The following document is a glossary of variables in the code of the Michigan Legislative Modeling Tool, listed in alphabetical order. Tool created in 2024 by Master's of Engineering Applied Climate student Brian Cromwell at the University of Michigan, in partnership with the Michigan Department of Energy, Great Lakes, and the Environment.

CO2EmissionsBAU - List of values from 2024-2050 of yearly CO2e emissions for the State of Michigan should no action be taken (AKA a "Business As Usual Case").

CO2EmissionsBAUYOYChange - The yearly change in emissions values from CO2EmissionsBAU.

CO2EmissionsHardCoded1 - Alternate method by which the program uses measured data. At the time of writing, the variable contains data from 2020-2023 in MMT CO2e.

CO2EmissionsHardCoded2 - The main method by which the program uses measured data. At the time of writing, the variable contains data from 2020-2023 in MMT CO2e.

CO2EmissionsElectricityHardCoded - Secondary method by which the program uses measured data, used exclusively in Reduction Measure 1.Units are in MMT CO2e.

CO2EmissionsElectricityProjectionsRM1 - A list of CO2e emissions values from electricity for 2024-2050 if Reduction Measure 1 is met in full (MMTCO2e).

CO2EmissionsElectricityProjectionsYOYChangeRM1 - A list of yearly change in emissions from electricity values for 2040-2050 if Reduction Measure 1 is met in full (MMT CO2e).

CO2EmissionsProjectionsRM1 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 1 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM2 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 2 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM3 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 3 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM4 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 4 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM5 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 5 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM6 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 6 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM7 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 7 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM8 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 8 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM9 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 9 is met in full (MMTCO2e).

CO2EmissionsProjectionsRM10 - A list of CO2e emissions values for 2024-2050 if Reduction Measure 10 is met in full (MMTCO2e).

CO2EmissionsProjectionsYOYChangeRM1 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 1 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM2 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 2 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM3 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 3 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM4 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 4 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM5 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 5 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM6 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 6 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM7 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 7 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM8 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 8 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM9 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 9 is met in full (MMT CO2e).

CO2EmissionsProjectionsYOYChangeRM10 - A list of yearly change in emissions values for 2024-2050 if Reduction Measure 10 is met in full (MMT CO2e).

customYOYPercents - Copy of the list of percentages of whatever measure is being worked with within the customReductionMeasure function.

customYOYReductions - Copy of the list of yearly reductions of whatever measure is being worked with within the customReductionMeasure function.

currentYear - The year for which the most recent data in the program is from.

customReductionMeasure - Function that takes in the input variables of the custom reduction measure and outputs a total carbon emissions reduction from that measure.

inputDownload - User input Y/N variable determining if the results will be downloaded as a text file.

inputPopQ - User input Y/N variable asking if the user would like to work with the full population of Michigan.

inputPopulation - User input population being worked with in the custom reduction measure tool. The default is the population for Michigan taken in the 2020 census.

inputRM - User input reduction measure number in the custom reduction measure tool.

inputYear - User input year for which the percentage of the reduction measure will be achieved.

interpolateValueRM12030 - Variable used to help with interpolation of Reduction Measure 1 percentages.

interpolateValueRM12035 - Variable used to help with interpolation of Reduction Measure 1 percentages.

interpolateValueRM12050 - Variable used to help with interpolation of Reduction Measure 1 percentages.

interpolateValueRM22030 - Variable used to help with interpolation of Reduction Measure 2 percentages.

interpolateValueRM32030 - Variable used to help with interpolation of Reduction Measure 3 percentages.

interpolateValueRM32050 - Variable used to help with interpolation of Reduction Measure 3 percentages.

interpolateValueRM42050 - Variable used to help with interpolation of Reduction Measure 4 percentages.

interpolateValueRM52030 - Variable used to help with interpolation of Reduction Measure 5 percentages.

interpolateValueRM52050 - Variable used to help with interpolation of Reduction Measure 5 percentages.

interpolateValueRM62030 - Variable used to help with interpolation of Reduction Measure 6 percentages.

interpolateValueRM62050 - Variable used to help with interpolation of Reduction Measure 6 percentages.

interpolateValueRM82050 - Variable used to help with interpolation of Reduction Measure 8 percentages.

interpolateValueRM92030 - Variable used to help with interpolation of Reduction Measure 9 percentages.

interpolateValueRM102050 - Variable used to help with interpolation of Reduction Measure 10 percentages.

interpolateValueRM102050 - Variable used to help with interpolation of Reduction Measure 10 percentages.

measureNumberLog - Logs the measure numbers of the custom reduction measures.

measureNumbers - List from 1-10 used in table creation.

measureReductionLog - Logs the total carbon reduction of the custom reduction measures.

percent - Input into the customReductionMeasure function.

percentLog - Logs the measure numbers of the custom reduction measures.

previous - Variable used in a for loop as a placeholder for the previous year's value of CO2e emissions.

reductionLog - Function that saves the input custom reduction measures to the log.

reductionMeasure - Input into the function customReductionMeasure used as the number of the reduction measure being worked with.

RM1 - Variable that turns Reduction Measure 1 on and off.

RM1Change - Yearly change from reduction measure 1.

RM1Electricity2030 - Variable that turns Reduction Measure 1's 2030 goal on and off.

RM1Electricity2050 - Variable that turns Reduction Measure 1's 2050 goal on and off.

RM1Percentages - List of interpolated percentages that Reduction Measure 1 will achieve each year.

RM1YearlyImpact - List of yearly impacts from Reduction Measure 1.

RM2 - Variable that turns Reduction Measure 2 on and off.

RM2Change - Yearly change from reduction measure 2.

RM22030 - Variable that turns Reduction Measure 2's 2030 goal on and off.

RM2Percentages - List of interpolated percentages that Reduction Measure 2 will achieve each year.

RM2YearlyImpact - List of yearly impacts from Reduction Measure 2.

RM3 - Variable that turns Reduction Measure 3 on and off.

RM3Change - Yearly change from reduction measure 3.

RM32050 - Variable that turns Reduction Measure 3's 2050 goal on and off.

RM3Per2030 - Variable used to calculate the target percentage in 2030 for Reduction Measure 3.

RM3Percentages - List of interpolated percentages that Reduction Measure 3 will achieve each year.

RM3YearlyImpact - List of yearly impacts from Reduction Measure 3.

RM4 - Variable that turns Reduction Measure 4 on and off.

RM4Change - Yearly change from reduction measure 4.

RM42050 - Variable that turns Reduction Measure 4's 2050 goal on and off.

RM4Percentages - List of interpolated percentages that Reduction Measure 4 will achieve each year.

RM4YearlyImpact - List of yearly impacts from Reduction Measure 4.

RM5 - Variable that turns Reduction Measure 5 on and off.

RM5Change - Yearly change from reduction measure 5.

RM52030 - Variable that turns Reduction Measure 5's 2030 goal on and off.

RM52050 - Variable that turns Reduction Measure 5's 2050 goal on and off.

RM5Percentages - List of interpolated percentages that Reduction Measure 5 will achieve each year.

RM5YearlyImpact - List of yearly impacts from Reduction Measure 5.

RM6 - Variable that turns Reduction Measure 6 on and off.

RM6Change - Yearly change from reduction measure 6.

RM62030 - Variable that turns Reduction Measure 6's 2030 goal on and off.

RM62050 - Variable that turns Reduction Measure 6's 2050 goal on and off.

RM6Per2030 - Variable used to calculate the target percentage in 2030 for Reduction Measure 6.

RM6Percentages - List of interpolated percentages that Reduction Measure 6 will achieve each year.

RM6YearlyImpact - List of yearly impacts from Reduction Measure 6.

RM7 - Variable that turns Reduction Measure 7 on and off.

RM7Change - Yearly change from reduction measure 7.

RM72030 - Variable that turns Reduction Measure 7's 2030 goal on and off.

RM72050 - Variable that turns Reduction Measure 7's 2050 goal on and off.

RM7Percentages - List of interpolated percentages that Reduction Measure 7 will achieve each year.

RM7YearlyImpact - List of yearly impacts from Reduction Measure 7.

RM8 - Variable that turns Reduction Measure 8 on and off.

RM8Change - Yearly change from reduction measure 8.

RM82030 - Variable that turns Reduction Measure 8's 2030 goal on and off.

RM8Percentages - List of interpolated percentages that Reduction Measure 8 will achieve each year.

RM8YearlyImpact - List of yearly impacts from Reduction Measure 8.

RM9 - Variable that turns Reduction Measure 9 on and off.

RM9Change - Yearly change from reduction measure 9.

RM92030 - Variable that turns Reduction Measure 9's 2030 goal on and off.

RM92050 - Variable that turns Reduction Measure 9's 2050 goal on and off.

RM9Percentages - List of interpolated percentages that Reduction Measure 9 will achieve each year.

RM9YearlyImpact - List of yearly impacts from Reduction Measure 9.

RM10 - Variable that turns Reduction Measure 10 on and off.

RM10Change - Yearly change from reduction measure 10.

RM102030 - Variable that turns Reduction Measure 10's 2030 goal on and off.

RM102050 - Variable that turns Reduction Measure 10's 2030 goal on and off.

RM10Per2030 - Variable used to calculate the target percentage in 2030 for Reduction Measure 10.

RM10Percentages - List of interpolated percentages that Reduction Measure 10 will achieve each year.

RM10YearlyImpact - List of yearly impacts from Reduction Measure 10.

runningPercent - Used in percentage calculations to help with the interpolation process.

sumOfMeasure - Sum of the reduction measure being worked with in the customReductionMeasure function.

table - Table output displaying the yearly impacts from each reduction measure.

timeyear - Secondary method to track the year within the customReductionMeasure function.

totalImpact - List of the total reduction measure impacts on a yearly basis.

totalMeasureImpacts - List of the sum of the yearly impacts from each reduction measure through 2050.

totalReduction - Output of the customReductionMeasure function.

totalsTable - Table displaying the total impact from each reduction measure through 2050.

workingList - List that is used to combine the measured data with the modeled data. Also used to graph the data.

workingListSplit - List that is used to combine the measured data with the modeled data for the split reduction measures. Also used to graph the data.

year - Input into the customReductionMeasure function.

yearLog - Logs the years of the custom reduction measures.

yearlyChange - Variable used in a for loop to calculate a yearly emissions reduction.

yearlyValue - Variable used in a for loop to calculate the yearly emissions.

years - A list of years from 2020 to 2050 that is used for plotting the graphs.