

Draft Guidance on the Impact of Adopting Regulations Pursuant to SB 1383 on the Ability to Continue to Generate Credits Under the Low Carbon Fuel Standard and Cap-and-Trade Program for the Reduction of Methane Emissions from Manure Management Operations

The California Air Resources Board (CARB) incentivizes, through credits generated under two of its climate programs, the reduction of greenhouse gas (GHG) emissions achieved by the voluntary capture and use, or destruction, of methane from anaerobic digestion of livestock manure. The destruction of methane is incentivized under the Cap-and-Trade Program via the opportunity to generate CARB compliance offset credits and the use of captured methane as a transportation fuel in California generates credits under the Low Carbon Fuel Standard (LCFS).

This guidance document is prepared pursuant to Health and Safety Code section 39730.7(e), enacted by SB 1383 (Lara, 2016),¹ which directs CARB to provide guidance on credit generation under the two programs relating to a future regulatory requirement to reduce manure methane emissions from livestock and dairy projects (hereinafter referred to as “projects”). This future regulatory emissions control requirement to reduce manure methane emissions from livestock and dairy projects is hereinafter referred to as the “Regulation” or “Regulation requirement” in this guidance document.

What is the crediting period for avoided methane emissions from manure management projects under the Cap-and-Trade Program and LCFS?

The Board-adopted Compliance Offset Protocol Livestock Projects² (Livestock Protocol) provides the framework for quantification, project eligibility, monitoring, reporting, and verification of GHG emissions reductions from manure methane operations under the Cap-and-Trade Program. Under the Livestock Protocol, the crediting period for an eligible project is 10 reporting periods, with the first reporting period lasting from 6 to 24 months and subsequent reporting periods being 12 months in duration.³ The LCFS utilizes the same framework to quantify avoided methane emissions in the production of biomethane from manure management operations that is used as a transportation fuel.⁴

¹ SEC. 4. [H&S code Section 39730.7(e)]:

No later than January 1, 2018, the state board shall provide guidance on credits generated pursuant to the Low-Carbon Fuel Standard regulations (Subarticle 7 (commencing with Section 95480) of Title 17 of the California Code of Regulations) and the market-based compliance mechanism developed pursuant to Part 5 (commencing with Section 38570) of Division 25.5 from the methane reduction protocols described in the strategy and shall ensure that projects developed before the implementation of regulations adopted pursuant to subdivision (b) receive credit for at least 10 years. Projects shall be eligible for an extension of credits after the first 10 years to the extent allowed by regulations adopted pursuant to the California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500)).

² CARB. Compliance Offset Protocol Livestock Projects. Adopted November 14, 2014. Available at: <https://www.arb.ca.gov/regact/2014/capandtrade14/ctlivestockprotocol.pdf>

³ For the remainder of this guidance document, we refer to the crediting period as a 10-year crediting period for simplicity.

⁴ See CARB Staff Summary for AMP Americas LLC Pathway available at https://www.arb.ca.gov/fuels/lcfs/fuelpathways/comments/tier2/amp_5968_sum.pdf

Pursuant to SB 1383, CARB will ensure that projects which are listed with CARB or an Offset Project Registry (OPR) pursuant to the Livestock Protocol before the effective date of the Regulation and are eligible to receive LCFS credits will receive LCFS credit for at least 10 years. The LCFS program will recognize the 10-year crediting period specified in the Livestock Protocol.

How would adoption of a Regulation affect credit generation for avoided methane emissions under the two programs?

As discussed in the Short Lived Climate Pollutant (SLCP) Strategy,⁵ projects listed⁶ after the Regulation's emission reduction requirements are in effect would not be eligible for compliance offset credits or an LCFS carbon intensity that reflects avoided methane emissions, as the methane reductions associated with those projects would not be additional to the Regulation, (i.e., the methane reduction requirements of the Regulation would establish a new baseline or business-as-usual scenario under the Livestock Protocol quantification methodology). Only the GHG emissions reductions that exceed any GHG emissions reductions required by the Regulation would be eligible for either compliance offset credits or a carbon intensity that reflects avoided methane emissions for the purpose of generating LCFS credits.

Pursuant to SB 1383, projects listed before the new requirements take effect would still be able to generate credits using the original baseline conditions for the remainder of each project's 10-year crediting period. This guidance clarifies that such projects' GHG reductions will continue to be quantified throughout the 10-year crediting period against the regulatory conditions that existed at the time of project listing.

Would the quantity of credits be consistent throughout the crediting period?

Not necessarily; the magnitude of credit generation may vary from year to year due to many factors. The quantification methodology relies on certain parameters that are updated annually, including the climate data at the project location and the actual livestock population or quantity of manure treated in the project system. Such changes could affect the magnitude of credit generation, and therefore the credits issued in the initial reporting period do not necessarily reflect the potential credits issued in subsequent reporting periods.

⁵ Page 69 of the SLCP Strategy reads:

Once the regulatory requirements are in effect, credits for avoided methane emissions under the LCFS or the Cap-and-Trade Programs would not be available for new projects as the reductions would not be additional to regulation (which becomes the business-as-usual case). However, projects in place before the new requirements take effect would still be able to generate credits for avoided methane emissions for their current crediting period, which is ten years of operation. Available at: https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf

⁶ The Livestock Protocol specifies that the crediting period begins on the first day of the initial reporting period. . See the Offset Protocol Livestock Projects FAQ available at: <https://www.arb.ca.gov/cc/capandtrade/protocols/livestock/livestock.2014.faq.pdf>

Additionally, during the crediting period for a project, the methodology for quantifying carbon intensity under the LCFS may change; the adoption of an updated version of the CA-GREET model, which the LCFS program uses to translate GHG reductions into the carbon intensity score used to generate credits under LCFS, may result in variation in the quantity of credits generated. Furthermore, under the LCFS, the carbon intensity benchmarks decline annually, meaning that alternative fuels generate fewer credits as the standard becomes more stringent, even if the carbon intensity and quantity of fuel produced remains constant.

How would adoption of a Regulation in California affect credit generation for avoided methane emissions associated with out-of-state projects?

Under both programs, in-state and out-of-state projects would be impacted identically, meaning that out-of-state projects would not be eligible for compliance offset credits or an LCFS carbon intensity that reflects avoided methane emissions if the project is listed after the Regulation requirement goes into effect in California.

Can crediting for avoided methane emissions be extended if the initial 10-year crediting period expires prior to the Regulation requirement going into effect?

Yes, if the project's initial 10-year crediting period expires prior to the Regulation requirement going into effect, the project may be granted up to two additional 10-year crediting periods. Similar to the initial crediting period, the subsequent adoption of a Regulation would not affect credit generation for avoided methane emissions during a second or third 10-year crediting period that began before the Regulation requirement goes into effect.

Can crediting for avoided methane emissions be extended if the Regulation requirement goes into effect prior to the expiration of the initial 10-year crediting period?

No, the project would not be eligible for an additional 10-year crediting period for avoided methane emissions.

Can a project switch between the LCFS and Cap-and-Trade Program, receiving credit from one program for one reporting period and from the other program for the next reporting period?

Yes, a project is able to switch between the LCFS and Cap-and-Trade Program from one reporting period to the next.

The 10-year crediting period begins with the first reporting period in either program, and continues with credit generation in either program. In other words, switching from Cap-and-Trade to LCFS does not initiate a new crediting period.

Can a project receive credit under both the LCFS and Cap-and-Trade Program during the same reporting period?

No, a project receiving credit under the LCFS may not receive credits under the Cap-and-Trade Program and the Livestock Protocol within the same reporting period, even for reductions that are not credited under the LCFS program. For example, a dairy digester project may produce both electricity and transportation fuel. Methane emission reductions associated with the use of captured biomethane for electricity generation are not considered as part of the LCFS transportation fuel pathway, and therefore are not counted when determining the credits generated under the LCFS. These methane reductions associated with electricity generation currently would not be eligible for crediting under the Cap-and-Trade Program as the Livestock Protocol does not include provisions to accommodate this situation.⁷ Project operators should notify the participating registry of which program the project intends to report under at the beginning of each reporting period.

Do all the requirements of the Livestock Protocol apply to LCFS fuel pathways?

No. The LCFS utilizes the quantification framework of the Livestock Protocol, requires many of the same conditions for project eligibility, and relies on the third-party verification system established by the Livestock Protocol (until the LCFS verification requirements staff intends to propose become effective, potentially 2019). The following table lists the sections of the Livestock Protocol which are applicable to LCFS fuel pathway certification.

Livestock Protocol Requirements for LCFS Manure-to-RNG Fuel Pathways

Areas where LCFS requirements are intended to be identical to the Livestock Protocol	Protocol Reference
Definitions used in the Livestock Protocol	Chapter 1.2
Eligible Activities; in addition, to be eligible for an LCFS fuel pathway, the project must produce 1) a transportation fuel for use in California, or 2) a fuel provided directly for use as process energy in a facility that produces a transportation fuel for use in California.	Chapter 2
General Eligibility Requirements apply, except 3.1(a)(3) as noted below	Chapter 3.1
Project Commencement definition applies, except 3.5(c) as noted below	Chapter 3.5
Offset project crediting period to define a reliable period of time for return on investment for project implementation	Chapter 3.6
The LCFS Pathway system boundary is a subset of the Livestock Protocol's Offset Project Boundary.	Chapter 4
GHG sources and sinks; for example, emissions from enteric fermentation are considered outside the fuel system boundary and will not be included. Exceptions as noted below.	Table 4.1
Methodology for quantifying GHG Emission Reductions generally applies, with specific exceptions as noted below.	Chapter 5
Registry listing, project monitoring parameters, reporting, and third-party verification requirements.	Chapters 6 through 8
Appendices, with exceptions as noted below.	Appendices

⁷ CARB staff will evaluate what potential amendments would need to be adopted to allow for crediting in both systems. The existing Livestock Protocol does not include an accounting mechanism to address crediting in two programs.

	A and B
Areas of the Livestock Protocol Not Applicable or Excluded from LCFS Requirements	Protocol Reference
Timing of application and reporting periods must adhere to the frequency and deadlines specified in the LCFS regulation.	
Additionality requirements that are referenced in the Livestock Protocol 95973(a)(2) of the Cap-and-Trade Regulation are not required under LCFS.	Chapter 3.1(a)(3) and 3.4
LCFS pathways are not required to have a commencement date after December 31, 2006.	Chapter 3.5(c)
Regulatory compliance requirements.	Chapter 3.7
LCFS Fuel Pathways do include emissions of CH ₄ and N ₂ O from equipment upgrading biogas for pipeline injection and use as CNG/LNG fuel (SSR 10) and at the end user (SSR 12).	Table 4.1
Global Warming Potentials must be consistent with CA-GREET (emissions determined under the Livestock Protocol quantification methodology must be reported to LCFS in mass units of methane).	Chapter 5(e)
For the purpose of LCFS Fuel Pathways, “prior to the installation of the BCS” means the same as “in the absence of any BCS”	Chapter 5.1(b)
The correct conversion factor from pounds to metric tons should be used (0.000454)	Equation 5.6
Parameters BDE (CH ₄ destruction efficiency) and F (Monthly volume of biogas from digester to destruction devices) must be reported for each device to allow for allocation of emissions between transportation fuel and other destruction methods.	Equations 5.6, 5.10, and Table 6.1
Emission factors for energy use, fuel properties (e.g., energy density) and global warming potentials (GWP) from CA-GREET are used, when available.	Protocol, Equations 5.12 and 5.13, Tables A.7 and A.8