



2019 CRRC

Australia Sustainability Report

About the Report

This is the first sustainability report issued by CRRC Corporation Limited in Australia. It offers an overview of CRRC's approach and contribution to sustainable development and a window on CRRC's long-term investment and business operation in Australia.

The report covers all CRRC's subsidiaries in Australia, and the relevant data is collected by CRRC and its subsidiaries up to June 30, 2019. It is prepared in accordance with the GRI Standards and ISO 26000:2010-Guidance on Social Responsibility. In the report, CRRC Corporation Limited is referred to as "CRRC" and "we".

All comments and questions about this report are welcomed, and feedback can be sent to crrc@crrcgc.com. For more information, please visit the website www.crrcgc.com to see the complementary information online.

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Chairman's Message



Liu Hualong, Chairman of CRRC Corporation Limited

Pursuing sustainability is central to ongoing future business success. As a provider of high-end equipment system solutions in the rail industry, we strive to *connect the world through better mobility* with our reinforced sustainable operations, and contribute to the sustainable development of the economy, society and environment.

Our vision is to build a world-class multinational company and for more than 20 years, we have been providing high quality products and professional services for customers and the passengers in Australia, supporting the rail industry development in Australia.

We strive to create continuous value for our Australian stakeholders. When delivering projects, we fully consider the comfort, safety and eco-friendliness of our products throughout the research and development, design and manufacturing phases to make sure we meet the needs of local passengers even better. Our technological and service innovations also contribute to the development of heavy-load railway and freight transportation in Australia, continuously improving the railway transportation capacity of bulk cargoes. We established an R&D center in Melbourne that helps transfer production techniques, develop the rail transit industry and upgrade Australia's manufacturing.

By actively engaging with our partners in Australia, we have been able to jointly build a community of shared interests. Our aim is to build long-term strategic partnerships with local companies and help their businesses go global by providing high-end products and services. We fully integrate in the industry supply chain to help local suppliers grow as well as promote the rail industry in Australia in general.

We respect every employee and provide them with career development opportunities. Committed to creating a diverse and inclusive corporate culture, we respect employees with different backgrounds. Our culture is based on an ethos of open communication and we promote wellbeing through targeted entertainment for our staff. We have established a training system that provides our Australian employees targeted courses, some of our employees will have opportunities to undertake trainings in our corporate office in China. Most importantly, we value the safety and wellbeing of our employees as well as their rights as employees of CRRC.

Engaging with our local communities is essential to our success. In addition to providing employment opportunities for the local community, the projects we work on host open days to help keep open communication with our neighbours and key stakeholders.

We actively aim to protect the environment and we strictly abide by Australian environmental policies and related regulations. As a corporation, we attach significant importance to research and development focused on eco-friendly materials and the reduction of energy consumption and greenhouse gas emissions. As a result, we provide eco-friendly solutions for customers and low-carbon travel for passengers in Australia.

The release of our first sustainability report in Australia aims to improve our corporate transparency and build better relationships with our stakeholders. I would like to extend my sincere thanks to all employees, the local community and partners for their strong support for CRRC. In the future, we will continue contributing CRRC's products, technologies and solutions to Australia's economic and social development.

About CRRC

Company Profile

With a history of more than 130 years, CRRC provides leading, efficient system solutions for the sustainable development of the global rail industry with safe, reliable, efficient, comfortable and eco-friendly products and services. By the end of 2018, CRRC had provided products and services to more than 100 countries and regions, and established 15 international R&D centres. CRRC has set up local manufacturing bases in the United States, Australia, South Africa, Malaysia, Turkey and India, etc. CRRC is one of the Fortune Global 500 companies, ranking 359th in 2019.

Our Business

Advanced products and services

Having built world-leading technological platforms and manufacturing bases for rail transit equipment, CRRC provides a series of world-leading products, such as high-speed Electric Multiple Units (EMUs), high-power locomotives, wagons and urban rail transit vehicles, which can adapt to complex geographies and meet diverse needs of the global market.

Professional products and services

CRRC provides a range of services, including R&D, design, refurbishment, sales, leasing and technical services for railway locomotives, EMUs/DMUs (Diesel Multiple Units), urban rail transit vehicles, engineering machinery, various electromechanical equipment, electronic equipment and components, electronic devices and environmental protection equipment, consulting, industrial investment and management, asset management, import and export business.

Our Values

We continuously strengthen our sustainable operation capabilities for the advancement of society through focusing on values-based activities. Our operations continue to consider environmental and social impacts of the products and services we provide. Central to what we do is aiming for the sustainable development of public transport.

CRRC strives to become "a full-value creator with high-end equipment as our core". The core values of our brand is also reflected in the Company's English name (CRRC):

CRRC

Customer-oriented

Responsible

Reliable

Creative

CRRC's Mission

Connecting the world through better mobility

CRRC's Vision

To affirm its position as a global leading company in manufacturing and technology, with railway transportation equipment at its core

CRRC's Core Values

Responsibility, Expertise and Outstanding Results



Growing Deep Roots in Australia

CRRC has been serving local customers and passengers in Australia for more than 20 years. We insist on local manufacturing, local procurement, local employment, local maintenance and repair as well as localised governance. We strive to be a cultural exchange promoter, a talent training provider, an industry development accelerator and a community citizen.

Australia is a country with abundant mineral resources development. The mining industry is an important part of Australia's national economy and railways are vital to the transportation of mining and agricultural products. We believe that developing rail sectors of the urban and intercity public transport system is a key plank in the solution to effectively reduce traffic congestion, improve transport efficiency and mitigate the environmental impact of traffic. The Australian Federal Government's *Australian Infrastructure Plan 2015-2030* has a key focus on rail infrastructure development and provides for rapid development of the rail industry in Australia. CRRC provides advanced technical products and services and contributes our expertise to the local development of economy and society.

Delivering Products for Australia

Since 1999, CRRC Qiqihaer Railway Rolling Stock Co., Ltd. (CRRC Qiqihaer) has provided spare parts for the Australian freight wagon market. Since 2012, CRRC Qiqihaer has provided world-leading freight wagons such as ore wagons and coal hopper wagons for BHP Billiton, Rio Tinto, FMG and other customers. We have been awarded the best global supplier of Rio Tinto and a strategic partner of BHP Billiton.

Since 2006, CRRC Changchun Railway Vehicles Co., Ltd. (CRRC Changchun) has been a key partner in Reliance Rail, a special purpose vehicle established exclusively to deliver the Private Public Partnership with Sydney Trains to finance, manufacture and maintain 626 suburban passenger train carriages (known as the Waratah Train) for Sydney's rail network. Reliance Rail is supported by a team of the rail industry's foremost engineering and services organisations including Downer EDI Limited as contractor and CRRC as manufacturer. In 2012, the Sydney Waratah fleet won the **"Best Manufacturing Process Award"** in Australia. In 2016 and 2019, Transport for NSW (TfNSW) placed orders to Downer directly with CRRC as manufacturer, and since 2006, CRRC Changchun has manufactured more than 800 passenger train carriages for Sydney Trains.

In 2016, the Evolution Rail consortium was contracted by the Victorian Government, as part of a Public Private Partnership (PPP), to deliver the High Capacity Metro Trains (HCMT) Project. As part of this Project, Evolution Rail will finance, design, build and maintain 65 new high capacity trains for the metropolitan network for 30 years. The Evolution Rail consortium is comprised of Downer, CRRC and Plenary.

CRRC Yangtze Co., Ltd. (CRRC Yangtze) provides freight trains for Pacific National Pty Ltd (PN), an Australian rail freight company. The coal transport fleet is currently the largest load, longest train formation and largest tractive tonnage in Australia. By the end of 2018, CRRC Yangtze had delivered nearly 9,000 freight wagons of various types to Australia. CRRC Yangtze also provides a variety of metro engineering vehicles for Sydney Metro Project, Australia's biggest public transport project.

CRRC Ziyang Co., Ltd. (CRRC Ziyang) provides the SDA1 locomotive for Queensland Rail. With high traction performance, we have created the innovative of "devil's corner" test. CRRC Ziyang has delivered 18 diesel locomotives for Queensland Rail.

CRRC Qishuyan Co., Ltd. (CRRC Qishuyan) works with PN to launch the world's most powerful narrow-gauge diesel locomotive for Australia.

CRRC Meishan Co., Ltd. (CRRC Meishan) provides more than 500 freight wagons including the new multi-purpose covered wagon that adopts a lightweight structure, and improves capacity utilisation and door locking reliability. We have applied and obtained 5 patents.

CRRC Shenyang Co., Ltd. (CRRC Shenyang) has developed and delivered products for Tasmanian Main Line Company (an Australian company) since 2014, including container flat wagons, 18-tonne axle load cement hopper wagons, 18-tonne axle-load ore wagons, 20-tonne axle load coal hopper wagons, and meter gauge cement hopper wagons.



CRRC has delivered more than **25,000** freight wagons

CRRC has been awarded with the contract of **455** carriages of the High Capacity Metro Trains

CRRC has delivered more than **800** passenger train carriages of the Waratah Train

CRRC Subsidiaries in Australia

Delkor Rail Pty Ltd (Delkor)

Delkor was founded in 1983, about 22 kilometres west of the Sydney CBD. Since 2002, it has worked closely with CRRC Zhuzhou Times New Material Technology Co., Ltd. (TMT) and became a subsidiary of TMT in 2011, and has subsequently started a global market service. Delkor has provided accumulated 1.8 million track shock absorbers for global customers since its establishment.

CRRC Australia Pty Ltd

CRRC Australia Pty Ltd was founded in 2012 in the central business district of Parramatta, NSW. The company, on behalf of CRRC, formulates the overall development strategy and plan in Australia, coordinates and manages the business of CRRC and its subsidiaries in Australia, and assists with after-sales services. The business in Australia is mainly trade and focuses on wagon business, including coal and iron ore transport vehicles.

CRRC Ziyang Australia Pty Ltd

CRRC Ziyang Australia Pty Ltd, located in Melbourne, was established by CRRC Ziyang in 2012. It is primarily responsible for the sale of locomotive parts and providing technical support services, to ensure that our "sales + service" model is implemented in Australia.

Pacific Railway Engineering Pty Ltd (PRE)

PRE was established in March 2015 as a joint venture between CRRC Qiqihaer and the Australian company, B&W Group (50% shares held by both parties respectively). It established maintenance workshops in Sydney and Newcastle to provide technical solutions and maintenance services for the Australian freight industry.

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CRRC Changchun Australia Rail Pty Limited (CRRC Changchun Australia)

CRRC Changchun Australia was founded in October 2016 in Melbourne, Victoria and supports the design, manufacturing and delivery work of the HCMT Project. This Project won **Asia Pacific Rail Deal of the Year at the 2016 PFI Awards** (Thomson Reuters), **Projects Grand Prix – 2017 Partnerships Awards, Asia Pacific PPP Deal of the Year – 2016 Infrastructure Investor Award and Best Transit Project – 2017 Partnerships Award**. It was also nominated 2018 Core Values Awards (Infrastructure) – International Association for Public Participation (IPA2).

Melbourne Plant of Delkor Rail Pty Ltd (CRRC Delkor plant in Melbourne)

In 2018, CRRC Delkor acquired a plant in Melbourne, formerly established in Australia by German company, BOGE Group, that provides suspension shock absorber parts for automobile manufacturers.

CRRC Times Electric Australia Pty Ltd (CTEA)

CTEA, a subsidiary of Zhuzhou CRRC Times Electric Co., Ltd., is located in Morwell area, the La Trobe Valley, Victoria, Australia. In June 2018, CTEA officially commenced production on the 4M3T metro traction systems. We can produce 18 systems annually to support the electrical products of the HCMT Project.

CRRC Yangtze Australia Pty Ltd

CRRC Yangtze Australia Pty Ltd provides locomotive technical service, after-sales service, overhaul service, spare parts sales and other related products and services, as well as delivery of rolling stock.



Compliance and Business Ethics

Compliance management

We place great importance on compliance management, abiding by Australian laws, regulations and industry rules, carrying out internal control and risk management, and conducting anti-corruption supervision. In 2018, CRRC issued risk management guidelines including *Comprehensive Risk Management System and Trading Risks of Bulk Commodities*, and *revised Regulations on Internal Audit*. To satisfy the above requirements, CRRC subsidiaries in Australia incorporate internal control and risk management into daily management.



Taxes payment

In compliance with local laws, we entrust qualified local accounting firms to file tax returns to the tax authorities of Australia on a quarterly basis.



Anti-corruption

To prevent all forms of corruption, every manager from CRRC in Australia has to sign a letter of responsibility on anti-corruption. All managers' report their financial statements to CRRC headquarters monthly, which helps strengthen anti-corruption monitoring and supervision.



Stakeholder Engagement

To ascertain materiality, we engage with our stakeholders and incorporate their views and feedback into the sustainable development of CRRC's subsidiaries in Australia. We actively communicate with our stakeholders how we take these material topics as important indicators to evaluate our business performance and carry out sustainability management.

Stakeholder identification	Stakeholder expectations	Communication channels
 Customers	Provision of high-quality products which meet local needs; quick response services	Annual reports; official website; social responsibility reports; cooperative forums; communication activities; open days; meetings; media interviews; etc.
 Employees	Respect of the fundamental principles and rights at work, health and safety; integration of diverse cultures; provision of training	
 Partners	Local purchases; fair cooperation and opportunity	
 The Government	Creation of jobs; compliance management; tax payment; development of the rail industry	
 Media	Promotion of industrial development; local employment; corporate transparency	
 The Environment	Carbon emission; waste management	
 Communities	Community engagement; employment and skill development; promoting Aboriginal and Torres Strait Islander cultures	

Long-term Value

We are committed to providing quality products and professional services to the world. By continuous technological innovation and service improvement, we enhance the public's travel experience, deepen cooperation with local business, and support the transformation and upgrading of manufacturing in Australia, thus creating long-term and stable value for all stakeholders.

Enhancing Travel Experience

Safe and comfortable urban rail transportation presents a range of advantages, such as large capacity, low land consumption, low environmental impact, and low energy consumption. Rail transport is one of the most carbon-efficient forms of passenger transport.

CRRC leverages our expertise in rail transit equipment manufacturing to meet customers' needs and improve passengers' travel experience. CRRC takes into full consideration the comfort, safety and eco-friendliness of our products in the R&D, design and manufacturing processes.

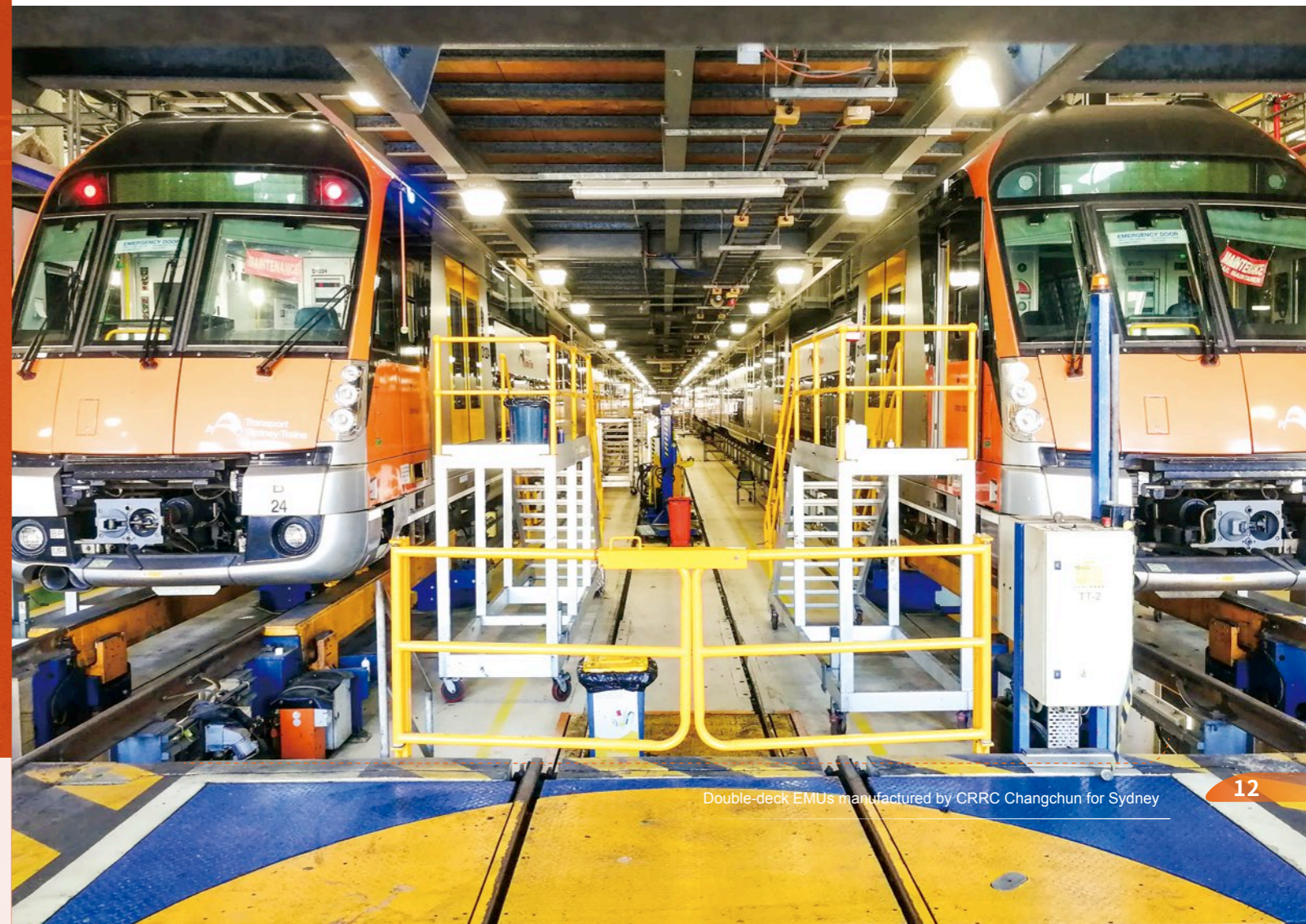
In 2012, Sydney Waratah Train won the "Best Manufacturing Process Award".

Case study: Sydney's Waratah Train provides stable performance

In 2005 CRRC received a manufacturing order for 626 Waratah Train carriages from Downer, as part of the Railcorp Rolling Stock PPP Project, more commonly known as the Waratah Train Project. The Waratah presented a new type of train for Sydney's commuter rail network.

The Downer-designed car bodies of the Waratah Train manufactured by CRRC, are made of high-strength stainless steel that is resistant to corrosion and aging, and the trains have a maximum operating speed of up to 130 km/h. With exceptional reliability and a very low failure rate, the new trains have greatly improved levels of passenger experience and service reliability across the Sydney rail network.

These outstanding results position the Waratah Train as the preferred rolling stock product within the Sydney Metropolitan area which is evidenced by additional client orders during the period from 2016 to 2019.



Double-deck EMUs manufactured by CRRC Changchun for Sydney

Contribution to the Sustainable Development Goals (SDGs)



Case Study: Stakeholder-oriented R&D

For the HCMT Project, CRRC (as part of the Evolution Rail consortium) meticulously examined various factors in the research and development, and design process. Evolution Rail, as part of their bid, actively sought public feedback on a range of issues including safety, comfort and environmental friendliness. In 2018, the Victorian Government invited the stakeholders to visit the prototype train to test the design, comfort and safety of the new HCMT train. During this period, more than 2,500 pieces of relevant feedback were collected and carefully analysed, which resulted in more than 150 improvements to the original design. Train drivers were also invited to test features of the train and their feedback resulted in additional improvements.

This extensive engagement with stakeholders resulted in the new HCMT having better functionality. In October 2018, testing of the first of Melbourne's new 65 HCMT's commenced at Downer's newly refurbished Newport manufacturing facility. The new trains will be able to carry 20 per cent more passengers than Melbourne's current fleet.



Case study: Making the rail track vibrate less and noise lower

To reduce structure-borne vibration and noise, and provide greater train stability, the Delkor Egg baseplate has been placed between the sleepers and the rails on the Sydney Harbour Bridge. The rail fastener ensures railway safety and also improves passenger comfort. The Delkor Egg baseplate comes in a variety of standard sizes to suit the needs of different customers. The product is widely used in many large-scale projects, such as the Sydney Harbour Bridge, the Vancouver Metro, the Hong Kong MTR, the Singapore MRT, and the London Underground.



Developing with Mining and Freight Enterprises

In the field of heavy-load transport, Australian mining and freight enterprises have a long legacy and high level. We strive to make technological breakthroughs, and continuously improve the local rail freight transport capacity with our advanced cargos.



CRRC Qiqihaer becomes a strategic supplier of BHP Billiton

Case study: A strategic partner of BHP Billiton

As a business partner, we have been working closely with BHP Billiton for nearly 20 years. From the supply of components to the rolling stock, we have gradually gained BHP Billiton's trust in our R&D, lean manufacturing and after-sales service.

CRRC Qiqihaer has been supplying the 40t axle-load wagons for BHP Billiton since 2012. As a strategic supplier for rolling stock and core components of BHP Billiton, CRRC Qiqihaer helps BHP Billiton to explore overseas market and grow with the company. In September 2015, CRRC Qiqihaer received an order of 587 ore wagons from BHP Billiton. In response to the customer's urgent needs, CRRC Qiqihaer developed an independent production plan to enhance personnel and technical support. In a period a little over 5 months, CRRC Qiqihaer successfully delivered all wagons within the required timeframes. In 2019, CRRC Qiqihaer held a completion ceremony for the 4000th ore wagon for BHP Billiton and was presented the Certificate of Contribution as a major supplier for rolling stock and components by BHP Billiton.

CRRC Qiqihaer has a world-leading wagon fatigue and vibration test-bed, which can obtain data from wagons up to 25-years old. Within 20 days, we can verify the reliability of wagons and can provide recommendations for future optimisation. At present, CRRC Qiqihaer has completed the fatigue test of 40t axle-load ore wagons for BHP Billiton through this test-bed.



The completion ceremony held by CRRC Qiqihaer for the 4000th ore wagon for BHP Billiton

Case study: Enhancing the railway transport capacity for bulk goods

In 2016, the SDA1 locomotive produced by CRRC Ziyang completed a test carried out on the railway from the Hawkesbury River to the Cowan Bank, a line more than 8,500km long with a more than 75% of the track on a gradient of up to 25 degrees and s-bend curvature. Due to its difficulty, the test is known as the "devil's corner". The SDA1 high-power locomotive can tow more than 8,000 tonnes and has a maximum speed of 120 kilometres per hour, which can significantly improve the rail freight transport capacity. Our products gained recognition by the Australian logistics companies such as SCT and QUBE.

In May 2019, CRRC Yangtze received a letter of commendation from the commissioning manager of PN, an Australian rail freight company. In the letter, he expressed gratitude to CRRC for providing high-quality sugar transportation wagons and the efficiency of our delivery.



The wagons provided by CRRC Yangtze for PN improves the transportation efficiency for customers.



Not only the colour of the wagon has changed, the loading capacity of a single wagon has been greatly improved, and it is much lighter. This will significantly improve the efficiency of iron ore transportation.



— Clayton Walker,
Then COO of Pilbara Supply Chain of Rio Tinto Iron Ore Company



Delivery ceremony of the first batch of the Q-series 40t axle-load ore wagon produced by CRRC Qiqihaer

Case study: Tailored vehicles meet customers' demand

Rio Tinto is one of the world's largest mining companies and suppliers of mineral products. In 2012, CRRC Qiqihaer received an order from Rio Tinto for 600 ore wagons. To meet demands, Australian conditions and the technical requirements of Rio Tinto, CRRC Qiqihaer rapidly responded by establishing a professional technical team to develop the Q-series ore wagon. The wagon is able to carry 139.5 tons of iron ore within a 40-ton axle load. The traction capacity is 38,000 tons, while its own weight is only 20.5 tons. The fastest speed of the ore wagon is 80 km/h, and the payload of each wagon is greatly increased. It was the wagon with the largest single loading capacity in the world at that time.

Q series ore wagons improved the production and operational efficiency of Rio Tinto, and the production of iron ore has increased by millions of tons compared with the previous capacity. As a result, CRRC Qiqihaer was granted the "Most Valuable Supplier" and the "2013 Best Supplier in China" by Rio Tinto Group. In June 2018, CRRC Qiqihaer launched the mass production of 250 ore wagons for Rio Tinto. Up to June 2019, CRRC Qiqihaer has exported more than 6,000 wagons of various types to Rio Tinto, which meet the company's needs for ore transportation and its future development.

Supporting the Upgrade and Transformation of the Manufacturing

The rail industry plays a crucial role in the global high-end equipment manufacturing industry and is focussing on technological innovation and improvement of equipment manufacturing processes. CRRC has increased our investment in R&D locally and established an R&D centre in Australia to promote the development of the rail industry in Australia and the broader Asia Pacific region.

Case study: A local R&D centre

As the biggest single order of trains in Victoria's history, the HCMT Project will create an evolution in Melbourne's public transport system.

In November 2017, CRRC established a rail vehicles engineering research and development centre in Melbourne to develop products tailored to customers' needs. The centre will provide technical support for CRRC's rolling stock projects in the Asia-Pacific region and tackle the technical challenges in the design, manufacturing and maintenance of trains. Moreover, it will become the rolling stock operation centre of CRRC Changchun in Australia and create employment opportunities for the local area. In 2018, CRRC invested AU \$9.35 million in research and development.

Case study: High-end technology transfer

To manufacture supporting electrical products for the HCMT Project, CTEA established a 2,100 square metre plant in Morwell to meet the needs for the production and maintenance of electrical products. The Morwell plant enabled the core components including traction and auxiliary system to be produced locally in Victoria.



CTEA facility

Industry Chain Partnership

The rail industry presents opportunities for public transport and provides efficient and low-cost transportation solutions for freight. In Australia, CRRC leverages our experience in technology, management, operations and services in the field of rail transit to engage with our local partners with a win-win mindset. Together with these partners, we are dedicated to promoting local economic development and social prosperity.

Committed to Long-term Partnerships

CRRC is committed to the long-term and stable relationships with local companies. From building partnerships to establishing consortia and joint ventures with local companies, CRRC serves the Australian market in a variety of ways, creating long-term value for our partners.

Case study: Australian local brand becomes a global brand

In 2011, CRRC acquired Delkor, an Australian rolling stock spare and accessory parts manufacturing company but maintained Delkor's independence in business management. Through Delkor, CRRC provides all-round support for pricing, quality control, supply and communication to the rail industry. Delkor also participates in the overseas sales of CRRC products and has transformed itself from a self-serve model into a "production + trade" comprehensive model. The Delkor Egg baseplate has commenced the process to become a globally recognised product.



Delkor participates in the Rail Solutions Asia 2019 in Malaysia

Case study: The Evolution Rail consortium delivers excellent results

In 2016, the consortium of Plenary, Downer and CRRC Changchun (known as Evolution Rail) won the bid for the Melbourne HCMT Project. Evolution Rail is responsible for the design, manufacturing and commissioning of 65 sets of metro trains. Melbourne's next generation seven-car trains will progressively enter service from 2020, operating first on the Cranbourne and Pakenham lines, and longer term will run through the new metro rail tunnel to Sunbury.

Case study: Providing maintenance technical support for railway freight wagons

In 2015, CRRC established a joint venture by investing in B&W Group's subsidiary Pacific Railway Engineering Pty Ltd (PRE) to provide high-end maintenance technology solutions for railway freight wagons. CRRC's input allowed PRE to develop a full life-cycle service capability from production, maintenance to optimised design, streamline procurement costs for technical solutions, and helped improve the technical capacity of the rail freight wagon maintenance industry in Australia.



Supporting the Development of Local Suppliers

Supply chain management is a key factor in allowing equipment manufacturers to produce high-quality products. As CRRC's involvement in Australia's rail industry continues to deepen, we have established closer relationships with suppliers and developed a sound supply chain management system.

Local procurement

- The CRRC Delkor plant in Melbourne has established a mature supply chain in Australia's automobile industry.
- For the HCMT Project, CRRC Changchun purchased the majority of spare parts in Australia, with a local spend rate of more than 60% including local procurement, design and manufacturing.
- For the maintenance of rolling stock, PRE purchased components and services in Australia, with a localisation rate greater than 50%.

Case study: Transfer of advanced technology

CRRC transfers advanced technology on spare parts manufacturing and provides training to local engineers and technicians, as well as local businesses. The bogie is one of the core components of rail trains and CRRC has contracted Hofmann Engineering Pty Ltd to assist with the welding and manufacture of bogies for the HCMT Project. Under the project requirements, CRRC needs to transfer all manufacturing techniques and quality control documents to Hofmann Engineering Pty Ltd, provide comprehensive support for the plant layout, acceptance inspection of tooling, employee training, and carry out the comprehensive evaluation to guarantee the products' quality. After systematic training, Hofmann Engineering Pty Ltd has enhanced its understanding of the welding and manufacture technique of the bogie frame. Its production capacities have also been improved.



Melbourne's new High Capacity Metro Train

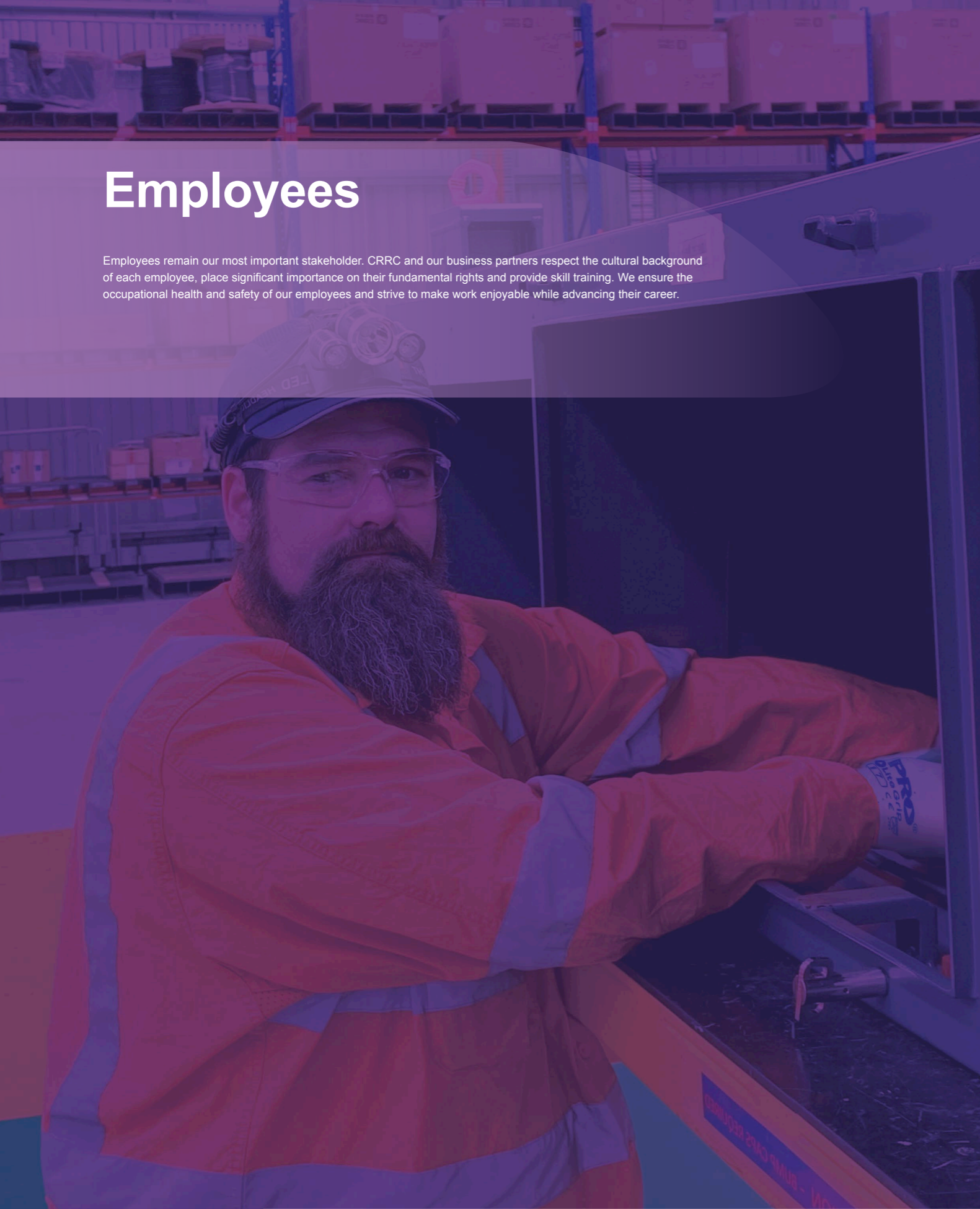
Industry Cooperation and Exchange

CRRC participates in AusRAIL and other industry activities, providing a useful communications tool and avenue to play an active role in developing Australia's future rail industry strategy.



Employees

Employees remain our most important stakeholder. CRRC and our business partners respect the cultural background of each employee, place significant importance on their fundamental rights and provide skill training. We ensure the occupational health and safety of our employees and strive to make work enjoyable while advancing their career.



Culture Fusion

Australia is a diverse and inclusive country of immigrants, with rich and diverse cultures among a population of more than 20 million. In our operations in Australia, we conduct open and inclusive cross-cultural management with full respect for the cultural diversity of our local employees.

Within the Company, CRRC's corporate culture aims to build a "culture of integrity and responsibility". The common interests, common goals and common development is the fulcrum of "seeking common ground as much as possible" and we strive to eliminate cultural conflicts and achieve cultural integration by value matching.

CRRC's member companies in Australia organise various employee activities, such as welcome meetings for new employees, receptions and Christmas parties and publishing a quarterly newsletter to promote communication among colleagues. These cross-cultural management measures have promoted the cultural integration between China and other regions, enable employees to understand our corporate culture, and enhance their team spirit.

Case study: Respecting the Aboriginal and Torres Strait Islander culture

CTEA respects multiculturalism. The company hires employees that identify as Aboriginal and Torres Strait Islander, and celebrate cultural initiatives like NAIDOC Week in July, where we aim to increase awareness about Aboriginal and Torres Strait Islander culture.



Aboriginal and Torres Strait Islander artifacts exhibited at CTEA



Team building of CRRC Changchun Australia



Training

Training outstanding personnel is absolutely essential to CRRC talent strategy. In CRRC Australia member companies, employees can learn advanced industrial knowledge, and get opportunities for business practice. The talent of our people becomes the source and power of CRRC's sustainable development.

We evaluate the work experience, skills and techniques of employees in different positions and offer our employees training programs to match their job requirements. CRRC's Delkor plant in Melbourne has developed a complete employee skills matrix and associated training program. The skills matrix clearly indicates the training and expertise required by each employee, giving employees a better understanding of the challenges ahead and setting up platforms for their career development.

We also encourage employees to participate in industrial and professional seminars. CRRC Changchun Australia provides training programs on leadership, project management, quality management and lean production for employees by means of voluntary registration. In 2019, CRRC Changchun Australia, in cooperation with a professional training organisation, delivered a professional project management course to 32 employees, which improved employees' management skills, and helped build an efficient project team.



Case study: Becoming skilled employees

More than 20 frontline employees at CTEA Morwell plant (who are recruited on behalf of Downer) are from the town of Morwell. They come from a variety of professional backgrounds outside of industrial production. CTEA provides training to these employees and follows up through communication whiteboards and quality control meetings.

Based on these communications, the company has continuously received valuable information from employees, including suggestions for improving the production process. We provide feedback to our employees on these suggestions. In this process, the employees' technical ability is continuously improved. Today, Morwell plant's frontline workers have grown into skilled employees who are capable to produce advanced train parts.



Occupational Health and Safety

In terms of occupational health and safety management, the plants of CRRC in Australia firmly believe that safety is the first priority and ensuring the safety of employees and preventing occupational diseases is the most basic responsibility of CRRC.

To enhance safety awareness amongst employees, we post the safety management rules and regulations in the workplace, and establish a feedback mechanism. Employees are required to report all safety incidents in a timely fashion. In addition, we purchase occupational health and safety insurance for our employees in accordance with Australian labour laws to ensure their occupational safety.

For emergency management, we provide safety training for new employees so they are familiar with the layout of the workplace, the escape routes, the contact information of safety wardens and officers, and the emergency procedure. We also provide first aid training to employees in line with regulations.

We pay particular attention to the occupational health of employees at our production and commissioning sites. All hazardous chemicals in our plants have a Material Safety Data Sheet (MSDS), which records in detail the hazard level of the chemicals, their potential damage to humans, as well as storage measures and conditions, etc. In the production process, we require all employees that deal with hazardous chemicals to take strict protective measures. All production facilities are monitored on-site by safety inspection agencies to ensure that they are in line with the standards.



First aid kit in TEC Australia

Case study: Effective communication on work safety

PRE recognises the importance to safety at work. The company holds daily group meetings to focus on safety issues and new initiatives. This is also evidenced by ensuring safety is discussed at management level meetings. Meanwhile, the company has established a sound safety management system that is overseen by a full-time Safety Manager, who is responsible for safety management, work safety, communication with review agencies, and the establishment of maintenance rules.



Employee Rights

Our partners and CRRC comply with Australia's federal, state and regional laws and regulations on the protection of employee rights. We adhere to the principles of gender equality, racial equality and cultural equality and forbid child labour. All employees are guaranteed equal opportunities on employment, training and promotion. All labour contracts signed between our Australia-based subsidiaries and the employees have been reviewed by Fair Work Australia. In addition, we follow the *Fair Work Act 2009 (Cth)*, and have established systems to ensure the rights and benefits of employees are met. These rights and benefits include but are not limited to:

• We guarantee that employees are paid no less than the legal minimum wage

• Our employees are provided holidays in compliance with legal requirements and for anyone who works overtime, they are either paid overtime pay or have the option to take time off in lieu.

As at 31 December 2018, CRRC had 153 employees in Australia, of which 18% were female employees. CRRC employs 113 local employees in Australia, of which 15% are female employees.



Community Development

Our success is reliant on being an excellent corporate citizen and good neighbour to the communities we operate in. Our goal is to facilitate community development through improving people's wellbeing, contribute to local employment and Sino-Australian cultural exchange.



CTEA invited Indigenous and Torres Strait Islanders people to the plant for cultural exchange

Contribution to the Sustainable Development Goals (SDGs)



Community Engagement

Developing in Australia, CRRC strives to integrate self-development into our community development programs so that we are able to tackle any issues in the best way possible, striving to establish a harmonious society together with the local government, companies and residents.

Case study: Assisting local community to reduce noise pollution

When a train travels on a curve, the friction between the wheels and the tracks increases and can increase noise pollution and impact on the surrounding environment and residents. Therefore, PRE worked with Transport for NSW to analyse options to mitigate this noise impact. PRE established a laboratory to test options for noise reduction and has released a report into the findings, helping local communities resolve the noise problem.

Case study: Pink Courtesy Car

In 2018, CRRC delivered a batch of pink open-top ore trains to Australian customers. These stainless-steel ore trains are designed and tailor-made in support of *Global Pink Ribbon Campaign Against Breast Cancer*. All of the eye-catching trains were decorated with designated pink paint, raising the public's awareness of breast cancer prevention.



Local Employment

With its business partners in Australia, CRRC creates equal employment opportunities for the local community, and provides training to cultivate high-calibre technical talent in the rail industry, boosting the sustainable development in local communities.

The HCMT Project in Melbourne is a high-profile rail transit infrastructure project. CRRC, with partners Downer and Plenary, are delivering in partnership with the Victorian Government. In total, the project will create 1,100 jobs across the life of the project, 15% of which will be offered to apprentices, cadets and trainees, and 7% will go to disadvantaged groups, creating equal employment opportunities for the local communities. The project was nominated 2018 Core Values Awards (Infrastructure) – International Association for Public Participation (IPA2).

Downer sets up its own training and assessments at the Newport facility. In addition, CRRC methods engineers provide advice to staff along installation and commissioning activities at the Newport facility.

Case study: Training young engineers

Through Evolution Rail, the Special Purpose Vehicle delivering the HCMT Project in Melbourne, CRRC Changchun Australia and Downer have partnered with local universities on a professional young engineers training program for new graduates. Working with Melbourne University, Swinburne University of Technology and the University of New South Wales, Evolution Rail is providing industry internship opportunities for university students of electrical and mechanical engineering and mechatronics majors, aiming at cultivating Australia's future rail industry professionals.



Cultural Exchanges

CRRC dedicates itself to cross-cultural activities in Australia to protect Aboriginal Australians and Torres Strait Islanders culture and promote cultural exchanges between China and Australia, which also serves as a bond for building mutual trust with the community and further promoting harmonious development.

CTEA has organised various cross-cultural activities, including:

- In October 2018, CTEA held an Open Day campaign at the Morwell plant, hosting the Victorian Government, local media, business partners including Downer, apprentices and local school children at the plant.

- To support local sports, CTEA, together with our partner Downer, sponsored a basketball team.



The home and away jerseys of the basketball team sponsored by CTEA and Downer

- In July 2019, during the NAIDOC Week, CTEA invited Aboriginal Australians and Torres Strait Islanders people to the plant for cultural exchange.

- In the future, CTEA plans to work with Australian universities in the field of manufacturing, management and scientific research to increase communication with Australian people and promote technological progress between both parties.

Case study: Memorable “metro train” in a time capsule

In 2013, Warrnambool, a port city in southwestern Victoria, officially became sister cities with Changchun, the city where CRRC Changchun is based. On 27 May 2018, a ceremony was held to bury a “time capsule” to celebrate Warrnambool’s 100th anniversary. At the ceremony, the 3D model of the HCMT Project’s first train was placed inside the “time capsule”. The train was chosen to commemorate the strong tie Changchun has with the local community. It will be opened 100 years later as a witness to the friendship between the two cities. The model was painstakingly completed by the craftsmen of Changchun using the world’s most advanced aluminium alloy train body manufacturing equipment with more than 50,000 drive commands.



The model of the Melbourne HCMT Project sealed in a “time capsule”

Case study: Professors and students from the University of Sydney Business School visit CRRC Qishuyan

In 2015, CRRC Qishuyan and Pacific National Pty Ltd (PN) jointly developed the world’s most powerful narrow-gauge locomotive for Australia. In July 2019, 20 MBA students and their professors from the University of Sydney Business School visited CRRC Qishuyan. During the visit, they learned about technological projects such as the 280 single-cylinder diesel engine independently developed by CRRC, and gained more insight into the global rail transit equipment industry.



China’s high-speed rail service is famous around the world. Our students are intrigued to know more about it. From the earliest locomotives to modern locomotives, various domestic and foreign technologies have been introduced and applied. We can see that China will be more international in the future.



—Prof. Hans Hendrichske

The University of Sydney Business School



Professors and students from University of Sydney Business School visit CRRC Qishuyan.

Environment

In terms of environmental protection and sustainability management, we strive to develop environmentally sustainable solutions and reduce energy consumption and greenhouse gas emissions. We have established an environmental management system to further these goals.

Environmental Management

To ensure that CRRC's products and manufacturing processes are eco-friendly, CRRC has developed a series of environmental standards and specifications. For example, CTEA and Downer's Newport facility have established an ISO 14001-2015 certified environmental management system, as well as published environmental sustainability policies and regulatory frameworks, illustrating our commitment to protecting the environment.



Eco-friendly Products

CRRC's highest priority is to provide safe and eco-friendly rail transit equipment across the passenger and cargo transport fields.

Improving environmental management of products

CRRC Changchun Australia has explicitly stipulated the limits for banned and restricted substances in the various components used in rail passenger vehicles. The company signed environmental management and control agreements with suppliers to incorporate more interior parts into the control list.

R&D of eco-friendly products

CRRC places great importance on the research and development of eco-friendly products. For example, the SDA1 locomotives exported to Australia are superpower AC-Diesel locomotives with internationally advanced adhesive performance, and its noise control also meets advanced international standards. Moreover, the CRRC's diesel engine exported in Australia satisfies the European Stage IIIA emission standard and boasts an outstanding fuel economy.

Use of eco-friendly materials

Our production processes are in strict compliance with Australian laws and standards. We never use prohibited materials. For restricted materials, our usage is in accordance with relevant standards and all of the chemical products are sourced locally and meet local requirements.

All of the non-metallic materials used in the metro trains for the HCMT Project are environmentally friendly materials, whose smoke and toxic substances emission meets the regulatory standards. The HCMT trains are made from stainless steel, eliminating the need for spray painting to prevent corrosion during the production process, which minimises environmental impacts.

Working together with its customers, Delkor has replaced some old shock-absorbing components with new ones. All of the replaced rubber is recycled by professional companies for reuse. The refurbished products show good performance and the price is more attractive.



Green Operation

To effectively reduce energy consumption and pollutant emission and reach our goal of clean production, we vigorously apply new technologies, new processes, new equipment, new materials and new models aimed at energy conservation and emission reduction. As a result, all of the environmental contaminants such as industrial waste water and waste gas, are effectively treated and discharged in compliance with relevant standards.

Treatment of "Three Wastes"

CRRC has two plants in Australia, the Delkor plant in Melbourne and the CTEA's Morwell plant, both of which are involved in the assembly of equipment products. These sites discharge a relatively small amount of waste gas, waste water and industrial residue. At the Delkor plant in Melbourne, all exhaust gases are discharged through a unified exhaust gas treatment device, which is regularly inspected and maintained by specialised companies. The solid waste and waste water (including chemical solvents) are placed inside dedicated containers in accordance with relevant regulations and standards, and these containers are collected by specialised companies on a regular basis. For the treatment of different wastes, there are different considerations and plans based on their environmental impacts and types.

PRE conducts regular sorting of wastes. The company's maintenance business undertakes regular vehicle cleaning, which involves the removal of grease that contains lubricating oil. PRE uses specialised equipment to separate the oil and water, and then stores the waste oil for the treatment by specialised companies.

In relation to packaging, CRRC recycles all relevant packaging and the remainder is disposed. Delkor reuses packaging from parts for the finished products to minimise the use of packaging materials. CRRC Changchun Australia reuses some packaging materials and disposes of the remainder in accordance with relevant regulations.

Energy conservation

The CTEA's Morwell plant actively aims to reduce energy consumption in construction and production activities. The workshop is a steel-frame structure with a span of 6.79 metres and a column height of about 8 metres.

- **In terms of fitout and layout**, the plant has considered production process and material transportation and the route has been designed to reduce the round-trip transport of materials to improve the efficiency. The roof of the plant is insulated, to minimise the electricity consumption of air conditioners and heat incursion when the air conditioning system is turned off. All fans and air conditioners installed in the plant are energy efficient.
- **In terms of the production equipment**, the plant is equipped with advanced energy-efficient production facilities that improve product quality and reduce rejection rate while reducing energy consumption. Facilities such as air compression stations and power transformer substations are placed close to large-load workshops for the reduction of energy and material consumption. Additionally, coulomb meters have been installed on the plant commissioning devices to monitor power usage.
- **In terms of lighting**, the plant has made maximum usage of natural lighting through rectangular glass skylights on the roof and side walls. High-efficient lamps are used and electric lights are installed according to the unique needs throughout the factory.

Water use

In the Morwell plant, domestic waste is discharged into the municipal sewage system via underground pipelines. The production water is mainly used for the rain test of vehicles, during which the plant uses pools and pumps to recycle tap water for reducing water waste.



Connecting the world through better mobility

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