

Clean Cars MN

OAH Docket No. 71-9003-36416

Preliminary Response to Comments

137 comments were submitted to the eComments website or by mail to the Office of Administrative Hearings by 2/12/2021.¹ Of the 137, three were questions about the contents of the Statement of Need and Reasonableness (SONAR) and the Appendix 1: Technical Support Document (TSD) of the SONAR, and the MPCA has provided answers below where possible. The remaining 134 were comments on a range of topics (listed below) and some comments included multiple components. The MPCA will respond to comments submitted after 2/12/2021 in future rounds of responses.

Questions

The MPCA received three comments with several questions related to the content of the SONAR which are summarized and responded to as follows.

A commenter requested “the estimated real-world per-mile fuel savings benefit (in gallons) for both passenger cars and light-duty trucks for model years 2025-2034 based on the differences between the LEV standards and the SAFE rule.” (Orr-1)

The MPCA estimated the average real-world fuel economy that might result from the Low Emission Vehicle (LEV) greenhouse gas (GHG) emissions standards compared with the federal GHG standards under the Safer Affordable Fuel Efficient (SAFE) Vehicles rule using the methodology described on page 23 of the TSD. We estimated the average real-world fuel economy for both passenger cars and light-duty trucks. The MPCA then estimated the average real-world fuel economy for an average Minnesotan vehicle assuming 25% of Minnesota new vehicle sales are passenger cars and 75% are light-duty trucks. (Page 29 of the TSD explains the agency’s assumption of the split of passenger cars and light-duty trucks in new vehicle sales.) See Table 1 for the data resulting from that analysis.

Table 1. Real-world miles per gallon for passenger cars (PCs) and light-duty trucks (LDTs) by model year (MY) for both the Reference scenario based on the SAFE rule and the Clean Cars scenario based on the LEV standard described in the TSD. The average based on 25%/75% split represents the average Minnesota light-duty vehicle based on the projection of the split between PCs and LDTs in Minnesota’s new vehicle sales.

MY	Reference scenario (SAFE)			Clean Cars scenario (LEV)			Reference vs. Clean Cars difference
	PCs	LDTs	Avg. based on 25%/75% split	PCs	LDTs	Avg. based on 25%/75% split	
2025	50.07	35.16	38.89	57.79	42.35	46.21	7.33
2026	50.81	35.80	39.55	57.60	42.23	46.07	6.52
2027	50.64	35.69	39.43	57.41	42.10	45.92	6.50
2028	50.48	35.58	39.30	57.22	41.97	45.78	6.48
2029	50.31	35.47	39.18	57.03	41.84	45.64	6.46
2030	50.15	35.37	39.06	56.84	41.72	45.50	6.43
2031	49.99	35.26	38.94	56.66	41.59	45.36	6.41
2032	49.83	35.16	38.83	56.48	41.47	45.22	6.39
2033	49.67	35.06	38.71	56.29	41.34	45.08	6.37
2034	49.51	34.95	38.59	56.11	41.22	44.94	6.35

¹ This batch of comments does not include responses at the eComments site; those comments will be reviewed and responded to during the rebuttal period.

A commenter requested “the exact figures used in EPA's MOVES model for LEV and ZEV vehicles in each model year.” (Orr-1)

Pages 16-17 and figure 3 of the TSD describe the data the MPCA used from the Environmental Protection Agency’s (EPA) 2014b Motor Vehicles Emissions Simulator (MOVES) to estimate annual vehicle miles traveled (VMT) for new vehicles sold in Minnesota. Table 2 includes the MOVES data underlying figure 3 of the TSD. The MPCA assumed that the average Minnesota new vehicle has a 150,000 mile lifetime. Therefore, the cells in gray in Table 2 indicate data that are included in figure 3 of the TSD, but are not used in the MPCA’s analysis.

Table 2: EPA MOVES model VMT default Minnesota values, by age and class. Gray cells indicate data not used in MPCA’s analysis, but identified in figure 3 of the TSD.

Vehicle age	Annual		Cumulative	
	Passenger car	Light-duty truck	Passenger car	Light-duty truck
0	13,414	15,161	13,414	15,161
1	13,159	14,876	26,573	30,037
2	12,884	14,555	39,457	44,592
3	12,590	14,203	52,047	58,795
4	12,280	13,824	64,327	72,619
5	11,955	13,421	76,282	86,040
6	11,617	12,998	87,899	99,038
7	11,269	12,558	99,168	111,596
8	10,913	12,106	110,081	123,702
9	10,550	11,647	120,631	135,349
10	10,183	11,181	130,814	146,530
11	9,815	10,716	140,629	157,246
12	9,446	10,253	150,075	167,499
13	9,080	9,799	159,155	177,298
14	8,718	9,354	167,873	186,652
15	8,361	8,924	176,234	195,576
16	8,014	8,513	184,248	204,089
17	7,676	8,123	191,924	212,212
18	7,351	7,761	199,275	219,973
19	7,040	7,429	206,315	227,402
20	6,746	7,130	213,061	234,532
21	6,472	6,870	219,533	241,402
22	6,217	6,650	225,750	248,052
23	5,985	6,477	231,735	254,529
24	5,779	6,353	237,514	260,882
25	5,599	6,280	243,113	267,162
26	5,448	6,266	248,561	273,428
27	5,329	6,266	253,890	279,694
28	5,243	6,266	259,133	285,960
29	5,192	6,266	264,325	292,226
30	5,192	6,266	269,517	298,492

A commenter requested the data described on page 44 of the TSD: "Finally, we calculated dollar savings per vehicle using the calculated fuel savings and projected gasoline prices from the U.S. Energy Information Association's 2019 Annual Energy Outlook from the Reference case in its Table 12: Petroleum and Other Liquids Prices. These gasoline price projections are \$3.07/gallon (in 2018 dollars) in 2023 and grow at an average rate of 0.7% per year in subsequent years. The EIA, in fact, predicts that the price per gallon of gasoline will increase from now through 2050 under all scenarios (Figure 14)." (Orr-1)

The requested data are from the U.S. Energy Information Administration's 2019 Annual Energy Outlook (AEO), Reference Case scenario projected gasoline prices, which can be found in the AEO's "Table 12: Petroleum and Other Liquids Prices."² The requested data is available in figure 14 of the TSD and footnote 51 on page 43 of the TSD provides a link to the referenced data source. Table 3 excerpts these data.

Table 3: Projected Fuel Price 2019 AEO, Reference Case (2018\$)

Year	Price
2025	\$ 3.15
2026	\$ 3.18
2027	\$ 3.24
2028	\$ 3.27
2029	\$ 3.35
2030	\$ 3.36
2031	\$ 3.40
2032	\$ 3.42
2033	\$ 3.44
2034	\$ 3.46
2035	\$ 3.48
2036	\$ 3.51
2037	\$ 3.51
2038	\$ 3.53
2039	\$ 3.55
2040	\$ 3.58
2041	\$ 3.59
2042	\$ 3.61
2043	\$ 3.62
2044	\$ 3.62
2045	\$ 3.62
2046	\$ 3.63
2047	\$ 3.64
2048	\$ 3.65

A commenter asked for clarification on the uses of different AEO projections, noting "tables, like Table 19, use AEO from 2016, while the paragraph above uses the 2019 AEO." The commenter also asks why the MPCA used 2019 AEO projections rather than 2020 AEO projections. (Orr-1)

The MPCA used the 2019 AEO projections for all of our fuel use and fuel costs analyses. Table 19 on page 43 of the TSD presents a copy of a table (Table IV.12) from the EPA's *Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation* (Proposed

² U.S. Energy Information Administration, AEO 2019, "Table 12: Petroleum and Other Liquids Prices," <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=12-AEO2019&sourcekey=0>.

Determination).³ Table 19 is not a presentation of the MPCA's analysis, but rather is used as an illustration that there are likely to be fuel cost savings of LEV-certified vehicles under a range of different fuel price projections and discount rates. The TSD references EPA's Proposed Determination to provide broader context to the MPCA's analysis, but the MPCA developed our own Minnesota-specific analysis using the 2019 AEO projections.

At the time the MPCA conducted this portion of the regulatory analysis, the 2019 AEO was the most recent data available. Even though the 2020 AEO was released prior to when the MPCA released the SONAR for this rule proposal, the MPCA deemed that using the 2019 AEO projected fuel prices was still reasonable.

A commenter requested information on air quality data from the states that have adopted the Clean Cars standards and from surrounding states that have not adopted the Clean Car standards. The commenter also notes the importance of considering emissions from both tailpipes and power plants when analyzing potential rule impacts. (Carlson)

Between 2012 and 2020, the federal vehicle emissions standard and the LEV standard were the same. We would therefore not expect to see differences in emissions or air concentrations between LEV and non-LEV states that would be attributable to using the LEV standards instead of the federal standards.

The MPCA agrees that it is important to understand potential air pollution and air quality impacts from the proposed rule. Due to the complexity of the link between air concentrations of pollutants resulting from emissions, however, we believe our analytical approach of examining emissions costs and benefits of the proposed rule is reasonable.

Examining the quantity of emissions of greenhouse gases rather than air concentrations is a standard and reasonable approach given the nature of these emissions. Greenhouse gases are global pollutants, which means that the location of the emission reductions does not impact the scale or location of the climate benefits.

Moreover, the primary need identified in the SONAR is reducing greenhouse gas emissions to address climate change and no single policy or action will turn the tide of climate change. Instead, it will take the cumulative impact of many actions to reduce global concentrations of greenhouse gases and address climate change. Each individual action is needed and important, but many such actions will be required.

The proposed rule would also reduce emissions of other air pollutants that have more local and regional impacts, namely nitrogen oxides and non-methane organic gases, which contribute to the formation of ozone, and particulate matter. The air concentrations of these pollutants and the link to direct emissions is complex. For example, in addition to vehicle emissions, the localized concentration of air pollutants is influenced by other emission sources, air pollution that migrates from other regions and states, chemical reactions in the atmosphere, and weather. These complex localized interactions produce very different air concentration outcomes across geography.

This variability means that it would not produce clear or definitive results to attempt to compare air pollution concentrations across geography as a way to determine the direct effects of a single policy. The MPCA therefore believes it is most reasonable to analyze the emission reductions associated with the proposed rule. This approach is reasonable because the motor vehicles regulated by this rule contribute significant air pollution emissions throughout the Minnesota. In addition, reducing the emissions of significant sources of air pollutants that contribute to the formation of ozone and particulate matter is the primary mechanism prescribed by the Clean Air Act to improve air quality in a region or state.

The LEV standard requires manufacturers to deliver new vehicles for sale that meet a grams per mile emission standard using a fleet average calculation. Since the LEV and federal standards have been the same since 2012, EPA analyses can illuminate the benefits of vehicle emission standards to date. EPA's Automotive Trends Report shows that real-world carbon dioxide emissions rate (grams per mile) for all new vehicles has decreased 23% since 2004.⁴

Page 16 of the SONAR notes that vehicle emissions are linked to many factors including emissions standards, type of vehicle, and miles driven. In Minnesota, trends of increasing vehicle miles traveled and Minnesotans choosing to purchase

³ EPA, *Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation*, page 43, Table IV.12, <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100Q3DO.pdf>.

⁴ EPA Automotive Trends Report highlights, <https://www.epa.gov/automotive-trends/highlights-automotive-trends-report#Highlight1>.

larger vehicles are counteracting some of the improvements in emission rates from individual new vehicles and thus contributing to only an 8% reduction in greenhouse gas emissions from transportation between 2005 and 2016.

Similarly, for other air pollutants, vehicle emission rates are on a long-term downward trend as required by vehicle emissions standards, according to the Bureau of Transportation Statistics.⁵ As new vehicles include emission rate improvements, overall emissions from transportation have also gone down over time, according to EPA's Our Nation's Air trends report.⁶ EPA also publishes data on other air quality trends on their "National Air Quality: Status and Trends of Key Air Pollutants" webpage.⁷

The MPCA's analysis of the proposed rule considers not only tailpipe emissions, but also emissions from power plants that generate electricity to fuel the electric vehicles that would result from implementation of the ZEV standard in Minnesota. This analysis can be found starting on page 77 of the SONAR.

A commenter asked if the MPCA included emissions resulting from the manufacturing of electric vehicles and internal combustion engine vehicles in the regulatory analysis. (Orr-2)

The proposed rule is an emissions standard developed under the authorities of the Clean Air Act that requires emission rate improvements and increased deliveries of electric vehicles (EVs). The MPCA did not assess emissions associated with vehicle manufacturing in its regulatory analysis for this rule, which is limited in scope to emissions standards for vehicles delivered for sale in Minnesota. It is reasonable to assume that gasoline or diesel powered vehicles manufactured to meet the LEV standard would not have significantly different manufacturing emissions compared to vehicles manufactured to meet the federal SAFE standard. However, since battery electric vehicles and plug-in hybrid electric vehicles have different components, there is a potential difference in emissions from the manufacture of these vehicles. Page 20 of the SONAR includes information on emissions associated with EVs and internal combustion engine vehicles that shows that EVs produce fewer GHGs than internal combustion engine vehicles, even when accounting for the manufacturing of the vehicle and battery.

Comments

64 comments were generally supportive and 71 comments were generally unsupportive of the rulemaking. Of comments that identified specific rule aspects they either supported or did not support, the most common topics were:

- Support for increased electric vehicle availability – 46 comments
- Support for greenhouse gas reductions – 44 comments
- Concerns about consumer costs – 30 comments
- Concerns about electric vehicle performance and charging infrastructure – 25 comments
- Concerns about MPCA's authority to adopt the rules – 22 comments
- Support for reductions in health impacts from transportation pollution – 7 comments
- Concerns about dealer costs – 6 comments
- Support for improvements in local air quality – 4 comments
- Concerns about manufacturer costs – 1 comment
- Concerns about data availability – 1 comment

Support for increased electric vehicle availability - 46 comments (Schousboe, Riggs, Wallinga-1, Arnosti, Troutman, Scheierl (Izaak Walton League), Bell, Hutchinson, Forsberg, Quady, Nerbonne, Wiens, Henseler, Nelson, Grinnell, Vrabel, Krenn, George, Dexheimer Pharris, Wallinga-2, Weber, Travis, Vorland, Reich, McNamara, Murphy, Jorissen, Chayka, Schettl, Corens, Christiansen, Margolis, Korpi, -Hoke, Johnson, Anderson-1, Anderson-2, Burleson, Jungst, Giesen, Janssen, Desiderato, Severson, Erickson, Morgan, Lee)

⁵ Bureau of Transportation Statistics, "Estimated U.S. average vehicle emissions rates per vehicle by vehicle type using gasoline and diesel," <https://www.bts.gov/content/estimated-national-average-vehicle-emissions-rates-vehicle-vehicle-type-using-gasoline-and-diesel>.

⁶ EPA, "Our Nation's Air," <https://gispub.epa.gov/air/trendsreport/2020/#naaqs>.

⁷ EPA, "National Air Quality: Status and Trends of Key Air Pollutants," <https://www.epa.gov/air-trends>.

The MPCA appreciates the statements of support for one of the goals of this rulemaking: improved access to EVs for Minnesotans.

[SONAR p. 49]

Support for greenhouse gas reductions - 44 comments (Schousboe, Weiss, Riggs, Schafer, Jones, Wallinga-1, Cl, Arnosti, Miller, Troutman, Scheierl (Izaak Walton League), Law, Bell, Hutchinson, Knutson, Forsberg, Quady, Nerbonne, Wiens, Henseler, Nelson, Grinnell, Vrabel, Corens, Curran, Walsh, Krenn, Adamski, Pape, George, Dexheimer Pharris, Wallinga-2, Weber, Travis, Vorland, Reich, McNamara, Murphy, Pera, Lafontaine, Wilson, Jorissen, Williams, Thomas)

The MPCA appreciates the statements of support for the goals of this rulemaking: to reduce greenhouse gas emissions by limiting vehicle emissions.

[SONAR p. 78]

Concerns about consumer costs - 30 comments (Wroolie, Wagner, Brekke, Keil, Rahe, Langaas, Leary, Gorr, Lee, Phelps-Bowman, Stillwell, Prushek, Hanson, Cannon, Cotter, Schousboe, Harris, Anderson, Peterson, Gramenz, Sonsalla, Ahrens, Efta, Toscano, Wolf, Jackson, Staples, Fitterer, Ba, Moore)

The MPCA analyzed potential impacts to consumers under the LEV and ZEV standards. This analysis shows that upfront costs for LEV vehicles are balanced out by fuel savings for most consumers. The analysis also shows that there are clear consumer cost savings under the ZEV rule. The MPCA welcomes commenters to submit additional information on consumer costs to the record at or after the hearing.

[SONAR p. 73, TSD p. 47 and 60]

Concerns about electric vehicle performance and charging infrastructure - 25 comments (Phelps-Bowman, Larson, Stillwell, Wroolie, Wagner, Van Keulen, Stevens, Prushek, Hanson, Cannon, Zastrow, Master, Cotter, Klemz-1, Klemz-2, Kel, Brekke, Schousboe, Lee, Chayka, Weiss, Anderson, Schmotter, Ellis, Riggs)

The MPCA received comments with concerns about EV performance, particularly in cold weather. Many commenters also raised concerns about the availability of charging infrastructure across the state. The MPCA notes that the ZEV rule does not require any individual to buy an EV. EV performance varies by manufacturer and is out of the scope of this rulemaking, although the ZEV rule is in effect in other cold weather states like Vermont and Maine. The MPCA and other state agencies are working to expand charging infrastructure through other programs, but EV charging infrastructure is outside the scope of this rulemaking.

[SONAR p. 22 and 45]

Concerns about MPCA's authority to adopt the rules - 22 comments (Wroolie, Wagner, Van Keulen, Brekke, Keil, Rahe, Durst, Rigge, Law, Ghiloni, Langaas, Gerads, Lilleodden-1, Lilleodden-2, Kahnke, Hoffman, Leary, Gaffney, Ferguson, Gorr, Hopkins, Plumley)

The MPCA has the authority in Minnesota law to adopt emission standards for motor vehicles. The LEV and ZEV standards proposed for adoption here are emission standards for motor vehicles. Further, the standards will address air pollution, which the MPCA also has authority to regulate in Minnesota law.

The federal Clean Air Act directs the federal government to adopt vehicle emissions standards. It also allows California to adopt its own, more protective standards with a waiver from EPA. The federal Clean Air Act does not allow states like Minnesota to create their own vehicle emission standards.

However, section 177 of the Clean Air Act allows states to adopt the standards developed by California instead of following the federal standards, if they choose. The MPCA is proposing here to adopt the standards developed by California, as many other states have done. The MPCA has also proposed rule provisions to address the EPA waiver issue, which is discussed in detail in the SONAR.

Together, the MPCA is using the rulemaking process created by Minnesota law to propose adoption of emission standards from motor vehicles, authorized by the federal Clean Air Act and Minnesota statute.

[SONAR p. 34; Minn. Stat. 14.05, subd. 1 (APA); Minn. Stat. 116.07, subd. 2 (emission standards from motor vehicles); Minn. Stat. 116.07, subd. 4(a) (air pollution)]

Support for reductions in health impacts from transportation pollution - 7 comments (Schousboe, Schafer, Jones, Wallinga, Cl, Arnosti, Miller)

The MPCA appreciates the statements of support for the goals of this rulemaking, including improving air quality by limiting vehicle emissions.

[TSD p. 72]

Concerns about dealer costs - 6 comments (Phelps-Bowman, Keil, Lee, Rahe, Plafcan, Durst)

The proposed rule does not directly regulate dealers; however, the MPCA acknowledges that dealers may incur costs as the interface between manufacturers and consumers. The MPCA addresses what we know about dealer costs and ways that the agency has tried to address some of those concerns starting on page 68 of the SONAR. The MPCA welcomes commenters to submit additional information on dealer costs to the record at or after the hearing.

[SONAR p. 68]

Support for improvements in local air quality - 4 comments (Schettl, Corens, Christiansen, Troutman)

The MPCA appreciates the statements of support for the goals of this rulemaking, including improving air quality by limiting vehicle emissions.

[SONAR p. 80]

Concerns about manufacturer costs - 1 comment (Phelps-Bowman)

The MPCA conducted our cost analysis using the assumption that manufacturer costs would be passed on to consumers. This assumption is consistent with analyses conducted by other states and the federal government when considering vehicle emissions standards. The MPCA welcomes commenters to submit additional information on manufacturer costs to the record at or after the hearing.

[SONAR p. 68]

Concerns about availability of data used to support the analysis presented in the SONAR – 1 comment (Orr-1)

The MPCA developed a technical support document (Appendix 1 to the SONAR) that provides details of the data sources, methods, and assumptions underlying the analysis presented in the SONAR. The agency used publicly available data sources whenever possible and provided citations and links to data sources throughout.