

Optimising capacity as climate action

The climate crisis worries us all: as citizens, companies, and as a society. We see and feel its effects, both locally and globally. The transport- and logistics industry in particular faces a great challenge in reducing emissions throughout its supply chain, and its strategic importance now equals that of financial targets.



The average fill rate of Danish trucks is only 56%¹.

¹ [Brancheforeningen ITD](#)



26%

increase of trucks on Danish roads in 10 years.

The challenge of a green transition

Transportation accounts for approximately 29% of Denmark's collective CO2 emissions, and heavy transports make up a third of that number. The challenge faced by the transport- and logistics sector is tremendous, and the industry is actively looking for cost-effective ways to adapt. Part of this challenge stems from the sector's continued reliance on fossil fuels and infrastructure that is difficult to reconfigure. At the same time, the industry faces increasing transportation costs, empty running, inefficient use of equipment, thinning margins, lack of capacity and a shortage of drivers. E-commerce's rapid growth doesn't help either.

Most of us shop online at home where our purchases will later be delivered to our doorstep. In Denmark alone, the number of trucks on the roads has risen 26% in just 10 years. An unfortunate trend that only puts additional strain on existing infrastructure, sees more traffic on highways and further damage done to the environment.

The transport industry serves an important socio-economical purpose. It ensures supply and carries the goods that both business and people rely on. It means we're all contributing to the problem caused by greater transportation needs and accompanying emissions. But it also means we can make a difference if we change our habits as consumers and businesses. That's the good news: reducing emissions from heavy transports is not an impossible task.

Being green is better for business and sustainability

Many businesses are actively involved in the green transition, and an increasing number demand their supply chain partners provide a "greener" service with fewer emissions. That's true for both transportation and logistics. At the same time, businesses use green initiatives as a criteria by which they position and market themselves against their competition. It has become a competitive edge to be seen as more sustainable than the rest.

What can the transport- and logistics industry do when customers and regulators demand it reduces its emissions?

And how can the industry realise CO2 reductions in the short term without having to make significant and risky investments?

The questions pile up. Transport and logistics operators naturally assume that a large-scale transition cannot work without greener technology and more sustainable fuels, and without them, a certifiable CO2-neutral transport industry will never be a reality. These are obvious, but also very expensive investments that take a long time to implement. At the same time, the transition faces significant barriers, because several of these green technologies are not yet commercially viable, and the same is true for the necessary infrastructure. Politically, a carbon tax is on the horizon – another good reason to begin reducing both CO2 and costs.

Optimising capacity as climate action

Fortunately, there are solutions ready to be implemented here and now. An obvious opportunity is optimising capacity, or, simply loading more cargo on every truck, which has the potential for significant and measurable benefits for the environment. Of course, this requires actionable insight into the flow of transportation and data, as well as concrete knowledge and a sense for how well trucks are filled throughout the supply chain. Far too many trucks make their deliveries only half-full, wasting their capacity because stacking goods higher safely and efficiently is difficult. As a result, the average fill rate of trucks on Danish roads is 56%¹.

Also, there's often a lack of transparency and scarce data on how efficient operators are in making use of the space available to them in their logistics operation. That means many transport customers are unaware of the environmental benefits available to them through better use of trucks' capacity and fill rate. Benefits that can be realised with simple tools and few adjustments to how they handle cargo.

If the fill rate on all trucks could be improved, it would mean every single transport could reduce CO2 emissions. The result would be operators using fewer trucks, and thereby being able to remove those drives from the "green" balance sheet.



SpaceInvader in use during loading, unloading and transportation at Blue Water Shipping and PostNord Logistics.

¹ [Brancheforeningen ITD](#)

Beyond the realised environmental savings from increasing the amount of goods on every truck, there are also additional gains to be made. Fewer trucks on the road benefits climate, the environment, and it helps the bottom line too – for both transporters and the customers who use their services. Finally, it also addresses the shortage of drivers and sees ergonomic improvements to how goods are handled by workers.

Innovative system is the way forward

The past three years have seen prominent transportation and logistics companies achieve significant reductions in emissions through the implementation of a cargo handling system developed by a Danish company named SpacelInvader. The solution makes possible simple and efficient double-stacking of pallet goods so

that trucks are filled to a greater degree and thereby drive down emissions of CO2.

Operators also saw corresponding savings, because there's a direct correlation between saved CO2 and saved logistics costs. For every CO2 reduction, money is saved as well, and with the introduction of a carbon tax, that saving is only going to grow.

Double-stacking is climate optimisation

The SpacelInvader system is tested and in use at a number of prominent transporters and distributors in Scandinavia. The savings from this solution are easy to document and can easily be entered into these businesses' climate calculations.

	postnord	ASKO <small>- vi forsyner Norge med mat</small>	VELUX®
	<i>PostNord Denmark is a leading supplier of logistics services, and a subsidiary of PostNord, a company co-owned by the Swedish and Danish governments.</i>	<i>ASKO is Norway's biggest foodstuff distributor and delivers goods to shop owners, supermarkets and the catering industry across Norway.</i>	<i>Velux, founded in Denmark in 1941, is an international producer of a variety of skylight solutions.</i>
	Linehaul	Distribution	3PL
	General cargo	FMCG	Industry
	<i>Scope</i>	<i>Scope</i>	<i>Scope</i>
	Taulov – Herning – Køge	Tiller - Mo i Rana	Kolding – Hedehusene
	4 months pilottest	3 months pilottest	3 months pilottest
Pilottest results			
Truck savings	200 trucks	12 trucks	25 trucks
Km savings	30.000 km	5.808 km	5.625 km
CO2 savings*	28,9 tonnes CO2	5,6 tonnes CO2	5,2 tonnes CO2
CO2 reduction	12,8%	20,0%	16,6%
Yearly potential			
Truck savings	600 trucks	52 trucks	100 trucks
CO2 savings*	86,7 tonnes CO2	24,2 tonnes CO2	20,7 tonnes CO2
CO2 reduction	12,8%	20,0%	16,6%

* CO2 savings are based on standard km/liter diesel: 2,7 and CO kg/liter diesel: 2,6



56%

Average fill rate of Danish trucks³

Denmark and the Climate Crisis

The latest report from the United Nations Intergovernmental Panel on Climate Change (IPCC) states the world has used up 80% of its CO2 budget and drastic action is needed, as a global temperature increase of 1.5°C is expected within the coming decade.

Even in Denmark, a country considered a green energy leader, we have one of the highest CO2 footprint per capita, and despite that footprint being reduced by 25% since 1990, every Dane still emits 11 tons CO2 annually, with 60% stemming from personal consumption.

Radical initiatives and drastic changes are necessary to turn the tides, and they're only possible with a collective willingness to change and united effort if we are to secure a sustainable society for the generations to come.

The Danish government has tabled binding CO2 targets for 2030, where Denmark must reduce its emissions by 70%. In the years to come, we will need many new initiatives, innovation, new technology, and major behavioral changes. Many solutions are still on the drawing board, but many are not market ready yet. Optimising capacity in the supply chain is an immediate climate solution for the here and now.

About SpacelInvader

SpacelInvader, founded in 2015, is a Danish green-tech company that is part of the circular economy and helps the transportation and logistics industry optimise its cargo capacity. SpacelInvader's climate solution offers both a documentable CO2 reduction in the supply chain as well as a ROI upwards of 400%. With its patented pallet rack system, SpacelInvader enables safe and stable double stacking of pallet goods in trucks, the warehouse and at the cargo's destination. The solution reduces the

significant costs related to the logistics operation: empty running and low rate of fill. The SpacelInvader system also sees an environmental benefit, as it saves between 10-30% of CO2/NoX. When implemented, the solution reduces both the number of driven kilometers and trucks used. Following implementation of the SpacelInvader solution in its line haul, PostNord Logistics effectively saved every eight truck.

Read more cases and learn about SpacelInvader's solution at www.spaceinvader.com