

Use of the AEZ-EF model (http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/aezef-model.xlsm) requires copying results from GTAP into a separate Excel workbook in a specific format. To facilitate this, staff has provided a program that generates a file with the required results in the proper format for copying into Excel.

To use this program, download the LUC.zip file from http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/luc.zip, unzip the file, and copy all the files to the same folder, which contains the GTAP model files and outputs. Now launch WinGEM and do the following:

1) Select "File -> Change both default directories" to choose the directory where the files from the zip archive was downloaded. It is preferable to make this directory where GTAP files and GTAP output files are located.

2) Select "Simulation -> TABLO Implement"

- Select LUC.tab
- Click the icon that looks like a cassette tape (or type Ctrl+T)
- Select LUC.sti
- Click "Run" to generate the FORTRAN program
- Click "Go to Compile and Link"
- Click "Compile and link" in the new window that pops up
- Wait for compile and link to complete, then click on "Go to 'Run TG program"
- Select the command file LUC.cmf (The CMF file must refer to the GTAP output files that should be read)
- Click run

3) Running the program creates the file "landchange.har", which is in the format required to copy into the "GTAP" workbook for use with AEZ-EF. For more detailed information on the required format, please refer to the "Template" worksheet in the file "Sample_GTAP_Results_v5.xlsx"

(http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/sample_gtap_results_v5.xlsx) and the AEZ-EF model documentation (http://www.arb.ca.gov/fuels/lcfs/lcfs_meetings/aezef-report.pdf).

Open "landchange.har" and copy each of the land-use change matrices (cFORESTRY, cLIVESTOCK, cCROPS, cPASTURECROP, cSUGARCROP, and cOILPALM), one at a time, and paste these into the corresponding locations on a sheet in the GTAP Results workbook (Sample_GTAP_Results_v5.xlsx). First click on the cFORESTRY which provides the "change in forestland by AEZ and region" and paste the entire matrix into the corresponding cells of Sample_GTAP_Results_v5.xlsx. Do the same for cLIVESTOCK, cCROPS, cPASTURECROP, cSUGARCROP, and cOILPALM¹. A final value that needs to be input into Sample_GTAP_Results_v5.xlsx is the net change in

¹ To account for the perennial cropping for sugarcane and palm, staff has included the separate land cover change inputs for sugarcane and palm.

post-conversion crop biomass carbon (Mg) which is available under item “tot_crpbio_c” of “landchange.har”². Copy this value to cell F4 of the corresponding worksheet in the results workbook.

4) Open the “AEZ-EF CARB matrix v46.xlsm”, under the “Results” tab, go to cell F11 and choose “Exogenous” from the dropdown on that cell.

Finally, in the same file, go to the “GTAP” tab and view the scenario run results.

² This value was computed by using the yields predicted by the GTAP model for each crop by region and AEZ and using this to calculate crop biomass on land converted to cropland.