

U.S. Renewable Fuel Standard and California Low Carbon Fuel Standard: A Program Comparison Applicable to Renewable Natural Gas

The two most-prominent U.S. regulatory programs incentivizing Renewable Natural Gas (RNG) deployment as a transportation fuel are the **Federal Renewable Fuel Standard (RFS)** and **California's Low Carbon Fuel Standard (LCFS)**.

The **RFS** is administered by the Environmental Protection Agency (EPA) and requires transportation fuel sold in the United States to include a minimum volume of renewable fuel. The program was created in the Energy Policy Act of 2005 and expanded ("RFS2") under the Energy Independence and Security Act (EISA) of 2007. Through 2022, the RFS volume obligations followed a schedule set in the EISA; as of 2023, the EPA Administrator sets fuel volume obligations according to statutory.

California's LCFS is a state regulation requiring a 20% reduction in transportation fuel carbon intensity by 2030. Fuel providers can meet their reduction targets by selling more low-carbon fuels, reducing carbon intensity of fossil fuels, or purchasing credits from producers who supply low carbon fuels. As of January 2023, California's Air Resources Board (CARB) is evaluating changes to the LCFS.

Meeting Obligations through Credit Trading

The **RFS** requires fuel producers, importers and distributors to include certain volumes of renewable fuels (set as "Renewable Volume Obligations," or RVOs) in their inventories. To achieve compliance, obligated parties that fail to meet the applicable requirement can purchase credits ("Renewable Identification Numbers," or RINs) from parties that have met them.

Different types of fuels generate different kinds of RINs; the same fuel can generate multiple kinds of RINs based on the use of different feedstocks. For RNG, "cellulosic" feedstocks generate a D3 RIN; non-cellulosic feedstocks generate a (generally lower value) D5 RIN.

The **LCFS** sets a threshold for emissions from fuels, measured as grams of CO₂e per megajoule of energy (gCO₂e/MJ). Fuels with emissions above the threshold generate deficits, based on metric tons of emissions; fuels coming in below the threshold generate credits, based on metric tons of emissions *avoided*. The further the emissions levels are from the threshold, the more deficits or credits are generated. For instance, in the case of RNG, a carbon-negative product generates more credits than a carbon-neutral product.

To cancel out their deficits under the program, high-emissions fuel providers can purchase credits from low-emissions fuel producers, effectively supporting those producers.

Summary Comments

The RFS and the LCFS both incentivize the production of lower carbon fuels, and both use credit markets. Despite their similarities, there is a basic difference between the programs. While fuels must achieve certain emissions reductions to be included under the RFS, the purpose of that program is to *promote the use of renewable fuels*, and credits or deficits are based on volume produced. The goal of the LCFS is to *reduce emissions*, and credits or deficits for that program are based on metric tons of emissions produced or avoided.