BRAINBOX AI

10 strategies to reduce GHG emissions in retail

Intro

Climate change presents a systemic risk to retailers.
Climate-related extreme weather events have increased by 83% since the 80s, leading to the destruction of retail assets, increasing insurance costs, the disruption of supply chains and distribution channels, and unstable access to raw materials. This, combined with stricter emissions policies and shifts in consumer and other key stakeholder preferences means that retailers are increasingly implementing emissions reduction strategies across their entire value chains.

However, the path to decarbonizing the retail space is still relatively unclear. With this in mind, we've put together a list of 10 ways retailers can reduce their scope 1, 2, and 3 emissions and reach their net zero targets.

> **Fact:** The retail sector is responsible for over **25% of global emissions**, **approximately 95%** of which are Scope 2 and 3 emissions.

Scope 1 emissions

Scope 1 emissions are the direct emissions caused by activities owned or controlled by an organization. Examples of this are the use of on-site energy (such as natural gas, fuel, and refrigerants), emissions from combustion in owned or controlled boilers, factory fumes produced in the process of manufacturing goods, or the emissions caused by company-owned cars or trucks.

01

Digitalize your operations

Digitalizing operations can help streamline your processes, lower costs, improve operational efficiency, and reduce your carbon footprint. Automating routine inventory and order management with software like NetSuite and RetailEdge can help retailers plan for demand more efficiently. This cuts down on surplus and unnecessary deliveries, which saves businesses money while reducing their scope 1s and 3s.

Reducing waste and excess deliveries is also particularly important for grocery stores, which face the challenge of managing a large number of SKUs (stock keeping units) for perishable produce. Where traditional forecasting methods involve manual estimates and outdated software, resulting in overstocking or stockouts, AI technology like Shelf Engine can forecast consumer demand for perishables. This allows stores to plan smarter and lower their emissions through reducing food waste and preventing excessive deliveries.

These kinds of technologies, according to Capgemini, have already reduced retail GHG emissions by 12.6% from 2017-2019, a percentage that's projected to increase to 15% by the end of 2024. Moreover, the same study predicts that AI will reduce consumer retail stores' economic emissions intensity (how much CO_2 is produced per USD of GDP) by 45% by 2030.

02

Reduce your refrigerants

When it comes time to replace or upgrade your HVAC equipment, consider switching to refrigeration systems that are more environmentally friendly, for example, low global warming potential (GWP) hydrofluorocarbon (HFC) or natural refrigerants such as CO_2, ammonia, or Propane or even hydrofluoro-olefins (HFOs). Although no refrigerant is perfect, both ammonia and HFOs have a low global warming potential (GWP) in addition to an ozone depletion potential of zero, meaning they do not directly contribute to the warming of the Earth when released into the atmosphere.

Hydrofluorocarbon (HFC) refrigerants, on the other hand, are up to 11,700 times more potent than CO_2. HFCs are commonly found in older HVAC systems, meaning businesses can significantly reduce their emissions by retrofitting or replacing their units with ones that use low GWP refrigerants. In fact, it's projected that the replacement of 67-82% of the world's HFC refrigerants with those containing ammonia, CO_2, or propane, could result in an emissions reduction of 42.73–48.75 gigatons of CO_2 equivalent (roughly the same amount needed to provide 6 billion homes with energy for a year).

Tip: Because about 90% of refrigerants' GHG emissions **come from end-of-life leaking**, it's also important to ensure their safe disposal in accordance with the relevant **environmental guidelines**.

03

Invest in fleet electrification

Electric vehicles (EVs) aren't just a good way to reduce your scope 1 emissions, they can also help lower your costs by up to 83% in the long run. That's because not only do EVs offer high fuel economy, but electricity prices are typically lower and relatively more stable than gas and diesel.

Although they require capital to buy, there are often federal, state, or local incentives that can knock down the purchase price of EVs. Additionally, you can achieve further savings (while reducing the grid load) by taking advantage of off-peak hours to charge your fleet.

Fact: Hundreds of thousands of CO_2 is avoided with each 15-vehicle fleet that transitions to electric.

Resource: *For a comprehensive guide on how to electrify your fleet, see* ***BC Hydro's fleet electrification guide*** *or Samsara's* ***complete guide to electric vehicles for fleets***.

04

Decrease transportation distances

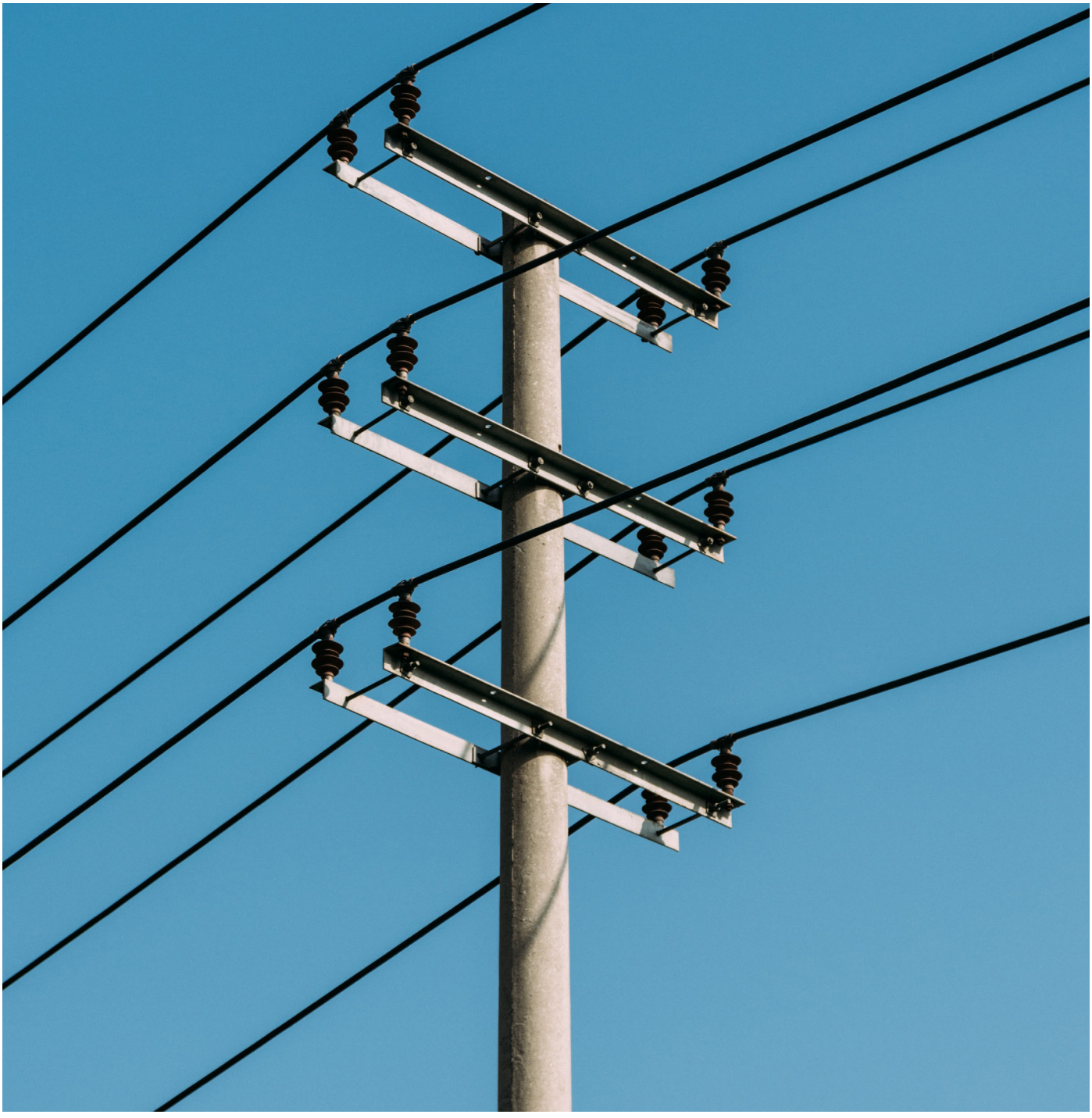
Finding more fuel-efficient routes not only reduces your emissions and fuel costs, it also minimizes delivery delays. In fact, route optimization technology (which adjusts for traffic, consolidates routing, and optimizes last-mile deliveries) is so effective that it can greatly reduce fuel usage.

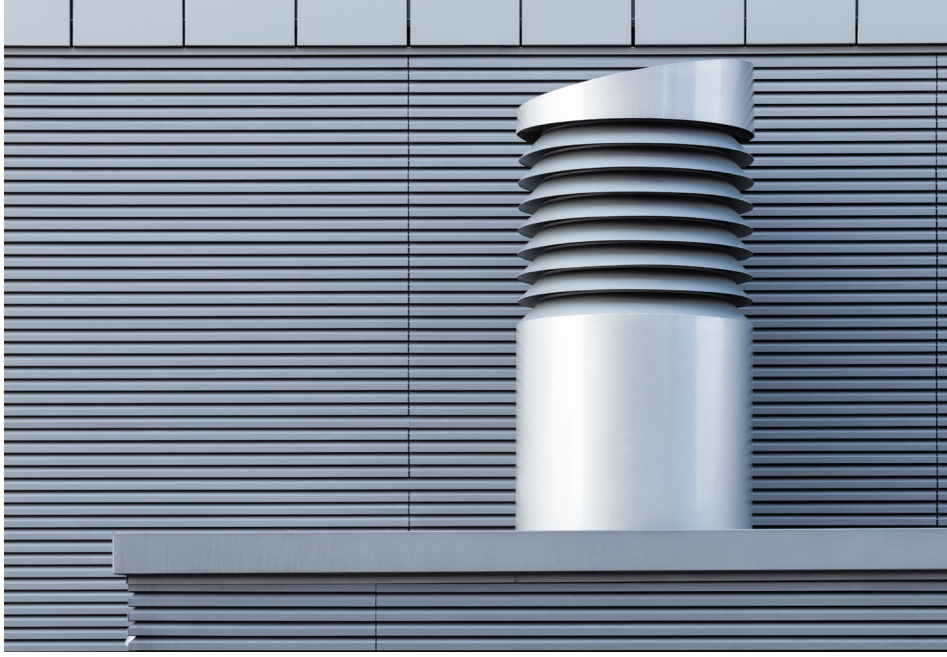
Saving fuel can help businesses achieve significant emissions reductions, especially considering that vehicles account for nearly three-quarters of the world's CO_2 emissions. That's why route optimization software companies like SimpliRoute are rapidly taking off. This tool alone has helped its clients (which include the likes of Walmart, Avon, and Unilever) reduce their CO_2 emissions and logistics costs by up to 34% - all while decreasing delivery times by up to 80%.

Fact: A **2019 survey** conducted by route optimization software Routific, found that out of 11,246 businesses, 72% of them were still manually planning their delivery drivers' routes.

Scope 2 emissions

Scope 2 emissions are a result of an organization's indirect emissions. An example of this would be the electricity or energy it buys to heat, cool, and light its buildings.





05

Reduce your HVAC energy consumption

Heating, ventilation, and air conditioning (HVAC) systems are responsible for around 35% of a building's total energy consumption. Making them more efficient can reduce both scopes 1 and 2 emissions, as well as utility costs.

While new HVAC systems use 30-40% less energy, they're generally costly and disposing of your old system may not be environmentally friendly. Instead of buying a new system, you could consider retrofitting your existing HVAC system, replacing old parts with new more energy-efficient components or controls.

Additionally, adopting AI technologies for HVAC can make your existing systems smarter and more efficient without having to invest in new equipment. This technology learns continuously, constantly becoming more efficient over time, saving energy and costs, increasing occupant comfort, and lengthening equipment life.

Resource: *To learn more about how investing in a smart HVAC can improve the energy efficiency of your existing system, check out BrainBox AI's article on* ***how smart HVACs can help buildings become part of the climate solution.***

06

Invest in LED bulbs and smart lighting

Switching out your incandescent lights for LEDs is a simple, but powerful, way to reduce your store's energy consumption and scope 2 emissions. Since LEDs use at least 75% less energy and last up to 25 times longer than their incandescent counterparts, making the change is both environmentally and economically prudent.

Additionally, Smart LED lights with embedded IoT software lets you automate your lights, control them remotely, and set automated lighting schedules. They can also allow you to personalize lighting settings for each of your departments, creating the right ambience while saving energy.

Resource: *For more information on how to improve your business' environmental performance and reduce your energy spend with LEDs, see the Sustainable Energy Authority of Ireland's* ***Energy Efficient LED Lighting Guide for Businesses***.

Scope 3 emissions

Scope 3 emissions are produced by assets not owned or controlled by the reporting organization, but which still impact its value chain. These emissions are notoriously difficult to measure as they occur off-site. Scope 3 emissions are separated into upstream and downstream emissions. Upstream emissions are emissions by a means that isn't owned or controlled by an organization, for example business travel and waste disposal. Downstream emissions are emitted after a product or service leaves the company's control or ownership, for example the end-of-life treatment of sold products.

07

Ditch the plastic

You can cut down on some of your scope 3 emissions by reducing the amount of plastic bags, containers, straws, cutlery and packaging you provide in your store. Instead, you can offer your customers more environmentally friendly options in which to transport their purchases, such as paper bags, leftover cardboard boxes, and compostable or reusable packaging. You can also encourage your customers to bring their own reusable bags. Additionally, clothing retail stores can consider replacing plastic hangars with those made of chrome, wood, or cardboard.

Another way retailers are reducing their plastic waste is by performing a waste audit, which is an on-site assessment of waste and recycling efforts. A waste audit can identify what is and isn't working in your current waste and recycling management program, enabling you to tweak and improve your plastic-disposal processes.

Fast facts on plastic: The retail sector is responsible for around **40% of global plastic usage**. **Almost 80 countries** have a full or partial ban on single-use plastic bags. **More than 30 of these** are African countries.

08

Cut down on business travel

You can reduce the amount of fuel you use and lower your scope 3s by avoiding unnecessary business travel. Before buying train tickets, flights, or car rentals, consider whether meetings, conferences, or events can be attended virtually. You could also think about following in IKEA's footsteps by using drones for inventory audits and stocktaking in place of on-site warehouse visits.

Indeed, many businesses today are choosing to cut down on business travel to lower their emissions and reach their net zero goals. EY, for example, aims to reduce their travel emissions by 6% each year to reach their target of a 35% reduction by 2025. Salesforce too has set their sights on a 50% reduction in travel emissions relative to 2019 pre-pandemic levels.

09

Incentivize greener consumption

One often-overlooked area for scope 3 retail emissions reduction is the customer's trip to the store. To address this, retailers can consider expanding the retail ecosystem in and around their stores, adding, for example, a gas station, electric vehicle charging points, or ATMs. This encourages customers to combine shopping trips, reducing the overall amount of fuel they use.

Retailers can also employ mobile technology, such as a store app that reminds customers of their regularly purchased items, or a product locator tool (as used by Home Depot) that helps customers quickly find what they're looking for. This could help customers buy everything they need in one go, reducing the number of store visits or single online purchases due to forgotten items.

10

Practice green procurement

Green procurement is the purchasing of products and services that cause minimal damage to the environment. It takes into account the immediate and future impacts of products, from production to consumption to end-of-life and disposal.

To put green procurement into practice, you can think about partnering with a local packaging supplier instead of one that's overseas. You could also consider purchasing goods with a lower carbon footprint (such as recycled raw materials) or switch to services that cause fewer emissions, like sustainable shipping companies (UPS, for example, offers a carbon neutral shipping option).

One illustration of a business practicing green procurement is IKEA, which aims to only use responsibly sourced renewable or recycled materials and sourcing standards. In fact, more than 99% of the wood utilized by IKEA is FSC-certified or recycled and only uses sustainably-sourced and recycled cotton.

Tip: Green procurement policies can improve a company's triple bottom line (their environmental, social, and financial performance). For instance, since introducing sustainable sourcing [as set forth in the Unilever Sustainable Living Plan (USLP) in 2010], Unilever has **cut costs by over USD $1 billion** and reduced their consumers' footprint associated with their products by 32%.

Resource: *To learn more about how sustainable corporate policies can result in better financial performance, check out Alex Edman's book,* ***Grow the Pie****.*

Conclusion

Incremental changes such as these can go a long way toward meeting regulatory requirements, lightening carbon footprints, and lowering overall costs. By investing in clean technology to optimize processes and energy consumption, eliminating single-use plastics, and developing ethical supply chains, retailers can begin to embed sustainable behavior throughout their processes, winning them loyal customers and helping them achieve their net zero targets.

Reduce your emissions by up to **40%** within a few months with BrainBox AI.