

2019 CONCISE SUSTAINABILITY REPORT

Delivering for a sustainable future



MANAGING DIRECTOR & CEO MESSAGE



We are proud of the leading role Aurizon has played in the transport sector in being open and transparent in relation to the social, environmental and economic aspects of our business. This year, we strengthened our business to create more value for our employees, communities, customers, and shareholders.

Across the business, safety remains our number one priority. We are investing in programs to help drive safety and leadership capability, and to create better business safety processes and systems.

At Aurizon, it is important that we play a positive role in the regional communities where our people live and work. While our employees continue to support their communities through local sponsorship

and volunteering, the Company helped local charities through our Community Giving Fund.

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

To read our full 2019 Sustainability Report, visit www.aurizon.com.au/sustainability

I welcome your feedback. Please send any comments to sustainability@aurizon.com.au

Andrew Harding
Managing Director & CEO

ABOUT AURIZON

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

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

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

COMMUNITY

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. We support the important work of charities through our Community Giving Fund. This year, we included additional funding for charities providing support to drought-impacted communities in New South Wales and Queensland, and flood-impacted communities in North Queensland.

Approximately 80% of our employees and their families live and work in regional centres. We contribute to these communities through providing employment opportunities, and contracting local providers and suppliers. In FY2019, we spent an estimated \$1.2 billion with suppliers, a large percentage of which was in regional Australia.

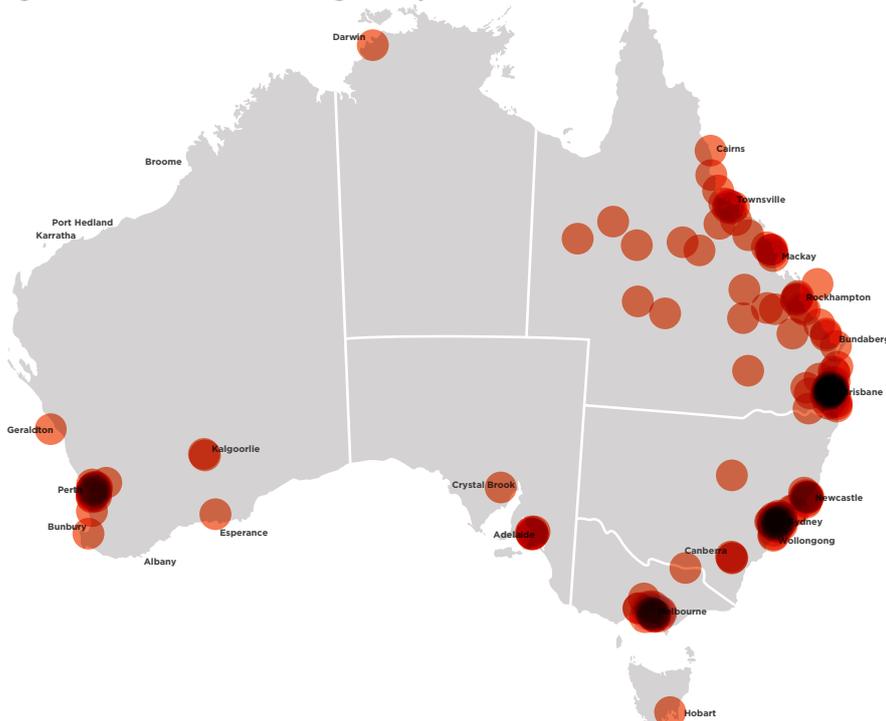
ENVIRONMENT

We acknowledge that as rail operators with a large operational footprint we have a role in helping maintain a sustainable environment in our local communities. We work collaboratively with our supply chain partners across our operations to minimise coal dust emissions from our coal haulage. We also continue to focus on cutting diesel emissions by reducing diesel consumption, using cleaner diesel, operating electric locomotives as part of our fleet, and promoting rail over road freight.

Recognising that rail offers productivity and environmental benefits and is far safer than road transport, Aurizon advocates for policy actions to increase the use of rail freight on key corridors.

Reducing the difference in access charges between rail and road would encourage bulk freight customers to increase the use of rail freight — particularly in key areas such as the Mount Isa rail line. We welcome the Queensland Government's announcement in June this year to provide funding to reduce rail access charges on the Mount Isa line. This will improve rail infrastructure cost and performance, which is critical to the economic success of the North West Minerals Province.

Figure 1 — Aurizon's FY2019 regional spend



DID YOU KNOW?

Rail freight emits **75%** fewer¹ greenhouse gas emissions per tonne of freight moved compared to the road freight transport sector.

¹ Australian Government, Department of Environment and Energy (2018), *Rail transport overview*, Available: <https://www.energy.gov.au/business/large-businesses/industries/rail-transport/rail-transport-overview>

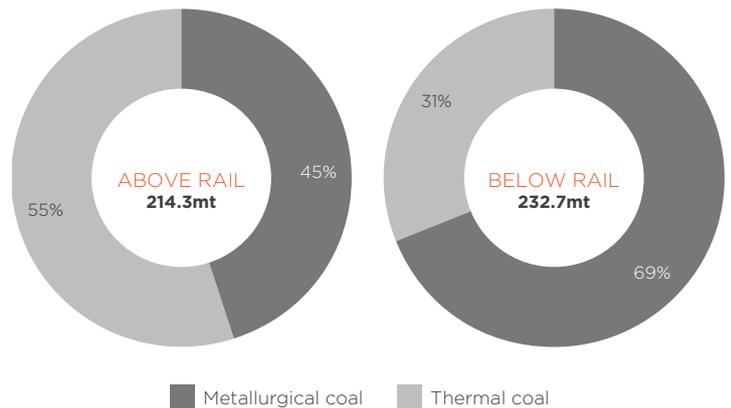
FUTURE OF COAL

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

Approximately 80% of our revenue relates to coal. As illustrated in figure 2, metallurgical coal is the major contributor because it represents about two-thirds of the volumes on our below rail Network, and just under half of our rail haulage volumes.

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 Coal business. We also haul coal for domestic energy use.

Figure 2 — Aurizon's coal volumes (FY2019)²



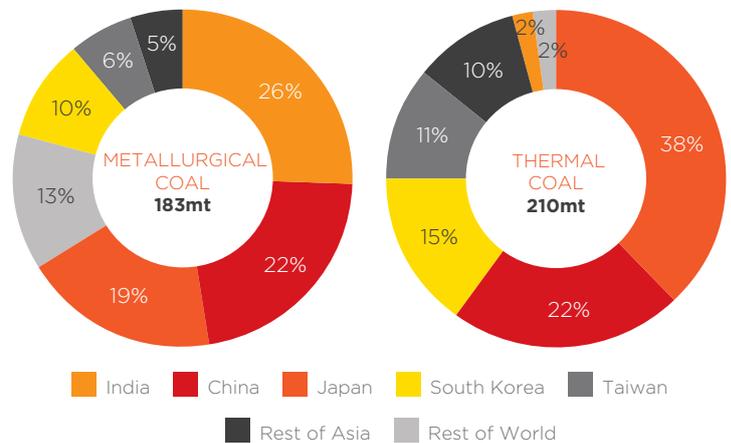
Seaborne coal demand

For metallurgical coal, steel-intensive growth in India is expected to be the single largest driver of seaborne trade demand over the coming decades. After surpassing annual production of more than 100 million tonnes for the first time in 2017, India's crude steel production was 106 million tonnes in 2018, almost double that of a decade earlier³. The Indian Government's *National Steel Policy (2017)* projects annual crude steel production to reach 255 million tonnes by 2030–31. India is already Australia's largest metallurgical coal trading partner.

For thermal coal, 98%⁴ of Australian exports are destined for Asia. It is this region (rather than global consumption) that is projected to use coal-fired generation assets for a prolonged period, in addition to increased renewables and other energy sources.

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

Figure 3 — FY2019 export destinations for Australian coal (million tonnes)⁵



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. Crude steel production occurs primarily via the blast furnace-basic oxygen furnace (BF-BOF) route, which accounted for 71% of global crude steel production in 2018⁶. The BF-BOF route remains the most economic means to produce steel and, within this process, hard coking coal currently has no economically viable substitute. Metallurgical coal is generally subdivided into coking coal, pulverised coal injection (PCI), and semi-soft coal. It takes about three-quarters of a tonne of hard coking coal to produce one tonne of crude steel⁷.
- **Thermal coal** (or steam coal) is primarily used as a heat source for energy generation, holding a 38% share of global generation in 2017⁸. Around 300,000 tonnes of coal equivalent are required per terawatt hour of generation⁹. 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 cement¹⁰.

2 Aurizon analysis. Represents coal tonnes hauled on the QGCN by all operators.

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

4 Australian Bureau of Statistics (Customised report)

5 Australian Bureau of Statistics (Customised report). Note: Due to rounding, the sum of the individual elements may not equal the total value.

6 WorldSteel, *World Steel in Figures 2019*

7 World Coal Association website

8 International Energy Agency, *World Energy Outlook 2018*

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

10 World Coal Association website

The future of seaborne metallurgical coal

Driven by urbanisation and associated infrastructure development, the opportunity remains for India and South-East Asian nations to increase steel usage (as measured per capita). Around one-third of global metallurgical coal demand is met through international trade¹¹, with Australia commanding over half of this market¹², which is almost entirely railed across the Central Queensland Coal Network¹³. Underpinned by shorter distances between mines and ports, as well as significant port and rail capacity exclusively servicing coal exports, Australia has comparatively low transportation and port costs.

Figure 4 – Apparent steel use per capita vs. GDP per capita, by key countries¹⁴

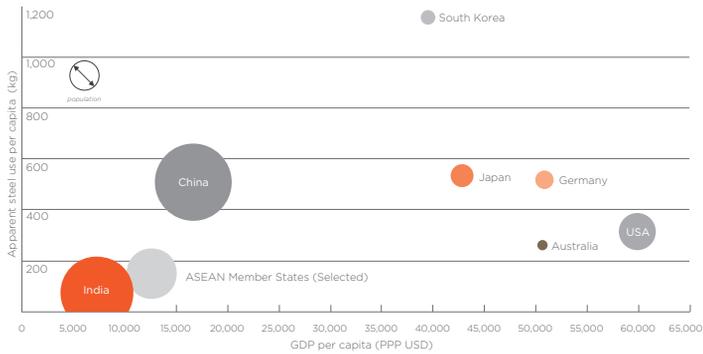


Figure 5 – Aggregate metallurgical coal trade balance, by major countries (2018–2040)¹⁵

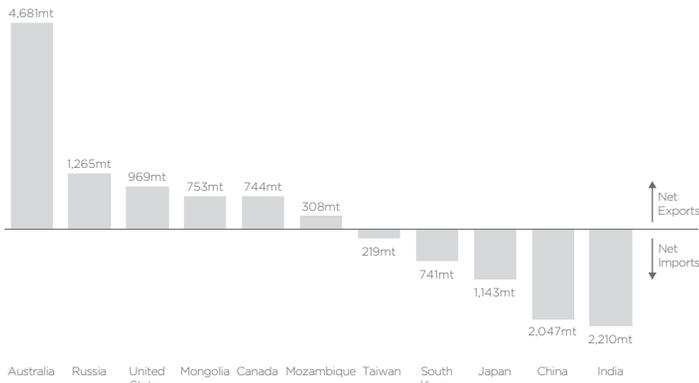
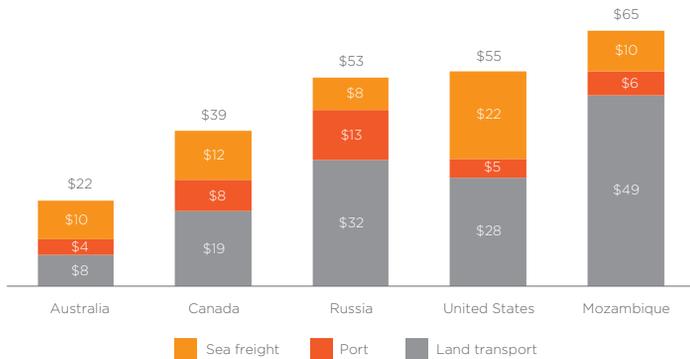


Figure 6 – Land transport, port, and sea freight costs from major seaborne metallurgical coal export countries to India (USD/t)¹⁶



11 International Energy Agency, *World Coal Information 2018*
 12 International Energy Agency, *World Coal Information 2018*
 13 Wood Mackenzie, Coal Cost Curves Tool (May 2019), reference year 2019
 14 GDP (Purchasing Power Parity) – International Monetary Fund, *World Economic Outlook April 2019* (2017 data); Population – International Monetary Fund *World Economic Outlook April 2019* (2017 data); Apparent Steel Usage – World Steel Association (2017 data). ASEAN member states (Selected, based on data availability): Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam.
 15 Wood Mackenzie Global Coal Markets Tool (2019 1H).
 16 Wood Mackenzie Coal Cost Curves (May 2019, reference year 2019); Wood Mackenzie Global Coal Markets Tool (2018 2H). Sea freight export terminal assumptions: United States – East Coast; Canada – West Coast; Australia – Hay Point; Russia – East. Note: Due to rounding, the sum of the individual elements may not equal the total value.

The future of seaborne thermal coal

Energy demand in Asia is projected by Bloomberg to increase by 152% by 2050, driven by GDP and population growth.¹⁷ While renewables and other cleaner energy sources will undoubtedly grow in significance, the age of the Asian coal-fired energy generation fleet and projected capacity additions provides insight into the continuing demand for thermal 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.

Figure 7 – Average age of coal-fired electricity capacity¹⁸

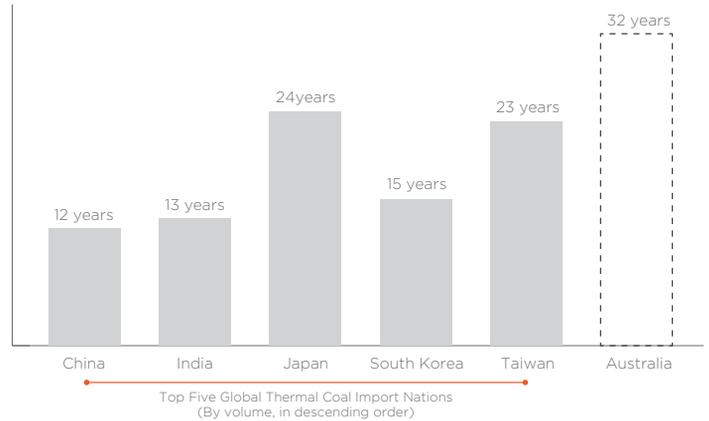


Figure 8 – International Energy Agency (IEA) outlook (New Policies Scenario) for electricity generation in South-East Asia, by source (TWh)¹⁹

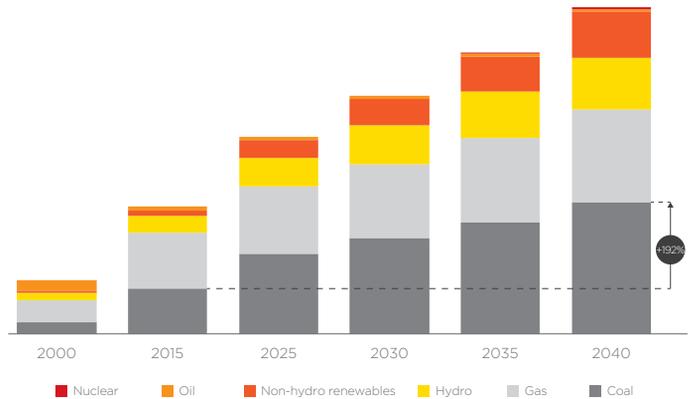
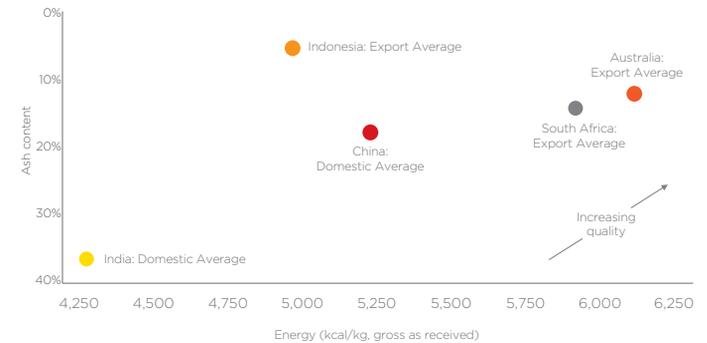


Figure 9 – Thermal coal energy and ash content²⁰



17 Bloomberg NEF, *World Energy Outlook 2019: Executive Summary*
 18 Platts UDI Electric Power Plants Database (March 2019), capacity weighted. Australia included as reference
 19 International Energy Association, *World Energy Outlook 2018*
 20 Australia (Export Average): Wood Mackenzie Coal Cost Curves (Year: 2019, Data: Feb 2019). India Domestic Average Source: India Ministry of Coal Provisional Coal Statistics 2017-18. China Domestic Average Source: IEA Coal Medium-Term Market Report 2016, Wood Mackenzie 'China Limits Coal Ash Content' (April 2017). Indonesia Export Average Source: Wood Mackenzie Coal Cost Curves (Year: 2019, Data: Feb 2019). Indonesia Coal Mining Association. South Africa Export Average Source: Wood Mackenzie Coal Cost Curves (Year: 2019, Data: Feb 2019), Richards Bay benchmark specifications (Platts).

FUTURE OF COAL

Scenario analysis: International Energy Agency

One recommended disclosure from the Task Force on Climate-related Financial Disclosures (TCFD), is to take into consideration different climate-related scenarios, including a 2°C or lower scenario²¹. Although the Task Force does not recommend using a specific scenario, Aurizon has drawn upon the best known and most widely used scenarios produced by the International Energy Agency (IEA) in its annual *World Energy Outlook*. This is used for comparison with Aurizon's internal scenarios. The IEA publishes three scenarios: the *New Policies Scenario*, the *Current Policies Scenario*, and the *Sustainable Development Scenario*. The latter aligns with the Paris Agreement's goal of limiting increases in global average temperature to well below 2°C.

The central *New Policies Scenario* projects global coal trade reduction of 1% by 2040 compared with 2017. However, Australia's export volume is projected to increase by 22% over the same period. The IEA notes that *Australia is the only export-oriented country projected to significantly raise coal production over the period to 2040... benefiting from its strong resource base and proximity to growing Asian markets*²².

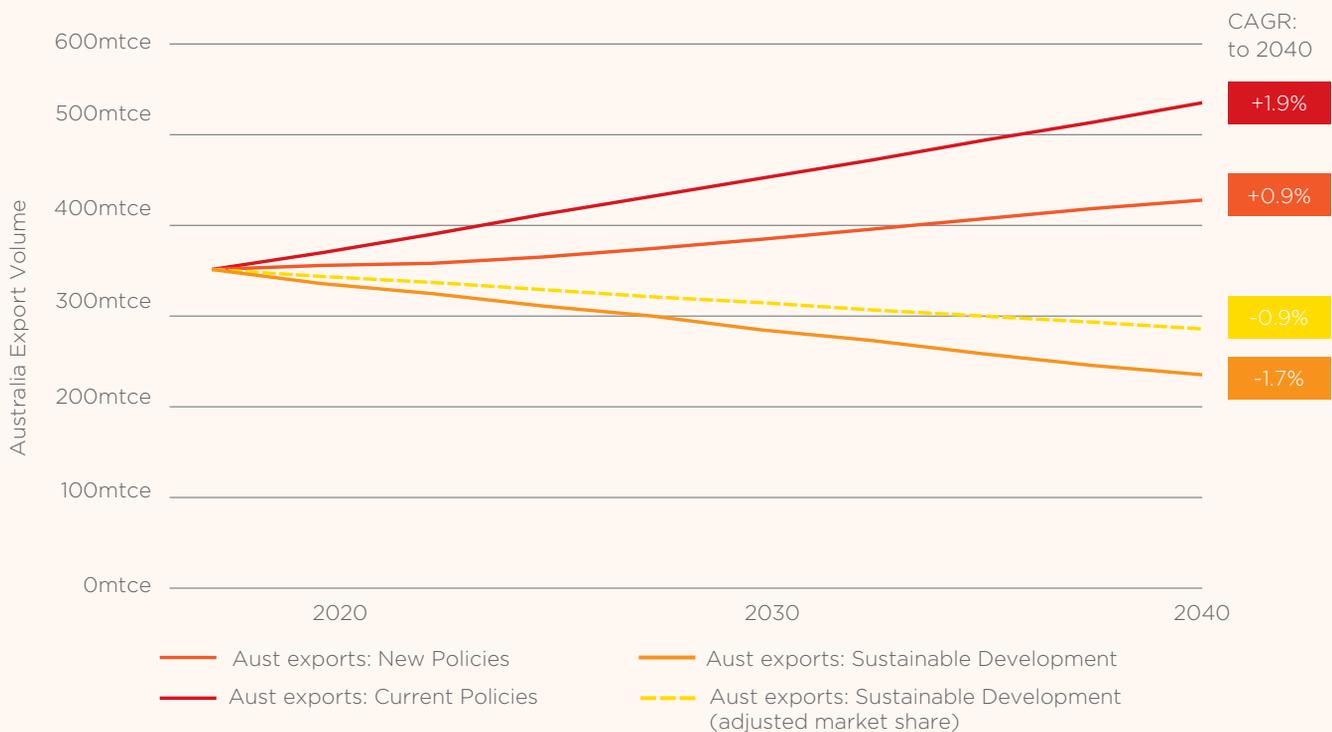
The *Sustainable Development Scenario* projects global coal trade reduction of 53% by 2040 compared with 2017.

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

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

However, given an expected preference for higher quality coal,²³ which Australia supplies, it can be projected that Australia could increase its market share in such a scenario. As such, we have modelled a higher market share (+10 percentage points compared to the *New Policies Scenario* in metallurgical and thermal coal trade markets in 2040). In this projection, Australia's export volume would fall by 62mtce in 2040 (-18% compared to 2017). This represents a CAGR of -0.9% across the period, as illustrated as Sustainable Development (Adjusted Market Share) in figure 10.

Figure 10 – Projected Australian export volumes under IEA scenarios²⁴



For more information on our scenario analysis or the IEA's *Sustainable Development Scenario*, see our 2019 Sustainability Report.

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

22 International Energy Agency, *World Energy Outlook 2018*

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

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

SAFETY

Safety is our highest priority — for our employees, contractors, and communities. As our core value, safety underpins our operations, and we have a relentless focus to achieve our goal of **ZERO**Harm.

In FY2019, we introduced Seamless Safety, a long-term program to reinforce our safety culture and to simplify our tools and processes. The program aims to improve safety systems and empower leaders to drive safety improvements. It encourages employees to think differently about safety in their day-to-day activities, emphasising the need to keep our people safe instead of focusing solely on compliance. Seamless Safety is based on positive outcomes, ethical responsibility, and harnessing user know-how.

We also recognise our responsibility to raise awareness about safe behaviour around the rail corridor in the communities where we operate. This year, we launched a public media and advertising campaign — ‘Don’t put your life on the line’ — to deter illegal and unsafe corridor trespasses. The campaign aimed to raise awareness of the dangers associated with trespassing in our rail corridors, with on-track protests being a major safety concern, particularly for our train drivers who can be traumatised by such incidents.

Our future with technology

Aurizon is committed to continuously improving our operations. Further investment in technology and innovation will continue to feature in our operations, not only to drive productivity improvements, but to also deliver safety benefits.

We are using the latest learning tools — Virtual Reality (VR) training solutions — to help trainee drivers fast-track their preparation for the job.

In what is believed to be a first for the Australian rail industry, trainee drivers at our Willowburn facility in Toowoomba piloted VR training as part of their 10-week driver school. The new VR technology enables training in a safe, simulated environment where trainees can work with wagons and locomotives before working with physical rollingstock.

Not only does VR training reduce reliance on operational resources for practical training, it also has the potential to be used to improve learnings from previous incidents. We plan on embedding VR training as part of driver training certifications.



Don't put your life on the line



PEOPLE

At Aurizon, our people are our greatest asset. By aiming to create a truly inclusive culture, we are supporting our diverse workforce to develop better engagement, safety and performance standards.

Our diversity focus has raised the representation of women in our workforce to 21.0% as of FY2019, continuing a positive trend since FY2012. Similarly, the representation of Aboriginal and Torres Strait Islander men and women has risen from 2.5% in FY2012 to 5.6% in FY2019.

To recognise diversity, this year we took up the International Women’s Day 2019 theme of Balance for Better. Teams across our operations took time to celebrate the achievements of our women and consider how we can achieve a better-balanced workforce. We continue to embrace and recognise key events for our Aboriginal and Torres Strait Islander employees, such as National Reconciliation Week and NAIDOC Week.

Figure 11 — Female workforce representation

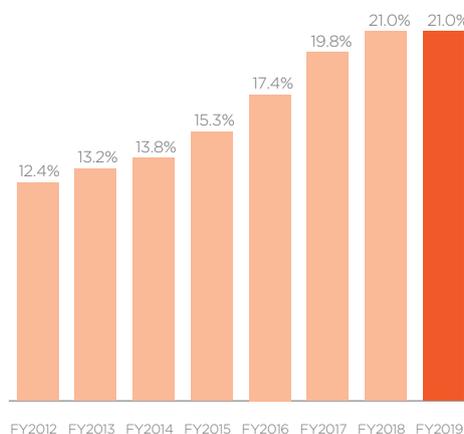


Figure 12 — Aboriginal and Torres Strait Islander workforce representation

