State of Sustainable Fleets: Industry Rises to Meet Peak Complexity with Unprecedented Innovation and Investment

Fleets grapple with regulatory uncertainty and differences across jurisdictions while facing growing pains with new technologies. Expanded supply of renewable fuels offer answers today while advancements to address charging and larger near-zero engines lay groundwork for future sustainable fleet expansion.

Las Vegas, Nevada, May 20, 2024 – Now in its fifth year, the State of Sustainable Fleets 2024 Market Brief, released today, sheds light on an industry meeting the moment of an active transition. A slew of new emissions regulations that were adopted in the past two years combined with the growing pains of new technology spotlight a period of peak complexity for fleet operators. Brief author and leading clean technology consulting firm, TRC Companies (TRC), having acquired the entity formerly known as, Gladstein, Neandross & Associates (GNA) LLC, unveiled the latest findings at the Advanced Clean Transportation (ACT) Expo, the largest commercial transportation conference, hosted this year in Las Vegas, Nevada

"The last two years of decisive new emissions regulations and the complexity that come with adopting any new technology, let alone multiple new clean technologies, compounds confusion for fleets," said Nate Springer, Vice President Market Development, TRC Companies. "It is exciting to see the numerous new partnerships, investments, and innovations that industry and government are forging to put sustainable solutions into the hands of fleets today while laying the groundwork for tomorrow's ever greater adoption of clean technologies."

The previous year continued a record flow of $32 billion in state and federal funds available to fleets while supplies of renewable diesel and renewable natural gas reached new highs to deliver solutions for fleets today. A vanguard of new utility-fleet partnerships, depot and leasing business models, and technologies to utilize existing natural gas supplies revealed an oncoming host of innovations to solve the charging challenge.

"Fleets today are faced with a myriad of challenges in their continual pursuit of reducing the environmental impact of their operations," stated Drew Cullen, Penske Senior Vice President of Fuels and Facility Services. "The complexity of options, investment requirements, and the promise of continued technology improvements only adds to fleet planning uncertainty. The 2024 State of Sustainable Fleets report is a tremendous resource for fleets to evaluate the range of options available and under development as they advance their strategy to meet and exceed sustainability goals."

As zero-emission regulations take hold in 11 states and a new emission standard deadline for model year 2027 looms nationally, fleets struggle to comply with a confusing new regulatory landscape. For fleets trying to deploy zero-emission technologies to meet some of these or their own goals, charging infrastructure gaps, consistently high battery and production costs, and power capacity constraints resulted in project delays in 2023, all of which are expected to persist for several years.

"At Volvo Trucks, we are committed to providing total transportation solutions with an electromobility ecosystem of support for our customers who choose the VNR Electric, the class leading zero emissions truck in the market," said Keith Brandis, Vice President, Partnerships and System Solutions, Volvo Group North America. "We are also working on developing future technologies such as fuel cell electric vehicles

and improving the efficiency of the internal combustion engine running on renewable diesel and hydrogen. Through partnership and industry collaboration, we can make a quantum leap forward in sustainable transportation."

“Our goal is to reduce carbon across the future energy economy. To do that, we need to keep innovating and looking for viable, lower-cost solutions,” said Andy Walz, President of Chevron Americas Products. “Economics matter and we need many different solutions, evaluated on their lifecycle carbon intensity. Policy support should drive toward reducing carbon intensity, following a technology agnostic approach.”

This year’s brief offers clarity for the industry on developments in the markets for renewable fuels and electricity paired with diesel, near-zero, and zero-emission vehicles with the following key findings:

- Among fleets using efficiency technology and practices in the annual survey, 63% expect diminishing returns on new investments of this type going forward.
- Renewable Diesel (RD) consumption increased by 68% in 2023 compared to 2022, with most consumption occurring where favorable carbon credit markets ensured price parity with diesel.
- The price of the highest blend of biodiesel (BD) commonly used, B20, dropped 9% to $3.25 per diesel gallon equivalent (DGE).
- Retail price of compressed natural gas (CNG) averaged 50% less expensive than diesel in 2023 at $3.04/DGE.
- Fleets using CNG met 70% of their fueling needs with renewable natural gas (RNG) on average in the annual State of Sustainable Fleets fleet survey.
- RNG producers opened more than 150 new facilities while maintaining a queue of at least 300 projects in 2023.
- The carbon intensity of RNG on California’s Low Carbon Fuel Standard market improved 21% between 2022 and the first three quarters of 2023.
- Production of a lighter and stronger 15-liter natural gas engine begins in 2024, expected to open opportunities for many more fleets and lead significant growth in natural gas vehicle sales.
- Natural gas–fueled linear generators began operations to charge battery-electric Class 8 trucks.
- Battery Electric Vehicle (BEV) adoption surged as more than 26,000 buses, trucks, and vans were delivered in 2023, doubling the number of BEV deliveries made in 2022.
- Commercial cargo vans and pickup trucks made up for 90% of all BEV deliveries in 2023, 95% of which were dominated by two manufacturers—Ford and Rivian.
- BEVs account for only 1-2% of all vehicles in the fleets of early adopters in the annual survey, though 90% of users of this technology expect their use to increase.
- Multiple fleet-dedicated charging depots opened or were in construction in 2023 while numerous providers of leasing and “as a service” vehicle and charging services were announced.
- The U.S. DOE’s historic allocation of $7 billion will fund seven proposed hydrogen fuel production and distribution hubs spanning 16 states.
- The average retail price of hydrogen in 2023 nearly doubled from mid-2022 levels to as much as $36/kg in California.
- The price of propane autogas averaged $1.71 per GGE for private retail, the most common fueling approach among fleets, compared to $3.58 per gallon of gasoline at public stations.

Penske Transportation Solutions, Volvo Trucks North America, and Chevron serve as title sponsors of the 2024 Market Brief. Dana, Exelon, and S&P Global Mobility serve as supporting sponsors. All sponsors provide credibility and expertise across numerous technologies covered in the assessment.

To read the complete 2024 Market Brief and to receive ongoing updates and analysis from State of Sustainable Fleets, visit www.StateofSustainableFleets.com.

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About State of Sustainable Fleets

The State of Sustainable Fleets Market Brief is the leading source of information on sustainable technology decisions being made by America's on-road fleets. The annual analysis gathers real-world data directly from early adopter fleets across the U.S. to provide deep sector-specific insights into the adoption of battery-electric, natural gas, propane, and hydrogen fuel cell electric vehicles and renewable fuels, against a baseline of diesel and gasoline vehicles. The analysis provides insights into public, private, and for-hire fleets, including school bus, shuttle, state/county/municipal, urban delivery, refuse, utility, transit, regional-haul, long-haul, drayage, and off-road cargo handling sectors. This first-of-its-kind assessment, developed annually, includes unique insights into vehicle sale trends, anticipated vehicle development timelines, real-world infrastructure and fuel costs, and the growing adoption of renewable fuels. State of Sustainable Fleets is authored by the clean transportation group of TRC Companies, formerly GNA.

About Penske

Penske Transportation Solutions is the universal brand for Penske Truck Leasing, Penske Logistics, Epes Transport Systems, Penske Vehicle Services, and related businesses. Our businesses provide innovative transportation, supply chain and technology solutions to keep the world moving forward. Visit GoPenske.com to learn more.

About Volvo Trucks North America

Volvo Trucks North America, headquartered in Greensboro, North Carolina, is one of the leading heavy-duty truck manufacturers in North America. Its Uptime Services commitment is delivered by a network of nearly 400 authorized dealers across North America and the 24/7 Volvo Trucks Uptime Center. Every Volvo truck is assembled in the Volvo Trucks New River Valley manufacturing facility in Dublin, Virginia, which meets the internationally recognized ISO 9001 standard for quality, 14001 standard for environmental care and holds a dual ISO 50001/Superior Energy Performance certification at the platinum level, indicating a sustained excellence in energy management. Volvo Trucks North America provides complete transport solutions for its customers, offering a full range of diesel, alternative-fuel and all-electric vehicles, and is part of the Volvo Trucks global organization.

About Chevron

Chevron is one of the world's leading integrated energy companies. We believe affordable, reliable, and ever-cleaner energy is essential to enabling human progress. Chevron produces crude oil and natural gas; manufactures transportation fuels, lubricants, petrochemicals, and additives; and develops technologies that enhance our business and the industry. We aim to grow our oil and gas business, lower the carbon intensity of our operations, and grow new lower carbon businesses in renewable fuels, hydrogen, carbon capture, offsets, and other emerging technologies. More information about Chevron is available at www.chevron.com.