

# Rail Manufacturing in Victoria

## Summary of key points

- Approximately 1000 people are employed directly by the major rail rolling stock manufacturers in Victoria and another 5,000 to 10,000 employed in their supply chain.
- Rail rolling stock manufacturing is directly influenced by State Government procurement policy and purchasing decisions. Victorian Government local content rules are weak compared to interstate and international examples. In recent years, the New South Wales and Victorian Governments have collectively awarded \$3.8 billion worth of contracts to overseas manufacturers.
- The Victorian Transport Plan commits to \$3.6 billion in new investment in rail rolling stock over 4 years. Manufacturing 50 % of these new vehicles in Victoria would create 2,250 full-time jobs directly and another 5,400 – 6,300 full-time jobs indirectly in the supply chain.
- A strong rail manufacturing sector could provide thousands of jobs for retrenched automotive workers as long as the training system was made more flexible and relevant to industry needs.
- Ongoing investment in local manufacturing would ensure the continued existence of a skilled workforce and provide a solid platform for expanded export opportunities. Once local manufacturing capacity is allowed to erode it is difficult, if not impossible to regain.

## Introduction

Victoria is facing the twin challenges of climate change and the global financial crisis. Already the economic downturn has cost thousands of Victorian jobs, many in the manufacturing sector and expectations are for unemployment to rise further in the coming year. At the same time, the impacts of climate change and peak oil will be felt most by low income and disadvantaged Victorians, particularly those living on the outskirts of our cities. People living in poor quality housing in areas badly served by public transport have few options for protecting themselves from the impacts of rising prices for essential services such as fuel, energy and water.

However, carefully targeted investment and regulatory measures can help turn these challenges into opportunities. One consequence of increased community concern about climate change coupled with rising fuel prices, has been a rapid increase in the demand for public transport in Melbourne. Increased Government investment in rail rolling stock to meet demand has the potential to create thousands of jobs in Victoria's manufacturing sector, and provide a solid platform for expanded export opportunities.

## Key manufacturers in Victoria

Victoria's history of rail (train and tram) manufacturing goes back more than a century, during which time the vast majority of rolling stock has been manufactured locally. In 1999, the Victorian Government awarded a number of franchises following the privatisation of Victoria's public transport network. Included in the franchise conditions was a requirement to purchase new rolling stock (trains and trams). Between 1999 and 2002, orders were placed with Alstom France for 174 *X'Trapolis* railcars and 31 *Citadis* trams, Siemens Germany for 216 Metro railcars and 59 Combino trams, and Bombardier for 76 *VLocity* railcars for VLine's regional passenger

network.<sup>1</sup> All of these trains were wholly manufactured overseas except for the Bombardier *VLocity* which was manufactured in Dandenong.

When the Bracks government came to power, it successfully negotiated for around \$300 million worth of work associated with these existing contracts to be undertaken in Victoria. However, a subsequent ‘top up’ order for an additional 108 *X’Trapolis* railcars from Alstom were fully imported. Melbourne has one of the world’s largest tram networks and yet Victoria currently has no tram manufacturing capacity at all. Trams were last built in Victoria 25 years ago by Comeng, which at its peak employed 400-500 people and trained hundreds of apprentices at its site in Dandenong.

### **Bombardier Transportation**

Canadian company Bombardier Incorporated operates under two manufacturing arms: Bombardier Aerospace and Bombardier Transportation. Bombardier Transportation (BT) is the world’s largest manufacturer of passenger rail rolling stock, with market-share in excess of 20%. More than 63 % of BT’s business comes through the manufacture of train rolling stock. Bombardier Transportation is the world’s number one supplier of Light Rail Vehicles (Trams), Metros, Regional and Commuter trains, Electric Locomotives and fleet maintenance services.

BT operates 45 production sites in 22 countries, employing approximately 30,000 people worldwide. In the year ending 31 January 2008, BT earned revenue of nearly \$US 7.8 billion, of which \$257 million was earned in the Asia-Pacific region.<sup>2</sup>

Within Australia, Bombardier Transportation is involved in the design, manufacture and fleet maintenance of passenger rolling stock. They have manufacturing facilities in Dandenong, Victoria and Maryborough, Queensland as well as (mainly) fleet maintenance sites in South Australia, Western Australia, New South Wales and Queensland. Approximately half of BT’s Australian staff are located in Victoria, the site of its regional headquarters.

#### **Bombardier in Australia**

<b>Location</b>	<b>Type of work</b>	<b>Employed</b>
Dandenong	Manufacture of <i>VLocity</i> DMUs for VLine	130
West Melbourne	Maintenance of <i>VLocity</i> Diesel fleet	13
Maryborough, Qld	Manufacturing	140
Western Australia	Maintenance of B Series EMU fleet with Downer EDI Rail for WA PTA	
Adelaide	Maintenance of TransAdelaide diesel fleet	
Pymont, NSW	Tram maintenance for Metro Transport, Sydney	
Milton, Qld	Design and project management	

Bombardier Transportation completed a contract with VLine to design and manufacture 76 *VLocity* railcars for its passenger services to regional Victoria. These trains are now in service. In addition to the original order, follow-on orders for 22 *VLocity* railcars are in progress and most recently the Government announced an order for a further 32 railcars delivered as two- and three-car sets. These are all to be built at the company’s Dandenong workshops.

Bombardier Transport also has completed several interstate contracts including:

- 93- *Itino* commuter railcars in a joint venture with EDI Rail for the Public Transport Authority in Western Australia. A further order for 15 similar units is now in production;
- 132 passenger railcars for Queensland Rail. A further order for 20 similar trains is now in early production status.

### **United Group Limited / Alstom Australia and New Zealand**

The French company Alstom Group operates two business arms in power generation and rail transport and employs 65,000 people in 70 countries worldwide. Alstom Transport controls 18 % of the worldwide railway market and achieved sales of more than 5.5 billion Euros (A\$10.6 billion) in the year ending March 2008.<sup>3</sup>

In 2005, Alstom’s Australia and New Zealand transport operations were acquired by Australian-based engineering and property services company United Group Limited (UGL). In Australia, UGL Rail operates rail infrastructure and rolling stock manufacture and maintenance interests serving the passenger and freight markets. UGL has an alliance with Alstom Transport for the fit-out of new rolling stock. UGL Rail is one of four UGL divisions. The others are UGL Infrastructure, UGL Resources and UGL Services.

In February 2009, the Victorian Government added an additional 120 *X’Trapolis* railcars to an existing order for 108, bringing the total order to 228 passenger railcars. The delivery of the new trains is set to begin in the last quarter of 2010.<sup>4</sup> The original 108 trains will be manufactured in Poland and fitted out in Italy. The additional 120 passenger cars will be manufactured in Poland, one 6-car train fitted out in Italy, and the balance then shipped to Australia for fit-out in UGL Rail’s Ballarat workshops.

#### **UGL Rail in Victoria**

<b>Company name</b>	<b>Type of work</b>	<b>Locations</b>	<b>Employed</b>
Regional Fleet Maintenance	Passenger and freight fleet fit-out and maintenance	Ballarat, Spotswood, Preston	250
Mainco (70% share)	Infrastructure (tracks, stations) maintenance	Burnley, Flinders St, depots around Melbourne	500
UMTL	Rolling stock maintenance	Epping, Bayswater	

### **Supply chain manufacturers**

Approximately 1000 people are employed directly by the major rail rolling stock manufacturers in Victoria and another 5,000 to 10,000 employed in their supply chain.

Around 100 small to medium sized businesses in Victoria provide goods and services as diverse as air conditioning, aluminium and glass products, cabling, rail carriage interiors and train management systems to the major rail manufacturers. These SMEs employ between 50 and 100 people each.<sup>A</sup>

ARM Group is a consortium of four local manufacturing companies based in Dandenong, supplying equipment and components to Bombardier. Collectively, the consortium employs 250

<sup>A</sup> Many of these suppliers also supply the automotive industry

people and has attracted \$30 million worth of work as a direct result of the contract to manufacture the *VLocity* train.

### Jobs and skills required

The rail sector in Australia encompasses a diverse range of players including rail operators, track owners and managers, and manufacturers of rolling stock and components.

In Victoria, around 80 % of the rolling stock manufacturing workforce is made up mechanical fitters and electricians, with the balance comprising mechanical and electrical engineers and administrative staff.

The rail workforce is ageing. The rail industry estimates it will need to access up to 85 engineers and 175 trades-people in Victoria every year for the next five years to meet demand and cover retirements.<sup>5</sup> However, a lack of skilled

workers available for supervision can be a barrier to training greater numbers of apprentices, thus setting up a vicious cycle of chronic worker shortages.

Engineers	<ul style="list-style-type: none"> <li>• Electrical and signaling engineers</li> <li>• Mechanical engineers</li> <li>• Civil engineers</li> <li>• Project managers</li> </ul>
Trades or Trade Equivalents	<ul style="list-style-type: none"> <li>• Electricians</li> <li>• Signalling</li> <li>• Civil/Perway</li> <li>• Mechanical</li> </ul>
Operations	<ul style="list-style-type: none"> <li>• Drivers</li> <li>• Train / Network Controllers or Operators</li> <li>• Network Planners</li> <li>• Transit Officers</li> </ul>
Professionals	<ul style="list-style-type: none"> <li>• Surveyors</li> <li>• Commercial Contract Managers</li> </ul>

### Prospects and growth opportunities for the industry

The global financial crisis is having a severe impact on Australian manufacturing, and these impacts are being most acutely felt in Victoria, the traditional home of manufacturing in Australia. In recent years, the New South Wales and Victorian governments have collectively ordered more than \$3.8 billion worth of rail rolling stock to be manufactured overseas. This is equivalent to total annual national sales for Toyota, Holden and Ford combined. The car industry employs around 15,000 people and another 30,000 in its supply chain, and receives millions of dollars in government assistance.

Given that rail manufacturing is less automated than car-making and so has the potential to employ more people, it is clear that had this \$3.8 billion of government investment stayed in Australia, it could have generated tens of thousands of jobs.

Melbourne currently has 96, 35 year-old *Comeng* trains which are nearing the end of their life, and 400 trams which do not comply with disability access requirements that will need to be replaced over time.

The Victorian Government's recent Transport Plan commits to \$3.6 billion of investment in new train and tram purchases over the next 4 years.<sup>6</sup> Ensuring that at least 50 % of this new rolling

stock was manufactured within Victoria<sup>7</sup> would create up to 2,250 full-time jobs directly and 5,400 - 6,300 full-time jobs indirectly in the supply chain.<sup>8</sup>

Industry figures point to the “outstanding success” of Bombardier’s *VLocity* train built at Dandenong which has a local content level of over 70 %, as evidence that Victoria’s manufacturing sector is capable of meeting Victoria’s future transport needs.<sup>9</sup>

If the Victorian Government made a long-term commitment to acquiring 40 new trams each year for the next 10 years, it would:

- increase annual output of Victorian manufacturing by \$120 million per year;
- generate a further \$87 million in supply chain activities per year; and
- provide direct employment of 150 full time employees for a period of 10 years, and an additional 450 employees in the supply chain;
- create direct value adding of \$605 million over the life of the contract.<sup>10</sup>

However, realizing these economic and employment benefits depends on government making a commitment to local manufacturing, as well as taking a more strategic approach to planning for future investment. A viable local manufacturing capacity requires a certain level of continuity in work in order to maintain a skilled workforce and support investment in new plant and equipment. Manufacturing in Victoria has steadily declined in recent decades from around 35% of GDP in the 1980s to 12% now. This compares with China >70%, India >60%, Germany 54%, France ~40%, UK ~24% and dropping, Turkey 16%, Bangladesh 8%.<sup>11</sup> Once manufacturing capacity and skilled workers are lost, it is difficult for local manufacturers to bid for new work and commit to timely delivery, thus reinforcing the trend of contracts moving off-shore.

The 3 years of continuous work created by the original order for 76 *VLocity* cars manufactured in Dandenong generated \$22 million in income for the ARM Group consortium of suppliers, at least \$3 million in plant and equipment purchases and full-time work for at least 70 people. In contrast, the subsequent intermittent small orders of 14, 8 and finally 32 cars have led to gaps in orders and work for suppliers, leading to retrenchments and the loss of skilled workers.<sup>12</sup>

The continuity created by large orders also allows companies to take on the extra training and supervision commitments associated with unskilled and disadvantaged job-seekers. For example, Acto-Pickering Metal Industries employs 6-9 physically and intellectually disabled workers (10-15 % of its workforce) at any one time. The work associated with the *VLocity* contract allowed the ARM Group as a whole to employ 76 unskilled job-seekers, many of whom have since moved on to other work.<sup>13</sup>

The maintenance of a strong manufacturing capacity in Victoria has benefits not only for local

#### **Export success**

Melbourne-based company *Innovonics* supplies digital video recording products to European rail manufacturers and currently has security systems installed on trains in London and Madrid, as well as Melbourne.

As of 2005 when it won an ICN Industry Achievement Award, *Innovonics* had exported over \$2 million worth of product and had won \$10 million worth of new contracts in Europe. *Innovonics* uses mainly local Victorian companies to manufacture its products, and employs 60 staff.

*Source:* [www.icnvic.org.au](http://www.icnvic.org.au)

jobs, but also for export earnings. With the assistance of the Department of Innovation, Industry and Regional Development and the Industry Capability Network, Victorian manufacturing firms supplying rolling stock manufacturers such as Alstom and Bombardier here in Victoria, have been successful in supplying components for these companies' other contracts in Europe (see box).

## Policy measures that would drive this growth

Since 2001, all Victorian Government departments have been required to apply the Victorian Industry Participation Policy to all projects over \$3 million in metropolitan Melbourne and over \$1 million in regional Victoria. All shortlisted bidders are required to prepare a VIPP Statement that addresses:

- level of local content;
- the number of new jobs created; and
- possible skills and technology transfer.<sup>14</sup>

In 2008 the policy was enhanced in the Victorian Manufacturing Statement (VIMS) by the inclusion of a requirement that major projects with whole-of-life costs in excess of \$250 million that are declared of strategic significance to the Victorian economy, will be subject to additional local content requirements. The purchase of rail rolling stock has been identified as a key area of strategic importance. The strategy commits the Government to aiming to achieve 40 % local content on a whole-of-life basis for train purchases, including initial capital costs, maintenance and any related training.<sup>15</sup>

However, for every \$1 spent on purchase, another \$2 is spent during the life of the vehicle on maintenance.<sup>16</sup> Given that the majority of maintenance is conducted locally, it is therefore relatively easy to satisfy the 40 % 'whole of life' requirement, even if the vehicle is manufactured overseas.

The lack of a specific local content requirement relating to manufacturing (versus maintenance), makes the Victorian regulations weaker than examples interstate and overseas. Recent rolling stock manufacturing contracts in Western Australia mandated a 10% local content with 30% of the contract value in counter-trade opportunities. Internationally, the United States mandates a minimum 60% local content requirement for rolling stock, the European Union 50%, China 70% and Canada 25%.<sup>17</sup>

Victorian local content rules should be strengthened to require 50% local content in manufacturing and 95% in maintenance. Because it generally costs less to maintain locally-made vehicles (because they are designed for local conditions and are less reliant on imported parts),<sup>18</sup> and local manufacturing generates significant downstream employment and economic

### United States local content rules

The US Federal Government's 'Buy America Act' requires public transport contracts using Federal funds to have 60% of components from US and final assembly done entirely in US. This has meant that Bombardier – a French-Canadian company based just over the border in Montreal – has had to set up a manufacturing plant in New York State in order to win US contracts.

In addition, US businesses defined as 'Disadvantaged Business Enterprises' are entitled to a 20% price premium when bidding for contracts.

*Source: AiG (2008)*

benefits, it is also reasonable for local bids to be eligible for a price premium on overseas companies.<sup>19</sup>

Victoria is proposing that the next meeting of the Council of Australian Governments (COAG) agree to undertake a national assessment of rail rolling stock and estimate future needs across the country. This would allow for a more organized process of ordering rolling stock on a national basis so as to maintain a continuous supply of work to both manufacturers and suppliers. In particular, establishing consistent specifications for fit-out components (such as air conditioning or seats) across state boundaries would create a significantly more stable investment and employment environment for a wide range of small to medium size component manufacturing firms across Australia.

## **Training and workforce skills implications**

Victoria's rail manufacturing industry is operating within a very uncertain and unpredictable market environment because of a lack of forward planning in infrastructure investment by Government, and inconsistent application of local content rules. This unpredictability creates a fluctuating demand for workers and the loss of skilled trades-people when work dries up.

Rail manufacturing is a specialized field where workers with existing engineering or trades qualifications typically require significant additional training which can cost in excess of \$20,000 per worker.<sup>20</sup> In the absence of ongoing work, companies risk losing skilled staff and the investment they have made in them, only to have to incur those costs again every time work is generated by a new contract.

As noted earlier, the rail industry is predicting significant skills shortages in the next five years. Because employment in this industry is generated by government investment in new rolling stock, these estimates are less likely to be significantly affected by the global economic downturn.

There is potential for workers affected by the economic crisis such as redundant automotive manufacturing workers and Victorians returning from interstate mining areas to transfer to the rail manufacturing industry. However, Victoria's training system is relatively inflexible and geared towards training unskilled workers, rather than 'upskilling' existing workers. In a specialized field such as rail manufacturing, this means the considerable cost of worker training is borne by individual companies.

The industry has recently outlined a strategy for tackling skills and labour shortages in the rail industry. Its recommendations address areas such as:

- the need for an industry culture change;
- attracting and retaining experienced staff;
- building new employment and training pathways; and
- collecting valid workforce planning information.<sup>21</sup>

## Links and further references

ARM Group Australia, [www.armgroup.com.au](http://www.armgroup.com.au)

Australian Rail Association (ARA), [www.ara.net.au](http://www.ara.net.au)

Australian Rail Industry Corporation (ARIC), [www.aric.net.au](http://www.aric.net.au)

Australian Rail Industry Network (ARIN), [www.railnetwork.com.au](http://www.railnetwork.com.au)

Industry Capability Network, [www.icnvc.org.au](http://www.icnvc.org.au)

Victorian Industry Participation Policy, [www.vgpb.vic.gov.au](http://www.vgpb.vic.gov.au)

Victorian Transport Plan, [www.transport.vic.gov.au](http://www.transport.vic.gov.au)

## References

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<sup>1</sup> Australian Government, Melbourne Trains and Trams Case Study at <http://www.innovation.gov.au>; and Industry sources

<sup>2</sup> Bombardier (2008) *Annual Report*, Year ended January 31 2008,

<sup>3</sup> *Results 07-08*, p. 53 at [www.alstom.com](http://www.alstom.com)

<sup>4</sup> [www.au.alstom.com/home](http://www.au.alstom.com/home)

<sup>5</sup> Derived from national figures published in ARA (2008) *A Rail Revolution*, assuming Victoria accounts for 25% of national activity. As the rail manufacturing sector in Australia has been largely driven by government policy and investment at a state level, it is reasonable to assume that (unlike other forms of manufacturing) the workforce is relatively evenly spread across the country.

<sup>6</sup> *Victorian Transport Plan – Overview*, p. 22, Victorian Government, [www.transport.vic.gov.au](http://www.transport.vic.gov.au)

<sup>7</sup> Recent government studies have shown ample capacity exists to manufacture at least 50 % of this new rolling stock within Victoria. *Source*: AiG (2008)

<sup>8</sup> Assuming every \$1 million of investment creates approximately 5 direct and 12-14 indirect jobs, and annual investment of \$450 million (50 % of \$3.6 billion over 4 years). *State Government sources*

<sup>9</sup> AiG (2008), *Ai Group submission on the development of A New Victorian Industry and Manufacturing Strategy*, Australian Industry Group, August 2008 and “Rail Industry Spooked by International Suppliers”, *The Age*, 19 February 2007

<sup>10</sup> *Victorian Tram Rail Manufacturing Strategy, Mark II*, Victorian Government 2002

<sup>11</sup> Industry sources

<sup>12</sup> Jill Walsh, ARM Group consortium, *pers. comm.* March 2009

<sup>13</sup> Jill Walsh, ARM Group consortium, *pers. comm.* March 2009

<sup>14</sup> *Procurement and Local Industry Participation (Victorian Industry Participation Policy – VIPP)*, [www.vgpb.vic.gov.au](http://www.vgpb.vic.gov.au)

<sup>15</sup> *Building Our Industries for the Future: Action Plans for Victorian Industry and Manufacturing*, Victorian Government 2008

<sup>16</sup> State Government sources

<sup>17</sup> AiG (2008), *Ai Group submission on the development of A New Victorian Industry and Manufacturing Strategy*, Australian Industry Group, August 2008

<sup>18</sup> The Bombardier *VLocity* passenger train which has been designed and manufactured to suit local conditions has been benchmarked as the most reliable DMU (diesel multiple unit) in the world. Jill Walsh, ARM Group, *pers. comm.* March 2009

<sup>19</sup> Australian Workers Union and Australian Manufacturing Workers Union are calling for a 20% price premium, meaning that local bids up to 20% more costly than an equivalent overseas bid would be treated

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equally. *Source:* J. Dowling and B. Schneiders (2008) “Unions and business want trains to be built here”, *The Age*, 15 September 2008

<sup>20</sup> A Certificate 8 welder requires (on top of existing welding qualification) 3 years of training at 4 hours/week, 38 weeks/year at a cost of \$45/hour. Jill Walsh, ARM Group, *pers.comm.* March 2009

<sup>21</sup> ARA (2008) *A Rail Revolution: Future Capability Identification and Skills Development for the Australasian Rail Industry*, Australasian Railway Association