

**BOMBARDIER**  
the evolution of mobility

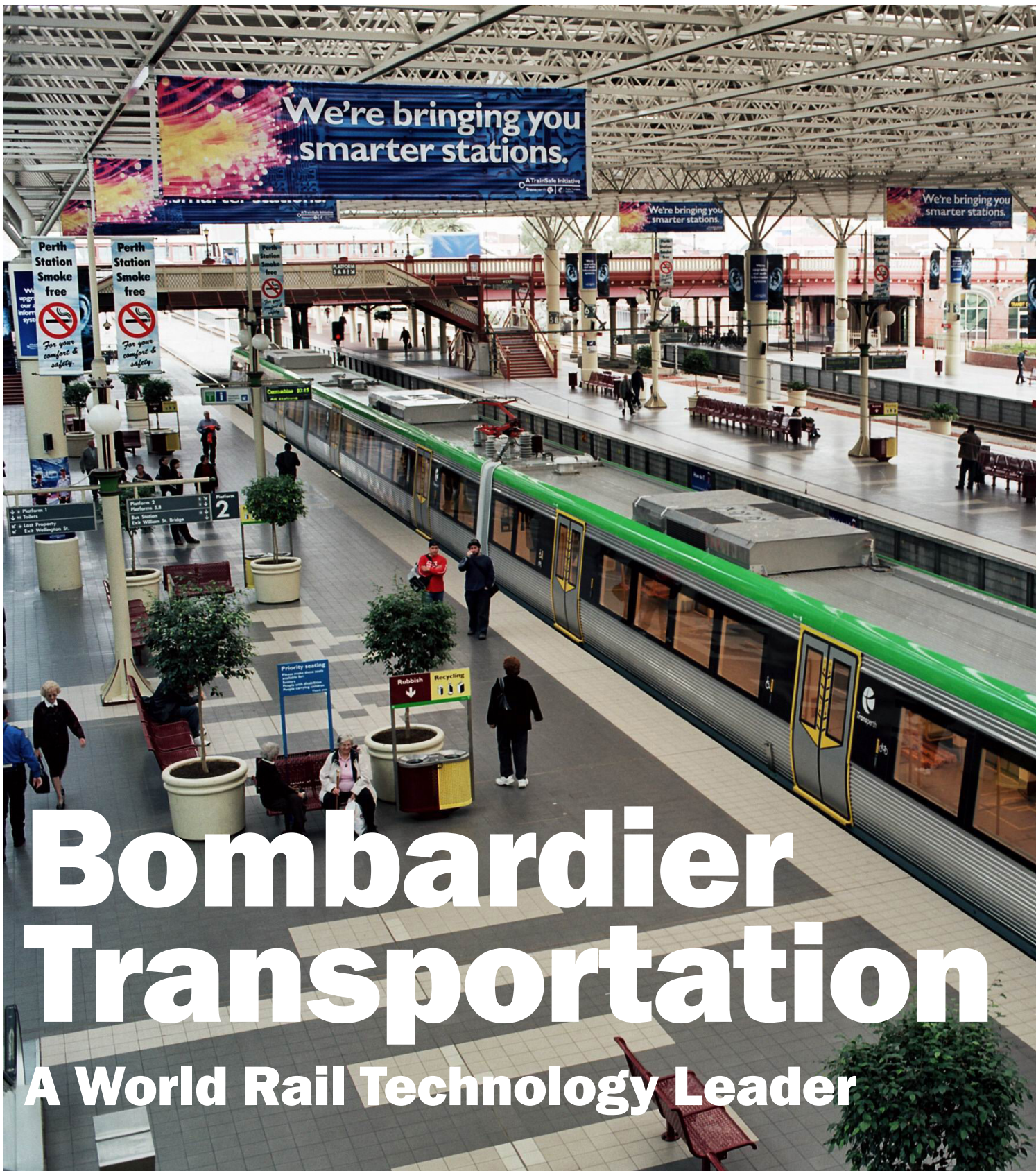
*We look far ahead to see and shape the future of mobility. Our goal is to continuously find better ways to bridge distances and bring people together. Across cities, countries and the globe. This is our passion.*

# A World Rail Technology Leader



• Aerospace • Transportation

Website: [www.bombardier.com](http://www.bombardier.com)



# Bombardier Transportation

## A World Rail Technology Leader

Bombardier... a name synonymous with excellence in mobility. From aerospace to rail transportation, this globally respected brand is the industry pinnacle in transportation innovation.

Among its many impressive stats, Bombardier is recognised as the world's largest manufacturer of both planes and trains, employing a global workforce of over 70,000 people.



Headquartered in Montréal, Canada (aerospace) and Berlin, Germany (rail transportation), the company's two divisions posted combined revenues of 18.2 billion USD in 2015. Australia's

## AT A GLANCE

**WHO:** Bombardier Transportation  
(Division of Bombardier, Inc.)

**WHAT:** Leader in rail technology solutions  
and diverse community composition.

**WHERE:** 22 locations in Australia

**WEBSITE:** [bombardier.com](http://bombardier.com)

purely rail-focused component is an important contributor to Bombardier's success.

### Thriving in Australia

For more than 60 years, Bombardier Transportation (BT) has provided Australia with the full spectrum of rail solutions – from the manufacture of passenger rail vehicles, to the provision of complete rail transportation systems and system integration. With local engineering and manufacturing capabilities, Bombardier also provides signalling, propulsion and control technology, asset management, and through-life support for vehicle components and rail systems. Design-wise, their trains are tailored to local conditions, attractive and highly reliable.

BT employs over 1100 people in Australia across 22 locations. Its manufacturing hub is headquartered in Victoria, with established maintenance facilities in Melbourne, Perth, Brisbane, Gold Coast and Adelaide.

We wish to congratulate Bombardier Transportation on their nomination and selection as one of 2016's Best Managed Firms with the Supply Chain and Transportation Industry.

Worthington Transport is a division of Worthington Industries, a leading supplier of composite panel solutions to the rail industry for over 35 years. As a long term supply partner to Bombardier Transportation and other rail primes in Australia, our product capabilities extend to flooring assemblies, ceiling assemblies, partition walls, interior and exterior doors, sidewalls, tables, luggage racks and seating. Current support to Bombardier Transportation includes composite flooring and ceiling assemblies for Melbourne's new E Class Trams, and the flooring assembly for Vlocity cars.

Our team of leading engineers and business support personnel work with customers to optimise existing products, customised to specific customer needs, or to design and develop new products best suited to the application. Our extensive range of manufacturing process and our network of specialist subcontractors enable us to supply integrated products including fully machined composite panels, metal components, visual surface finishes, and technical modules (for example, driver seat mechanisms). An Integrated Management System is a key foundation which supports our risk management and continuous improvement philosophy.

The Dandenong manufacturing plant alone covers 41 acres, with 28,000 sq. metres under roof and direct access to the rail network, as well as a one kilometre light rail vehicle (LRV) test track. Bombardier's Centre of Excellence for Industrial Design and Engineering is based in both Brisbane and Melbourne, for customizing rail solutions to suit local requirements.

At 27 years old, Loulou Hammad, Communications and Marketing Lead for BT Australia, is one of the youngest people on the Bombardier team, but her knowledge of the brand, and passion for promoting its value, is exemplary. We spoke with Hammad in-depth about the company's long-time presence in Australia, and its positive effect on local economies across the nation.

"We are 'local' in every sense of the word," Hammad noted. "Our industrial design, engineering, manufacturing, maintenance and rail signalling teams are all based in Australia, allowing us to maintain the highest level of local content across the majority of our projects."

## Delivering Mobility Across Australia

A number of exclusive BT rollingstock projects are on the go across the country, such as the VLocity diesel multiple units for V/Line, and Melbourne FLEXITY 'E-Class' trams for Yarra Trams, both designed, manufactured

MANUFACTURERS OF COMPOSITE  
PANEL SOLUTIONS

**PROUDLY SUPPLYING TO BOMBARDIER TRANSPORTATION**

Our manufacturing capabilities coupled with our specialized team of engineers enable us to provide you with customised panel solutions and fully built-up modules for your application.



**WIDE RANGE OF PRODUCT CAPABILITIES INCLUDING:**

- Flooring Assemblies
- Ceiling Assemblies
- Luggage Racks
- Partition Walls
- Other Customised Solutions
- Interior and Exterior Doors
- Interior Sidewalls
- Seating (curved plywood)
- Tables

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and maintained in Victoria. In the north, the Queensland New Generation Rollingstock (QNGR) project is currently in development, with the first of 75 x six-car electrical multiple unit (EMU) trains preparing for dynamic tests at the Wulkuraka maintenance facility in Ipswich, Brisbane, before introduction into passenger service later in the year. Stage Two of the Gold Coast Light Rail Transit system is currently under construction, which sees Bombardier providing additional light rail vehicles, bringing the total fleet to 18 trams in time for the 2018 Commonwealth Games.

“Our award-winning Gold Coast LRVs are the only trams in the world

to be fitted with surfboard racks!” said Hammad. “Local design and engineering capabilities allow us to keep in touch with local environments and customize our vehicles to suit state or city needs. Gold Coast commuters now have a place to stow their boards and they love it. We’re very proud of that unique addition.”

In South Australia, Bombardier built and now maintains the Adelaide A-City EMU trains. While in Western Australia, Perth’s A & B Series electric trains are built and maintained in Joint Venture with Downer EDI.



## Good Design Award for Adelaide A-City EMU

BT was recently honored at the 2015 Australian International Design Awards Gala Night for its Adelaide A-City EMU train. Following the accolades of the Gold Coast Tram and Melbourne FLEXITY tram in previous years, the Adelaide EMU was presented the Good Design Award in the category of Automotive and Transport Design.

The Good Design Awards represent excellence in innovation and cutting edge design from Australia and around the globe. It is Australia's longest standing design awards program, dating back to 1958 and recognised by the International Council of Societies of Industrial Design (ICSID).

“This is a great achievement for the entire Adelaide team, who all worked tirelessly on the project to design and deliver these attractive vehicles,” said Brett Davidson, Industrial Design and Human Factors Manager APA.



## Supply Chain Advice: Shop Local

Bombardier has built strong partnerships with more than 600 suppliers in Victoria, and 1,500 Australia wide who support their national business operations. “After 60 years of continued growth, Bombardier truly understands the Australian market and has established local industry partnerships to ensure we have another 60 successful years ahead,” Hammad stated.

The local supply chain plays a significant role in Bombardier's success through the added value of local content, increased employment



opportunities and partnerships with local industry. BT has a reputation in Australia for maintaining 50%+ local content mandates across the majority of its projects. This includes the VLocity diesel multiple unit trains, Melbourne *FLEXITY* E-class trams and Adelaide electric trams built in Victoria and exported to South Australia. All of these projects were designed, built and will continue to be maintained locally by Bombardier.

The 'shop local' theme is becoming a requirement in Victoria, with customers and government placing heavier focus on local manufacturing to stimulate economic and industry growth. Unlike the automotive sector's history of

getting it wrong: work went offshore, it became cheaper to build overseas, and local industry eventually collapsed because there were no mandates for local manufacturing. Bombardier, on the other hand, truly values the local supply chain and integrates them in day-to-day business; offering in-house training such as welding programs at the Bombardier Welding School, where suppliers can train their staff for recertification.

## **Employer of Choice**

Bombardier is known for its highly supportive work environment and commitment to staff career development, skill enhancement and



ongoing training. “Noble” offerings include apprenticeships and work experience, as well as regular manufacturing site tours for students interested in careers in manufacturing, engineering, industrial design and other aspects of the rail industry. “We like to reach out to young people in the community,” Hammad explained, “let them experience working side-by-side with our electricians, welders, boilermakers – a “try before you buy” experience – so they are better informed when it’s time to make career decisions. We see it as our responsibility to give the next generation this opportunity.”

In-house training for employees is run by the departments themselves

(i.e. Finance, Project Management, Communications, Quality and Methods, etc). There is also a mentoring program for skill development, and a wellbeing program run by Human Resources that is open to all staff and promotes a healthy work/life balance. Planned social activities throughout the year encourage interaction among staff from different departments, strengthening teamwork and collaboration.

## Developing Sustainable Mobility

Sustainability is a key issue when it comes to energy consumption in the transportation industry. This is





why BT developed ECO4; a cutting-edge portfolio of 15 energy-saving solutions for modern rail technology and fleet management. ECO4's four cornerstones are energy, efficiency, ecology and economy. Reducing energy consumption lowers operating costs and minimizes impact on the environment. Implementing the ECO4 solutions can create overall energy savings of up to 50 percent.

One of their most fascinating eco-active technologies is the **BOMBARDIER MITRAC** Energy Saver. According to Hammad, "When a train brakes, energy is released and that energy will be lost unless it can be stored in some way. **MITRAC**

Energy Saver has an innovative double layer of ultra-capacitors to store the energy released from braking, and allow that energy to be reused during operation. This technology can be used as a performance booster by adding extra power during acceleration. On diesel trains, the technology helps reduce emissions, as well as costs."

Bombardier is always looking for new ways to support a sustainable future. This means using lean manufacturing techniques to reduce waste from production processes, reducing the energy used by trains when they are in operation, and increased use of recyclable materials. Even in



their offices, careful management of energy consumption and waste reduction (paper, cardboard and glass) are priorities. Hammad stressed, “These are just a few of the initiatives designed to leave future generations with an environment primarily unspoiled by our industrial activities and products.”

## Future Direction

Bombardier

Transportation

anticipates growth in Australia over the coming years. The nation’s market for rail projects is healthy, and Bombardier is working with customers and the government to see it continues. Understanding the fundamental needs of their customers and the industry at large, and keeping abreast of technology innovations, enables BT to adapt its mobility solutions for present and future needs. Much is being done in new generation technology for



local market, and deliver custom products and services that meet and exceed the needs of our customers. For us, it's all about 'what's next'."

Bombardier Transportation's business is project-based and cyclical, making it essential to have a highly skilled workforce and a long-term pipeline of work to sustain and grow rail manufacturing and public transport capabilities to meet the changing needs of society. Being recognised as a local partner of choice is taken very seriously. "It's an exciting time for everyone," Hammad said. "We are setting ourselves up for the long haul; making sure our supply chain and industry partners are in a strong position to take the journey with us and ultimately grow, themselves. Our job, our responsibility, is to add value to the Australian economy as a global rail technology leader, and that's definitely where the future's headed for us."

rollingstocks – always with the next, higher level of safety at the forefront.

"We take pride in providing integrated solutions for mobility, driving innovation, and being a long-term partner of choice for Australia," Hammad said. "Our rail solutions create substantial benefits for operators, passengers, societies and the environment. We combine decades of global best practice with our in-depth understanding of the

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