

CA LCFS MARKET UPDATE



Low Carbon Fuel Standard (LCFS) Market Overview

MAY 2020

HIGHLIGHTS

➤ On March 18, 2020, FTA announced an \$11 million Notice of Funding Opportunity under the Accelerating Innovative Mobility (AIM) Initiative to support and advance innovation in the transit industry. Proposals must be submitted electronically through Grants.gov website by 11:59 PM Eastern Time on May 18, 2020.

➤ The Electrification of Transportation Systems (ETS) provides grant funds for the continued transformation of the electric transportation market in Washington State. They are now accepting applications for this competitive grant with up to \$10.67 million available to eligible applicants including local governments, Tribal Governments, and retail electric utilities for EV charging infrastructure.

➤ The VW Mitigation Trust has \$130 million in funds to replace older, high-polluting transit, school, and shuttle buses with new battery-electric or fuel-cell buses. The zero-emission school bus bin of the VW Mitigation Trust Fund is now oversubscribed. Money for transit and shuttle buses is still available.

➤ SRECTrade presented to CALSTART and Harbor Trucking Association (HTA) at the end of April where we discussed the fundamentals of LCFS crediting and how we help our clients obtain the benefits of the LCFS Program.

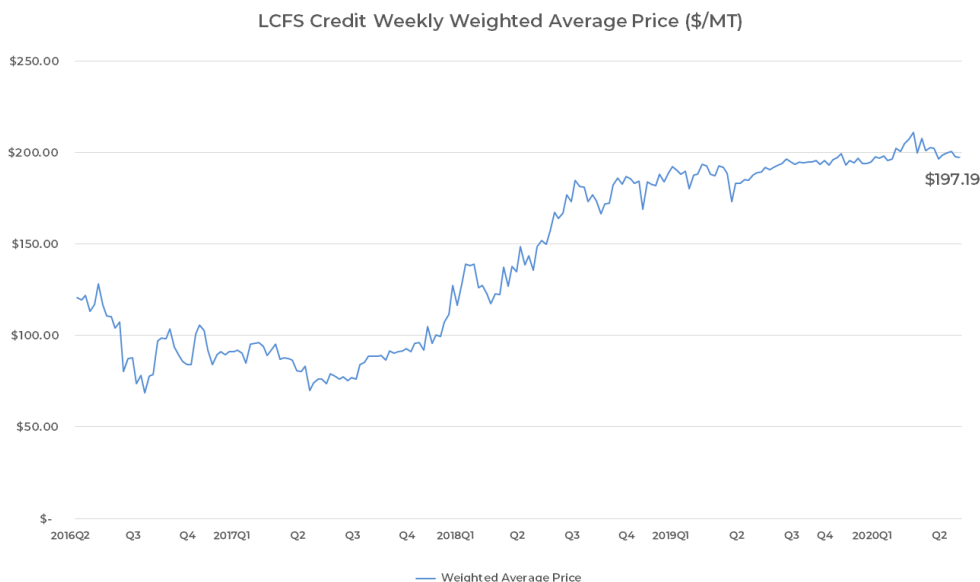
➤ In mid-March, SRECTrade posted a LCFS 101 Video on our website. In the upcoming weeks, SRECTrade will launch a LCFS Credit Calculator App which you can use to easily estimate your fleet's potential annual LCFS revenue.



RECENT CA LCFS CREDIT PRICE TRENDS

- Continuing into the new year, CA LCFS credit prices traded at all-time highs, some transacted above the previously implied ~\$213 cap from 2019.
- In mid-March, LCFS credit pricing dropped nearly 20% from ~\$210 to approximately \$170 per credit due to the impact of COVID-19.
- Recently the LCFS market has seen a rebound from the March slump of COVID-19, prices trading at between \$190 and \$195 in the first week of May.
- Weighted average pricing reported in the LCFS Registry Tracking Credit Bank and Transfer System (LRT-CBTS) ranged between \$196 and \$211 in Q1 2020.
- On April 13, the California Air Resources Board (CARB) released a maximum cap on LCFS credit prices for 2020 at \$217.97 per credit.
- Raw data on deficit and credit production for Q1 2020 and Q2 2020 will not be released until July 31 and October 31, 2020, respectively. As such, the market may continue to experience some degree of COVID-19 uncertainty in the near term.

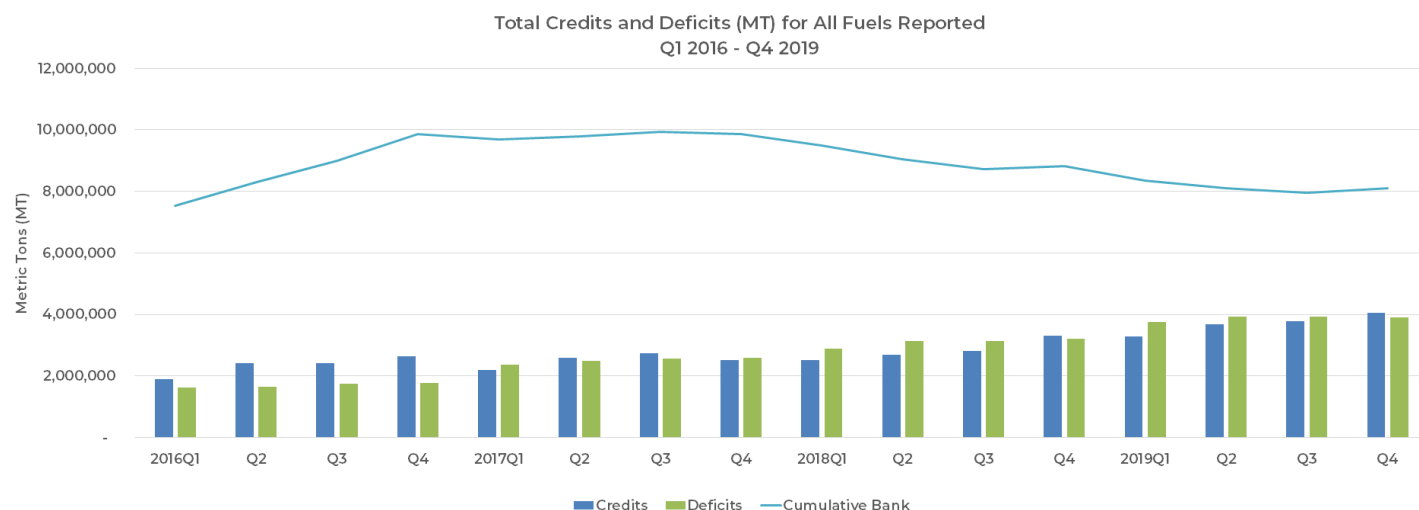
The chart below shows historic pricing from 2016 through May 3, 2020 as reported by CARB:



CREDIT AND DEFICIT REPORT

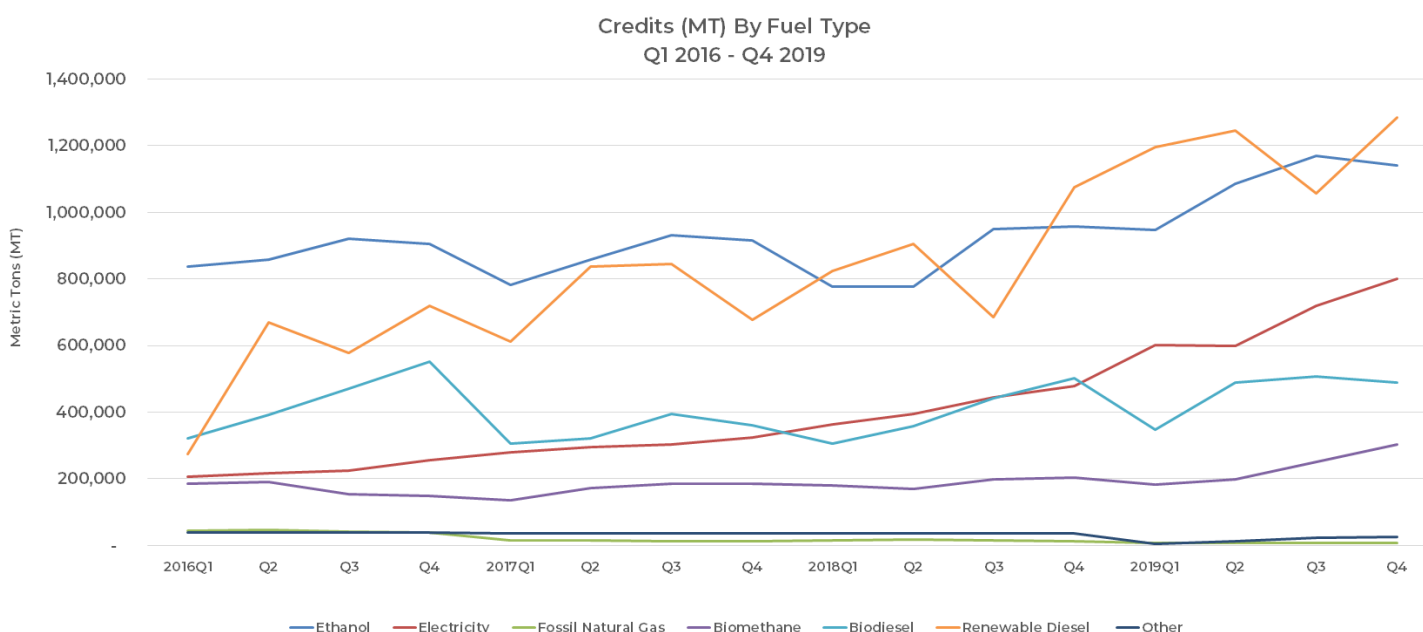
- On April 30, 2020, CARB released the Q4 2019 credit and deficit data.
- The market saw a record high in Q4 2019 as new credits outpaced new deficits for the first time in 2019.
- Credits outpaced deficits with 4.05 mm credits issued in Q4 2019 vs. a total balance of 3.89 mm deficits generated.

The chart below reflects the total credits and deficits since 2016 and the trends in cumulative credit bank. The draw in the credit bank since 2017 corresponds to the increase in credits prices over the same time frame.



- Throughout 2019 the market saw smaller draws on the cumulative bank. Credits issued outpaced deficit generation in Q4 2019, allowing the cumulative bank credits to increase slightly. As deficit generation continues to outpace credits issued, we expect to see more drawn upon the cumulative bank.
- There was an increase in credit volume with 4.05 mm credits produced, up 7.3% from Q3 2019's volume of 3.77 mm.

The chart below depicts the credit volume issued by fuel type since 2016

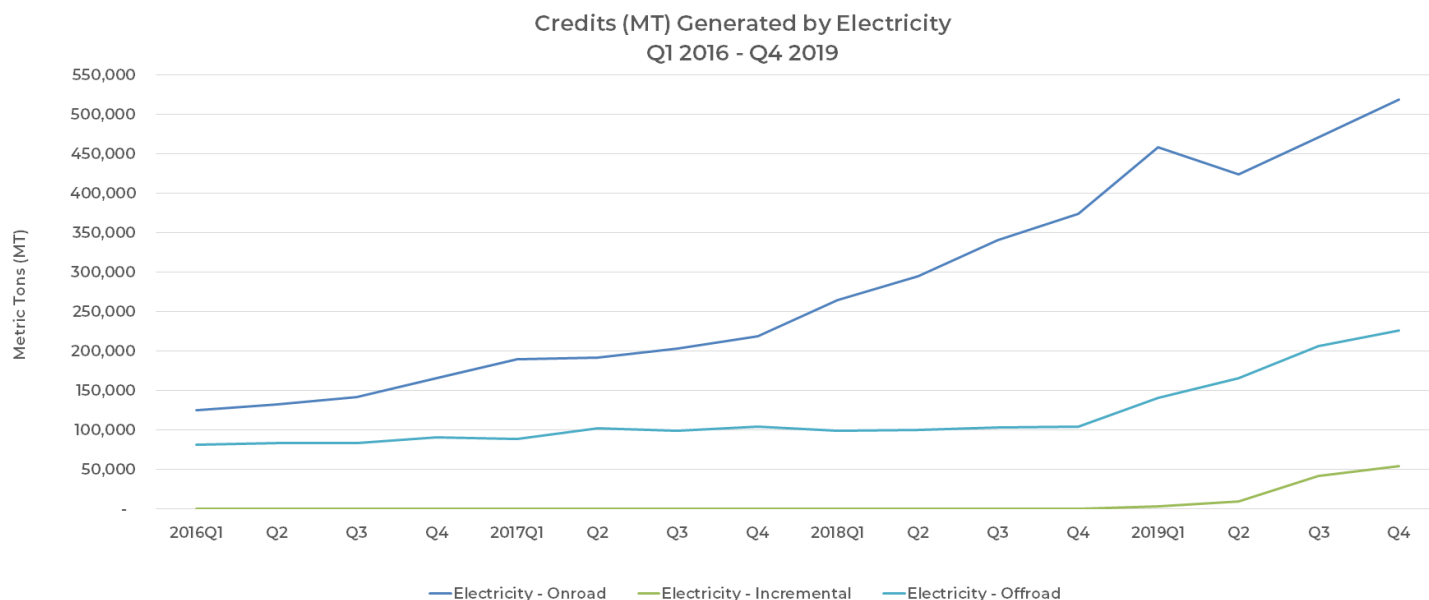


Fuel Type	Change from Q3 2019 (%)	Change from Q4 2018 (%)	Change from Trailing Four Qtr. Avg. (%)
Ethanol <65	3.1%	153.5%	69.3%
Renewable Diesel	21.5%	19.5%	12.3%
Bio-CNG	22.1%	53.8%	48.0%
Hydrogen	12.0%	104.1%	49.9%
Electricity	11.1%	67.1%	33.3%
All Fuels	7.3%	22.7%	15.5%

- A contributor to the credit growth was Renewable Natural Gas (Bio-CNG), up by 51.8k credits from 234.8k to 286.2k.
- There was a significant decrease in renewable diesel in Q3 2019, however Q4 2019 reflected a 226.6k credit increase surpassing the record of 1.2 mm credits issued in Q2 2019.
- There was a 12% increase in Hydrogen in Q4, up to 4.3k from 3.8k credits. Although small, hydrogen as a fuel has seen a 104% increase in the last year.

- Electricity as a fuel has been consistently increasing in credit generation since 2016. Credits generated in Q4 2019 from on-road electricity reached a record high of 518.9k, rebounding from the decrease in Q2 2019. Off-road vehicles increased 9.4%, up from 206.8k credits to 226.4k.
- Progressing into 2020, Carbon Intensity (CI) targets take another step down in the Compliance Standard, from a 6.25% to 7.50% CI reduction. The market will likely see an uptick in deficit production beginning Q1 2020, barring any major changes in fuel production.

The chart below shows credit volume generated by electricity since 2016



GRANT PROGRAMS UPDATE

- The [San Joaquin Valley Air Pollution Control District \(APCD\)](#) is currently accepting applications for the [Truck Replacement Program \(TRP\)](#). The TRP gives grants to fleets to replace on-road diesel trucks with cleaner technology units and to expand fleets with the cleanest technology available, both of which help reduce harmful emissions from trucking.
- The [Electrification of Transportation Systems \(ETS\) Grant](#), the [Clean Energy Fund \(CEF\)](#), is for the continued transformation of the electric transportation market in Washington State. ETS provides grants to Washington local governments, Tribal Governments, and retail electric utilities for EV charging infrastructure. The mandatory Letter of Intent deadline for the active ETS solicitation has passed for Local Government and Retail Electric Utility applicants. Tribal Governments may submit their Letters of Intent until May 29 at 3:00 pm PT.



POLICY & REGULATORY UPDATES

- [Advanced Clean Truck Rule](#) - CARB just issued the final draft rule (click CARB logo) of the Advanced Clean Truck Rule that now doubles the requirements of clean truck sales by manufacturers in California. The proposal will result in roughly 100k - 300k electric trucks on California's roads in 2030 and 2035, respectively, out of roughly 1.8 million and 1.9 million total trucks expected in those years.

Sales percentages proposed under the Advanced Clean Trucks standard, June 2020

Year	Class 2b-3	Class 4-8 straight trucks	Class 7-8 tractors
2024	3% 5%	7% 9%	3% 5%
2025	5% 7%	9% 11%	5% 7%
2026	7% 10%	11% 13%	7% 10%
2027	9% 15%	13% 20%	9% 15%
2028	11% 20%	24% 30%	11% 20%
2029	13% 25%	37% 40%	13% 25%
2030	15% 30%	50%	15% 30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035	55%	75%	40%

Source: Union of Concerned Scientists



- [Puget Sound Clean Air District](#) - Regulation was put on hold - As of April 6, 2020, the Agency is suspending any action by the Board of Directors on the Agency's draft Clean Fuel Standard. If relevant state legislation is enacted or there is a clarification of the Washington State Supreme Court's recent ruling on the Washington State Department of Ecology's Clean Air Rule, the Agency will evaluate the implications of those developments on a draft rule.
- [Clean Fuels NY](#) - The CleanFuelsNY coalition was close to getting clean fuel standard legislation onto the state Budget Bill, however COVID-19 put a pause on legislative activity and the language did not get added into the bill. The coalition is in a good place with the Division of Budget however and the focus is now on a 2021 strategy to reintroduce language. The goal is to attempt to get language into the Governor's Executive Budget, grow the coalition and counter opposition messages.

ADDITIONAL LCFS PROGRAMS

Oregon:

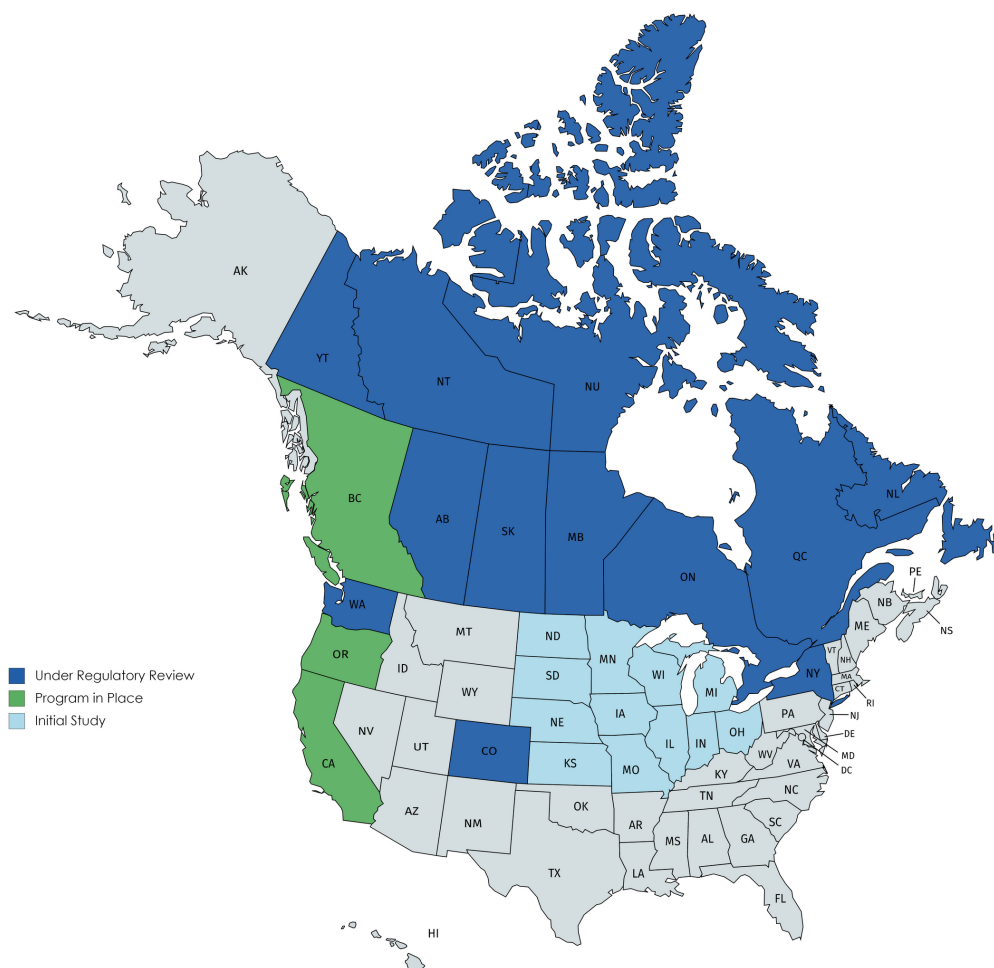
SRECTrade also operates in the [Oregon Clean Fuel Program \(OR CFP\)](#). For the third quarter in a row, credits outpaced deficits. The cumulative bank increased to over 700k credits. CFP average prices for Q1 2020 dropped slightly from Q4 2019, averaging at \$147.84/credit. April 2020 average price was ~\$121.61 per credit, down \$24.75 from March 2020 average price of \$146.36 per credit. Recently the CFP prices in Oregon are trading between \$115-125/credit.

Canada

The objective of the [Canadian Clean Fuel Standard](#) is to achieve up to 30 mm tonnes of annual reductions in greenhouse gas emissions by 2030, making a significant contribution toward exceeding Canada's target of reducing national emissions by 30% below 2005 levels by 2030. Environment and Climate Change Canada is engaging with the Clean Fuel Standard Technical Working group on design elements this Spring/Summer. Due to the impacts of the COVID-19 pandemic, the proposed Clean Fuel Standard regulations for the liquid fuel class has been delayed to Fall 2020. In late 2021 after a 75-day formal comment period, the regulations for the liquid fuel class will be finalized and implemented in 2022.

British Columbia, Canada

[British Columbia's low carbon fuel standard \(BC-LCFS\)](#) was introduced to reduce the carbon intensity (CI) of fuels used in the province of Canada. Similar to the California LCFS program, the credit market creates a financial incentive to reward low-carbon fuels. In Q1 2020, the average price per credit was \$235.49, down from Q4 2019 pricing of \$297.71 per credit.

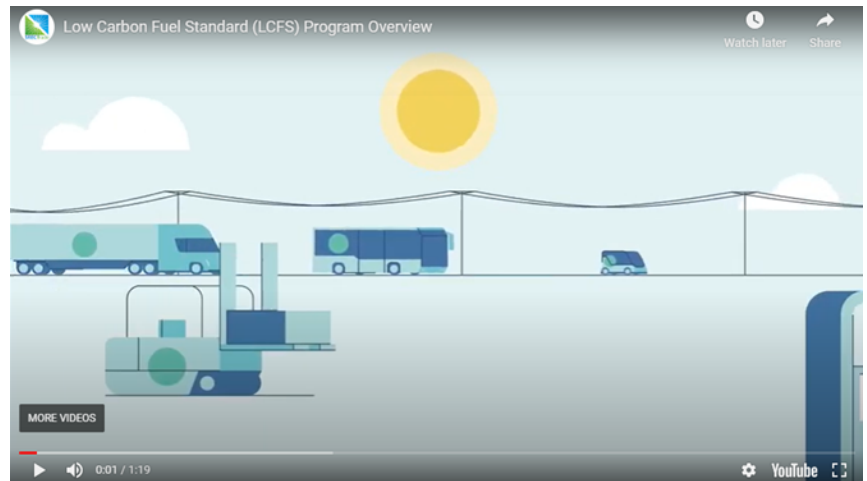


SRECTRADE LCFS 101 VIDEO

In mid-March, SRECTrade posted a LCFS 101 video on our site and YouTube channel.

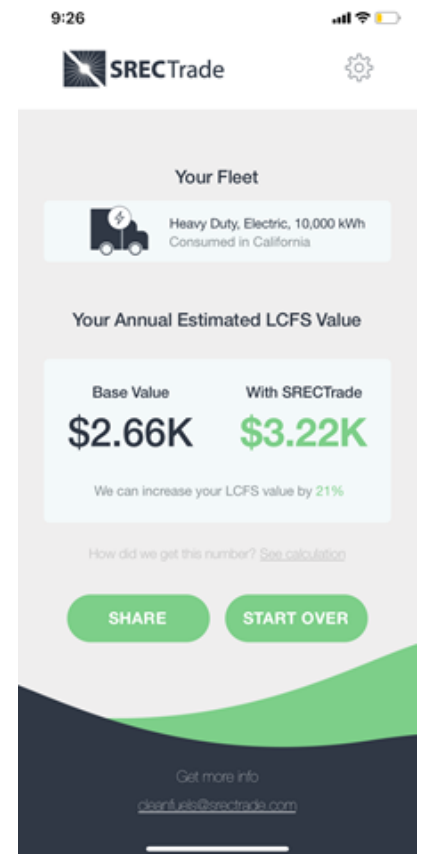
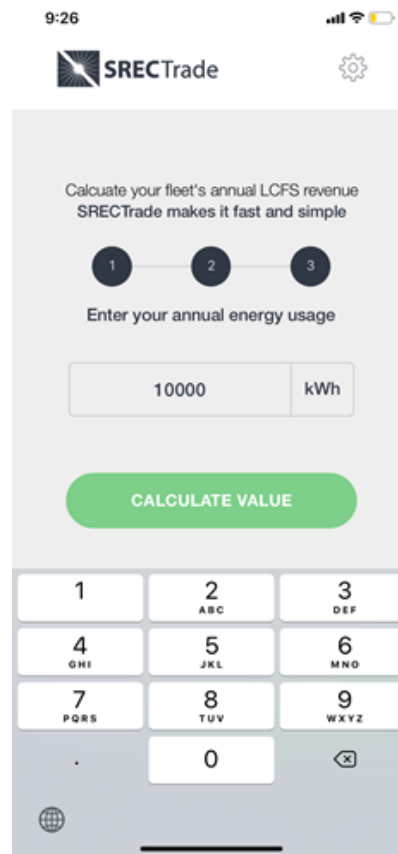
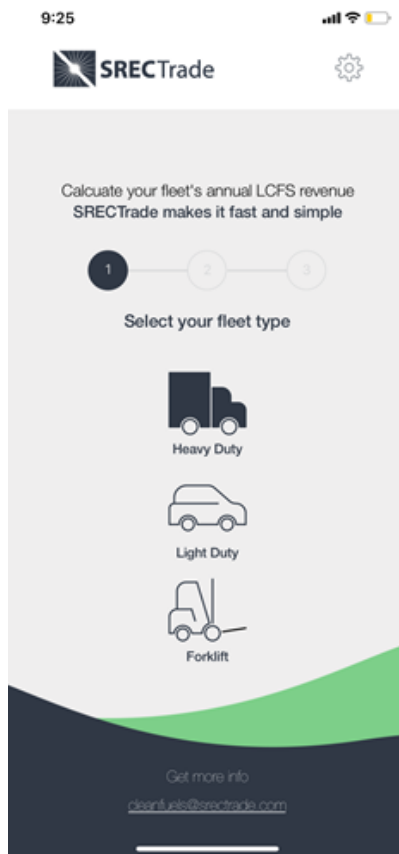
Watch at:

https://srectrade.com/#clean_transportation



UPCOMING LCFS CREDIT CALCULATOR PHONE APP

In the next few weeks, SRECTrade will be launching an LCFS Credit Calculator Application for smartphones. It will help calculate a fleet's annual LCFS revenue based on usage and fleet type.



RENEWABLE ENERGY CREDIT (REC) PAIRING BENEFITS

- SRECTrade pairs vehicle electricity consumption with carbon free electricity through the CA LCFS REC book and claim process. This provides EV assets with an uplift in their issued LCFS credits.
- Given each REC yields between 20-35% more LCFS credits, the REC pairing is a beneficial transaction for us to facilitate on behalf of our clients.
- Please contact us for more information about how we can help your EV assets benefit from pairing your fuel consumption with renewable energy to reduce the carbon intensity of your electricity consumed.



CONTACT US

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ABOUT US

SRECTrade offers LCFS credit management and transaction services to electric vehicle (EV) fleet operators, OEMs, EV charging station owners, and other asset owners. We help our clients navigate the entire LCFS process including asset registration, ongoing reporting requirements, application of low CI pathways, transacting, settlement, and remittance of funds. Our domain expertise in environmental commodity markets allows us to provide our clients with industry leading regulatory and market knowledge. Please reach out to cleanfuels@srectrade.com for more information.

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