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ACCELERATING FLEETS TOWARD A SUSTAINABLE FUTURE:

Top Insights from CV Industry Leaders

A Frost & Sullivan Virtual Think Tank

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Frost & Sullivan recently hosted a Virtual Think Tank focused on sustainability efforts within US commercial vehicle (CV) fleets. Attendees included a mix of fleet managers, industry thought leaders, and CV suppliers and OEMs, with discussion oriented toward critical drivers of change, hurdles to overcome, and strategies being adopted. Participants interacted by contributing to a brief survey as well as sharing experiences and perspectives.

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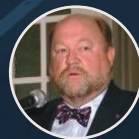
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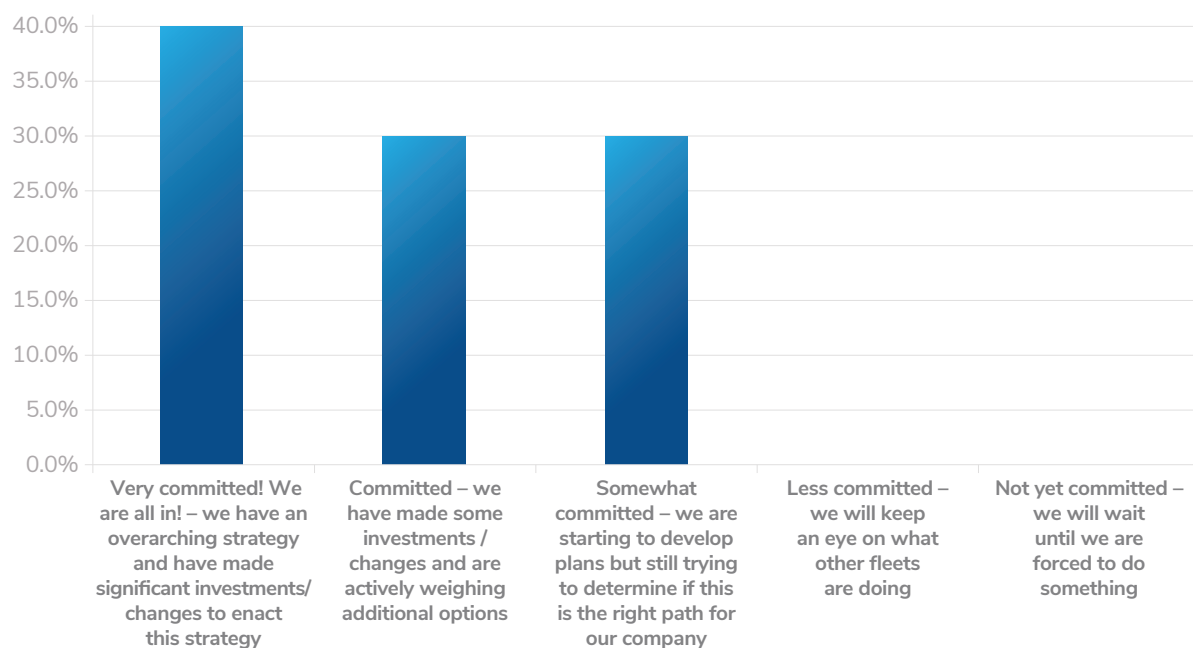


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SUSTAINABILITY IS TOP OF MIND AMONG FLEETS

Green trucking, with attention paid toward reducing emissions, economizing fuel usage, and lessening overall environmental impact, is fast becoming a core ambition of US fleets. A number of factors are forwarding this trend. More reliable technologies, such as pollution control and route optimization technologies, with calculable returns-on-investment (ROIs) have been brought to market. Further, growing consumer desire to purchase from sustainability-minded organizations has been guiding internal operations, with expectations percolating down to the fleets companies own and hire. As one think tank participant noted: “There is the image—the perception of having that clean, electric fleet. We see that as a very strong part of that total cost of ownership.”¹ Overall, the industry’s increasing commitment to sustainability was evident in our panel polling, as 70% of participants said that their fleet or the fleets they work with were either very committed (40%) or committed to advancing sustainability efforts.

Exhibit 1: Which of the following best describes the position on sustainability (i.e., reducing carbon footprint and environmental impact) of your fleet or the majority of fleets you serve?

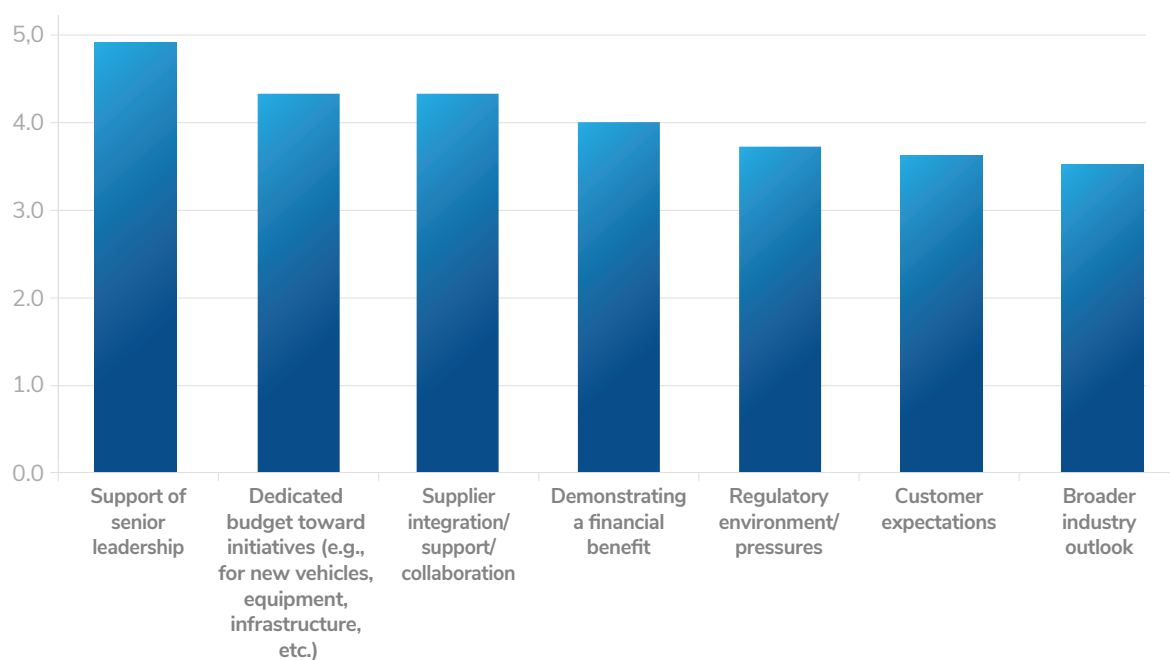


Although discussion touched on many topics related to the current state of sustainability in the industry, panelists gravitated toward three dominant subjects: the role of senior leadership in actioning sustainability measures; electrification of trucks and other zero-emissions vehicles; and sustainability specific to heavy-duty and long-haul applications. This paper highlights key points panelists made related to these areas and their influence over how fleet sustainability will unfold in the coming decade.

SENIOR LEADERSHIP IS VITAL TO DRIVING SUSTAINABILITY

According to our panelist poll, the number one driver for a fleet's sustainability transition is support of senior leadership, and the second highest-ranked driver is having a dedicated budget for sustainability initiatives (which goes hand-in-hand with senior commitment). When prioritized by leadership, overarching sustainability strategies—at the organizational level and with defined commitments—provide fleets with necessary guidance and clear targets.


Exhibit 2: Please rate each of the following in terms of importance for driving a fleet's sustainability transition. (i.e., reducing carbon footprint and environmental impact)?



These sorts of comprehensive strategies are becoming more prevalent, especially for publicly traded companies facing increasing scrutiny from investors and consumers. Take for example UPS and FedEx, with the former having set a corporate-wide goal of reducing absolute greenhouse gas emissions in ground operations by 12% by 2025 and the latter having committed to reducing aircraft emissions, increasing vehicle efficiency, and greater use of both renewable energy and alternative fuels.²

IKEA offers another strong example, with a stated goal of 100% last-mile delivery of products performed via electric trucks by 2025.³ For companies like IKEA, which must move product from one locale to another, regardless of whether they own their fleets directly or partner, the logistics portion of the business is often a leading consumer of fossil fuels and contributor of overall emissions, and thus primed for top-down sustainability campaigns. A panelist representing IKEA succinctly iterated this point: “From IKEA's point of view, sustainability is an all-encompassing thing. Sustainable mobility really comes in a long line of sustainability projects and we do believe that mobility is moving toward zero emissions and the electrification of everything.”⁴

However, as was acknowledged in panel discussion, if senior leadership functions as the prime mover for propelling fleet sustainability then it can also be a critical roadblock. This is particularly true when sustainable technologies are unproven or have yet to provide data to form a sound business case. Panelists stated that in some instances, despite a solid foundation for adoption, lack of understanding the sustainable technology or tactic can halt senior support. In these instances, education and awareness-raising will continue to be crucial. Once sustainability-driven practices become fully normalized for fleets, greater openness to innovation at the senior level will follow suit: “Once you have a couple pilot projects in place, and you prove that proof of concept that zero-emission delivery or whatever your sustainable project happens to be, once you've proven that it works and can function, then that expectation quickly moves from a single company to the marketplace.”⁵



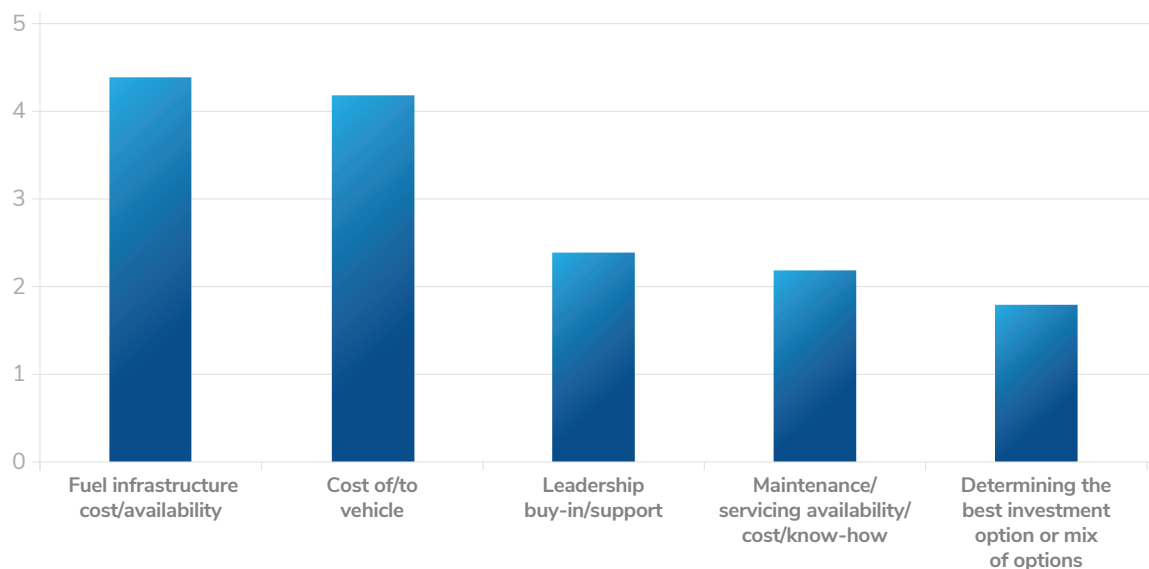
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EVS ARE THE FUTURE, BUT THE FUTURE IS MUCH CLOSER FOR SOME APPLICATIONS THAN OTHERS

Truck electrification is a near-impossible topic to avoid when it comes to conversations around sustainability and fleets, and our panel discussion proved no different. Frost & Sullivan estimates global electric commercial vehicle shipments at approximately 2.2 million in 2030, representing a double-digit compound annual growth rate of 18.9%. However, Frost & Sullivan also projects the bulk of that growth to be in China and Europe, with North America comprising only 8.7% of total global EV shipments in the commercial vehicles space.⁶ Panelist perspectives concerning the speed at which the industry will electrify in the United States varied, with some suggesting that electrification will make increasing financial sense and others predicting a strong bifurcation between a more electrified California market and the rest of US states.

In terms of electrification restraints, panelists were fairly unified, citing vehicle costs, lack of adequate battery electric charging infrastructure (and hydrogen fueling infrastructure in the case of fuel cell trucks), battery weight and size, and misaligned charging times (i.e., the least expensive charging times occur when a truck is predominantly in use) as important for the US market to overcome. Lower diesel fuel costs, especially in the wake of the global pandemic, which has disrupted oil demand, were also predicted to be a near-term headwind but not as significant a factor in the long run.

Exhibit 3: In terms of energy sources for fleets, what has been the greatest barrier to integrating more sustainable energy sources (e.g., electric, natural gas) within your fleet or the fleets you serve?



In defense of electrification, one panelist—a vendor of technology aimed at reducing electric charging cost variability—articulated charging cost advantages, “Tariffs that have a super off-peak rate during the middle of the day...So, from 10am to 3pm, it is 20% cheaper for daytime charging...I think the landscape is changing for fleets with driving cycles that it can accommodate daytime charging.”⁷ Another interesting counterpoint was made in terms of the larger commercial vehicle ecosystem, particularly around vehicle maintenance. One panelist asserted that internal combustion engine-based fleets may find it increasingly difficult to recruit younger maintenance workers: “Even considering...technical training. I mean, a lot of kids graduating high school today. They don't want to start a 40-year career working on diesel engines.”⁸

Panelists also expressed consensus that, in the near term, electrification will continue to grow most swiftly in application areas for which the technology makes the most immediate sense. These include light-duty vehicles in urban environments, especially in last-mile delivery applications. Indeed, this segment has already seen stronger electric adoption given that light-duty vehicles tend to operate in more air quality-regulated areas, suffer from extensive idling in traffic congestion, have less need to travel outside of battery range prior to recharging, and have dedicated access to recharging stations. Medium-duty regional-haul applications with highly predictable driving ranges are also more ready for electrification, as an increasing number of OEMs bring electric versions to market. As acknowledged by one panelist: “A lot of automakers like ourselves are heavily embedded in electrifying our programs and that's where you'll see light-duty vehicles and some of these medium-duty Class 2, Class 3, Class 4-type vehicles that are leveraging a lot of that program development work.”⁹

When considering electrification, panelists also pointed to the adoption of electric technologies other than electric drive trains. Electric auxiliary power units, for instance, are helping achieve greater sustainability metrics by reducing unnecessary engine idling time and thus lowering fuel usage, emissions, and maintenance needs. Calling attention to this technology in particular, one panelist stated:

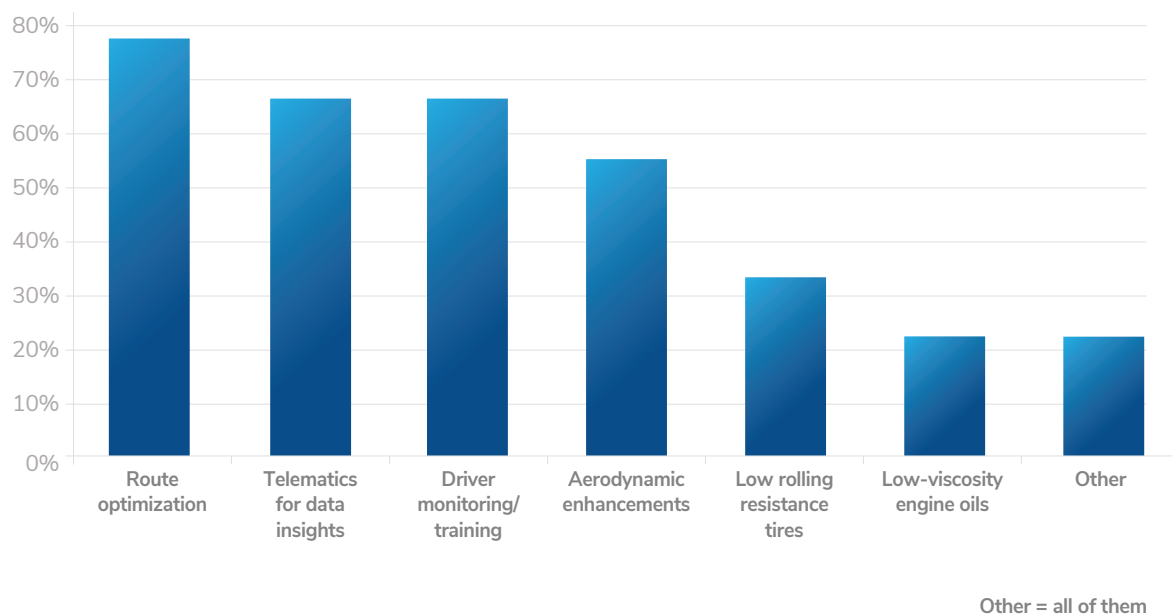
An electric APU will allow you to cut the engine off at night and run off a battery pack. It charges during the day while it's driving or whenever the truck is moving, and it allows you to operate completely without the engine off. That does three things for you. One is it eliminates the truck idling and fuel savings associated with that. The second thing that it does is it reduces the emissions of course, and the third thing is does is it provides a tremendous amount of driver comfort, which helps people like us in recruitment and retention.¹⁰

IN THE HEAVY-DUTY SEGMENT, FLEETS TAKE A MULTI-PRONGED APPROACH

The topic of sustainability in the heavy-duty segment followed conversation around electrification. Heavy-duty trucks, and the applications they are deployed in, are less conducive to adoption of today's electric drive trains and supporting infrastructure than light- and medium-duty vehicles. Although many OEMs are hard at work commercializing electric heavy-duty vehicles and gathering the data required to prove their cost effectiveness, in the immediate term, fleets are investing in a broad range of solutions to drive sustainability in their heavy-duty fleets and long-haul applications.


As our polling shows, technologies such as aerodynamic drag reduction technologies, which include a range of enhancements such as replacing side mirrors with camera technology, specialized coatings, and add-on devices (e.g., cross-vortex traps, vortex strakes, and skirt fairings); and low rolling resistance tires, which decrease the amount of effort needed to roll a tire and thus conserve fuel, are increasingly popular. However, two additional technology domains garnered discussion time as well. These included: connected digital technologies and low-viscosity engine oils.

Exhibit 4: In terms of fuel efficiency for fleets, what are the most prevalent technologies / strategies currently being used within your fleet or the fleets you serve to gain improvements? (Check up to three.)



Connected digital technologies, such as route optimization software, telematics, and driver behavior monitoring solutions, provide multiple sustainability benefits and are typically worth the investment for fleets—indeed, one assessment suggests data collected and analyzed from telematics solutions can yield a 14% savings in fuel and maintenance costs and a 5-20% savings by providing the data and algorithms to tackle inefficient driving and poor vehicle routing.¹¹ One Frost & Sullivan study asserts that 40% of fleet managers believe connected trucks to be a “must have” while another study estimates that over 21 million trucks will be considered connected trucks in North America by 2025.¹² Our panelists take on truck digitalization echoed these assessments, also noting that we have only scratched the surface of connected capabilities: “[Telematics] allows us to get even more data off a vehicle than we were getting before. Matching that information with the route optimization, the driver behavior, even down to the weather is providing a lot of impact. I really believe that's probably still an untapped area.”¹³

Low-viscosity engine oils were also discussed in terms fuel savings and emissions reductions. One panelist pointed to the immediate benefits using these lubricants can bring: “Utilizing lower viscosity engine oils... this is something that is, you know, available today that can provide an immediate return.”¹⁴ Panelists agreed that implementing these engine oils did help with mileage improvements but that this solution can often be overlooked by fleets that are more focused on leapfrogging straight to electric and alternative-fuel vehicles.



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THE LAST WORD ON SUSTAINABILITY

Frost & Sullivan's Virtual Think Tank covering the state of sustainability in fleets concluded on an optimistic note. While there will always be lingering concerns associated with emerging technologies, the good news is that more technologies driving sustainability are being developed and tested, and the evidence of their efficacy and associated cost benefits is mounting. Fleets have every reason to believe that the next era of commercial vehicles will be dominated by sustainable practices that simultaneously improve the bottom line. As one panelist put it:

I think we are becoming more technology lovers than haters... I think we are at a really interesting time where there is as many people excited and wanting to move forward...it's quite interesting and hopeful.¹⁵



ENDNOTES

1. David Genise
2. UPS. (2020). Sustainability Strategy: Environmental Responsibility. <https://sustainability.ups.com/sustainability-strategy/environmental-responsibility>; FedEx. (2020). FedEx and the Environment. fedex.com/sc/about/sustainability/environment.html
3. Fehrenbacher, K. (2019, March 29). How IKEA plans to deliver its goods via electric trucks and vans. Retrieved from <https://www.greenbiz.com/article/how-ikea-plans-deliver-its-goods-electric-trucks-and-vans>
4. Steven Moelk
5. Steven Moelk
6. Frost & Sullivan. (2019, Nov. 4). Electric drive train systems technology evolution and global market potential in commercial vehicles, forecast to 2030. Retrieved from <https://cds.frost.com/p/297230703#!/ppt/c?id=K3A0-01-00-00-00&hq=sustainability%20technologies%20commercial%20vehicle>
7. Vic Shao
8. Andrew Papson
9. Alex Keros
10. Matt McLelland
11. Birkland, C. (2017, Jan. 30). Saving time and money: What onboard telematics can do for you. Retrieved from <https://www.fleetequipmentmag.com/saving-time-money-onboard-telematics/>
12. Frost & Sullivan. (2017, June 12). Developments in the global connected truck market shaping the future of logistics. Retrieved from <https://cds.frost.com/p/297230703#!/ppt/c?id=K199-01-00-00-00>; Frost & Sullivan. (2019, Sept. 10). 2025 vision of truck telematics market. Retrieved from <https://cds.frost.com/p/297230703#!/ppt/c?id=ME07-01-00-00-00&hq=connected%20trucks%20global>
13. James Cade
14. Dan Arcy
15. Mike Roeth

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