

Final Regulatory Impact Analysis: Fuel Efficiency Data Book (Appendix III – HDPUV Analysis)

Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027 and Beyond and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030 and Beyond

May 2024



U.S. Department of Transportation
National Highway Traffic Safety
Administration



Table of Contents

Summary Tables	3
Required and Achieved FE Levels, Baseline vs. Preferred Alternative	10
Incremental Benefits and Costs.....	18
Regulatory Cost per Vehicle, by Model Year.....	30
Incremental Societal Impacts.....	36
Labor Impacts	41
Compliance Impacts.....	48
Powertrain Technology Penetration Rate, by Model Year	84
Mass Reduction Penetration Rate, by Model Year	114
Powertrain Technology Penetration Rate, by Alternative.....	144
Regulatory Cost, Comparison.....	163
Vehicle Price Increases.....	171
Technology Costs, Price Increase, Sales, and Labor Utilization	179
FE Compliance Credits	203
Consumer Impacts	208
Environmental Impacts	218
Fleet Characteristics	223
Liquid Fuel and Electricity Consumption	227
Vehicle Mass Related Fatality Impacts	230
Change in Safety Parameters.....	232

Summary Tables

Table 1 - Incremental Benefits and Costs Over the Lifetimes of HDPUV Fleet for Calendar Years 2022-2050 (2021\$ BILLIONS), 3% Percent Discount Rate, by Alternative, All SC-GHG Levels

Incremental Benefits and Costs Over the Lifetimes of HDPUV Fleet for Calendar Years 2022-2050 (2021\$ BILLIONS), 3% Percent Discount Rate, by Alternative, All SC-GHG Levels				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Total Incremental Social Benefits, SC-GHG 3%	0.449	8.774	14.160	33.397
Total Incremental Social Benefits, SC-GHG 2.5%	0.766	12.644	20.563	50.050
Total Incremental Social Benefits, SC-GHG 2%	1.125	17.029	27.819	68.916
Net Incremental Social Benefits, SC-GHG 3%	0.213	5.370	8.537	19.630
Net Incremental Social Benefits, SC-GHG 2.5%	0.531	9.239	14.940	36.284
Net Incremental Social Benefits, SC-GHG 2%	0.890	13.624	22.196	55.149

Table 2 - Incremental Benefits and Costs Over the Lifetimes of HDPUV Fleet for Calendar Years 2022-2050 (2021\$ BILLIONS), 7% Percent Discount Rate, by Alternative, All SC-GHG Levels

Incremental Benefits and Costs Over the Lifetimes of HDPUV Fleet for Calendar Years 2022-2050 (2021\$ BILLIONS), 7% Percent Discount Rate, by Alternative, All SC-GHG Levels				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Total Incremental Social Benefits, SC-GHG 3%	0.316	5.124	8.377	20.477
Total Incremental Social Benefits, SC-GHG 2.5%	0.634	8.993	14.781	37.130
Total Incremental Social Benefits, SC-GHG 2%	0.993	13.378	22.036	55.996
Net Incremental Social Benefits, SC-GHG 3%	0.192	3.541	5.714	13.738
Net Incremental Social Benefits, SC-GHG 2.5%	0.509	7.411	12.118	30.392
Net Incremental Social Benefits, SC-GHG 2%	0.868	11.796	19.373	49.257

Table 3 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV4, SC-GHG 2%

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV4, SC-GHG 2%				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	0.235	0.125	0.012	0.010
Benefits	1.125	0.993	0.059	0.081
Net Benefits	0.890	0.868	0.046	0.071

Table 4 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV10-8, SC-GHG 2%

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV10-8, SC-GHG 2%				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	3.404	1.582	0.177	0.129
Benefits	17.029	13.378	0.887	1.090
Net Benefits	13.624	11.796	0.710	0.961

Table 5 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV10, SC-GHG 2%

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV10, SC-GHG 2%				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	5.623	2.663	0.293	0.217
Benefits	27.819	22.036	1.450	1.795
Net Benefits	22.196	19.373	1.157	1.578

Table 6 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV14, SC-GHG 2%

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars), HDPUV Fleet for Alternative HDPUV14, SC-GHG 2%				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	13.767	6.739	0.717	0.549
Benefits	68.916	55.996	3.592	4.561
Net Benefits	55.149	49.257	2.874	4.012

Table 7 - Estimated HDPUV Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars) HDPUV Fleet, by Alternative, SC-GHG 2%

Estimated HDPUV Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2022-2050 (billions of dollars) HDPUV Fleet, by Alternative, SC-GHG 2%						
Alternative	3% Discount Rate			7% Discount Rate		
	Costs	Benefits	Net Benefits	Costs	Benefits	Net Benefits
4.00%/Y HDPUV During 2030-2035	0.235	1.125	0.890	0.125	0.993	0.868
10.0%/Y 2030-2032, 8%/Y 2033-2035 HDPUV	3.404	17.029	13.624	1.582	13.378	11.796
10.0%/Y HDPUV During 2030-2035	5.623	27.819	22.196	2.663	22.036	19.373
14.0%/Y HDPUV During 2030-2035	13.767	68.916	55.149	6.739	55.996	49.257

Required and Achieved FE Levels, Baseline vs. Preferred Alternative

Table 8 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Ford				GM				Mercedes-Benz			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.805	2.772	4.332	2.817	5.458	4.348	4.912	4.348	4.359	1.835	3.923	1.834
2031	4.805	2.771	3.899	2.817	5.302	3.469	4.294	3.469	4.359	1.833	3.530	1.834
2032	4.805	2.772	3.509	2.816	5.302	3.469	3.865	3.469	4.358	1.832	3.177	1.832
2033	4.803	2.759	3.227	2.803	5.302	3.469	3.556	3.011	4.358	1.831	2.923	1.833
2034	4.803	2.759	2.968	2.802	5.302	3.469	3.271	3.010	4.358	1.831	2.689	1.831
2035	4.796	2.718	2.722	2.717	5.302	3.469	3.010	3.010	4.358	1.831	2.474	1.830
2036	4.796	2.718	2.722	2.717	5.302	3.469	3.010	3.010	4.358	1.832	2.474	1.831
2037	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.358	1.833	2.474	1.832
2038	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.073	0.463	2.312	0.463

Table 9 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Nissan				Stellantis				Total			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.225	1.984	3.803	1.984	4.825	3.446	4.343	3.445	5.000	3.404	4.503	3.421
2031	4.225	1.982	3.423	1.984	5.162	1.851	4.180	1.848	5.027	2.742	4.074	2.759
2032	4.225	1.981	3.080	1.983	5.162	1.850	3.762	1.848	5.027	2.742	3.667	2.758
2033	4.225	1.980	2.834	1.983	5.162	1.850	3.461	1.848	5.027	2.737	3.373	2.603
2034	4.185	1.747	2.582	1.747	5.162	1.850	3.184	1.848	5.026	2.732	3.102	2.598
2035	4.185	1.747	2.376	1.747	5.162	1.850	2.929	1.848	5.023	2.716	2.851	2.565
2036	4.185	1.747	2.376	1.748	5.162	1.850	2.929	1.848	5.023	2.717	2.851	2.565
2037	4.185	1.748	2.376	1.748	5.149	1.793	2.923	1.791	5.020	2.703	2.850	2.552
2038	3.862	0.000	2.192	0.000	5.149	1.793	2.923	1.791	5.005	2.629	2.841	2.478

Table 10 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Ford				GM				Mercedes-Benz			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.805	2.772	4.332	2.817	5.458	4.348	4.912	4.348	4.359	1.835	3.923	1.834
2031	4.805	2.771	3.899	2.817	5.302	3.469	4.294	3.469	4.359	1.833	3.530	1.834
2032	4.805	2.772	3.509	2.816	5.302	3.469	3.865	3.469	4.358	1.832	3.177	1.832
2033	4.803	2.759	3.227	2.803	5.302	3.469	3.556	3.011	4.358	1.831	2.923	1.833
2034	4.803	2.759	2.968	2.802	5.302	3.469	3.271	3.010	4.358	1.831	2.689	1.831
2035	4.796	2.718	2.722	2.717	5.302	3.469	3.010	3.010	4.358	1.831	2.474	1.830
2036	4.796	2.718	2.722	2.717	5.302	3.469	3.010	3.010	4.358	1.832	2.474	1.831
2037	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.358	1.833	2.474	1.832
2038	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.073	0.463	2.312	0.463

Table 11 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Nissan				Stellantis				Total			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.225	1.984	3.803	1.984	4.825	3.446	4.343	3.445	5.000	3.404	4.503	3.421
2031	4.225	1.982	3.423	1.984	5.162	1.851	4.180	1.848	5.027	2.742	4.074	2.759
2032	4.225	1.981	3.080	1.983	5.162	1.850	3.762	1.848	5.027	2.742	3.667	2.758
2033	4.225	1.980	2.834	1.983	5.162	1.850	3.461	1.848	5.027	2.737	3.373	2.603
2034	4.185	1.747	2.582	1.747	5.162	1.850	3.184	1.848	5.026	2.732	3.102	2.598
2035	4.185	1.747	2.376	1.747	5.162	1.850	2.929	1.848	5.023	2.716	2.851	2.565
2036	4.185	1.747	2.376	1.748	5.162	1.850	2.929	1.848	5.023	2.717	2.851	2.565
2037	4.185	1.748	2.376	1.748	5.149	1.793	2.923	1.791	5.020	2.703	2.850	2.552
2038	3.862	0.000	2.192	0.000	5.149	1.793	2.923	1.791	5.005	2.629	2.841	2.478

Table 12 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Ford				GM				Mercedes-Benz			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.805	2.772	4.332	2.817	5.458	4.348	4.912	4.348	4.359	1.835	3.923	1.834
2031	4.805	2.771	3.899	2.817	5.302	3.469	4.294	3.469	4.359	1.833	3.530	1.834
2032	4.805	2.772	3.509	2.816	5.302	3.469	3.865	3.469	4.358	1.832	3.177	1.832
2033	4.803	2.759	3.227	2.803	5.302	3.469	3.556	3.011	4.358	1.831	2.923	1.833
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2037	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.358	1.833	2.474	1.832
2038	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.073	0.463	2.312	0.463

Table 13 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Nissan				Stellantis				Total			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.225	1.984	3.803	1.984	4.825	3.446	4.343	3.445	5.000	3.404	4.503	3.421
2031	4.225	1.982	3.423	1.984	5.162	1.851	4.180	1.848	5.027	2.742	4.074	2.759
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2037	4.185	1.748	2.376	1.748	5.149	1.793	2.923	1.791	5.020	2.703	2.850	2.552
2038	3.862	0.000	2.192	0.000	5.149	1.793	2.923	1.791	5.005	2.629	2.841	2.478

Table 14 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Ford				GM				Mercedes-Benz			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.805	2.772	4.332	2.817	5.458	4.348	4.912	4.348	4.359	1.835	3.923	1.834
2031	4.805	2.771	3.899	2.817	5.302	3.469	4.294	3.469	4.359	1.833	3.530	1.834
2032	4.805	2.772	3.509	2.816	5.302	3.469	3.865	3.469	4.358	1.832	3.177	1.832
2033	4.803	2.759	3.227	2.803	5.302	3.469	3.556	3.011	4.358	1.831	2.923	1.833
2034	4.803	2.759	2.968	2.802	5.302	3.469	3.271	3.010	4.358	1.831	2.689	1.831
2035	4.796	2.718	2.722	2.717	5.302	3.469	3.010	3.010	4.358	1.831	2.474	1.830
2036	4.796	2.718	2.722	2.717	5.302	3.469	3.010	3.010	4.358	1.832	2.474	1.831
2037	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.358	1.833	2.474	1.832
2038	4.796	2.718	2.722	2.718	5.302	3.469	3.010	3.010	4.073	0.463	2.312	0.463

Table 15 - Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)

Comparison of No Action Alternative (Baseline) and Alternative HDPUV108 Required and Achieved Levels in MYs 2030-2038 for the HDPUV Fleet (gal. per 100 miles)												
	Nissan				Stellantis				Total			
	No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108		No Action Alternative (Baseline)		Alternative HDPUV108	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2030	4.225	1.984	3.803	1.984	4.825	3.446	4.343	3.445	5.000	3.404	4.503	3.421
2031	4.225	1.982	3.423	1.984	5.162	1.851	4.180	1.848	5.027	2.742	4.074	2.759
2032	4.225	1.981	3.080	1.983	5.162	1.850	3.762	1.848	5.027	2.742	3.667	2.758
2033	4.225	1.980	2.834	1.983	5.162	1.850	3.461	1.848	5.027	2.737	3.373	2.603
2034	4.185	1.747	2.582	1.747	5.162	1.850	3.184	1.848	5.026	2.732	3.102	2.598
2035	4.185	1.747	2.376	1.747	5.162	1.850	2.929	1.848	5.023	2.716	2.851	2.565
2036	4.185	1.747	2.376	1.748	5.162	1.850	2.929	1.848	5.023	2.717	2.851	2.565
2037	4.185	1.748	2.376	1.748	5.149	1.793	2.923	1.791	5.020	2.703	2.850	2.552
2038	3.862	0.000	2.192	0.000	5.149	1.793	2.923	1.791	5.005	2.629	2.841	2.478

Incremental Benefits and Costs

Table 16 - Incremental Benefits and Costs for Calendar Years 2022-2050 for HDPUV Fleet Produced Through MY 2050 (2021\$ BILLIONS), 3% Percent Discount Rate, by Alternative, SC-GHG 2%

Incremental Benefits and Costs for Calendar Years 2022-2050 for HDPUV Fleet Produced Through MY 2050 (2021\$ BILLIONS), 3% Percent Discount Rate, by Alternative, SC-GHG 2%				
Alternative	HDPUV4	HDPUV10-8	HDPUV10	HDPUV14
Private Costs				
Technology Costs to Increase Fuel Economy	0.120	2.327	3.737	8.748
Consumer Surplus Loss from Reduced New Vehicle Sales	0.000	0.001	0.001	0.006
Safety Costs Internalized by Drivers	0.006	0.114	0.219	0.427
Subtotal - Incremental Private Costs	0.126	2.442	3.957	9.181
External Costs				
Congestion and Noise Costs from Rebound-Effect Driving	0.001	-0.068	-0.085	-0.229
Safety Costs Not Internalized by Drivers	-0.005	-0.254	-0.395	-0.894
Loss in Fuel Tax Revenue	0.113	1.285	2.147	5.708
Subtotal - Incremental External Costs	0.109	0.963	1.666	4.585
Total Incremental Social Costs	0.235	3.404	5.623	13.767
Private Benefits				
Reduced Fuel Costs	0.404	4.937	8.383	21.251
Benefits from Additional Driving	0.008	0.221	0.433	0.787
Less Frequent Refueling	-0.238	0.454	0.088	-2.523
Subtotal - Incremental Private Benefits	0.174	5.613	8.905	19.514
External Benefits				
Reduction in Petroleum Market Externality	0.030	0.344	0.571	1.510
Reduced Climate Damages, SC-GHG 2%	0.879	10.653	17.648	45.963
Reduced Health Damages	0.042	0.419	0.695	1.929
Subtotal - Incremental External Benefits	0.951	11.416	18.914	49.402
Total Incremental Social Benefits, SC-GHG 2%	1.125	17.029	27.819	68.916
Net Incremental Social Benefits, SC-GHG 2%				
	0.890	13.624	22.196	55.149

Table 17 - Incremental Benefits and Costs for Calendar Years 2022-2050 for HDPUV Fleet Produced Through MY 2050 (2021\$ BILLIONS), 7% Percent Discount Rate, by Alternative, SC-GHG 2%

Incremental Benefits and Costs for Calendar Years 2022-2050 for HDPUV Fleet Produced Through MY 2050 (2021\$ BILLIONS), 7% Percent Discount Rate, by Alternative, SC-GHG 2%				
Alternative	HDPUV4	HDPUV10-8	HDPUV10	HDPUV14
Private Costs				
Technology Costs to Increase Fuel Economy	0.069	1.116	1.829	4.456
Consumer Surplus Loss from Reduced New Vehicle Sales	0.000	0.000	0.001	0.004
Safety Costs Internalized by Drivers	0.003	0.048	0.093	0.186
Subtotal - Incremental Private Costs	0.072	1.165	1.923	4.645
External Costs				
Congestion and Noise Costs from Rebound-Effect Driving	0.001	-0.029	-0.036	-0.097
Safety Costs Not Internalized by Drivers	-0.002	-0.105	-0.164	-0.376
Loss in Fuel Tax Revenue	0.054	0.551	0.939	2.566
Subtotal - Incremental External Costs	0.053	0.418	0.740	2.093
Total Incremental Social Costs	0.125	1.582	2.663	6.739
Private Benefits				
Reduced Fuel Costs	0.193	2.110	3.649	9.493
Benefits from Additional Driving	0.004	0.094	0.187	0.346
Less Frequent Refueling	-0.114	0.214	0.033	-1.249
Subtotal - Incremental Private Benefits	0.082	2.418	3.869	8.590
External Benefits				
Reduction in Petroleum Market Externality	0.014	0.147	0.248	0.672
Reduced Climate Damages, SC-GHG 2%	0.879	10.653	17.648	45.963
Reduced Health Damages	0.018	0.160	0.271	0.770
Subtotal - Incremental External Benefits	0.911	10.960	18.167	47.406
Total Incremental Social Benefits, SC-GHG 2%	0.993	13.378	22.036	55.996
Net Incremental Social Benefits, SC-GHG 2%				
	0.868	11.796	19.373	49.257

Table 18 - Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 3%

Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 3%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.052	0.013	0.014	0.012	0.011	0.009	0.009	0.034	0.032	0.186
Alternative HDPUV108	0.017	-0.039	-0.034	0.266	0.246	0.265	0.258	0.253	0.247	1.480
Alternative HDPUV10	0.049	-0.038	-0.034	0.498	0.466	0.498	0.485	0.472	0.461	2.859
Alternative HDPUV14	0.323	0.231	0.213	1.292	1.215	1.271	1.237	1.207	1.173	8.161

Table 19 - Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 7%

Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 7%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.034	0.008	0.008	0.007	0.006	0.005	0.004	0.016	0.015	0.102
Alternative HDPUV108	0.006	-0.023	-0.020	0.157	0.140	0.144	0.134	0.126	0.118	0.782
Alternative HDPUV10	0.025	-0.023	-0.019	0.292	0.262	0.268	0.249	0.232	0.218	1.504
Alternative HDPUV14	0.198	0.145	0.129	0.754	0.679	0.678	0.630	0.590	0.549	4.353

Table 20 - Incremental Total Societal Benefits (\$b) by Year and Alternative for HDPUV Fleet, Average SCC Level, Discounted at 7%

Incremental Total Societal Benefits (\$b) by Year and Alternative for HDPUV Fleet, Average SCC Level, Discounted at 7%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.116	0.033	0.036	0.037	0.038	0.030	0.030	0.112	0.111	0.545
Alternative HDPUV108	-0.155	-0.094	-0.089	0.883	0.867	0.936	0.920	0.906	0.892	5.065
Alternative HDPUV10	-0.186	-0.093	-0.088	1.618	1.585	1.709	1.682	1.653	1.629	9.508
Alternative HDPUV14	0.091	0.548	0.543	4.210	4.121	4.368	4.303	4.243	4.164	26.591

Table 21 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, Average SCC Level, Discounted at 3%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, Average SCC Level, Discounted at 3%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.086	0.025	0.028	0.033	0.034	0.027	0.028	0.106	0.107	0.476
Alternative HDPUV108	-0.214	-0.075	-0.073	0.948	0.957	1.031	1.027	1.024	1.019	5.644
Alternative HDPUV10	-0.289	-0.075	-0.072	1.687	1.695	1.830	1.823	1.815	1.808	10.220
Alternative HDPUV14	-0.250	0.432	0.448	4.220	4.222	4.548	4.533	4.518	4.482	27.153

Table 22 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, Average SCC Level, Discounted at 7%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, Average SCC Level, Discounted at 7%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.083	0.025	0.028	0.031	0.032	0.026	0.026	0.096	0.097	0.442
Alternative HDPUV108	-0.161	-0.071	-0.069	0.726	0.726	0.792	0.786	0.780	0.774	4.283
Alternative HDPUV10	-0.211	-0.071	-0.068	1.326	1.323	1.441	1.433	1.421	1.411	8.004
Alternative HDPUV14	-0.108	0.403	0.414	3.456	3.442	3.690	3.672	3.653	3.615	22.238

Technology Costs and Civil Penalties per Vehicle, by Model Year

Table 23 - Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Ford)

Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Ford)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	2,287	2,051	1,792	1,548	1,302	1,107	898	805	713
Alternative HDPUV4	2,379	2,136	1,874	1,624	1,370	1,166	951	855	762
Alternative HDPUV108	2,209	1,979	1,731	1,495	1,254	1,111	901	808	717
Alternative HDPUV10	2,209	1,979	1,731	1,687	1,429	1,313	1,086	985	886
Alternative HDPUV14	2,533	2,279	2,005	2,446	2,118	2,068	1,783	1,657	1,539

Table 24 - Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (GM)

Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (GM)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	-1,345	88	-72	-243	-407	-564	-700	-765	-828
Alternative HDPUV4	-1,345	11	-143	-308	-465	-616	-747	-762	-826
Alternative HDPUV108	-1,345	88	-72	590	382	182	15	-66	-147
Alternative HDPUV10	-1,345	90	-71	962	738	522	342	254	167
Alternative HDPUV14	-1,345	375	194	2,125	1,824	1,535	1,299	1,183	1,069

Table 25 - Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Mercedes-Benz)

Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Mercedes-Benz)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	1,576	1,254	908	555	216	-107	-392	-516	211
Alternative HDPUV4	1,576	1,252	907	554	219	-106	-391	-515	211
Alternative HDPUV108	1,576	1,252	907	552	218	-105	-391	-516	211
Alternative HDPUV10	1,576	1,252	907	552	217	-107	-391	-516	211
Alternative HDPUV14	1,576	1,251	906	692	339	-1	-298	-427	250

Table 26 - Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Nissan)

Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Nissan)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	5,224	4,907	4,545	4,190	4,123	3,769	3,466	3,336	4,719
Alternative HDPUV4	5,223	4,903	4,542	4,187	4,123	3,770	3,466	3,336	4,720
Alternative HDPUV108	5,223	4,903	4,542	4,185	4,123	3,770	3,466	3,336	4,720
Alternative HDPUV10	5,223	4,903	4,542	4,186	4,123	3,770	3,467	3,337	4,720
Alternative HDPUV14	5,223	4,902	4,540	4,493	4,414	4,047	3,732	3,595	4,720

Table 27 - Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Stellantis)

Estimated Average Per Vehicle Technology and Civil Penalties Costs (\$), HDPUV Fleet for Manufacturer (Stellantis)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	2,890	1,609	1,269	921	588	270	-5	-74	-199
Alternative HDPUV4	2,890	1,611	1,270	922	589	270	-5	-70	-195
Alternative HDPUV108	2,890	1,612	1,271	922	590	271	-5	-69	-194
Alternative HDPUV10	2,890	1,612	1,271	922	590	271	-4	-73	-198
Alternative HDPUV14	2,891	1,610	1,269	922	589	270	-5	-69	-194

Regulatory Cost per Vehicle, by Model Year

Table 28 - Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Total)

Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Total)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	1,267	1,330	1,080	831	592	374	169	89	51
Alternative HDPUV4	1,303	1,339	1,089	839	599	379	174	111	71
Alternative HDPUV108	1,237	1,303	1,057	1,083	833	620	405	321	277
Alternative HDPUV10	1,237	1,304	1,057	1,281	1,017	810	584	494	445
Alternative HDPUV14	1,363	1,514	1,250	1,967	1,651	1,444	1,177	1,069	997

Table 29 - Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Ford)

Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Ford)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	2,287	2,051	1,792	1,548	1,302	1,107	898	805	713
Alternative HDPUV4	2,379	2,136	1,874	1,624	1,370	1,166	951	855	762
Alternative HDPUV108	2,209	1,979	1,731	1,495	1,254	1,111	901	808	717
Alternative HDPUV10	2,209	1,979	1,731	1,687	1,429	1,313	1,086	985	886
Alternative HDPUV14	2,533	2,279	2,005	2,446	2,118	2,068	1,783	1,657	1,539

Table 30 - Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (GM)

Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (GM)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	-1,345	88	-72	-243	-407	-564	-700	-765	-828
Alternative HDPUV4	-1,345	11	-143	-308	-465	-616	-747	-762	-826
Alternative HDPUV108	-1,345	88	-72	590	382	182	15	-66	-147
Alternative HDPUV10	-1,345	90	-71	962	738	522	342	254	167
Alternative HDPUV14	-1,345	375	194	2,125	1,824	1,535	1,299	1,183	1,069

Table 31 - Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Mercedes-Benz)

Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Mercedes-Benz)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	1,576	1,254	908	555	216	-107	-392	-516	211
Alternative HDPUV4	1,576	1,252	907	554	219	-106	-391	-515	211
Alternative HDPUV108	1,576	1,252	907	552	218	-105	-391	-516	211
Alternative HDPUV10	1,576	1,252	907	552	217	-107	-391	-516	211
Alternative HDPUV14	1,576	1,251	906	692	339	-1	-298	-427	250

Table 32 - Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Nissan)

Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Nissan)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	5,224	4,907	4,545	4,190	4,123	3,769	3,466	3,336	4,719
Alternative HDPUV4	5,223	4,903	4,542	4,187	4,123	3,770	3,466	3,336	4,720
Alternative HDPUV108	5,223	4,903	4,542	4,185	4,123	3,770	3,466	3,336	4,720
Alternative HDPUV10	5,223	4,903	4,542	4,186	4,123	3,770	3,467	3,337	4,720
Alternative HDPUV14	5,223	4,902	4,540	4,493	4,414	4,047	3,732	3,595	4,720

Table 33 - Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Stellantis)

Estimated Average Per Vehicle Regulatory Costs (\$), HDPUV Fleet for Manufacturer (Stellantis)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
No Action Alternative (Baseline)	2,890	1,609	1,269	921	588	270	-5	-74	-199
Alternative HDPUV4	2,890	1,611	1,270	922	589	270	-5	-70	-195
Alternative HDPUV108	2,890	1,612	1,271	922	590	271	-5	-69	-194
Alternative HDPUV10	2,890	1,612	1,271	922	590	271	-4	-73	-198
Alternative HDPUV14	2,891	1,610	1,269	922	589	270	-5	-69	-194

Incremental Societal Impacts

Table 34 - Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 3%

Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 3%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.052	0.013	0.014	0.012	0.011	0.009	0.009	0.034	0.032	0.186
Alternative HDPUV108	0.017	-0.039	-0.034	0.266	0.246	0.265	0.258	0.253	0.247	1.480
Alternative HDPUV10	0.049	-0.038	-0.034	0.498	0.466	0.498	0.485	0.472	0.461	2.859
Alternative HDPUV14	0.323	0.231	0.213	1.292	1.215	1.271	1.237	1.207	1.173	8.161

Table 35 - Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 7%

Incremental Total Societal Costs (\$b) by Year and Alternative for HDPUV Fleet, Discounted at 7%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.034	0.008	0.008	0.007	0.006	0.005	0.004	0.016	0.015	0.102
Alternative HDPUV108	0.006	-0.023	-0.020	0.157	0.140	0.144	0.134	0.126	0.118	0.782
Alternative HDPUV10	0.025	-0.023	-0.019	0.292	0.262	0.268	0.249	0.232	0.218	1.504
Alternative HDPUV14	0.198	0.145	0.129	0.754	0.679	0.678	0.630	0.590	0.549	4.353

Table 36 - Incremental Total Societal Benefits (\$b) by Year and Alternative for HDPUV Fleet, SC-GHG 2% Level, Discounted at 7%

Incremental Total Societal Benefits (\$b) by Year and Alternative for HDPUV Fleet, SC-GHG 2% Level, Discounted at 7%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.179	0.052	0.056	0.058	0.060	0.048	0.049	0.178	0.178	0.857
Alternative HDPUV108	-0.227	-0.145	-0.137	1.280	1.266	1.386	1.372	1.360	1.348	7.504
Alternative HDPUV10	-0.269	-0.143	-0.136	2.372	2.341	2.554	2.531	2.505	2.484	14.240
Alternative HDPUV14	0.180	0.842	0.839	6.291	6.202	6.606	6.552	6.504	6.423	40.439

Table 37 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, SC-GHG 2% Level, Discounted at 3%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, SC-GHG 2% Level, Discounted at 3%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.149	0.044	0.049	0.054	0.056	0.045	0.046	0.172	0.173	0.789
Alternative HDPUV108	-0.286	-0.126	-0.122	1.345	1.357	1.481	1.479	1.478	1.476	8.083
Alternative HDPUV10	-0.372	-0.125	-0.120	2.441	2.451	2.675	2.672	2.667	2.663	14.952
Alternative HDPUV14	-0.161	0.726	0.743	6.301	6.303	6.787	6.782	6.780	6.741	41.002

Table 38 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, SC-GHG 2% Level, Discounted at 7%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for HDPUV Fleet, SC-GHG 2% Level, Discounted at 7%										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	0.145	0.044	0.048	0.052	0.054	0.044	0.044	0.162	0.163	0.755
Alternative HDPUV108	-0.233	-0.121	-0.117	1.123	1.126	1.242	1.238	1.234	1.230	6.722
Alternative HDPUV10	-0.294	-0.120	-0.116	2.080	2.079	2.287	2.282	2.273	2.267	12.736
Alternative HDPUV14	-0.019	0.697	0.710	5.537	5.523	5.928	5.922	5.914	5.874	36.086

Labor Impacts

Table 39 - Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Total)

Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Total)					
Model Year	Regulatory Alternative				
	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
2030	32,324	32,324	32,325	32,325	32,320
2031	32,336	32,336	32,337	32,337	32,323
2032	32,408	32,408	32,408	32,408	32,395
2033	32,441	32,440	32,400	32,370	32,262
2034	32,590	32,589	32,547	32,521	32,427
2035	32,925	32,925	32,884	32,859	32,772
2036	33,330	33,330	33,292	33,269	33,197
2037	33,695	33,694	33,658	33,636	33,569
2038	34,106	34,105	34,070	34,050	33,988

Table 40 - Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Ford)

Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Ford)					
Model Year	Regulatory Alternative				
	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
2030	4,933	4,933	4,933	4,933	4,933
2031	4,935	4,935	4,935	4,935	4,933
2032	4,946	4,946	4,946	4,946	4,944
2033	4,951	4,951	4,945	4,940	4,924
2034	4,973	4,973	4,967	4,963	4,949
2035	5,024	5,024	5,018	5,014	5,001
2036	5,085	5,085	5,080	5,076	5,066
2037	5,140	5,140	5,135	5,132	5,122
2038	5,203	5,203	5,198	5,195	5,186

Table 41 - Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (GM)

Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (GM)					
Model Year	Regulatory Alternative				
	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
2030	23,705	23,705	23,705	23,705	23,702
2031	23,714	23,714	23,714	23,714	23,705
2032	23,767	23,767	23,767	23,767	23,758
2033	23,792	23,791	23,761	23,739	23,660
2034	23,901	23,900	23,869	23,850	23,781
2035	24,147	24,147	24,117	24,098	24,034
2036	24,445	24,444	24,416	24,400	24,346
2037	24,712	24,711	24,685	24,669	24,619
2038	25,014	25,013	24,987	24,972	24,927

Table 42 - Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Mercedes-Benz)

Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Mercedes-Benz)					
Model Year	Regulatory Alternative				
	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
2030	391	391	391	391	391
2031	391	391	391	391	391
2032	392	392	392	392	392
2033	393	393	392	392	390
2034	394	394	394	394	392
2035	398	398	398	398	397
2036	403	403	403	403	402
2037	408	408	407	407	406
2038	413	413	412	412	411

Table 43 - Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Nissan)

Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Nissan)					
Model Year	Regulatory Alternative				
	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
2030	327	327	327	327	327
2031	327	327	327	327	327
2032	327	327	327	327	327
2033	328	328	327	327	326
2034	329	329	329	329	328
2035	332	332	332	332	331
2036	336	336	336	336	335
2037	340	340	340	340	339
2038	344	344	344	344	343

Table 44 - Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Stellantis)

Estimated Labor Utilization (1000s of Person-Years), HDPUV Fleet for Manufacturer (Stellantis)					
Model Year	Regulatory Alternative				
	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
2030	2,968	2,968	2,968	2,968	2,967
2031	2,969	2,969	2,969	2,969	2,968
2032	2,976	2,976	2,976	2,976	2,974
2033	2,979	2,979	2,975	2,972	2,962
2034	2,993	2,993	2,989	2,986	2,977
2035	3,023	3,023	3,020	3,017	3,009
2036	3,061	3,061	3,057	3,055	3,048
2037	3,094	3,094	3,091	3,089	3,082
2038	3,132	3,132	3,129	3,127	3,121

Table 45 - Changes in Work Loss Days (thousand instances), HDPUV Fleet through MY 2038

Changes in Work Loss Days (thousand instances), HDPUV Fleet through MY 2038				
Category	Regulatory Alternative			
	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Work Loss Days from Upstream Emissions	-0.002	-0.509	-1.084	-2.276
Work Loss Days from Tailpipe Emissions	-0.995	-6.430	-12.082	-37.968
Total Work Loss Days	-0.997	-6.939	-13.166	-40.244

Compliance Impacts

Table 46 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Total)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Total)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	5.000	5.027	5.027	5.027	5.026	5.023	5.023	5.020	5.005	N/A
Change from Baseline (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A
Average Achieved (gal per 100 miles)	3.404	2.742	2.742	2.737	2.732	2.716	2.717	2.703	2.629	N/A
Total Regulatory Costs										
Technology Costs (\$b)	1.305	1.371	1.115	0.859	0.614	0.392	0.179	0.096	0.055	5.986
Subtotal Technology Costs (\$b)	1.305	1.371	1.115	0.859	0.614	0.392	0.179	0.096	0.055	5.986
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	1.305	1.371	1.115	0.859	0.614	0.392	0.179	0.096	0.055	5.986
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Average Work Factor	5170	5170	5170	5170	5170	5170	5170	5170	5170	N/A

Table 47 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Total)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Total)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.796	4.632	4.446	4.268	4.097	3.931	3.931	3.926	3.915	N/A
Change from Baseline (%)	-4%	-8%	-12%	-15%	-18%	-22%	-22%	-22%	-22%	N/A
Average Achieved (gal per 100 miles)	3.382	2.736	2.735	2.730	2.725	2.710	2.710	2.681	2.607	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.037	0.009	0.009	0.009	0.008	0.006	0.005	0.023	0.022	0.128
Subtotal Technology Costs (\$b)	0.037	0.009	0.009	0.009	0.008	0.006	0.005	0.023	0.022	0.128
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.037	0.009	0.009	0.009	0.008	0.006	0.005	0.023	0.022	0.128
Sales Impacts										
Sales Change from Baseline (t)	-0.019	0.000	0.000	-0.036	-0.030	-0.011	-0.002	-0.038	-0.033	-0.169
Average Work Factor	5170	5170	5170	5170	5170	5170	5170	5170	5170	N/A

Table 48 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Total)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Total)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.503	4.074	3.667	3.373	3.102	2.851	2.851	2.850	2.841	N/A
Change from Baseline (%)	-10%	-19%	-27%	-33%	-38%	-43%	-43%	-43%	-43%	N/A
Average Achieved (gal per 100 miles)	3.421	2.759	2.758	2.603	2.598	2.565	2.565	2.552	2.478	N/A
Total Regulatory Costs										
Technology Costs (\$b)	-0.031	-0.028	-0.024	0.260	0.249	0.258	0.250	0.248	0.246	1.428
Subtotal Technology Costs (\$b)	-0.031	-0.028	-0.024	0.260	0.249	0.258	0.250	0.248	0.246	1.428
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	-0.031	-0.028	-0.024	0.260	0.249	0.258	0.250	0.248	0.246	1.428
Sales Impacts										
Sales Change from Baseline (t)	0.012	0.007	0.001	-1.320	-1.355	-1.295	-1.199	-1.162	-1.124	-7.435
Average Work Factor	5170	5170	5170	5170	5170	5170	5170	5170	5170	N/A

Table 49 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Total)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Total)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.503	4.074	3.667	3.294	2.964	2.664	2.664	2.662	2.654	N/A
Change from Baseline (%)	-10%	-19%	-27%	-34%	-41%	-47%	-47%	-47%	-47%	N/A
Average Achieved (gal per 100 miles)	3.421	2.759	2.758	2.481	2.477	2.431	2.431	2.418	2.344	N/A
Total Regulatory Costs										
Technology Costs (\$b)	-0.031	-0.028	-0.024	0.462	0.440	0.456	0.440	0.434	0.427	2.577
Subtotal Technology Costs (\$b)	-0.031	-0.028	-0.024	0.462	0.440	0.456	0.440	0.434	0.427	2.577
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	-0.031	-0.028	-0.024	0.462	0.440	0.456	0.440	0.434	0.427	2.577
Sales Impacts										
Sales Change from Baseline (t)	0.012	0.007	0.001	-2.264	-2.204	-2.107	-1.902	-1.844	-1.758	-12.059
Average Work Factor	5170	5170	5170	5170	5170	5170	5170	5170	5170	N/A

Table 50 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Total)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Total)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.292	3.707	3.188	2.724	2.342	2.012	2.012	2.011	2.005	N/A
Change from Baseline (%)	-14%	-26%	-37%	-46%	-53%	-60%	-60%	-60%	-60%	N/A
Average Achieved (gal per 100 miles)	3.352	2.641	2.641	2.028	2.023	1.954	1.954	1.941	1.871	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.099	0.188	0.175	1.163	1.091	1.116	1.066	1.047	1.024	6.969
Subtotal Technology Costs (\$b)	0.099	0.188	0.175	1.163	1.091	1.116	1.066	1.047	1.024	6.969
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.099	0.188	0.175	1.163	1.091	1.116	1.066	1.047	1.024	6.969
Sales Impacts										
Sales Change from Baseline (t)	-0.148	-0.413	-0.401	-5.707	-5.178	-4.869	-4.225	-3.996	-3.715	-28.652
Average Work Factor	5170	5170	5170	5170	5170	5170	5170	5170	5170	N/A

Table 51 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Ford)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Ford)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.805	4.805	4.805	4.803	4.803	4.796	4.796	4.796	4.796	N/A
Change from Baseline (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A
Average Achieved (gal per 100 miles)	2.772	2.771	2.772	2.759	2.759	2.718	2.718	2.718	2.718	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.916	0.821	0.719	0.622	0.525	0.452	0.370	0.336	0.301	5.063
Subtotal Technology Costs (\$b)	0.916	0.821	0.719	0.622	0.525	0.452	0.370	0.336	0.301	5.063
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.916	0.821	0.719	0.622	0.525	0.452	0.370	0.336	0.301	5.063
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Average Work Factor	4624	4624	4624	4624	4624	4624	4624	4624	4624	N/A

Table 52 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(GM)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(GM)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	5.458	5.302	5.302	5.302	5.302	5.302	5.302	5.302	5.302	N/A
Change from Baseline (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A
Average Achieved (gal per 100 miles)	4.348	3.469	3.469	3.469	3.469	3.469	3.469	3.469	3.469	N/A
Total Regulatory Costs										
Technology Costs (\$b)	-0.455	0.030	-0.025	-0.082	-0.139	-0.194	-0.244	-0.269	-0.295	-1.673
Subtotal Technology Costs (\$b)	-0.455	0.030	-0.025	-0.082	-0.139	-0.194	-0.244	-0.269	-0.295	-1.673
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	-0.455	0.030	-0.025	-0.082	-0.139	-0.194	-0.244	-0.269	-0.295	-1.673
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Average Work Factor	5567	5567	5567	5567	5567	5567	5567	5567	5567	N/A

Table 53 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Mercedes-Benz)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Mercedes-Benz)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.359	4.359	4.358	4.358	4.358	4.358	4.358	4.358	4.073	N/A
Change from Baseline (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A
Average Achieved (gal per 100 miles)	1.835	1.833	1.832	1.831	1.831	1.831	1.832	1.833	0.463	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.050	0.040	0.029	0.018	0.007	-0.003	-0.013	-0.017	0.007	0.117
Subtotal Technology Costs (\$b)	0.050	0.040	0.029	0.018	0.007	-0.003	-0.013	-0.017	0.007	0.117
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.050	0.040	0.029	0.018	0.007	-0.003	-0.013	-0.017	0.007	0.117
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Average Work Factor	3904	3904	3904	3904	3903	3903	3903	3903	3904	N/A

Table 54 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Nissan)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Nissan)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.225	4.225	4.225	4.225	4.185	4.185	4.185	4.185	3.862	N/A
Change from Baseline (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A
Average Achieved (gal per 100 miles)	1.984	1.982	1.981	1.980	1.747	1.747	1.747	1.748	0.000	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.098	0.092	0.085	0.079	0.078	0.072	0.067	0.065	0.093	0.727
Subtotal Technology Costs (\$b)	0.098	0.092	0.085	0.079	0.078	0.072	0.067	0.065	0.093	0.727
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.098	0.092	0.085	0.079	0.078	0.072	0.067	0.065	0.093	0.727
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Average Work Factor	3596	3596	3596	3596	3595	3595	3595	3595	3595	N/A

Table 55 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Stellantis)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, No Action Alternative (Baseline)(Stellantis)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.825	5.162	5.162	5.162	5.162	5.162	5.162	5.149	5.149	N/A
Change from Baseline (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	N/A
Average Achieved (gal per 100 miles)	3.446	1.851	1.850	1.850	1.850	1.850	1.850	1.793	1.793	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.696	0.388	0.306	0.223	0.143	0.066	-0.001	-0.019	-0.051	1.752
Subtotal Technology Costs (\$b)	0.696	0.388	0.306	0.223	0.143	0.066	-0.001	-0.019	-0.051	1.752
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.696	0.388	0.306	0.223	0.143	0.066	-0.001	-0.019	-0.051	1.752
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
Average Work Factor	5809	5809	5809	5809	5809	5809	5809	5809	5809	N/A

Table 56 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Ford)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Ford)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.603	4.419	4.242	4.071	3.908	3.747	3.746	3.746	3.746	N/A
Change from Baseline (%)	-4%	-8%	-12%	-15%	-19%	-22%	-22%	-22%	-22%	N/A
Average Achieved (gal per 100 miles)	2.717	2.717	2.716	2.703	2.702	2.664	2.664	2.664	2.664	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.037	0.034	0.033	0.030	0.028	0.024	0.022	0.021	0.020	0.250
Subtotal Technology Costs (\$b)	0.037	0.034	0.033	0.030	0.028	0.024	0.022	0.021	0.020	0.250
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.037	0.034	0.033	0.030	0.028	0.024	0.022	0.021	0.020	0.250
Sales Impacts										
Sales Change from Baseline (t)	-0.01	0.00	0.00	-0.01	-0.01	0.00	0.01	-0.01	-0.01	-0.032
Average Work Factor	4624	4624	4624	4624	4624	4624	4624	4624	4624	N/A

Table 57 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (GM)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (GM)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	5.240	4.894	4.698	4.510	4.330	4.156	4.156	4.150	4.150	N/A
Change from Baseline (%)	-4%	-8%	-11%	-15%	-18%	-22%	-22%	-22%	-22%	N/A
Average Achieved (gal per 100 miles)	4.348	3.516	3.516	3.516	3.515	3.515	3.515	3.467	3.467	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	-0.026	-0.024	-0.022	-0.020	-0.018	-0.017	0.001	0.001	-0.125
Subtotal Technology Costs (\$b)	0.000	-0.026	-0.024	-0.022	-0.020	-0.018	-0.017	0.001	0.001	-0.125
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	-0.026	-0.024	-0.022	-0.020	-0.018	-0.017	0.001	0.001	-0.125
Sales Impacts										
Sales Change from Baseline (t)	-0.01	0.00	0.00	-0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.054
Average Work Factor	5567	5567	5567	5567	5567	5567	5567	5567	5567	N/A

Table 58 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Mercedes-Benz)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Mercedes-Benz)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.184	4.017	3.856	3.702	3.553	3.411	3.411	3.411	3.188	N/A
Change from Baseline (%)	-4%	-8%	-12%	-15%	-18%	-22%	-22%	-22%	-22%	N/A
Average Achieved (gal per 100 miles)	1.834	1.834	1.832	1.831	1.830	1.830	1.831	1.832	0.463	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.029
Average Work Factor	3904	3904	3904	3904	3903	3903	3903	3903	3904	N/A

Table 59 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Nissan)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Nissan)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.057	3.894	3.738	3.589	3.412	3.276	3.276	3.276	3.023	N/A
Change from Baseline (%)	-4%	-8%	-12%	-15%	-18%	-22%	-22%	-22%	-22%	N/A
Average Achieved (gal per 100 miles)	1.984	1.984	1.982	1.982	1.747	1.747	1.748	1.748	0.000	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.010
Average Work Factor	3596	3596	3596	3596	3595	3595	3595	3595	3595	N/A

Table 60 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Stellantis)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV4 (Stellantis)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.633	4.757	4.566	4.384	4.208	4.040	4.040	4.030	4.030	N/A
Change from Baseline (%)	-4%	-8%	-12%	-15%	-18%	-22%	-22%	-22%	-22%	N/A
Average Achieved (gal per 100 miles)	3.445	1.849	1.849	1.849	1.849	1.848	1.848	1.791	1.791	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004
Sales Impacts										
Sales Change from Baseline (t)	-0.01	0.00	0.00	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	-0.064
Average Work Factor	5809	5809	5809	5809	5809	5809	5809	5809	5809	N/A

Table 61 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Ford)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Ford)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.332	3.899	3.509	3.227	2.968	2.722	2.722	2.722	2.722	N/A
Change from Baseline (%)	-10%	-19%	-27%	-33%	-38%	-43%	-43%	-43%	-43%	N/A
Average Achieved (gal per 100 miles)	2.817	2.817	2.816	2.803	2.802	2.717	2.717	2.718	2.718	N/A
Total Regulatory Costs										
Technology Costs (\$b)	-0.031	-0.029	-0.024	-0.022	-0.020	0.001	0.001	0.001	0.001	-0.122
Subtotal Technology Costs (\$b)	-0.031	-0.029	-0.024	-0.022	-0.020	0.001	0.001	0.001	0.001	-0.122
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	-0.031	-0.029	-0.024	-0.022	-0.020	0.001	0.001	0.001	0.001	-0.122
Sales Impacts										
Sales Change from Baseline (t)	0.01	0.00	0.00	-0.50	-0.51	-0.48	-0.44	-0.42	-0.41	-2.747
Average Work Factor	4624	4624	4624	4624	4624	4624	4624	4624	4624	N/A

Table 62 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (GM)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (GM)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.912	4.294	3.865	3.556	3.271	3.010	3.010	3.010	3.010	N/A
Change from Baseline (%)	-10%	-19%	-27%	-33%	-38%	-43%	-43%	-43%	-43%	N/A
Average Achieved (gal per 100 miles)	4.348	3.469	3.469	3.011	3.010	3.010	3.010	3.010	3.010	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.282	0.269	0.257	0.249	0.246	0.243	1.546
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.282	0.269	0.257	0.249	0.246	0.243	1.546
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.282	0.269	0.257	0.249	0.246	0.243	1.546
Sales Impacts										
Sales Change from Baseline (t)	0.01	0.00	0.00	-0.44	-0.45	-0.44	-0.41	-0.40	-0.39	-2.506
Average Work Factor	5567	5567	5567	5567	5567	5567	5567	5567	5567	N/A

Table 63 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Mercedes-Benz)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Mercedes-Benz)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	3.923	3.530	3.177	2.923	2.689	2.474	2.474	2.474	2.312	N/A
Change from Baseline (%)	-10%	-19%	-27%	-33%	-38%	-43%	-43%	-43%	-43%	N/A
Average Achieved (gal per 100 miles)	1.834	1.834	1.832	1.833	1.831	1.830	1.831	1.832	0.463	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	-0.04	-0.04	-0.04	-0.03	-0.03	-0.03	-0.214
Average Work Factor	3904	3904	3904	3904	3904	3903	3904	3904	3904	N/A

Table 64 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Nissan)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Nissan)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	3.803	3.423	3.080	2.834	2.582	2.376	2.376	2.376	2.192	N/A
Change from Baseline (%)	-10%	-19%	-27%	-33%	-38%	-43%	-43%	-43%	-43%	N/A
Average Achieved (gal per 100 miles)	1.984	1.984	1.983	1.983	1.747	1.747	1.748	1.748	0.000	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.111
Average Work Factor	3596	3596	3596	3596	3596	3596	3596	3596	3595	N/A

Table 65 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Stellantis)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV108 (Stellantis)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.343	4.180	3.762	3.461	3.184	2.929	2.929	2.923	2.923	N/A
Change from Baseline (%)	-10%	-19%	-27%	-33%	-38%	-43%	-43%	-43%	-43%	N/A
Average Achieved (gal per 100 miles)	3.445	1.848	1.848	1.848	1.848	1.848	1.848	1.791	1.791	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004
Subtotal Technology Costs (\$b)	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.004
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	-0.33	-0.33	-0.32	-0.30	-0.29	-0.28	-1.857
Average Work Factor	5809	5809	5809	5809	5809	5809	5809	5809	5809	N/A

Table 66 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Ford)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Ford)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.332	3.899	3.509	3.142	2.828	2.534	2.534	2.534	2.534	N/A
Change from Baseline (%)	-10%	-19%	-27%	-35%	-41%	-47%	-47%	-47%	-47%	N/A
Average Achieved (gal per 100 miles)	2.817	2.817	2.816	2.652	2.652	2.534	2.534	2.534	2.534	N/A
Total Regulatory Costs										
Technology Costs (\$b)	-0.031	-0.029	-0.024	0.054	0.050	0.083	0.077	0.075	0.072	0.327
Subtotal Technology Costs (\$b)	-0.031	-0.029	-0.024	0.054	0.050	0.083	0.077	0.075	0.072	0.327
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	-0.031	-0.029	-0.024	0.054	0.050	0.083	0.077	0.075	0.072	0.327
Sales Impacts										
Sales Change from Baseline (t)	0.01	0.00	0.00	-0.86	-0.84	-0.79	-0.70	-0.68	-0.63	-4.483
Average Work Factor	4624	4624	4624	4624	4624	4624	4624	4624	4624	N/A

Table 67 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (GM)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (GM)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.912	4.294	3.865	3.478	3.131	2.818	2.818	2.818	2.818	N/A
Change from Baseline (%)	-10%	-19%	-27%	-34%	-41%	-47%	-47%	-47%	-47%	N/A
Average Achieved (gal per 100 miles)	4.348	3.469	3.469	2.818	2.818	2.818	2.818	2.818	2.818	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.408	0.390	0.373	0.363	0.359	0.355	2.248
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.408	0.390	0.373	0.363	0.359	0.355	2.248
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.408	0.390	0.373	0.363	0.359	0.355	2.248
Sales Impacts										
Sales Change from Baseline (t)	0.01	0.00	0.00	-0.76	-0.74	-0.71	-0.65	-0.63	-0.60	-4.070
Average Work Factor	5567	5567	5567	5567	5567	5567	5567	5567	5567	N/A

Table 68 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Mercedes-Benz)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Mercedes-Benz)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	3.923	3.530	3.177	2.859	2.573	2.316	2.316	2.316	2.165	N/A
Change from Baseline (%)	-10%	-19%	-27%	-34%	-41%	-47%	-47%	-47%	-47%	N/A
Average Achieved (gal per 100 miles)	1.834	1.834	1.832	1.832	1.830	1.830	1.831	1.832	0.462	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	-0.07	-0.07	-0.07	-0.06	-0.06	-0.06	-0.379
Average Work Factor	3904	3904	3904	3904	3903	3903	3903	3903	3904	N/A

Table 69 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Nissan)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Nissan)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	3.803	3.423	3.080	2.772	2.471	2.224	2.224	2.224	2.053	N/A
Change from Baseline (%)	-10%	-19%	-27%	-34%	-41%	-47%	-47%	-47%	-47%	N/A
Average Achieved (gal per 100 miles)	1.984	1.984	1.983	1.983	1.747	1.747	1.747	1.748	0.000	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.001
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	-0.04	-0.04	-0.03	-0.03	-0.03	-0.03	-0.196
Average Work Factor	3596	3596	3596	3596	3596	3596	3596	3596	3596	N/A

Table 70 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Stellantis)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV10 (Stellantis)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.343	4.180	3.762	3.386	3.047	2.743	2.743	2.736	2.736	N/A
Change from Baseline (%)	-10%	-19%	-27%	-34%	-41%	-47%	-47%	-47%	-47%	N/A
Average Achieved (gal per 100 miles)	3.445	1.848	1.848	1.848	1.848	1.848	1.848	1.793	1.793	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
Subtotal Technology Costs (\$b)	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002
Sales Impacts										
Sales Change from Baseline (t)	0.00	0.00	0.00	-0.54	-0.53	-0.51	-0.47	-0.45	-0.44	-2.931
Average Work Factor	5809	5809	5809	5809	5809	5809	5809	5809	5809	N/A

Table 71 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Ford)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Ford)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.113	3.537	3.042	2.571	2.211	1.897	1.897	1.897	1.897	N/A
Change from Baseline (%)	-14%	-26%	-37%	-46%	-54%	-60%	-60%	-60%	-60%	N/A
Average Achieved (gal per 100 miles)	2.639	2.639	2.639	2.075	2.074	1.897	1.897	1.897	1.896	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.099	0.091	0.085	0.356	0.326	0.388	0.363	0.353	0.347	2.406
Subtotal Technology Costs (\$b)	0.099	0.091	0.085	0.356	0.326	0.388	0.363	0.353	0.347	2.406
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.099	0.091	0.085	0.356	0.326	0.388	0.363	0.353	0.347	2.406
Sales Impacts										
Sales Change from Baseline (t)	-0.05	-0.15	-0.14	-2.18	-1.96	-1.84	-1.57	-1.49	-1.37	-10.736
Average Work Factor	4624	4624	4624	4624	4624	4624	4624	4624	4624	N/A

Table 72 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (GM)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (GM)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.694	3.906	3.359	2.889	2.484	2.137	2.137	2.137	2.137	N/A
Change from Baseline (%)	-14%	-26%	-37%	-46%	-53%	-60%	-60%	-60%	-60%	N/A
Average Achieved (gal per 100 miles)	4.348	3.319	3.319	2.137	2.137	2.137	2.137	2.137	2.137	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.097	0.090	0.799	0.757	0.720	0.695	0.685	0.676	4.519
Subtotal Technology Costs (\$b)	0.000	0.097	0.090	0.799	0.757	0.720	0.695	0.685	0.676	4.519
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.097	0.090	0.799	0.757	0.720	0.695	0.685	0.676	4.519
Sales Impacts										
Sales Change from Baseline (t)	-0.05	-0.14	-0.13	-1.89	-1.73	-1.63	-1.42	-1.34	-1.26	-9.576
Average Work Factor	5567	5567	5567	5567	5567	5567	5567	5567	5567	N/A

Table 73 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Mercedes-Benz)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Mercedes-Benz)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	3.748	3.224	2.772	2.372	2.040	1.754	1.754	1.754	1.644	N/A
Change from Baseline (%)	-14%	-26%	-36%	-46%	-53%	-60%	-60%	-60%	-60%	N/A
Average Achieved (gal per 100 miles)	1.834	1.834	1.833	1.725	1.725	1.726	1.726	1.727	0.424	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.004	0.004	0.003	0.003	0.003	0.001	0.019
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.004	0.004	0.003	0.003	0.003	0.001	0.019
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.004	0.004	0.003	0.003	0.003	0.001	0.019
Sales Impacts										
Sales Change from Baseline (t)	-0.01	-0.02	-0.02	-0.18	-0.16	-0.15	-0.13	-0.12	-0.11	-0.903
Average Work Factor	3904	3904	3904	3904	3904	3904	3904	3904	3904	N/A

Table 74 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Nissan)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Nissan)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	3.634	3.125	2.688	2.302	1.960	1.686	1.686	1.686	1.562	N/A
Change from Baseline (%)	-14%	-26%	-36%	-46%	-53%	-60%	-60%	-60%	-60%	N/A
Average Achieved (gal per 100 miles)	1.985	1.985	1.983	1.841	1.606	1.607	1.607	1.608	0.000	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	0.005	0.005	0.005	0.005	0.005	0.000	0.024
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	0.005	0.005	0.005	0.005	0.005	0.000	0.024
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	0.005	0.005	0.005	0.005	0.005	0.000	0.024
Sales Impacts										
Sales Change from Baseline (t)	0.00	-0.01	-0.01	-0.10	-0.09	-0.09	-0.07	-0.07	-0.07	-0.500
Average Work Factor	3596	3596	3596	3596	3596	3596	3595	3596	3595	N/A

Table 75 - Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Stellantis)

Compliance Impacts and Cumulative Industry Costs by Model Year for HDPUV Fleet, Alternative HDPUV14 (Stellantis)										
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Fuel Economy										
Average Required (gal per 100 miles)	4.150	3.818	3.283	2.824	2.428	2.088	2.088	2.083	2.083	N/A
Change from Baseline (%)	-14%	-26%	-36%	-45%	-53%	-60%	-60%	-60%	-60%	N/A
Average Achieved (gal per 100 miles)	3.445	1.850	1.850	1.850	1.850	1.850	1.850	1.791	1.791	N/A
Total Regulatory Costs										
Technology Costs (\$b)	0.000	0.000	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.001
Subtotal Technology Costs (\$b)	0.000	0.000	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.001
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.000	0.000	0.000	-0.001	-0.001	0.000	0.000	0.001	0.001	0.001
Sales Impacts										
Sales Change from Baseline (t)	-0.04	-0.11	-0.10	-1.36	-1.24	-1.17	-1.03	-0.98	-0.91	-6.937
Average Work Factor	5809	5809	5809	5809	5809	5809	5809	5809	5809	N/A

Table 76 - Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Total)

Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Total)					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fuel Economy					
Average Required (gal per 100 miles)	5.005	3.915	2.841	2.654	2.005
Percent Change from Baseline	0%	-22%	-43%	-47%	-60%
Average Achieved (gal per 100 miles)	2.629	2.607	2.478	2.344	1.871
Total Regulatory Costs					
Technology Application Costs (\$b)	0.111	0.022	0.246	0.427	1.024
Subtotal Technology Costs (\$b)	0.111	0.022	0.246	0.427	1.024
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.111	0.022	0.246	0.427	1.024
Sales Impacts					
Sales Change from Baseline (t)	0.00	-0.17	-7.44	-12.06	-28.65
Average Required (gal/100 miles)	0.00	-7.24	-15.07	-16.03	-20.89

Table 77 - Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Ford)

Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Ford)					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fuel Economy					
Average Required (gal per 100 miles)	4.796	3.746	2.722	2.534	1.897
Percent Change from Baseline	0%	-22%	-43%	-47%	-60%
Average Achieved (gal per 100 miles)	2.718	2.664	2.718	2.534	1.896
Total Regulatory Costs					
Technology Application Costs (\$b)	0.603	0.020	0.001	0.072	0.347
Subtotal Technology Costs (\$b)	0.603	0.020	0.001	0.072	0.347
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.603	0.020	0.001	0.072	0.347
Sales Impacts					
Sales Change from Baseline (t)	0.00	-0.03	-2.75	-4.48	-10.74
Average Required (gal/100 miles)	0.00	-6.98	-14.38	-15.36	-20.14

Table 78 - Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (GM)

Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (GM)					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fuel Economy					
Average Required (gal per 100 miles)	5.302	4.150	3.010	2.818	2.137
Percent Change from Baseline	0%	-22%	-43%	-47%	-60%
Average Achieved (gal per 100 miles)	3.469	3.467	3.010	2.818	2.137
Total Regulatory Costs					
Technology Application Costs (\$b)	-0.591	0.001	0.243	0.355	0.676
Subtotal Technology Costs (\$b)	-0.591	0.001	0.243	0.355	0.676
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	-0.591	0.001	0.243	0.355	0.676
Sales Impacts					
Sales Change from Baseline (t)	0.00	-0.05	-2.51	-4.07	-9.58
Average Required (gal/100 miles)	0.00	-7.59	-15.94	-16.92	-21.99

Table 79 - Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Mercedes-Benz)

Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Mercedes-Benz)					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fuel Economy					
Average Required (gal per 100 miles)	4.073	3.188	2.312	2.165	1.644
Percent Change from Baseline	0%	-22%	-43%	-47%	-60%
Average Achieved (gal per 100 miles)	0.463	0.463	0.463	0.462	0.424
Total Regulatory Costs					
Technology Application Costs (\$b)	0.014	0.000	0.000	0.000	0.001
Subtotal Technology Costs (\$b)	0.014	0.000	0.000	0.000	0.001
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.014	0.000	0.000	0.000	0.001
Sales Impacts					
Sales Change from Baseline (t)	0.00	-0.03	-0.21	-0.38	-0.90
Average Required (gal/100 miles)	0.00	-6.21	-12.96	-13.76	-17.88

Table 80 - Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Nissan)

Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Nissan)					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fuel Economy					
Average Required (gal per 100 miles)	3.862	3.023	2.192	2.053	1.562
Percent Change from Baseline	0%	-22%	-43%	-47%	-60%
Average Achieved (gal per 100 miles)	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs					
Technology Application Costs (\$b)	0.186	0.000	0.000	0.000	0.000
Subtotal Technology Costs (\$b)	0.186	0.000	0.000	0.000	0.000
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	0.186	0.000	0.000	0.000	0.000
Sales Impacts					
Sales Change from Baseline (t)	0.00	0.01	-0.11	-0.20	-0.50
Average Required (gal/100 miles)	0.00	-5.96	-12.46	-13.23	-17.17

Table 81 - Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Stellantis)

Compliance Impacts and Cumulative Industry Costs for MY 2030 to 2038 HDPUV Fleet by Alternative for Manufacturer (Stellantis)					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fuel Economy					
Average Required (gal per 100 miles)	5.149	4.030	2.923	2.736	2.083
Percent Change from Baseline	0%	-22%	-43%	-47%	-60%
Average Achieved (gal per 100 miles)	1.793	1.791	1.791	1.793	1.791
Total Regulatory Costs					
Technology Application Costs (\$b)	-0.101	0.001	0.001	0.000	0.001
Subtotal Technology Costs (\$b)	-0.101	0.001	0.001	0.000	0.001
Total Civil Penalties (\$b)	0.000	0.000	0.000	0.000	0.000
Total Regulatory Costs (\$b)	-0.101	0.001	0.001	0.000	0.001
Sales Impacts					
Sales Change from Baseline (t)	0.00	-0.06	-1.86	-2.93	-6.94
Average Required (gal/100 miles)	0.00	-7.41	-15.46	-16.42	-21.25

Powertrain Technology Penetration Rate, by Model Year

Table 82 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, No Action Alternative (Baseline)

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	35	24	24	24	24	24	24	24	23
Diesel Engines	11	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	1	1	1	1	1	1	1	1	1
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	26.9	37.8	37.8	37.8	37.8	37.8	37.8	37.8	36.8
Plug-In Hybrid Powertrains	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
Battery Electric Vehicles (BEVs)	27.2	37.5	37.5	37.6	37.7	38.0	38.0	38.3	40.1
BEV1	25.5	35.7	35.7	35.8	35.9	36.2	36.2	36.6	38.3
BEV2	1.7	1.8	1.8	1.7	1.7	1.8	1.8	1.7	1.7
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	46	24	24	24	24	24	24	24	23
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 83 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV4

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	35	24	24	24	24	24	24	23	22
Diesel Engines	11	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	1	1	1	1	1	1	1	1	1
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	26.9	37.8	37.8	37.8	37.8	37.8	37.8	37.8	36.8
Plug-In Hybrid Powertrains	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
Battery Electric Vehicles (BEVs)	27.6	37.6	37.6	37.7	37.8	38.2	38.2	38.8	40.6
BEV1	26.0	35.9	35.9	36.0	36.1	36.4	36.4	37.0	38.8
BEV2	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	45	24	24	24	24	24	24	23	22
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 84 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV108

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	35	25	25	21	21	21	21	20	20
Diesel Engines	11	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	1	1	1	1	1	1	1	1	1
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	26.9	37.8	37.8	36.9	36.9	36.8	36.8	36.8	35.8
Plug-In Hybrid Powertrains	0.0	0.4	0.4	4.4	4.4	4.4	4.4	4.4	4.4
Battery Electric Vehicles (BEVs)	26.8	37.1	37.1	37.2	37.3	38.0	38.0	38.3	40.1
BEV1	25.1	35.4	35.4	35.5	35.5	36.3	36.3	36.5	38.3
BEV2	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	46	25	25	21	21	21	21	20	20
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 85 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV10

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	35	25	25	19	19	18	18	18	17
Diesel Engines	11	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	1	1	1	5	5	5	5	5	5
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	26.9	37.8	37.8	36.9	36.9	36.7	36.7	36.7	35.7
Plug-In Hybrid Powertrains	0.0	0.4	0.4	6.0	6.0	6.0	6.0	5.9	5.9
Battery Electric Vehicles (BEVs)	26.8	37.1	37.1	38.2	38.3	39.3	39.3	39.6	41.3
BEV1	25.1	35.4	35.4	36.5	36.6	37.5	37.5	37.8	39.5
BEV2	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	46	25	25	19	19	18	18	18	17
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 86 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV14

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	34	23	23	12	12	11	11	10	10
Diesel Engines	11	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	1	1	1	3	3	3	3	3	3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Strong Hybrid Powertrains, Total	26.6	37.5	37.5	32.8	32.8	32.8	32.8	32.8	31.8
Plug-In Hybrid Powertrains	0.1	0.5	0.5	11.6	11.6	12.6	12.6	12.5	12.5
Battery Electric Vehicles (BEVs)	28.3	39.5	39.5	43.4	43.5	43.9	43.9	44.3	45.9
BEV1	26.6	37.7	37.7	41.7	41.7	42.2	42.2	42.5	44.2
BEV2	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	45	22	22	12	12	11	11	10	9
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	1

Table 87 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, No Action Alternative (Baseline)

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	33	33	33	33	33	32	32	32	32
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	28.0	28.0	28.0	28.0	28.0	27.9	27.9	27.9	27.9
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	38.9	38.9	38.9	39.1	39.1	40.0	40.0	40.0	40.0
BEV1	36.4	36.4	36.4	36.7	36.7	37.6	37.6	37.6	37.6
BEV2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	33	33	33	33	33	32	32	32	32
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 88 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, No Action Alternative (Baseline)

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	50	31	31	31	31	31	31	31	31
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	4	4	4	4	4	4	4	4	4
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	5.6	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
BEV1	4.0	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
BEV2	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	50	31	31	31	31	31	31	31	31
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 89 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, No Action Alternative (Baseline)

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	0	0	0	0	0	0	0	0	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	45.2	45.2	45.1	45.1	45.1	45.1	45.1	45.1	11.4
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	54.8	54.8	54.9	54.9	54.9	54.9	54.9	54.9	88.6
BEV1	53.1	53.1	53.1	53.1	53.2	53.2	53.1	53.1	86.9
BEV2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	0	0	0	0	0	0	0	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 90 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, No Action Alternative (Baseline)

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	45	45	45	45	40	40	40	40	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	55.4	55.4	55.5	55.5	60.0	60.0	60.0	60.0	100.0
BEV1	54.6	54.7	54.7	54.7	59.2	59.2	59.2	59.2	99.2
BEV2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	40	40	40	40	40	40	40	40	0
9-Speed Automatic	5	5	5	5	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 91 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, No Action Alternative (Baseline)

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	21	1	1	1	1	1	1	1	1
Diesel Engines	47	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	46.7	46.7	46.7	46.7	46.7	46.7	46.7	46.7
Plug-In Hybrid Powertrains	0.0	1.7	1.7	1.7	1.7	1.7	1.7	1.2	1.2
Battery Electric Vehicles (BEVs)	32.1	50.2	50.2	50.2	50.3	50.3	50.3	51.6	51.6
BEV1	31.6	49.8	49.8	49.8	49.8	49.8	49.8	51.1	51.1
BEV2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	68	1	1	1	1	1	1	1	1
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 92 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV4

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	32	32	32	32	32	31	31	31	31
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	40.1	40.1	40.1	40.4	40.4	41.2	41.2	41.2	41.2
BEV1	37.6	37.6	37.6	37.9	37.9	38.7	38.7	38.7	38.7
BEV2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	32	32	32	32	32	31	31	31	31
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 93 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV4

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	50	32	32	32	32	32	32	31	31
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	4	4	4	4	4	4	4	4	4
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6	44.6
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	5.6	23.1	23.1	23.1	23.1	23.1	23.1	24.1	24.1
BEV1	4.0	21.2	21.2	21.2	21.2	21.2	21.2	22.2	22.2
BEV2	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	50	32	32	32	32	32	32	31	31
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 94 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV4

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	0	0	0	0	0	0	0	0	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	45.2	45.2	45.1	45.1	45.1	45.1	45.1	45.1	11.4
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	54.8	54.8	54.9	54.9	54.9	54.9	54.9	54.9	88.6
BEV1	53.1	53.1	53.2	53.2	53.2	53.2	53.2	53.1	86.9
BEV2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	0	0	0	0	0	0	0	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 95 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV4

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	45	45	45	45	40	40	40	40	0
Variable Geometry Turbo	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	55.4	55.4	55.4	55.4	60.0	60.0	60.0	60.0	100.0
BEV1	54.6	54.6	54.6	54.6	59.2	59.2	59.2	59.2	99.2
BEV2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	40	40	40	40	40	40	40	40	0
9-Speed Automatic	5	5	5	5	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 96 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV4

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	21	1	1	1	1	1	1	0	0
Diesel Engines	47	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	46.7	46.7	46.7	46.7	46.7	46.7	46.7	46.7
Plug-In Hybrid Powertrains	0.0	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2
Battery Electric Vehicles (BEVs)	32.1	50.3	50.3	50.3	50.3	50.4	50.4	51.6	51.6
BEV1	31.6	49.8	49.8	49.8	49.9	49.9	49.9	51.1	51.1
BEV2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	68	1	1	1	1	1	1	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 97 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV108

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	34	34	34	34	34	32	32	32	32
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	28.0	28.0	28.0	28.0	28.0	27.9	27.9	27.9	27.9
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	37.9	37.9	37.9	38.2	38.2	40.0	40.0	40.0	40.0
BEV1	35.4	35.4	35.4	35.7	35.7	37.5	37.5	37.5	37.5
BEV2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	34	34	34	34	34	32	32	32	32
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 98 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV108

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	50	31	31	22	22	22	22	22	22
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	4	4	4	3	3	3	3	3	3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	44.6	44.6	44.6	41.6	41.6	41.6	41.6	41.6	41.6
Plug-In Hybrid Powertrains	0.0	0.0	0.0	12.4	12.4	12.4	12.4	12.4	12.4
Battery Electric Vehicles (BEVs)	5.6	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
BEV1	4.0	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
BEV2	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	50	31	31	22	22	22	22	22	22
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 99 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV108

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	0	0	0	0	0	0	0	0	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	45.2	45.2	45.1	45.1	45.1	45.1	45.1	45.1	11.4
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	54.8	54.8	54.9	54.9	54.9	54.9	54.9	54.9	88.6
BEV1	53.1	53.1	53.2	53.1	53.2	53.2	53.2	53.2	86.9
BEV2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	0	0	0	0	0	0	0	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 100 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV108

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	45	45	45	45	40	40	40	40	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	55.4	55.4	55.4	55.4	60.0	60.0	60.0	60.0	100.0
BEV1	54.6	54.6	54.6	54.6	59.2	59.2	59.2	59.2	99.2
BEV2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	40	40	40	40	40	40	40	40	0
9-Speed Automatic	5	5	5	5	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 101 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV108

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	21	1	1	1	1	1	1	0	0
Diesel Engines	47	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	46.7	46.7	46.7	46.7	46.7	46.7	46.7	46.7
Plug-In Hybrid Powertrains	0.0	1.6	1.6	1.6	1.6	1.6	1.6	1.3	1.3
Battery Electric Vehicles (BEVs)	32.1	50.4	50.4	50.4	50.4	50.4	50.4	51.6	51.6
BEV1	31.6	49.9	49.9	49.9	49.9	49.9	49.9	51.1	51.1
BEV2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	68	1	1	1	1	1	1	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 102 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV10

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	34	34	34	31	31	29	29	29	29
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	28.0	28.0	28.0	28.0	28.0	27.7	27.7	27.7	27.7
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Battery Electric Vehicles (BEVs)	37.9	37.9	37.9	40.8	40.8	43.2	43.2	43.2	43.2
BEV1	35.4	35.4	35.4	38.3	38.3	40.7	40.7	40.7	40.7
BEV2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	34	34	34	31	31	29	29	29	29
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 103 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV10

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	50	31	31	17	17	17	17	17	17
Variable Geometry Turbo	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	4	4	4	14	14	14	14	14	14
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	44.6	44.6	44.6	41.6	41.6	41.6	41.6	41.6	41.6
Plug-In Hybrid Powertrains	0.0	0.0	0.0	17.0	17.0	17.0	17.0	17.0	17.0
Battery Electric Vehicles (BEVs)	5.6	24.1	24.1	24.1	24.1	24.1	24.1	24.1	24.1
BEV1	4.0	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
BEV2	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	50	31	31	17	17	17	17	17	17
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 104 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV10

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	0	0	0	0	0	0	0	0	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	45.2	45.2	45.1	45.1	45.1	45.1	45.1	45.1	11.4
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	54.8	54.8	54.9	54.9	54.9	54.9	54.9	54.9	88.6
BEV1	53.1	53.1	53.2	53.2	53.2	53.2	53.2	53.2	86.9
BEV2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	0	0	0	0	0	0	0	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 105 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV10

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	45	45	45	45	40	40	40	40	0
Variable Geometry Turbo	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	55.4	55.4	55.4	55.4	60.0	60.1	60.0	60.0	100.0
BEV1	54.6	54.6	54.6	54.6	59.2	59.2	59.2	59.2	99.2
BEV2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	40	40	40	40	40	40	40	40	0
9-Speed Automatic	5	5	5	5	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 106 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV10

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	21	1	1	1	1	1	1	1	1
Diesel Engines	47	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	46.7	46.7	46.7	46.7	46.7	46.7	46.7	46.7
Plug-In Hybrid Powertrains	0.0	1.6	1.6	1.6	1.6	1.6	1.6	1.2	1.2
Battery Electric Vehicles (BEVs)	32.1	50.4	50.4	50.4	50.4	50.4	50.4	51.6	51.6
BEV1	31.6	49.9	49.9	49.9	49.9	49.9	49.9	51.1	51.1
BEV2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	68	1	1	1	1	1	1	1	1
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 107 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV14

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	31	31	31	21	21	17	17	17	17
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2
Plug-In Hybrid Powertrains	0.2	0.2	0.2	0.2	0.2	2.7	2.7	2.7	2.7
Battery Electric Vehicles (BEVs)	41.8	41.8	41.8	51.6	51.6	52.8	52.8	52.8	52.8
BEV1	39.3	39.3	39.3	49.1	49.1	50.2	50.2	50.2	50.2
BEV2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	31	31	31	21	21	17	17	17	16
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	1

Table 108 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV14

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	50	29	29	9	9	9	9	9	9
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	4	4	4	8	8	8	8	8	8
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	44.6	44.6	44.6	30.4	30.4	30.4	30.4	30.4	30.4
Plug-In Hybrid Powertrains	0.0	0.0	0.0	34.0	34.0	34.0	34.0	34.0	34.0
Battery Electric Vehicles (BEVs)	5.6	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7
BEV1	4.0	24.9	24.9	24.9	24.9	24.9	24.9	24.9	24.9
BEV2	1.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	50	29	29	9	9	9	9	9	9
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 109 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV14

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	0	0	0	0	0	0	0	0	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	45.2	45.2	45.2	42.6	42.5	42.6	42.6	42.6	10.5
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	54.8	54.8	54.8	57.4	57.5	57.4	57.4	57.4	89.5
BEV1	53.1	53.1	53.1	55.7	55.7	55.7	55.7	55.7	87.8
BEV2	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	0	0	0	0	0	0	0	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 110 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV14

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	45	45	45	42	38	38	38	38	0
Diesel Engines	0	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	31	31	31	31	31	0
Mild Hybrid Powertrains	0.0	0.0	0.0	6.7	6.7	6.8	6.8	6.8	0.0
Strong Hybrid Powertrains, Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	55.4	55.4	55.4	57.7	62.3	62.2	62.2	62.2	100.0
BEV1	54.6	54.6	54.6	56.9	61.5	61.4	61.4	61.4	99.2
BEV2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	40	40	40	38	38	38	38	38	0
9-Speed Automatic	5	5	5	5	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Table 111 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV14

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Non-Hybrid High Compression Engines	0	0	0	0	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0	0	0	0	0
Non-Hybrid Turbocharged Engines	21	1	1	1	1	1	1	0	0
Diesel Engines	47	0	0	0	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	46.7	46.7	46.7	46.7	46.7	46.7	46.7	46.7
Plug-In Hybrid Powertrains	0.0	1.7	1.7	1.7	1.7	1.7	1.7	1.2	1.2
Battery Electric Vehicles (BEVs)	32.1	50.2	50.2	50.3	50.3	50.3	50.3	51.6	51.6
BEV1	31.6	49.8	49.8	49.8	49.8	49.8	49.8	51.1	51.1
BEV2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BEV3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BEV4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-Speed Automatic	0	0	0	0	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0	0	0	0	0
8-Speed Automatic	68	1	1	1	1	1	1	0	0
9-Speed Automatic	0	0	0	0	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0	0	0	0	0

Mass Reduction Penetration Rate, by Model Year

Table 112 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, No Action Alternative (Baseline)

Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	84	84	84	84	84	84	84	84	84
Mass Reduction Level 2 (%)	16	16	16	16	16	16	16	16	16

Table 113 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV4

Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	84	84	84	84	84	84	84	84	84
Mass Reduction Level 2 (%)	16	16	16	16	16	16	16	16	16

Table 114 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV108

Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	84	84	84	84	84	84	84	84	84
Mass Reduction Level 2 (%)	16	16	16	16	16	16	16	16	16

Table 115 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV10

Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	84	84	84	84	84	84	84	84	84
Mass Reduction Level 2 (%)	16	16	16	16	16	16	16	16	16

Table 116 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV14

Mass Reduction Penetration Rate by Model Year for Manufacturer (Total) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	84	84	84	84	84	84	84	84	84
Mass Reduction Level 2 (%)	16	16	16	16	16	16	16	16	16

Table 117 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, No Action Alternative (Baseline)

Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	59	59	59	59	59	59	59	59	59
Mass Reduction Level 2 (%)	41	41	41	41	41	41	41	41	41

Table 118 - Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, No Action Alternative (Baseline)

Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 119 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, No Action Alternative (Baseline)

Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 120 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, No Action Alternative (Baseline)

Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 121 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, No Action Alternative (Baseline)

Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, No Action Alternative (Baseline)									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 122 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV4

Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	59	59	59	59	59	59	59	59	59
Mass Reduction Level 2 (%)	41	41	41	41	41	41	41	41	41

Table 123 - Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV4

Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 124 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV4

Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 125 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV4

Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 126 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV4

Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV4									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 127 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV108

Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	59	59	59	59	59	59	59	59	59
Mass Reduction Level 2 (%)	41	41	41	41	41	41	41	41	41

Table 128 - Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV108

Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 129 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV108

Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 130 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV108

Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 131 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV108

Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV108									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

%

Table 132 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV10

Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	59	59	59	59	59	59	59	59	59
Mass Reduction Level 2 (%)	41	41	41	41	41	41	41	41	41

Table 133 - Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV10

Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 134 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV10

Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 135 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV10

Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 136 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV10

Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV10									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 137 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV14

Mass Reduction Penetration Rate by Model Year for Manufacturer (Ford) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	59	59	59	59	59	59	59	59	59
Mass Reduction Level 2 (%)	41	41	41	41	41	41	41	41	41

Table 138 - Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV14

Mass Reduction Penetration Rate by Model Year for Manufacturer (GM) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 139 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV14

Mass Reduction Penetration Rate by Model Year for Manufacturer (Mercedes-Benz) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 140 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV14

Mass Reduction Penetration Rate by Model Year for Manufacturer (Nissan) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Table 141 - Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV14

Mass Reduction Penetration Rate by Model Year for Manufacturer (Stellantis) HDPUV Fleet, Alternative HDPUV14									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Mass Reduction Level 0 (%)	0	0	0	0	0	0	0	0	0
Mass Reduction Level 1 (%)	100	100	100	100	100	100	100	100	100
Mass Reduction Level 2 (%)	0	0	0	0	0	0	0	0	0

Powertrain Technology Penetration Rate, by Alternative

Table 142 - Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2038 HDPUV Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2038 HDPUV Fleet by Alternative					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Non-Hybrid High Compression Engines	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0
Non-Hybrid Turbocharged Engines	23	22	20	17	10
Diesel Engines	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0
12V Stop-Start (non-hybrid)	1	1	1	5	3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	36.8	36.8	35.8	35.7	31.8
Plug-In Hybrid Powertrains	0.3	0.3	4.4	5.9	12.5
Battery Electric Vehicles (BEVs)	40.08	40.55	40.07	41.32	45.94
BEV1	38.33	38.78	38.29	39.54	44.16
BEV2	1.75	1.77	1.77	1.77	1.77
BEV3	0.00	0.00	0.00	0.00	0.00
BEV4	0.00	0.00	0.00	0.00	0.00
5-Speed Automatic	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0
8-Speed Automatic	23	22	20	17	9
9-Speed Automatic	0	0	0	0	0
10-Speed Automatic	0	0	0	0	1

Table 143 - Powertrain Technology Penetration Rate (%) for Manufacturer (Ford), MY 2038 HDPUV Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Ford), MY 2038 HDPUV Fleet by Alternative					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Non-Hybrid High Compression Engines	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0
Non-Hybrid Turbocharged Engines	32	31	32	29	17
Diesel Engines	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	27.9	27.9	27.9	27.7	27.2
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.1	2.7
Battery Electric Vehicles (BEVs)	40.04	41.20	40.03	43.22	52.76
BEV1	37.58	38.68	37.51	40.71	50.24
BEV2	2.46	2.52	2.52	2.51	2.52
BEV3	0.00	0.00	0.00	0.00	0.00
BEV4	0.00	0.00	0.00	0.00	0.00
5-Speed Automatic	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0
8-Speed Automatic	32	31	32	29	16
9-Speed Automatic	0	0	0	0	0
10-Speed Automatic	0	0	0	0	1

Table 144 - Powertrain Technology Penetration Rate (%) for Manufacturer (GM), MY 2038 HDPUV Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (GM), MY 2038 HDPUV Fleet by Alternative					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Non-Hybrid High Compression Engines	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0
Non-Hybrid Turbocharged Engines	31	31	22	17	9
Diesel Engines	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0
12V Stop-Start (non-hybrid)	4	4	3	14	8
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	44.6	44.6	41.6	41.6	30.4
Plug-In Hybrid Powertrains	0.0	0.0	12.4	17.0	34.0
Battery Electric Vehicles (BEVs)	24.04	24.09	24.04	24.06	26.73
BEV1	22.18	22.23	22.18	22.19	24.87
BEV2	1.86	1.87	1.87	1.87	1.87
BEV3	0.00	0.00	0.00	0.00	0.00
BEV4	0.00	0.00	0.00	0.00	0.00
5-Speed Automatic	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0
8-Speed Automatic	31	31	22	17	9
9-Speed Automatic	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0

Table 145 - Powertrain Technology Penetration Rate (%) for Manufacturer (Mercedes-Benz), MY 2038 HDPUV Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Mercedes-Benz), MY 2038 HDPUV Fleet by Alternative					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Non-Hybrid High Compression Engines	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0
Non-Hybrid Turbocharged Engines	0	0	0	0	0
Diesel Engines	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	11.4	11.4	11.4	11.4	10.5
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	88.58	88.58	88.58	88.58	89.54
BEV1	86.87	86.87	86.86	86.87	87.83
BEV2	1.71	1.71	1.71	1.72	1.71
BEV3	0.00	0.00	0.00	0.00	0.00
BEV4	0.00	0.00	0.00	0.00	0.00
5-Speed Automatic	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0
8-Speed Automatic	0	0	0	0	0
9-Speed Automatic	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0

Table 146 - Powertrain Technology Penetration Rate (%) for Manufacturer (Nissan), MY 2038 HDPUV Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Nissan), MY 2038 HDPUV Fleet by Alternative					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Non-Hybrid High Compression Engines	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0
Non-Hybrid Turbocharged Engines	0	0	0	0	0
Diesel Engines	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	0.0	0.0	0.0	0.0	0.0
Plug-In Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Battery Electric Vehicles (BEVs)	100.00	100.00	100.00	100.00	100.00
BEV1	99.20	99.19	99.19	99.19	99.19
BEV2	0.80	0.81	0.81	0.81	0.81
BEV3	0.00	0.00	0.00	0.00	0.00
BEV4	0.00	0.00	0.00	0.00	0.00
5-Speed Automatic	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0
8-Speed Automatic	0	0	0	0	0
9-Speed Automatic	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0

Table 147 - Powertrain Technology Penetration Rate (%) for Manufacturer (Stellantis), MY 2038 HDPUV Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Stellantis), MY 2038 HDPUV Fleet by Alternative					
Alternative	No Action	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Non-Hybrid High Compression Engines	0	0	0	0	0
Cylinder Deactivation	0	0	0	0	0
Dynamic Cylinder Deactivation	0	0	0	0	0
Non-Hybrid Turbocharged Engines	1	0	0	1	0
Diesel Engines	0	0	0	0	0
Fuel Cell Vehicles (FCVs)	0	0	0	0	0
12V Stop-Start (non-hybrid)	0	0	0	0	0
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains, Total	46.7	46.7	46.7	46.7	46.7
Plug-In Hybrid Powertrains	1.2	1.2	1.3	1.2	1.2
Battery Electric Vehicles (BEVs)	51.61	51.63	51.57	51.59	51.61
BEV1	51.11	51.14	51.07	51.09	51.11
BEV2	0.49	0.50	0.50	0.50	0.50
BEV3	0.00	0.00	0.00	0.00	0.00
BEV4	0.00	0.00	0.00	0.00	0.00
5-Speed Automatic	0	0	0	0	0
6-Speed Automatic	0	0	0	0	0
7-Speed Automatic	0	0	0	0	0
8-Speed Automatic	1	0	0	1	0
9-Speed Automatic	0	0	0	0	0
10-Speed Automatic	0	0	0	0	0

Required and Achieved Fuel Efficiency Levels, Comparison

Table 148 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for No Action Alternative (Baseline)

Required and Achieved Gallons per 100 miles for HDPUV Fleet for No Action Alternative (Baseline)			
Model Year	Total		
	Required	Achieved	Difference
2030	5.000	3.404	-1.596
2031	5.027	2.742	-2.285
2032	5.027	2.742	-2.285
2033	5.027	2.737	-2.290
2034	5.026	2.732	-2.294
2035	5.023	2.716	-2.307
2036	5.023	2.717	-2.306
2037	5.020	2.703	-2.317
2038	5.005	2.629	-2.376

Table 149 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV4

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV4			
Model Year	Total		
	Required	Achieved	Difference
2030	4.796	3.382	-1.414
2031	4.632	2.736	-1.896
2032	4.446	2.735	-1.711
2033	4.268	2.730	-1.538
2034	4.097	2.725	-1.372
2035	3.931	2.710	-1.221
2036	3.931	2.710	-1.221
2037	3.926	2.681	-1.245
2038	3.915	2.607	-1.308

Table 150 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV108

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV108			
Model Year	Total		
	Required	Achieved	Difference
2030	4.503	3.421	-1.082
2031	4.074	2.759	-1.315
2032	3.667	2.758	-0.909
2033	3.373	2.603	-0.770
2034	3.102	2.598	-0.504
2035	2.851	2.565	-0.286
2036	2.851	2.565	-0.286
2037	2.850	2.552	-0.298
2038	2.841	2.478	-0.363

Table 151 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV10

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV10			
Model Year	Total		
	Required	Achieved	Difference
2030	4.503	3.421	-1.082
2031	4.074	2.759	-1.315
2032	3.667	2.758	-0.909
2033	3.294	2.481	-0.813
2034	2.964	2.477	-0.487
2035	2.664	2.431	-0.233
2036	2.664	2.431	-0.233
2037	2.662	2.418	-0.244
2038	2.654	2.344	-0.310

Table 152 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV14

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV14			
Model Year	Total		
	Required	Achieved	Difference
2030	4.292	3.352	-0.940
2031	3.707	2.641	-1.066
2032	3.188	2.641	-0.547
2033	2.724	2.028	-0.696
2034	2.342	2.023	-0.319
2035	2.012	1.954	-0.058
2036	2.012	1.954	-0.058
2037	2.011	1.941	-0.070
2038	2.005	1.871	-0.134

Table 153 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV4

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV4												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.603	2.717	-1.886	5.240	4.348	-0.892	4.184	1.834	-2.350	4.057	1.984	-2.073
2031	4.419	2.717	-1.702	4.894	3.516	-1.378	4.017	1.834	-2.183	3.894	1.984	-1.910
2032	4.242	2.716	-1.526	4.698	3.516	-1.182	3.856	1.832	-2.024	3.738	1.982	-1.756
2033	4.071	2.703	-1.368	4.510	3.516	-0.994	3.702	1.831	-1.871	3.589	1.982	-1.607
2034	3.908	2.702	-1.206	4.330	3.515	-0.815	3.553	1.830	-1.723	3.412	1.747	-1.665
2035	3.747	2.664	-1.083	4.156	3.515	-0.641	3.411	1.830	-1.581	3.276	1.747	-1.529
2036	3.746	2.664	-1.082	4.156	3.515	-0.641	3.411	1.831	-1.580	3.276	1.748	-1.528
2037	3.746	2.664	-1.082	4.150	3.467	-0.683	3.411	1.832	-1.579	3.276	1.748	-1.528
2038	3.746	2.664	-1.082	4.150	3.467	-0.683	3.188	0.463	-2.725	3.023	0.000	-3.023

Table 154 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV4

Model Year	Stellantis			Total		
	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.633	3.445	-1.188	4.796	3.382	-1.414
2031	4.757	1.849	-2.908	4.632	2.736	-1.896
2032	4.566	1.849	-2.717	4.446	2.735	-1.711
2033	4.384	1.849	-2.535	4.268	2.730	-1.538
2034	4.208	1.849	-2.359	4.097	2.725	-1.372
2035	4.040	1.848	-2.192	3.931	2.710	-1.221
2036	4.040	1.848	-2.192	3.931	2.710	-1.221
2037	4.030	1.791	-2.239	3.926	2.681	-1.245
2038	4.030	1.791	-2.239	3.915	2.607	-1.308

Table 155 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV108

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV108												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.332	2.817	-1.515	4.912	4.348	-0.564	3.923	1.834	-2.089	3.803	1.984	-1.819
2031	3.899	2.817	-1.082	4.294	3.469	-0.825	3.530	1.834	-1.696	3.423	1.984	-1.439
2032	3.509	2.816	-0.693	3.865	3.469	-0.396	3.177	1.832	-1.345	3.080	1.983	-1.097
2033	3.227	2.803	-0.424	3.556	3.011	-0.545	2.923	1.833	-1.090	2.834	1.983	-0.851
2034	2.968	2.802	-0.166	3.271	3.010	-0.261	2.689	1.831	-0.858	2.582	1.747	-0.835
2035	2.722	2.717	-0.005	3.010	3.010	0.000	2.474	1.830	-0.644	2.376	1.747	-0.629
2036	2.722	2.717	-0.005	3.010	3.010	0.000	2.474	1.831	-0.643	2.376	1.748	-0.628
2037	2.722	2.718	-0.004	3.010	3.010	0.000	2.474	1.832	-0.642	2.376	1.748	-0.628
2038	2.722	2.718	-0.004	3.010	3.010	0.000	2.312	0.463	-1.849	2.192	0.000	-2.192

Table 156 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV108

Model Year	Stellantis			Total		
	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.343	3.445	-0.898	4.503	3.421	-1.082
2031	4.180	1.848	-2.332	4.074	2.759	-1.315
2032	3.762	1.848	-1.914	3.667	2.758	-0.909
2033	3.461	1.848	-1.613	3.373	2.603	-0.770
2034	3.184	1.848	-1.336	3.102	2.598	-0.504
2035	2.929	1.848	-1.081	2.851	2.565	-0.286
2036	2.929	1.848	-1.081	2.851	2.565	-0.286
2037	2.923	1.791	-1.132	2.850	2.552	-0.298
2038	2.923	1.791	-1.132	2.841	2.478	-0.363

Table 157 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV10

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV10												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.332	2.817	-1.515	4.912	4.348	-0.564	3.923	1.834	-2.089	3.803	1.984	-1.819
2031	3.899	2.817	-1.082	4.294	3.469	-0.825	3.530	1.834	-1.696	3.423	1.984	-1.439
2032	3.509	2.816	-0.693	3.865	3.469	-0.396	3.177	1.832	-1.345	3.080	1.983	-1.097
2033	3.142	2.652	-0.490	3.478	2.818	-0.660	2.859	1.832	-1.027	2.772	1.983	-0.789
2034	2.828	2.652	-0.176	3.131	2.818	-0.313	2.573	1.830	-0.743	2.471	1.747	-0.724
2035	2.534	2.534	0.000	2.818	2.818	0.000	2.316	1.830	-0.486	2.224	1.747	-0.477
2036	2.534	2.534	0.000	2.818	2.818	0.000	2.316	1.831	-0.485	2.224	1.747	-0.477
2037	2.534	2.534	0.000	2.818	2.818	0.000	2.316	1.832	-0.484	2.224	1.748	-0.476
2038	2.534	2.534	0.000	2.818	2.818	0.000	2.165	0.462	-1.703	2.053	0.000	-2.053

Table 158 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV10

Model Year	Stellantis			Total		
	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.343	3.445	-0.898	4.503	3.421	-1.082
2031	4.180	1.848	-2.332	4.074	2.759	-1.315
2032	3.762	1.848	-1.914	3.667	2.758	-0.909
2033	3.386	1.848	-1.538	3.294	2.481	-0.813
2034	3.047	1.848	-1.199	2.964	2.477	-0.487
2035	2.743	1.848	-0.895	2.664	2.431	-0.233
2036	2.743	1.848	-0.895	2.664	2.431	-0.233
2037	2.736	1.793	-0.943	2.662	2.418	-0.244
2038	2.736	1.793	-0.943	2.654	2.344	-0.310

Table 159 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV14

Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV14												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.113	2.639	-1.474	4.694	4.348	-0.346	3.748	1.834	-1.914	3.634	1.985	-1.649
2031	3.537	2.639	-0.898	3.906	3.319	-0.587	3.224	1.834	-1.390	3.125	1.985	-1.140
2032	3.042	2.639	-0.403	3.359	3.319	-0.040	2.772	1.833	-0.939	2.688	1.983	-0.705
2033	2.571	2.075	-0.496	2.889	2.137	-0.752	2.372	1.725	-0.647	2.302	1.841	-0.461
2034	2.211	2.074	-0.137	2.484	2.137	-0.347	2.040	1.725	-0.315	1.960	1.606	-0.354
2035	1.897	1.897	0.000	2.137	2.137	0.000	1.754	1.726	-0.028	1.686	1.607	-0.079
2036	1.897	1.897	0.000	2.137	2.137	0.000	1.754	1.726	-0.028	1.686	1.607	-0.079
2037	1.897	1.897	0.000	2.137	2.137	0.000	1.754	1.727	-0.027	1.686	1.608	-0.078
2038	1.897	1.896	-0.001	2.137	2.137	0.000	1.644	0.424	-1.220	1.562	0.000	-1.562

Table 160 - Required and Achieved Gallons per 100 miles for HDPUV Fleet for Alternative HDPUV14

Model Year	Stellantis			Total		
	Required	Achieved	Difference	Required	Achieved	Difference
2030	4.150	3.445	-0.705	4.292	3.352	-0.940
2031	3.818	1.850	-1.968	3.707	2.641	-1.066
2032	3.283	1.850	-1.433	3.188	2.641	-0.547
2033	2.824	1.850	-0.974	2.724	2.028	-0.696
2034	2.428	1.850	-0.578	2.342	2.023	-0.319
2035	2.088	1.850	-0.238	2.012	1.954	-0.058
2036	2.088	1.850	-0.238	2.012	1.954	-0.058
2037	2.083	1.791	-0.292	2.011	1.941	-0.070
2038	2.083	1.791	-0.292	2.005	1.871	-0.134

Regulatory Cost, Comparison

Table 161 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference
2030	0.916	0.953	0.037	-0.455	-0.455	0.000	0.050	0.050	0.000	0.098	0.098	0.000
2031	0.821	0.856	0.034	0.030	0.004	-0.026	0.040	0.040	0.000	0.092	0.092	0.000
2032	0.719	0.752	0.033	-0.025	-0.049	-0.024	0.029	0.029	0.000	0.085	0.085	0.000
2033	0.622	0.653	0.030	-0.082	-0.104	-0.022	0.018	0.018	0.000	0.079	0.079	0.000
2034	0.525	0.553	0.028	-0.139	-0.159	-0.020	0.007	0.007	0.000	0.078	0.078	0.000
2035	0.452	0.476	0.024	-0.194	-0.212	-0.018	-0.003	-0.003	0.000	0.072	0.072	0.000
2036	0.370	0.392	0.022	-0.244	-0.261	-0.017	-0.013	-0.013	0.000	0.067	0.067	0.000
2037	0.336	0.357	0.021	-0.269	-0.269	0.001	-0.017	-0.017	0.000	0.065	0.065	0.000
2038	0.301	0.322	0.020	-0.295	-0.295	0.001	0.007	0.007	0.000	0.093	0.093	0.000

Table 162 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference
2030	0.696	0.696	0.000	1.305	1.342	0.037
2031	0.388	0.388	0.000	1.371	1.379	0.009
2032	0.306	0.307	0.000	1.115	1.125	0.009
2033	0.223	0.223	0.000	0.859	0.867	0.009
2034	0.143	0.143	0.000	0.614	0.622	0.008
2035	0.066	0.066	0.000	0.392	0.398	0.006
2036	-0.001	-0.001	0.000	0.179	0.185	0.005
2037	-0.019	-0.018	0.001	0.096	0.119	0.023
2038	-0.051	-0.050	0.001	0.055	0.077	0.022

Table 163 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference
2030	0.916	0.885	-0.031	-0.455	-0.455	0.000	0.050	0.050	0.000	0.098	0.098	0.000
2031	0.821	0.793	-0.029	0.030	0.030	0.000	0.040	0.040	0.000	0.092	0.092	0.000
2032	0.719	0.695	-0.024	-0.025	-0.024	0.000	0.029	0.029	0.000	0.085	0.085	0.000
2033	0.622	0.600	-0.022	-0.082	0.200	0.282	0.018	0.018	0.000	0.079	0.078	0.000
2034	0.525	0.506	-0.020	-0.139	0.130	0.269	0.007	0.007	0.000	0.078	0.078	0.000
2035	0.452	0.453	0.001	-0.194	0.063	0.257	-0.003	-0.003	0.000	0.072	0.072	0.000
2036	0.370	0.372	0.001	-0.244	0.005	0.249	-0.013	-0.013	0.000	0.067	0.067	0.000
2037	0.336	0.337	0.001	-0.269	-0.023	0.246	-0.017	-0.017	0.000	0.065	0.065	0.000
2038	0.301	0.303	0.001	-0.295	-0.052	0.243	0.007	0.007	0.000	0.093	0.093	0.000

Table 164 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference
2030	0.696	0.696	0.000	1.305	1.274	-0.031
2031	0.388	0.388	0.001	1.371	1.343	-0.028
2032	0.306	0.307	0.000	1.115	1.091	-0.024
2033	0.223	0.223	0.000	0.859	1.118	0.260
2034	0.143	0.143	0.000	0.614	0.863	0.249
2035	0.066	0.066	0.000	0.392	0.650	0.258
2036	-0.001	-0.001	0.000	0.179	0.429	0.250
2037	-0.019	-0.017	0.001	0.096	0.344	0.248
2038	-0.051	-0.049	0.001	0.055	0.301	0.246

Table 165 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference
2030	0.916	0.885	-0.031	-0.455	-0.455	0.000	0.050	0.050	0.000	0.098	0.098	0.000
2031	0.821	0.793	-0.029	0.030	0.030	0.000	0.040	0.040	0.000	0.092	0.092	0.000
2032	0.719	0.695	-0.024	-0.025	-0.024	0.000	0.029	0.029	0.000	0.085	0.085	0.000
2033	0.622	0.676	0.054	-0.082	0.326	0.408	0.018	0.018	0.000	0.079	0.078	0.000
2034	0.525	0.576	0.050	-0.139	0.251	0.390	0.007	0.007	0.000	0.078	0.078	0.000
2035	0.452	0.534	0.083	-0.194	0.179	0.373	-0.003	-0.003	0.000	0.072	0.072	0.000
2036	0.370	0.447	0.077	-0.244	0.119	0.363	-0.013	-0.013	0.000	0.067	0.067	0.000
2037	0.336	0.410	0.075	-0.269	0.089	0.359	-0.017	-0.017	0.000	0.065	0.065	0.000
2038	0.301	0.374	0.072	-0.295	0.059	0.355	0.007	0.007	0.000	0.093	0.093	0.000

Table 166 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference
2030	0.696	0.696	0.000	1.305	1.274	-0.031
2031	0.388	0.388	0.001	1.371	1.343	-0.028
2032	0.306	0.307	0.000	1.115	1.092	-0.024
2033	0.223	0.223	0.000	0.859	1.321	0.462
2034	0.143	0.143	0.000	0.614	1.054	0.440
2035	0.066	0.066	0.000	0.392	0.848	0.456
2036	-0.001	-0.001	0.000	0.179	0.619	0.440
2037	-0.019	-0.018	0.000	0.096	0.529	0.434
2038	-0.051	-0.050	0.000	0.055	0.483	0.427

Table 167 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference
2030	0.916	1.014	0.099	-0.455	-0.455	0.000	0.050	0.050	0.000	0.098	0.098	0.000
2031	0.821	0.913	0.091	0.030	0.127	0.097	0.040	0.040	0.000	0.092	0.092	0.000
2032	0.719	0.804	0.085	-0.025	0.066	0.090	0.029	0.029	0.000	0.085	0.085	0.000
2033	0.622	0.978	0.356	-0.082	0.717	0.799	0.018	0.022	0.004	0.079	0.084	0.005
2034	0.525	0.851	0.326	-0.139	0.618	0.757	0.007	0.011	0.004	0.078	0.083	0.005
2035	0.452	0.839	0.388	-0.194	0.526	0.720	-0.003	0.000	0.003	0.072	0.077	0.005
2036	0.370	0.733	0.363	-0.244	0.451	0.695	-0.013	-0.010	0.003	0.067	0.072	0.005
2037	0.336	0.689	0.353	-0.269	0.415	0.685	-0.017	-0.014	0.003	0.065	0.070	0.005
2038	0.301	0.648	0.347	-0.295	0.380	0.676	0.007	0.008	0.001	0.093	0.093	0.000

Table 168 - Regulatory Costs (\$b) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference
2030	0.696	0.696	0.000	1.305	1.403	0.099
2031	0.388	0.388	0.000	1.371	1.559	0.188
2032	0.306	0.306	0.000	1.115	1.290	0.175
2033	0.223	0.222	-0.001	0.859	2.022	1.163
2034	0.143	0.142	-0.001	0.614	1.705	1.091
2035	0.066	0.066	0.000	0.392	1.508	1.116
2036	-0.001	-0.001	0.000	0.179	1.245	1.066
2037	-0.019	-0.017	0.001	0.096	1.143	1.047
2038	-0.051	-0.049	0.001	0.055	1.080	1.024

Vehicle Price Increases

Table 169 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference
2030	2,287	2,379	92	-1,345	-1,345	0	1,576	1,576	0	5,224	5,223	-1
2031	2,051	2,136	86	88	11	-77	1,254	1,252	-2	4,907	4,903	-3
2032	1,792	1,874	82	-72	-143	-71	908	907	-1	4,545	4,542	-3
2033	1,548	1,624	76	-243	-308	-64	555	554	0	4,190	4,187	-3
2034	1,302	1,370	69	-407	-465	-58	216	219	2	4,123	4,123	0
2035	1,107	1,166	59	-564	-616	-53	-107	-106	2	3,769	3,770	1
2036	898	951	53	-700	-747	-48	-392	-391	1	3,466	3,466	0
2037	805	855	51	-765	-762	3	-516	-515	1	3,336	3,336	0
2038	713	762	48	-828	-826	2	211	211	0	4,719	4,720	0

Table 170 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV4	Difference	No Action Alternative (Baseline)	Alternative HDPUV4	Difference
2030	2,890	2,890	0	1,267	1,303	36
2031	1,609	1,611	2	1,330	1,339	8
2032	1,269	1,270	1	1,080	1,089	9
2033	921	922	1	831	839	8
2034	588	589	1	592	599	8
2035	270	270	1	374	379	6
2036	-5	-5	1	169	174	5
2037	-74	-70	4	89	111	21
2038	-199	-195	3	51	71	20

Table 171 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference
2030	2,287	2,209	-78	-1,345	-1,345	0	1,576	1,576	0	5,224	5,223	-1
2031	2,051	1,979	-72	88	88	0	1,254	1,252	-2	4,907	4,903	-4
2032	1,792	1,731	-61	-72	-72	0	908	907	-1	4,545	4,542	-3
2033	1,548	1,495	-54	-243	590	833	555	552	-3	4,190	4,185	-5
2034	1,302	1,254	-47	-407	382	789	216	218	1	4,123	4,123	0
2035	1,107	1,111	4	-564	182	746	-107	-105	2	3,769	3,770	1
2036	898	901	4	-700	15	714	-392	-391	1	3,466	3,466	0
2037	805	808	3	-765	-66	698	-516	-516	0	3,336	3,336	1
2038	713	717	4	-828	-147	682	211	211	0	4,719	4,720	1

Table 172 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV108	Difference	No Action Alternative (Baseline)	Alternative HDPUV108	Difference
2030	2,890	2,890	1	1,267	1,237	-30
2031	1,609	1,612	2	1,330	1,303	-27
2032	1,269	1,271	2	1,080	1,057	-23
2033	921	922	2	831	1,083	253
2034	588	590	1	592	833	241
2035	270	271	1	374	620	247
2036	-5	-5	1	169	405	236
2037	-74	-69	5	89	321	232
2038	-199	-194	5	51	277	226

Table 173 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference
2030	2,287	2,209	-78	-1,345	-1,345	0	1,576	1,576	0	5,224	5,223	-1
2031	2,051	1,979	-72	88	90	1	1,254	1,252	-2	4,907	4,903	-4
2032	1,792	1,731	-61	-72	-71	1	908	907	-1	4,545	4,542	-3
2033	1,548	1,687	139	-243	962	1,206	555	552	-2	4,190	4,186	-4
2034	1,302	1,429	128	-407	738	1,145	216	217	1	4,123	4,123	0
2035	1,107	1,313	205	-564	522	1,086	-107	-107	0	3,769	3,770	1
2036	898	1,086	188	-700	342	1,041	-392	-391	1	3,466	3,467	0
2037	805	985	180	-765	254	1,018	-516	-516	0	3,336	3,337	1
2038	713	886	173	-828	167	995	211	211	0	4,719	4,720	1

Table 174 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV10	Difference	No Action Alternative (Baseline)	Alternative HDPUV10	Difference
2030	2,890	2,890	1	1,267	1,237	-30
2031	1,609	1,612	2	1,330	1,304	-27
2032	1,269	1,271	2	1,080	1,057	-23
2033	921	922	2	831	1,281	450
2034	588	590	1	592	1,017	426
2035	270	271	1	374	810	436
2036	-5	-4	1	169	584	415
2037	-74	-73	1	89	494	405
2038	-199	-198	1	51	445	394

Table 175 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14												
Model Year	Ford			GM			Mercedes-Benz			Nissan		
	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference
2030	2,287	2,533	246	-1,345	-1,345	0	1,576	1,576	0	5,224	5,223	-1
2031	2,051	2,279	229	88	375	287	1,254	1,251	-3	4,907	4,902	-5
2032	1,792	2,005	213	-72	194	266	908	906	-2	4,545	4,540	-5
2033	1,548	2,446	898	-243	2,125	2,368	555	692	137	4,190	4,493	303
2034	1,302	2,118	817	-407	1,824	2,231	216	339	122	4,123	4,414	291
2035	1,107	2,068	960	-564	1,535	2,099	-107	-1	106	3,769	4,047	277
2036	898	1,783	886	-700	1,299	1,999	-392	-298	94	3,466	3,732	265
2037	805	1,657	852	-765	1,183	1,948	-516	-427	88	3,336	3,595	259
2038	713	1,539	826	-828	1,069	1,898	211	250	38	4,719	4,720	1

Table 176 - Comparison of Average Vehicle Price Increase (dollars) for HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Model Year	Stellantis			Total		
	No Action Alternative (Baseline)	Alternative HDPUV14	Difference	No Action Alternative (Baseline)	Alternative HDPUV14	Difference
2030	2,890	2,891	1	1,267	1,363	96
2031	1,609	1,610	0	1,330	1,514	183
2032	1,269	1,269	1	1,080	1,250	170
2033	921	922	1	831	1,967	1,136
2034	588	589	1	592	1,651	1,059
2035	270	270	1	374	1,444	1,071
2036	-5	-5	1	169	1,177	1,008
2037	-74	-69	5	89	1,069	979
2038	-199	-194	5	51	997	946

Technology Costs, Price Increase, Sales, and Labor Utilization

Table 177 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent
2030	1	1	0	3%	1,267	1,303	36	3%	1,030	1,030	0	0.0%	32	32	-0.001	0.0%
2031	1	1	0	1%	1,330	1,339	8	1%	1,030	1,030	0	0.0%	32	32	0.000	0.0%
2032	1	1	0	1%	1,080	1,089	9	1%	1,032	1,032	0	0.0%	32	32	0.000	0.0%
2033	1	1	0	1%	831	839	8	1%	1,034	1,033	0	0.0%	32	32	-0.001	0.0%
2034	1	1	0	1%	592	599	8	1%	1,038	1,038	0	0.0%	33	33	-0.001	0.0%
2035	0	0	0	2%	374	379	6	2%	1,049	1,049	0	0.0%	33	33	0.000	0.0%
2036	0	0	0	3%	169	174	5	3%	1,062	1,062	0	0.0%	33	33	0.000	0.0%
2037	0	0	0	24%	89	111	21	24%	1,073	1,073	0	0.0%	34	34	-0.001	0.0%
2038	0	0	0	40%	51	71	20	40%	1,086	1,086	0	0.0%	34	34	-0.001	0.0%

Table 178 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
Model Year	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent
2030	1	1	0	-2%	1,267	1,237	-30	-2%	1,030	1,030	1,030	0	32	32	0.000	0.0%
2031	1	1	0	-2%	1,330	1,303	-27	-2%	1,030	1,030	1,030	0	32	32	0.000	0.0%
2032	1	1	0	-2%	1,080	1,057	-23	-2%	1,032	1,032	1,032	0	32	32	0.000	0.0%
2033	1	1	0	30%	831	1,083	253	30%	1,034	1,034	1,032	-1	32	32	-0.042	-0.1%
2034	1	1	0	41%	592	833	241	41%	1,038	1,038	1,037	-1	33	33	-0.043	-0.1%
2035	0	1	0	66%	374	620	247	66%	1,049	1,049	1,048	-1	33	33	-0.041	-0.1%
2036	0	0	0	140%	169	405	236	140%	1,062	1,062	1,061	-1	33	33	-0.038	-0.1%
2037	0	0	0	259%	89	321	232	260%	1,073	1,073	1,072	-1	34	34	-0.037	-0.1%
2038	0	0	0	443%	51	277	226	444%	1,086	1,086	1,085	-1	34	34	-0.036	-0.1%

Table 179 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent
2030	1	1	0	-2%	1,267	1,237	-30	-2%	1,030	1,030	0	0.0%	32	32	0.000	0.0%
2031	1	1	0	-2%	1,330	1,304	-27	-2%	1,030	1,030	0	0.0%	32	32	0.000	0.0%
2032	1	1	0	-2%	1,080	1,057	-23	-2%	1,032	1,032	0	0.0%	32	32	0.000	0.0%
2033	1	1	0	54%	831	1,281	450	54%	1,034	1,031	-2	-0.2%	32	32	-0.071	-0.2%
2034	1	1	0	72%	592	1,017	426	72%	1,038	1,036	-2	-0.2%	33	33	-0.070	-0.2%
2035	0	1	0	116%	374	810	436	117%	1,049	1,047	-2	-0.2%	33	33	-0.067	-0.2%
2036	0	1	0	246%	169	584	415	246%	1,062	1,060	-2	-0.2%	33	33	-0.061	-0.2%
2037	0	1	0	453%	89	494	405	454%	1,073	1,072	-2	-0.2%	34	34	-0.059	-0.2%
2038	0	0	0	771%	51	445	394	773%	1,086	1,085	-2	-0.2%	34	34	-0.056	-0.2%

Table 180 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
Model Year	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent
2030	1	1	0	8%	1,267	1,363	96	8%	1,030	1,030	0	0.0%	32	32	-0.004	0.0%
2031	1	2	0	14%	1,330	1,514	183	14%	1,030	1,030	0	0.0%	32	32	-0.013	0.0%
2032	1	1	0	16%	1,080	1,250	170	16%	1,032	1,032	0	0.0%	32	32	-0.012	0.0%
2033	1	2	1	135%	831	1,967	1,136	137%	1,034	1,028	-6	-0.6%	32	32	-0.180	-0.6%
2034	1	2	1	178%	592	1,651	1,059	179%	1,038	1,033	-5	-0.5%	33	32	-0.163	-0.5%
2035	0	2	1	285%	374	1,444	1,071	287%	1,049	1,044	-5	-0.5%	33	33	-0.154	-0.5%
2036	0	1	1	595%	169	1,177	1,008	598%	1,062	1,058	-4	-0.4%	33	33	-0.133	-0.4%
2037	0	1	1	1093%	89	1,069	979	1098%	1,073	1,069	-4	-0.4%	34	34	-0.126	-0.4%
2038	0	1	1	1849%	51	997	946	1856%	1,086	1,083	-4	-0.3%	34	34	-0.118	-0.3%

Table 181 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent
2030	1	1	0	4%	2,287	2,379	92	4%	400	400	0	0.0%	5	5	0.000	0.0%
2031	1	1	0	4%	2,051	2,136	86	4%	401	401	0	0.0%	5	5	0.000	0.0%
2032	1	1	0	5%	1,792	1,874	82	5%	401	401	0	0.0%	5	5	0.000	0.0%
2033	1	1	0	5%	1,548	1,624	76	5%	402	402	0	0.0%	5	5	0.000	0.0%
2034	1	1	0	5%	1,302	1,370	69	5%	404	404	0	0.0%	5	5	0.000	0.0%
2035	0	0	0	5%	1,107	1,166	59	5%	408	408	0	0.0%	5	5	0.000	0.0%
2036	0	0	0	6%	898	951	53	6%	413	413	0	0.0%	5	5	0.000	0.0%
2037	0	0	0	6%	805	855	51	6%	417	417	0	0.0%	5	5	0.000	0.0%
2038	0	0	0	7%	713	762	48	7%	422	422	0	0.0%	5	5	0.000	0.0%

Table 182 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent
2030	0	0	0	0%	-1,345	-1,345	0	0%	338	338	0	0.0%	24	24	0.000	0.0%
2031	0	0	0	-88%	88	11	-77	-88%	338	338	0	0.0%	24	24	0.000	0.0%
2032	0	0	0	0%	-72	-143	-71	0%	339	339	0	0.0%	24	24	0.000	0.0%
2033	0	0	0	0%	-243	-308	-64	0%	339	339	0	0.0%	24	24	-0.001	0.0%
2034	0	0	0	0%	-407	-465	-58	0%	341	341	0	0.0%	24	24	-0.001	0.0%
2035	0	0	0	0%	-564	-616	-53	0%	344	344	0	0.0%	24	24	0.000	0.0%
2036	0	0	0	0%	-700	-747	-48	0%	349	349	0	0.0%	24	24	0.000	0.0%
2037	0	0	0	0%	-765	-762	3	0%	352	352	0	0.0%	25	25	-0.001	0.0%
2038	0	0	0	0%	-828	-826	2	0%	357	357	0	0.0%	25	25	-0.001	0.0%

Table 183 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent
2030	0	0	0	0%	1,576	1,576	0	0%	32	32	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	1,254	1,252	-2	0%	32	32	0	0.0%	0	0	0.000	0.0%
2032	0	0	0	0%	908	907	-1	0%	32	32	0	0.0%	0	0	0.000	0.0%
2033	0	0	0	0%	555	554	0	0%	32	32	0	0.0%	0	0	0.000	0.0%
2034	0	0	0	1%	216	219	2	1%	32	32	0	0.0%	0	0	0.000	0.0%
2035	0	0	0	0%	-107	-106	2	0%	32	32	0	0.0%	0	0	0.000	0.0%
2036	0	0	0	0%	-392	-391	1	0%	33	33	0	0.0%	0	0	0.000	0.0%
2037	0	0	0	0%	-516	-515	1	0%	33	33	0	0.0%	0	0	0.000	0.0%
2038	0	0	0	0%	211	211	0	0%	34	34	0	0.0%	0	0	0.000	0.0%

Table 184 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent
2030	0	0	0	0%	5,224	5,223	-1	0%	19	19	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	4,907	4,903	-3	0%	19	19	0	0.0%	0	0	0.000	0.0%
2032	0	0	0	0%	4,545	4,542	-3	0%	19	19	0	0.0%	0	0	0.000	0.0%
2033	0	0	0	0%	4,190	4,187	-3	0%	19	19	0	0.0%	0	0	0.000	0.0%
2034	0	0	0	0%	4,123	4,123	0	0%	19	19	0	0.0%	0	0	0.000	0.0%
2035	0	0	0	0%	3,769	3,770	1	0%	19	19	0	0.0%	0	0	0.000	0.0%
2036	0	0	0	0%	3,466	3,466	0	0%	19	19	0	0.0%	0	0	0.000	0.0%
2037	0	0	0	0%	3,336	3,336	0	0%	19	19	0	0.0%	0	0	0.000	0.0%
2038	0	0	0	0%	4,719	4,720	0	0%	20	20	0	0.0%	0	0	0.000	0.0%

Table 185 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV4																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV4	Absolute	Percent
2030	1	1	0	0%	2,890	2,890	0	0%	241	241	0	0.0%	3	3	0.000	0.0%
2031	0	0	0	0%	1,609	1,611	2	0%	241	241	0	0.0%	3	3	0.000	0.0%
2032	0	0	0	0%	1,269	1,270	1	0%	242	242	0	0.0%	3	3	0.000	0.0%
2033	0	0	0	0%	921	922	1	0%	242	242	0	0.0%	3	3	0.000	0.0%
2034	0	0	0	0%	588	589	1	0%	243	243	0	0.0%	3	3	0.000	0.0%
2035	0	0	0	0%	270	270	1	0%	245	245	0	0.0%	3	3	0.000	0.0%
2036	0	0	0	0%	-5	-5	1	0%	248	248	0	0.0%	3	3	0.000	0.0%
2037	0	0	0	0%	-74	-70	4	0%	251	251	0	0.0%	3	3	0.000	0.0%
2038	0	0	0	0%	-199	-195	3	0%	254	254	0	0.0%	3	3	0.000	0.0%

Table 186 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent
2030	1	1	0	-3%	2,287	2,209	-78	-3%	400	400	0	0.0%	5	5	0.000	0.0%
2031	1	1	0	-3%	2,051	1,979	-72	-3%	401	401	0	0.0%	5	5	0.000	0.0%
2032	1	1	0	-3%	1,792	1,731	-61	-3%	401	401	0	0.0%	5	5	0.000	0.0%
2033	1	1	0	-4%	1,548	1,495	-54	-3%	402	401	0	-0.1%	5	5	-0.006	-0.1%
2034	1	1	0	-4%	1,302	1,254	-47	-4%	404	403	-1	-0.1%	5	5	-0.006	-0.1%
2035	0	0	0	0%	1,107	1,111	4	0%	408	407	0	-0.1%	5	5	-0.006	-0.1%
2036	0	0	0	0%	898	901	4	0%	413	412	0	-0.1%	5	5	-0.005	-0.1%
2037	0	0	0	0%	805	808	3	0%	417	417	0	-0.1%	5	5	-0.005	-0.1%
2038	0	0	0	0%	713	717	4	1%	422	422	0	-0.1%	5	5	-0.005	-0.1%

Table 187 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
Model Year	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent
2030	0	0	0	0%	-1,345	-1,345	0	0%	338	338	0	0.0%	24	24	0.000	0.0%
2031	0	0	0	0%	88	88	0	0%	338	338	0	0.0%	24	24	0.000	0.0%
2032	0	0	0	0%	-72	-72	0	0%	339	339	0	0.0%	24	24	0.000	0.0%
2033	0	0	0	0%	-243	590	833	0%	339	339	0	-0.1%	24	24	-0.031	-0.1%
2034	0	0	0	0%	-407	382	789	0%	341	340	0	-0.1%	24	24	-0.032	-0.1%
2035	0	0	0	0%	-564	182	746	0%	344	344	0	-0.1%	24	24	-0.031	-0.1%
2036	0	0	0	0%	-700	15	714	0%	349	348	0	-0.1%	24	24	-0.029	-0.1%
2037	0	0	0	0%	-765	-66	698	0%	352	352	0	-0.1%	25	25	-0.028	-0.1%
2038	0	0	0	0%	-828	-147	682	0%	357	356	0	-0.1%	25	25	-0.027	-0.1%

Table 188 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent
2030	0	0	0	0%	1,576	1,576	0	0%	32	32	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	1,254	1,252	-2	0%	32	32	0	0.0%	0	0	0.000	0.0%
2032	0	0	0	0%	908	907	-1	0%	32	32	0	0.0%	0	0	0.000	0.0%
2033	0	0	0	-1%	555	552	-3	-1%	32	32	0	-0.1%	0	0	0.000	-0.1%
2034	0	0	0	0%	216	218	1	0%	32	32	0	-0.1%	0	0	0.000	-0.1%
2035	0	0	0	0%	-107	-105	2	0%	32	32	0	-0.1%	0	0	0.000	-0.1%
2036	0	0	0	0%	-392	-391	1	0%	33	33	0	-0.1%	0	0	0.000	-0.1%
2037	0	0	0	0%	-516	-516	0	0%	33	33	0	-0.1%	0	0	0.000	-0.1%
2038	0	0	0	0%	211	211	0	0%	34	33	0	-0.1%	0	0	0.000	-0.1%

Table 189 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent
2030	0	0	0	0%	5,224	5,223	-1	0%	19	19	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	4,907	4,903	-4	0%	19	19	0	0.0%	0	0	0.000	0.0%
2032	0	0	0	0%	4,545	4,542	-3	0%	19	19	0	0.0%	0	0	0.000	0.0%
2033	0	0	0	0%	4,190	4,185	-5	0%	19	19	0	-0.1%	0	0	0.000	-0.1%
2034	0	0	0	0%	4,123	4,123	0	0%	19	19	0	-0.1%	0	0	0.000	-0.1%
2035	0	0	0	0%	3,769	3,770	1	0%	19	19	0	-0.1%	0	0	0.000	-0.1%
2036	0	0	0	0%	3,466	3,466	0	0%	19	19	0	-0.1%	0	0	0.000	-0.1%
2037	0	0	0	0%	3,336	3,336	1	0%	19	19	0	-0.1%	0	0	0.000	-0.1%
2038	0	0	0	0%	4,719	4,720	1	0%	20	20	0	-0.1%	0	0	0.000	-0.1%

Table 190 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV108																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV108	Absolute	Percent
2030	1	1	0	0%	2,890	2,890	1	0%	241	241	0	0.0%	3	3	0.000	0.0%
2031	0	0	0	0%	1,609	1,612	2	0%	241	241	0	0.0%	3	3	0.000	0.0%
2032	0	0	0	0%	1,269	1,271	2	0%	242	242	0	0.0%	3	3	0.000	0.0%
2033	0	0	0	0%	921	922	2	0%	242	241	0	-0.1%	3	3	-0.004	-0.1%
2034	0	0	0	0%	588	590	1	0%	243	243	0	-0.1%	3	3	-0.004	-0.1%
2035	0	0	0	0%	270	271	1	0%	245	245	0	-0.1%	3	3	-0.004	-0.1%
2036	0	0	0	0%	-5	-5	1	0%	248	248	0	-0.1%	3	3	-0.004	-0.1%
2037	0	0	0	0%	-74	-69	5	0%	251	251	0	-0.1%	3	3	-0.004	-0.1%
2038	0	0	0	0%	-199	-194	5	0%	254	254	0	-0.1%	3	3	-0.003	-0.1%

Table 191 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent
2030	1	1	0	-3%	2,287	2,209	-78	-3%	400	400	0	0.0%	5	5	0.000	0.0%
2031	1	1	0	-3%	2,051	1,979	-72	-3%	401	401	0	0.0%	5	5	0.000	0.0%
2032	1	1	0	-3%	1,792	1,731	-61	-3%	401	401	0	0.0%	5	5	0.000	0.0%
2033	1	1	0	9%	1,548	1,687	139	9%	402	401	-1	-0.2%	5	5	-0.011	-0.2%
2034	1	1	0	10%	1,302	1,429	128	10%	404	403	-1	-0.2%	5	5	-0.010	-0.2%
2035	0	1	0	18%	1,107	1,313	205	19%	408	407	-1	-0.2%	5	5	-0.010	-0.2%
2036	0	0	0	21%	898	1,086	188	21%	413	412	-1	-0.2%	5	5	-0.009	-0.2%
2037	0	0	0	22%	805	985	180	22%	417	417	-1	-0.2%	5	5	-0.008	-0.2%
2038	0	0	0	24%	713	886	173	24%	422	422	-1	-0.1%	5	5	-0.008	-0.1%

Table 192 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent
2030	0	0	0	0%	-1,345	-1,345	0	0%	338	338	0	0.0%	24	24	0.000	0.0%
2031	0	0	0	1%	88	90	1	1%	338	338	0	0.0%	24	24	0.000	0.0%
2032	0	0	0	0%	-72	-71	1	0%	339	339	0	0.0%	24	24	0.000	0.0%
2033	0	0	0	0%	-243	962	1,206	0%	339	339	-1	-0.2%	24	24	-0.053	-0.2%
2034	0	0	0	0%	-407	738	1,145	0%	341	340	-1	-0.2%	24	24	-0.052	-0.2%
2035	0	0	0	0%	-564	522	1,086	0%	344	344	-1	-0.2%	24	24	-0.049	-0.2%
2036	0	0	0	0%	-700	342	1,041	0%	349	348	-1	-0.2%	24	24	-0.045	-0.2%
2037	0	0	0	0%	-765	254	1,018	0%	352	352	-1	-0.2%	25	25	-0.044	-0.2%
2038	0	0	0	0%	-828	167	995	0%	357	356	-1	-0.2%	25	25	-0.042	-0.2%

Table 193 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent
2030	0	0	0	0%	1,576	1,576	0	0%	32	32	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	1,254	1,252	-2	0%	32	32	0	0.0%	0	0	0.000	0.0%
2032	0	0	0	0%	908	907	-1	0%	32	32	0	0.0%	0	0	0.000	0.0%
2033	0	0	0	-1%	555	552	-2	0%	32	32	0	-0.2%	0	0	-0.001	-0.2%
2034	0	0	0	0%	216	217	1	0%	32	32	0	-0.2%	0	0	-0.001	-0.2%
2035	0	0	0	0%	-107	-107	0	0%	32	32	0	-0.2%	0	0	-0.001	-0.2%
2036	0	0	0	0%	-392	-391	1	0%	33	33	0	-0.2%	0	0	-0.001	-0.2%
2037	0	0	0	0%	-516	-516	0	0%	33	33	0	-0.2%	0	0	-0.001	-0.2%
2038	0	0	0	0%	211	211	0	0%	34	33	0	-0.2%	0	0	-0.001	-0.2%

Table 194 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent
2030	0	0	0	0%	5,224	5,223	-1	0%	19	19	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	4,907	4,903	-4	0%	19	19	0	0.0%	0	0	0.000	0.0%
2032	0	0	0	0%	4,545	4,542	-3	0%	19	19	0	0.0%	0	0	0.000	0.0%
2033	0	0	0	0%	4,190	4,186	-4	0%	19	19	0	-0.2%	0	0	-0.001	-0.2%
2034	0	0	0	0%	4,123	4,123	0	0%	19	19	0	-0.2%	0	0	-0.001	-0.2%
2035	0	0	0	0%	3,769	3,770	1	0%	19	19	0	-0.2%	0	0	0.000	-0.1%
2036	0	0	0	0%	3,466	3,467	0	0%	19	19	0	-0.2%	0	0	0.000	-0.1%
2037	0	0	0	0%	3,336	3,337	1	0%	19	19	0	-0.2%	0	0	0.000	-0.1%
2038	0	0	0	0%	4,719	4,720	1	0%	20	20	0	-0.2%	0	0	0.000	-0.1%

Table 195 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV10																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV10	Absolute	Percent
2030	1	1	0	0%	2,890	2,890	1	0%	241	241	0	0.0%	3	3	0.000	0.0%
2031	0	0	0	0%	1,609	1,612	2	0%	241	241	0	0.0%	3	3	0.000	0.0%
2032	0	0	0	0%	1,269	1,271	2	0%	242	242	0	0.0%	3	3	0.000	0.0%
2033	0	0	0	0%	921	922	2	0%	242	241	-1	-0.2%	3	3	-0.007	-0.2%
2034	0	0	0	0%	588	590	1	0%	243	242	-1	-0.2%	3	3	-0.007	-0.2%
2035	0	0	0	0%	270	271	1	0%	245	245	-1	-0.2%	3	3	-0.006	-0.2%
2036	0	0	0	0%	-5	-4	1	0%	248	248	0	-0.2%	3	3	-0.006	-0.2%
2037	0	0	0	0%	-74	-73	1	0%	251	251	0	-0.2%	3	3	-0.006	-0.2%
2038	0	0	0	0%	-199	-198	1	0%	254	254	0	-0.2%	3	3	-0.005	-0.2%

Table 196 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent
2030	1	1	0	11%	2,287	2,533	246	11%	400	400	0	0.0%	5	5	-0.001	0.0%
2031	1	1	0	11%	2,051	2,279	229	11%	401	400	0	0.0%	5	5	-0.002	0.0%
2032	1	1	0	12%	1,792	2,005	213	12%	401	401	0	0.0%	5	5	-0.002	0.0%
2033	1	1	0	57%	1,548	2,446	898	58%	402	400	-2	-0.5%	5	5	-0.027	-0.5%
2034	1	1	0	62%	1,302	2,118	817	63%	404	402	-2	-0.5%	5	5	-0.024	-0.5%
2035	0	1	0	86%	1,107	2,068	960	87%	408	406	-2	-0.5%	5	5	-0.023	-0.5%
2036	0	1	0	98%	898	1,783	886	99%	413	411	-2	-0.4%	5	5	-0.019	-0.4%
2037	0	1	0	105%	805	1,657	852	106%	417	416	-1	-0.4%	5	5	-0.018	-0.4%
2038	0	1	0	115%	713	1,539	826	116%	422	421	-1	-0.3%	5	5	-0.017	-0.3%

Table 197 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14																
Model Year	Technology Costs Increase (\$)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent
2030	0	0	0	0%	-1,345	-1,345	0	0%	338	338	0	0.0%	24	24	-0.003	0.0%
2031	0	0	0	325%	88	375	287	325%	338	338	0	0.0%	24	24	-0.009	0.0%
2032	0	0	0	0%	-72	194	266	0%	339	339	0	0.0%	24	24	-0.009	0.0%
2033	0	1	1	0%	-243	2,125	2,368	0%	339	337	-2	-0.6%	24	24	-0.132	-0.6%
2034	0	1	1	0%	-407	1,824	2,231	0%	341	339	-2	-0.5%	24	24	-0.120	-0.5%
2035	0	1	1	0%	-564	1,535	2,099	0%	344	343	-2	-0.5%	24	24	-0.113	-0.5%
2036	0	0	1	0%	-700	1,299	1,999	0%	349	347	-1	-0.4%	24	24	-0.099	-0.4%
2037	0	0	1	0%	-765	1,183	1,948	0%	352	351	-1	-0.4%	25	25	-0.093	-0.4%
2038	0	0	1	0%	-828	1,069	1,898	0%	357	355	-1	-0.4%	25	25	-0.087	-0.3%

Table 198 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent
2030	0	0	0	0%	1,576	1,576	0	0%	338	338	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	1,254	1,251	-3	0%	338	338	0	0.0%	0	0	0.000	-0.1%
2032	0	0	0	0%	908	906	-2	0%	339	339	0	0.0%	0	0	0.000	-0.1%
2033	0	0	0	24%	555	692	137	25%	339	337	-2	-0.6%	0	0	-0.002	-0.6%
2034	0	0	0	56%	216	339	122	57%	341	339	-2	-0.5%	0	0	-0.002	-0.5%
2035	0	0	0	0%	-107	-1	106	0%	344	343	-2	-0.5%	0	0	-0.002	-0.5%
2036	0	0	0	0%	-392	-298	94	0%	349	347	-1	-0.4%	0	0	-0.002	-0.4%
2037	0	0	0	0%	-516	-427	88	0%	352	351	-1	-0.4%	0	0	-0.002	-0.4%
2038	0	0	0	18%	211	250	38	18%	357	355	-1	-0.4%	0	0	-0.001	-0.3%

Table 199 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent
2030	0	0	0	0%	5,224	5,223	-1	0%	19	19	0	0.0%	0	0	0.000	0.0%
2031	0	0	0	0%	4,907	4,902	-5	0%	19	19	0	0.0%	0	0	0.000	0.0%
2032	0	0	0	0%	4,545	4,540	-5	0%	19	19	0	0.0%	0	0	0.000	0.0%
2033	0	0	0	7%	4,190	4,493	303	7%	19	19	0	-0.5%	0	0	-0.002	-0.5%
2034	0	0	0	7%	4,123	4,414	291	7%	19	19	0	-0.5%	0	0	-0.001	-0.4%
2035	0	0	0	7%	3,769	4,047	277	7%	19	19	0	-0.4%	0	0	-0.001	-0.4%
2036	0	0	0	7%	3,466	3,732	265	8%	19	19	0	-0.4%	0	0	-0.001	-0.3%
2037	0	0	0	7%	3,336	3,595	259	8%	19	19	0	-0.4%	0	0	-0.001	-0.3%
2038	0	0	0	0%	4,719	4,720	1	0%	20	20	0	-0.3%	0	0	-0.001	-0.3%

Table 200 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) HDPUV Fleet Between No Action Alternative (Baseline) and Alternative HDPUV14																
Model Year	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (thousands vehicles)				Labor (person years)			
	Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative		Standards		Change from Alternative	
	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent	No Action Alternative (Baseline)	Alternative HDPUV14	Absolute	Percent
2030	1	1	0	0%	2,890	2,891	1	0%	241	241	0	0.0%	3	3	-0.001	0.0%
2031	0	0	0	0%	1,609	1,610	0	0%	241	241	0	0.0%	3	3	-0.001	0.0%
2032	0	0	0	0%	1,269	1,269	1	0%	242	241	0	0.0%	3	3	-0.001	0.0%
2033	0	0	0	0%	921	922	1	0%	242	240	-1	-0.6%	3	3	-0.017	-0.6%
2034	0	0	0	0%	588	589	1	0%	243	242	-1	-0.5%	3	3	-0.015	-0.5%
2035	0	0	0	0%	270	270	1	0%	245	244	-1	-0.5%	3	3	-0.014	-0.5%
2036	0	0	0	0%	-5	-5	1	0%	248	247	-1	-0.4%	3	3	-0.013	-0.4%
2037	0	0	0	0%	-74	-69	5	0%	251	250	-1	-0.4%	3	3	-0.012	-0.4%
2038	0	0	0	0%	-199	-194	5	0%	254	253	-1	-0.4%	3	3	-0.011	-0.4%

FE Compliance Credits

Table 201 - FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for No Action Alternative (Baseline)

FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for No Action Alternative (Baseline)									
Manufacturer	2030	2031	2032	2033	2034	2035	2036	2037	2038
Ford	1,221	1,222	1,224	1,232	1,238	1,271	1,287	1,301	1,316
GM	563	930	932	933	937	947	958	969	981
Mercedes-Benz	120	120	121	121	121	123	124	125	181
Nissan	63	63	63	63	69	70	70	71	114
Stellantis	498	1,197	1,200	1,201	1,207	1,219	1,234	1,264	1,280
Total	2,465	3,532	3,540	3,550	3,572	3,629	3,674	3,730	3,872

Table 202 - FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV4

FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV4									
Manufacturer	2030	2031	2032	2033	2034	2035	2036	2037	2038
Ford	1,133	1,023	919	825	730	662	670	677	685
GM	452	699	601	506	417	331	335	361	365
Mercedes-Benz	112	104	97	89	83	77	78	78	137
Nissan	58	54	49	45	47	44	44	45	89
Stellantis	429	1,051	984	919	859	807	817	843	854
Total	2,184	2,930	2,650	2,384	2,136	1,921	1,944	2,005	2,131

Table 203 - FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV108

FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV108									
Manufacturer	2030	2031	2032	2033	2034	2035	2036	2037	2038
Ford	910	650	417	255	100	3	3	3	3
GM	286	418	201	277	133	0	0	0	0
Mercedes-Benz	100	81	64	52	41	31	32	32	93
Nissan	51	40	31	24	24	18	18	18	65
Stellantis	325	843	693	584	486	397	402	426	431
Total	1,671	2,033	1,407	1,192	784	450	455	479	591

Table 204 - FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV10

FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV10									
Manufacturer	2030	2031	2032	2033	2034	2035	2036	2037	2038
Ford	910	650	417	295	106	0	0	0	0
GM	286	418	201	335	160	0	0	0	0
Mercedes-Benz	100	81	64	49	36	24	24	24	85
Nissan	51	40	31	22	20	14	14	14	61
Stellantis	325	843	693	557	436	329	333	355	359
Total	1,671	2,033	1,407	1,258	758	366	370	392	505

Table 205 - FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV14

FE Compliance Credits (in millions) Earned by Manufacturers, HDPUV Fleet by Model Year for Alternative HDPUV14									
Manufacturer	2030	2031	2032	2033	2034	2035	2036	2037	2038
Ford	885	539	243	297	83	0	0	0	1
GM	175	298	20	381	177	0	0	0	0
Mercedes-Benz	91	66	45	31	15	1	1	1	61
Nissan	46	32	20	13	10	2	2	2	46
Stellantis	255	711	519	351	210	87	88	110	111
Total	1,453	1,646	846	1,073	494	91	92	113	219

Consumer Impacts

Table 206 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, No Action Alternative (Baseline) at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, No Action Alternative (Baseline) at a 3% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	0	0	0	0	0	0	0	0	0
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	0	0	0	0	0	0
Increase in Taxes/Fees	0	0	0	0	0	0	0	0	0
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	0	0	0	0	0	0	0	0	0
Fuel Savings	0	0	0	0	0	0	0	0	0
Mobility Benefit	0	0	0	0	0	0	0	0	0
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	0	0	0	0	0	0	0	0	0
Total Consumer Benefit	0	0	0	0	0	0	0	0	0
Net Consumer Benefit	0	0	0	0	0	0	0	0	0
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 207 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, No Action Alternative (Baseline) at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, No Action Alternative (Baseline) at a 7% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	0	0	0	0	0	0	0	0	0
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	0	0	0	0	0	0
Increase in Taxes/Fees	0	0	0	0	0	0	0	0	0
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	0	0	0	0	0	0	0	0	0
Fuel Savings	0	0	0	0	0	0	0	0	0
Mobility Benefit	0	0	0	0	0	0	0	0	0
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	0	0	0	0	0	0	0	0	0
Total Consumer Benefit	0	0	0	0	0	0	0	0	0
Net Consumer Benefit	0	0	0	0	0	0	0	0	0
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 208 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV4 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV4 at a 3% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	36	8	9	8	8	6	5	21	20
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	3	1	1	1	1	1	0	2	2
Increase in Taxes/Fees	2	0	0	0	0	0	0	1	1
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	41	9	10	10	9	7	6	25	23
Fuel Savings	-97	-29	-31	-32	-33	-27	-28	-103	-103
Mobility Benefit	1	0	0	0	0	0	0	1	1
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	57	20	20	20	20	17	17	56	56
Total Consumer Benefit	59	13	15	12	13	10	10	48	49
Net Consumer Benefit	18	4	5	2	4	3	4	24	25
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 209 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV4 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV4 at a 7% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	36	8	9	8	8	6	5	21	20
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	3	1	1	1	1	0	0	2	2
Increase in Taxes/Fees	2	0	0	0	0	0	0	1	1
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	41	9	10	10	9	7	6	24	23
Fuel Savings	-75	-22	-24	-25	-25	-21	-21	-80	-80
Mobility Benefit	1	0	0	0	0	0	0	1	1
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	44	16	16	16	16	14	14	44	44
Total Consumer Benefit	50	11	13	9	10	8	8	37	37
Net Consumer Benefit	9	2	3	-1	1	1	2	13	14
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 210 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV108 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV108 at a 3% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	-30	-27	-23	253	241	247	236	232	226
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	-3	-3	-2	24	23	23	22	22	21
Increase in Taxes/Fees	-2	-1	-1	14	13	13	13	13	12
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	-35	-31	-27	290	277	283	271	266	260
Fuel Savings	82	80	77	-625	-630	-711	-713	-714	-717
Mobility Benefit	-1	-1	-1	14	14	15	16	16	16
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	-48	-44	-43	-83	-83	-38	-38	-44	-44
Total Consumer Benefit	-50	-50	-45	723	728	764	767	774	776
Net Consumer Benefit	-16	-18	-18	432	451	481	495	508	517
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 211 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV108 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV108 at a 7% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	-30	-27	-23	253	241	247	236	232	226
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	-2	-2	-2	20	19	19	18	18	18
Increase in Taxes/Fees	-2	-1	-1	14	13	13	13	13	12
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	-34	-31	-26	286	273	280	268	263	256
Fuel Savings	64	62	60	-483	-486	-548	-550	-551	-552
Mobility Benefit	-1	-1	-1	11	11	12	12	12	12
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	-37	-34	-34	-65	-64	-30	-30	-34	-34
Total Consumer Benefit	-42	-41	-37	558	562	590	592	597	599
Net Consumer Benefit	-8	-10	-11	272	289	310	324	334	342
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 212 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV10 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV10 at a 3% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	-30	-27	-23	450	426	436	415	405	394
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	-3	-3	-2	42	40	41	39	38	37
Increase in Taxes/Fees	-2	-1	-1	25	23	24	23	22	21
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	-35	-31	-26	517	489	502	477	465	453
Fuel Savings	83	79	76	-1,210	-1,217	-1,357	-1,362	-1,362	-1,366
Mobility Benefit	-1	-1	-1	31	32	34	34	35	35
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	-48	-43	-43	27	26	97	98	93	93
Total Consumer Benefit	-51	-49	-44	1,214	1,222	1,294	1,299	1,304	1,308
Net Consumer Benefit	-16	-18	-18	697	733	792	821	839	855
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 213 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV10 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV10 at a 7% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	-30	-27	-23	450	426	436	415	405	394
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	-2	-2	-2	35	33	34	33	32	31
Increase in Taxes/Fees	-2	-1	-1	25	23	24	23	22	21
Lost Consumer Surplus	0	0	0	0	0	0	0	0	0
Total Consumer Cost	-34	-31	-26	510	483	495	471	459	447
Fuel Savings	64	62	59	-934	-939	-1,047	-1,051	-1,050	-1,052
Mobility Benefit	-1	-1	0	24	25	26	27	27	27
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	-37	-33	-33	21	21	76	76	72	72
Total Consumer Benefit	-43	-41	-37	938	943	998	1,001	1,005	1,008
Net Consumer Benefit	-9	-11	-11	428	461	503	531	546	561
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 214 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV14 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV14 at a 3% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	96	183	170	1,136	1,059	1,071	1,008	979	946
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	9	17	16	107	100	101	95	92	89
Increase in Taxes/Fees	5	10	9	62	58	58	55	53	52
Lost Consumer Surplus	0	0	0	2	1	1	1	1	1
Total Consumer Cost	110	210	196	1,307	1,218	1,231	1,159	1,126	1,088
Fuel Savings	-229	-446	-450	-3,234	-3,248	-3,512	-3,523	-3,533	-3,523
Mobility Benefit	1	4	4	54	54	65	66	67	68
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	137	244	243	616	613	612	612	611	600
Total Consumer Benefit	137	274	268	2,672	2,689	2,966	2,978	2,989	2,991
Net Consumer Benefit	27	64	72	1,364	1,471	1,734	1,819	1,863	1,903
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 215 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV14 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the HDPUV Fleet, Alternative HDPUV14 at a 7% Discount Rate (dollars), per Vehicle Model Year									
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038
Price Increase	96	183	170	1,136	1,059	1,071	1,008	979	946
Implicit Opportunity Cost	0	0	0	0	0	0	0	0	0
Increase in Financing Cost	0	0	0	0	0	0	0	0	0
Increase in Insurance Cost	8	14	13	89	83	84	79	77	74
Increase in Taxes/Fees	5	10	9	62	58	58	55	53	52
Lost Consumer Surplus	0	0	0	2	1	1	1	1	1
Total Consumer Cost	109	207	193	1,289	1,201	1,214	1,143	1,110	1,073
Fuel Savings	-176	-344	-347	-2,496	-2,506	-2,710	-2,718	-2,723	-2,714
Mobility Benefit	1	3	3	42	42	51	52	52	52
Reallocated Benefit	0	0	0	0	0	0	0	0	0
Refueling Benefit	107	190	189	479	477	475	475	475	466
Total Consumer Benefit	115	225	218	2,060	2,072	2,285	2,294	2,301	2,300
Net Consumer Benefit	6	18	25	770	870	1,071	1,151	1,190	1,227
Payback	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Environmental Impacts

Table 216 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2038 HDPUV Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2038 HDPUV Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fleetwide Change in Upstream Emissions				
CO Upstream	0.000	0.000	0.000	0.000
VOC Upstream	0.000	0.000	0.000	0.000
NOx Upstream	0.000	0.000	0.000	0.000
SO2 Upstream	0.000	0.000	0.000	0.000
PM Upstream	0.000	0.000	0.000	0.000
Fleetwide Change in Tailpipe Emissions				
CO Tailpipe	0.000	0.000	0.000	0.000
VOC Tailpipe	0.000	0.000	0.000	0.000
NOx Tailpipe	0.000	0.000	0.000	0.000
SO2 Tailpipe	0.000	0.000	0.000	0.000
PM Tailpipe	0.000	0.000	0.000	0.000
Fleetwide Change in Total Emissions				
CO Total	0.000	0.000	0.000	0.000
VOC Total	0.000	0.000	0.000	0.000
NOx Total	0.000	0.000	0.000	0.000
SO2 Total	0.000	0.000	0.000	0.000
PM Total	0.000	0.000	0.000	0.000

Table 217 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) Over Lifetimes of Vehicles Through 2038 for the Total Fleet, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) Over Lifetimes of Vehicles Through 2038 for the Total Fleet, by Alternative (1,000 metric tons)				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fleetwide Change in Upstream Emissions				
CO Upstream	0.000	0.000	0.000	0.000
VOC Upstream	0.000	0.000	0.000	0.000
NOx Upstream	0.000	0.000	0.000	0.000
SO2 Upstream	0.000	0.000	0.000	0.000
PM Upstream	0.000	0.000	0.000	0.000
Fleetwide Change in Tailpipe Emissions				
CO Tailpipe	0.000	0.000	0.000	0.000
VOC Tailpipe	0.000	0.000	0.000	0.000
NOx Tailpipe	0.000	0.000	0.000	0.000
SO2 Tailpipe	0.000	0.000	0.000	0.000
PM Tailpipe	0.000	0.000	0.000	0.000
Fleetwide Change in Total Emissions				
CO Total	0.000	0.000	0.000	0.000
VOC Total	0.000	0.000	0.000	0.000
NOx Total	0.000	0.000	0.000	0.000
SO2 Total	0.000	0.000	0.000	0.000
PM Total	0.000	0.000	0.000	0.000

Table 218 - Total Criteria Emissions from the MY 2038 HDPUV Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2038 HDPUV Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fleetwide Change in Upstream Emissions				
CO Upstream	0.674	0.673	0.671	0.673
VOC Upstream	2.061	1.968	1.872	1.533
NOx Upstream	1.223	1.216	1.208	1.191
SO2 Upstream	0.486	0.495	0.504	0.542
PM Upstream	0.090	0.090	0.089	0.088
Fleetwide Change in Tailpipe Emissions				
CO Tailpipe	11.187	10.742	10.312	8.592
VOC Tailpipe	1.342	1.288	1.237	1.031
NOx Tailpipe	0.583	0.559	0.537	0.447
SO2 Tailpipe	0.031	0.029	0.028	0.022
PM Tailpipe	0.085	0.082	0.079	0.066
Fleetwide Change in Total Emissions				
CO Total	11.861	11.415	10.983	9.265
VOC Total	3.403	3.256	3.108	2.564
NOx Total	1.806	1.775	1.745	1.639
SO2 Total	0.517	0.524	0.532	0.564
PM Total	0.175	0.172	0.168	0.154

Table 219 - Total Criteria Emissions from the MY 2038 HDPUV Fleet in Calendar Year 2045, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2038 HDPUV Fleet in Calendar Year 2045, by Alternative (1,000 metric tons)				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fleetwide Change in Upstream Emissions				
CO Upstream	0.525	0.528	0.530	0.542
VOC Upstream	1.482	1.416	1.348	1.110
NOx Upstream	0.927	0.925	0.923	0.925
SO2 Upstream	0.368	0.375	0.383	0.416
PM Upstream	0.068	0.068	0.068	0.068
Fleetwide Change in Tailpipe Emissions				
CO Tailpipe	15.552	14.932	14.332	11.937
VOC Tailpipe	1.523	1.463	1.404	1.169
NOx Tailpipe	0.533	0.512	0.491	0.409
SO2 Tailpipe	0.022	0.021	0.020	0.016
PM Tailpipe	0.102	0.098	0.094	0.078
Fleetwide Change in Total Emissions				
CO Total	16.078	15.460	14.861	12.479
VOC Total	3.005	2.879	2.752	2.279
NOx Total	1.460	1.437	1.414	1.334
SO2 Total	0.390	0.396	0.403	0.432
PM Total	0.170	0.166	0.162	0.146

Table 220 - Total Criteria Emissions from the MY 2038 HDPUV Fleet in Calendar Year 2050, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2038 HDPUV Fleet in Calendar Year 2050, by Alternative (1,000 metric tons)				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fleetwide Change in Upstream Emissions				
CO Upstream	0.379	0.382	0.386	0.403
VOC Upstream	0.980	0.937	0.894	0.741
NOx Upstream	0.641	0.643	0.643	0.654
SO2 Upstream	0.246	0.252	0.257	0.280
PM Upstream	0.047	0.047	0.047	0.048
Fleetwide Change in Tailpipe Emissions				
CO Tailpipe	10.516	10.097	9.692	8.074
VOC Tailpipe	1.416	1.360	1.305	1.087
NOx Tailpipe	0.364	0.349	0.335	0.279
SO2 Tailpipe	0.014	0.014	0.013	0.010
PM Tailpipe	0.070	0.067	0.064	0.053
Fleetwide Change in Total Emissions				
CO Total	10.894	10.479	10.077	8.476
VOC Total	2.396	2.297	2.199	1.828
NOx Total	1.005	0.992	0.979	0.933
SO2 Total	0.260	0.266	0.270	0.290
PM Total	0.117	0.114	0.111	0.101

Fleet Characteristics

Table 221 - Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV4

Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV4											
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total	Avg.
Changes in Fleet Size, Usage and Fuel Consumption											
Changes in Fleet Size (thousands)	-0.340	-0.075	-0.041	-0.787	-0.711	-0.324	-0.127	-0.846	-0.800	-4.050	-0.450
VMT from Rebound (b)	0.014	0.003	0.003	0.003	0.003	0.003	0.003	0.015	0.015	0.062	0.007
Fuel Volume - Total (b gallons)	-0.055	-0.016	-0.018	-0.019	-0.019	-0.016	-0.016	-0.060	-0.061	-0.279	-0.031
Changes in Fatalities by Source											
Fatalities from Rebound Miles	0	0	0	0	0	0	0	0	0	0	0
Fatalities from Curb Weight Change	0	0	0	0	0	0	0	0	0	0	0
Total Changes in Fatalities	0	0	0	0	0	0	0	0	0	0	0
Changes in Non-Fatal Safety Impacts											
Injuries from Rebound Miles (thousands)	0.009	0.002	0.002	0.002	0.002	0.002	0.002	0.011	0.011	0	0
Injuries from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Change in Injuries (thousands)	0.006	0.001	0.002	-0.006	-0.005	-0.001	0.001	0.002	0.003	0.003	0.000
Property Damage from Rebound Miles (thousands)	0.028	0.005	0.006	0.005	0.006	0.006	0.006	0.032	0.033	0.127	0.014
Property Damage from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Property Damaged Vehicles (thousands)	0.019	0.004	0.006	-0.017	-0.015	-0.003	0.003	0.007	0.009	0.014	0.002

Table 222 - Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV108

Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV108											
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total	Avg.
Changes in Fleet Size, Usage and Fuel Consumption											
Changes in Fleet Size (thousands)	0.199	-0.087	-0.379	-26.776	-29.194	-27.869	-25.830	-24.948	-24.142	-159.026	-17.670
VMT from Rebound (b)	-0.012	-0.012	-0.011	0.109	0.110	0.124	0.127	0.129	0.132	0.695	0.077
Fuel Volume - Total (b gallons)	0.046	0.045	0.043	-0.363	-0.366	-0.413	-0.417	-0.421	-0.425	-2.272	-0.252
Changes in Fatalities by Source											
Fatalities from Rebound Miles	0	0	0	1	1	1	1	1	1	3	0
Fatalities from Curb Weight Change	0	0	0	0	0	0	0	0	0	0	0
Total Changes in Fatalities	0	0	0	-1	-1	-1	-1	-1	-1	-7	-1
Changes in Non-Fatal Safety Impacts											
Injuries from Rebound Miles (thousands)	-0.008	-0.008	-0.008	0.082	0.082	0.092	0.095	0.097	0.099	1	0
Injuries from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Change in Injuries (thousands)	-0.001	-0.004	-0.007	-0.186	-0.211	-0.188	-0.165	-0.155	-0.145	-1.062	-0.118
Property Damage from Rebound Miles (thousands)	-0.025	-0.024	-0.024	0.246	0.248	0.277	0.284	0.289	0.296	1.567	0.174
Property Damage from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Property Damaged Vehicles (thousands)	0.004	-0.004	-0.012	-0.551	-0.628	-0.559	-0.491	-0.461	-0.432	-3.134	-0.348

Table 223 - Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV10

Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV10											
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total	Avg.
Changes in Fleet Size, Usage and Fuel Consumption											
Changes in Fleet Size (thousands)	0.052	-0.333	-0.707	-45.846	-47.459	-45.247	-40.928	-39.491	-37.665	-257.625	-28.625
VMT from Rebound (b)	-0.012	-0.011	-0.011	0.230	0.232	0.256	0.262	0.266	0.272	1.484	0.165
Fuel Volume - Total (b gallons)	0.046	0.044	0.043	-0.693	-0.697	-0.780	-0.787	-0.792	-0.800	-4.417	-0.491
Changes in Fatalities by Source											
Fatalities from Rebound Miles	0	0	0	1	1	1	1	1	1	7	1
Fatalities from Curb Weight Change	0	0	0	0	0	0	0	0	0	0	0
Total Changes in Fatalities	0	0	0	-2	-2	-2	-1	-1	-1	-10	-1
Changes in Non-Fatal Safety Impacts											
Injuries from Rebound Miles (thousands)	-0.008	-0.008	-0.008	0.172	0.173	0.191	0.197	0.201	0.206	1	0
Injuries from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Change in Injuries (thousands)	0.001	-0.004	-0.008	-0.288	-0.304	-0.264	-0.216	-0.198	-0.175	-1.456	-0.162
Property Damage from Rebound Miles (thousands)	-0.025	-0.024	-0.023	0.518	0.522	0.574	0.588	0.598	0.611	3.340	0.371
Property Damage from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Property Damaged Vehicles (thousands)	0.013	0.003	-0.009	-0.853	-0.903	-0.785	-0.641	-0.590	-0.524	-4.289	-0.477

Table 224 - Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV14

Changes in Fleet Characteristics for Model Years 2030-2038 for Alternative HDPUV14											
Model Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	Total	Avg.
Changes in Fleet Size, Usage and Fuel Consumption											
Changes in Fleet Size (thousands)	-4.536	-10.498	-11.154	-116.943	-112.560	-105.463	-91.933	-86.490	-80.540	-620.117	-68.902
VMT from Rebound (b)	0.026	0.049	0.048	0.453	0.458	0.530	0.545	0.555	0.564	3.227	0.359
Fuel Volume - Total (b gallons)	-0.133	-0.260	-0.262	-1.877	-1.881	-2.035	-2.052	-2.072	-2.081	-12.654	-1.406
Changes in Fatalities by Source											
Fatalities from Rebound Miles	0	0	0	2	2	3	3	3	3	16	2
Fatalities from Curb Weight Change	0	0	0	0	0	0	0	0	0	0	0
Total Changes in Fatalities	0	0	0	-5	-5	-4	-3	-3	-2	-24	-3
Changes in Non-Fatal Safety Impacts											
Injuries from Rebound Miles (thousands)	0.018	0.039	0.038	0.340	0.344	0.401	0.414	0.425	0.434	2	0
Injuries from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Change in Injuries (thousands)	-0.007	-0.049	-0.058	-0.834	-0.787	-0.659	-0.510	-0.446	-0.378	-3.728	-0.414
Property Damage from Rebound Miles (thousands)	0.055	0.118	0.117	1.018	1.031	1.198	1.232	1.257	1.280	7.306	0.812
Property Damage from Curb Weight (thousands)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Property Damaged Vehicles (thousands)	0.014	-0.106	-0.130	-2.473	-2.339	-1.963	-1.520	-1.336	-1.138	-10.990	-1.221

Liquid Fuel and Electricity Consumption

Table 225 - Change in Liquid Fuel Consumed (b Gallons), HDPUV Fleet, Undiscounted Over the Lifetime of the Model Year

Change in Liquid Fuel Consumed (b Gallons), HDPUV Fleet, Undiscounted Over the Lifetime of the Model Year										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	285.040	-0.016	-0.018	-0.019	-0.019	-0.016	-0.016	-0.060	-0.061	284.816
Alternative HDPUV108	285.163	0.045	0.043	-0.363	-0.366	-0.413	-0.417	-0.421	-0.425	282.845
Alternative HDPUV10	285.174	0.044	0.043	-0.693	-0.697	-0.780	-0.787	-0.792	-0.800	280.711
Alternative HDPUV14	285.030	-0.260	-0.262	-1.877	-1.881	-2.035	-2.052	-2.072	-2.081	272.509

Table 226 - Change in Electricity (G-Wh) Consumed, HDPUV Fleet, Undiscounted Over the Lifetime of the Model Year

Change in Electricity (G-Wh) Consumed, HDPUV Fleet, Undiscounted Over the Lifetime of the Model Year										
Model Year	1983-2030	2031	2032	2033	2034	2035	2036	2037	2038	Total
Alternative HDPUV4	92.844	0.258	0.282	0.287	0.297	0.242	0.249	0.890	0.900	96.249
Alternative HDPUV108	91.332	-0.664	-0.643	4.886	4.909	5.626	5.703	5.765	5.835	122.749
Alternative HDPUV10	91.333	-0.656	-0.634	9.107	9.146	10.415	10.563	10.658	10.788	150.719
Alternative HDPUV14	94.091	3.988	4.015	26.812	26.935	29.071	29.493	29.856	30.065	274.326

Table 227 - Estimated Average Per Vehicle Fuel Costs (\$) for MY 2038 HDPUV Fleet, by Alternative

Estimated Average Per Vehicle Fuel Costs (\$) for MY 2038 HDPUV Fleet, by Alternative				
	Lifetime Total Fuel Expenditures		Lifetime Retail Fuel Savings	
	7% Discount Rate	3% Discount Rate	7% Discount Rate	3% Discount Rate
No Action Alternative (Baseline)	23,034	29,753	0	0
Alternative HDPUV4	22,955	29,650	-80	-103
Alternative HDPUV108	22,482	29,037	-552	-717
Alternative HDPUV10	21,982	28,387	-1,052	-1,366
Alternative HDPUV14	20,320	26,231	-2,714	-3,523

Vehicle Mass Related Fatality Impacts

Table 228 - Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1983-2038 for HDPUV Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%

Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1983-2038 for HDPUV Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%				
Category	Regulatory Alternative			
	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fatalities	0	-5	-7	-19
Fatality Costs (\$ Billion, 3% Discount Rate)	0.000	-0.028	-0.036	-0.103
Fatality Costs (\$ Billion, 7% Discount Rate)	0.000	-0.010	-0.013	-0.038
Non-Fatal Crash Costs (\$ Billion, 3% Discount Rate)	0.001	-0.067	-0.087	-0.245
Non-Fatal Crash Costs (\$ Billion, 7% Discount Rate)	0.000	-0.025	-0.032	-0.093
Total Crash Costs (\$ Billion, 3% Discount Rate)	0.001	-0.095	-0.124	-0.348
Total Crash Costs (\$ Billion, 7% Discount Rate)	0.001	-0.036	-0.045	-0.131

Table 229 - Vehicle-Mass-Related Fatality Impacts for CY 2039-2050 for HDPUV Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%

Vehicle-Mass-Related Fatality Impacts for CY 2039-2050 for HDPUV Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%				
Category	Regulatory Alternative			
	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fatalities	0	-6	-8	-21
Fatality Costs (\$ Billion, 3% Discount Rate)	0.000	-0.037	-0.050	-0.128
Fatality Costs (\$ Billion, 7% Discount Rate)	0.000	-0.015	-0.020	-0.053
Non-Fatal Crash Costs (\$ Billion, 3% Discount Rate)	0.000	-0.089	-0.119	-0.303
Non-Fatal Crash Costs (\$ Billion, 7% Discount Rate)	0.000	-0.036	-0.049	-0.125
Total Crash Costs (\$ Billion, 3% Discount Rate)	0.000	-0.127	-0.168	-0.430
Total Crash Costs (\$ Billion, 7% Discount Rate)	0.000	-0.052	-0.069	-0.178

Change in Safety Parameters

Table 230 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1983-2038 for HDPUV Fleet, 3% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1983-2038 for HDPUV Fleet, 3% Percent Discount Rate, by Alternative				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fatalities				
Fatalities From Mass Changes	0	0	0	0
Fatalities from Rebound Effect	0	3	7	16
Fatalities from Sales/Scrappage	0	-9	-14	-35
Total Changes in Fatalities	0	-5	-7	-19
Fatality Costs (\$b)				
Fatality Costs From Mass Changes	0.000	0.000	0.000	0.000
Fatality Costs From Rebound Effect	0.002	0.020	0.043	0.096
Fatality Costs from Sales/Scrappage	-0.001	-0.048	-0.080	-0.199
Total - Fatality Costs (\$b)	0.000	-0.028	-0.036	-0.103
Non-Fatal Crash Costs (\$b)				
Non-Fatal Crash Costs From Mass Changes	0.000	0.000	0.000	0.000
Non-Fatal Crash Costs From Rebound Effect	0.004	0.047	0.100	0.221
Non-Fatal Crash Costs from Sales/Scrappage	-0.003	-0.114	-0.187	-0.465
Total - Non-Fatal Crash Costs (\$b)	0.001	-0.067	-0.087	-0.245
Property Damage Costs (\$b)				
Property Damage Costs From Mass Changes	0.000	0.000	0.000	0.000
Property Damage Costs From Rebound Effect	0.001	0.007	0.015	0.032
Property Damage Costs From Sales/Scrappage	0.000	-0.018	-0.029	-0.071
Total - Property Damage Costs (\$b)	0.000	-0.011	-0.014	-0.039
Societal Crash Costs (\$b)				
Crash Costs from Mass Changes	0.000	0.000	0.000	0.000
Crash Costs from Rebound Effect	0.006	0.074	0.158	0.349
Crash Costs from Sales/Scrappage	-0.005	-0.180	-0.296	-0.736
Total - Societal Crash Costs (\$b)	0.001	-0.106	-0.138	-0.387

Table 231 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1983-2038 for HDPUV Fleet, 7% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1983-2038 for HDPUV Fleet, 7% Percent Discount Rate, by Alternative				
Alternative	HDPUV4	HDPUV108	HDPUV10	HDPUV14
Fatalities				
Fatalities From Mass Changes	0	0	0	0
Fatalities from Rebound Effect	0	3	7	16
Fatalities from Sales/Scrappage	0	-9	-14	-35
Total Changes in Fatalities	0	-5	-7	-19
Fatality Costs (\$b)				
Fatality Costs From Mass Changes	0.000	0.000	0.000	0.000
Fatality Costs From Rebound Effect	0.001	0.009	0.018	0.041
Fatality Costs from Sales/Scrappage	-0.001	-0.019	-0.031	-0.079
Total - Fatality Costs (\$b)	0.000	-0.010	-0.013	-0.038
Non-Fatal Crash Costs (\$b)				
Non-Fatal Crash Costs From Mass Changes	0.000	0.000	0.000	0.000
Non-Fatal Crash Costs From Rebound Effect	0.002	0.020	0.043	0.096
Non-Fatal Crash Costs from Sales/Scrappage	-0.001	-0.045	-0.075	-0.189
Total - Non-Fatal Crash Costs (\$b)	0.000	-0.025	-0.032	-0.093
Property Damage Costs (\$b)				
Property Damage Costs From Mass Changes	0.000	0.000	0.000	0.000
Property Damage Costs From Rebound Effect	0.000	0.003	0.007	0.015
Property Damage Costs From Sales/Scrappage	0.000	-0.008	-0.013	-0.032
Total - Property Damage Costs (\$b)	0.000	-0.005	-0.006	-0.017
Societal Crash Costs (\$b)				
Crash Costs from Mass Changes	0.000	0.000	0.000	0.000
Crash Costs from Rebound Effect	0.003	0.032	0.068	0.152
Crash Costs from Sales/Scrappage	-0.002	-0.072	-0.119	-0.299
Total - Societal Crash Costs (\$b)	0.001	-0.040	-0.051	-0.147