

ADDITIONAL SUPPORTING DOCUMENTS AND INFORMATION

The following additional supporting documents and information are available for public comment during the supplemental public comment period in the 2004 rulemaking approving regulations to control greenhouse gas emissions from motor vehicles.

A. Additional staff analysis and calculations

Staff has reviewed the comments submitted during the 45 day and the initial 15 day comment periods and is in the process of preparing responses. As part of that effort, staff has identified two issues for which additional staff analysis and calculations were needed in order to fully respond to the comments received. Staff has determined that the results of the additional staff analysis and calculations do not materially differ from the previous staff analysis and do not change any of the original staff conclusions regarding the impacts of the proposed regulation. Therefore staff does not propose any additional changes to the regulatory language. The additional analysis and calculations are documented here and are being made available for public comment.

1. EMFAC mileage accrual for pre-2009 vehicles

One commenter noted that although 2008 model year vehicles are not subject to the proposed regulations (and therefore would not be expected to have increased VMT relative to the baseline case), in the staff analysis the average mileage of passenger cars of this vintage (in 2020) increases. Because of this increase in accumulated mileage, the staff model predicts that 2008 model year vehicles under the rebound case will have a slightly higher emission rate than in the baseline case. The commenter stated that as a result, about half of the exhaust ROG, CO, and NO_x emissions increase associated with the rebound effect calculated by ARB staff is from vehicles older than the 2009 model year and therefore not subject to the regulation.

ARB staff agrees that the previous staff methodology affected vehicles older than 12 model years in 2020 by increasing their cumulative mileage and therefore increasing their emissions deterioration. Staff also agrees that the impacts of rebound presented in Table 12.3-2 of the August 6, 2004, ISOR incorrectly include the impact of the accrual rate changes on 2008 and older model year vehicles. ARB staff conducted additional EMFAC runs to restrict the impact of the accrual rate changes (rebound effect) to model year 2009 and newer vehicles. These impacts on model year 2009 and newer vehicles were then expressed as a percentage change for the entire light duty fleet (including all model years). The results are presented here as a revised version of Table 12.3-2. Relative to Table 12.3-2 in the ISOR, the table below shows a net decrease in statewide ROG + NO_x emissions of 0.03 tons per day. NO_x, PM₁₀, and CO emissions increases are less than originally estimated. ROG emissions go from a net decrease to a very slight increase.

Revised Table 12.3-2. Impacts of Rebound Effect, Total Light Duty Fleet \leq 8500 lbs. GVWR, VMT and Emissions (tons per day)

	CY2020		
	Baseline	Adjusted	% Difference
VMT	1,020,478	1,025,760	0.52%
ROG	230.95	231.03	0.03%
NOx	190.20	190.42	0.12%
PM10	42.74	42.98	0.56%
CO	2096.98	2,101.39	0.21%
CO₂	485,150	487,540	0.49%

The estimated emissions increase due to the rebound effect under the revised analysis (excluding pre-2009 vehicles) is smaller than the original staff estimate. Therefore the impacts of the rebound effect as presented in the revised Table 12.3-2 do not alter staff's conclusion that the combined effect of the regulation is a net decrease in criteria pollutant emissions. Related files are available as Rebound Recalc.zip.

2. Calculation of consumer monthly savings

One commenter argued that the staff analysis of the consumer benefit of the proposed regulation does not account for the sales tax and therefore overstates the benefits of the regulation. Staff agrees that it is appropriate to include sales tax in the calculation of consumer monthly savings, and has prepared an additional estimate of the monthly savings to consumers taking into account the effect of sales tax on the purchase price of new and used vehicles. This estimate updates the information reported in Tables 10.5-1 and 11.4-2 of the September 10, 2004 *Addendum*. Because the analysis still shows a net monthly savings for the consumer, inclusion of sales tax in the analysis does not change the conclusion that the regulation is cost effective to the owner or operator of the vehicle.

The following is a revision to Table 10.5-1, modified to show the effect of sales tax on the owner of a new vehicle.

Description	PC/LDT1	LDT2
Average Increase in New Car Price	\$1,064	\$1,029
Increase in Monthly Loan Payment, without sales tax	\$20.08	\$19.42
Increase in Monthly Loan Payment, with sales tax	\$21.69	\$20.97
Monthly Operating Cost Savings	\$23.46	\$26.16
Net Monthly Savings	\$1.77	\$5.19

The following is a revision to Table 11.4-2, modified to show the effect of sales tax on the owner of a used vehicle.

Description	PC/LDT1	LDT2
Average Increase in Used Vehicle Price	\$245	\$329
Increase in Monthly Loan Payment, without sales tax	\$7.91	\$10.62
Increase in Monthly Loan Payment, with sales tax	\$8.54	\$11.47
Monthly Operating Cost Savings	\$14.02	\$15.21
Net Monthly Savings	\$5.48	\$3.74

B. Additional references

While preparing responses to comments received staff has identified the following additional references:

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C. Email and correspondence

- 1) March 9, 2004 letter from Catherine Witherspoon to John M. Cabaniss.
- 2) March 9, 2004 letter from Catherine Witherspoon to Steven P. Douglas.
- 3) June 25, 2004 email from Steve Albu to Tom Austin, with attachment.
- 4) June 25, 2004 email from Tom Austin to Steve Albu.
- 5) June 28, 2004 email from Steve Albu to Tom Austin.
- 6) June 28, 2004 email from Steve Albu to Paul Hughes.
- 7) June 28, 2004 email from Tom Austin to Paul Hughes, with attachment.
- 8) June 29, 2004 email from Tom Austin to Steve Albu.
- 9) June 29, 2004 email from Steve Albu to Paul Hughes.
- 10) June 29, 2004 email from Steve Albu to Tom Austin.
- 11) June 29, 2004 email from Steve Albu to Paul Hughes.
- 12) June 30, 2004 email from Steve Albu to Tom Austin, Paul Hughes, Nic Lutsey.
- 13) June 30, 2004 email from Tom Austin to Steve Albu.
- 14) July 1, 2004 email from Stephen Brueckner to Paul Hughes.
- 15) July 1, 2004 email from Tom Austin to Steve Albu.
- 16) July 2, 2004 email from Chuck Shulock to Steve Albu, Paul Hughes, Jonathan Taylor, Doug Thompson, Richard Corey, Reza Mahdavi, William Dean, Eileen Tutt.
- 17) July 6, 2004 email from Steve Albu to Tom Austin, Paul Hughes, with attachment.
- 18) July 6, 2004 email from Tom Austin to Steve Albu.
- 19) July 14, 2004 email from Steve Albu to Tom Austin, Chuck Shulock, Paul Hughes.
- 20) July 15, 2004 email from Tom Austin to Steve Albu.
- 21) July 20, 2004 email from Chuck Shulock to Steve Douglas, with attachments.

- 22) July 20, 2004 email from Chuck Shulock to Steve Douglas, Jim Lyons, Fereidun Feizollahi, with attachments.
- 23) July 26, 2004 letter from Alan Lloyd to Kevin McCarthy.
- 24) July 28, 2004 email from Chuck Shulock to Jim Lyons, Steve Douglas, with attachments.
- 25) August 2, 2004 email from Steve Albu to Tom Austin.
- 26) August 5, 2004 email from Chuck Shulock to Jim Lyons, with attachments.
- 27) August 6, 2004 email from Chuck Shulock to Jim Lyons, Steve Douglas, with attachments.
- 28) August 10, 2004 email from Nic Lutsey Steve Albu.
- 29) August 10, 2004 email from Tom Austin to Steve Albu.
- 30) August 16, 2004 email from Tom Austin to Paul Hughes, with attachments.
- 31) August 17, 2004 email from Stuart Drake to Aron Livingston.
- 32) August 19, 2004 email from Chuck Shulock to Steve Douglas, Jim Lyons, with attachment.
- 33) August 19, 2004 email from Steve Albu to Jim Lyons.
- 34) August 20, 2004 email from Jim Lyons to Chuck Shulock, Steve Douglas.
- 35) August 20, 2004 email from Steve Albu to Jim Lyons.
- 36) August 23, 2004 email from Aron Livingston to Stuart Drake.
- 37) August 23, 2004 email from Aron Livingston to Kingsley Macomber, Jim Lyons, Sarah Farley, J. Becker.
- 38) August 24, 2004 email from Steve Albu to Tom Austin, with attachment.
- 39) August 24, 2004 email from Aron Livingston to Ryan Rosales, Sarah Farley, with attachments.
- 40) August 26, 2004 email from Tom Austin to Paul Hughes.
- 41) August 27, 2004 email from Tom Austin to Paul Hughes, with attachments.
- 42) August 30, 2004 email from Aron Livingston to Kingsley Macomber.
- 43) August 30, 2004 email from Aron Livingston to Stuart Drake, Chuck Shulock.
- 44) September 2, 2004 email from Aron Livingston to Stuart Drake, Sarah Farley.
- 45) September 3, 2004 email from Christopher Knittel to Reza Mahdavi.
- 46) September 6, 2004 email from Jim Lyons to Chuck Shulock.
- 47) September 8, 2004 email from Jim Lyons to Chuck Shulock.
- 48) September 9, 2004 email from Christopher Knittel to Reza Mahdavi.
- 49) September 10, 2004 email from Aron Livingston to Sarah Farley.
- 50) September 13, 2004 email from Aron Livingston to Stuart Drake.
- 51) September 13, 2004 email from Eileen Tutt to Jim Lyons, with attachments.

- 52) September 13, 2004 email from Corey Bock to Michael Prather, Robert Sawyer, Joe Norbeck.
- 53) September 15, 2004 email from Eileen Tutt to Jim Lyons, with attachment.
- 54) September 15, 2004 email from Eileen Tutt to Jim Lyons.
- 55) September 15, 2004 email from Eileen Tutt to Jim Lyons.
- 56) September 17, 2004 email from Michael Hanemann to Reza Mahdavi, Richard Corey, Fereidun Feizollahi.
- 57) September 17, 2004 email from Christopher Knittel to Reza Mahdavi.
- 58) September 17, 2004 email from Tom Evashenk to Richard Corey, Lisa Kasper.
- 59) September 20, 2004 email from Reza Mahdavi to Richard Corey, Fereidun Feizollahi.
- 60) September 21, 2004 email from Chuck Shulock to Steve Douglas, Jim Lyons, with attachment.
- 61) October 4, 2004 email from Aron Livingston to Granta Nakayama, with attachment.
- 62) October 6, 2004 email from Aron Livingston to Granta Nakayama, Ryan Rosales.
- 63) October 12, 2004 email from Corey Bock to Richard Corey.
- 64) October 14, 2004 email from Aron Livingston to Jim Lyons.
- 65) October 20, 2004 email from Aron Livingston to Granta Nakayama.
- 66) October 21, 2004 email from Michael Hanemann to Reza Mahdavi.
- 67) October 28, 2004 email from Fereidun Feizollahi to Corey Bock.
- 68) November 1, 2004 email from Ryan Rosales to Kingsley Macomber, Artavia Edwards, Aron Livingston.
- 69) November 17, 2004 email from Corey Bock to Richard Corey.
- 70) November 17, 2004 email from Richard Corey to Corey Bock.
- 71) November 29, 2004 email from Corey Bock to MaryAnne Peters.
- 72) November 30, 2004 email from Robert Sawyer to Corey Bock.
- 73) December 21, 2004 email from Corey Bock to Aron Livingston.
- 74) February 24, 2005 email from Fereidun Feizollahi to Richard Corey, Chuck Shulock, Reza Mahdavi.
- 75) February 25, 2005 email from Corey Bock to Richard Corey, with attachments.
- 76) April 18, 2005 email from Steve Albu to Chuck Shulock.
- 77) April 19, 2005 email from Steve Albu to Aron Livingston, Chuck Shulock, Sarah Carter.

All of these documents are available for inspection during normal business hours at the Air Resources Board offices, 1001 I Street, Sacramento CA 95812; contact either Ms. Amy Whiting at (916)-322-6533 or Ms. Alexa Malik at (916) 322-4011.