



Journalist's Guide to California's Low Carbon Fuel Standard

April 2016

As the California Air Resources Board (ARB) continues to fine-tune its implementation of the Low Carbon Fuel Standard (LCFS), California Delivers has provided this resource that journalists might find helpful:

- A brief overview of the LCFS
- An explanation of what's happening
- A list of relevant data points
- A list of sources who are available for interview

What is the LCFS?

The LCFS sets pollution limits for transportation fuels in California – a 10% reduction in carbon pollution by 2020. By not picking winners, the LCFS supports a wide range of technologies enabling the transition to lower carbon fuels such as clean electricity, renewable fuels and natural gas. The LCFS was adopted in 2009, went into effect in 2011, and was re-adopted in 2015.

How does the LCFS program work?

The standard is implemented using a market-based approach that rewards fuel producers that reduce carbon pollution with reduction credits. Those credits have a financial value within the program. ARB estimates LCFS credits can be worth as much as \$1/gallon or more for ultra-low carbon fuels. At the end of each year, refiners and importers of gasoline and diesel must demonstrate they have met their reduction targets either through reducing their emissions directly or purchasing credits from low-carbon fuel producers.

THE SACRAMENTO BEE

“...The Low Carbon Fuel Standard encourages competition for bringing the most effective clean fuels to market, regardless of whether oil prices are \$30 or \$100 a barrel.”

Adrienne Alvord and Don Anair,
Union of Concerned Scientists

February 20, 2016

Who's eligible to receive credits?

Any producer that sells a low-carbon transportation fuel is eligible to receive LCFS credits. This includes, but is not limited to:

- Anyone that owns and operates a fueling station that dispenses compressed natural gas (CNG) for use as a transportation fuel
- Any entity that provides the public with equipment to charge plug-in electric vehicles
- Any employer that provides electric vehicle charging to employees
- Producers of renewable fuels

What is the ARB doing in 2016 and why?

Although the LCFS has been in effect since 2011, the ARB in 2015 re-adopted the rule to satisfy certain legal procedural requirements. ARB also updated several key parts of the regulation to reflect the latest science and further enhance the program. In 2016, ARB continues to fine-tune the LCFS to ensure its implementation is fair and effective, and that it is achieving the expected emissions and market benefits.

What are the potential benefits for local government and fleet owners?

The credits generated by fleets depend on the amount of reductions they achieve from using low carbon fuels. The value from those LCFS credits can help offset fleet expenditures. For illustrative purposes, we consider three potential examples based on a credit price range of \$65 – \$120 per credit.



“...[The Low Carbon Fuel Standard...drives long-range investments in the next generation of clean fuels and accelerates the development of infrastructure like EV charging and hydrogen fueling stations. California’s commitment to clean fuels assures businesses of a reliable demand for low-carbon fuels no matter how the price of oil fluctuates.

Mike Levin, FuelCell Energy, Inc.
& CleanTech OC
March 18, 2016

	Ex 1: Fleet of light-duty battery EVs	Ex 2: Fleets of medium-duty CNG vehicles	Ex 3: Fleet of heavy-duty CNG transit buses
Fuel used	Electricity	CNG	CNG
Fuel displaced	Gasoline	Diesel	Diesel
# of vehicles	20	20	20
Annual miles traveled per vehicle	8,000 miles	12,000 miles	60,000 miles
LCFS credit potential per year	40 credits	42 credits	660 credits
LCFS revenue potential per mile	1.6 – 4.0 c/mile	1.1 – 2.1 c/mile	2.9 – 5.3 c/mile
LCFS revenue potential per year	\$2,500 – \$4,800	\$2,700 – \$5,000	\$34,400 – \$63,600

Source: ICF International

Experts Available for Interview

John Boesel

CALSTART is an industry trade organization representing fleet operators, alternative fuels companies and other businesses committed to transitioning to cleaner transportation.

Contact: jboesel@calstart.org

Jeremy Martin,

Union of Concerned Scientists
Martin, a senior scientist in the Clean Vehicles Program, evaluates the impact of biofuels and fuel policy.

Contact: *Debbie Holtz*
ucscamedia@ucsusa.org

Lisa Mortenson

Co-Founder and CEO of Community Fuels

Contact: lisa@communityfuels.com

Simon Mui

Natural Resources Defense Council
Mui is the California Director for NRDC's clean vehicles and fuels program.

Contact: smui@nrdc.org

Colin Murphy

NextGen Climate America
Murphy is a climate policy advocate and an expert in advanced biofuel systems, life cycle analysis and alternative fuel policy.

Contact: colin.murphy@nextgenamerica.org

Amy Myers Jaffe

Jaffe is Executive Director of Energy and Sustainability at UC Davis and a global energy policy expert.

Contact: *Steve Kulieke* skulieke@ucdavis.edu

Philip Sheehy

ICF International

Sheehy is an expert in the LCFS credit market expert and local government fleets.

Contact: philip.sheehy@icfi.com

Mary Solecki

Environmental Entrepreneurs (E2) is a national non-partisan business group.

Contact: mary@e2.org

Eileen Wenger Tutt

The California Electric Transportation Coalition is a nonprofit association working to reduce greenhouse gases and air pollution through the development and use of electric transportation.

Contact: eileen@caletc.org

Steve Westly

Founder & Managing Partner of
The Westly Group

Contact: *Joel Berman* joel@stevewestly.com



“Since the LCFS began in 2011, the state’s use of cleaner transportation fuels—such as electricity, biogas, and advanced renewable fuels—has grown by over 20 percent on average.”

Simon Mui

Natural Resources Defense Council

February 2, 2016

Relevant Data Points

- California is home to more than 40,000 businesses serving advanced energy markets, employing roughly 431,800. (Source: Advanced Energy Economy Institute, *California Advanced Energy Employment Survey*, December 2014)
- Low carbon fuels are currently replacing over 100,000 barrels of gasoline and diesel use per day in California. By 2030, low carbon fuels could replace up to 400,000 barrels of gasoline and diesel use per day in California as well as the Pacific Northwest, reducing the overall carbon intensity of transportation fuels by 14% to 21% by 2030. (Source: ARB LCFS Compliance Data; Potential Low Carbon Fuel Supply to the Pacific Coast Region of North America. ICCT, January 2015)
- Alternative fuels' share of California transportation fuels, by energy content, grew from 6% in 2011 to 8% in 2015, and are capable of tripling in the next 10 years. (Source: ARB LCFS Compliance Data, UC Davis, *Status Review of California's Low Carbon Fuel Standard*, July 2014; Promotum. California's LCFS: Evaluation of the Potential to Meet and Exceed the Standards, February 2015)
- The advanced biofuel industry will have up to 1.7 billion gallons of production capacity in the United States by 2017. (Source: E2, *Advanced Biofuel Market Report 2014*, January 2015)
- LCFS is working. The reported average fuel carbon intensity of all alternative fuels included in the program declined 15% between 2011 and 2014. (Source: UC Davis, *Status Review of California's Low Carbon Fuel Standard*, Spring 2015)
- Since 2007 there has been more than \$3.7 billion in private equity investment in advanced biofuels enterprises nationwide. (Source: E2, *Advanced Biofuel Market Report 2014*, January 2015)
- Electricity as a transportation fuel can displace 620 million to 3.3 billion gallons of gasoline in 2030, and is already displacing gasoline by 16 million gallons per year. (Source: ICF International and E3, *California Transportation Electrification Assessment, Phase 1*, September, 2014)
- By 2025, thanks to California's clean fuels policies (LCFS & AB 32 Fuels in Cap), Californians will save over \$100 billion from reduced sales at the pump; we will consume 21.4 billion fewer gallons of gasoline and 11.8 billion fewer gallons of diesel fuel. (Source: EDF and American Lung Association, *Driving California Forward*, May 2014)
- California leads the nation in hybrid and plug-in electric vehicle sales, with more than 189,000 PEVs on the road, comprising roughly 45% of the U.S. plug-in market. (Source: Plug-in Electric Vehicle Collaborative, Cumulative CA PEV sales 2011-February 2016)
- To date, the LCFS has cut emissions by over 15 million metric tons—that's equivalent to the annual emissions of four belching coal fired plants. (Source: ARB Compliance Data)
- For every dollar oil companies spend more on clean renewable fuels they spend more than \$50 to produce more oil from dirty sources. (Source: Natural Resources Defense Council, *Oil Companies' Investments in Dirty Fuels Outpacing Clean Fuels by Fifty Times*)
- Over \$40 billion leaves the state every year to import crude oil and petroleum products. (Source: U.S Energy Information Administration)