

LCFS MARKET UPDATE

NOVEMBER 2020



CONTACT US AT CLEANFUELS@SRECTRADE.COM OR
(415) 763-7732 EXT 4

INDUSTRY HIGHLIGHTS

- California is the first state to declare a complete transition to clean vehicles, announcing that by 2035 every new car sold in California will be emission free. **Governor Newsom's executive order** released in early October discusses how CARB should extend efforts to reduce carbon emissions beyond 2030.
- In September, Walmart and PepsiCo announced plans to shift to 100% renewable energy and zero emissions by 2035 and 2040 respectively. These target goals among large corporations continue to support California's efforts to make this transition affordable for all businesses through the LCFS program.
- In October, the Port Authority successfully deployed 36 electric buses at various airports in New Jersey, forming the largest East Coast airport electric bus fleet.
- Colorado considers the possibility of a Clean Fuels Program (CFP) in its **Greenhouse Gas Pollution Reduction Roadmap** released this quarter. The state plans to further invest in zero emission vehicles before implementing a low carbon fuel standard.
- New Jersey governor Phil Murphy (D) unveiled his plan for cutting state GHG emissions by 80 percent by 2050, with a major focus on ending the use of conventional gasoline and diesel fuel.

SRECTRADE HIGHLIGHTS

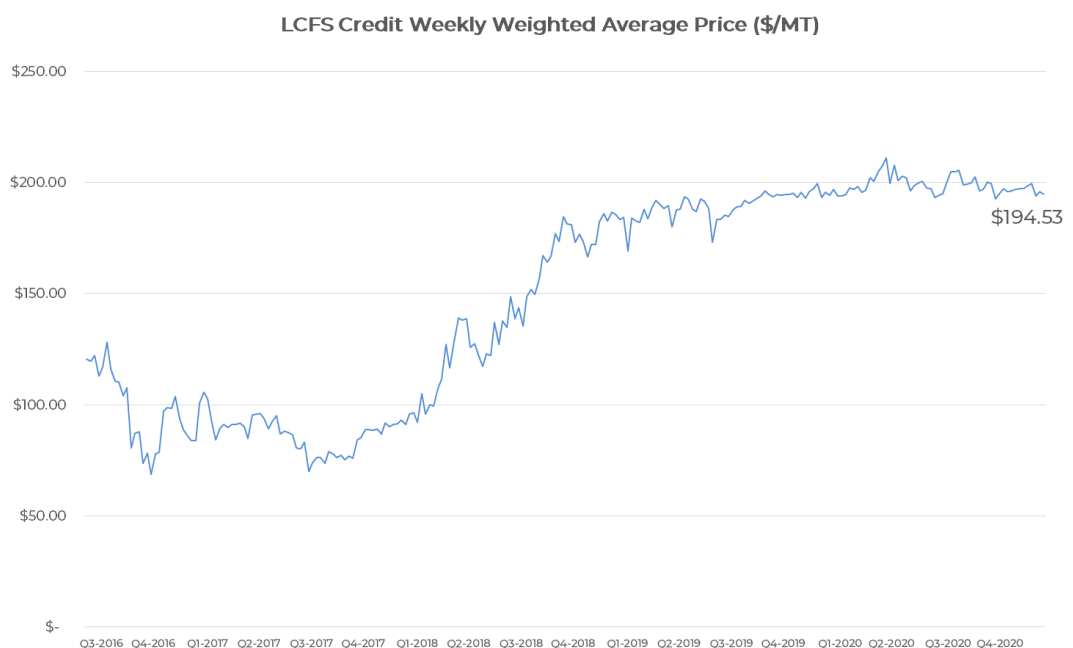
- This quarter, SRECTrade released its **LCFS 101 blog post** explaining how the program works and how fleet owners can charge up to get paid.
- SRECTrade launched the first **LCFS Credit Calculator App** which you can use to easily estimate your fleet's potential annual LCFS revenue. Now available on **iPhone** and **Android**.



RECENT CALIFORNIA LCFS CREDIT PRICE TRENDS

- Throughout the third quarter of 2020, the LCFS market saw steady credit prices.
- Weighted average pricing reported in the **LCFS Registry Tracking Credit Bank and Transfer System (LRT-CBTS)** ranged between \$192 and \$203 in Q3 2020.
- Recently the LCFS market has seen a steady trend in prices, trading between \$194 and \$200 in the last week of October and through early November.
- Near term pricing strength is expected to remain as carbon intensity reduction requirements continue to increase and larger draws continue on the LCFS credit bank.
- Deficit and credit production data for Q3 2020 will not be released until January 31, 2020. 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 November 15, 2020 as reported by CARB:

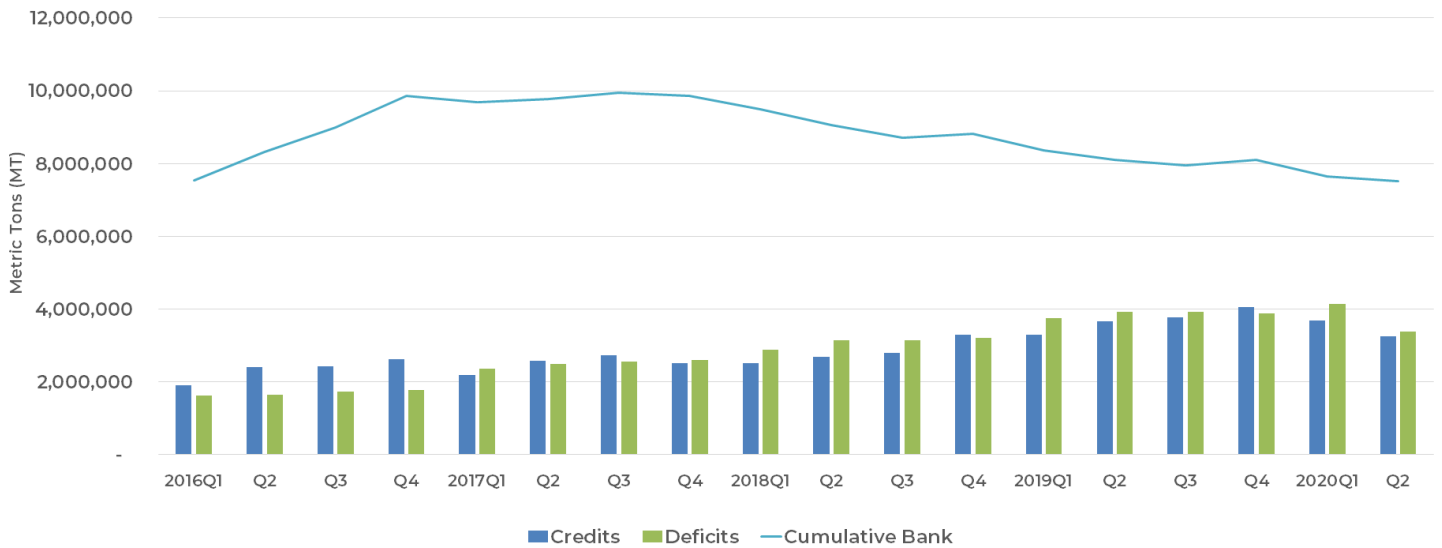


CALIFORNIA LCFS CREDIT AND DEFICIT REPORT

- On October 30, 2020, CARB released the [Q2 2020 credit and deficit data](#).
- The market saw an overall drop in deficits and credits generated in Q2 2020 as well as a smaller draw upon the cumulative bank most likely due to impacts of COVID-19.

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

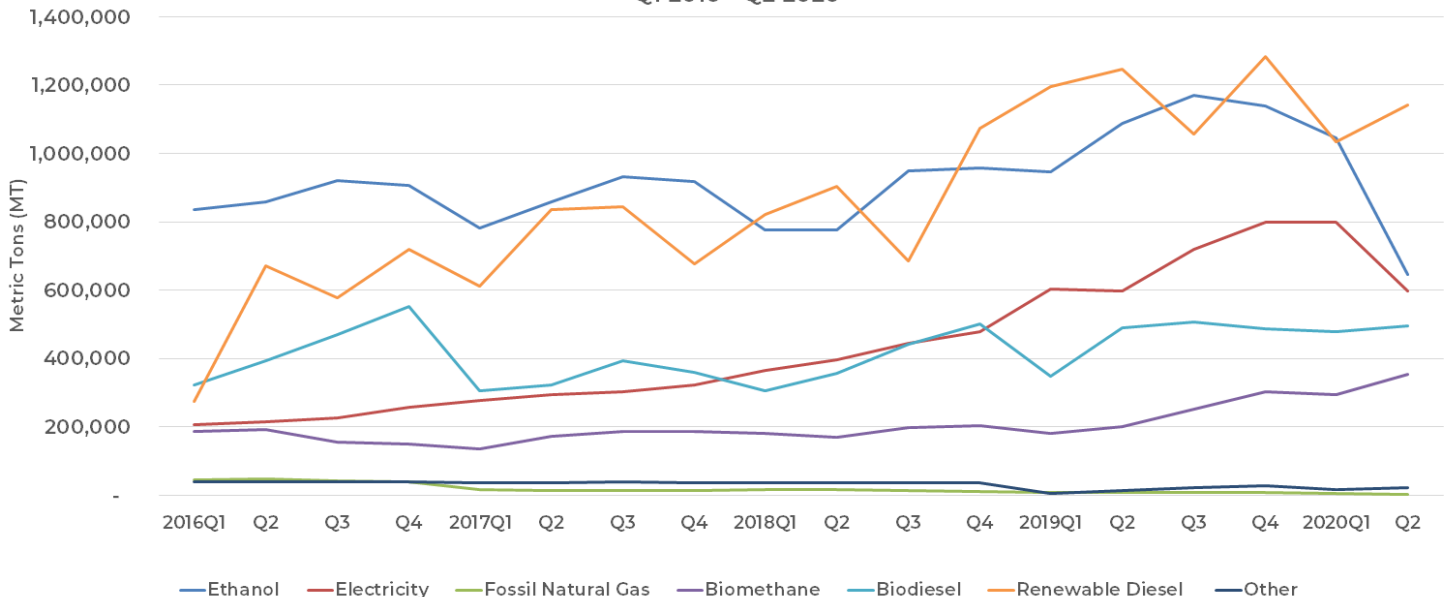
Total Credits and Deficits (MT) for All Fuels Reported
Q1 2016 - Q2 2020



- Deficits outpaced credits with 3.25 mm credits issued in Q2 2020 vs. 3.38 mm deficits generated.
- Between Q1 2020 and Q2 2020, the bank saw a 1.6% decrease from 7.7 mm credits to 7.5 mm credits. As deficit generation continues to outpace credits issued, we expect to see more drawn upon the cumulative bank.
- Credit volume decreased significantly with 3.25 mm credits produced, down 11.6% from Q1 2020's volume of 3.68 mm.

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

Credits (MT) By Fuel Type
Q1 2016 - Q2 2020

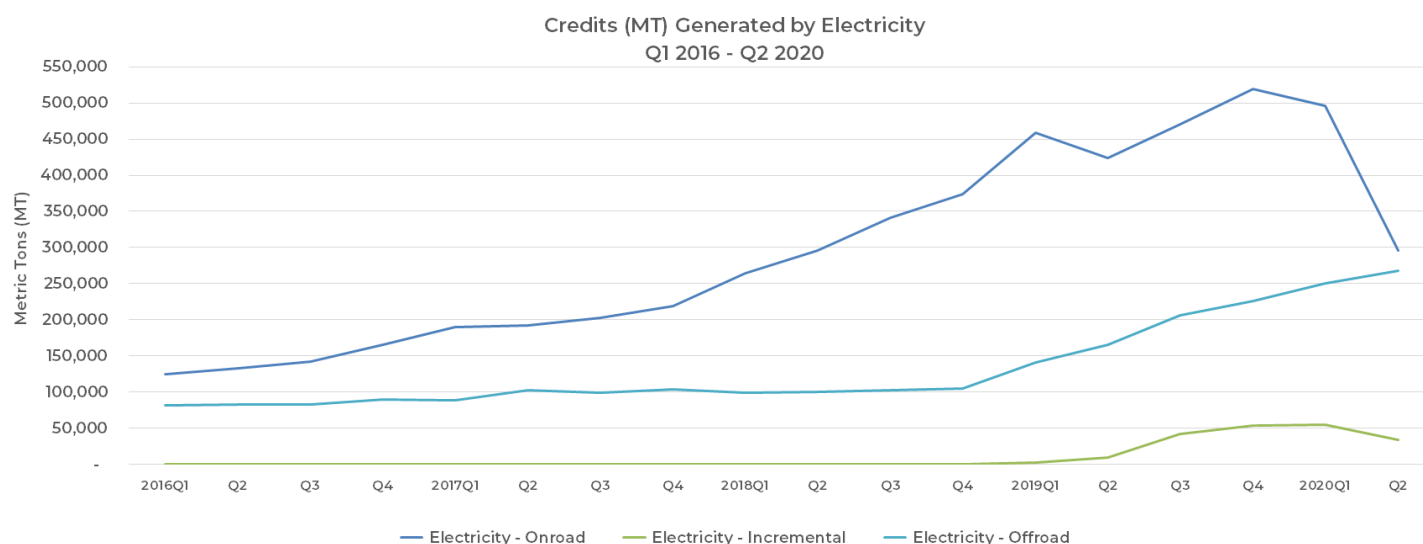


Fuel Type	Change from Q1 2020 (%)	Change from Q2 2019 (%)	Change from Trailing Four Qtr. Avg. (%)
Ethanol	-38.2%	-40.5%	-41.7%
Renewable Diesel	10.4%	-8.4%	-1.2%
Bio-CNG	21.8%	82.3%	37.0%
Hydrogen	-22.4%	-0.6%	-20.2%
Electricity	-25.2%	-0.2%	-18.0%
All Fuels	-11.56%	-11.30%	-14.21%

- The largest contributor to the credit decrease was Ethanol, down by almost 400k credits from 1.05 mm credits in Q1 2020 to 647k credits generated in Q2 2020.
- There was a slight increase in renewable diesel in Q2 2020. 1.14 mm credits were generated in Q2 2020, up 10.4% from 1.03 mm credits in Q1 2020.
- Biogas or Bio-CNG credits increased by 21.8% from Q1 2020, up to 335.9k credits in Q2 2020 from 275.7k credits. Since early 2019, Bio-CNG has steadily increased as a fuel.
- Credits produced from hydrogen decreased 22.4% in Q2, down to 3k from 3.9k credits.

- Electricity as a fuel has been consistently increasing in credit generation since 2016 until Q2 2020 where the effects of COVID-19 caused a dramatic decrease. Credits generated in Q2 2020 from on-road electricity decreased to 296k from the record high of 518.7k in Q4 2019. Off-road vehicles increased 7.5%, up from 225.5k credits to 267.4k.
- Electricity credits generated by onroad light duty and medium duty electric vehicles largely contributed to the total electricity onroad credit generation in Q2 2020 with 288.9k credits out of 597.7k credits. The majority of these credits were generated with residential EV charging with grid average carbon intensity (CI) or base credits. There was a significant decrease in onroad and incremental electricity credits most likely due to the effects of COVID-19. For electricity credits generated from off road vehicles, electric forklifts and fixed guideway systems showed a steady increase since 2016.
- In 2020, the Carbon Intensity (CI) reduction target increased from a 6.25% to 7.50% CI reduction. The market will likely continue to see an uptick in deficit production through 2020, barring any major changes in fuel production.

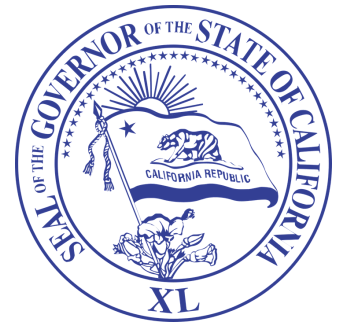
The chart below shows credit volume generated by electricity since 2016



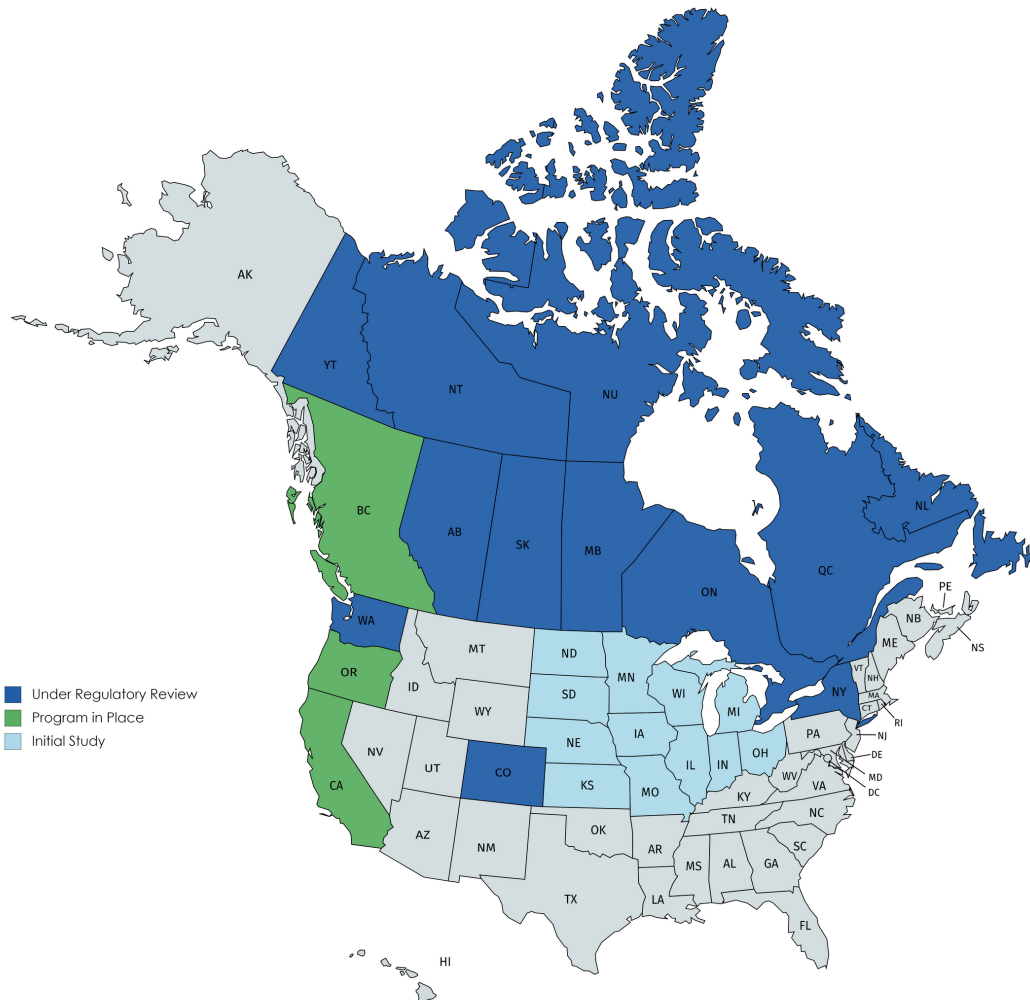
REGULATORY AND POLICY UPDATES

California

- CARB staff held **public workshops** to discuss potential regulation revisions to the **Low Carbon Fuel Standard** on October 15 and 16, 2020. Topics included proposed changes to fuel pathway applications, carbon intensity calculations, spending requirements on electricity credit proceeds, metering and data requirements, reporting entity hierarchy, third-party verification, and additional credit generation opportunities. Comments were due November 5 and the rulemaking process is expected to begin in 2021.
- On September 23, 2020, **California Governor Gavin Newsom issued Executive Order N-79-20** directing state agencies to develop regulations that require:
 - All in-state sales of new passenger cars and trucks to be zero-emission by 2035
 - All medium- and heavy-duty vehicles be zero emission by 2045
 - All off-road vehicles and equipment be zero emissions by 2035



The order effectively **bans the sale of internal combustion engines by 2035 in California** and will accelerate and affect ongoing rulemaking by imposing additional zero-emission requirements for heavy-duty vehicles and off-road equipment.



Oregon



State of Oregon
Department of
Environmental
Quality

- **Oregon Department of Environmental Quality** is holding a series of advisory committee meetings to discuss potential regulation revisions to electricity used as a transportation fuel within the **Clean Fuels Program**. Topics included proposed changes to grid average carbon intensity calculations, allowing book-and-claim accounting for low or zero carbon intensity electricity, and additional credit generation opportunities within the program. Workshops are scheduled through at least November 19, 2020 and comments are being accepted on an ongoing basis. Rulemaking is anticipated to begin in 2021.
- In March 2020, **Oregon Governor Kate Brown issued Executive Order 20-04** directing state agencies to take further action to reduce and regulate greenhouse gases. DEQ staff indicated that an additional rulemaking will kick off in the second half of 2021 to consider expanding the Clean Fuels Program. Staff will consider a goal of reducing carbon intensity by 20% below 2015 levels by 2030 and 25% by 2035.

Colorado

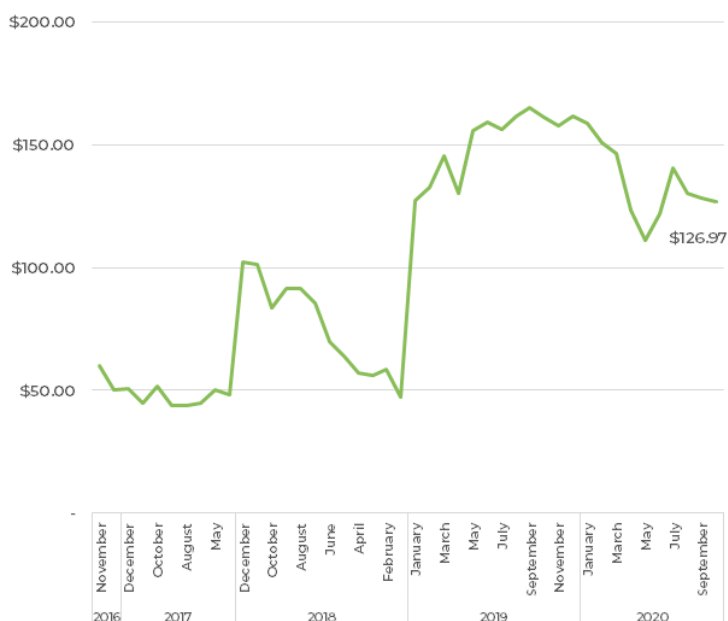


- On September 30, 2020, the **Colorado Energy Office** released a draft **Greenhouse Gas Pollution Reduction Roadmap** for public review. The report details early action steps the state can take towards meeting greenhouse gas goals of 26% reduction from 2005 levels by 2025 and 50% by 2030. The report recognizes the role of the transportation sector in achieving reduction targets and lists electrification and the use of lower carbon fuels as policy goals, but stops short of recommending a clean fuels standard citing an early study that identified issues with large scale biofuel adoption and compliance costs. Public comment concluded on November 1 with a final version anticipated to be released by the end of the year.

OTHER LCFS CREDIT PRICE TRENDS

- SRECTrade also operates in the **Oregon Clean Fuel Program (OR CFP)**. CFP average prices for Q3 2020 were steady from the COVID-19 slump in Q2 2020, averaging at \$132.80/credit. October 2020 weighted average price remained lower at \$126.97 per credit, down \$1.05 from September 2020 average price of \$128.02 per credit. Recently the CFP prices in Oregon have trended between \$120-128/credit.

Oregon CFP Weekly Weighted Average Price (\$/MT)



GRANT PROGRAMS UPDATE

- Small businesses looking to invest in electrifying their fleet may be able to receive a loan through enrolling in the **California Capital Access Program (CalCAP)** for Small Business, which assists financial institutions in providing loans for smaller firms. Through the program, which offers both secured or unsecured loans, businesses in California can apply for funding for a variety of start-up costs, including new equipment. Loans may reach \$5 million, and each borrower can apply for loans for up to \$2.5 million enrolled over three years. Lenders can enroll up to \$2.5 million for loans. CalCAP will only consider loan enrollment applications submitted within three weeks of the Date of First Disbursement.
- The **South Coast Air Quality Management District (SCAQMD)** is providing funding for public school districts to replace diesel buses with near-zero or zero-emission buses. Requests for bus replacements can receive up to \$370,000 per bus. Applications are due at 3:00 pm on January 26, 2021.



- The **California Energy Commission (CEC)** announced a \$22 million **Grant Funding Opportunity (GFO)** for projects on Bi-Directional Energy Transfers and Distributed Energy Resource Integration for electrifying medium and heavy duty vehicles (MDHD). Applications must be submitted before 5:00 PM PT on December 30, 2020.
- There are a number of tax credits and incentive programs in New York to support the transition to clean fuel vehicles, such as the **New York State Drive Clean Rebate** program and **Charge Ready NY**. The Drive Clean Rebate program allows for a rebate of up to \$2,000 for the purchase or lease of electric cars. Also, there is still more than \$8 million in funding available through the Charge Ready NY program, which offers rebates of \$4000 per charging port for entities installing Level 2 EV charging stations in parking lots for public parking, office buildings, and multi-unit dwellings.

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 a **20-35% uplift** in their issued LCFS credits, **yielding more proceeds for your organization.**
- Our team procures and purchases RECs on your behalf and matches with the quarterly kWh consumption of your EV assets. If your organization has solar or wind assets or is thinking about investing in renewable energy assets, SRECTrade can manage and transact the RECs from those assets in addition to your LCFS credits.
- **Contact SRECTrade at cleanfuels@srectrade.com or (415) 763-7732 ext 4** 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.

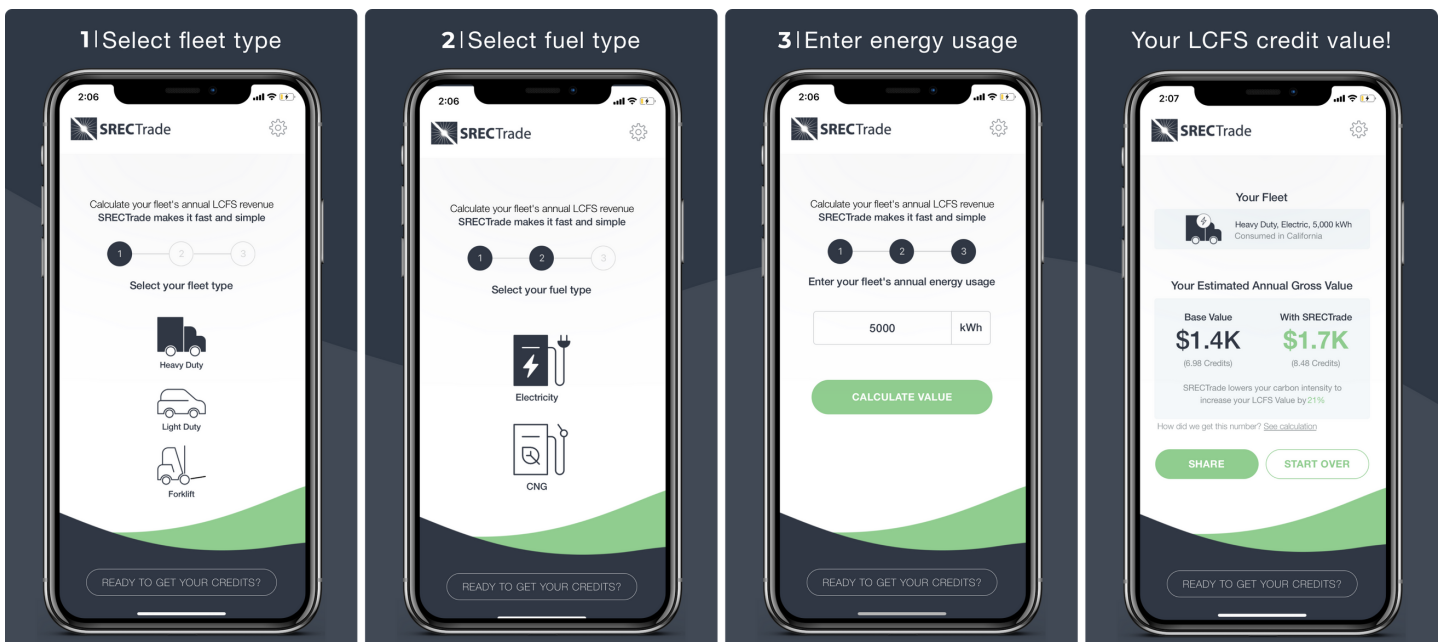


LCFS CREDIT CALCULATOR PHONE APP

We are happy to announce the **SRECTrade LCFS Credit Calculator app is now available for Apple and Android users.** The app allows you to model your clean fuel vehicle's annual credit allowance and projected value in the Low Carbon Fuel Standard (LCFS) program.

Once downloaded, follow three simple steps to build a model of your estimated annual gross value from LCFS credit sales.

The app allows you to share your model results via automated email and easily connect with SRECTrade directly from within the app if you have further questions or want to find out more about our management and software services.





CONTACT US

cleanfuels@srectrade.com

(415) 763-7732 ext 4

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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