FOUR SUSTAINABILITY STRATEGIES FLEETS CAN USE TODAY

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For fleet operators looking to achieve sustainability goals, reduce their carbon footprint, or just stay compliant with upcoming — and potentially upcoming — state laws, migrating to all-electric-vehicle (EV) fleets is likely the prudent action to take. But at present, EV and other alternative-fuel vehicle inventory shortages and higher per-vehicle costs compared to internal combustion (IC) vehicles mean fleets in transition can expect potentially long wait times for vehicle delivery and higher price tags for new vehicles.

At the same time, 75% of the largest U.S. fleet operators — accounting for roughly 1.2 million vehicles — have committed to decarbonization targets, meaning they need to show measurable progress on their sustainability goals. Other fleets may simply be eager to reduce their environmental impact. So what steps can they take while the EV inventories catch up — and prices come down?

Fortunately, fleets can act today, at their own pace, and improve step by step. In this white paper, we'll examine strategies fleet operators can use to begin lessening their environmental impacts today, while we wait for fleet EV integration to become more attainable.

FLEETS OF THE FUTURE: WHAT TO KNOW ABOUT EV INTEGRATION TODAY

If your fleet is still on the fence about electrification, it's not hard to see why. Historically, EV commercial vehicles cost more to purchase than traditional vehicles. Meanwhile, many fleets operate in and across areas where charging stations are scarce — if they're present at all. Plus, they require specialized maintenance from qualified technicians, and given that traditional IC techs are already a scarce commodity, that alone likely gave operators pause when considering EV integration.

However, all of these factors are starting to change for the better.

Arguably the largest of several stumbling blocks for most fleets when it comes to EV adoption has been cost. While historically, EVs have cost around \$10,000 per vehicle more than traditional IC vehicles, by the end of 2022, the average price of a new EV was \$3,594 less than it was a year earlier. In fact, the price of EVs is also falling relative to their IC competitors, and it may even reach parity by 2027.

Meanwhile, Kelley Blue Book found that the maintenance cost of owning an EV comes to \$4,246 over five years of ownership, compared to \$4,583 for a gas-powered car.

Another factor contributing to the falling cost of EVs is the price of the batteries they require. The per-kilowatt-hour cost of lithium ion batteries is now 85% lower than it was in 2010, and that cost is expected to fall below \$100 per kilowatt hour by 2024.

Next, there's been the issue of availability. To date, comparatively few fleet-ready EVs have been available, but that's rapidly changing, with some common fleet vehicles like the Ford F-150 recently getting EV versions. This is a trend that's expected to continue well into the remainder of the decade as demand for fleet capable EVs continues to grow.

Of course, it's not just EVs that have an opportunity to gain market share in the fleet space. By 2030, EVs and hydrogen vehicles together are expected to make up 25% of the Class 4-8 medium- and heavy-duty truck market.

All told, many of these obstacles that kept fleets from electrification are diminishing or outright disappearing, making EVs the likely choice for fleets of the near future.

But what about the fleets of today?



WHAT TO DO WHILE YOU'RE WAITING

It may not be realistic or even feasible to switch your entire fleet to alternative fuel vehicles today, but there are measurable steps you can take to lessen your environmental impact and make measurable progress on sustainability goals.

Here are four things you can do on that front as we await the EV future of fleets.

1.) Reduce Fuel Consumption and Pollution Through Better Tire Maintenance

A vehicle's pollution doesn't simply come from its tailpipe. Much of a vehicle's impact — and ultimately its fuel consumption — can be attributed to its tires. In fact, even seasoned operators may be surprised by just how much tire tread and pressure levels can impact fuel economy and emission levels.

Why? Simply put, tires are literally where the 'rubber meets the road,' and the friction from and load-bearing stresses on a vehicle's tires have a dramatic effect on the environment. The most pronounced of these effects occurs while tires are in their "use" phase — or when they're actively carrying a vehicle and its cargo over the road. Tires can impact up to 30% of a vehicle's fuel consumption, while 24% of road-related CO2 emissions are related to tires and their performance.

One of the primary reasons for this impact on fuel consumption and emissions creation are how accurately the tires are inflated. For example, a single tire that's 20% under-inflated can increase a vehicle's fuel consumption by 10%. That's because under-inflated tires bulge and sag, increasing the surface area of the tire that interacts with the road. This makes a vehicle work harder to start from a complete stop, putting additional strain on your engine. This additional bending and flexing of the tire as it rotates also wastes energy, generating heat rather than forward motion.

Under-inflated tires are also the cost of up to a quarter of incidents of rapid air loss on the road, which can be dangerous, to say nothing of the unnecessary tire waste created therein.

Of course, over-inflation is also dangerous, as it risks altering the contact patch, reducing the tire's grip and performance. Like under-inflation, over-inflation can also place undue stress on the tire, shortening its lifespan.

Beyond maintaining correct inflation levels, fleets may also wish to consider how the proper tire — with the proper tread depth for their fleet's use case — can impact fuel economy.

Selecting tires with treads that are too deep, for example, can increase rolling resistance — a measure of the effort a vehicle must put into making the tires roll across a surface — and thereby increase fuel consumption. As a result, fleets that don't require the kind of "luggy" tires normally needed for off-road applications should avoid them, and instead opt for tires with shallower treads designed for in-town or highway driving.

In short, by choosing the right tire up front and performing regular monthly tire inspections, fleets can avoid unnecessary fuel consumption, waste creation, and CO2 pollution — in addition to lowering their total cost of ownership (TCO).





MAKING INCREMENTAL IMPROVEMENTS WHILE PREPARING FOR EVS

Every vehicle, whether IC or EV, comes with a cost of ownership. Maintenance, insurance, fuel, wear and tear, depreciation, registration and fees — the list goes on. But what factors should fleet operators who are concerned about their environmental impacts and achieving sustainability goals consider before making the switch to EVs? And when does it truly make financial sense to switch?

Let's look at a side-by-side comparison of what fleet operators will encounter if they switch now versus switching in the near future — while still taking steps to mitigate their environmental impact.

Switching to EVS Now

- High per-vehicle cost
- Low availability and long wait times
- Charging infrastructure is still costly to install
- Maintenance requires specialized skills few technicians have
- EVs' maintenance needs are rarer than IC, but more costly when they're required

Switching to EVs in the Near Future

- Prices are falling, expected to reach parity or near parity by 2027
- More EVs are being manufactured with each model year, and more models are arriving in the market
- Charging infrastructure is likely to become more affordable, easier to install, and maybe even tax deductible
- Technicians need time to train on new skills and equipment
- Operators will be able to maintain all-EV fleets with fewer, more specialized technicians

With these factors in mind, it certainly appears that the right time to make the switch will be when EV prices reach — or fall below — parity with IC vehicles, when a wider selection of vehicles is available, when technicians have sufficient time to learn new skills and technologies required to maintain EVs, and once operators have time to install the necessary infrastructure.

Of course, that's a lot to take on immediately — but operators can start on training and infrastructure improvements today while they wait on prices and availability. Likewise, they can also follow the steps referenced here today to reduce their environmental impacts, save money, and reduce waste while doing so.

2.) Ensure Your Drivers Are Trained On High-Efficiency Driving

While tires and fleet vehicles contribute to fuel consumption and harmful emissions, so do the drivers themselves — namely, not just what they drive, but how they drive.

Consider that IC vehicles consume the most fuel when accelerating from a stop. In this instance, vehicles don't have the benefit of momentum like they do during highway driving, for example, meaning those first moments of acceleration are when engines have to work hardest to transfer power to the individual wheels.

Drivers can mitigate unnecessary fuel consumption and emissions when accelerating from a stop by accelerating slowly and steadily, rather than applying maximum pressure to the accelerator to get up to speed quickly — and, perhaps, to avoid the ire of impatient drivers behind them.

But it's not just how they start from a stop that can impact fuel usage and pollution, but how they stop to begin with. Rather than applying the brakes to stop urgently, gradual braking and reading the road ahead for changing lights and potential obstructions can improve fuel economy by as much as 35% at highway speeds — and up to 40% in stop-and-go driving.

Another tough but worthwhile habit fleet drivers may want to consider breaking is idling while loading, unloading, or waiting for a loading dock to become available. According to the Environmental Protection Agency (EPA), long-haul truck idling alone results in:

- A billion gallons of unnecessary fuel consumption
- 11 million tons of CO2 emissions
- 180,000 tons of nitrogen oxide emissions
- 5,000 tons of particulate matter emissions

While these figures are almost certainly less dramatic for smaller fleet vehicles, the same idea holds true: By avoiding idling whenever possible, fleet drivers can have a measurable impact on fuel consumption and emissions of a variety of toxic environmental agents.

Of course, none of these tactics should require you to reeducate your drivers on how to drive. Instead, just remind them periodically that how they drive impacts the environment — and your bottom line.



3.) Use Higher-Quality Tires

In addition to adjusting driving tactics and paying proper attention to proper tire maintenance, fleets may also want to reconsider the overall quality of tires they use.

Consider that as many as 1.5 billion tires end up in landfills or burn piles each year — and that number may be as high as five billion by 2030. Fleet operators can mitigate this environmental impact by making a remarkably simple decision: using better tires.

That's because tire quality can have a considerable impact on maintenance costs, waste, and TCO.

But why? What innovations go into "premium" tires, and how do those innovations lead to greater longevity and lower overall TCO?

Consider that, in the example of the Michelin Agilis CrossClimate tire, fleet owners will find StabiliBlok, MaxPressure Profile, and CurbGard technologies at work. StabiliBlok provides wider and longer tread blocks to resist extreme torque. MaxPressure Profile optimizes the tire footprint, maximizing the rubber on the road, for better wear life under high pressure, heavy loads, high torque, and stop-and-go driving. Meanwhile, CurbGard sidewall protectors resist curb scrub, allowing the tire to remain in service longer. Together, these technologies allow the Agilis CrossClimate tire to last up to 19% longer under heavy loads than three leading competitive commercial tires.

Granted, higher-quality tires like the Agilis CrossClimate tire likely come with a higher cost up front. But over time, those costs are offset by less-frequent maintenance and a longer lifespan. On the other hand, operators may have to replace lower-quality tires several times over the equivalent lifespan of a higher-quality tire — meaning those lower-quality tires may come with a cheaper sticker price, but a considerably higher total cost of ownership (TCO).

4.) Look for Vendors and Partners With a Focus on Sustainability

One way fleets can mitigate their environmental impact today may often be overlooked: the partners with which they choose to do business.

While there are any number of partners that can provide tires to fleets, few have a decades-long dedication to sustainability — but those that do can provide invaluable guidance as fleets look to achieve sustainability goals, reduce emissions, and ultimately transition to EVs.

Michelin, for example, has been at the forefront of more sustainable mobility since 1889. Not only has Michelin launched six generations of car tires and five generations of truck tires with improved energy efficiency since 1992, they're also one of the world's leaders in energy-efficient radial tires. Michelin is also committed to reaching Net Zero emissions and 100% use of renewable or recycled materials by 2050.

Furthermore, Michelin's continued commitment to innovation in sustainable tire development earned Michelin the AutomotiveINNOVATIONS Award 2023 in the 'Chassis, Car Body & Exterior' category for its road-approved car tires containing 45% sustainable materials.

These are just a few examples of Michelin's ongoing dedication to being fleets' key partner in their journeys to sustainable mobility, both today — and once EVs arrive.





TAKEAWAYS FOR FLEET OPERATORS

EVs have distinguished themselves as the heirs to the future of commercial fleets, and with them are expected to come lower emissions, less waste, and — ideally — lower overall TCO.

But while we wait for that EV future to manifest itself, there's no reason fleets can't take action today to lower their vehicles' cost of ownership and mitigate their environmental impact. These include:



Adopting higher-quality, longer-lasting tires



 Adhering to rigorous tire maintenance schedules that ensure proper pressure and tread depth is always present



3. Encouraging drivers to operate their vehicles more mindfully and efficiently



 Choosing partners with demonstrated histories of innovation and commitment regarding sustainable mobility

With these strategies in place — and alongside a true partner like Michelin — fleets can help reduce both their environmental footprints and their costs.

Click here to learn more about Michelin's commitment to sustainable mobility, or get in touch to start a conversation with one of Michelin's fleet experts today.







ABOUT MICHELIN

Dedicated to the improvement of sustainable mobility, Michelin designs, manufactures and sells tires for every type of vehicle, including airplanes, automobiles, bicycles, earthmoving equipment, farm machinery, heavy-duty trucks and motorcycles. Michelin also offers a full range of innovative services and solutions that help make mobility safer, more efficient and more environmentally friendly. To learn more, **business.michelinman.com**