

Eco Solutions

CA-GREET Model Inputs and Changes

In addition to the changes to CA-GREET 1.8b model that are tabulated below, it was further modified to address public comments submitted regarding Eco Solutions' used cooking oil to biodiesel pathway (BIOD041) in the following ways:

1. Natural gas use in South Korea for stationary thermal use and electricity generation was modified to account for the emissions of using 100% imported liquefied natural gas (LNG).
2. The imported LNG ocean tanker transport distance was entered as 3,450 miles.
3. The liquefied natural gas delivered to port was modeled as being converted to a gas and then recompressed to compressed natural gas (CNG).

The applicant has conducted its analysis of direct effects on carbon intensity for the pathways using CA-GREET, v.1.8b (Dec. 2009) (See

http://www.arb.ca.gov/fuels/lcfs/ca_greet1.8b_dec09.xls). The standard inputs and parameters specified in CA-GREET remain unchanged except as noted in the input tables below. The input tables below specify the spreadsheet location of the CA-GREET inputs and other parameters that were claimed as confidential business information or trade secret by the applicant, but it does not disclose the actual value of such inputs and parameters because they are claimed to be confidential business information or trade secret.

Eco Solutions' input data tables (Locations of cells containing Confidential Business Information are shown, but the actual values of such confidential information are not disclosed) The first table below is for changes/inputs to GREET regarding the tallow to biodiesel pathway and the second table is for the UCO to biodiesel pathway.

Parameter	Cell location	Default US value	Eco Solutions UCO value	Units
Select Region for Analysis	Regional LT!C2	Midwest	South Korea	
Res. oil electric generation	Regional LT!J83	2.70%	4.0%	%
Natural gas electric generation	Regional LT!J84	18.90%	53.9%	%
Coal electric generation	Regional LT!J85	50.70%	41.1%	%
Nuclear electric generation	Regional LT!J86	18.70%	0.0%	%
Biomass electric generation	Regional LT!J87	1.30%	0.0%	%
Other (renewables) electric generation	Regional LT!J88	7.70%	1.1%	%
Ocean tanker transport distance (miles)	T&D!GB93	NA	6,579	miles
Biodiesel truck transport distance (miles)	T&D!GC93	50	114	miles
Biodiesel ocean tanker payload (tons)	T&D!V5	--	35,664	tons
Biodiesel ocean tanker horsepower requirement	T&D!T12	--	12,672	hp
Column for biodiesel ocean tanker	T&D!GB90:132	Move right (insert new transport column)		
Title	T&D!GB91	--	Ocean Tanker	
Ocean tanker fraction diesel power	T&D!GB95	--	0%	%
Ocean tanker fraction residual oil power	T&D!GB96	--	100%	%
Ocean tanker outbound energy intensity	T&D!GB108	--	71	btu/ton-mile
Ocean tanker back-haul energy intensity	T&D!GB109	--	63	btu/ton-mile
Fraction of biodiesel transported by ocean tanker	T&D!CL138	0	100	%
Fraction of biodiesel transported by truck	T&D!CL142	80	100	%
NG for UCO rendering	UCO BD!C189	838	963	btu/lb

Electricity for UCO rendering	UCO BD!C192	234	110	btu/lb
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