

Deemed Complete: March 30, 2017
 Posted for Comment: June 7, 2017
 Certified and Posted: June 22, 2017
 CI Effective: January 1, 2017
 Fuel Pathway Code: Please see Table

Staff Summary
 Tier 2 Method 2B Pathway
 High Mountain Fuels, Livermore, California
 Landfill Gas to LNG and L-CNG Pathway

Pathway Summary

High Mountain Fuels (HMF), a joint venture between Waste Management Renewable Energy (WMRE) and Linde North America, operates the High Mountain Fuels LNG plant located in Livermore, California. The plant processes, cleans, and liquefies landfill gas from the Altamont Landfill that is owned and operated by WMRE. The finished fuel is distributed to stations in California for use as LNG or L-CNG by WMRE. At the Altamont Landfill facility, WMRE uses a separate landfill biogas stream to generate electricity, part of which is supplied to the purification and liquefaction facility. Since the Tier 1 model is incapable of modeling combined purification and liquefaction in a single process step, HMF has applied for Tier 2 Method 2B for estimating carbon intensity for several LNG and L-CNG pathways.

Carbon Intensity of Landfill Gas to LNG Pathway

The LCFS Tier 1 CA-GREET 2.0 model does not offer an option to accurately model the HMF pathways which use electricity derived from landfill gas in a single process unit (i.e., purification and liquefaction). Hence, the Tier 2 CA-GREET 2.0 model has been used to estimate the CI for these pathways. HMF has met the two-year data requirements to support the energy use and feedstock sourcing for these pathways. The following table lists the proposed CI for these pathways.

Proposed Pathway CI

Fuel	Pathway FPC	Pathway Description	Carbon Intensity (gCO ₂ e/MJ)		
			Direct Emissions	Indirect Land Use	Total
LNG from Landfill Gas	LNGLF217	Tier 2 Method 2B Pathway: Altamont landfill gas delivered via pipeline to High Mountain Fuels; purified to biomethane and liquefied to LNG in California; fuel dispensed on-site	7.39	0	7.39
L-CNG from Landfill Gas	CNGLF246	Tier 2 Method 2B Pathway: Altamont landfill gas delivered via pipeline to High Mountain Fuels; purified to biomethane and liquefied to LNG in California; re-gasified to L-CNG on-site; fuel dispensed on-site	9.97	0	9.97
LNG from Landfill Gas	LNGLF218	Tier 2 Method 2B Pathway: Altamont landfill gas delivered via pipeline to High Mountain Fuels; purified to biomethane and liquefied to LNG in California; fuel delivered to Bay Area by Truck	7.74	0	7.74
L-CNG from Landfill Gas	CNGLF247	Tier 2 Method 2B Pathway: Altamont landfill gas delivered via pipeline to High Mountain Fuels; purified to biomethane and liquefied to LNG in California; re-gasified to L-CNG in California; fuel delivered to Bay Area by Truck	10.32	0	10.32

LNG from Landfill Gas	LNGLF219	Tier 2 Method 2B Pathway: Altamont landfill gas delivered via pipeline to High Mountain Fuels; purified to biomethane and liquefied to LNG in California; fuel delivered to Southern California by Truck	10.71	0	10.71
L-CNG from Landfill Gas	CNGLF248	Tier 2 Method 2B Pathway: Altamont landfill gas delivered via pipeline to High Mountain Fuels; purified to biomethane and liquefied to LNG in California; re-gasified to L-CNG in California; fuel delivered to Southern California by Truck	13.29	0	13.29

Operating Conditions

Operations at the plant will be subject to the following conditions designed to ensure that the CI of the LNG and L-CNG produced at the HMF plant will remain at or below the value appearing in the above table for all volumes of RD produced using this feedstock and sold in California:

1. Except for periods of abnormal operations, such as planned maintenance or unpredictable, unavoidable, and uncontrollable force majeure events, the CI value specified in the application shall not be exceeded.
2. The recovery and processing efficiency levels at the Altamont Landfill in Livermore, CA, shall remain at or above the levels specified in the HMF application. In addition, the liquefaction efficiency at the HMF LNG plant shall remain at or above the levels specified in the application. Energy consumption values for these facilities are classified by the applicant as confidential business information.
3. HMF must provide signed statements from Altamont Landfill in Livermore, CA and any party to whom it conveys biomethane from the HMF LFG processing plant attesting under penalty of perjury under California law that all environmental attributes, including the right to generate credits under the LCFS, are exclusively reserved to HMF and that no party will claim or has claimed credit for volumes reported in California's LCFS program under any other governmental program except the federal RFS.