

# BENEFITS OF A NATIONAL LOCAL CONTENT POLICY

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- The track owners, managers and contractors that deliver a safe and efficient rail infrastructure network
- The suppliers, manufacturers and consultants that drive innovation, productivity and efficiency in the rail industry.

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# EXECUTIVE SUMMARY

## Introduction

The ARA's recently released study entitled *Towards a National Local Content Policy* (2022) reviews the current jurisdiction-based policy approaches for procurement in the rail industry and provides recommendations for harmonisation.

The study finds that for suppliers, operating in multiple states can be considered equivalent to operating in different countries when it comes to responding to state-based rail project tenders. Suppliers provide examples of the need to duplicate or partially duplicate facilities, cost prohibitive barriers to bidding, and 'gaming' of state based local policy requirements by some industry participants. The study finds these issues are associated with increased costs, constrained investment, and inefficiencies.

*Towards a National Content Policy* was not the first time the ARA advocated for the need for improved coordination and planning in procurement. A decade

ago, the ARA commissioned a study from Deloitte Access Economics entitled *Opportunities for Greater Passenger Rolling Stock Procurement Efficiency* which also provided recommendations for policy harmonisation.

There is significant overlap in the recommendations of the two studies because there has been little movement towards policy harmonisation over the last decade. However, the major difference in the policy landscape in the last decade has been the widespread adoption of local content policies (LCPs).

This report builds on the findings of the ARA's 2022 *Towards a National Local Content Policy* report, which highlighted the risks of failing to adopt a standardised approach to local content. It seeks to support the implementation of its recommendations at state level, and quantify the cost savings and productivity benefits that can be achieved through a harmonised approach to local content procurement.



## Lost decade of efficiency savings

The Deloitte Access Economics' study estimates the potential cost savings from policy harmonisation for heavy rail passenger rolling stock procurement over the 30 years to 2043. Using the same approach, we estimate the foregone procurement cost savings over the last decade as a result of harmonisation measures not having been adopted.

In total, we estimate foregone procurement cost savings of \$1.85 billion, comprising:

- \$717 million of savings from increased scale
- \$811 million of savings from reduced complexity in planning and design
- \$318 million of savings from major componentry harmonisation

These cost savings would have accrued to the jurisdictions procuring the heavy rail passenger rolling stock and are therefore equivalent to foregone expenditure in the home state. Aside from transport, the two other major expenditure categories for state governments are health and education. If these cost savings had been invested in health and education they would have supported around 1500 workers across the decade and contributed to \$4.69 billion of Gross Output and \$2.79 billion of Gross Value Added (GVA).

## Lost productivity gains

The adoption of LCPs has shielded the domestic rail manufacturing sector from imports. However, a national LCP would provide further protection as it would increase the efficiency of the domestic industry and its ability to compete against imports.

The average value of imports of rolling stock for final uses over the five years to 2019-20 was \$524 million in current prices. If this value was instead captured by the domestic market, the total additional annual economic contribution would be \$1.39 billion in Gross Output and \$476 million in GVA, supporting 3500 workers across the economy.

Over the course of a decade, assuming that import displacement continued in the same manner, the undiscounted GVA impacts would rise to \$4.76 billion.

Only through a national LCP will the Australian rail industry be able to capture the identified efficiency savings and strengthen the domestic industry's position at home and abroad.

# PROCUREMENT COST SAVINGS FROM POLICY HARMONISATION

## 1.1 APPROACH TO COST SAVINGS ESTIMATION

In 2013, the ARA released a study entitled *Opportunities for Greater Passenger Rolling Stock Procurement Efficiency*. The study draws on national and international research to estimate potential cost savings for heavy rail passenger rolling stock procurement over the 30 years to 2043.

Procurement costs are estimated under a “policy case” in which there is an improved level of coordination between states, such that:

- Train orders are procured collaboratively for all states
- Long term procurement programs are in place
- There are two harmonised train platforms, one each for single deck and double deck trains
- Train orders are smoothed across time

These costs are compared to a “base case” characterised by the existing practice of each state procuring rolling stock separately without consideration of the timing and size of orders from other states.

The following cost savings are identified:

- Savings from improved scale
- Savings in planning and design costs
- Savings from componentry harmonisation

These saving categories are described in more detail below.

### 1.1.1 Savings from improved scale

These savings relate to the high fixed costs associated with both the procurement and development of new trains. The study uses historical contracts to create empirical cost curves separately for single deck and double deck cars. For instance, the average cost per car for a 50-car order relative to a 150-car order for single deck cars is found to be two-thirds higher. The potential efficiency gains are found to be greatest for small orders (<50 cars). For larger orders (>200 cars) it is assumed that the economies of scale are exhausted.

### 1.1.2 Savings in planning and design costs

These savings relate to pre-build costs in design, planning and tendering. The planning and design costs are assumed to be equivalent to 18% of the average cost per car for the ‘base case’ and 11.5% of the average cost per car for the ‘policy case’.

### 1.1.3 Savings from componentry harmonisation

Harmonisation of major componentry drives cost savings through the supply chain by improving scale, reducing inventory requirements and reducing the cost of sub-assembly. The study uses a cost saving estimate based on UK evidence<sup>1</sup>.

<sup>1</sup> ARUP (2011), Rail Value for Money Study Rolling Stock Whole Life Costs, prepared for the Rail Value for Money Study

## 1.2 KEY FINDINGS

The study uses heavy rail passenger rolling stock forecasts developed by Orion Advisory<sup>2</sup> to arrive at a projected demand of 11,000 cars over the 30 years to 2043. Tram and light rail rolling stock procurement are excluded as the potential procurement benefits are considered to be relatively limited compared to heavy rail rolling stock.

For a total procurement value of approximately \$36 billion (in current prices), efficiency savings of \$7.1 billion over the 30 years to 2043 are identified, a saving of 19% relative to the base case.



<sup>2</sup> Orion Advisory (2012), The Future of Australian Passenger Rolling stock: A Framework for Coordination National Demand and Supply



### 1.3 ESTIMATED FOREGONE COSTS SAVINGS OVER LAST DECADE

It has been 10 years since the study was released. During that time, we have seen a major phase of heavy rail passenger rolling stock procurement across New South Wales, Victoria, Queensland and Western Australia. To assess the foregone efficiency savings, we have adopted the same approach to benefits measurement as used in the study but applied it retrospectively to heavy rail passenger rolling stock contracts awarded over the last decade.

Our analysis covers 12 major heavy rail passenger rolling stock contracts. The contracts include rolling stock for urban and regional services across New South Wales, Victoria, Queensland and Western Australia. They include new services as well as major expansion and replacement programs.

The contracts are listed in Figure 1 below. The total number of cars delivered under the 12 contracts is 3,061.

**Fig. 1. Heavy rail passenger rolling stock contracts**

State	Date	Project	Source	Cost	Quantity	Consortium (Manufacturer)
NSW	2019	Regional Rail Fleet	Spain	\$1.3bn	117 cars	Momentum Trains
NSW	2016	Sydney Growth Trains (Waratah 2)	China	\$1bn+	192 cars	Downer Edi (Changchun Railway Vehicles)
NSW	2016	New Intercity Fleet	South Korea	\$3.9bn	520 cars	RailConnect (Hyundai Rotem)
NSW	2014	Sydney Metro Stage 1	China	\$3.7bn	132 cars	Northwest Rapid Transit (Alstom)
NSW	2016	Waratah	China / Australia	\$3.6bn	626 cars	Reliance Rail (Changchun Railway Vehicles / Downer)
VIC	2022	X'Trapolis 2.0	Australia	\$1bn	150 cars	Alstom
VIC	2019	New Vlocity Trains	Australia	\$0.34bn	119 cars	Alstom
VIC	2016	X'Trapolis	Australia	\$0.1bn	54 cars	Alstom
VIC	2016	High Capacity Metro	China / Australia	\$2bn	65 trains	Evolution Rail (CRRC / Downer)
QLD	2023	Queensland Train Manufacturing Program	Australia	\$7.1bn	390 cars	Downer
QLD	2014	New Generation	India	\$4.4bn	450 cars	Qtectic (Bombardier)
WA	2019	WA Railcar Program	Australia	\$1.2bn	246 cars	Alstom

Source: BIS Oxford Economics (BISOE)

Note: Some of the contract values in Figure 1 include additional cost components, such as the construction of rolling stock production and maintenance facilities and so the costs per car are not comparable.



### 1.3.1 Foregone cost savings

The following savings measures are applied to the 12 contracts:

- Savings from improved scale are estimated from the empirical costs curve created for the 2013 study updated to current prices
- Savings in planning and design costs are estimated as \$0.27 million per car

- Componentry harmonisation benefits are estimated at \$26.5 million in the first year and grown at the same rate as the national passenger rail growth task, assumed at 4% per annum.

Based on the above, the nominal foregone benefit of procurement harmonisation for the 12 identified rolling stock contracts awarded over the last decade is estimated at \$1.85 billion.

**Fig. 2. Estimated savings (\$m, undiscounted)**

Benefit Stream	\$m, undiscounted
Savings from Improved Scale	\$717
Savings in Planning and Design Costs	\$811
Saving due to Componentry Harmonisation	\$318
<b>Total</b>	<b>\$1,846</b>

Source: Hadron Group workings; BISOE & Deloitte Access Economics data

### 1.3.2 Foregone economic benefits

The \$1.85 billion cost savings would accrue to the jurisdictions procuring the rolling stock. These potential costs savings are therefore equivalent to foregone expenditure in the home state.

Aside from transport, the two other major expenditure categories for state governments are health and education. If this \$1.85 billion cost saving had been invested in health and education it would have directly supported 1530 workers across the decade and contributed to \$4.69 billion of revenue and \$2.79 billion of gross state product.

**Fig. 3. Foregone economic benefits in health and education (\$m, undiscounted)**

Item	Gross Output (Revenue) (\$m, undiscounted)	GSP (\$m, undiscounted)	Employment (headcount)
Direct (health and education)	\$1,846	\$1,285	1,530
Indirect and induced	\$2,846	\$1,499	816
<b>Total</b>	<b>\$4,692</b>	<b>\$2,785</b>	<b>2,346</b>

Source: Hadron Group workings; BISOE & Deloitte Access Economics data; ABS Input-Output tables, 2019-20

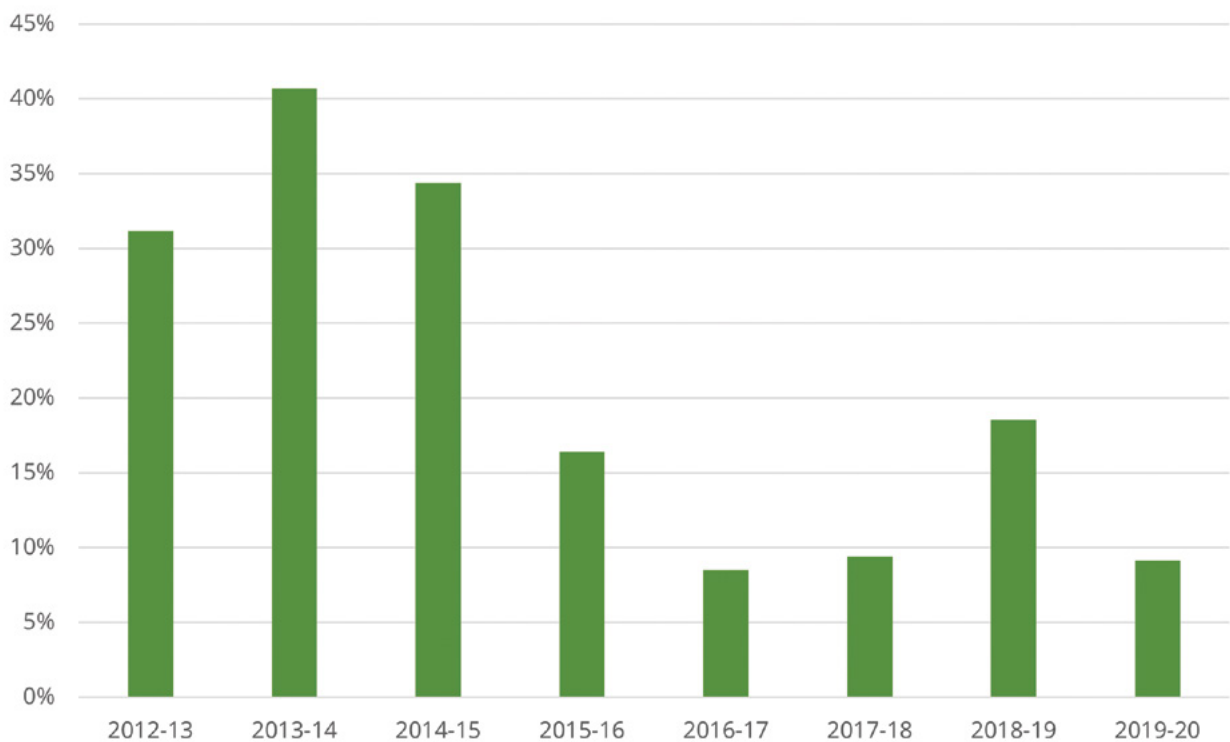
# PRODUCTIVITY IMPACTS

## 2.1 IMPORT SUBSTITUTION

The 2013 Deloitte Access Economics' study envisages a future where imports dominate Australian rolling stock supply due to the domestic sector's lack of competitiveness. However, the widespread adoption of local content

policies (LCPs) since the release of the study has protected the domestic sector from this eventuality, with the import share of rolling stock manufacturing supply for final uses having fallen, rather than increased, over the last decade (see Figure 4, below).

**Fig. 4. Import share of final uses of rolling stock manufacturing supply**



Final uses comprise consumption expenditure, inventories, investment and exports

### 2.1.1 Increased import substitution potential

A National Local Content Policy – as opposed to a series of State LCPs – offers additional opportunities aside from the realisation of procurement cost savings. As the local industry becomes more efficient, the appeal of imports fades. Conversely, if the industry fails to adopt a national LCP, potential efficiency gains will be forgone. Not only does this mean that additional potential import substitution possibilities are forgone, but this also increases the risk that state LCPs may erode over time and that imports may ultimately rise.

A national LCP offers the key to unlocking the benefits described earlier in terms of scale, componentry harmonisation and design efficiencies. As outlined, these could amount to a cut of some 19% in rolling stock manufacturing procurement expenses, which would be of considerable benefit across the country, allowing state governments to increase spending in areas such as education and health care.

However, a substantial benefit might also come from the opportunity to engage in import substitution.

Cheaper pricing is often advanced as the reason for the purchase of overseas rolling stock. For example, the NSW Government has previously suggested that locally manufactured train sets cost 25% more than imported ones due to higher energy, labour and raw materials costs<sup>3</sup>. However, if local prices fall relative to imported ones due to the implementation of a national LCP then the attraction of imports diminishes.

The complete displacement of imports in the rail manufacturing sector may be seen as an upper limit estimate given that some level of importation would be likely to persist. As with any commodity it may not be possible or practical to replace imports on every occasion. Nonetheless, it provides an order of magnitude estimate of the future market potential.

While not comprising of the entirety of rail manufacturing activity in Australia, the Railway Rolling Stock Manufacturing industry provides a good indicator of the size of the potential market. The table below indicates the level of railway rolling stock manufacturing imports as measured by the Final Uses over the five years to 2019-20.

**Fig. 5. Imported value and share of total final uses: Railway Rolling Stock Manufacturing 2015-16 to 019-20 (unadjusted for inflation)<sup>4</sup>**

Year	Final Uses (imports) (\$m, undiscounted)	Total Final Uses (\$m, undiscounted)	Imported final uses share of total final uses (%)
2019-20	430	1465	29%
2018-19	906	1527	59%
2017-18	370	1081	34%
2016-17	256	1030	25%
2015-16	479	1307	37%
<b>Average (unadjusted for inflation)</b>	<b>488</b>	<b>1282</b>	<b>37%</b>

Source: ABS, Input-Output Tables

<sup>3</sup> Rail Express September 3, 2020, "Berejiklian criticised for NSW rail manufacturing comments", <https://www.railexpress.com.au/berejiklian-criticised-for-nsw-train-manufacturing-comments/>

<sup>4</sup> ABS (2016-2022) Australian National Accounts: Input Output Tables

The average value of imported railway rolling stock over these five years was some \$488 million or \$524 million if values are adjusted to current prices.

Adopting a forward looking perspective and assuming that an average of \$524 million in railway rolling stock manufactured goods is available for Australian manufacturers to compete with and potentially displace over the next decade, it is possible to estimate the potential economic impacts of such an opportunity.

In annual terms, displacing the annual average of \$524 million in imported rolling stock and directing this spending to the

Australian domestic economy, would equate to a direct boost of \$127 million in rolling stock manufacturing Gross Value Added (GVA) and support some 800 additional jobs in the rolling stock sector<sup>5</sup>. When applied to an Input-Output (IO) model to measure the total economic contribution these figures increase to \$1.389 billion in Gross Output, and \$476 million in GVA supporting 3500 workers across the economy.

These figures are illustrated in the table below.

**Fig. 6. Import substitution opportunity: annual effects**

Year	Gross output (\$m, undiscounted)	GVA (\$m, undiscounted)	Employment (headcount)
Direct	524	127	800
Flow on effects (indirect and induced)	865	349	2,600
<b>Total</b>	<b>1,389</b>	<b>476</b>	<b>3,500</b>

Source: BISOE workings; ABS Input-Output Table, 2019-20



<sup>5</sup> Based on data derived from ABS (2022) Australian National Accounts: Input Output Tables 2019-20



Over the course of a decade, assuming that import displacement continued in the same manner, the undiscounted GVA impacts rise to \$1.27 billion in direct terms and \$4.76 billion in total.

As indicated, this represents an upper bound estimate. In practice, some level of importation is likely to continue, irrespective of Australian policy changes. Nonetheless, this indicates the opportunity in order of magnitude terms that a more competitive rail manufacturing industry might have to further displace imports under a national LCP.

### 2.1.2 Risk of not adopting a national LCP

The converse to the adoption of a national LCP is the risk of non-adoption. At first sight this may simply be seen as a rather bland business as usual (BAU) case, which carries with it the implicit assumption that current LCPs will continue.

However, this is not the case, state governments – and policies along with them – can and do change. There is no guarantee that current state LCPs will

survive into the longer term. This is especially so since budgetary pressures do not abate. State governments in the future may find questions being raised about the implicit cost of LCPs particularly given competing demands in areas such as health and education. Their role as a front-line service provider in such areas make this particularly salient. The issue is also non-trivial. Data from the 2019-20 IO tables suggests that the domestic rolling stock manufacturing industry accounted for \$3.8 billion in domestic gross output in that year alone and employed nearly 7200 FTE positions.

If cost pressures force state governments to reconsider their LCPs in the future this could put current rail industry manufacturing activity and employment under a cloud in the longer term. Conversely, moves towards a national LCP with attendant cost reductions and efficiency savings may help lock in the case for domestic manufacturing. This would help safeguard domestic jobs and growth into the future.



# CONCLUSION

State governments across Australia use a variety of different policy approaches for procuring rail infrastructure, assets and services and the local content requirements vary significantly. However, in practice, the various approaches each apply a state-based definition of local content.

In essence, the LCPs are trade barriers which treat non-local Australian suppliers the same as overseas suppliers. The main argument for LCPs is to support home-grown jobs and production. However, as the ARA's recent report Towards a National Local Content Policy

concludes, the LCPs result in increased costs, constrained investment, and inefficiencies.

A national LCP would overcome these constraints and provide significant procurement cost savings to government, while protecting home-grown jobs and production. A national LCP would also increase the growth potential of the domestic rail manufacturing sector by increasing its competitiveness, both against imports and in export markets.





