Method 2B Application: Applied Fuels Natural Gas – Liquefied Natural Gas Plant in Topock, Arizona

Plant Summary

Applied Natural Gas Fuels, Inc. (ANGF) operates a Liquefied Natural Gas (LNG) Plant in Topock, Arizona. The facility has the capacity to produce 90,000 gallons of LNG per day. It is located adjacent to a pipeline system owned by Kinder Morgan (formerly El Paso Natural Gas Corporation). This system primarily conveys natural gas provided by an oil company from various North American wells. ANGF currently supplies the California transportation market from its two refueling stations in Barstow and Ontario.

Carbon Intensity of LNG Produced

The carbon intensity (CI) of the Topock LNG plant, as calculated by ANGF, is 85.77 gCO_2e/MJ of LNG produced. This CI is based on the LNG liquefaction plant efficiency of the year 2011 data. This efficiency value is calculated based on the amount of gas received and amount of LNG produced. By comparison, the Lookup Table CI for North American LNG liquefied in California (at a liquefaction efficiency of 80 percent) is 83.13 gCO_2e/MJ. ANGF plant energy consumption data from 2011 yielded an average electricity[1] and NG consumption. The weighted average LNG transport round trip distance from Topock to the California market was calculated. LNG is transported this distance mostly by heavy duty diesel truck. In 2011, ANGF started using one LNG truck for LNG delivery. The greater transport distance and lower liquefaction efficiency for the ANGF plant are primarily responsible for the difference between the applicant's CI and the Lookup Table value of 83.13 gCO_2e/MJ.

Fuel/Feedstock	Proposed Lookup Table Pathway Description	Carbon Intensity in gCO_2e/MJ (Including Indirect Effects)	Do Special Conditions Apply? (Y/N)[1]
Liquefied Natural Gas/North American Natural Gas	North American NG delivered via pipeline; liquefied in Topock, AZ	85.77	Y

Operating Conditions

1. ARB bases CI calculations on the operational data covering two years. However, the ANGF CI is based on data from only one year. ANGF will

[1] Applicant's electricity use was based on series of photos of electricity meters in 2011. Actual electricity couldn't be verified because the plant shared electricity with the El Paso offices. The assumed amount of electricity usage is in a close range to the default value in GREET 2011(at 0.04 kWh/gal). The current CA-GREET 1.8b assumed no electricity usage in LNG production.

submit energy consumption data for the year following the posting of its pathway. Submission will occur no less frequently than quarterly.

2. Actual plant performance shall remain within the bounds established in ANGF application. The plant's energy and electricity use values are classified by the applicant as confidential business information.

Staff Analysis and Recommendation

Staff has reviewed the ANGF application for the Topock, AZ LNG plant and has replicated, using the CA-GREET spreadsheet, the CI value calculated by ANGF (85.77g/MJ). ANGF has provided documentation of the plant's energy use, LNG production, and LNG transportation for the year 2011. Staff therefore recommends that AFNG's application for a Method 2B LNG pathway be approved, subject to the operating conditions stipulated above.