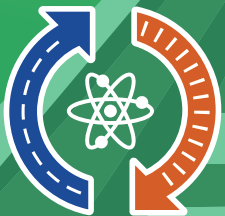


Solving Sustainable Logistics with Intermodal Transportation



InTek Freight
& Logistics Inc[™]
Technology Driven Road & Rail Solutions

Find out how a transition from truckload to intermodal transportation is a ready made solution to reduce fuel usage, emissions and traffic congestion while other sustainable options such as electrification continue to develop.

How a Diversified Shipping Strategy Reduces the Environmental Impact of Freight

Sustainability is justifiably front of mind for consumers and businesses of all stripes. For this reason, those involved in shipping and logistics must consider the most environmentally friendly transportation methods. After all, with **54 billion tons** moving within the U.S. alone every day using powered vehicles, freight transport is among the largest contributors of both **greenhouse gas and black carbon** emissions.

While most domestic freight moves via trucks over the road, impactful electrification is still years away. However, a simple move available now can not only drastically reduce the environmental impact of freight, but also save companies money. That move? A significant shift to intermodal as a transportation mode.



Comparing Intermodal to Truckload Today

An Emissions Breakdown

While truckload offers undeniable benefits including schedule flexibility, speed and the widest variety of carrier options of any freight mode, intermodal - a combination of short-haul road and railroad for the long-haul, can be competitive on delivery times while also coming in at an average cost **about 15% less**.

For those companies that care about their carbon footprint, the rail portion of the shipment allows intermodal to shine brightest compared to its truckload counterpart. In fact, it's considered the most **environmentally friendly method** of moving goods over land. And the numbers tell the story, as railroad is four times more efficient than trucks over the same distance.

Breaking it down further:

- Rail can move one ton of freight nearly **500 miles** on a single gallon of diesel.
- A train emits approximately **5.4 pounds** of carbon dioxide per 100 ton-miles whereas trucks emit approximately **19.8 pounds**.
- Trucks moving 40,000 lbs. each going 3,000 miles produce an estimated **17.4 tons** of carbon emissions, while the equivalent of these trucks placed in intermodal service produces an estimated **seven tons** of carbon emissions.

Rail Versus Trucks: Tackling Road Congestion

Beyond the direct improvement in emissions rail offers versus over the road, trains also have a secondary benefit: taking more trucks off **the nation's highways** and byways. This matters to the environment as medium and heavy-duty diesel-powered vehicles account for **more than 20%** of transportation emissions, despite making up about 5% of vehicles on the road.

So just how many trucks does a train replace? A typical intermodal train can carry the equivalent of 280 trucks. With those kind of figures, the more shipments convert to intermodal, the impact becomes exponential.

As fewer trucks vie for space on highways, this reduction plays a critical role in decreasing air pollutants emitted by idling engines stuck in traffic jams - as well as other issues related to road congestion.



1 Train



280 Trucks

Why Reduced Congestion Matters

A recent study of the Twin Cities of Minneapolis and St. Paul, Minnesota **found highway congestion** cost the area \$2.6 billion - with significant environmental and public health impacts. Extrapolate that to a larger Midwest market like Chicago, and the issue multiplies.

Congested roads lead to specific side effects, including:

Higher Emissions from Vehicle Idling

When vehicles are stationary or moving very slowly, they burn fuel inefficiently and emit more pollutants into the air. Engines are also running more due to slower travel time - a negative for freight as well.

Reduced Fuel Efficiency

Vehicles at steady, higher speeds are more fuel efficient. When traffic is congested, vehicles experience frequent stop and go, reducing fuel - and fuel combustion - efficiency.

Increased Emission Intensity

Emissions per unit of time, tends to increase in congested traffic due to inefficient engine operation.

Poorer Air Quality in Urban Areas

Congestion contributes to the trapping of pollutants in a localized area, leading to poor air quality.

Elevated Noise Pollution

More traffic during more hours of the day means more noise pollution affecting both drivers and those near highways.

Combining the added efficiency of rail and less road congestion, the EPA estimates every ton-mile of freight that moves using rail instead of highway **can reduce greenhouse emissions** by two-thirds.



Opportunities for Intermodal

Industry analysts and insiders agree that the intermodal market has significant growth potential. Intermodal shipping accounts for a substantial portion of freight transport, but there is significant capacity to handle expansion. Experts suggest that with improved supply chain integration and usage optimization, the market share for intermodal shipping could potentially double.

Put another way, intermodal currently handles about 25% of U.S. long-haul freight according to the Intermodal Association of North America (IANA). If businesses fully leverage the benefits of intermodal, this share could **increase to 50%** in short order, representing a massive growth opportunity.



There are a surprising number of trucking lanes for which intermodal fits. More specifically, Cleveland Research reports there are 45 million truckload shipments that could be converted to intermodal service - so there is **no lack of opportunity**. It generally comes down to the desire of the shipper to explore the transition.

And while it may seem like a major shift in strategy to convert some or all freight to intermodal, there are no infrastructure, technology or adoption issues. It's actually as simple as contacting any number of intermodal marketing companies, also **known as IMCs**, to make the move.

The Viability of Electric Trucks in 2024

Electric trucks are the obvious sustainable successor to the current over the road freight model, as they can theoretically go wherever diesel-powered tractor-trailers can, sans all the carbon emissions. The problem in 2024 (and this take will likely become dated at some point) is that the technology - both within these vehicles and without - is **not yet viable** for mass adoption on long haul routes.

Current battery technology limits the **range of electric trucks**, making them less suitable for long-haul routes. Additionally, charging stations along major highways **are hardly ubiquitous**, and even if they were, recharge time could add hours to a journey.

On top of that, the weight of battery packs made with current tech reduces their payload capacity. Despite allowance for an additional 2,000 pounds in the U.S., heavy batteries mean electric trucks may haul less freight than their diesel counterparts which are allowed to carry 80,000 pounds.

For companies still interested in taking the plunge today in spite of those flaws, upfront costs remain **significantly higher** than gas-powered trucks. And production capacity means these vehicles are still rather difficult to acquire.

Industry experts believe we are **five to 10 years** away from electric trucks taking over long-haul freight. However, short-haul for final-mile deliveries, drayage and other local applications are already gaining ground - as many of the above obstacles do not apply for local routes.



Sustainability and the Bottom Line

While sustainability should be a goal of any company, some executives may still need convincing due to worries about bottom line costs. And while making changes can lead to upfront expenses, consumers appreciative of the effort will likely pay them back with interest.

A 2020 Deloitte survey **found 43%** of consumers made a conscious lifestyle change to choose brands with environmentally sustainable values and practices. In the Global Sustainability Study 2021 - a major study of more than 10,000 people across 17 countries - that **percentage doubled** to 85% who'd shifted their purchasing behavior in the past five years.

In the same study, more than a third of respondents said they'd be willing to pay a premium to support sustainable companies. In freight and logistics specifically, a Sifted survey showed **nearly 60%** of consumers would pay at least 10% more for eco-friendly shipping and packaging.

There are a number of ways sustainability can **lead to profitability** for companies that adjust their operations, including

- More operating efficiencies
- Tax incentives
- An improved reputation
- Future-proofing

Getting back to intermodal, the aforementioned upfront costs are negligible - if they exist at all. And savings not only comes via committing to sustainability, but through lower rates as well.

How to Get Started with Intermodal

As mentioned earlier, **getting started** with intermodal is as simple as reaching out to an IMC (intermodal marketing company) who can walk through the process. That walk-through includes one or more discovery conversations, to understand shipping needs, lanes and priorities that will determine how intermodal best fits each individual customer's operations.

During this exchange, it is important for the shipper to hear from the IMC regarding operating authority, insurance, registrations, testimonials, how the company works, assigned staff and - for sustainability questions - its environmental credentials such as EPA SmartWay Certification. The shipper should also understand the billing process and potential **accessorial charges** that can occur.

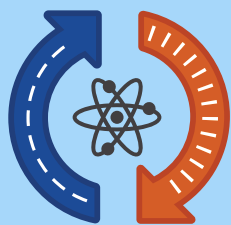
Once settled on whether and how much intermodal is a fit (and the shipper is comfortable with the IMC), one more key step is ensuring proper blocking and bracing - as packing is slightly different for rail vs truck to account for **harmonic vibration**.

When freight movement is underway, the IMC serves as the point of contact, the coordinator of each load, the visibility provider and the biller for all intermodal shipments. To keep things uncomplicated, rates tend to be door-to-door, so the shipper need not deal with each party involved in extra steps in the **intermodal shipment** compared to traditional truckload.

The process from onboarding to execution can be completed in a minimal timeframe (even a few days), allowing the shipper to quickly incorporate intermodal into its strategy and gaining the sustainability (and cost) benefits it offers almost immediately.

About InTek Freight & Logistics, Inc.

InTek Freight & Logistics, Inc. is a North American service-focused IMC and logistics company. It was named among the Inc 5000 fastest growing privately held companies in the U.S. in 2022 and 2023, both a Top 3PL and Top Software and Technology Provider by Food Logistics Magazine in 2023, a 2023 Best Places to Work in Indiana honoree by the Indiana Chamber of Commerce and is SmartWay Certified by the U.S. Environmental Protection Agency.



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