



### **CARBON CAPTURE AND SEQUESTRATION PROJECT ELIGIBILITY**

**September 2019**

#### **INTRODUCTION**

The California Air Resources Board (CARB) adopted the Carbon Capture and Sequestration Protocol under the Low Carbon Fuel Standard (CCS Protocol) for use in its Low Carbon Fuel Standard (LCFS). The LCFS is designed to reduce greenhouse gas emissions associated with the life cycle of transportation fuels used in California and diversify the state's fuel mix. CARB staff has prepared this document to address frequently asked questions (FAQ) about the CCS Protocol. These answers may be based in part on case-specific factual circumstances and are offered here only as guidance that does not supplant the requirements of the LCFS regulation or the CCS Protocol, which is incorporated into the LCFS regulation. Unlike the regulation itself, this document does not have the force of law. It is not intended to and cannot establish new mandatory requirements beyond those that are already in the LCFS regulation, nor can it supplant, replace, or amend any of the legal requirements of the regulation. Conversely, any omission or truncation of regulatory requirements does not relieve entities of their legal obligation to fully comply with all requirements of the regulation.

This document addresses common questions related to carbon capture and sequestration (CCS) project eligibilities for receiving LCFS credits. These requirements are primarily addressed in LCFS Regulation section 95490(a) and the CCS Protocol subsection A.1. If you have a question that you would like to be included in this FAQ, please contact LCFS staff (see contact below).

#### **1. Do CCS projects have to be located within California to earn LCFS credits?**

No. Projects may be located anywhere, but the innovative crude oil or transportation fuel produced associated with the CCS project must be consumed in California. LCFS credits will only be issued for the fuel consumed in California.

The only exceptions to being issued credits based on fuel consumed in California are direct air capture (DAC) projects, which store captured carbon dioxide (CO<sub>2</sub>) underground. DAC projects may apply for CCS Permanence Certification regardless of location, and do not need to have a fuel component to be issued credits.

#### **2. Does the CO<sub>2</sub> need to be captured and sequestered by the same entity?**

No. CO<sub>2</sub> may be captured by one entity and transferred to another entity for sequestration. When applying for CCS Permanence Certification and for crediting under the LCFS, both the capture entity and the sequestering entity must apply as joint applicants.

## Low Carbon Fuel Standard Frequently Asked Questions

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### 3. Do LCFS credits go to the entity that captures or sequesters the CO<sub>2</sub>?

Once the CCS project application receives Permanence Certification, and after the reported amounts of sequestered CO<sub>2</sub> are verified, the entity that captures the CO<sub>2</sub> can claim the LCFS credits.

### 4. What types of CCS projects are eligible under the LCFS?

The following table is intended to be a complete list of the types of CCS projects that are eligible for crediting under the LCFS regulation; CARB staff acknowledges that there may be other CCS project types that could become eligible for LCFS crediting in the future.

| Project Type (these entities receive the LCFS credits)                   | Examples (where the CO <sub>2</sub> is captured from)   |
|--|---|
| Direct air capture (credits generated by the capturer)                   | Chemical separation (e.g. absorption, membrane separation) of CO <sub>2</sub> directly from ambient (atmospheric) air                                       |
| Tier 2 pathway (credits generated by the alternative fuel producer)      | CO <sub>2</sub> from fermentation during ethanol production   |
|  | CO <sub>2</sub> streams from production of renewable diesel, renewable gasoline, and alternative jet fuel   |
|  | CO <sub>2</sub> produced as part of biogas from anaerobic digestion   |
|  | CO <sub>2</sub> from power plants that produce low-CI electricity supplied for eligible transportation applications such as electric vehicle charging, etc. |
| Refinery Investment (credits generated by the refinery)                  | CO <sub>2</sub> from steam methane reforming at or supplying hydrogen to a refinery   |
|  | CO <sub>2</sub> from steam generators and/or combined heat and power plants at a refinery   |
| Innovative Crude (credits generated by the crude producer <sup>1</sup> ) | CO <sub>2</sub> from steam methane reforming at a bitumen upgrader  |
|  | CO <sub>2</sub> from steam generators or combined heat and power plants that supply steam, heat, or power demand at an oil field                            |

### 5. What types of sequestration sites are eligible for CCS projects?

The sites that are eligible for CO<sub>2</sub> sequestration under the LCFS are:

- Saline reservoirs
- Depleted oil and gas reservoirs

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<sup>1</sup> The crude oil producer may elect to transfer the right to opt in for credit generation to the joint applicant through a written agreement.

## Low Carbon Fuel Standard

### Frequently Asked Questions

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- Oil and gas reservoirs used for CO<sub>2</sub>-enhanced oil recovery (CO<sub>2</sub>-EOR)

As a reminder, the entities that run the sequestration sites are not the entities receiving the LCFS credits (unless that same entity is also the entity that captured the CO<sub>2</sub>). In addition, all sequestration site types must be located onshore in order to be eligible for CCS Permanence Certification.

#### **6. Is the oil produced from CO<sub>2</sub>-EOR, using CO<sub>2</sub> captured from eligible project types, eligible to generate credits?**

No. CO<sub>2</sub>-EOR fields are sequestration sites under the CCS Protocol, not project types. The capture facility is the entity that generates the LCFS credits, not the CO<sub>2</sub> sequestering facility. The crude oil generated as a result of CO<sub>2</sub>-EOR using CO<sub>2</sub> captured from eligible projects is not eligible for generating LCFS credits under the Innovative Crude Provision.

#### **CONTACT**

If you have questions regarding the above information, please visit the LCFS Contacts webpage: <https://www.arb.ca.gov/fuels/lcfs/contact.htm>.