ARB Docket Comments System (docket)

Subject: Biogas GHG in GREET 3.0

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Sent: Thursday, April 12, 2018 10:39 AM
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Subject: Biogas GHG in GREET 3.0

Hello Anil,

I ran into something interesting today with the GREET 3.0 model for biomethane as compared to natural gas. We are looking to implement an anaerobic digester at our facility to then produce ethanol using that gas source rather than natural gas, but we would like to estimate the CI saving of doing this project. To do this I ran our ethanol data in GREET 3.0 to find the CI from natural gas then ran it again using only renewable natural gas, however, GREET 3.0 is showing significantly higher GHG emissions from renewable natural gas compared to natural gas.

The difference I found was mainly in the CO2 calculation for the natural gas and biogas, where the highlighted cells are the main contributors to the difference in the EtOH tab:

> Renewable Natural Gas:
> S529=(L\$435*(D\$398*EF!\$G16+D\$399*EF!\$D16+D\$400*EF!\$B16+D\$401*EF!\$C16+RNG!E627))/1000000
>> Where: RNG!E627=46,991
>> Giving a total CI for the biomethane to be **71.25** if I assumed 50,000 Btu/gal just for an example

> Natural Gas:
> O529=L\$430*(D\$398*EF!\$G16+D\$399*EF!\$D16+D\$400*EF!\$B16+D\$401*EF!\$C16+NG!\$B101)/1000000
>> Where: NG!B101=6,916
>> Giving a total CI for the biomethane to be **45.7** if I assumed 50,000 Btu/gal just for an example

I know biomethane shouldn't really have GHG emissions that are roughly twice the fossil fuel equivalent, so I am curious why the RNG option is so high.

Thank you for your time and I look forward to the discussion,

Karen O'Brien
Process Engineer

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