

Ports Australia Coastal Shipping Factsheet

Purpose

To outline the state of the coastal shipping freight task in Australia.

Overview

- Australia's national freight task is estimated to be 725 billion tonne-km, having increased by over four-fold in the last 45 years.¹
- Whilst the national freight task across rail, road and shipping has continued to grow in recent years, the growth rate has slowed. The national freight task is projected to increase, albeit it at this slower rate. Between 2018 and 2040 it is forecast to increase by 25% to 962 billion tonne-km.²
- Domestic shipping also commonly known as coastal shipping has declined over recent decades. Whilst coastal shipping volumes have stayed relatively similar, its percentage contribution to the national freight task has significantly declined.³

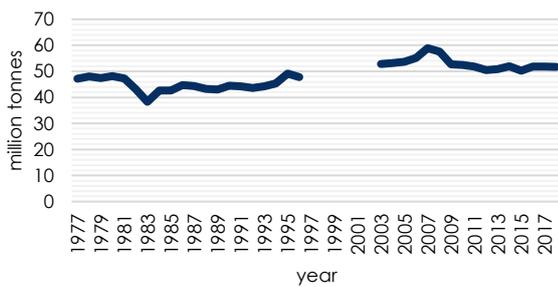


Figure 1. Trend of volume of goods moved domestically by ship⁴

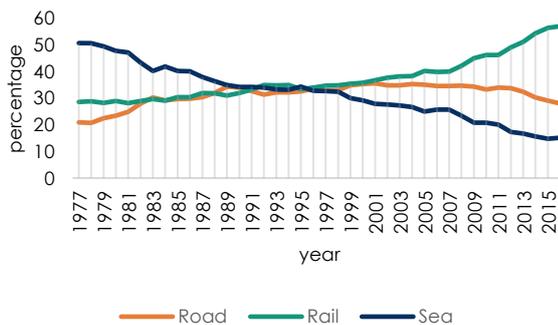


Figure 2. Trend of goods moved domestically by transportation mode (tonne-km)⁵

- Shipping presents as a low-cost transport option for certain commodities and routes, and an emission efficient freight transportation mode.⁶
- The reasons for the diminishing role of shipping in domestic freight transportation are complex.
- Whilst coastal shipping presents as lower cost than land transport alternatives in certain scenarios, regulatory and market-based impediments exist, including:
 - Licensing constraints under current regulation, leading to supply constraints;
 - Lack of supply and demand visibility;

- Longer transit times than road or rail;
- Sunk investment in existing landside supply chains;
- Port-landside infrastructure suitability to service;
- Preferred coastal vessel types; and
- Distance of the commodity origin and destination to the port impacting on landside transport costs.⁷

- Increased visibility of recent freight data across all modes of transport is necessary to obtain an accurate picture of domestic freight transportation.
- Regulation and system improvements are required to improve the viability of coastal shipping.

Current state

- Coastal shipping freight comprises 6.3% volume that moves through Australia's ports, with the remainder being international freight (103.8/1,653.2 million tonnes).⁸
- Road and rail complete the majority of domestic freight movements, with shipping and air contributing a lesser amount. Shipping contributes more in terms of tonne-km than tonnes.⁹

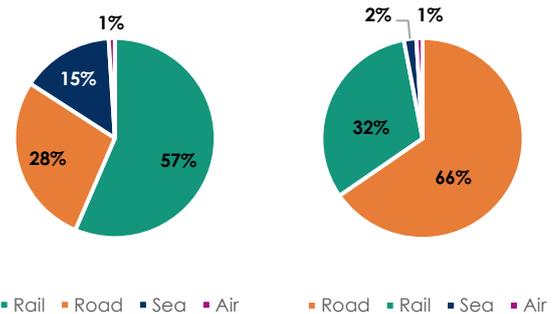


Figure 3. Goods moved domestically by transportation mode: tonne-km versus tonnes¹⁰

- The two key domestic freight growth areas have been:
 - Bulk export commodity freight (5.4%/year growth), transported mainly by rail; and
 - Urban and inter-urban non-bulk freight (4.8%/year and 4.4%/year growth respectively), transported mainly by road.¹¹

¹ Bureau of Infrastructure, Transport and Regional Economics (BITRE) 2019a, Australian aggregate freight forecasts – 2019 update.

² Ibid.

³ BITRE 2020, Yearbook 2020: Australian Infrastructure Statistics.

⁴ Ibid. 1997-2002 data unavailable.

⁵ Ibid.

⁶ International Maritime Organization (IMO) 2009, Prevention of Air Pollution from Ships - Second IMO GHG Study.

⁷ Synergies Economic Consulting 2020, Coastal Shipping - Case Studies.

⁸ BITRE 2019b, Australian sea freight 2016-17.

⁹ BITRE 2020, op. cit.

¹⁰ BITRE 2020, op. cit.

¹¹ BITRE 2019a, op. cit.

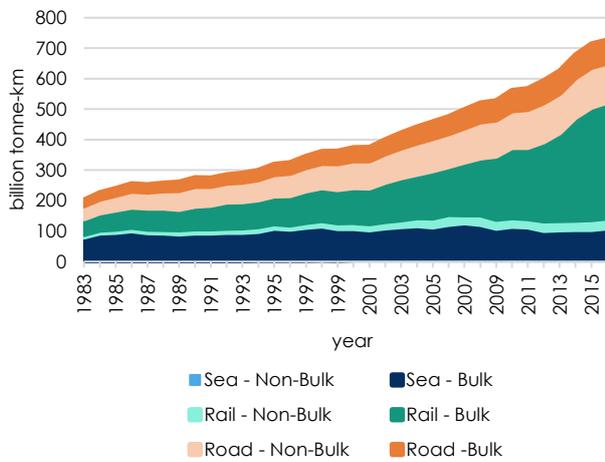


Figure 4. Trend of domestic bulk and non-bulk freight task by transport mode¹²

- Although coastal shipping comprises a diminishing share of the overall freight task, it plays a more significant role in relation to bulk than non-bulk freight (14.1% and 1.0% respectively, out of a total domestic freight task of 727 billion tonne km).¹³

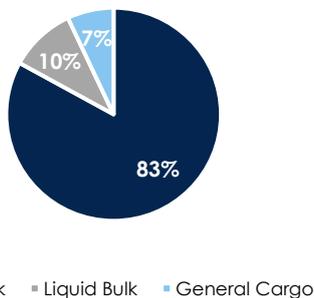


Figure 5. Domestic shipments by freight type (tonne-km)¹⁴

- The primary freight types transported domestically via ship are:
 - Bauxite and alumina
 - Iron ore
 - Crude oil
 - Petroleum products
 - Other bulk liquids
 - Containers
 - Bass Strait non-bulk freight.¹⁵
- The most recent corridor data for freight across transport modes is from 2007 and indicates that rail transports most of the cargo along the East–West corridor moving around 58% freight, with road and shipping moving around 29% and 13% respectively (out of a total East–West corridor freight task of 18.3 billion tonne-km in 2007).¹⁶
- For the North–South corridor, road transports most of the cargo, moving an estimated 86%, with rail and shipping moving around 12% and 2% respectively (out of a total North–South corridor freight task of 65.4 billion tonne-km from 2007).¹⁷ Examining specific inter capital routes, reveals

significant differences in market share. For example, between Melbourne and Brisbane rail transports around 30% of non-bulk cargo.¹⁸

Current state - Bulk cargo

- Bulk cargo is primarily transported by rail. The annual rail freight task is approximately 414 billion tonne-km. Around 65% annual rail freight task is iron ore and around 22% coal. The remaining rail freight is largely dedicated to grains, sugar and fertilisers (6%) and non-bulk product (6%).¹⁹
- 40% coastal shipping comprises bauxite and alumina transportation, both in terms of tonnes and tonne-km. This has increased from about 13 million tonnes in 2012 to about 21 million tonnes in 2016.²⁰
- Whilst volumes of bulk commodity coastal shipping have remained relatively similar over the years, coastal shipping has faced diminishing bulk commodity market share, which is largely attributable to geographical factors, including the increasing movement of export commodities from inland locations.²¹

Current state - Non-bulk cargo

- The East–West corridor is the main route for domestic containerised cargo. Estimates are that 70–90% of this containerised cargo is moved by rail.²²
- In 2019, 63,489 twenty-foot equivalent units (TEUs) were shipped along the East–West corridor routes from Melbourne, Sydney, Brisbane, Adelaide to Adelaide and Perth.²³
- The Bass Strait ro-ro vessels are currently the only Australian flagged sizeable container-capable vessels operating under a General Licence. Accordingly, international vessels conduct the majority of coastal shipping of containers in Australia.^{24,25}

Hp = horsepower
St = short ton
DWT = deadweight tonnage

¹² BITRE 2020, op. cit.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ BITRE 2019a, op. cit.

¹⁶ BITRE 2010, op. cit.

¹⁷ Ibid.

¹⁸ BITRE 2014, Freightline 1 – Australian freight transport overview.

¹⁹ BITRE 2019a, op. cit.

²⁰ BITRE 2019a, op. cit.

²¹ Synergies Economic Consulting 2020, op. cit.

²² ACIL Allen Consulting 2014, The Economic Significance of the Australian Logistics Industry.

²³ Department of Infrastructure, Transport, Cities and Regional Development (DITRDC) 2020, Voyage Reports.

²⁴ BITRE 2019b, op. cit.

²⁵ Synergies Economic Consulting 2020, op. cit.

Environment

- Shipping is typically the most emission efficient mode of transport for moving large quantities of goods.

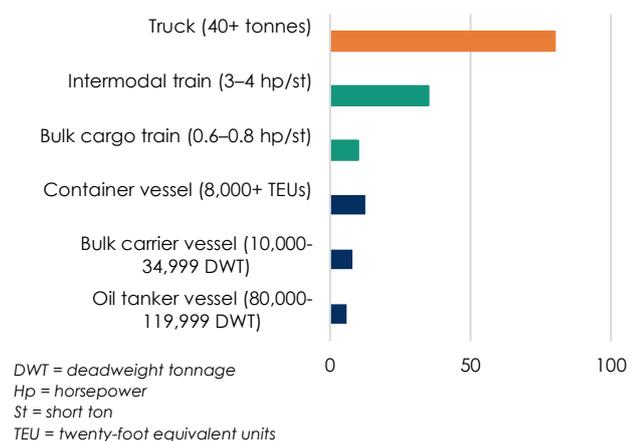


Figure 6. Comparison of carbon dioxide emission efficiency between modes of transport²⁶

Cost

- Capital and operational expenditure are important considerations for business and government for all modes of transport. Whilst port infrastructure is a significant initial investment, each capital city already has established container, general cargo and bulk terminals to be utilised and the sea is a natural transportation system.
- Cost is a key factor in modal choice and is highly dependent on the route and the commodity. Where the distance is far and the origin and destination are close to a port, shipping certain commodities can be financially advantageous relative to land transport alternatives. As is demonstrated in the below indicative freight rates.

Table 1. Indicative freight rates²⁷

Freight	Supply Chain	Rail	Shipping
Steel	Port Kembla to Hastings	\$57/tonne	\$32/tonne
Sugar	Mackay to Yarraville	\$68/tonne	\$46/tonne
Containers	Melbourne to Fremantle	\$2,500/TEU	\$1,700/TEU
Containers	Sydney to Fremantle	\$3,900/TEU	\$1,700/TEU

Regulation

- Coastal shipping is regulated by the [Coastal Trading \(Revitalising Australian Shipping\) Act 2012](#), requiring vessels that are moving cargo or passengers between ports in different Australian states or territories to have a licence.²⁸ Under the Act, Australian flagged vessels require a general licence which allows for unrestricted coastal trading and is valid for 5 years; foreign-flagged vessels require a temporary licence which allows for authorised voyages to be undertaken and is valid for 12 months. Application timeframes, cost, documentation and reporting requirements and ongoing uncertainties, reduce the competitiveness of shipping and supply of shipping capacity as compared with other transport modes. Intrastate trading

differs slightly, requiring a Section 12 declaration which has no application cost nor approval timeframe.

- In 2016-17, 67.7% loaded coastal shipping freight was transported on vessels with a Coastal Trading Licence. The remaining 32.3% was transported on vessels without a licence and hence is attributed to intrastate movement (35.2 million tonnes and 16.8 million tonnes respectively).²⁹
- The number of major Australian coastal trading vessels has decreased significantly from 30 in 2007 to 15 in 2017.³⁰
- In 2016-17, of the cargo carried under a coastal trading licence:
 - 9.9 million tonnes was transported by Australian-flagged vessels; and
 - 25.3 million tonnes was transported by foreign-flagged vessels.³¹
- Coastal shipping reform has been and continues to be on the Australian Government agenda.^{32,33}

Required Actions

- Increase the transparency of freight volumes and flows across all transport modes. Coastal shipping data is routinely reported and is readily available. Volumes transported by other modes are captured infrequently and are less visible.
- Increase awareness of the importance of land allocation close to a port for commodity facilities.
- Address artificial regulatory and other impediments to coastal shipping.
- Support policy and investment decisions that do not distort modal choice.

²⁶ IMO 2009, op. cit.

²⁷ Synergies Economic Consulting 2020, op. cit. Freight rates are estimates only based on Synergies' modelling, and may not reflect the actual level of charges that prevail in the market at a particular point in time.

²⁸ Australian Government 2015, Coastal Trading (Revitalising Australian Shipping) Act 2012.

²⁹ BITRE 2019b, op. cit.

³⁰ Ibid.

³¹ Ibid.

³² Parliament of Australia 2019, Bills of Previous Parliaments - Coastal Trading (Revitalising Australian Shipping) Amendment Bill 2017.

³³ DIIRDC 2020, Coastal Trading Reform – Where to from here?

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Australian domestic freight flows

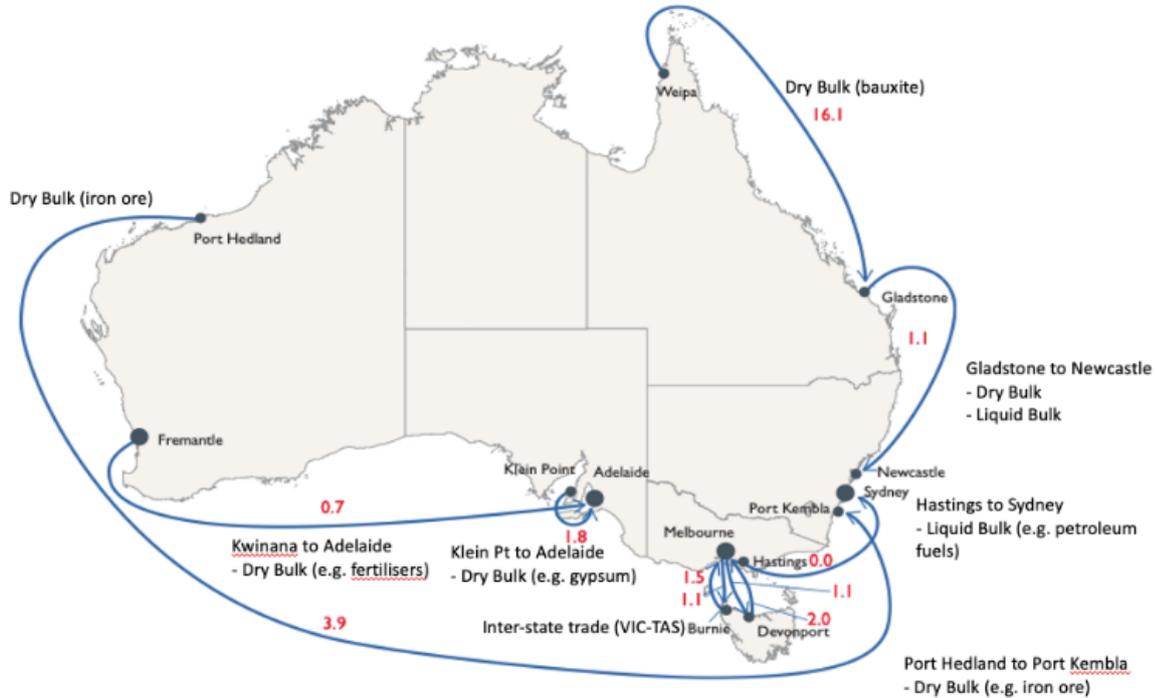


Figure 1 Top ten coastal shipping routes by million tonnes.
 BITRE 2019, *Australian Sea Freight 2016-17*, BITRE, Canberra, viewed 21 October 2020, <https://www.bitre.gov.au/sites/default/files/documents/asf_2016_17.pdf>. NB: Using Synergies' annotations.

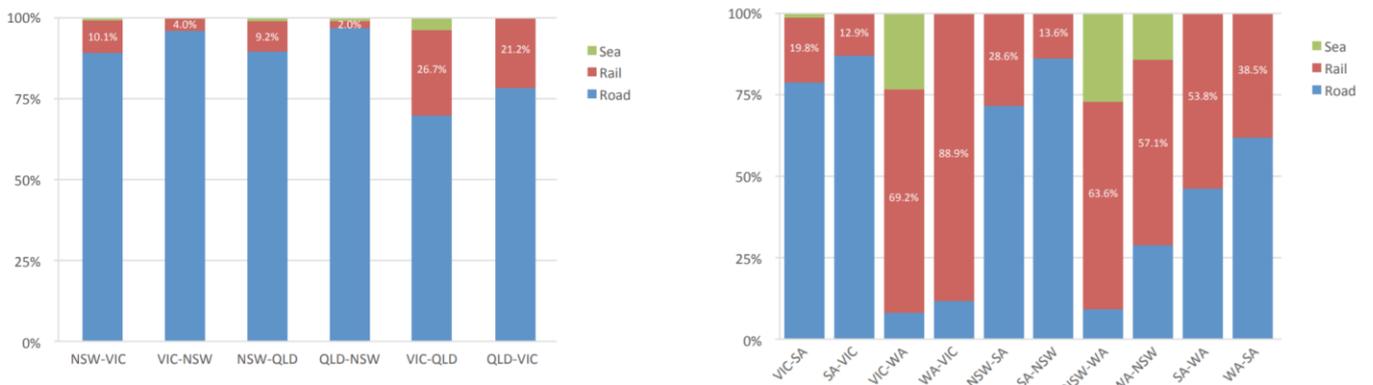


Figure 2 Freight task on North-South and East-West corridors
 National Transport Commission 2016, *Who Moves What Where – Freight and Passenger Transport in Australia*, National Transport Commission, Melbourne, viewed 21 October 2020, <<https://www.ntc.gov.au/sites/default/files/assets/files/Whomoveswhatwherereport.pdf>>.