**MEMORANDUM**

**Subject:** Michigan Comments on the US EPA 2016v2 Emissions Modeling Platform

**To:** US EPA’s Emissions Modeling Group

**Cc:** Allison Eyth (US EPA) and Mark Janssen (LADCO)

**From:**  Catherine Asselin, Michigan’s Air Emissions, Reporting and Assessment Unit Manager

**Attachments:** Stationary Source non-EGU Point Controls Spreadsheet, 2016v2 EMP Projections Comments

**Date:**  December 17, 2021

This memo outlines issues found by Michigan during our review of the US EPA 2016 version 2 emissions modeling platform (2016v2 EMP).

We have worked with the Lake Michigan Air Directors Consortium (LADCO) to identify technical issues with the 2016v2 EMP and have received support in our efforts to provide comments to the US EPA regarding the platform.

Michigan identified three areas for improvement in the 2016v2 EMP:

* Non-electricity generation stationary (non-EGU) point source emissions controls
* Future year emissions projections for various point and non-point inventory sectors
* Stationary point EGU growth rate differences between the ERTAC vs IPM models

The comments provided by Michigan in this memo are specific to our state and do not address comments for other LADCO states.

**Non-EGU Point Source Emissions Controls**

LADCO worked with their member states to identify the highest-emitting sources and applicable control technology information for non-EGU stationary point sources in the region. They generated a spreadsheet with the highest-emitting non-EGU sources in 2016 for each LADCO state. The spreadsheet includes columns for state input on emissions control information for each of the sources. The LADCO Emissions Workgroup has worked over the past few months to identify base year emissions controls and potential emissions controls for non-EGU point sources in the region.

On October 25, 2021 LADCO provided a non-EGU point emissions control-data collection template to the LADCO Emissions Workgroup. Subsequently, on November 3, 2021 LADCO sent a request to the LADCO Technical Oversight Committee for information needed to identify base and future year emissions controls for non-EGU point sources. Given that the US EPA has indicated that non-EGU point sources will be included in the remedy for the states’ obligations under the 2015 Ozone NAAQS Transport Rule, LADCO recommended that their member states review the control information for this sector and provide information to the US EPA on actual, existing controls at the largest sources in the region.

Michigan filtered the spreadsheet to only include Michigan sources and reviewed the control technology for the sources. The spreadsheet was included with this memo (nonegu spreadsheet). It includes notes about what control technologies are present for the listed emission units at the sources, and control efficiencies that could be determined during the limited time for research. Note that the control efficiencies are only for NOx, though many of these emission units control for other pollutants. NOx control efficiencies can be difficult to determine as it is often quantified as a final output rather than a reduction. Therefore, some values are based upon best estimates rather than site-specific information.

Additionally, it was determined that one of the sources on the list only had one line listed when there are two lines at the source. This source is Guardian Industries, LLC (facility\_id of 7888111). The second emission unit is almost identical to the first, has been there for a considerable time, and emits at a similar rate as the line already included in the spreadsheet. Therefore, Michigan duplicated the entry, adding it to the spreadsheet in red text. Please know that we changed the agy\_unit\_id, but did not have the new unit\_id. Please contact Michigan if you have any questions about the additional emission unit.

**Future Year Emissions Projections for Various Sources**

LADCO used the US EPA-generated emissions projection reports and identified a list of SCCs that they believe have incorrect future year projection rates; the 2016v2 EMP projection rates are not consistent either with real-world emissions trends or regional emissions projection information. Michigan has reviewed the list and found that four of the projection rates were for Michigan.

The attached spreadsheet (LADCO\_EPA2016v2\_Projections\_Comments) includes the list of the SCCs with alternative projection information and LADCO comments on the sources of the alternative information.

Michigan is requesting that the US EPA replace the 2016v2 EMP projections for those included in the spreadsheet for Michigan: 2275020000, 2282005022, 2260001020, and 20200252. As commented on in the spreadsheet, the updated projections reflect information showing a fairly steady-state value for three of the activities and one which research suggests will have an increase, but smaller than the projection the US EPA originally proposed.

**EGU Point Source Emissions Projections**

LADCO recognizes that the US EPA uses the Integrated Planning Model (IPM) to estimate future year EGU emissions, and that the IPM projection methodology differs from the Eastern Research Technical Advisory Committee (ERTAC) EGU model that is endorsed by the MJOs and the majority of the states in the eastern half of the country. Michigan works with LADCO on Michigan-specific inputs to ERTAC and Michigan would like the US EPA to replace IPM projections with ERTAC EGU projections for sources in Michigan, if not the entire LADCO region.

LADCO has identified persistent issues with the IPM projection methods for sources in our region. In particular, they are concerned that IPM shuts down units that member states are not prepared to include in their SIPs as having permanent and enforceable controls. The table below includes a unit in the 2016v2 EMP that is shut down by IPM in 2023, and is not planned for shut down by ERTAC.

|  |  |  |
| --- | --- | --- |
| State | Plant Name | ORIS ID |
| MI | TES Filler City | 50835 |

For the previous Cross State Air Pollution Rule (CSAPR) analyses, the US EPA projected EGU emissions using an “engineering analysis” method. LADCO recognizes that the US EPA engineering analysis projection methods more closely align with the ERTAC EGU methods. However, LADCO identified for some EGUs in the region problems with the engineering analysis projections used by the US EPA for the revised 2008 Ozone Standard CSAPR rule published on March 15, 2021.

The table below shows the projected emissions for some of the problematic EGU units identified by LADCO. The green column shows the 2023 ozone season emissions projected by the US EPA engineering analysis. These are the total ozone season emissions for these units allocated under the revised CSAPR rule. The first blue column shows the 2023 ozone season emissions for each unit estimated by ERTAC. The second blue column (OS NOx EPA Compliance….) shows the result of including additional EPA-prescribed CSAPR compliant emissions reductions on top of the ERTAC projections. The additional reductions come from using the lowest achieved rate for each unit for the 2016 base year. The yellow column highlights the differences between the revised CSAPR allocations and the CSAPR-compliant ERTAC EGU projections. Negative values in the yellow column indicate lower future year allocations from the ERTAC EGU model; positive values indicate higher future year allocations. For example, this analysis shows that Belle River Unit 2 would require an additional NOx emissions reduction of 829 tons per ozone season beyond what ERTAC projected to be compliant with the transport rule.

LADCO is concerned that their member states will be challenged to comply with the transport rule for those units with large positive differences between the EPA engineering analysis and the ERTAC allocations. This analysis highlights the potential problems of using the EPA engineering analysis for transport rule compliance. LADCO feels that calculating transport rule compliance with ERTAC better captures the emissions and control potential for sources in our region.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ORIS** | **Unit ID** | **Facility** | **State** | **A: The US EPA CSAPR Ozone Season Allocations** | **B: 2023 ERTAC EGU O3 Season NOx (tons)** | **C: B + OS Average Rates (ERTAC Method)** | **C-A** |
| 1710 | 3 | J H Campbell | MI | 1,030 | 206 | 206 | -824 |
| 1733 | 2 | Monroe | MI | 689 | 232 | 232 | -457 |
| 6034 | 1 | Belle River | MI | 637 | 1134 | 1,134 | 497 |
| 6034 | 2 | Belle River | MI | 708 | 1537 | 1,537 | 829 |