



THE UNIVERSITY OF
SYDNEY

VII: Your Free Shipping Isn't Free

It runs on diesel, congestion
and wishful thinking



August 2026

SUSTAINABLE TRANSPORT SERIES

ISSUE #7

Institute of Transport and Logistics Studies

Acknowledgement of Country

We recognise and pay respect to the Elders and communities – past and present – of the lands that the University of Sydney's campuses stand on. For thousands of years, they have shared and exchanged knowledges across innumerable generations for the benefit of all.

VII: Your Free Shipping Isn't Free

It runs on diesel, congestion and wishful thinking



Australians have developed a peculiar moral logic when it comes to shopping. We agonise over the price of petrol, debate electricity bills, and argue about supermarket margins. Then we click “express delivery” without a second thought.

Free shipping has become an expectation. Same day delivery feels normal. Next day feels slow. The entire system hums on convenience.

But convenience has a carbon footprint.

Australia’s domestic freight task is enormous and growing. The Bureau of Infrastructure and Transport Research Economics (BITRE, 2025) estimates it reached around 786 billion tonne kilometres in 2024 to 2025. That figure captures bulk freight such as minerals and grain, but it also reflects the broader reality that goods move constantly across a vast continent.

At the urban end of the chain, the rise of e-commerce has reshaped freight patterns. The last mile delivery market has expanded rapidly, driven by online retail growth and consumer expectations of speed. Warehouses have multiplied. Delivery fleets have grown. Vans now thread suburban streets from early morning until evening.

The emissions story is rarely told in checkout screens.



Research summarised by the Associated Press (2025) has highlighted an uncomfortable detail. Faster shipping can increase emissions because it disrupts route optimisation and reduces consolidation. One cited estimate suggested next day or expedited delivery can raise emissions by around ten percent compared with slower, optimised delivery schedules. Delaying deliveries by even a day or two can allow companies to combine parcels and cut fuel use significantly.

In simple terms, speed costs carbon.

Sustainable Transport Series

Most consumers do not see this trade off. The carbon cost is hidden in logistics software and diesel invoices. Companies advertise convenience, not combustion. This invisibility is not accidental. It is a design feature of the modern retail economy. Carbon is treated as an externality, something abstract and distant. The delivery van outside your house does not come with an emissions receipt attached to the parcel.

Yet transport emissions are real and substantial. Transport produced about 90 million tonnes of carbon dioxide equivalent in 2022 and accounts for roughly one fifth of Australia's total emissions, according to the Climate Change Authority (2024). On road vehicles dominate the sector. Urban delivery fleets are part of that system.



So here is the controversial suggestion. Put a visible emissions price on delivery choices at checkout. Not a vague corporate pledge. Not a buried sustainability report. A clear display that shows the estimated emissions impact of standard versus express delivery, with pricing that reflects that difference.

The default option should be consolidated, slower delivery. Express should remain available, but framed honestly as a premium carbon choice.

Critics will say this punishes consumers and complicates retail. But markets already differentiate on speed, insurance and service. We do not consider it an injustice that faster

shipping costs more money. Why is it outrageous that it might also cost more carbon?

There is precedent for transparency driving behaviour. Energy efficiency ratings on appliances shape purchasing decisions. Nutritional labels influence food choices. When information is visible, some consumers adjust.

Even modest shifts in behaviour can compound at scale. If millions of parcels are consolidated more efficiently, the fuel savings add up. Fewer half empty vans run through neighbourhoods. Fewer repeat trips are required for missed deliveries.

There is also a broader cultural shift at stake. The expectation of immediacy has environmental consequences beyond transport. It drives warehouse sprawl, packaging waste and labour pressures. Recalibrating expectations around delivery speed could nudge the entire system toward efficiency rather than urgency.

This is not anti-commerce. It is pro efficiency and pro honesty.

Retailers may argue they are already electrifying fleets. Some are. Electric vans will help. But electrification does not eliminate congestion, road wear or energy demand. Nor does it solve the problem of inefficient routing driven by extreme time pressure.

An electric traffic jam is still a traffic jam. An electric van still requires materials, infrastructure and energy.

The deeper question is whether we are prepared to accept that sustainability requires friction. Not paralysis. Not austerity. But the recognition that unlimited speed is incompatible with finite resources.

Australia prides itself on practicality. We understand drought. We understand distance. We understand that nothing is truly free. Yet in the digital marketplace we suspend that understanding. We accept a narrative that convenience has no consequence. The irony is that many consumers would likely choose slower delivery if given a clear, meaningful reason. Surveys consistently show Australians express

concern about climate change. But concern without information becomes abstraction.

Displaying delivery emissions would transform abstraction into choice.

There will be resistance. Large platforms benefit from the psychological power of “free.” But free is rarely free. It is subsidised by someone, somewhere. In this case, the subsidy is environmental. If we can debate congestion pricing and fuel standards, we can debate the carbon cost of next day socks.

The delivery economy is not going away. Online retail is embedded in modern life. The question is whether we design it for efficiency or indulgence. Slower can be smarter. Consolidated can be cleaner. Transparent can be transformative. Free shipping is a marketing term. It is not a climate strategy.

If we are serious about sustainable transport, we cannot ignore the vans outside our own front doors.

References

Associated Press (2025) *Fast shipping is increasing emissions. Here's why delivery has become more polluting*, <https://apnews.com/article/climate-online-shopping-expedited-shipping-fulfillment-center-e809c3508a15033f4707dc2abbb6de69>.

Bureau of Infrastructure and Transport Research Economics (2025) *Australian Infrastructure and Transport Statistics Yearbook 2025*, <https://www.bitre.gov.au/publications/2025/australian-infrastructure-and-transport-statistics-yearbook-2025/freight>.

Climate Change Authority (2024) *2024 Sector Pathways Review: Transport*, <https://www.climatechangeauthority.gov.au/sites/default/files/documents/2024-09/2024SectorPathwaysReviewTransport.pdf>.

Sustainable Transport Series

About the authors of this series

John rejoined the Institute of Transport and Logistics Studies as the Neil Smith Research Chair in Sustainable Transport Futures in October 2022, after an 8-year absence. Over the course of his academic career, John has published over 300 scientific articles in peer-reviewed journals, books, and conference proceedings. He has also been an Associate Editor of *Transportation*, and Co-Editor and Chief of the *Journal of Choice Modelling and Transportation Research Part A*. He has also held various roles on multiple conference committees both in Australia and overseas.



Since graduating with a PhD, John has been obtained numerous grants worth over \$3.4 million. These include a number of ARC discovery grants in the areas of Public Health, Transportation crowding, general economic theory related to utility separability as well as one on improving the external validity of Discrete Choice Experiments. In addition to academic grants, John has been involved in \$9 million in industry-based contract research since the year 2005. Find out more about John: <https://profiles.sydney.edu.au/john.rose>



Andrea joined the Institute of Transport and Logistics Studies as the Neil Smith Lecturer in Sustainable Mobility and Accessibility in March 2023. Before becoming a lecturer, Andrea spent three years as visiting research scholar thanks to two scholarships, the Early.Postdoc mobility and the Postdoc mobility, awarded by the Swiss National Science Foundation. Andrea holds a Master of Science in Statistics with Honors from the University of Bologna and a PhD in Economics from the University of Lugano. Over the years, Andrea has taken part in different consulting projects with several public and private institutions such as NSW Government, University of Florence, and University of Catania. Find out more about Andrea:

<https://profiles.sydney.edu.au/andrea.pellegrini>



For more information
University of Sydney Business School
Institute of Transport and Logistics Studies
business.itlse@sydney.edu.au
sydney.edu.au