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**Review of Victorian Industry Participation Policy
DEDJTR Discussion Paper
Submission**

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Executive Summary - Leveraging Government Procurement for greater innovation

The Victorian Government Industry Participation Policy in its current form is already providing a significant boost to the rail industry and therefore the state economy with its strong commitment to employment.

However, in its current form, the VIPP omits any consideration of the significant economic benefits that could be derived by requiring a commitment to innovation from businesses tendering for government contracts.

RMCRRC notes that the DEDJTR *Strategic Plan 2015* includes innovation policy as one of the key policy levers to secure investment and support sustained employment and economic growth in Victoria.

The Victorian Government has clearly demonstrated a strong commitment to innovation through the recent creation and funding of *LaunchVic*, which will support innovative new businesses to establish themselves.

The innovation challenge in public policy settings applies equally to existing, traditional industry sectors like rail. While traditional businesses do not have the cache of a start-up, they nevertheless have a proven track record and strong future prospects.

In addition, rail manufacturing is an industry sector in which the Victorian Government is a leading purchaser, with more than \$2.2 billion in infrastructure investment in rail already identified.

RMCRRC therefore submits that the Victorian Government Industry Participation Policy could be strengthened by including a commitment to a level of R&D investment and innovation in the contracts with the successful bidders.

By seeking a commitment to innovation in government procurement, the Victorian Government would be ensuring that those businesses who are directly benefitting from government procurement policies were reciprocating this benefit by contributing to the long-term viability of their industry through greater investment in R&D.

Introduction

Since its inception in 2014, Rail Manufacturing CRC has worked intensively with rail manufacturing businesses in Victoria and other states to identify how to bring the benefits of R&D, innovation and new technology into the sector.

The rail industry is acknowledged as being conservative and consequently in many instances is cautious in adapting to change and implementing new innovation. To ensure the rail industry continues to grow and remain viable this conservatism needs to be addressed by policies that promote and encourage innovation.

There is no doubt that with policy challenges such as increased urbanisation and the need to transition to more efficient means of transport, that rail is a key part of the solution to Australia's future challenges.

Given this, it would be optimal if the future rail industry included strong Australian businesses, able to compete with global players in meeting the needs of the Australian industry as well as taking advantage of expanding export markets in the Asia-Pacific region.

RMCRC agrees with the DEDJTR Discussion Paper that government procurement can play a strategic role in technological development, job creation and the development of SMEs.

RMCRC is particularly interested in how government procurement can be used to encourage greater innovation and the adoption of new technology in the rail manufacturing sector.

RMCRC believes that government procurement in the rail manufacturing sector should be used to encourage greater innovation through the application of new technologies and the adoption of the principles of advanced manufacturing.

The observations in this submission derive from this experience.

About Rail Manufacturing CRC

Rail Manufacturing CRC has been funded by the Australian Government Department of Industry, Innovation and Science through the Cooperative Research Centres (CRC) Programme to operate for 6 years from 1 July 2014 onwards. The CRC program supports industry-driven research partnerships between publicly funded researchers, business and the community to address major long term challenges.

The objective of the CRC Programme is to foster links between leading research experts and industry to benefit business outcomes, efficiency and productivity. The CRC programme is one of a number of federal government programs that support increased innovation in Australian industry.

Essential Participants in RMCRC include Australia's leading rail manufacturers such as Bombardier Transportation, OneSteel, Downer and Faiveley Transport, as well as a number of SMEs contributing to the sector.

The formation of Rail Manufacturing CRC arose out of a detailed consultation process within the rail industry sector, the findings of which are set out in the subsequent report, *On Track to 2040 – Preparing the Australian Rail Supply Industry for Challenges and Growth*, a project to map the future needs of the rail manufacturing sector in Australia, launched in 2012.¹

On Track to 2040 was commissioned by the former Department of Innovation Industry Science and Research (DIISR), through the Rail Supplier Advocate. The project was funded by the Commonwealth government; the state governments of New South Wales, Victoria and Queensland; and the Australasian Railways Association (ARA) on behalf of industry.

On Track to 2040 identified 80 opportunities for technological development in the rail manufacturing sector. That list was then organised into broad themes and ranked into priorities by the industry. RMCRC's three strategic research themes which are informed by this priority list are Power and Propulsion; Materials and Manufacturing; and Design, Modelling and Simulation.

RMCRC is actively pursuing the industry priorities as identified in the Roadmap by adopting the priorities set out in *On Track to 2040* as a means to guide strategic investment in the industry and support knowledge transfer across industry and science-based disciplines.

¹ Department of Industry, Innovation & Science, "On Track to 2040 – Preparing the Australian Rail Supply Industry for Challenges and Growth", 2012, downloaded at <http://industry.gov.au/industry/IndustryInitiatives/AustralianIndustryParticipation/SupplierAdvocates/Documents/OnTrackTo2040-Roadmap.pdf>

RAIL MANUFACTURING CRC'S STRATEGIC RESEARCH THEMES		
Power and Propulsion	Materials and Manufacturing	Design, Modelling and Simulation
Research aim: energy and cost efficiency and improved competitive performance in advanced rail manufacturing through research, development and commercialisation in: <ul style="list-style-type: none"> •Energy Regeneration and Storage •Advanced Braking Systems •Electronic Motors and Systems 	Research aim: competitive cost, durability and performance in advanced rail manufacturing through research and commercialisation in: <ul style="list-style-type: none"> •High performance materials for heavy haul •Advanced Manufacturing •Advanced, lightweight materials •Low Cost Manufacturing Systems 	Research aim: safety and efficiency in advanced rail manufacturing to enhance industry competitiveness through research and commercialisation in: <ul style="list-style-type: none"> •Advanced Design and Simulation •Automated Health Monitoring •Advanced Data Analysis and Information Systems •Advanced Operations Management Systems •Energy Use Management Tools

The rail industry has identified the specific areas where innovation and greater R&D input is needed in order to secure the economic sustainability of the rail manufacturing sector.

With the priorities established and the inception of a body such as RMCRC to help put this into effect, in RMCRC's view, the challenge still remains as to how to effectively drive the adoption of innovation and R&D into rail businesses.

Scope of submission

RMCRC notes that a large proportion of Victorian infrastructure investment will be made in the rail manufacturing sector with \$1.3 billion for new high capacity metropolitan trains, \$274 million for new E-Class trams, \$257 million for new VLocity regional carriages, \$220 million for the Murray Basin Rail Project, \$90 million for new X'Trapolis trains and \$75 million allocated to existing Comeng trains.

Given the significance of the Victorian investment in rail and rail-related infrastructure and the public policy objective – shared by RMCRC – of supporting the Australian rail manufacturing sector, RMCRC is pleased to have this opportunity to contribute to the review of the Victorian Government Industry Participation Policy and in particular, make some observations as to how government procurement policy can deliver the best outcomes for taxpayers and rail businesses.

Currently, Australian rail manufacturing businesses benefit from the objectives of the Victorian Industry Participation Policy (VIPPP) and the policy of 50 per cent local content in new rolling stock orders. RMCRC acknowledges the enormous benefit to the rail manufacturing sector as a result of this local content policy which provides a baseline of security to the industry that fosters capital investment.

As was noted at the recent AusRAIL conference held in Melbourne by the Australasian Railway Association, most G20 countries have a similar policy because of the broader economic benefits derived from a strong industry base. It was also noted that a policy such as this should not be a licence not to be competitive and that the value (not just cost) provided to the government purchaser should at least match the offering from a global competitor, thereby encouraging local companies to innovate.

In contributing to the DEDJTR Discussion Paper, RMCRC is particularly focused on how government spending on infrastructure can be used to encourage the adoption of new technology in the rail manufacturing sector and to drive increased innovation.

RMCRC also notes the support of the Australian and Victorian governments for advanced manufacturing through programmes like the Next Generation Manufacturing Investment Programme, which recently awarded \$3.2 million to Bombardier Transportation to support the installation of assembly lines for robotic welding. In addition, the grant of \$3.312 million through the Geelong Region Innovation and Investment Fund to Air Radiators Pty Ltd, will also significantly benefit the rail manufacturing sector.

RMCRC agrees with the DEDJTR Discussion Paper that government procurement can play a strategic role in technological development, job creation and the development of SMEs.

RMCRC believes that government procurement in the rail manufacturing sector can also be leveraged to encourage innovation through the adoption of new technologies and the principles of advanced manufacturing.

Innovation in Australian Businesses

It is widely recognised that Australian businesses have a low level of adoption of R&D and innovation. For example, the *2015 Global Innovation Index* ranked Australia 17th out of 141 economies for innovation capabilities and performance but only 72 for innovation efficiency.

The latest *Australian Innovation System Report* of the Australian Government Office of Chief Economist found that Australian businesses of all sizes do poorly on new to market innovation and that our large businesses rank only 21st in the OECD for innovation.

In addition, the *OECD Science, Technology and Industry Scoreboard 2013* found that Australia ranked the lowest in the OECD for collaboration on innovation with public research institutions.²

Analysis like this consistently identifies that there is a significant gap between the world class innovation that is taking place in Australia's research institutions and the transfer of that knowledge and research to business. This is a key public policy challenge that requires a multi-channel approach to address.

The benefits of innovation to business are clearly articulated in the *Australian Innovation System Report*. Innovation leads to greater wealth creation, employment growth and more efficient production. Innovative Australian businesses are 31 per cent more likely to increase income and 46 per cent more likely to report increased profitability. This report also found that the scale and impact of innovation in Australia appears to be hampered by a poor management culture of innovation and collaboration and shortages in a range of skills.³

This lack of innovation in manufacturing comes at a time when industry is rapidly shifting to increased automation. A recent Bank of America Merrill Lynch (BOAML) report into the impact of the robotics industry identified that Australia's manufacturing sector used only 80 robots for every

² OECD (2013), *OECD Science, Technology and Industry Scoreboard 2013: Innovation for Growth*, http://dx.doi.org/10.1787/sti_scoreboard-2013-en

³ Australian Government, Department of Industry, Office of Chief Economist, *Australian Innovation System Report 2014*, www.industry.gov.au/OCE/innovationreport.

10,000 employees, less than half the number used in South Korea, Japan, Germany and Sweden and significantly less than the United States and Canada.

Rail Manufacturing in Australia

Rail manufacturing in Australia is increasingly evolving from the production of end-to-end products that characterise traditional manufacturing and increasingly towards advanced manufacturing which involves low-volume, high-value production.

This transition can be seen in an analysis of the size of the various segments of rail manufacturing. The most recent IBISWorld report into this sector identified that end-to-end manufacture now comprises only 6.8% of rail production. Other segments of the rail industry are increasingly more significant such as repair and maintenance at 21.3%, passenger railcars fitout at 20.8%, locomotive components at 19.5% and freight wagons at 10.7%.⁴

Given this changing industry profile, governments have already accepted a role in supporting the process of transition in traditional industries (like rail manufacturing) towards the adoption of more modern manufacturing practices such as those that characterise advanced manufacturing.

The challenges for government in assisting Australian manufacturing in adopting the principles of advanced manufacturing were set out in a CEDA report, *Advanced Manufacturing: Beyond the production line*.⁵ This report outlined the characteristics of successful advanced manufacturers as innovative and technologically cognisant.

Importantly, CEDA also identified that Government has a role to introduce public procurement policies aimed at innovative products and incentivising innovation.⁶

As the *On Track to 2040 Roadmap* identified, the Australian rail industry has the opportunity to contribute to the growing demand for rail products in the Asia-Pacific region and to leverage Australian skills, expertise and experience for these new markets as urbanisation spreads. However, without increased application of innovation, the Australian rail industry will not keep pace with the application of new technology to global platforms.

At present, Australia is a net importer of rail equipment. According to IBISWorld, in 2014-15 the value of imports was \$1.4 billion whereas the value of exports was \$98.8 million.⁷ While imports of rail equipment are expected to grow at around 13.1% over the next five years, exports are smaller and grew slower at an annual rate of 2.9% over the past five years.

RMCRRC believes that the rail manufacturing industry in Australia, with its close proximity to the growing Asia-Pacific markets, is well placed to integrate into the global supply chain that will service the expanding markets driven by increased urbanisation in the region.

The location of global rail manufacturing companies including Bombardier Transportation, Downer, Alstom and Faiveley Transport in Australia creates a strong foundation for developing greater export opportunities into the Asia-Pacific region as these companies leverage Australian manufacturing expertise into growing markets.

⁴ IBISWorld Industry Report C2393, *Railway Equipment Manufacturing and Repair in Australia*, May 2015.

⁵ CEDA, *Advanced Manufacturing: Beyond the production line*, April 2014.

⁶ Ibid, p.8.

⁷ IBISWorld, *ibid*, p 16.

In the long term, the Australian rail manufacturing industry will not be able to maintain its viability unless it increases its export offerings. Increased innovation is key to increased competitiveness and expanding this export opportunity.

The role of RMCRC in supporting innovation in rail manufacturing

RMCRC's brief from the Australian Government is to foster innovation in our rail manufacturing industry and to facilitate links between research and industry. To that end, a number of co-funded projects are already underway, which we believe will benefit the rail sector and increase innovation in Australian rail products.

These projects entail collaboration between rail manufacturing companies and Australia's excellent public research institutions, including CSIRO, Monash, Deakin, Swinburne and RMIT Universities.

However, RMCRC believes that more can be done to drive Australian manufacturing to greater innovation and adoption of the principles of advanced manufacturing.

Unlike many other industry sectors, procurement of rail products is an activity which is dominated by public procurement principles. That is, the market for rail products is dominated by passenger rail, tram and freight rail operators – mainly governments, with their accompanying public policy objectives.

While there is no data that RMCRC has located that outlines the level of innovation in rail manufacturing businesses, RMCRC's experience in liaising with rail businesses on R&D projects reinforces the broader picture for manufacturing and believes that the rail manufacturing sector would benefit from an increased adoption of R&D and innovation.

Governments can offer incentives to adopt innovation, such as the co-funding of projects through CRC's but in order for public policy levers to all be pushing in the same direction, RMCRC believes that public procurement policy like the VIPP is well placed to reinforce this objective by including criteria that give weighting for the adoption of innovation to assess tenders for future rail-related procurement.

As the Australian economy transitions towards knowledge-based industries, RMCRC believes the low level of innovation in rail is a key challenge for the rail manufacturing sector that needs to be addressed by both rail businesses and in public policy settings like the VIPP. RMCRC outlined this viewpoint in a presentation to the industry at the recent Australasian Railway Association Conference, AusRAIL.

RMCRC's observation is that many rail businesses lack management expertise in R&D adoption and also lack dedicated R&D resources to act as a liaison between production systems and research development. This is borne out in a 2011 report into the Australian rail industry found that less than one per cent of employees in the sector are scientists or researchers.⁸

RMCRC believes that although the rail industry has recognised the need for innovation through the *On the Track to 2040* roadmap that rail businesses need to allocate more resources to R&D to facilitate the implementation of this important industry roadmap and to enable rail to compete in the advanced manufacturing paradigm of the future.

⁸ Australian Government Department of Innovation, Industry, Science and Research, "Railway Manufacturing Industry: a profile of the Railway Manufacturing Industry in Australia" prepared by ACIL Tasman, July 2011, p. 15.

For these reasons and as outlined in the Executive Summary (above), RMCRC submits that the Victorian Government Industry Participation Policy could be strengthened by including a commitment to a level of R&D investment and innovation in the contract with the successful bidder.