- $835 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 FY2018
- Approximately 75% of our employees reside in regional areas.
- $413 million in taxes collected and paid.*

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

HOW WE OPERATE

As a significant contributor to coal, iron ore and other bulk supply chains in Australia, we provide effective and efficient above rail (transport) and below rail (network) capabilities that are crucial in generating sustainable returns for our shareholders. Our business model is built around creating lasting value for all of our key stakeholders.

Our Business Structure

Growing regional Australia by delivering bulk commodities to the world, we provide transport solutions to connect our customers to global markets.

Coal

Our Coal business services mines in regional Queensland and New South Wales. During FY2018, we hauled 212 million tonnes of coal, primarily destined for port terminals for subsequent export to global markets. Beyond export coal, more than 10% of coal that we haul is for domestic customers, contributing to Australia's energy generation. The Coal fleet includes more than 300 locomotives and 8,500 coal wagons. Our Coal business unit employs more than 1,800 people across communities in regional Queensland and New South Wales.

Bulk

During FY2018, our Bulk business delivered 55 million tonnes of commodities such as iron ore, alumina, bauxite, limestone, and industrial and agricultural products from across regional Queensland, New South Wales and Western Australia. The Bulk business unit provides employment for more than 800 people across these areas.

Network

Network encompasses the operation of the 2,725 kilometre Central Queensland Coal Network (CQCN), held under a long-term lease from the Queensland Government. Network delivers around 60%[1] of seaborne metallurgical coal to steel mills across the globe, connecting over 40 mines to five coal export terminals in regional Queensland. During FY2018, 230 million tonnes were delivered across the CQCN. The network business employs more than 1,200 people.

Because the CQCN is a regulated asset, network access charges need to compensate the business and shareholders adequately, reflective of the maintenance and capital expenditure program consistent with a responsible company and the elevated risk environment in which we operate.

[1]International Energy Agency, *World Coal Information 2017*

Figure 1 — Aurizon's Central Queensland Coal Network
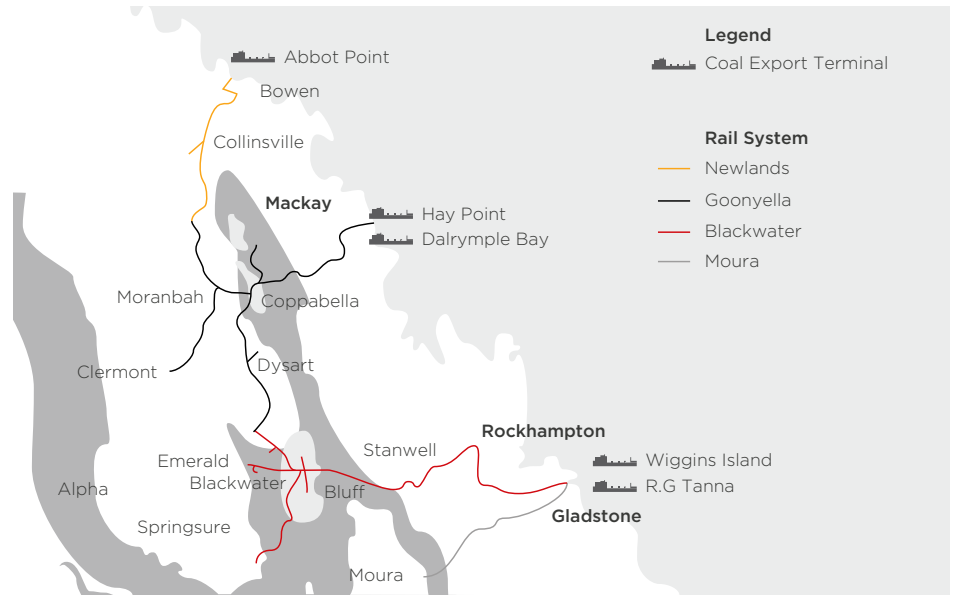
40+ mines

Open access network with 3 above rail haulage operators

70+ services per day

230mt coal moved during FY2018

4 major coal systems and one connecting system

5 export terminals at 3 major ports

2,725km of track

4.4 million sleepers

768 level crossings

3,772 track circuits

2,412km optical fibre

131,000km² land area footprint

Intermodal

On 14 August 2017, we announced our intention to exit our loss-making Intermodal business through a combination of closure and sale.

The Interstate (outside of Queensland) Intermodal business closed on 31 December 2017.

We also announced, subject to regulatory approval, the sale of the Queensland Intermodal business (QIB) to a consortium of Linfox and Pacific National, and the sale of the Acacia Ridge Terminal, south of Brisbane, to Pacific National.

On 19 July 2018, the Australian Competition and Consumer Commission opposed both transactions and commenced proceedings against Pacific National and Aurizon in the Federal Court alleging anti-competitive conduct.

On 13 August 2018, the Federal Court granted an interlocutory injunction that compels Aurizon to continue to operate QIB until final orders of the Court. The Federal Court proceedings commence on 19 November 2018.

Subject to any Court orders, our intention remains to exit the QIB and to clear the Acacia Ridge Terminal transaction. Aurizon will defend the allegations about illegal anti-competitive conduct. We will update shareholders as required.

Customers

The shift to a business unit model has provided us with greater agility to deliver customers with better end-to-end service. The new model has driven better business outcomes to deliver for our customers.

During FY2018, we secured the following contracts for our coal business:

- Baralaba Coal Company entered into an agreement for coal haulage from the Baralaba North Mine to the RG Tanna Coal Terminal at Gladstone, for 2 million tonnes per annum (mtpa). Haulage is expected to commence in 1H-FY2019 for a term of up to 10 years.

- We entered into an agreement with MACH Energy for coal haulage of 8mtpa from the Mount Pleasant Mine to Newcastle ports as well as domestic power stations. The haul is expected to commence late 1H-FY2019, for a contract term of 10 years.

- We extended our relationship with the QCoal Group to include coal haulage of up to 10mtpa (5.0mtpa initially) from the greenfield Byerwen Mine to Abbot Point Coal Terminal, for a period of 10 years that commenced in January 2018.

- Bounty Mining commenced railings in March 2018 under a new agreement following its acquisition of the Cook Colliery during 3Q-FY2018.

These new tonnages have been secured through responding to our customers' expectations around delivery performance and flexibility. We have also been able to cascade our Interstate Intermodal assets in our new coal contracts. Future investment during FY2018 and into FY2019 will allow Coal to preserve existing assets and grow future value for our Company. We recognise that the markets that we operate in are competitive, and that ongoing transformation is essential to improve competitiveness and service. Our relentless focus on operating discipline and reliability will drive our delivery performance.

Our Bulk business is currently progressing a turnaround plan with a focus on continuous improvement. Our end goal for this plan includes a focus on growth markets, strategic partnerships and improved operational performance. It also involves a more customer-led approach in how we operate. With the cessation of Cleveland-Cliffs iron ore mine operations in June 2018, and the cessation of the Mt Gibson iron ore contract in mid-FY2019, Bulk will be operating one iron ore contract from mid-FY2019. However, Bulk is delivering on its plan to strengthen its haulage portfolio.

Contracts that our Bulk business secured during the year include:

- A contract extension for Incitec Pivot's (IPL) acid and fertiliser hauls on the Mt Isa corridor, commencing January 2020

- A 10-year contract extension for the Cement Australia East End to Fisherman's Landing limestone haul which commenced January 2018

- A 7.4-year contract with MMG for the transport of zinc deposits on the Mt Isa corridor during November 2017

- A 2+2 year contract extension for the Queensland Rail services contract, covering both infrastructure trains and supporting the Inlander passenger train

- A short-term extension with Alcoa to rail additional bauxite export volumes into the Kwinana Bulk Terminal

- Contract variation for Mt Gibson Mining to rail additional volumes under the existing Rail Haulage Agreement. This contract will end in mid-FY2019 in line with the end of mine life.

Case Study: Customer-led Approach – Incitec Pivot (IPL)

Incitec Pivot (IPL) is a key customer for the Bulk business on the Mt Isa corridor. This is a significant and long-term contract, which we have serviced since the operation opened 20 years ago. We were able to deliver an innovative service design solution to IPL that underpinned the successful negotiation of a new contract, which creates value for both our business and IPL. We were delighted to be selected by IPL as their preferred rail supplier. Our solution appealed to IPL because it was able to deliver on the company's key objectives around manufacturing flexibility, cost and delivery performance. The new contract commences with IPL in January 2020.

We will continue to work hard to improve the value we create for customers by reviewing operational performance, evaluating customer sentiment, planning improvements and implementing a response. We strive to be the first choice for our customers' bulk commodity transport solutions.

Photo: Aurizon IPL acid train, Townsville

Photo: Aurizon trackside supersite, CQCN

Driving our Future with Technology

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.

On our trains, we are rolling out technology that provides data to monitor locomotives and to assist train drivers in delivering a high standard of driving performance. This technology transmits real-time information about the condition of the locomotives and the way the driver is handling the train. This data will initiate better performance within our fleet of locomotives, while promoting fuel savings, a smaller carbon footprint and less wear and tear on rollingstock.

We are also expanding our industry-leading condition monitoring program, which underpins our predictive maintenance strategy for our fleet of locomotives and wagons. There are six of these supersites now deployed in Central Queensland, and we are now installing this technology in the Hunter Valley for coal train operations.

These trackside supersites capture more than 200,000 photographs on each train passing at normal operating speed, and enable us to identify and address faults before they become costly maintenance problems or safety issues. This means a change in routine for our rollingstock maintainers. Rather than inspecting trains with torches at night-time in search of potential issues, maintainers are informed of issues two hours in advance and can prepare to fix them accordingly. As a result, we can now extend our visual maintenance inspection schedules from 21 days to 42 days, which keeps trains safely in service longer.

We are also rolling out technology, largely developed in-house, that enables us to detect the closing force of every door on our coal wagons. Currently, wagon door faults in our fleet cause 14% of our cancellations, so with technology enabling us to predict a door's failure or the potential for failure, we expect to reduce the impacts on our services.

In the coming year, three locomotives in our Central Queensland coal operations are intended to be equipped with European Train Control System (ETCS) technology, along with associated trackside equipment, as part of a trial to assess its potential and effectiveness. In Europe, this technology has improved rollingstock asset use and safety through continuous supervision of train speed and improved signal enforcement. After we assess ETCS in the trial next year, we will decide whether it is feasible to implement across our Central Queensland fleet.

Regulation and Policy

Rail transport in Australia is highly regulated, and government policy and regulatory processes can have significant impacts on company operations, costs and growth. We proactively engage at all levels of government to help inform policy decisions that promote efficient and productive supply chains in Australia, and to mitigate against policy and regulation that is likely to have negative economic, community and environmental impacts.

The following are the priority policy areas of focus for our business over the coming year.

Economic Regulation in Queensland

We consider the current approach to rail network access regulation within Queensland to be overly complex, costly and not adequately supportive of commercial outcomes for industry. The current regulatory framework has resulted in a disproportionate and discretionary approach to estimating the theoretically efficient costs for providing access. The costs and regulatory risks incurred to establish these 'efficient costs' significantly exceed the limited benefits that this form of regulation provides the supply chain.

The 2017 Aurizon Network Draft Access Undertaking (UT5) has clearly illustrated these issues, with the regulator prioritising lowest cost access over all other broader considerations. This has included an incorrect assessment of the risk profile, and proposes one of the lowest rates of return of any recent regulatory decision in Australia.

When combined with the retrospective nature of the process, with final decisions coming years after the start of the period they are meant to regulate, the current regulatory framework fails to provide the right incentives to deliver the best value outcome across the supply chain.

We have, along with several of our customers, made representations to the regulator that the current system has failed, and reform is required.

We consider that there is a clear shared opportunity to create value through improved supply chain alignment underwritten by regulatory reform.

Overall, regulatory improvement that ensures regulation is targeted and outcome focused will reduce regulatory risk and promote the commercial interests of all stakeholders, and the broader interests of the community.

Environment and Energy Security

We are one of the largest energy consumers in Queensland and operate 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.

We remain committed to the competitiveness of electric traction and are working to reduce its costs. It is anticipated that efficiencies will begin to be passed through to the supply chain in the coming years.

However, there is inconsistency between policy intent and market outcomes for electric traction. Because diesel traction can substitute electric, where policy has an immediate impact on the affordability or reliability of electric traction, there is an impact on competitiveness. Electric traction is less emissions intensive than diesel and is expected to become more so overtime as the electricity generation mix changes. Inconsistency between policy intent and market outcomes needs to be carefully considered.

The Australian energy sector continues to undergo substantial reform.

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 target is essential.

Energy policy should also take a technology-neutral approach that maximises the role of innovation and industry investment facilitated by stable government policies. It should also carefully consider market outcomes. With this in mind, we are working with other rail freight operators to develop and introduce industry-led solutions to managing emissions, while ensuring that the environmental benefits of using rail freight compared to road can be realised.

Leveraging Infrastructure Investment

We believe that greenfield investment policies should maximise the use of existing infrastructure when this offers improved supply chain efficiency and wider community benefits, including improved safety and environmental outcomes. This is particularly relevant where new development opportunities, such as the Surat Basin and the Galilee Basin, can benefit from the lower costs, faster export delivery, and socialised cost benefits that are offered by leveraging existing rail infrastructure.

A Modal Shift from Road to Rail

Federal and state governments have outlined policy objectives to achieve a modal shift of freight from road to rail where this would deliver economic, environmental and community benefits. However, outside of the heavy haul coal networks, on corridors where bulk and general freight services operate, there is little evidence that modal shift has occurred, and significant impediments remain for rail infrastructure. In fact, on some long-haul freight corridors, there has been a shift from rail to road.

We continue to contribute to the development of policy and regulatory proposals and to advocate to state and federal governments that they should:

• Make and/or facilitate targeted investments in existing rail infrastructure and links with other infrastructure aimed at improving the reliability and efficiency of supply chains for freight customers.

• Reduce major differences in rail and road access prices where they exist, including through the introduction of cost-reflective direct-user charging for heavy vehicles.

• Set further mode-share targets for specific corridors based on the example of the current 28% rail's mode-share target for the Port Botany Rail Line in Sydney. Establishing this target has contributed to an increase in rail's mode-share on the Port Botany Line. Introducing further mode-share targets would align government and industry actions with increasing the use of rail freight.

These policy changes have the potential to significantly improve the productivity and competitiveness of supply chains for the benefit of customers as well as regional and national economies. They would also result in safer roads, with one extra freight train removing the need for up to 150 semi-trailers to be on the road. In addition, every tonne of freight carried by rail helps the environment, because it results in 75 per cent less greenhouse gas emissions compared to one tonne of freight carried by road.

Our Approach to Sustainability

At Aurizon, we know that understanding our material impacts is necessary to develop our strategy and operate sustainably, and that identifying our material priorities leads to creating value for our stakeholders.

Our Approach to Reporting

This report has been prepared with reference to the Global Reporting Initiative's (GRI) Standards to provide investors with comparable information relating to environmental, social and governance (ESG) performance. Our approach takes into consideration the GRI's principles for defining report content that covers stakeholder inclusiveness, sustainability context, materiality, and completeness.

Material Priorities and Relevant Stakeholders

In compiling this report, we have assessed the material priorities that affect our business, our stakeholders and our environment. This assessment considered the views of internal and external stakeholders to ensure that our report reflects significant economic, environmental and social priorities that may influence strategic decision making or have significant impacts on our stakeholders and our business. Our key stakeholders are outlined in figure 2.

These priorities were confirmed through feedback from our communities, engaging with shareholders, discussions with customers, meetings with employees, and validation from the Aurizon Executive Committee and Board. Report content was then designed around these priorities, which are outlined in table 1 in order of appearance.

Figure 2 — Key Stakeholders

Table 1 — Material Priorities

Material Priority	Description	Chapter
Transformation	How we continuously improve our operations to reduce resource use, remain operationally efficient, increase productivity, and ultimately create value for the benefit of customers and shareholders.	About Aurizon and How We Operate
Business Model	How the structure of our business efficiently and effectively supports sustainable business practices, manages risk and supports our customers.	How We Operate
Customers	How we deliver efficient and reliable services to help our customers compete in global commodity markets, how our innovation of operations enhances our customers' experience, and how we secure and maintain strong customer partnerships.	How We Operate
Regulation and Policy	How we address the impact of regulation on our competitiveness, competition between electric and diesel locomotives, and Australian energy and emissions policies.	How We Operate
Governance, Risk and Business Integrity	How we operate with integrity and conduct business ethically. How our Board manages risk within our strategic framework, including our mitigation of climate-related risks through compliance with the Financial Stability Board's (FSB) 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 identify the importance of coal to our business along with the future demand for seaborne thermal and metallurgical coal, and conduct scenario analysis for strategic planning and business resilience.	Future of Coal
Environment	How we effectively manage material environmental transition and physical risks, and improve environmental performance, by addressing climate change and our response to extreme weather events, energy and emissions management, clean air, coal dust, and waste.	Environment
People	How we ensure the overall wellbeing of our employees, including mental and physical health and wellbeing, diversity and inclusion in our workforce, organisational capability, and overall talent acquisition and retention.	People
Community	How we focus on growing regional Australia through engagement with our communities, our economic contributions, listening to feedback and managing our impacts on local communities.	Community

Modern Slavery and Human Rights

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. We note the introduction of legislation to the Australian Parliament on 28 June 2018 to enact a Modern Slavery Act. We are supportive of the proposed objectives of the Act, including establishing a reporting requirement that provides transparency on slavery risks and how they are being addressed.

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. Each of the goals aim to provide guidelines that address issues such as climate change, economic inequality, innovation, sustainable consumption, and peace and justice, among others.

Given our participation in global supply chains, we recognise that our business activities have a wider impact on communities, environment, and the economy. Within this year's Sustainability Report, we have considered the SDGs and our respective contributions.

Acknowledging that our business contributes to some SDGs more than others, we have focused on five goals most aligned to our business, our values and our operational environment.

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3 GOOD HEALTH AND WELL-BEING

The safety of our employees, contractors and the public is our number one priority, and we have a relentless focus toward achieving our goal of **ZERO**Harm. Safe work practices are necessary to maximise our operational performance and maintain our social licence to operate. While all unsafe incidents are unwelcome, they do provide an opportunity for organisational learning to minimise the likelihood of a reoccurrence.

We aim to maximise these opportunities through incident investigations, reporting and communications. In the communities where we operate, we also have a key role in managing our operations in a safe manner and raising awareness of safe behaviour around the rail corridor. We also value the mental health and wellbeing of all our employees, and our journey towards **ZERO**Harm ensures no one gets injured.

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5 GENDER EQUALITY

At Aurizon, we seek diverse perspectives in our workforce. We aim to ensure that women are provided full and effective participation and equal opportunities for leadership at all levels of our Company. 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. Despite these efforts, we recognise that more work must continue to be done in the future to address the overall gender composition in our Company and to increase the number of women in leadership roles. Our workforce composition is the largest contributor to the gender pay gap. That is, women are under-represented in the Company and are often in roles and work areas that attract lower pay. Therefore, increasing the number of women across all job types is the single largest activity available to improve the overall gender pay gap.

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8 DECENT WORK AND ECONOMIC GROWTH

We remain committed to creating a strong business and a sustainable future that creates value for our employees, our customers, our communities, and our shareholders. We are part of a global supply chain, delivering bulk commodities for subsequent application in the development of modern economies and urban infrastructure through the provision of energy, steel, aluminium, copper, cement and food supply. Coal is Australia's second largest export industry (by value) valued at $60 billion[2] in FY2018, and we play a significant role with more than two-thirds of Australia's coal exports using the Central Queensland Coal Network (CQCN) and/or hauled by our above rail business. A large part of our economic footprint is also in regional Queensland where we employ more than 3,000 people supporting our above rail operations and the operation of the CQCN.

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9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

We aim to ensure our infrastructure is high-quality, reliable, sustainable and resilient. We recognise the physical risks and opportunities associated with our rail infrastructure in the Central Queensland Coal Network. Programs are currently in place to improve the resilience of our operations through improved design, preparedness, monitoring, recovery and communication with the supply chain and affected stakeholders. We strive to maintain Queensland's coal export advantage through cost-effective and reliable supply chain infrastructure.

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13 CLIMATE ACTION

Although locomotive emissions are a relatively minor contributor to local air quality, we acknowledge that as rail operators with a large diesel locomotive fleet we have a role in helping our local communities maintain air quality. We have led rail freight operators across Australia to develop an industry-led approach to managing locomotive diesel emissions leading to the *Code of Practice for Management of Locomotive Exhaust Emissions* by the National Rail Safety and Standards Board. We 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 a modal shift from road to rail, with one tonne of freight carried by rail resulting in 75 per cent less greenhouse gas emissions compared to one tonne of freight carried by road. 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 higher quality coal (high energy, low ash and low sulphur) that Australia supplies will be a key part of the transitional strategy.

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[2]Australian Bureau of Statistics, Customised Report

Photo: MMG containers being loaded on Aurizon train at Stuart Depot, Townsville

GOVERNANCE AND RISK

We recognise that risk is characterised by both threat and opportunity, and we manage risk in order to enhance opportunities and reduce threats to sustain shareholder value.

We foster a risk-aware culture in all decision making through the application of high-quality, integrated risk analysis and management. Our Board is ultimately responsible for risk management, which considers a wide range of social, environmental and economic risks within our strategic planning. We have a commitment to effective risk management as a key element of business success.

Effective Governance

Continuous Improvement

While our Board Committee structures remain unchanged, the way they work has changed. We have been proactive to consider and respond to changes recommended within the Australian Securities Exchange consultation draft *Corporate Governance Principles and Recommendations*, by updating the Charters to the Board's Committees.

The Board and Executive Committee continue to stay abreast of lessons being learnt through the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry, in addition to the Australian Prudential Regulation Authority's individual banking reports, and where appropriate, acting to enhance our corporate governance and culture.

The Board appointed an external party to facilitate their FY2018 Board effectiveness review. The review highlighted strengths in our approach with opportunities for further enhancement.

Our governance and, more broadly, our management system is undergoing a fundamental review to ensure 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.

Conduct

Our Code of Conduct embodies what it means to work at Aurizon. We value our social licence to operate, we are honest and fair, and we conduct business with the highest ethical standards. We are 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 staff are made aware of the code prior to employment and are required to complete online training modules annually to ensure a thorough understanding and continuous adherence.

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

Committee Structure
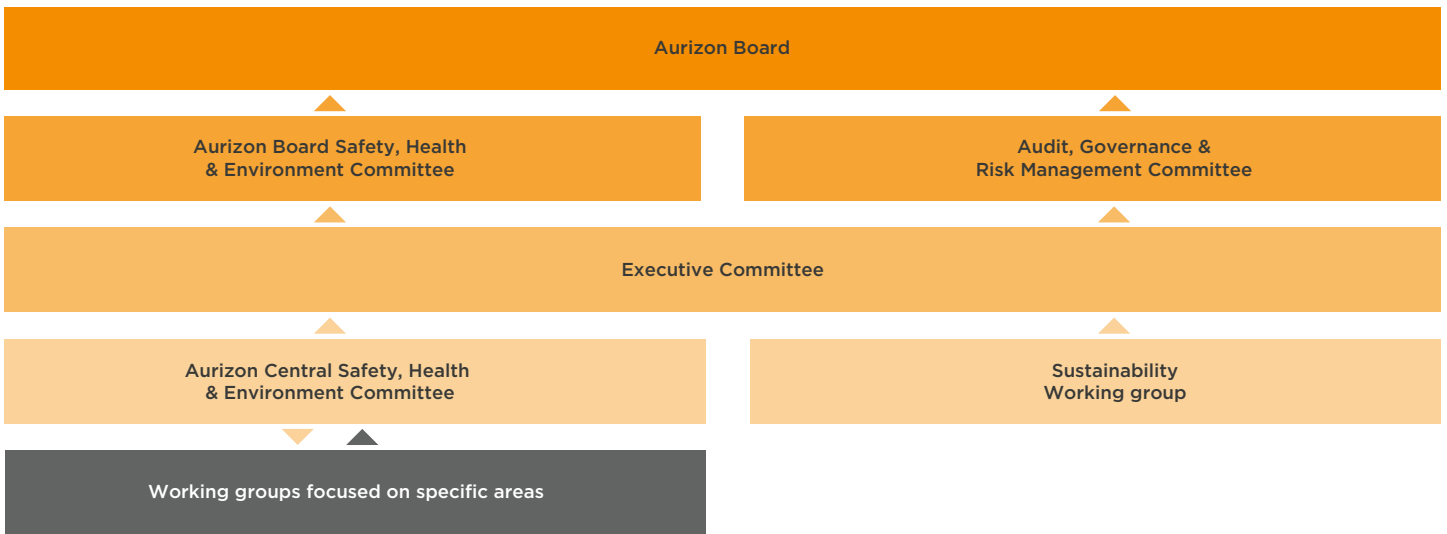
Our Committee structure remains unchanged, with our Board providing oversight and strategic direction to sustainability. The Board is supported by the Safety, Health and Environment (SHE) Committee and the Sustainability Working Group

• The Safety, Health and Environment (SHE) Committee, which includes several members of the Board, including the Chairman and Managing Director & CEO.

• The Sustainability Working Group, which provides strategic direction and supports the external Environmental, Social and Governance (ESG) reporting. The Working Group membership draws on expertise from across the Company, ensuring a whole-of-enterprise response to sustainability.

Note: Additional Aurizon Committees not shown include the Nomination and Succession Committee and the Remuneration and Human Resources Committee. For more information regarding our committee structures, see our FY2018 Annual Report.

How we Manage Risk

Risk Management Framework

We promote a risk-aware culture with an emphasis on frontline accountability for effective risk management. The consideration of risk features heavily in our thinking, from the framing of strategy through to informing decision making. Our Enterprise Risk Management Framework is based on the international standard for risk management (AS/NZS ISO 31000:2009) and supports the identification, assessment and reporting of risk across the business, and includes both financial and non-financial risks.

Sustainability Risk

In February 2018, our Group Executives reviewed and updated our risk profile, which was subsequently considered by the Board. A summary of the key risks is presented within our FY2018 Annual Report.

Data Security

One of the governance activities undertaken in 2018 was establishing our Data Breach Notification Plan to comply with the notification obligations of the Notifiable Data Breach scheme under the *Privacy Act 1988*. In June 2018, we were one of many large Australian organisations notified by PageUp, a third-party vendor used for online recruitment, that there had been unauthorised activity on their IT systems. We responded to the incident using our Breach Notification Plan and proactively communicated with potentially impacted employees and previous candidates who had used the system. We take the privacy and security of personal information seriously and will continue to work with the Office of the Australian Information Commissioner as required.

Photo: Aurizon Network Control Centre, Rockhampton

Cyber Security

Advances in automation and digitisation have increased the adoption and use of technology in delivering services, improving reliability and enhancing customer experience. We also understand that within these benefits lies the potential for cyber security, privacy and data protection risks.

We have been addressing these risks with a proactive approach, consistent with industry recommendations. We understand that a holistic approach focusing on people, process and technology is required for ongoing effectiveness.

Some key achievements to date include:

• Cyber Security Awareness and Training programs have been rolled out to all employees and contractors to uplift the end users' capabilities. Ongoing awareness messages remind staff about the ever-changing risk landscape and how to best protect systems and information.

• Internal detection, response and recovery capabilities are regularly tested and improved to ensure our systems and information are protected.

• There is ongoing focus on the industry, regulator and government collaboration through engagement with the Australian Cyber Security Centre. We have been an active contributor to the cyber security industry through involvement in the development of the Rail Industry Safety and Standards Board's Cyber Security Standard to improve and standardise cyber security management frameworks across rail organisations in Australia.

• Ongoing governance and compliance activities are conducted to understand and, where applicable, meet new industry standards and best practices.

Climate Risk

Climate change presents transition risks that could affect our business over the longer term through changed demand for our customers' products, particularly thermal coal.

A changing climate also presents physical risk due to increasing frequency or severity of extreme weather events, which may reduce capacity or availability of our trains and track assets. To minimise this risk and to manage potential disruptions, we have implemented multiple control measures. They include implementing a program of work to prepare and plan for weather, designing our infrastructure to withstand higher flood levels and higher temperatures, maintaining strategic spares to respond to track washouts, and monitoring ambient conditions in real time to minimise heat-related speed restrictions on our Network.

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

Climate-Related Risks Definitions[3]

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 Change Considerations for our Business

We acknowledge that climate change is affecting a wide range of industries around the world, resulting in financial implications. Transition risks related to energy policy, regulation, technology and market shifts (that are necessary to achieve the transition to a low-carbon economy) will affect the demand for the commodities we haul. Physical risks from extreme weather events will also continue to affect our business through supply chain disruptions.

Our Board has ultimate responsibility for the Company's consideration of climate-related risk and 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 second reporting period in which we have conducted a risk assessment approach using the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD) recommendations. This year's TCFD assessment builds on the risks identified during our initial assessment in FY2017, and further incorporates our emissions management and climate change resilience and adaptation, and additional quantifiable metrics.

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.

Table 2 — Core Elements: Task Force on Climate-related Financial Disclosures

Core element	TCFD recommended disclosure	Index
Governance	Board's oversight of climate-related risks and opportunities.	Paragraph above
	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.	Response to Climate-Related Risks (see table 3)
	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.	Chapter: Future of Coal
Risk Management	Organisation's processes for identifying and assessing climate-related risks.	Response to Climate-Related Risks (see table 3)
	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 & Targets	Metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Chapter: Environment
	Targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	

[3]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 our 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 greenhouse gas (GHG) emissions (including carbon pricing).	Transition: Market, Policy & Legal, and Technology Risk level: High	Approximately a third of our network volumes and half of rail haulage volumes relate to continuing demand for thermal coal. Time horizon: Medium to Long-Term	• Continue to monitor and hold a view on demand for seaborne thermal coal (particularly in Asia) in addition to cost and quality of coal supply. • Continue to compare our scenario analysis with a range of projections (e.g. International Energy Agency). • Continue to undertake mine resilience analysis (based on coal quality, cost competitiveness and projected mine life) to inform investment decisions.	• Coal demand and supply projections and scenario analysis, (refer to our Future of Coal chapter). • Seaborne market demand/supply. • Average age of coal-fired electricity capacity. • Thermal coal generation projections. • Global coal quality specifications.
Access to Funding & Licences	Investor concern over climate-related risks may result in higher cost of capital for our business and our customers for funding coal mining, transport and coal-fired power projects.	Transition: Reputation Risk level: Moderate – High	Refinancing of existing borrowing facilities or development of new mines, greenfield rail infrastructure and coal-fired power may incur higher borrowing costs, delays in approvals or restrictions on licence conditions impacting growth opportunities. Time horizon: Short, Medium and Long-Term	• Continue to advocate 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 Australian thermal coal supply, used for energy generation and contributing to a reduction in GHG emissions relative to lower quality alternatives. • Continue climate-related disclosures. • Access a broad range of capital markets and diversify funding sources/extend tenure where possible.	• Disclosure ratings such as Australian Council of Superannuation disclosure reporting and CDP Climate Performance score.
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 Risk level: Moderate – 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	• 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. • An adaptive design approach to improved infrastructure resilience is likely to generate increased trust from key stakeholders, thereby retaining economic value and appropriate asset insurance. • Increasing demand for resilient infrastructure, particularly in areas vulnerable to severe weather events.	• 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 *National Greenhouse and Energy Reporting Act 2007.* Increased opportunity under federal and state government energy/climate targets and policy instruments.	Transition: Policy & Legal Risk level: Moderate – Low	Facilities exceeding the emission baseline may require the need to purchase Australian carbon credit units (ACCUs) per tonne of CO_2e exceeded. Time horizon: Medium to Long-Term	• Assess future liability under the Emission Reduction Fund Safeguard Mechanism (current analysis indicates our baselines are not expected to be surpassed before 2020 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 achieving a locomotive emissions intensity reduction target of 15% by FY2020 (from FY2015), driven by lower energy use and using lower emissions sources. • The Queensland Government's renewable energy target, if achieved, has the potential to halve the emissions intensity of our electric locomotive fleet by 2030. • Better value provided to customers and stakeholders through increasing demand for energy efficient services. • Transfer of energy risk to customers via cost pass-through mechanism. • Engage with policymakers directly and through membership of the Carbon Market Institute. • Link our GHG emissions to our financial reporting. • Monitor and engage with government climate policy agendas and advocate for a positive policy outcome for rail. • Establish a renewables working group to identify opportunities to participate in renewable energy programs and energy efficiency initiatives.	• Locomotive emissions intensity (refer to our Environment chapter).

SAFETY

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

We operate in hazardous environments. In FY2018, we collaborated with the Office of the National Rail Safety Regulator, the Rail Industry Safety and Standards Board, other rail operators, our employees, academia and other organisations to search for ways to eliminate or reduce safety risk so far as is reasonably practicable.

To accelerate towards **ZERO**Harm and to support the ongoing development of our strong safety culture, we commenced several improvement initiatives in FY2018, including:

- streamlining and simplifying our Safety Management System.
- bolstering role-specific training provided to frontline leaders.
- improving organisational learning from safety, health and environment incidents.

These initiatives will continue throughout FY2019.

Simplifying and Streamlining our Safety Systems and Processes

At the start of FY2019, our Safety Health and Environment (SHE) team will announce a new long-term program of work called 'Seamless Safety'. Seamless Safety aims to streamline and simplify our safety systems and processes.

The Seamless Safety program will consist of three interdependent projects around Leadership and Culture, Systems and Processes, and Structure. It will focus on developing the capability of our leaders to help drive safety improvements and strengthen our safety culture, while improving our safety systems and enhancing our technology. This project aligns with the broader efforts led by our Risk and Assurance team to improve the Enterprise Governance Framework, in particular the simplification of our Safety Management System (SMS).

Providing Safety Training for our Frontline Leaders

As part of the restructure to a Business Unit Model from 1 July 2017, several new frontline leaders' roles were created. To support this change, and in recognition of the contribution frontline leaders make to ensure a safe work environment, the SHE team provided enhanced SHE training to 40 frontline leaders during FY2018. By 31 July 2018, all frontline leaders had undertaken enhanced SHE training.

Also in FY2018, our Human Resources (HR) team began piloting a Leading for Results training program for frontline leaders. Together with other HR-led initiatives that will deliver better leader selection and performance, this will help to develop leaders' behaviours and capabilities required by Seamless Safety.

Improving Organisational Learning

While all SHE incidents are unwelcome, they do provide an opportunity for organisational learning to minimise the likelihood of a reoccurrence. To maximise these opportunities, the SHE team has begun updating its Incident Management procedures to clarify and simplify our requirements for incident investigations, reporting and communications. This work will continue through FY2019, running parallel to and complementing our efforts to simplify our Safety Management Systems.

Recording our Safety Performance

We record and investigate all 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 FY2018, we revised our injury metric, with TRIFR now including contractor injuries and restricted work injuries for both employees and contractors. This change ensures consistent best practice and is the first step in a broader program to create a learning safety culture. We turned around a disappointing decline in performance early in the financial year by focusing on newly identified areas for improvement. By the end of FY2018, our TRIFR was 10.02 injuries per million hours worked, which was an increase of 41% when compared to FY2017 (see figure 3). Actual injuries by body part are shown in figure 4.

To focus specifically on contractor safety, we formed a Contractor Safety Management Community of Competence in FY2018. This group of subject matter experts aims to reduce injuries to contractors and to make our TRIFR data more accurate by pursuing several initiatives, including:

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

Rail Process Safety

Our FY2018 Rail Process Safety record, which covers derailments, signals passed at danger, and rollingstock collisions, was also disappointing — a total of 5.08 incidents per million train kilometres travelled (see figure 5).

Incident investigations identified several ways to improve Rail Process Safety, including a strategic shift from control methods to interdependence and self-sustaining behaviours. This will be delivered as part of Seamless Safety.

Figure 3 — TRIFR FY2015 to FY2018

8.43	FY2015
9.88	FY2016
7.12 +41%*	FY2017
10.02	FY2018
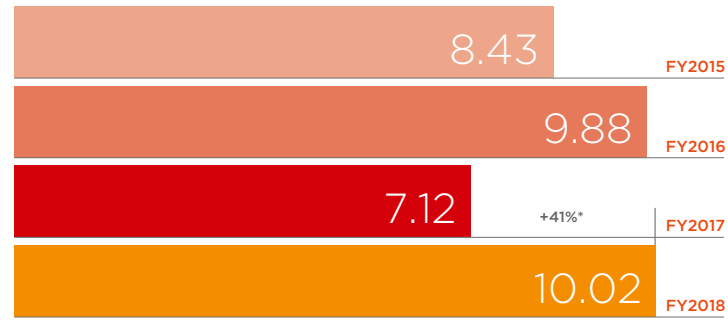
Figure 4 — FY2018 Recordable Injuries by Body Part

- 5 Trauma
- Head 11
- 0 Ear
- Eye 2
- 4 Face
- Neck 1
- Shoulders & Arms 16
- 20 Back
- Trunk 3
- 27 Hands
- Legs & Hips 28
- Feet & Toes 5
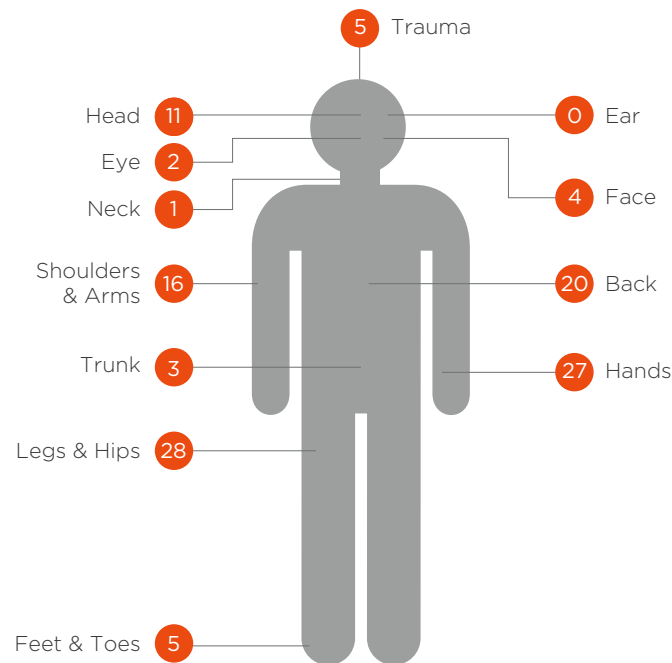
Figure 5 — Rail Process Safety

5.49	FY2015
4.66	FY2016
3.04 +67%	FY2017
5.08	FY2018
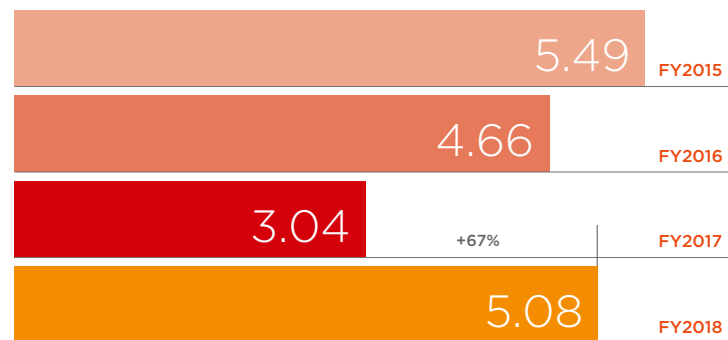
*Revised injury metrics were used in FY2018 to record all employees and contractor injuries and restricted work injuries.

Motor Vehicle Safety

Road safety remains one of the key risks for employees due to the regional and remote locations where we operate. Employees need vehicles to move freight, meet trains and access our extensive rail network to undertake maintenance. Our 24-hour operations also increase the risk of fatigue and hazards related to night-time driving. In early 2017, we completed installation of In-Vehicle Monitoring System (IVMS) devices across our entire road fleet of approximately 1,500 light vehicles and trucks.

Using IVMS, the driver can be identified, and behaviour monitored by GPS at all times. Real-time feedback is provided to drivers via visual and audible speed alerts based on speed and duration. Historical data is used to inform performance discussions and issue warnings.

With use of the IVMS system now well embedded to drive behavioural change, the focus in FY2019 will be on educational programs to give drivers the necessary tools to respond to changed road and traffic conditions.

Keeping our Community Safe

In the communities where we operate, we have a key role in raising awareness of safe behaviour around the rail corridor. Our targeted media and social media campaigns focus on safe behaviour around railway level crossings and in the rail corridor.

In the Hunter Valley, we continued our partnership with the Newcastle Knights to deliver our national award-winning rail safety program to the region's primary schools. The 2018 program kicked off in June and will reach more than 2,000 students over the year. During the Newcastle Knights partnership, we have delivered vital rail safety messages to more than 14,000 primary school-aged students.

Concerningly, the number of level crossing incidents on the Central Queensland Coal Network (CQCN) rose in FY2018. The 58 level crossing incidents on the CQCN in FY2018 was an increase of 21% when compared to FY2017 (see figure 6), primarily driven by near-miss incidents increasing from 31 to 47. Level crossing incidents not only carry the risk of potentially fatal collisions, but also result in significant psychological impact to the train crew involved.

Figure 6 — CQCN Level Crossing Incidents, FY2013 to FY2018

Year	Incidents
FY2013	130
FY2014	94
FY2015	60
FY2016	36
FY2017	48 (+21%)
FY2018	58
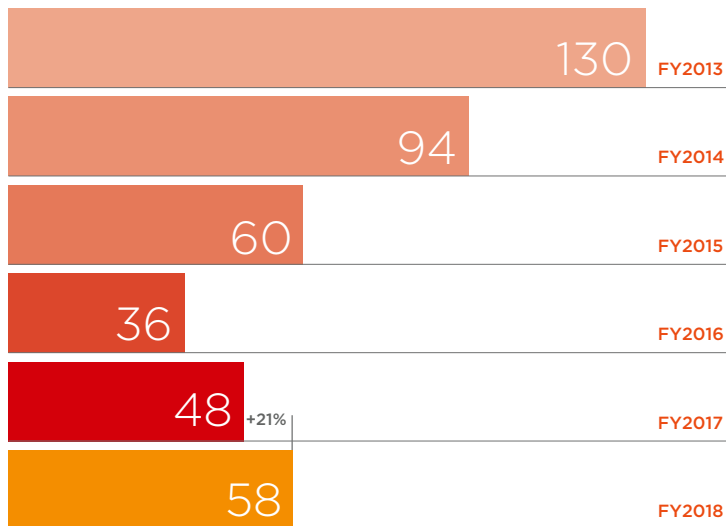
Supporting Emergency Services to Deliver Safe Rail Recovery

In December 2017, we gifted a section of purpose-built railway track and two rail wagons to Queensland Fire & Emergency Services (QFES) at their North Rockhampton training facility.

The QFES will use the equipment to help emergency personnel prepare for train incidents. They will practise simulation exercises using heavy rescue equipment to lift the wagons safely from the railway track.

The donation was a major boost to the training facility and allows crews to practise using real rail wagons for the first time. Previously, they used trucks and buses in simulation exercises but did not have rail infrastructure to work with.

While we never like to see rail incidents in our operations, we were pleased to be able to support the QFES in preparing for emergencies, and to benefit the community more broadly.

FUTURE OF COAL

As our business is linked to the continued demand for seaborne coal, it is important for us to understand how we will continue to contribute to this global market.

Although global coal consumption is likely to reduce over the coming decades, demand for Australian coal is expected to be resilient, driven by development in Asian nations and preference for higher quality coal.

For metallurgical coal, steel-intensive growth in India is expected to drive seaborne demand over the coming decades. In 2017, India, Australia's largest metallurgical coal trading partner (by volume), reached annual crude steel production of more than 100 million tonnes for the first time. The Indian Government's National Steel Policy (2017) projects annual crude steel production to reach 255 million tonnes by 2030–31.

For thermal coal, more than 95%[4] of Australian exports are destined for Asia, and it is this region (rather than global consumption) that is expected to continue investing in coal-fired energy generation.

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 growing coal needs of Asia.

Coal Types

Metallurgical coal is primarily used to produce steel, an integral link with economic development driving the construction of modern economies and urban infrastructure. Metallurgical coal can be further 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.

Thermal coal is primarily used as a heat source for energy generation, holding a 37% share of global generation in 2016[5]. 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[6].

Importance of Coal to Aurizon

Approximately 80% of our revenue relates to coal. As illustrated in figure 7, metallurgical coal is the major contributor because it represents around two-thirds of the volumes on our below rail Network and approximately half of our rail haulage volumes, given that our largest presence is in metallurgical coal-rich Queensland.

Aurizon's Role in Australia's Coal Transportation

Our Company plays a significant role in Australia's coal supply chain, with more than two-thirds of Australia's coal exports using our network and/or carried by our above rail business. We also haul coal for a number of customers for domestic energy use.

Figure 7 — Aurizon's Coal Volumes (FY2018)

Total Volume 212 million tonnes — ABOVE RAIL — 53% / 47%

Total Volume 230 million tonnes — BELOW RAIL — 33% / 67%

Metallurgical coal / Thermal coal
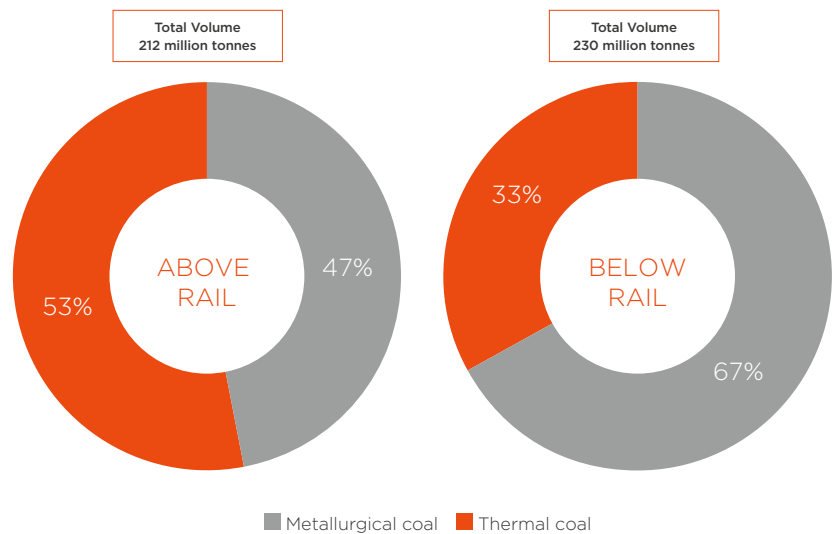
[4] Australian Bureau of Statistics, Customised report
[5] International Energy Agency, *World Energy Outlook 2017*
[6] World Coal Association, *Uses of Coal*

Figure 8 — Export Destinations for Australian Coal (million tonnes)[7]

Japan | South Korea | Taiwan

FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
171	181	182	182	193	203	208	214	202	198

China

FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
17	41	32	49	74	96	86	68	80	88

India

FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
25	32	31	30	33	39	50	50	44	48

Rest of Asia

FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
7	5	7	8	8	10	15	17	19	20

Rest of the World

FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
35	33	30	31	27	28	32	40	33	28

■ Metallurgical ■ Thermal

Seaborne Coal Demand

When considering the demand for seaborne coal, we assess global demand for both metallurgical coal and thermal coal, driven primarily by steel production and energy generation (including fuel mix), respectively. From this demand base, we assess the requirement for imported coal, taking into account a nation's ability to service coal demand using domestic reserves. For some nations, almost all coal demand is serviced by imported volume, such as India (for metallurgical coal) and Japan (for both metallurgical coal and thermal coal). In China, about 95%[8] of coal consumption is currently satisfied by domestic production, with the nation turning to imported supply when seeking cost-effective or specific coal type or quality.

With almost all Australian coal export volume destined for Asia, it is current (and future) demand from this region that underpins the opportunity for coal supply. Around 60%[9] of thermal coal global trade volume and 70%[10] of coking coal global trade is concentrated in five nations: China, India, Japan, South Korea and Taiwan.
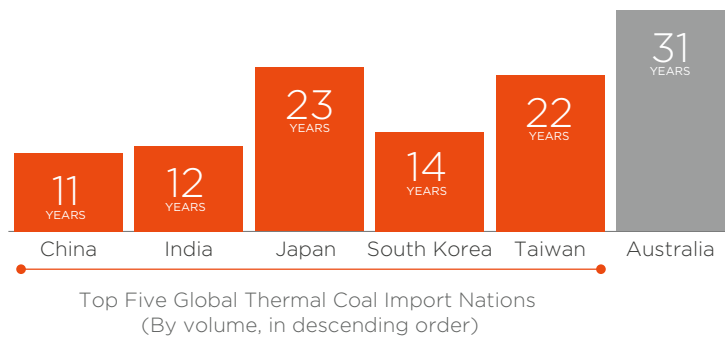
When considering thermal coal, the age of coal-fired energy generation fleet provides insight into the continuing demand from operating assets. As noted in figure 9, and across a typical economic life of 40 years[11], the average age of operating coal-fired generation capacity across the five largest import nations is relatively young.

In 2017, over half the coal-fired capacity that was retired globally in 2017 was more than 40 years old, and nearly 70%[12] of this capacity was in either the United States or Europe – markets where Australian thermal coal has almost nil exposure.

In the future, construction of new coal-fired capacity is expected to drive additional demand for thermal coal. Across the ASEAN[13] nations of Vietnam, the Philippines, Malaysia and Thailand, 16.7 gigawatts of coal-fired capacity is considered under construction[14], with around two-thirds of this capacity considered High Efficiency Low Emission (HELE), built upon supercritical and ultra-supercritical technologies[15]. This capacity under construction is estimated to require about 30 million tonnes of coal equivalent (mtce) per annum.

When we combine this projected demand with our cost-effective production and transportation, we believe that high-quality metallurgical and thermal coal supplied by Australia will continue to be robust against a backdrop of increasing demand from Asian nations.

Figure 9 — Average Age of Coal-Fired Electricity Capacity [16]

China	India	Japan	South Korea	Taiwan	Australia
11 YEARS	12 YEARS	23 YEARS	14 YEARS	22 YEARS	31 YEARS

Top Five Global Thermal Coal Import Nations
(By volume, in descending order)

Why is Coal Important to Australia?

Trade: Coal is Australia's second largest export industry, earning $60 billion[17] of revenue in FY2018.

Royalties: Coal royalty payments to the state governments of Queensland and New South Wales contributed $4.9 billion[18] in FY2017, which is used to fund schools, roads and hospitals.

Employment: The coal industry directly employs more than 50,000 Australians[19]

[7] Japan, South Korea, Taiwan, India, China, Rest of Asia (FY2015 – FY2018), Rest of World (FY2015 - FY2018): Australian Bureau of Statistics (Customised report). Rest of Asia (FY2009 – FY 2014): Office of the Chief Economist. Rest of World (FY2009 – FY2014): Australian Bureau of Statistics (Customised report) and Office of the Chief Economist. Note: Metallurgical coal for Rest of Asia (FY2009 – FY2014), only includes hard coking coal with other metallurgical coal captured in Rest of World.

[8] International Energy Agency, *World Coal Information 2017*
[9] International Energy Agency, *World Coal Information 2017*
[10] International Energy Agency, *World Coal Information 2017*
[11] International Energy Association, *World Energy Investment 2018*
[12] International Energy Association, *World Energy Investment 2018*
[13] ASEAN - Association of South-East Asian Nations
[14] Platts UDI Electric Power Plants Database, March 2018
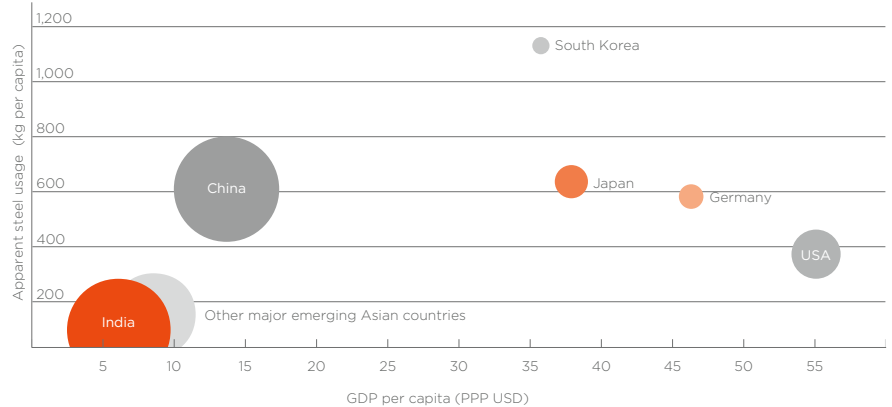
[15] Platts UDI Electric Power Plants Database, March 2018
[16] Platts UDI Electric Power Plants Database, March 2018, Australia included for comparison purposes.
[17] Australian Bureau of Statistics, Customised report.
[18] Queensland Government: *Mid Year Fiscal and Economic Review 2017-18*, New South Wales Government: *Mining Industry Infographics Snapshot (September 2017)*.
[19] Australian Bureau of Statistics, Labour Force, Australia, Detailed, Quarterly, May 2018.

The Future of Seaborne Metallurgical Coal

Increasing Demand for Steel in Asia

On a per capita basis, many countries in Asia are likely to dramatically increase steel consumption as incomes rise. As illustrated in figure 10, India and other emerging Asian countries sit well below the per capita usage of other major steel-producing nations. This indicates the significant growth potential for their steel producers.
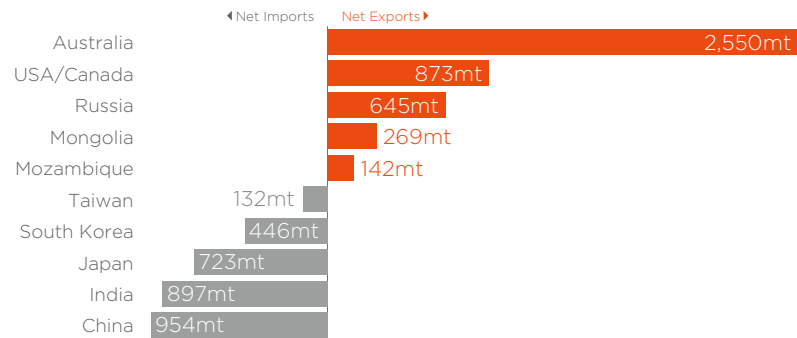
Scarcity of Metallurgical Coal

Around 30%[21] of global metallurgical coal demand is met through international trade, with Australia commanding around 60%[22] of this market, which is almost entirely railed across the Central Queensland Coal Network.
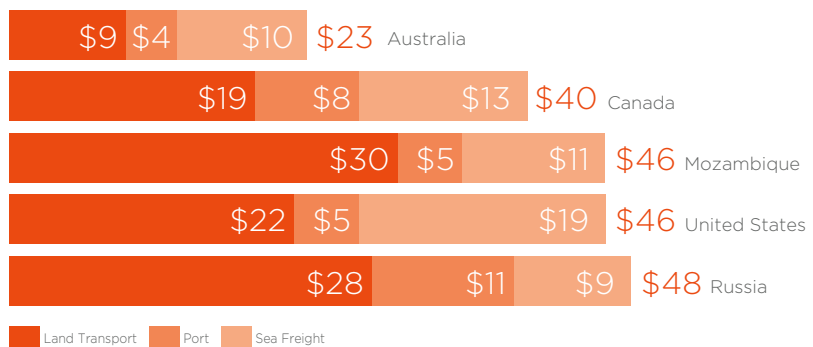
Australia's Export Infrastructure Advantage

Currently, the cost and availability of land transport restricts supply of metallurgical coal from other exporting nations. As illustrated in figure 12, Australia has the lowest average transportation and port costs. 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.

Figure 10 — Per Capita Steel Usage vs. Per Capita Income, by Key Countries[20]

Figure 11 — Aggregate Metallurgical Coal Trade Balance, by Major Countries (2018–2030)[23]

◄ Net Imports   Net Exports ►

Country	Value
Australia	2,550mt
USA/Canada	873mt
Russia	645mt
Mongolia	269mt
Mozambique	142mt
Taiwan	132mt
South Korea	446mt
Japan	723mt
India	897mt
China	954mt

Figure 12 — Land Transport, Port and Sea Freight Costs from Major Metallurgical Coal Export Countries to India (USD/t)[24]

Country	Land Transport	Port	Sea Freight	Total
Australia	$9	$4	$10	$23
Canada	$19	$8	$13	$40
Mozambique	$30	$5	$11	$46
United States	$22	$5	$19	$46
Russia	$28	$11	$9	$48

■ Land Transport   ■ Port   ■ Sea Freight

The Future of Seaborne Thermal Coal

Increasing Electricity Demand in Asia

Rising incomes, increased access to energy, urbanisation and growing populations are expected to drive energy demand growth in Asia. 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.[25]

Figure 13 — Per Capita Electricity Consumption vs. Per Capita Income, by Key Countries[26]

Continued Reliance on Coal-Fired Power in Asia

Although it is recognised that renewable energy will increase within the energy mix over the long-term, thermal coal generation in South-East Asia is projected by the International Energy Agency (New Policies Scenario) to increase by 113% to 655 terawatt hours (TWh) by 2030.

Figure 14 — International Energy Agency (IEA) Outlook for Electricity Generation in South-East Asia, by Source (TWh)[27]
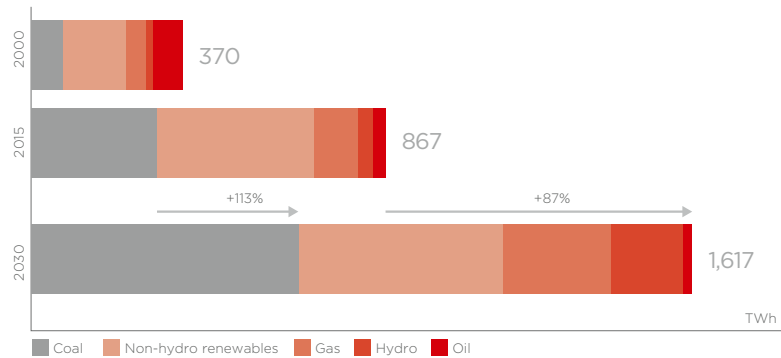
Importance of High-Quality Coal

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.

Figure 15 — Thermal Coal Energy and Ash Content[28]

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[25]United Nations, *World Urbanisation Prospects: The 2018 Revision.*
[26]World Bank (GDP per capita PPP, current international, (2016 data), World Bank (population, 2016 data), World Bank (Electric power consumption per capita, 2014 data). Other major emerging Asian countries include Indonesia, Thailand, the Philippines, Vietnam, Malaysia, Pakistan and Bangladesh.
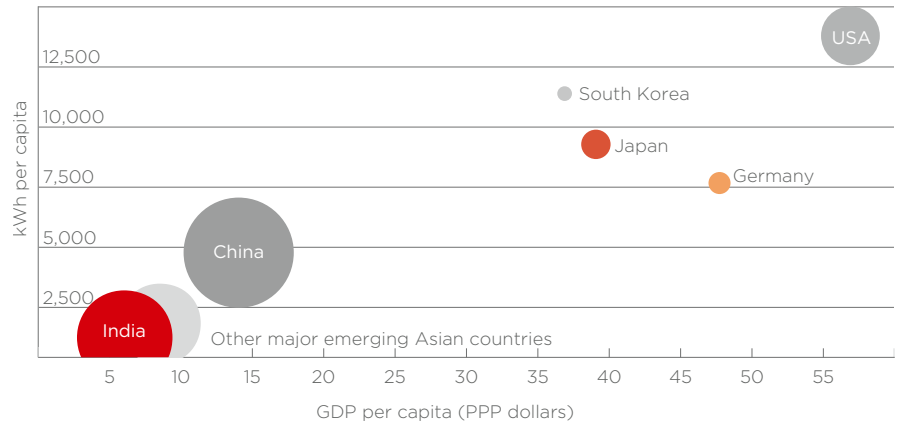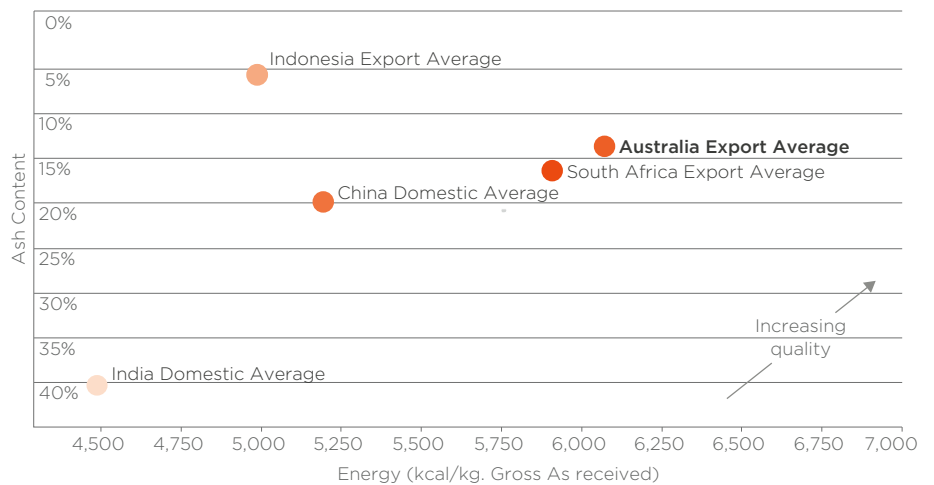
[27]International Energy Agency *World Energy Outlook, New Policies Scenario 2017.*
[28]Australia (Export Product) Source: Wood Mackenzie Coal Supply Tool (Year: 2018, Data: Q2 2018). Wood Mackenzie Coal Cost Curves (Year: 2018, Data: May 2018). India Domestic Average Source: India Ministry of Coal Provisional Coal Statistics 2016-17. China Domestic Average Source: IEA Coal Medium-Term Market Report

2016, Wood Mackenzie. Indonesia Export Average Source: Wood Mackenzie Coal Cost Curves (Year: 2018, Data: May 2018), Indonesia Coal Mining Association. South Africa Export Average Source: Wood Mackenzie Coal Cost Curves (Year: 2018, Data: May 2018), Richards Bay benchmark specifications (Platts)

Scenario Analysis

We undertake scenario analysis in strategic planning, whereby drivers of uncertainty are identified, and outcomes are subsequently quantified. As previously mentioned, metallurgical coal and thermal coal each have distinct demand drivers, and when overlaid with competitiveness of seaborne supply and Australia's participation in the markets, they enable the creation of volume scenarios for strategic planning.

Although we develop our own long-term outlook for seaborne coal demand, we also consider the best known and most widely used Sustainable Development Scenario produced by the International Energy Agency (IEA) through the annual release of the *World Energy Outlook* (WEO).

Following our initial reporting on the recommendations by the Task Force on Climate-related Financial Disclosures (TCFD) in last year's report, we have updated our scenario analysis to use the most recent projections by the IEA.

IEA Sustainable Development Scenario and Implications for Australian Coal Export Volumes

In the Sustainable Development Scenario, the IEA projects global coal trade to reduce by 33% by 2030 compared with 2016, representing a compound annual growth rate of –2.8% across this period. The IEA notes that, '...even in the Sustainable Development Scenario, coal consumption in both India and Southeast Asia continues to grow over the medium term before peaking in the mid-2020s.'

- For global metallurgical coal trade, the volume projection reduces by 17% by 2030 compared with 2016, representing a compound annual growth rate of –1.3% across the period.

- For global thermal coal trade, the volume projection reduces by 38% by 2030 compared with 2016, representing a compound annual growth rate of –3.4% across the period.

As the Sustainable Development Scenario does not provide country-level trade projections, we have applied market share assumptions for Australia.

Based on Australia's export volumes in 2016 (and the split of metallurgical coal and thermal coal) and assuming Australia's participation in the trade market aligns with the (central) New Policies Scenario, Australia's export volume would be projected to reduce by 26% (or 93mtce) in 2030 compared to 2016, representing a compound annual growth rate of –2.1%. However, this projection for Australia takes a conservative approach given an expected further preference for higher quality coal in such a carbon-constrained scenario.

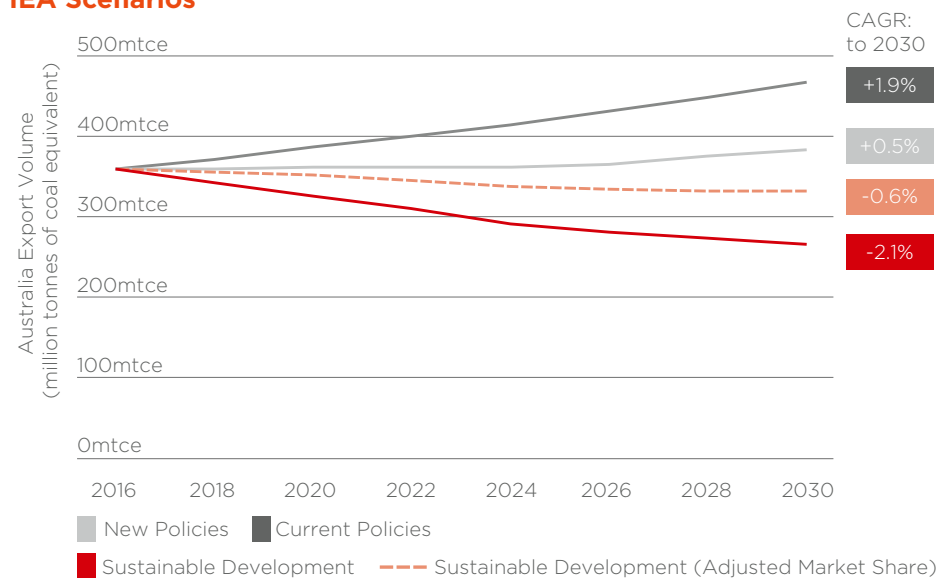### Aurizon's Resilience Under an IEA Sustainable Development Scenario

We consider the following points when assessing the resilience of our business to the IEA Sustainable Development Scenario:

1.Market share: We hold the view that in a carbon-constrained environment, higher quality coal (high energy, low ash and low sulphur), which Australia supplies, will be favoured and will increase Australia's participation in global coal markets. The resilience of Australian supply aligns with the IEA's (central) New Policies Scenario where Australian coal export volume is projected to increase by 19% in 2040 (compared to 2016) despite a projected 4% contraction in global trade over the same period. We have modelled an increased market share (+10 percentage points in both the metallurgical and thermal coal trade markets by 2030). In such a scenario, Australia's export volume would reduce by just 27mtce in 2030 (–8% compared to

2016). This represents a compound annual growth rate of –0.6% across the period, as illustrated as Sustainable Development (Adjusted Market Share) in figure 16.

2.Metallurgical coal: Two-thirds of coal volumes transported across the Central Queensland Coal Network (CQCN) is estimated to be metallurgical coal. Given the lack of substitutes in steel production, the Sustainable Development Scenario projects more resilience in metallurgical coal trade (compared to thermal coal). When this figure is combined with the expectation of increased market share for Australia export volume, we can expect the CQCN to be resilient in a scenario of reduced global coal demand.

Figure 16 — Australia Export Volumes Projected Under IEA Scenarios[29]*

World Energy Outlook (WEO)
Scenario Definitions[30]

*The **Current Policies Scenario** excludes the realisation of announced, new policy targets and considers only the impact of those policies and measures that are firmly enshrined in legislation as of mid-2017. In addition, where existing policies target a range of outcomes, the assumption in the Current Policies Scenario is that the least ambitious end of this range is achieved. In this way, the scenario provides a cautious assessment of where momentum from existing policies might lead the energy sector in the absence of any additional impetus from governments. It therefore provides a reference against which the impact of any additional "new" policies can be measured.*

*The **New Policies Scenario** is the central scenario of this (World Energy) Outlook, and aims to provide a sense of where today's policy ambitions seem likely to take the energy sector. It incorporates not just the policies and measures that governments around the world have already put in place, but also the likely effects of announced policies, as expressed in official targets or plans.*

*The **Sustainable Development Scenario** was introduced for the first time in 2017. While the Current Policies and New Policies Scenarios start with certain assumptions about policies and see where they lead the energy sector, the Sustainable Development Scenario (as with the previous 450 Scenario [or 2 Degree Scenario]) starts with a certain vision of where the energy sector needs to go and then works back to the present.*

[30]*International Energy Agency, World Energy Outlook 2017*
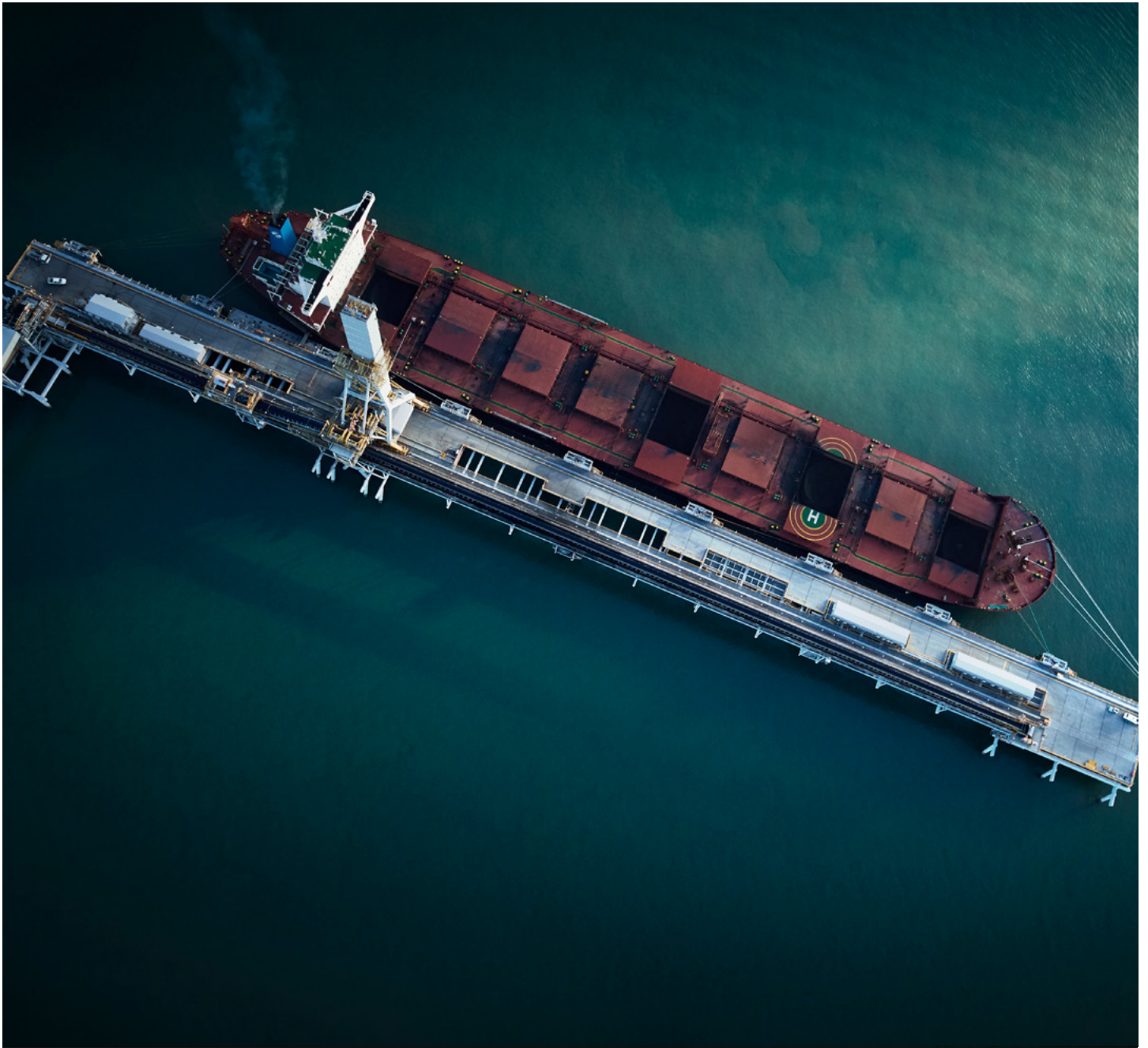
ENVIRONMENT

We acknowledge that as rail operators with a large locomotive fleet we have a role in helping our local communities maintain a sustainable environment. Our vision is to deliver environmental value through effective management of our material environmental risks and improved enterprise environmental performance.

In our efforts to find balanced environmental outcomes in our operations, we use an evidence-based approach to management of various material environmental issues. Importantly, in our approach to clean air, we are addressing concerns about minimising emissions of rail-related coal dust, diesel and greenhouse gas. We are also taking proactive steps to manage our waste and climate change adaptation/resilience across our business.

How we Operate in our Environment

Diesel Emissions

We recognise that the local communities in which we operate have some of the best air quality in the world and that there has been a growing concern by government and communities in relation to management of non-road diesel emissions. Although locomotive emissions are a relatively minor contributor to local air quality, we acknowledge that as rail operators with a large diesel locomotive fleet we have a role in helping our local communities maintain this world-leading air quality.

As a result, we have led rail freight operators across Australia to develop an industry-led approach to managing locomotive diesel emissions. In FY2018, this action culminated in the publication of the *Code of Practice for Management of Locomotive Exhaust Emissions* (CoP) by the National Rail Safety and Standards Board. The CoP outlines emissions standards for new and existing fleet that must be met within 10 years of the effective date (1 December 2018). This represents a significant investment by freight rail operators in improving the management of locomotive emissions from existing and new fleet, which contributes towards maintaining Australia's excellent air quality standards.

In developing the CoP, we used an evidence-based approach focused on delivering sustainable and balanced environmental outcomes. As such, the CoP prioritises both particulate matter (PM) and greenhouse gas (GHG) emission reductions, while being careful not to decrease fuel efficiency in pursuit of greater nitrogen oxide reductions. This potentially negative impact was highlighted by the New South Wales Environment Protection Authority locomotive upgrade trial in 2015 that demonstrated that if PM and nitrogen oxide were both reduced, GHG emissions increased.

In FY2019, we will focus on implementing the CoP across our fleet, including annual reporting on our progress. 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.

> ### Rail vs. Road
> Locomotives contributed less than 1% of particulate matter in the Greater Sydney, Newcastle and Wollongong regions, known collectively as the Greater Metropolitan Region.
>
> "Rail freight emits 75 per cent less greenhouse gas emissions per tonne of freight moved compared to the road freight transport sector."[31]

Greenhouse Gas Emissions

In FY2018, our total GHG emissions (Scope 1 and 2) were 946[32] $ktCO_2e$, representing a 6%[33] reduction from the previous year. As illustrated in figure 17, approximately 92% of our total GHG emissions relate to the operation of our locomotive fleet (about two-thirds relate to diesel locomotives).

We also recognise more than 134 $ktCO_2e$ of indirect Scope 3 GHG emissions annually through our CDP (formerly known as Carbon Disclosure Project) response. 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.

> **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.

On 1 July 2016, the Australian Government implemented an Emissions Reduction Fund in an attempt to lower emissions at a national level. A key part of this is the safeguard mechanism, which requires a variety of businesses to keep emissions within baseline levels and is monitored by the Clean Energy Regulator (CER).

In March 2018, the CER released results for the first Emissions Reduction Fund Safeguard Mechanism compliance period to 30 June 2017. Only three of our facilities were captured and through effective management of our emissions, we achieved full compliance and were not required to purchase or generate offsets to meet our abatement obligations.

We support the principles upon which the safeguard mechanism is based and believe that it will be a key component

Figure 17 — Aurizon's FY2018 Greenhouse Gas Profile

- 534 $ktCO_2e$ – Diesel locomotives
- 336 $ktCO_2e$ – Electric locomotives
- 32 $ktCO_2e$ – Purchased electricity - facilities
- 14 $ktCO_2e$ – Diesel - other transport
- 31 $ktCO_2e$ – Other
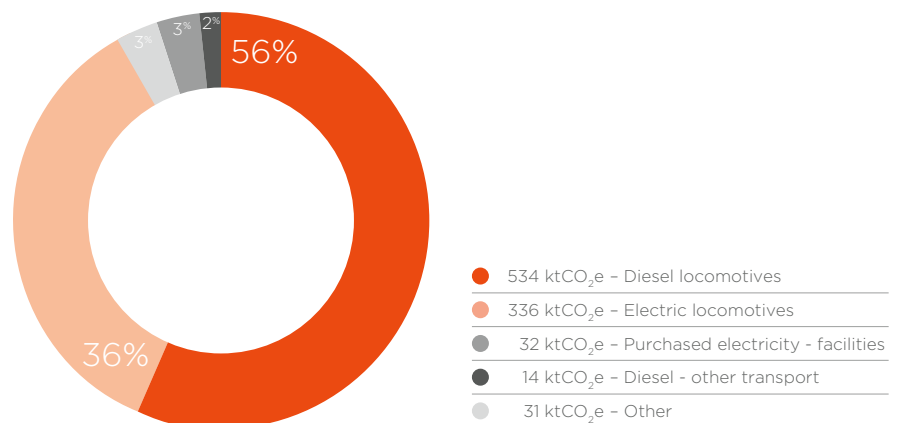
[31] EnergyEXchange (EEX) website: Rail freight transport
[32] A copy of our annual NGER assurance statement is available on our website
[33] Based on independent advice, in FY2018 we revised our methodology for calculating reportable Scope 2 emissions. As a result, our FY2018 emissions show a 10% reduction against FY2017 emissions. 4% of this reduction is attributed to this change in reporting methodology and 6% is related to our operations.

in driving Australia's emissions trajectories in line with international commitments. The safeguard mechanism will become increasingly important with regards to stimulating investment in abatement and price signals for the growth of the domestic carbon market.

Emission Intensity Performance

In recognising the risks associated with climate change, we acknowledge our responsibility to reduce our GHG intensity. 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 allow for growth while reducing emissions per unit of production (in our case, Gross Tonne Kilometres). We are exploring opportunities and implementing targeted initiatives aimed at improving operational efficiency and improving our resilience to the transitional and physical

impacts of climate change.

In 2016, our Board endorsed a 15% reduction in the GHG emissions intensity of our locomotive fleet by FY2020 (from a FY2015 baseline). As illustrated in the figures below, progress has continued during FY2018 with a further 1% reduction, which means that since FY2015 we have reduced our locomotive emissions intensity by 7%. In total since 2010, we have reduced our locomotive emissions intensity by 19%.

These achievements have been made principally through a combined approach to the role of fuel substitution (moving from diesel to electric fleet) and fuel efficiency initiatives. However, we have also learnt how our above-rail emissions intensity is inherently impacted by infrastructure constraints, terrain, climatic conditions, weather events and haulage distance. These factors contribute to a high level of variability (>30%) between regions, networks, and discrete market segments.

External drivers of emissions intensity variability were noticeable in FY2017 when our emissions intensity reductions were impeded by a combination of severe weather events, prolonged heatwaves and third-party incidents, which led to a 0.4% increase in overall emissions intensity.

Despite these constraints, key initiatives to reduce emissions intensity of our fleet have progressed in FY2018 and have included the following: continued deployment of Driver Advisory System; train handling technology; and development of corridor-specific driver methodologies supported by improved data-handling capability to drive operational efficiency.

Figure 18 — Emissions Intensity Performance
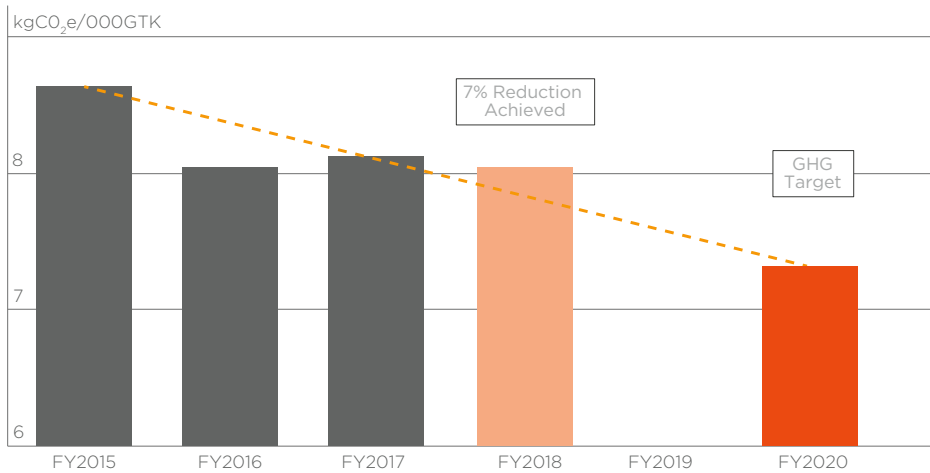
Figure 19 — Historical and GHG Emissions Intensity Reduction
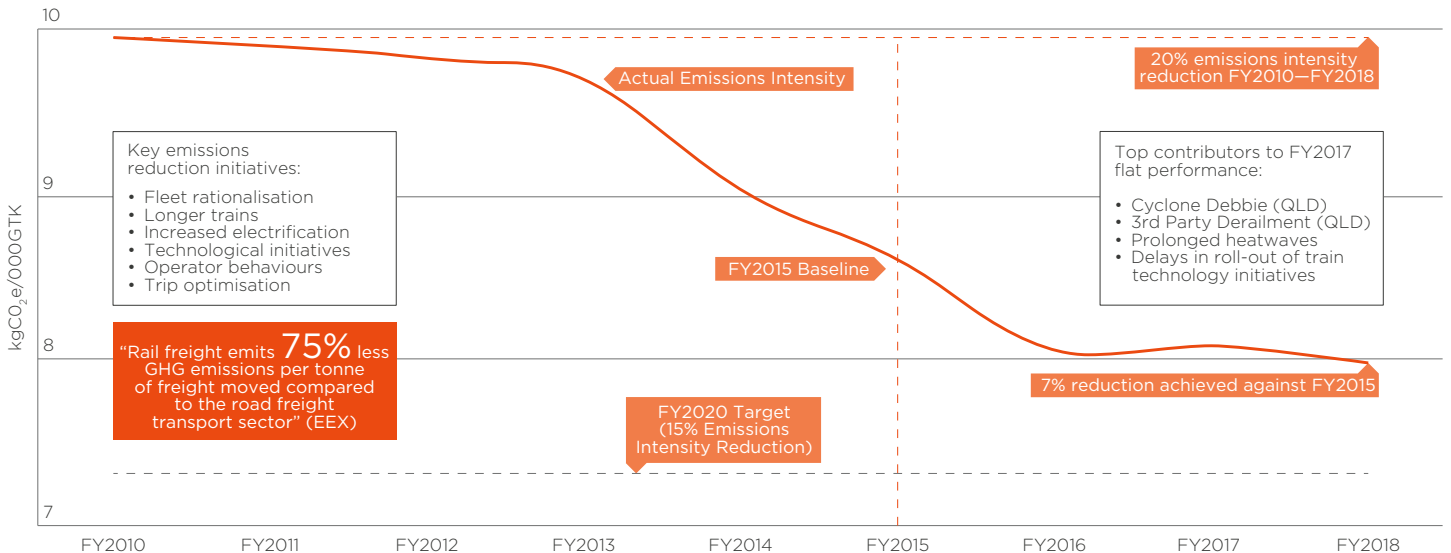
Case Study: Climate-related Physical Risk and Resilience

As outlined in our Future of Coal chapter, our scenario analysis focuses primarily on transition risk. We also recognise the physical risks (both chronic and acute) and opportunities associated with climate change under different scenarios.

Acknowledging that physical risks have the potential to affect our business and the communities in which our employees live and work, we note that between 2011 and 2017 Central and North Queensland were impacted by three severe tropical cyclones and record average monthly temperatures. Over this period, extreme weather events (lasting more than 48 hours) accounted for 65% of cancellations on the Central Queensland Coal Network (CQCN). From a CQCN perspective, we ensure our Network Condition Program is designed and adapted to improve the resilience of our operations through improved design, preparedness, monitoring, recovery, and communication with the supply chain and affected stakeholders.

Building resilience into our operations is a fundamental component of the success of our business, and we have applied an adaptive approach to enhancing our response capability and resilience to physical risks associated with climate change. In keeping with our focus on resilience, we continue to make incremental improvements to our CQCN infrastructure and systems. We are also committed to building resilience in the communities in which our employees live and work. See our Community chapter for more information.

Case Study: Continual Improvement — Network Hydrology

Over the past year, our Network Asset Management Team has completed a high-level hydrology study focusing on interaction with catchments along the Goonyella System (a major rail system in the CQCN). The outcomes of this study informed the development of a drainage inlet risk prioritisation model, which incorporates a number of factors that could contribute to less hydraulic capacity, leading to scouring, erosion and potential damage to infrastructure, particularly during high rainfall. The factors considered include flood immunity level, culvert type, local topography, and waterway maintenance history.

To date, modelling outputs have helped with prioritising targeted maintenance, strengthening high-risk sites, installing inlet protection, and protection from debris.

Photo: Black Mountain Debris Protection Barrier, May 2018. Black Mountain Shotcrete Inlet, May 2018, Black Mountain Stabilisation Works.

Case Study: Continual improvement — Temperature Monitoring and Management

Queensland's 2017–18 summer was the second warmest on record, with a mean temperature 1.64°C above average. Recognising that rail infrastructure is vulnerable to extreme temperature variation, 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 Network.

We are improving this process by making data more reliable and targeting high-risk areas. For example, we are installing additional rail temperature measurement sites on the Black Mountain range in the Goonyella System to improve detection of excessive rail temperatures caused by ambient and high wheel temperatures.

Temperature extremes can affect network reliability, contributing to the risk of misalignments associated with track buckling and fracturing.

We have improved stress-free temperature management, which greatly reduces the risks of rail fracturing or buckling in extreme temperatures. More improvements are also evident after we installed laser creep monitoring, which improves the detection of rail stress and high-risk buckle zones. These initiatives have contributed to our ability to detect rail defects that have the potential to lead to derailments and reduced productivity associated with temporary speed restrictions.

Coal Dust

We recognise the importance of working collaboratively with our supply chain partners to minimise coal dust emissions from our coal haulage operations across the supply chains we operate. As part of this approach, we focus on implementing world-leading solutions tailored to suit the unique needs of each coal supply chain. In developing these solutions, 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. As well as working with the supply chain, we have developed a suite of educational documents for the community to improve the understanding that rail coal dust forms only a small part of visible dust that is perceived to be 'coal dust'.

What is Veneering?

Veneering is the application of an environmentally safe and biodegradable polymer to the surface of loaded coal wagons. This polymer forms a hardened crust that helps prevent dust lift-off from the loaded coal in transit.

Central Queensland Coal Network (CQCN)

On the CQCN, the 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 at the start of their journeys on the CQCN to a port.

As part of these measures and in agreement with the Department of Environment and Sciences (DES), we continue to operate an opacity monitoring point on each of the four rail systems in the CQCN. In FY2018, 78 validated exceedances occurred within the CQCN, which equates to less than 0.2% of more than 47,000 coal train movements in FY2018.

We actively monitor opacity trends, including investigating any exceedance of the DES-agreed 5% opacity threshold. As outlined in figure 20, a slight increase in the average opacity exceedances occurred in the mid-part of the FY2018 year. This is largely attributable to issues with veneering systems and low moisture content of older coal stockpiles at some loading points in summer due to an extended dry period. In FY2019, we will work with the CQCN coal supply chain to review the CQCN CDMP.

Figure 20 — Average Percentage of Train Services Exceeding 5% Opacity on the Central Queensland Coal Network vs. Tonnes of Coal Hauled
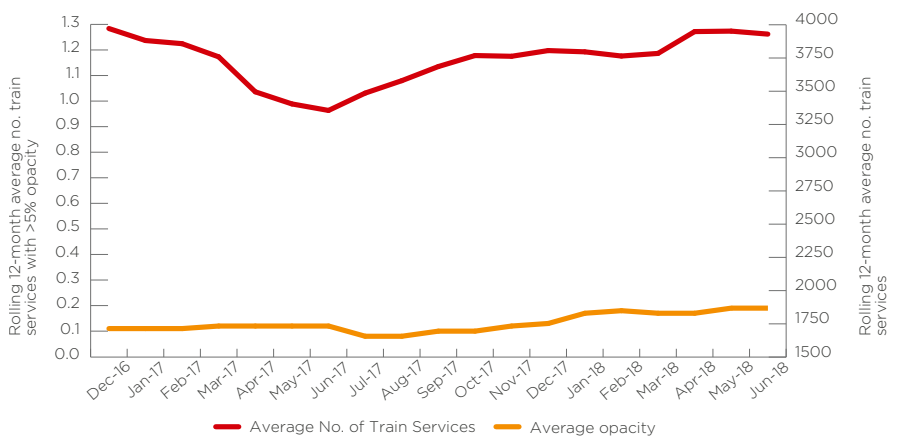
South-West System

On the South-West System in Queensland, we continue to work with the South-West System Users Group (SWUG) to implement the controls outlined in the South-West System Coal Dust Management Plan. This has included the monitoring of rail-related coal dust along the system since 2013, with the initial monitoring report leading Queensland Health to conclude that "For people living along the corridor, the dust concentrations measured during the (2013) investigation are unlikely to result in any additional adverse health effects".

The monitoring is undertaken on behalf of the SWUG by the Department of Environment and Science, with the results consistently demonstrating that rail transport (including coal haulage) along the system is compliant with air quality criteria. The most recent results for the monitoring period from January 2017 to December 2017 continue to demonstrate that coal dust mitigation measures in the system are highly effective in reducing coal dust associated with rail transport.

Hunter Valley

In the Hunter Valley, we have continued to work with the supply chain during FY2018 by sharing information and investigating coal dust improvements along the rail corridor. As part of this work, we participate in industry forums and have implemented a number of control measures, including a focus on wagon design to mitigate the potential loss of coal from our wagons. A summary of the supply chain's implemented measures and investigations is available on the NSW Minerals Council website[34].

The NSW Office of the Environment and Heritage 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[35]. This monitoring is supplemented by previous studies, such as the NSW 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%[36].

Compliance and Reporting

In FY2018, 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. Both incidents involved hydrocarbon spills and were appropriately remediated, with no further ongoing remediation required (see table 4).

Waste

In FY2018, we recognised the war on waste occurring across Australia, including the Queensland Government's recent announcement to transform waste management.

As part of our efforts, figure 21 outlines the amount of waste we generated, including the proportion recycled or reused. In FY2019, we will focus on identifying opportunities, such as those outlined below in the case study, to reduce the amount of waste we send to landfill across our footprint.

Figure 21 — Waste Recycled vs. Landfill (tonnes)

5051
7528

■ Total Recycled / Reused
■ Total Landfilled / Incinerated / Treated
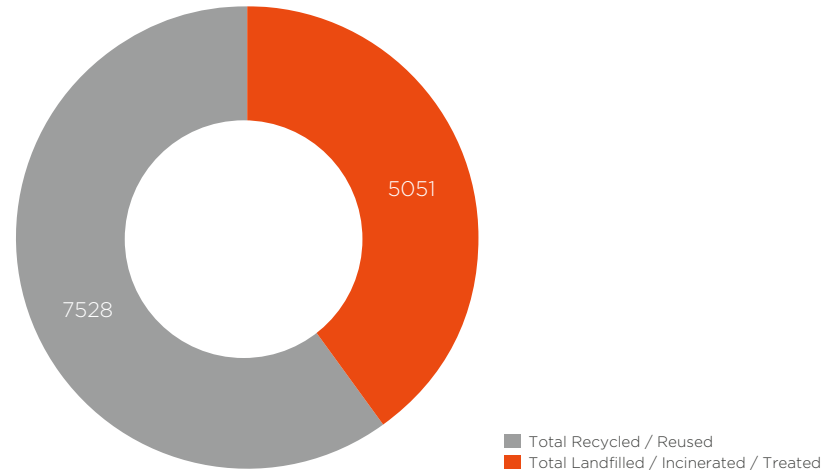
Case Study: Ballast

Our Network's Mechanised Production section have reduced their waste footprint over the past 12 months or so by establishing a successful fouled ballast recycling program. The program involves the relocation of fouled ballast to one of three locations on the CQCN where the ballast is screened, washed and assessed for suitability of reuse, thus reducing the reliance of using newly quarried ballast, and reducing the cost of sourcing new products and the amount of material requiring disposal. Since its inception, the recycling program has screened more than 57,000 tonnes of fouled ballast, resulting in the recovery and reuse of approximately 75% of this product within the rail corridor. The other 25% is repurposed for activities such as road stabilisation and waterway crossings. A further 33,000 tonnes are awaiting screening at the ballast recycling centres.

Table 4 — Notifiable Environment Incidents in FY2018

Location	Volume	Material
Kwinana, Western Australia	Up to 5,000 litres	Hydrocarbon
Waitara, Queensland	Up to 1,500 litres	Hydrocarbon

[34]NSW Mining website: Rail corridor air quality
[35]NSW Government Office of Environment and Heritage website: Air quality monitoring in the Lower Hunter and on the Central Coast
[36]NSW EPA website: Lower Hunter air quality studies

PEOPLE

At Aurizon, our greatest asset is our people. We recognise the importance for our business to ensure the right people are working together safely and efficiently to deliver bulk commodities to the world.

We currently have a team of some 5,000 men and women, of whom approximately three-quarters live and work in regional Australia in our operational teams, servicing our customers 24/7.

We aim to have strong leaders who seek a range of diverse perspectives from their teams and invest in their people to build their capability so that everyone can reach their potential.

Investing in Our People

Investing in our Leaders

Leadership capability is fundamental to creating a safety and performance culture underpinned by our values.

This year we have focused on three key areas to improve our leaders' capability: improving leader performance; building frontline leader capability; and selecting the right leaders.

Improving Leader Performance

As of 30 June, 384* of our leaders had participated in the Leadership Profile 360-degree initiative, which includes feedback from line manager, peers and team members, and subsequent coaching to improve individual performance and address capability gaps.

A refresh of our performance management process has strengthened focus on disciplined performance routines, with simplified tools and systems to improve:

- Transparency and alignment of key objectives.

- Leadership accountability.

- Data-driven feedback and decision making.

Building Frontline Leader Capability

Targeted development for frontline leaders in operational areas has continued with a pilot program called Leading for Results. The program, including a two-day onsite session and four coaching pods over 10 weeks, focuses on building leader capability to have quality conversations, provide feedback, and hold team members to account.

Selecting the Right Leaders

Selecting leaders with the right capabilities is critical to driving a safety and performance culture and delivering our strategy. We have made some changes to enable hiring managers to use evidence and data to assist leadership selection decisions. This data includes psychometric assessments, and other data on performance and development.

*Total includes leaders who have completed or are currently completing the 360 process.

Building Capability

At Aurizon we pride ourselves in building the capability of our workforce by offering opportunities for trainee and apprentices.

We are making a significant investment in building the capability of our train crew across our regional locations to ensure we are well positioned to deliver on increasing customer demand for new and existing contracts. Since July last year, more than 100 employees have been recruited to undertake traineeships to become qualified locomotive drivers in our Bulk and Coal businesses.

We have also been actively building capability in our Network business. We have taken on approximately 30 trainees in the past 12 months, including 20 currently in our Network Control team in Rockhampton.

We also have a long history of providing apprenticeships to men and women who are keen to learn new skills – we currently have 60 apprentices across the Company.

Harnessing Technology to Deliver Leading-Edge Training Techniques

To improve the capability of our train drivers, we are embracing virtual reality (VR) training solutions. We believe this technology will deliver significant advantages to our business through richer training experiences, resulting in our drivers being trained more quickly and to a higher quality.

VR training technology has the potential to re-create incidents, analyse skills gaps, and provide a risk-free immersive learning environment to help our people meet their operational safety targets.

By reducing the demand for physical and human resources, VR training will deliver more flexible, cost-effective and time-efficient training for trainee drivers and shunters. As this type of training evolves, we will gain greater benefit across our business.

Enterprise Agreements

Approximately 80% of our workforce are covered by an Enterprise Agreement, which is negotiated with employee representatives. We will either commence or conclude bargaining for all of our Enterprise Agreement in 2018 – aiming to balance productivity improvements with a fair outcome.

Creating an Inclusive Workplace

At Aurizon we believe that an inclusive workforce is good for business. Aligned to our values, our approach to inclusion aims to create an environment where we seek diverse perspectives and where every member of our current workforce is valued for their skills, perspectives and ideas, and is able to perform to their potential. We continue to build greater diversity in the workforce – with a particular focus on representation of women and Aboriginal and Torres Strait Islander men and women in the workforce. In FY2018, we continued to make progress in creating a more diverse workforce, as illustrated in this chapter.

Figure 22 — Female Workforce Representation

FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18
11.6%	12.4%	13.2%	13.8%	15.3%	17.4%	19.8%	21.0%

■ Percentage of women in our workforce

We have increased the representation of women in our workforce from 11.6% in 2011 to approximately 21% as of 30 June 2018.

We are striving to make the most of the skills and experience of every individual in our workforce. We continue to build a more inclusive work environment by harnessing diversity of thought to be more creative, and to be better decision makers and safer operators.

Gender Pay Gap

In 2017 and again in 2018, we analysed our gender pay gap in detail. The overall gender pay gap has decreased since March 2017, both in terms of Total Remuneration and Base Pay, but particularly in our like-for-like gap. Much of this movement can be attributed to proactive consideration and intervention through organisational restructures, appointments, and contract adjustments during 2017.

Reducing the Gender Pay Gap

As well as raising workforce representation of women, we continue to address issues underpinning gender inclusion, including our approach to closing the gender pay gap, and opening career pipelines via development initiatives, such as our mentor circles, which are now in their fifth year.

Like-for-like Pay Gap

The like-for-like pay gap is a measure of 'equal pay' – it's the difference between what we pay men and women for doing the same role. At 31 March 2018, the like-for-like base pay gap was 0.3%, which means that, on average, we pay women 0.3% less than men (down from 1.5% in September 2017). We are committed to closing this gender pay gap.

Overall Pay Gap

The overall total remuneration gender pay gap is the percentage difference between the average total salary for women compared to men (including payments such as superannuation, overtime, allowances, and bonuses). At 31 March 2018, our total remuneration gender pay gap was 11.9% (down from 13.5% in March 2017). While these pay gaps are evidence that our actions are working and are well below national averages, we continue to identify opportunities to address and close these gaps.

Our workforce composition is the largest contributor to the gender pay gap. That is, women are under-represented in the Company and are often in roles and work areas that attract lower pay. Therefore, increasing the number of women across all job types is the single largest activity available to improve the overall gender pay gap.

Although we have made progress towards increasing gender inclusion, we recognise that more work can be done to address overall gender composition in the Company and to increase the number of women in leadership roles.

Committing to our Aboriginal and Torres Strait Islander Employees

We have increased the representation of Aboriginal and Torres Strait Islander men and women from 2.5% in 2012 to approximately 5% as of 30 June 2018.

Figure 23 — Aboriginal and Torres Strait Islander Workforce Representation

Percentage of Aboriginal and Torres Strait Islander people in our workplace
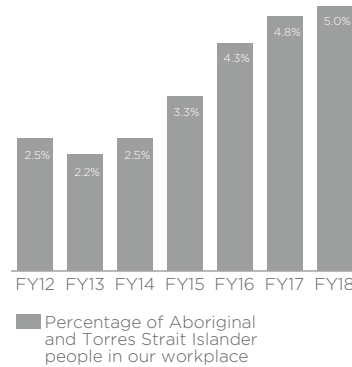
Our commitments to reconciliation are included in our Reconciliation Action Plan (RAP). We have engaged significantly with our employees and external partners to prepare the Company's second RAP, which is a 'Stretch' RAP, published in July 2018.

Reconciliation Australia has a RAP framework that provides organisations with a structured approach to advancing reconciliation. In the framework, there are four levels of RAP – Reflect, Innovate, Stretch and Elevate. Our first RAP in 2015 was at the Innovate level, and the most recent is a Stretch RAP, which is best suited to organisations that have developed strategies and established a strong approach towards advancing reconciliation internally and within the organisation's sphere of influence. Our Stretch RAP is focused on implementing longer term strategies and working towards defined measurable targets and goals.

The Stretch RAP requires organisations to embed reconciliation initiatives into business strategies to become 'business as usual'.

The focus areas of the commitments in this Stretch RAP include:

- Being more engaged with our existing Indigenous employees in our regional centres.

- Developing a pipeline of leadership talent through leadership development such as our Emerging Leaders Program.

- Showing greater recognition of Country in our major regional sites and depots.

- Building stronger relationships with regional Aboriginal and Torres Strait Islander community groups and businesses.

In 2017, we made a commitment to CareerTrackers to take a minimum of five Aboriginal and Torres Strait Islander undergraduates on internships each summer for 10 years. We believe this important initiative will be 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. See our Community chapter for more information.

Bringing your Whole Self to Work

In May 2018, we marked the third anniversary of ALLin – our lesbian, gay, bisexual, transgender, intersex and queer (LGBTIQ) and Allies Network. Since inception, more than 300 employees have joined ALLin across all major sites and helped create a safe and respectful work environment where everyone can bring their whole self to work. Over the past 12 months, we have supported the marriage equality vote, and continued to raise awareness around Wear It Purple Day and IDAHOBIT day. In FY2018, for the third successive year, we have also maintained our Bronze status of the Australian Workplace Equality Index.

Supporting our People in the Communities Where we Operate

From Kalgoorlie to Cairns and down to the Hunter Valley, approximately 75% of our people work in regional locations across the country. Over the next few years, we are committed to bringing more of our leadership, decision-making and support services closer to our operations and our customers to drive performance and support the communities in which we operate. As part of the commitment, Group Executives of Coal and Bulk relocated from Brisbane to Mackay and Perth respectively to be closer to their businesses. Figure 24 shows the spread of our workforce across Australia.

To enable more people to be located closer to our operations and customers,

we have invested more than $6 million refurbishing our main building in Rockhampton. The refurbishment has modernised the workspace and provided extra capacity as well as contemporary, flexible and collaborative places to work. It will also allow us to accommodate up to 200 more people, including the transfer of Brisbane-or metropolitan-based roles in coming years.

We recognise that the location and composition of our workforce is driven by the changing markets where we operate, our haulage opportunities and our maintenance strategies. Our coal haulage market in the Hunter Valley has continued to grow, with new contracts coming on line in FY2018. This has enabled us to grow and diversify our workforce in this region. While providing new employment opportunities

for locals, we have also been able to redeploy 40 of our employees from our Interstate Intermodal business, which closed on 31 December 2017.

As our business adapts to market changes, we remain committed to supporting our employees. With the closure of our Interstate Intermodal business, the end of our iron ore haulage contract with Cliffs in Esperance, Western Australia, and the closure of our maintenance workshops in Rockhampton, we recognise the impacts these changes can have on our workers, their families and the broader communities. Where possible, we have offered redeployment and retraining opportunities to our employees and provided our people with early professional outplacement support and access to our Employee Assistance Program.

Figure 24 — Our Employees Across Australia*
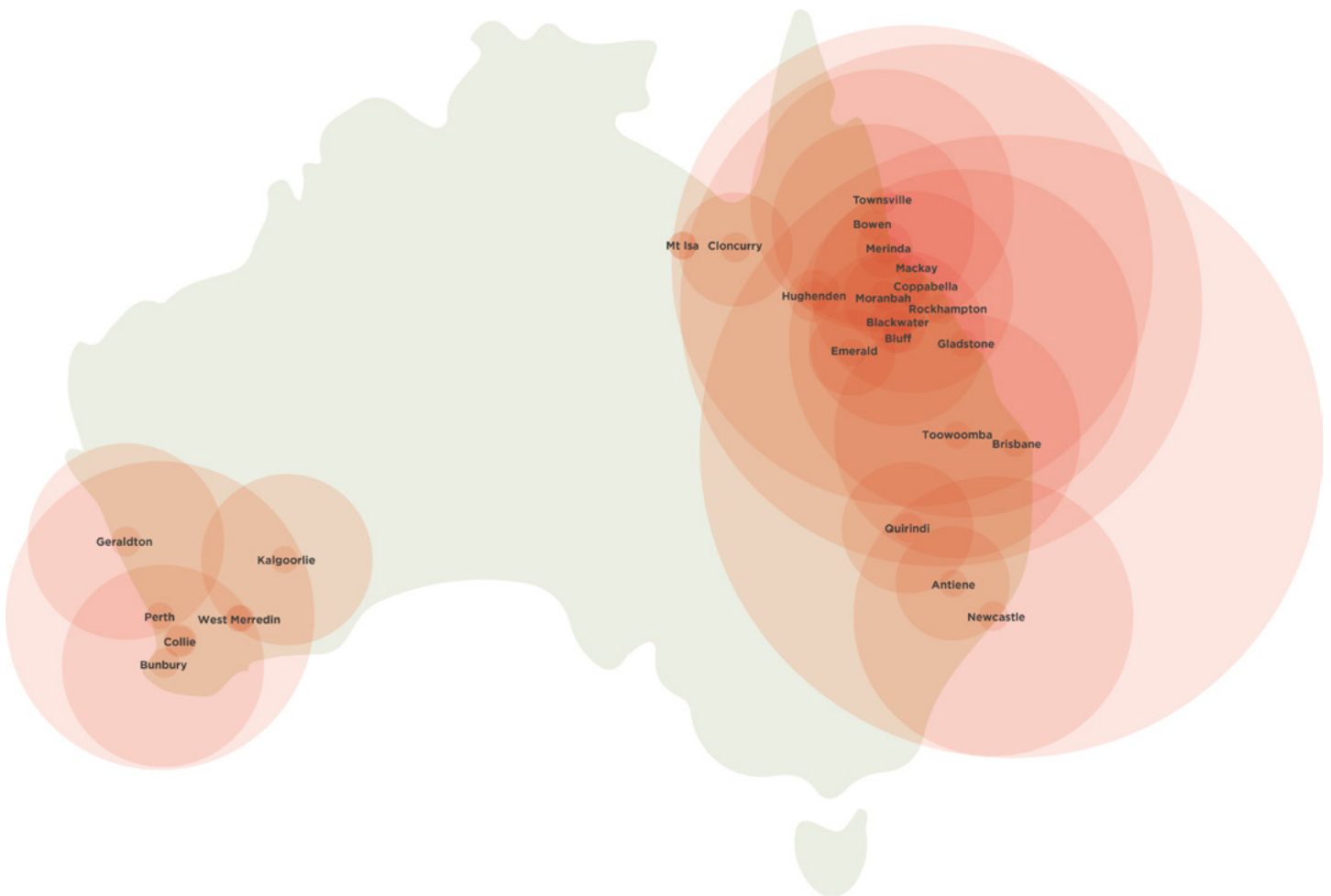
*Data excludes our Intermodal business.

Prioritising our Employees' Health and Wellbeing

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

During FY2018, we focused on both physical and mental wellbeing. Through onsite wellness programs, we offered more than 6,000 individual health consultations on different health-related subjects, such as high blood pressure, diabetes, obesity and general fitness.

More than 300 leaders/managers have attended training in the Understanding Mental Health Issues in Your People program. We used Rail RUOK? Day and National RUOK? Day to raise awareness of the significance of mental health problems for more than 600 workers at different sites, mainly in regional and remote areas. We also installed RUOK? branding on one of our locomotives in Western Australia to share the message in the community.

COMMUNITY

As a large Australian company with a predominantly regional footprint, we understand we need to create value in the communities where we operate. We continue to work to build and enhance relationships in our local communities.

Being a Regionally Focused Company

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 75% of our employees and their families living and working in regional centres, we are focused on understanding our important role in sustaining strong communities. We contribute to these communities through providing employment opportunities, 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 local schools and use local services.

Our biggest economic footprint is in regional Queensland where we employ more than 3,000 people. These employees support our coal haulage business, ensure the Central Queensland Coal Network is running efficiently and safely, and deliver bulk commodities across regional Queensland.

We recognise the importance of having our people based closer to our operations. Where possible, we actively encourage and enable our employees to relocate from metropolitan areas to regional centres. We now have more senior managers and teams based regionally, including the relocation of our Coal Integrated Planning team from Brisbane to Mackay in early 2018. Based on average remuneration, it is estimated that every metropolitan-based employee moving to a regional location has the potential to contribute $250,000 of value to that regional economy each year.

Building Community Resilience and Responsiveness

Community resilience is a measure of the sustained ability of a community to use resources to not only recover from adverse situations, but to respond to and withstand major challenges that they may be exposed to.

Our employees play a part in helping build vibrant, sustainable and resilient regional communities through sponsorships and contributing to community activities and services. This includes promotion of rail safety, raising awareness of social issues by participating in events, and providing mentoring opportunities for those considering careers in the rail industry. The following are some examples of how our employees contributed to our communities over the past year.

Supporting Emergency Services in Central Queensland to Deliver Safe Rail Recovery

Our employees donated a section of purpose-built railway track and two rail wagons to Queensland Fire and Emergency Services for use at their North Rockhampton training facility. Emergency personnel will use this equipment in simulation exercises to prepare for incidents involving trains.

Providing Career Advice and Work Experience Opportunities for Bowen Students

Maintenance team members based at our Pring depot at Bowen in North Queensland are strong advocates of business engaging with schools and the benefits it brings to both the community and local industry. Smaller communities such as Bowen can often be at risk of losing local young talent to larger regional towns and cities.

Team Aurizon Raising Awareness for Domestic and Family Violence

A large team of our employees participated in the Darkness to Daylight Challenge in Brisbane. The annual event not only raises vital funds but also awareness of domestic and family violence as a serious issue in the community. We have multiple initiatives in our workplaces to support those affected by domestic and family violence, including training for employees to recognise and offer support to impacted colleagues.

Below: Wayne Prosser, General Manager of Aurizon Network Infrastructure Maintenance with Queensland Fire & Emergency Services Superintendent Ross Macrae at the official handover.

Helping to Revegetate part of the Willie Creek Bank

Our Jilalan depot employees at Sarina in Central Queensland joined the Sarina Landcare Catchment Management Association and local volunteers to plant the first 200 of 1,000 saplings to stabilise Willie Creek's bank. The Association secured an Aurizon Community Giving Fund grant for the project. This section of Willie Creek is located next to our Jilalan depot.

Photo: Taking some time out to help local volunteers plant saplings to stabilise the creek bank.

Supporting our Local Schools to Help Provide its Students with Necessary Equipment

Our Rockhampton employees joined together for a sausage sizzle to raise much-needed funds for Allenstown State School near our Murray Street Administration Building to provide basic school items for some students. Employees took the opportunity to show the children some of the different roles we perform at Aurizon and to emphasise important rail safety messages.

Photo: Staff from Aurizon's Rockhampton Network Assets team engaging the students in a discussion of what rail engineers do.

Supporting Young Aboriginal and Torres Strait Islander Men

The Clontarf Foundation is set up to improve 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 FY2018, we have worked together with the Clontarf Foundation to engage the students in a variety of initiatives, including attendance and participation in our Reconciliation Week and National Aboriginal and Islanders Day Observance Committee (NAIDOC) events, Academy presentations by our employees, as well as student workplace visits and employment forums.

Our support for Clontarf is country-wide with interaction and support ranging from Townsville in North Queensland to the Goldfields in Western Australia.

Aurizon employees Sam Songoa and Tony Lucas on the footy field with Kirwan Academy students in Townsville as part of our partnership with the Clontarf Foundation.

Investing in our Communities

Our Community Giving Fund is a cash grant program aimed at supporting not-for-profit community programs and initiatives, especially where they benefit the communities where we operate. The Fund not only helps make possible many of our community programs and initiatives, but it supports initiatives that help build stronger, more resilient communities.

During FY2018, we were pleased to support 42 charities in the areas of health and wellbeing, community safety, education and environmental initiatives with cash grants. Some examples of successful recipients in FY2018 included:

- Hands of Compassion received a grant for the Rockhampton Foodbank, to allow them to purchase new equipment that has provided fresh food to people who are homeless, struggling financially, or suffering from domestic violence or alcohol and drug abuse.

- Hunter Surf Lifesaving received a grant to improve training room facilities used for training and educating lifesavers, youth and juniors.

- Zephyr Education's New School, Fresh Start initiative in North Queensland received a grant to help children in domestic violence shelters resume their education at their new school as quickly as possible by supplying them with uniforms, stationery and other essential items.

- The Earbus Foundation received a grant for its program to provide mobile ear health clinics to Aboriginal children in south-west Western Australian schools, and helping to improve their education outcomes.

A Helping Hand for Local Queensland Communities to Recover from Cyclone Debbie

In July 2017, Aurizon provided welcome relief to those communities hit hardest by Cyclone Debbie, announcing 15 successful charities who received cash grants for local rebuilding and recovery projects.

Understanding the Impacts of our Operations

At Aurizon, we talk openly with a wide range of stakeholders to gain a broader understanding of our business environment and operations. An important part of engaging with our communities is how we listen to community feedback and respond to these concerns.

We monitor community concerns about our operations to understand the way these concerns affect our communities. It also helps us understand how we can improve or better communicate the regulatory and safety requirements of our business.

One example of this is the evidence-based fact sheet and video available online to respond to communities' questions and concerns about coal dust and its perceived impacts. This readily accessible information has been developed in collaboration with our supply chain partners, industry peak body and relevant government agencies.

Another common community concern with any rail operation is noise. Perception of noise levels varies from individual to individual. What one person considers noisy is acceptable to another person. Many factors contribute to rail noise levels, such as topography. We continue to work on noise concerns through a variety of ways, such as engineering solutions, always by considering a whole-of-supply chain approach.

In FY2018, we received 229 community complaints, a decrease of 8.4% from FY2017. Rail noise and road safety were of most concern to the community.

Sounding of the Train Horn Keeps our Communities Safe

The use of the klaxon (also referred to as the horn or the whistle) was referenced in the majority of noise-related comments from the community. The sounding of the klaxon is a mandatory safety requirement and is an important public safety mechanism. It is critical in warning motorists, pedestrians and rail workers of an oncoming train, especially at a rail level crossing where vehicles and trains intersect. Because trains are very heavy, they need some distance to come to a stop. Unlike vehicles, trains cannot swerve to avoid a collision. The sounding of the klaxon is intentionally loud and above ambient noise to effectively warn of and to attract attention to an approaching train, even if it isn't immediately visible.

The klaxon is a critical instrument to help keep people safe. For this reason, many jurisdictions have specific regulations for its use, as does the National Rail Safety Regulator.

Other than on approach to a rail level crossing, our train crews must also sound the klaxon if their view is restricted or they perceive a hazard on or near the railway. This requirement to sound the klaxon applies 24 hours a day, seven days a week. The klaxon must be sounded even if a rail level crossing has other warning devices, like flashing lights, bells and gates.

Helping to educate the community on the reasons for the sounding of the klaxon is a priority, and an important aspect of keeping our communities safe.

Left: Coal Group Executive, Edward McKeiver, presenting the Mackay Surf Life Saving Club with a new tractor to assist with the clean-up and safe removal of natural debris and waste.

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 FY2018, we spent an estimated $1.3 billion, a large percentage of which was in regional Australia (see figure 25).

For example, in the Mackay region in Central Queensland, we directly contributed an estimated $23.5 million in actual spend at a wide range of local businesses in FY2018, from purchase of fuel, electrical services, accommodation, and waste management to traffic control services and catering.

Similarly, in the Hunter Valley region in New South Wales, we spent approximately $34.2 million in FY2018. These figures exclude the amount spent by our employees and their families who live and work in these areas.

Figure 25 — Aurizon's FY2018 Regional Spend

Note: One bubble indicates > $100,000 spend
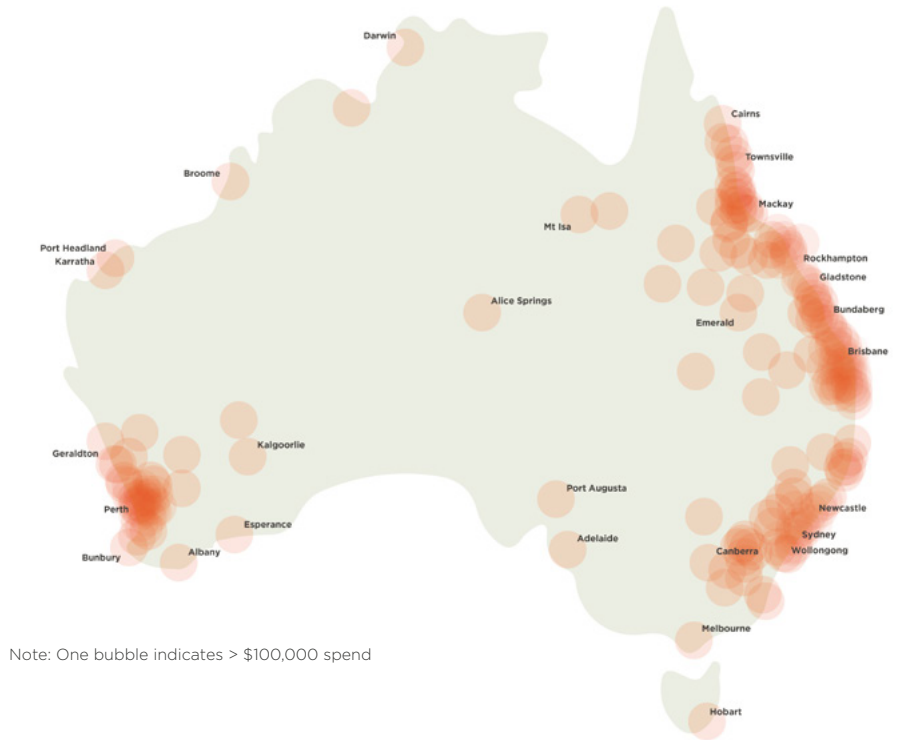
TAX AT AURIZON

Message from the CFO

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.

This year's Sustainability Report includes:

• A summary of taxes paid and collected by Aurizon.

• An overview of Aurizon's approach to tax strategy, tax policy and governance.

• An explanation of the tax disclosures in the financial statements.

PAM BAINS
CFO & Group Executive Strategy

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.
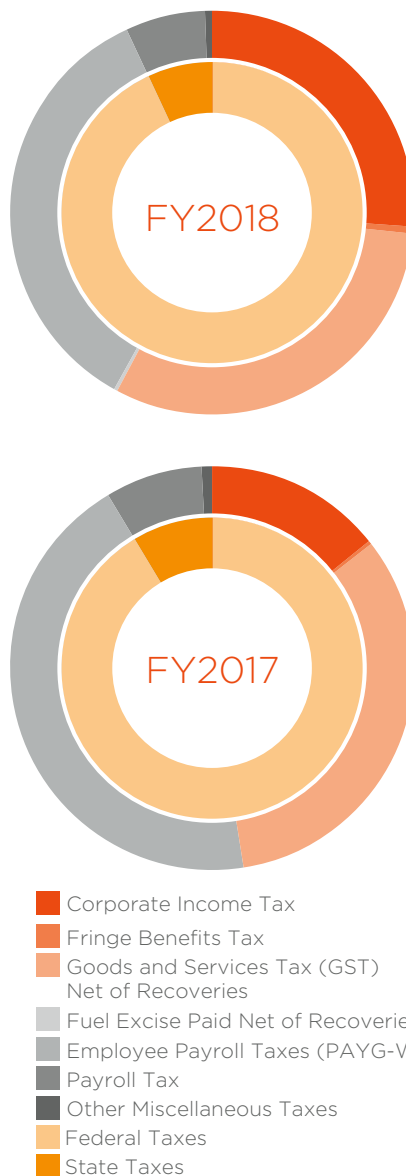
Taxes Paid

Australian corporate income tax represents the largest component of taxes we pay. Corporate income tax is payable in instalments throughout the income year, with a balancing payment made in the December following the end of the income year to reflect the final income tax liability for that income year.

The corporate income tax, represented in figure 26, reflects taxes paid in respect of the income year, rather than taxes actually paid during the income year.

Taxes Collected

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 26 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 our income tax consolidated group.

Figure 26 — Taxes Collected and Paid by Aurizon

FY2018

FY2017

- ■ Corporate Income Tax
- ■ Fringe Benefits Tax
- ■ Goods and Services Tax (GST) Net of Recoveries
- ■ Fuel Excise Paid Net of Recoveries
- ■ Employee Payroll Taxes (PAYG-W)
- ■ Payroll Tax
- ■ Other Miscellaneous Taxes
- ■ Federal Taxes
- ■ State Taxes

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 our 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 our tax obligations, including lodging returns and making tax payments on time. Confirmation of accurate and timely tax compliance and reporting is provided to the CFO and the Board.

Enhancing Shareholder Value Through Principled Tax Planning

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

• Ensuring operations, transactions and funding are tax efficient.

• Utilising tax concessions, where available.

• Ensuring we make appropriate tax selections when given a choice under the tax law.

• Ensuring tax positions adopted by our business are in accordance with parliamentary intention and guidance provided by the 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. We voluntarily meet with the ATO twice a year as part of our commitment to full disclosure and to build a positive, collaborative working relationship with the ATO.

Income Tax

The following information has been derived from the audited financial statements prepared for our business for FY2018. 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.

Effective Income Tax Rate

The Australian accounting standards define 'effective tax rate' as the income tax expense for the income year, divided by the accounting profit/(loss) before tax. Our effective income tax rate is outlined in table 6.

Our effective tax rate for FY2018 of 30.1% is more than the 30% Australian corporate tax rate. This is primarily due to the permanent components of the fixed asset adjustments and a decrease in expenditure eligible for the research and development tax incentive.

In FY2018, 'Other' permanent component includes 8 million relating to capital losses not recognised.

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.

Table 5 — Reconciliation Of Accounting Profit To Income Tax Payable (Including both continuing and discontinued operations)

	FY2018 $m	FY2017 $m
Current Tax	167.9	77.1
Deferred Tax	51.7	(158.7)
Total Income Tax Expense	219.6	(81.6)
Underlying Profit/(Loss) Before Tax	751.6	657.5
Significant Items (Impairments etc)	(49.0)	(927.0)
Statutory Profit/(Loss) Before Tax	702.6	(269.5)
Tax at Australian Tax Rate of 30% (2017: 30%)	210.8	(80.9)
Tax effect of amounts which are not (taxable) deductible in calculating taxable income:		
- Research and Development	(0.7)	(1.6)
- Other	9.9	2.3
- Adjustments for tax of prior periods	(0.4)	(1.4)
Income Tax Expense/(Benefit)	**219.6**	(81.6)
Temporary Differences:		
Provisions/Accruals	(9.5)	5.1
Customer Contracts	(7.8)	(10.3)
Property, Plant and Equipment	(54.0)	168.0
Other	19.6	(4.1)
Income Tax Payable	**167.9**	**77.1**

Table 6 — Aurizon's Effective Income Tax Rate (For continued and discontinued operations combined)

	FY2018	FY2017
Underlying Profit before Tax (PBT)	$751.6m	$657.5m
Significant Items (Impairments etc)	$49.0m	$927.0m
Statutory PBT/(LBT)	$702.6m	($269.5m)
Statutory Income Tax Expense/(Benefit)	$219.6m	($81.6m)
Statutory Effective Tax Rate	31.30%	30.30%
Underlying Income Tax Expense	$226.3m	$196.5m
Underlying Effective Tax Rate	30.10%	29.90%