

LOW CARBON FUEL VEHICLE OWNER FACT SHEET

2023 QUALITATIVE STUDY

Consumer Reports conducted an online discussion board for drivers of vehicles that can run on low-carbon fuels (LCF) from January 30-31, 2023 to learn more about their experiences with and views of these vehicles and low-carbon fuels in general. Specifically, we interviewed thirty-one Americans who own vehicles that can run on low-carbon fuels besides electricity—that is, not hybrid or electric vehicles, but those that run on fuels such as ethanol, biodiesel, or hydrogen. These people are not representative of all drivers of vehicles that can run on low-carbon fuels. While some participants may be leasing their LCF vehicles, all participants will be referred to as owners. Some participant responses may be edited to account for grammatical errors.

SUMMARY OF FINDINGS

Most people in CR's study feel that LCFs are better for the environment than conventional diesel or gasoline, but familiarity with the fuel technology varies even among these drivers, and they feel that the general public doesn't know much about LCFs. While some participants got LCF vehicles specifically with environmental protection in mind, others chose their vehicles for other reasons but view environmental protection as a nice benefit. Some rarely or never actually use LCFs in their vehicles—one did not even realize she could until she was invited to be part of this study.

There are a variety of questions from respondents surrounding how and when to utilize LCFs in their vehicles. A common concern raised is lack of availability of fuels—that is, relatively few places to fuel or charge, especially to do so affordably—and there is also confusion surrounding how the use of LCFs might affect vehicle performance. Overall, participants believe that there can be more done to inform consumers about the variety of LCF technologies and vehicle options available.

AWARENESS OF LCFS

Some participants had never heard of LCFS until they were in the process of purchasing their vehicles, and when LCFS were explained to them, there was still some confusion. Some participants also believe that the general public has a lack of understanding of LCF fuel and vehicle technology.

"Recapping the thought process...the truck is flex fuel and can operate on the ethanol to non ethanol spectrum. Yet, I am to pick one and stay using just that one? Doesn't that contradict the whole flex fuel concept?"

"Most do not have any idea what it [LCFS] is. I had to explain it."

"I think not enough people are educated about LCF vehicles and the ones that are educated aren't thoroughly educated. They think it's high maintenance and require extra money for fuel, repairs, etc. Consumers aren't always aware that you can get fuel from some regular gas stations."

Several people heard about LCFS from their friends, especially friends who owned LCF vehicles themselves. Similar to other clean vehicle technologies, word of mouth and experience plays a big role in increasing consumer interest.

"A friend of mine was talking about his low-carbon fuel vehicle, and my curiosity piqued."

REASONS FOR USING LCFS

Drivers of LCF vehicles generally have good impressions of the fuel technology, and many appreciate the environmental benefits that LCFS provide, though that is rarely their primary reason for choosing their vehicle.

"I believe these vehicles are extraordinary inventions, for a number of different reasons. They provide meaningful, very comfortable alternative means of transportation while being environmentally friendly."

"I chose a Tahoe because it's a LCF vehicle and I wanted to 'do my part' and get something that was good for the environment. I also never had a truck before so it was a win-win."

"I chose it because of environmental resources/lower carbon emissions, being better for the environment. It makes me feel better about my carbon footprint, and I want to do what I can to be a good human being, but obviously within my budget constraints."

"I have had multiple Ford Explorers and honestly the fact that this one had the low carbon fuels option just happened to be [an] accident. I have however grown to see the multiple advantages."

Participants expressed positive reactions to available incentives for the purchase of their LCF vehicles, which particularly benefited drivers of hydrogen-fueled vehicles due to existing state and federal incentives.

"We get a carpool lane sticker which saves our commute times in half, which is the reason we did it. We also save so much time not going to the gas station and make our road trips easier with kids. Also, the three years of free fuel was a big selling point, as hydrogen is kind of pricey."

"Discounts, rebates, and tax credit... We got them because of the vehicle incentives, the fuel incentives, and the cars' build quality, not to mention that they are environmentally friendly."

"Definitely being fueled by hydrogen and emitting water was a primary reason for me to purchase this vehicle. Also, Toyota had great deals on the Mirais around the timeframe I was buying the vehicle."

CHALLENGES TO USING LCFS

There have been times where accessibility to fuel types was of concern for LCF vehicle owners, especially those whose vehicles rely solely on LCF technology, such as hydrogen fuel-cell.

"I had a concern about the access to hydrogen stations on long trips. I also had concerns about the price of hydrogen... Yes, there have been times when I go to fuel hydrogen and the station is down."

"Even when you can find hydrogen, the cost to consumers has doubled in less than three months, with no sign of decreasing."

"I wish I could say that I have more access to low carbon (biodiesel) fuel than I do."

"I fuel with gas because it's hard to find stations that offer biodiesel here."

Some people raised questions about switching back and forth between fuel types, and whether this switch, or the use of a particular type of fuel, would damage their vehicle.

"I had some concerns about what gas stations would have the low carbon fuels and also if it would matter if I mixed gas types because I did not want to damage the engine...I was concerned that if I had a half tank of low carbon fuel in the gas tank, but only had access to a gas station that sold regular gas, how would that affect my car?"

"My main concern was how my vehicle would react to using biodiesel and maybe using regular fuel if I couldn't afford biodiesel at times. I was also concerned if there was any added maintenance and/or repairs because my vehicle takes different fuels."

"For the low-carbon, I think my greatest worry is that it would upset the cylinders and reduce engine life, or use up the spark plugs more quickly."

HOW TO ENCOURAGE THE USE OF LCFs

Dealers and auto repair shops play a critical role in educating consumers about their LCF and LCF vehicle options. While some dealerships are able to educate consumers about the different ways they can benefit from the fuel technology, other dealerships are less knowledgeable about the technology and the surrounding ecosystem.

"I heard about LCFs when I watched tv commercials, but I did not really understand what they were until I went to visit the dealership. And the dealership salesman was able to breakdown what LCFs are and how they help the environment and myself."

"I didn't even know about them [LCFs] until after talking to a friend of mine who owns one and helped talk us into it. I was blown away with the lack of knowledge out there and even how dealers don't talk about it!"

"I would encourage dealerships and manufacturers to clarify ALL cost/benefit parameters so a consumer can truly make an informed choice...The dealership labeled it under flex fuel. Very minimal was discussed beyond that."

"Why was this information [that the vehicle can use fuel other than gasoline] not spotlighted during the buying process?"

"We weren't exactly sure about a couple of things" after owning the vehicle for a while and "took it to the dealership to ask around. I realized then that maintenance personnel could've been provided with better training themselves."

Owners of LCF vehicles think that advertisements and campaigns to increase awareness of LCFs can encourage more people to use LCFs.

"Education on LCFs needs to be implemented more!!! It's a choice that doesn't change the quality of the vehicle. The only issue would be availability and I feel if we demand it, it would be in supply more."

"If people don't know what they are, they won't research and they need to be marketed as I only see ads for electric cars."

"Maybe get them to know them more by the commercials because people are usually afraid of things they are not familiar with."

Financial incentives were a common theme when we asked these people what would encourage others to use LCFs, as was the idea of making it easier to find them.

"Definitely some tax incentives would encourage people as well as being able to find the low-carbon fuel in many gas stations."

"I really think that the biggest draw for them is that tax incentive/fueling credit and if those are no longer available, people would not be encouraged to use LCF."

"Government subsidies would definitely help, a program that would show the advantages and drawbacks, and more fueling stations for every kind of LCF vehicle."

RECOMMENDING LCFs TO OTHERS

Many owners emphasized the need for prospective owners to conduct their own research of the fuel technologies, and research on whether or where the LCFs might be available to them in describing whether they would recommend vehicles that use LCF to others, and to whom.

"I think they have to know the area they live in and how close they are to stations."

"If none [stations] are around you then it doesn't make too much sense to buy one."

"Make sure it is actually something that fits your needs."

Many owners said they would recommend LCF vehicles to a friend or a family member, but urged others to take logistics into account when making their considerations.

"I would [recommend it] just because I like to make that little impact for our environment but I know it might not be a good idea for people that have long commutes and live in the area where it's harder to get that type of fuel."

"I believe that I would advise anyone of the benefits of LCF vehicles in suburban and urban areas... There's more to consider than just believing you are helping the environment by buying one. Fuel sources are much more readily available in urban areas. Owning a flex fuel vehicle gives you options but again if the supply of any fuel is limited then the low carbon footprint would seemingly go out the window."

A few owners said they would not recommend LCFs at all, and all of these respondents said they would recommend a fully electric vehicle instead.

"I would not recommend it because essentially I am not seeing the major benefits of using LCF at the moment. There are not a lot of gas stations with LCF near my friends or family either so they would be left to use mixed gasoline...I would honestly suggest going completely electric."

"I personally would recommend an electric vehicle instead of a low carbon fuel vehicle. To me it's more convenient to just get home and plug my car in and not have to worry about stopping at a gas station in cold weather to get fuel."

THE FUTURE OF LCFS

When asked about the future of LCFS, many consider LCF vehicles as an intermediate step toward an even more environmentally-friendly future. They anticipate their next vehicle being fully electric, or the vehicle landscape in the US gradually shifting to predominantly electric. Others envision a future of mixed fuels, at least until one environmentally-friendly fuel type wins out over others.

"I don't think that they'll [LCF vehicles] become widespread honestly, and they'll stay pretty invisible as people just jump from traditional fueled cars to electric."

"I think they [LCF vehicles] will remain less common. I think people are going straight to electric."

"I think electric will be the way of the future, as people love to charge at home and its very popular. I don't think people will want to go to a gas station at all whether it's for gas or hydrogen."

"I think [there will be] a bit of an arms war/race between EVs and alternative fuel vehicles. But I definitely think the standard gasoline fueled cars are going to be less common... It will depend on how the different types of alternative fueled vehicle manufacturers get ahead of the curve and handle the demand."

"I don't know how sustainable the other two [EVs and hybrids] are. Meaning that there are a lot of people that use conventional gas, and are unwilling or don't want to switch. I am thinking along the lines that the other two may be phased out at some point."

"Battery Electric Vehicles (BEVs) have the momentum today to replace internal combustion engines (ICE), and will coexist [with] hybrid, plug-in hybrids (PHEV), LCFS (Hydrogen Fuel Cell and others). Till ICE vehicles are phased out, perhaps due to legislation, PHEV with 50+ miles in electric in my honest opinion will be the 'sweet spot'."