

PRIA Appendix 1: CAFE Data Book

The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule III for
Model Years 2022 to 2031 Passenger Cars and Light Trucks

December 2025



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



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A1. Summary Tables

Table 1 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Total Fleet for Alt 1 - scen 1

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Total Fleet for Alt 1 - scen 1				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-109.2	-76.1	-4.4	-5.6
Benefits	-85.2	-53.9	-3.4	-3.9
Net Benefits	24.0	22.2	1.0	1.6

Table 2 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Passenger Car Fleet for Alt 1 - scen 1

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Passenger Car Fleet for Alt 1 - scen 1				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	1,382.4	864.4	55.2	63.1
Benefits	-327.9	-207.2	-13.1	-15.1
Net Benefits	-1,710.3	-1,071.6	-68.3	-78.3

Table 3 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Light Truck Fleet for Alt 1 - scen 1

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Light Truck Fleet for Alt 1 - scen 1				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-1,491.7	-940.4	-59.6	-68.7
Benefits	242.7	153.3	9.7	11.2
Net Benefits	1,734.4	1,093.7	69.3	79.9

Table 4 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Total Fleet for Alt 2 - scen 2

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Total Fleet for Alt 2 - scen 2				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-109.1	-76.0	-4.4	-5.6
Benefits	-85.1	-53.8	-3.4	-3.9
Net Benefits	24.0	22.2	1.0	1.6

Table 5 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Passenger Car Fleet for Alt 2 - scen 2

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Passenger Car Fleet for Alt 2 - scen 2				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	1,382.4	864.4	55.2	63.1
Benefits	-327.9	-207.2	-13.1	-15.1
Net Benefits	-1,710.3	-1,071.6	-68.3	-78.3

Table 6 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Light Truck Fleet for Alt 2 - scen 2

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Light Truck Fleet for Alt 2 - scen 2				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-1,491.6	-940.4	-59.6	-68.7
Benefits	242.8	153.3	9.7	11.2
Net Benefits	1,734.4	1,093.7	69.3	79.9

Table 7 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Total Fleet for Alt 3 - scen 3

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Total Fleet for Alt 3 - scen 3				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-97.1	-67.7	-3.9	-4.9
Benefits	-73.5	-46.5	-2.9	-3.4
Net Benefits	23.7	21.2	0.9	1.6

Table 8 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Passenger Car Fleet for Alt 3 - scen 3

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Passenger Car Fleet for Alt 3 - scen 3				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	1,387.8	868.1	55.5	63.4
Benefits	-323.2	-204.2	-12.9	-14.9
Net Benefits	-1,711.0	-1,072.3	-68.4	-78.3

Table 9 - Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Light Truck Fleet for Alt 3 - scen 3

Estimated Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars), Light Truck Fleet for Alt 3 - scen 3				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-1,485.0	-935.8	-59.3	-68.3
Benefits	249.7	157.7	10.0	11.5
Net Benefits	1,734.7	1,093.5	69.3	79.9

Table 10 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Total Fleet for Alt 1 - scen 1

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Total Fleet for Alt 1 - scen 1				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-393.9	-219.6	-21.5	-18.3
Benefits	-291.2	-157.4	-15.9	-13.1
Net Benefits	102.8	62.1	5.6	5.2

Table 11 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Passenger Car Fleet for Alt 1 - scen 1

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Passenger Car Fleet for Alt 1 - scen 1				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	4,305.4	2,307.1	234.9	192.5
Benefits	-1043.9	-564.9	-57	-47.1
Net Benefits	-5,349.3	-2,872.0	-291.9	-239.6

Table 12 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Light Truck Fleet for Alt 1 - scen 1

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Light Truck Fleet for Alt 1 - scen 1				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-4,699.3	-2,526.7	-256.4	-210.8
Benefits	752.7	407.5	41.1	34
Net Benefits	5,452.0	2,934.2	297.5	244.8

Table 13 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Total Fleet for Alt 2 - scen 2

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Total Fleet for Alt 2 - scen 2				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-393.8	-219.5	-21.5	-18.3
Benefits	-291.1	-157.4	-15.9	-13.1
Net Benefits	102.8	62.1	5.6	5.2

Table 14 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Passenger Car Fleet for Alt 2 - scen 2

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Passenger Car Fleet for Alt 2 - scen 2				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	4,305.4	2,307.1	234.9	192.5
Benefits	-1043.9	-564.9	-57	-47.1
Net Benefits	-5,349.3	-2,872.0	-291.9	-239.6

Table 15 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Light Truck Fleet for Alt 2 - scen 2

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Light Truck Fleet for Alt 2 - scen 2				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-4,699.3	-2,526.7	-256.4	-210.8
Benefits	752.8	407.5	41.1	34
Net Benefits	5,452.1	2,934.2	297.5	244.8

Table 16 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Total Fleet for Alt 3 - scen 3

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Total Fleet for Alt 3 - scen 3				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	-353.8	-197.2	-19.3	-16.4
Benefits	-256.5	-138.4	-14.0	-11.5
Net Benefits	97.3	58.8	5.3	4.9

Table 17 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Passenger Car Fleet for Alt 3 - scen 3

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Passenger Car Fleet for Alt 3 - scen 3				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	4,322.9	2,317.0	235.9	193.3
Benefits	-1,029.80	-557.2	-56.2	-46.5
Net Benefits	-5,352.7	-2,874.2	-292.1	-239.8

Table 18 - Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Light Truck Fleet for Alt 3 - scen 3

Estimated Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars), Light Truck Fleet for Alt 3 - scen 3				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Costs	4,676.7	2,514.1	-255.2	-209.7
Benefits	773.3	418.8	42.2	34.9
Net Benefits	5,450.0	2,932.9	297.4	244.7

A2. CAFE Costs per Vehicle

Table 19 - Estimated Total Fleet Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars)
Total Fleet, by Alternative

Estimated Total Fleet Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars) Total Fleet, by Alternative						
Alternative	3% Discount Rate			7% Discount Rate		
	Costs	Benefits	Net Benefits	Costs	Benefits	Net Benefits
Alternative 1	-109.2	-85.2	24.0	-76.1	-53.9	22.2
Alternative 2	-109.1	-85.1	24.0	-76.0	-53.8	22.2
Alternative 3	-97.1	-73.5	23.7	-67.7	-46.5	21.2

Table 20 - Estimated Passenger Car Fleet Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars) Passenger Car Fleet, by Alternative

Estimated Passenger Car Fleet Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars) Passenger Car Fleet, by Alternative						
Alternative	3% Discount Rate			7% Discount Rate		
	Costs	Benefits	Net Benefits	Costs	Benefits	Net Benefits
Alternative 1	1,382.4	-327.9	-1,710.3	864.4	-207.2	-1,071.6
Alternative 2	1,382.4	-327.9	-1,710.3	864.4	-207.2	-1,071.6
Alternative 3	1,387.8	-323.2	-1,711.0	868.1	-204.2	-1,072.3

Table 21 - Estimated Light Truck Fleet Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars) Light Truck Fleet, by Alternative

Estimated Light Truck Fleet Costs, Benefits, and Net Benefits Across MYs 1985-2031 (billions of dollars) Light Truck Fleet, by Alternative						
Alternative	3% Discount Rate			7% Discount Rate		
	Costs	Benefits	Net Benefits	Costs	Benefits	Net Benefits
Alternative 1	-1,491.7	242.7	1,734.4	-940.4	153.3	1,093.7
Alternative 2	-1,491.6	242.8	1,734.4	-940.4	153.3	1,093.7
Alternative 3	-1,485.0	249.7	1,734.7	-935.8	157.7	1,093.5

Table 22 - Estimated Total Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars) Total Fleet, by Alternative

Estimated Total Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars) Total Fleet, by Alternative						
Alternative	3% Discount Rate			7% Discount Rate		
	Costs	Benefits	Net Benefits	Costs	Benefits	Net Benefits
Alternative 1	-393.9	-291.2	102.8	-219.6	-157.4	62.1
Alternative 2	-393.8	-291.1	102.8	-219.5	-157.4	62.1
Alternative 3	-353.8	-256.5	97.3	-197.2	-138.4	58.8

Table 23 - Estimated Passenger Car Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars) Passenger Car Fleet, by Alternative

Estimated Passenger Car Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars) Passenger Car Fleet, by Alternative						
Alternative	3% Discount Rate			7% Discount Rate		
	Costs	Benefits	Net Benefits	Costs	Benefits	Net Benefits
Alternative 1	4,305.4	-1,043.9	-5,349.3	2,307.1	-564.9	-2,872.0
Alternative 2	4,305.4	-1,043.9	-5,349.3	2,307.1	-564.9	-2,872.0
Alternative 3	4,322.9	-1,029.8	-5,352.7	2,317.0	-557.2	-2,874.2

**Table 24 - Estimated Light Truck Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050
(billions of dollars) Light Truck Fleet, by Alternative**

Estimated Light Truck Fleet Costs, Benefits, and Net Benefits Across Calendar Years 2024-2050 (billions of dollars) Light Truck Fleet, by Alternative						
Alternative	3% Discount Rate			7% Discount Rate		
	Costs	Benefits	Net Benefits	Costs	Benefits	Net Benefits
Alternative 1	-4,699.3	752.7	5,452.0	-2,526.7	407.5	2,934.2
Alternative 2	-4,699.3	752.8	5,452.1	-2,526.7	407.5	2,934.2
Alternative 3	-4,676.7	773.3	5,450.0	-2,514.1	418.8	2,932.9

Table 25 - MY 2031 Required and Achieved CAFE Levels (mpg), and Per-Vehicle Regulatory Costs (\$) for Total Fleet by Alternative

MY 2031 Required and Achieved CAFE Levels (mpg), and Per-Vehicle Regulatory Costs (\$) for Total Fleet by Alternative			
	Avg Required (mpg)	Avg Achieved (mpg)	Avg Reg. Cost (\$)
Alt 0 - No Action	49.9	45.5	2104
Alt 1 - scen 1	33.6	41.3	1179
Alt 2 - scen 2	34.5	41.3	1179
Alt 3 - scen 3	37.5	41.8	1257

Table 26 - MY 2031 Required and Achieved CAFE Levels (mpg), and Per-Vehicle Regulatory Costs (\$) for Passenger Car Fleet by Alternative

MY 2031 Required and Achieved CAFE Levels (mpg), and Per-Vehicle Regulatory Costs (\$) for Passenger Car Fleet by Alternative			
	Avg Required (mpg)	Avg Achieved (mpg)	Avg Reg. Cost (\$)
Alt 0 - No Action	65.8	58.7	2019
Alt 1 - scen 1	36.2	46.3	1090
Alt 2 - scen 2	37.4	46.3	1090
Alt 3 - scen 3	40.6	46.7	1136

Table 27 - MY 2031 Required and Achieved CAFE Levels (mpg), and Per-Vehicle Regulatory Costs (\$) for Light Truck Fleet by Alternative

MY 2031 Required and Achieved CAFE Levels (mpg), and Per-Vehicle Regulatory Costs (\$) for Light Truck Fleet by Alternative			
	Avg Required (mpg)	Avg Achieved (mpg)	Avg Reg. Cost (\$)
Alt 0 - No Action	45.4	41.7	2139
Alt 1 - scen 1	28.0	32.1	1414
Alt 2 - scen 2	28.6	32.1	1414
Alt 3 - scen 3	31.2	32.6	1581

A3. Various Impacts of Alternatives

Table 28 - Impacts for Alt 1 - scen 1

Impacts for Alt 1 - scen 1			
Category	Passenger Car	Light Truck	Combined Fleet
Fuel Economy			
Required Fuel Economy for MY 2031(mpg)	36.2	28.0	33.6
Achieved Fuel Economy for MY 2031 (mpg)	46.3	32.1	41.3
Achieved Fuel Economy for MY 2027 - for reference (mpg)	51.2	36.1	39.5
Average MY 2031 Vehicle - Incremental to Alternative 0 (Baseline)			
Per Vehicle Price Increase (dollars)	-929	-724	-925
Lifetime Fuel Cost (per vehicle), 3% Discount Rate (dollars)	3,475	5,966	1,431
Lifetime Fuel Cost (per vehicle), 7% Discount Rate (dollars)	2,668	4,469	1,112
Payback Period Relative to MY 2027, 3% Discount Rate (years)	-2.0	-1.0	-0.9
Payback Period Relative to MY 2027, 7% Discount Rate (years)	-4.0	-3.0	-2.9
Lifetime of Vehicles Through 2031 - Incremental to Alternative 0 (Baseline)			
Total Lifetime Fuel Volume (billion gallons)	152	-126	25
Total Lifetime CO2 Volume (million metric tons)	1,664	-1,384	280
Fatalities (Including Rebound Miles)	21,206	-21,790	-584
Fatalities (Excluding Rebound Miles)	20,419	-20,581	-162
Total Technology Costs, 3% Discount Rate (\$b)	9.2	-46.3	-37.1
Total Technology Costs, 7% Discount Rate (\$b)	7.5	-37.7	-30.3
Total Net Societal Benefits, 3% Discount Rate (\$b)	-1,710.3	1,734.4	24.0
Total Net Societal Benefits, 7% Discount Rate (\$b)	-1,071.5	1,093.7	22.2

Table 29 - Impacts for Alt 2 - scen 2

Impacts for Alt 2 - scen 2			
Category	Passenger Car	Light Truck	Combined Fleet
Fuel Economy			
Required Fuel Economy for MY 2031(mpg)	37.4	28.6	34.5
Achieved Fuel Economy for MY 2031 (mpg)	46.3	32.1	41.3
Achieved Fuel Economy for MY 2027 - for reference (mpg)	51.2	36.1	39.5
Average MY 2031 Vehicle - Incremental to Alternative 0 (Baseline)			
Per Vehicle Price Increase (dollars)	-929	-724	-925
Lifetime Fuel Cost (per vehicle), 3% Discount Rate (dollars)	3,475	5,966	1,431
Lifetime Fuel Cost (per vehicle), 7% Discount Rate (dollars)	2,668	4,469	1,112
Payback Period Relative to MY 2027, 3% Discount Rate (years)	-2.0	-1.0	-0.9
Payback Period Relative to MY 2027, 7% Discount Rate (years)	-4.0	-3.0	-2.9
Lifetime of Vehicles Through 2031 - Incremental to Alternative 0 (Baseline)			
Total Lifetime Fuel Volume (billion gallons)	152	-126	25
Total Lifetime CO2 Volume (million metric tons)	1,664	-1,385	279
Fatalities (Including Rebound Miles)	21,206	-21,789	-583
Fatalities (Excluding Rebound Miles)	20,419	-20,581	-162
Total Technology Costs, 3% Discount Rate (\$b)	9.2	-46.2	-37.1
Total Technology Costs, 7% Discount Rate (\$b)	7.5	-37.7	-30.3
Total Net Societal Benefits, 3% Discount Rate (\$b)	-1,710.3	1,734.4	24.0
Total Net Societal Benefits, 7% Discount Rate (\$b)	-1,071.5	1,093.7	22.2

Table 30 - Impacts for Alt 3 - scen 3

Impacts for Alt 3 - scen 3			
Category	Passenger Car	Light Truck	Combined Fleet
Fuel Economy			
Required Fuel Economy for MY 2031(mpg)	40.6	31.2	37.5
Achieved Fuel Economy for MY 2031 (mpg)	46.7	32.6	41.8
Achieved Fuel Economy for MY 2027 - for reference (mpg)	51.3	36.3	39.7
Average MY 2031 Vehicle - Incremental to Alternative 0 (Baseline)			
Per Vehicle Price Increase (dollars)	-883	-557	-847
Lifetime Fuel Cost (per vehicle), 3% Discount Rate (dollars)	3,371	5,610	1,256
Lifetime Fuel Cost (per vehicle), 7% Discount Rate (dollars)	2,586	4,196	977
Payback Period Relative to MY 2027, 3% Discount Rate (years)	-2.0	-1.0	-0.9
Payback Period Relative to MY 2027, 7% Discount Rate (years)	-4.0	-2.0	-2.6
Lifetime of Vehicles Through 2031 - Incremental to Alternative 0 (Baseline)			
Total Lifetime Fuel Volume (billion gallons)	150	-128	22
Total Lifetime CO2 Volume (million metric tons)	1,649	-1,408	241
Fatalities (Including Rebound Miles)	21,235	-21,760	-525
Fatalities (Excluding Rebound Miles)	20,425	-20,583	-158
Total Technology Costs, 3% Discount Rate (\$b)	10.5	-44.3	-33.7
Total Technology Costs, 7% Discount Rate (\$b)	8.6	-36.1	-27.5
Total Net Societal Benefits, 3% Discount Rate (\$b)	-1,711.0	1,734.7	23.7
Total Net Societal Benefits, 7% Discount Rate (\$b)	-1,072.3	1,093.5	21.2

A4. Required and Achieved CAFE Levels by Manufacturer

Table 31 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)												
	BMW				Ferrari				Ford			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	40.7	32.3	40.7	32.3	47.6	21.2	47.6	21.2	34.4	29.2	34.4	29.2
2025	44.5	36.2	44.5	36.2	51.7	21.3	51.7	21.3	37.5	31.3	37.5	31.3
2026	49.1	38.9	49.1	38.9	57.5	21.4	57.5	21.4	41.6	32.1	41.6	32.1
2027	49.3	42.5	31.8	40.0	58.6	21.4	36.1	21.4	41.6	36.6	27.2	35.2
2028	49.5	44.1	34.9	41.2	59.8	22.0	37.1	22.0	41.6	37.6	31.0	35.2
2029	50.6	44.7	35.0	41.3	61.0	22.0	37.2	22.0	42.4	37.6	31.2	35.2
2030	51.6	44.8	35.1	41.3	62.3	23.0	37.3	23.0	43.2	39.6	31.2	36.0
2031	52.7	45.7	35.1	41.8	63.6	24.2	37.3	24.2	44.2	39.6	31.3	36.0

Table 32 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)												
	GM				Honda				Hyundai			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	35.9	29.2	35.9	29.2	43.1	39.9	43.1	39.9	41.5	36.1	41.5	36.1
2025	39.3	31.2	39.3	31.2	47.2	42.3	47.2	42.3	45.5	37.9	45.5	37.9
2026	43.4	35.9	43.4	35.9	52.1	45.9	52.1	45.9	50.2	41.4	50.2	41.4
2027	43.3	36.2	28.0	36.0	52.3	46.1	33.5	45.8	50.3	44.1	32.5	42.0
2028	43.4	38.0	31.7	37.3	52.7	48.9	37.0	46.3	50.6	48.4	36.1	42.7
2029	44.3	39.1	31.8	37.6	53.8	51.9	37.1	46.9	51.6	51.2	36.2	42.8
2030	45.2	39.5	31.8	37.6	54.9	53.0	37.2	47.4	52.7	51.2	36.3	42.8
2031	46.1	40.5	31.9	38.0	56.0	53.1	37.2	47.4	53.8	51.1	36.4	42.8

Table 33 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)												
	Ineos				JLR				KIA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	36.6	19.9	36.6	19.9	35.7	26.9	35.7	26.9	41.6	35.5	41.6	35.5
2025	39.7	19.9	39.7	19.9	38.9	28.4	38.9	28.4	45.5	40.7	45.5	40.7
2026	44.1	19.9	44.1	19.9	43.2	30.8	43.2	30.8	50.3	44.6	50.3	44.6
2027	44.1	22.7	29.4	22.7	43.2	32.3	28.5	31.8	50.3	45.0	32.5	44.7
2028	44.1	22.7	31.4	22.7	43.2	32.3	31.6	31.8	50.5	48.7	36.4	45.6
2029	45.0	22.7	31.5	22.7	44.0	35.2	31.6	32.9	51.7	51.5	36.5	45.7
2030	46.0	22.7	31.6	22.7	44.9	35.2	31.7	32.9	52.7	51.4	36.6	45.7
2031	46.9	31.0	31.7	31.0	45.8	38.1	31.8	34.0	53.7	51.5	36.7	45.6

Table 34 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)												
	Mazda				Mercedes-Benz				Mitsubishi			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	39.4	35.1	39.4	35.1	39.0	29.5	39.0	29.5	43.9	39.5	43.9	39.5
2025	42.9	35.8	42.9	35.8	42.5	30.3	42.5	30.3	47.9	42.0	47.9	42.0
2026	47.6	36.7	47.6	36.7	47.0	35.9	47.0	35.9	53.0	51.1	53.0	51.1
2027	47.6	43.0	31.6	39.9	47.1	36.9	30.7	36.4	52.9	50.7	34.5	50.7
2028	47.7	42.9	36.9	39.8	47.3	37.4	33.1	36.8	53.1	50.6	39.8	50.5
2029	48.6	45.7	37.0	40.2	48.3	38.3	33.2	37.6	54.2	50.7	39.9	50.6
2030	49.6	45.7	37.1	40.2	49.3	41.1	33.3	38.3	55.3	55.6	40.0	53.4
2031	50.6	48.8	37.2	42.1	50.2	41.4	33.4	38.4	56.4	55.6	40.1	53.4

Table 35 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)												
	Nissan				Stellantis				Subaru			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	43.2	37.5	43.2	37.5	34.9	27.6	34.9	27.6	41.5	36.1	41.5	36.1
2025	47.2	41.7	47.2	41.7	37.9	28.5	37.9	28.5	45.2	36.6	45.2	36.6
2026	52.1	43.2	52.1	43.2	42.1	29.6	42.1	29.6	50.1	36.5	50.1	36.5
2027	52.3	46.9	33.2	45.8	42.1	34.1	27.8	32.4	50.1	41.0	33.3	37.7
2028	52.7	46.7	36.2	45.6	42.1	36.6	31.1	33.2	50.1	48.2	39.3	41.1
2029	53.8	50.4	36.3	47.6	42.9	39.2	31.2	34.5	51.2	49.7	39.4	41.7
2030	54.9	52.4	36.4	48.6	43.8	39.3	31.3	34.5	52.2	49.7	39.5	41.7
2031	56.0	52.6	36.5	48.6	44.8	39.3	31.4	34.6	53.3	49.7	39.6	41.7

Table 36 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)												
	Toyota				Volvo				VWA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	39.7	37.8	39.7	37.8	38.5	34.2	38.5	34.2	41.1	32.3	41.1	32.3
2025	43.4	39.4	43.4	39.4	42.0	36.8	42.0	36.8	44.9	37.7	44.9	37.7
2026	47.9	43.1	47.9	43.1	46.5	41.0	46.5	41.0	49.7	40.1	49.7	40.1
2027	47.9	43.6	31.0	43.4	46.5	45.4	30.7	44.5	49.7	45.0	32.4	42.2
2028	48.0	45.1	34.6	44.5	46.6	45.8	35.0	44.6	49.8	46.8	37.2	42.4
2029	49.1	46.2	34.7	44.8	47.6	45.8	35.0	44.6	50.9	46.9	37.3	42.4
2030	50.1	47.3	34.8	45.1	48.5	45.8	35.1	44.6	51.9	46.8	37.4	42.4
2031	51.0	47.8	34.9	45.3	49.4	45.8	35.2	44.6	53.0	47.1	37.5	42.5

Table 37 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Total Fleet (mpg)

	Total			
	Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved
2024	38.8	33.2	38.8	33.2
2025	42.4	35.5	42.4	35.5
2026	46.9	38.3	46.9	38.3
2027	46.8	40.7	30.4	39.5
2028	46.9	42.7	34.2	40.4
2029	48.0	44.2	34.4	40.8
2030	48.9	45.0	34.4	41.1
2031	49.9	45.5	34.5	41.3

Table 38 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)												
	BMW				Ferrari				Ford			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	47.6	34.2	47.6	34.2	47.6	21.2	47.6	21.2	48.8	32.8	48.8	32.8
2025	51.7	38.2	51.7	38.2	51.7	21.3	51.7	21.3	53.0	32.8	53.0	32.8
2026	57.4	42.0	57.4	42.0	57.5	21.4	57.5	21.4	58.9	35.4	58.9	35.4
2027	58.6	42.7	36.0	42.3	58.6	21.4	36.1	21.4	60.1	38.1	36.7	36.7
2028	59.8	46.7	35.5	41.6	59.8	22.0	37.1	22.0	61.4	38.1	36.6	40.4
2029	61.0	46.7	35.6	41.7	61.0	22.0	37.2	22.0	62.6	38.1	36.7	40.4
2030	62.3	46.8	35.7	41.7	62.3	23.0	37.3	23.0	63.9	38.1	36.8	40.4
2031	63.6	49.1	35.7	42.3	63.6	24.2	37.3	24.2	65.2	38.1	36.9	40.4

Table 39 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)												
	GM				Honda				Hyundai			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	49.5	38.3	49.5	38.3	49.1	45.2	49.1	45.2	48.6	41.1	48.6	41.1
2025	53.8	41.5	53.8	41.5	53.4	45.2	53.4	45.2	52.9	42.4	52.9	42.4
2026	59.8	48.5	59.8	48.5	59.3	51.3	59.3	51.3	58.7	45.4	58.7	45.4
2027	61.0	51.2	37.1	49.9	60.5	52.1	36.9	51.5	59.9	53.3	36.5	46.8
2028	62.3	51.2	37.4	46.4	61.7	56.1	37.3	46.6	61.2	59.4	36.5	43.3
2029	63.5	56.3	37.5	46.6	63.0	63.8	37.4	47.3	62.4	62.5	36.6	43.4
2030	64.8	56.3	37.6	46.7	64.3	63.8	37.5	47.8	63.7	62.5	36.7	43.4
2031	66.1	56.3	37.7	46.9	65.6	63.8	37.5	47.8	65.0	62.5	36.8	43.4

Table 40 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)												
	Ineos				JLR				KIA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	0.0	0.0	0.0	0.0	47.4	28.4	47.4	28.4	49.7	42.7	49.7	42.7
2025	0.0	0.0	0.0	0.0	51.5	28.4	51.5	28.4	54.0	48.3	54.0	48.3
2026	0.0	0.0	0.0	0.0	57.2	42.6	57.2	42.6	60.0	51.4	60.0	51.4
2027	0.0	0.0	0.0	0.0	58.4	42.6	35.9	42.6	61.3	53.3	37.2	52.3
2028	0.0	0.0	0.0	0.0	59.6	42.6	36.1	41.1	62.5	55.7	36.4	45.6
2029	0.0	0.0	0.0	0.0	60.8	42.6	36.2	41.1	63.8	65.4	36.5	45.7
2030	0.0	0.0	0.0	0.0	62.0	42.6	36.3	41.1	65.1	65.4	36.6	45.7
2031	0.0	0.0	0.0	0.0	63.3	42.5	36.4	41.1	66.4	65.4	36.7	45.6

Table 41 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)												
	Mazda				Mercedes-Benz				Mitsubishi			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	50.7	39.9	50.7	39.9	46.1	34.0	46.1	34.0	55.4	53.9	55.4	53.9
2025	55.1	43.2	55.1	43.2	50.1	35.1	50.1	35.1	60.2	53.9	60.2	53.9
2026	61.2	60.9	61.2	60.9	55.7	36.3	55.7	36.3	66.9	77.1	66.9	77.1
2027	62.4	60.9	37.5	60.9	56.8	38.1	35.3	37.4	68.3	77.1	39.0	77.1
2028	63.7	60.9	36.9	39.8	58.0	39.7	35.6	36.6	69.7	77.1	39.8	50.5
2029	65.0	60.9	37.0	40.2	59.2	42.9	35.7	37.9	71.1	77.1	39.9	50.6
2030	66.3	60.9	37.1	40.2	60.4	45.4	35.8	39.2	72.6	77.1	40.0	53.4
2031	67.7	60.9	37.2	42.1	61.6	46.7	35.9	39.6	74.0	77.1	40.1	53.4

Table 42 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)												
	Nissan				Stellantis				Subaru			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	49.6	44.1	49.6	44.1	50.5	38.7	50.5	38.7	50.5	36.3	50.5	36.3
2025	53.9	51.2	53.9	51.2	54.9	39.2	54.9	39.2	54.9	39.7	54.9	39.7
2026	59.9	54.1	59.9	54.1	61.0	39.2	61.0	39.2	61.0	39.7	61.0	39.7
2027	61.1	59.9	37.1	58.2	62.3	44.8	37.7	43.8	62.2	49.9	37.6	42.3
2028	62.3	60.0	37.6	50.2	63.5	44.8	34.8	39.1	63.5	60.4	39.3	41.1
2029	63.6	60.0	37.7	52.6	64.8	44.8	34.9	39.1	64.8	60.4	39.4	41.7
2030	64.9	60.0	37.8	52.6	66.2	45.3	34.9	39.1	66.1	60.4	39.5	41.7
2031	66.2	60.5	37.9	52.6	67.5	45.3	35.0	39.1	67.5	60.4	39.6	41.7

Table 43 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)												
	Toyota				Volvo				VWA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	49.3	45.6	49.3	45.6	46.8	37.2	46.8	37.2	50.2	36.1	50.2	36.1
2025	53.6	49.5	53.6	49.5	50.9	37.2	50.9	37.2	54.6	40.3	54.6	40.3
2026	59.5	59.5	59.5	59.5	56.6	46.6	56.6	46.6	60.6	45.9	60.6	45.9
2027	60.7	60.7	37.0	60.4	57.8	47.5	35.6	47.5	61.9	47.7	37.4	47.2
2028	62.0	61.1	37.1	53.7	59.0	50.1	35.0	44.6	63.1	51.7	37.6	43.1
2029	63.3	61.5	37.2	54.1	60.2	50.1	35.0	44.6	64.3	51.7	37.7	43.1
2030	64.6	62.4	37.3	54.8	61.4	50.1	35.1	44.6	65.7	51.7	37.8	43.1
2031	65.9	63.6	37.4	55.1	62.6	50.1	35.2	44.6	67.0	52.8	37.9	43.2

Table 44 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Passenger Car Fleet (mpg)

	Total			
	Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved
2024	49.3	41.2	49.3	41.2
2025	53.6	44.3	53.6	44.3
2026	59.5	49.8	59.5	49.8
2027	60.7	52.8	36.9	51.2
2028	62.0	54.9	37.1	45.5
2029	63.2	57.9	37.2	45.9
2030	64.5	58.1	37.3	46.1
2031	65.8	58.7	37.4	46.3

Table 45 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)												
	BMW				Ferrari				Ford			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	36.4	31.0	36.4	31.0	0.0	0.0	0.0	0.0	33.4	28.9	33.4	28.9
2025	39.6	34.6	39.6	34.6	0.0	0.0	0.0	0.0	36.3	31.1	36.3	31.1
2026	43.9	36.7	43.9	36.7	0.0	0.0	0.0	0.0	40.4	31.8	40.4	31.8
2027	43.9	42.3	29.2	38.5	0.0	0.0	0.0	0.0	40.4	36.5	26.6	35.0
2028	43.9	42.3	29.9	37.3	0.0	0.0	0.0	0.0	40.4	37.6	28.3	32.6
2029	44.8	43.4	30.0	37.3	0.0	0.0	0.0	0.0	41.2	37.6	28.4	32.6
2030	45.8	43.5	30.1	37.3	0.0	0.0	0.0	0.0	42.0	39.8	28.4	33.7
2031	46.7	43.5	30.1	37.3	0.0	0.0	0.0	0.0	42.9	39.8	28.5	33.7

Table 46 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)												
	GM				Honda				Hyundai			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	32.1	26.5	32.1	26.5	37.4	34.7	37.4	34.7	37.4	33.1	37.4	33.1
2025	34.9	27.9	34.9	27.9	40.7	38.9	40.7	38.9	40.7	34.9	40.7	34.9
2026	38.8	32.2	38.8	32.2	45.2	40.5	45.2	40.5	45.2	38.7	45.2	38.7
2027	38.8	32.4	25.5	32.4	45.2	40.5	30.2	40.5	45.2	39.3	30.2	39.2
2028	38.8	34.6	27.1	30.7	45.2	42.7	29.3	37.0	45.2	43.0	31.0	34.5
2029	39.6	34.9	27.2	30.8	46.1	42.7	29.4	37.0	46.1	45.5	31.1	34.5
2030	40.4	35.4	27.2	30.8	47.1	44.5	29.5	37.0	47.1	45.5	31.2	34.5
2031	41.2	36.5	27.3	31.3	48.0	44.6	29.6	37.0	48.1	45.5	31.2	34.5

Table 47 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)												
	Ineos				JLR				KIA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	36.6	19.9	36.6	19.9	35.3	26.9	35.3	26.9	37.0	31.4	37.0	31.4
2025	39.7	19.9	39.7	19.9	38.4	28.4	38.4	28.4	40.3	36.0	40.3	36.0
2026	44.1	19.9	44.1	19.9	42.7	30.4	42.7	30.4	44.7	40.6	44.7	40.6
2027	44.1	22.7	29.4	22.7	42.7	32.0	28.3	31.5	44.7	40.6	29.8	40.6
2028	44.1	22.7	31.4	22.7	42.7	32.0	30.3	29.5	44.7	44.8	0.0	0.0
2029	45.0	22.7	31.5	22.7	43.5	35.0	30.3	30.8	45.7	44.8	0.0	0.0
2030	46.0	22.7	31.6	22.7	44.4	35.0	30.4	30.8	46.6	44.8	0.0	0.0
2031	46.9	31.0	31.7	31.0	45.3	37.9	30.5	32.1	47.5	45.0	0.0	0.0

Table 48 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)												
	Mazda				Mercedes-Benz				Mitsubishi			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	38.5	34.7	38.5	34.7	35.8	27.4	35.8	27.4	40.8	35.9	40.8	35.9
2025	41.8	35.1	41.8	35.1	38.9	28.0	38.9	28.0	44.3	38.6	44.3	38.6
2026	46.5	35.1	46.5	35.1	43.2	35.7	43.2	35.7	49.2	45.4	49.2	45.4
2027	46.5	41.7	31.1	38.5	43.2	36.3	28.7	35.9	49.2	45.4	33.2	45.4
2028	46.5	41.7	0.0	0.0	43.2	36.3	30.5	37.1	49.2	45.4	0.0	0.0
2029	47.4	44.6	0.0	0.0	44.1	36.3	30.6	37.1	50.2	45.4	0.0	0.0
2030	48.4	44.6	0.0	0.0	45.0	39.1	30.7	37.1	51.3	50.9	0.0	0.0
2031	49.4	47.8	0.0	0.0	45.9	39.1	30.7	37.1	52.3	50.9	0.0	0.0

Table 49 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)												
	Nissan				Stellantis				Subaru			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	36.2	30.7	36.2	30.7	34.5	27.3	34.5	27.3	40.4	36.1	40.4	36.1
2025	39.4	32.1	39.4	32.1	37.5	28.3	37.5	28.3	43.9	36.1	43.9	36.1
2026	43.7	33.3	43.7	33.3	41.7	29.4	41.7	29.4	48.7	36.1	48.7	36.1
2027	43.7	36.2	29.1	35.5	41.7	33.9	27.6	32.2	48.7	39.9	32.8	37.1
2028	43.7	36.2	29.8	29.7	41.7	36.4	29.6	30.8	48.7	46.8	0.0	0.0
2029	44.6	41.4	29.8	30.3	42.5	39.1	29.6	32.6	49.7	48.5	0.0	0.0
2030	45.5	44.9	29.9	33.6	43.4	39.1	29.7	32.6	50.7	48.5	0.0	0.0
2031	46.5	44.9	30.0	33.6	44.3	39.1	29.8	32.7	51.8	48.5	0.0	0.0

Table 50 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)												
	Toyota				Volvo				VWA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	35.7	34.4	35.7	34.4	37.0	33.6	37.0	33.6	37.8	30.7	37.8	30.7
2025	38.8	35.0	38.8	35.0	40.2	36.7	40.2	36.7	41.1	36.5	41.1	36.5
2026	43.1	37.3	43.1	37.3	44.7	39.9	44.7	39.9	45.7	37.9	45.7	37.9
2027	43.1	38.0	28.6	37.9	44.7	45.0	29.8	43.9	45.7	44.0	30.6	40.3
2028	43.1	39.8	28.5	28.6	44.7	45.0	0.0	0.0	45.7	45.0	31.1	33.2
2029	44.0	40.9	28.6	28.7	45.6	45.0	0.0	0.0	46.6	45.0	31.2	33.2
2030	44.9	42.1	28.6	28.7	46.5	45.0	0.0	0.0	47.6	45.0	31.3	33.2
2031	45.8	42.5	28.7	28.8	47.4	45.0	0.0	0.0	48.6	45.0	31.4	33.2

Table 51 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Light Truck Fleet (mpg)

	Total			
	Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved
2024	35.4	30.5	35.4	30.5
2025	38.4	32.3	38.4	32.3
2026	42.7	34.6	42.7	34.6
2027	42.7	37.1	28.3	36.1
2028	42.7	39.1	28.4	31.1
2029	43.6	40.2	28.5	31.5
2030	44.5	41.2	28.5	31.8
2031	45.4	41.7	28.6	32.1

Table 52 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)												
	BMW				Ferrari				Ford			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.8	32.8	48.8	32.8
2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0	32.8	53.0	32.8
2026	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.9	35.4	58.9	35.4
2027	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.1	38.1	36.7	36.7
2028	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.4	38.1	38.8	39.3
2029	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.6	38.1	38.9	39.2
2030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.9	38.1	39.0	39.2
2031	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	65.2	38.1	39.1	39.2

Table 53 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)												
	GM				Honda				Hyundai			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	48.4	35.3	48.4	35.3	49.1	45.2	49.1	45.2	0.0	0.0	0.0	0.0
2025	52.6	41.0	52.6	41.0	53.4	45.2	53.4	45.2	0.0	0.0	0.0	0.0
2026	58.5	51.7	58.5	51.7	59.3	51.3	59.3	51.3	0.0	0.0	0.0	0.0
2027	59.7	51.7	36.5	51.7	60.5	52.1	36.9	51.5	0.0	0.0	0.0	0.0
2028	60.9	51.7	37.6	49.1	61.7	56.1	37.3	46.6	0.0	0.0	0.0	0.0
2029	62.1	51.7	37.7	49.1	63.0	63.8	37.4	47.3	0.0	0.0	0.0	0.0
2030	63.4	51.7	37.8	49.1	64.3	63.8	37.5	47.8	0.0	0.0	0.0	0.0
2031	64.7	51.7	37.9	49.4	65.6	63.8	37.5	47.8	0.0	0.0	0.0	0.0

Table 54 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)												
	Ineos				JLR				KIA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.6	44.3	50.6	44.3
2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.0	44.3	55.0	44.3
2026	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.1	44.3	61.1	44.3
2027	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.4	48.2	37.7	46.2
2028	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.6	48.2	40.3	46.2
2029	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.9	71.6	40.4	46.2
2030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.2	71.6	40.5	46.2
2031	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	67.6	71.6	40.6	46.2

Table 55 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)												
	Mazda				Mercedes-Benz				Mitsubishi			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 56 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)												
	Nissan				Stellantis				Subaru			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	49.6	44.6	49.6	44.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	53.9	53.6	53.9	53.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	59.9	56.7	59.9	56.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	61.1	61.6	37.1	60.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	62.3	61.6	37.3	51.6	0.0	0.0	34.1	38.9	0.0	0.0	0.0	0.0
2029	63.6	61.6	37.4	54.5	0.0	0.0	34.2	38.9	0.0	0.0	0.0	0.0
2030	64.9	61.6	37.5	54.5	0.0	0.0	34.2	38.9	0.0	0.0	0.0	0.0
2031	66.2	62.3	37.6	54.4	0.0	0.0	34.3	38.9	0.0	0.0	0.0	0.0

Table 57 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)												
	Toyota				Volvo				VWA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	47.7	42.3	47.7	42.3	46.6	39.5	46.6	39.5	44.3	29.7	44.3	29.7
2025	51.8	60.8	51.8	60.8	50.7	39.5	50.7	39.5	48.1	29.7	48.1	29.7
2026	57.6	60.8	57.6	60.8	56.3	53.3	56.3	53.3	53.5	43.5	53.5	43.5
2027	58.8	60.8	36.1	60.8	57.5	53.3	35.5	53.3	54.2	43.5	34.0	43.5
2028	60.0	60.9	36.1	51.9	58.7	53.3	36.1	53.3	55.5	43.5	34.1	35.2
2029	61.2	60.9	36.2	52.1	59.9	53.3	36.2	53.3	56.4	43.5	34.2	35.3
2030	62.4	60.9	36.3	52.0	61.1	53.3	36.3	53.3	57.5	43.5	34.2	35.3
2031	63.7	62.2	36.4	53.6	62.3	53.3	36.4	53.3	58.7	43.5	34.3	35.3

Table 58 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Domestic Car Fleet (mpg)

	Total			
	Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved
2024	49.0	41.3	49.0	41.3
2025	53.2	45.4	53.2	45.4
2026	59.1	50.9	59.1	50.9
2027	60.3	52.7	36.8	52.0
2028	61.5	54.2	37.0	45.7
2029	62.8	57.9	37.1	46.3
2030	64.1	57.9	37.2	46.4
2031	65.4	58.1	37.3	46.5

Table 59 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)												
	BMW				Ferrari				Ford			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	47.6	34.2	47.6	34.2	47.6	21.2	47.6	21.2	0.0	0.0	0.0	0.0
2025	51.7	38.2	51.7	38.2	51.7	21.3	51.7	21.3	0.0	0.0	0.0	0.0
2026	57.4	42.0	57.4	42.0	57.5	21.4	57.5	21.4	0.0	0.0	0.0	0.0
2027	58.6	42.7	36.0	42.3	58.6	21.4	36.1	21.4	0.0	0.0	0.0	0.0
2028	59.8	46.7	35.5	41.6	59.8	22.0	37.1	22.0	0.0	0.0	34.8	41.5
2029	61.0	46.7	35.6	41.7	61.0	22.0	37.2	22.0	0.0	0.0	34.9	41.5
2030	62.3	46.8	35.7	41.7	62.3	23.0	37.3	23.0	0.0	0.0	34.9	41.6
2031	63.6	49.1	35.7	42.3	63.6	24.2	37.3	24.2	0.0	0.0	35.0	41.6

Table 60 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)												
	GM				Honda				Hyundai			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	50.6	42.0	50.6	42.0	0.0	0.0	0.0	0.0	48.6	41.1	48.6	41.1
2025	55.0	42.0	55.0	42.0	0.0	0.0	0.0	0.0	52.9	42.4	52.9	42.4
2026	61.2	45.6	61.2	45.6	0.0	0.0	0.0	0.0	58.7	45.4	58.7	45.4
2027	62.4	50.8	37.7	48.1	0.0	0.0	0.0	0.0	59.9	53.3	36.5	46.8
2028	63.7	50.8	37.1	43.6	0.0	0.0	0.0	0.0	61.2	59.4	36.5	43.3
2029	65.0	61.8	37.2	44.1	0.0	0.0	0.0	0.0	62.4	62.5	36.6	43.4
2030	66.3	61.8	37.3	44.3	0.0	0.0	0.0	0.0	63.7	62.5	36.7	43.4
2031	67.6	62.0	37.4	44.3	0.0	0.0	0.0	0.0	65.0	62.5	36.8	43.4

Table 61 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)												
	Ineos				JLR				KIA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	0.0	0.0	0.0	0.0	47.4	28.4	47.4	28.4	49.2	41.8	49.2	41.8
2025	0.0	0.0	0.0	0.0	51.5	28.4	51.5	28.4	53.4	51.2	53.4	51.2
2026	0.0	0.0	0.0	0.0	57.2	42.6	57.2	42.6	59.4	57.1	59.4	57.1
2027	0.0	0.0	0.0	0.0	58.4	42.6	35.9	42.6	60.6	57.1	36.9	57.1
2028	0.0	0.0	0.0	0.0	59.6	42.6	36.1	41.1	61.8	61.9	35.8	45.5
2029	0.0	0.0	0.0	0.0	60.8	42.6	36.2	41.1	63.1	62.1	35.9	45.6
2030	0.0	0.0	0.0	0.0	62.0	42.6	36.3	41.1	64.4	62.1	36.0	45.6
2031	0.0	0.0	0.0	0.0	63.3	42.5	36.4	41.1	65.7	62.1	36.1	45.5

Table 62 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)												
	Mazda				Mercedes-Benz				Mitsubishi			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	50.7	39.9	50.7	39.9	46.1	34.0	46.1	34.0	55.4	53.9	55.4	53.9
2025	55.1	43.2	55.1	43.2	50.1	35.1	50.1	35.1	60.2	53.9	60.2	53.9
2026	61.2	60.9	61.2	60.9	55.7	36.3	55.7	36.3	66.9	77.1	66.9	77.1
2027	62.4	60.9	37.5	60.9	56.8	38.1	35.3	37.4	68.3	77.1	39.0	77.1
2028	63.7	60.9	36.9	39.8	58.0	39.7	35.6	36.6	69.7	77.1	39.8	50.5
2029	65.0	60.9	37.0	40.2	59.2	42.9	35.7	37.9	71.1	77.1	39.9	50.6
2030	66.3	60.9	37.1	40.2	60.4	45.4	35.8	39.2	72.6	77.1	40.0	53.4
2031	67.7	60.9	37.2	42.1	61.6	46.7	35.9	39.6	74.0	77.1	40.1	53.4

Table 63 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)												
	Nissan				Stellantis				Subaru			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	49.6	41.9	49.6	41.9	50.5	38.7	50.5	38.7	50.5	36.3	50.5	36.3
2025	54.0	41.9	54.0	41.9	54.9	39.2	54.9	39.2	54.9	39.7	54.9	39.7
2026	60.0	43.8	60.0	43.8	61.0	39.2	61.0	39.2	61.0	39.7	61.0	39.7
2027	61.2	52.8	37.2	49.0	62.3	44.8	37.7	43.8	62.2	49.9	37.6	42.3
2028	62.4	53.0	38.2	47.2	63.5	44.8	39.0	40.0	63.5	60.4	39.3	41.1
2029	63.7	53.0	38.3	48.5	64.8	44.8	39.1	40.1	64.8	60.4	39.4	41.7
2030	65.0	53.0	38.4	48.6	66.2	45.3	39.2	40.3	66.1	60.4	39.5	41.7
2031	66.3	53.0	38.5	48.6	67.5	45.3	39.3	40.3	67.5	60.4	39.6	41.7

Table 64 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)												
	Toyota				Volvo				VWA			
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	49.7	46.5	49.7	46.5	47.8	30.5	47.8	30.5	50.7	36.7	50.7	36.7
2025	54.0	47.5	54.0	47.5	51.9	30.5	51.9	30.5	55.1	41.4	55.1	41.4
2026	60.0	59.2	60.0	59.2	57.7	31.7	57.7	31.7	61.2	46.0	61.2	46.0
2027	61.2	60.7	37.2	60.3	58.8	33.7	36.1	33.7	62.5	48.0	37.7	47.5
2028	62.5	61.1	37.2	53.9	60.0	41.0	34.8	43.5	63.7	52.4	38.9	46.4
2029	63.8	61.6	37.3	54.4	61.3	41.0	34.8	43.5	65.0	52.4	39.0	46.4
2030	65.1	62.7	37.4	55.1	62.5	41.0	34.9	43.5	66.4	52.4	39.1	46.4
2031	66.4	63.9	37.5	55.2	63.8	41.0	35.0	43.5	67.7	53.6	39.2	46.6

Table 65 - Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)

Comparison of Alt 0 - No Action and Alt 2 - scen 2 Required and Achieved CAFE Levels in MYs 2024-2031 for the Imported Car Fleet (mpg)												
	Total											
	Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2		Alt 0 - No Action		Alt 2 - scen 2	
Model Year	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved	Required	Achieved
2024	49.5	41.2	49.5	41.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	53.9	43.4	53.9	43.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	59.8	49.0	59.8	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	61.0	52.8	37.1	50.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	62.3	55.5	37.1	45.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	63.6	57.9	37.2	45.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	64.9	58.3	37.3	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	66.2	59.1	37.4	46.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

A5. Incremental Benefits and Costs

Table 66 - Incremental Benefits and Costs Over the Lifetimes of Passenger Car Fleet Produced Through 2031 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative

Incremental Benefits and Costs Over the Lifetimes of Passenger Car Fleet Produced Through 2031 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	9.2	9.2	10.5
Sacrifice in Other Vehicle Attributes	23.9	23.9	25.4
Consumer Surplus Loss from Reduced New Vehicle Sales	0.0	0.0	0.0
Safety Costs Internalized by Drivers	33.5	33.5	34.5
Subtotal - Incremental Private Costs	66.6	66.6	70.5
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	389.6	389.6	390.2
Safety Costs Not Internalized by Drivers	979.9	979.9	980.3
Loss in Fuel Tax Revenue	-53.7	-53.7	-53.2
Subtotal - Incremental External Costs	1,315.8	1,315.8	1,317.3
Total Incremental Social Costs	1,382.4	1,382.4	1,387.8
Private Benefits			
Reduced Fuel Costs	-321.1	-321.1	-318.2
Benefits from Additional Driving	48.5	48.5	49.9
Less Frequent Refueling	-18.9	-18.9	-18.7
Subtotal - Incremental Private Benefits	-291.5	-291.5	-286.9
External Benefits			
Reduction in Petroleum Market Externality	-13.2	-13.2	-13.1
Reduced Health Damages	-23.2	-23.2	-23.2
Subtotal - Incremental External Benefits	-36.4	-36.4	-36.2
Total Incremental Social Benefits	-327.9	-327.9	-323.2
Net Incremental Social Benefits	-1710.3	-1710.3	-1711

Table 67 - Incremental Benefits and Costs Over the Lifetimes of Light Truck Fleet Produced Through 2031 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative

Incremental Benefits and Costs Over the Lifetimes of Light Truck Fleet Produced Through 2031 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	-46.3	-46.2	-44.3
Sacrifice in Other Vehicle Attributes	-50.5	-50.4	-48.4
Consumer Surplus Loss from Reduced New Vehicle Sales	0.0	0.0	0.0
Safety Costs Internalized by Drivers	-51.8	-51.8	-50.5
Subtotal - Incremental Private Costs	-148.6	-148.5	-143.1
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	-399.2	-399.2	-398.7
Safety Costs Not Internalized by Drivers	-988.6	-988.6	-988.6
Loss in Fuel Tax Revenue	44.7	44.7	45.4
Subtotal - Incremental External Costs	-1,343.1	-1,343.0	-1,341.9
Total Incremental Social Costs			
Private Benefits			
Reduced Fuel Costs	267.2	267.2	271.7
Benefits from Additional Driving	-73.6	-73.6	-71.6
Less Frequent Refueling	15.8	15.8	16.0
Subtotal - Incremental Private Benefits	209.4	209.4	216.1
External Benefits			
Reduction in Petroleum Market Externality	11.0	11.0	11.2
Reduced Health Damages	22.4	22.4	22.4
Subtotal - Incremental External Benefits	33.4	33.4	33.6
Total Incremental Social Benefits	242.8	242.8	249.7
Net Incremental Social Benefits	1734.5	1734.3	1734.7

Table 68 - Incremental Benefits and Costs Over the Lifetimes of Passenger Car Fleet Produced Through 2031 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative

Incremental Benefits and Costs Over the Lifetimes of Passenger Car Fleet Produced Through 2031 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	7.5	7.5	8.6
Sacrifice in Other Vehicle Attributes	15.2	15.2	16.1
Consumer Surplus Loss from Reduced New Vehicle Sales	0.0	0.0	0.0
Safety Costs Internalized by Drivers	20.6	20.6	21.2
Subtotal - Incremental Private Costs	43.2	43.2	45.9
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	248.4	248.4	248.8
Safety Costs Not Internalized by Drivers	607.2	607.3	607.5
Loss in Fuel Tax Revenue	-34.5	-34.5	-34.1
Subtotal - Incremental External Costs	821.2	821.2	822.2
Total Incremental Social Costs	864.4	864.4	868.1
Private Benefits			
Reduced Fuel Costs	-203.4	-203.4	-201.5
Benefits from Additional Driving	29.8	29.8	30.7
Less Frequent Refueling	-12.0	-12.0	-11.9
Subtotal - Incremental Private Benefits	-185.6	-185.6	-182.7
External Benefits			
Reduction in Petroleum Market Externality	-8.3	-8.3	-8.2
Reduced Health Damages	-13.3	-13.3	-13.3
Subtotal - Incremental External Benefits	-21.6	-21.6	-21.5
Total Incremental Social Benefits	-207.2	-207.2	-204.2
Net Incremental Social Benefits	-1,071.6	-1,071.6	-1,072.3

Table 69 - Incremental Benefits and Costs Over the Lifetimes of Light Truck Fleet Produced Through 2031 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative

Incremental Benefits and Costs Over the Lifetimes of Light Truck Fleet Produced Through 2031 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	-37.7	-37.7	-36.1
Sacrifice in Other Vehicle Attributes	-32.1	-32.1	-30.7
Consumer Surplus Loss from Reduced New Vehicle Sales	0.0	0.0	0.0
Safety Costs Internalized by Drivers	-32.1	-32.1	-31.2
Subtotal - Incremental Private Costs	-101.9	-101.8	-98.1
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	-254.4	-254.4	-254.2
Safety Costs Not Internalized by Drivers	-612.7	-612.7	-612.7
Loss in Fuel Tax Revenue	28.6	28.7	29.1
Subtotal - Incremental External Costs	-838.5	-838.5	-837.7
Total Incremental Social Costs	-940.4	-940.4	-935.8
Private Benefits			
Reduced Fuel Costs	169.1	169.2	172.0
Benefits from Additional Driving	-45.7	-45.6	-44.4
Less Frequent Refueling	10.1	10.1	10.2
Subtotal - Incremental Private Benefits	133.6	133.6	137.8
External Benefits			
Reduction in Petroleum Market Externality	6.9	6.9	7.0
Reduced Health Damages	12.8	12.8	12.8
Subtotal - Incremental External Benefits	19.7	19.7	19.9
Total Incremental Social Benefits	153.3	153.3	157.7
Net Incremental Social Benefits	1,093.7	1,093.7	1,093.5

Table 70 - Incremental Benefits and Costs for Calendar Years 2024-2050 for Total Fleet Produced Through MY 2050 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative

Incremental Benefits and Costs for Calendar Years 2024-2050 for Total Fleet Produced Through MY 2050 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	-150.1	-150.0	-138.0
Sacrifice in Other Vehicle Attributes	-119.2	-119.2	-105.2
Consumer Surplus Loss from Reduced New Vehicle Sales	0.1	0.1	0.1
Safety Costs Internalized by Drivers	-60.5	-60.5	-53.6
Subtotal - Incremental Private Costs	-329.7	-329.6	-296.6
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	-26.6	-26.6	-23.6
Safety Costs Not Internalized by Drivers	-7.9	-7.9	-7.3
Loss in Fuel Tax Revenue	-29.8	-29.8	-26.2
Subtotal - Incremental External Costs	-64.3	-64.2	-57.2
Total Incremental Social Costs	-393.9	-393.8	-353.8
Private Benefits			
Reduced Fuel Costs	-185.4	-185.4	-163.3
Benefits from Additional Driving	-84.3	-84.3	-74.1
Less Frequent Refueling	-10.1	-10.1	-9.0
Subtotal - Incremental Private Benefits	-279.8	-279.7	-246.5
External Benefits			
Reduction in Petroleum Market Externality	-7.8	-7.8	-6.9
Reduced Health Damages	-3.5	-3.5	-3.1
Subtotal - Incremental External Benefits	-11.4	-11.4	-10.0
Total Incremental Social Benefits	-291.2	-291.1	-256.5
Net Incremental Social Benefits	102.8	102.8	97.3

Table 71 - Incremental Benefits and Costs for Calendar Years 2024-2050 for Passenger Car Fleet Produced Through MY 2050 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative

Incremental Benefits and Costs for Calendar Years 2024-2050 for Passenger Car Fleet Produced Through MY 2050 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	39.3	39.3	44.1
Sacrifice in Other Vehicle Attributes	113.4	113.4	119.2
Consumer Surplus Loss from Reduced New Vehicle Sales	0.1	0.1	0.1
Safety Costs Internalized by Drivers	101.8	101.8	104.8
Subtotal - Incremental Private Costs	254.6	254.6	268.1
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	1229.5	1229.6	1231.3
Safety Costs Not Internalized by Drivers	2,986.1	2,986.1	2,986.9
Loss in Fuel Tax Revenue	-164.8	-164.8	-163.4
Subtotal - Incremental External Costs	4,050.8	4,050.8	4,054.8
Total Incremental Social Costs	4,305.4	4,305.4	4,322.9
Private Benefits			
Reduced Fuel Costs	-1,026.3	-1,026.3	-1,017.5
Benefits from Additional Driving	148.8	148.8	153.0
Less Frequent Refueling	-58.9	-58.9	-58.4
Subtotal - Incremental Private Benefits	-936.4	-936.4	-922.8
External Benefits			
Reduction in Petroleum Market Externality	-43.4	-43.4	-43.0
Reduced Health Damages	-64.1	-64.1	-63.9
Subtotal - Incremental External Benefits	-107.5	-107.5	-107.0
Total Incremental Social Benefits	-1,043.9	-1,043.9	-1,029.8
Net Incremental Social Benefits	-5,349.3	-5,349.3	-5,352.7

Table 72 - Incremental Benefits and Costs for Calendar Years 2024-2050 for Light Truck Fleet Produced Through MY 2050 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative

Incremental Benefits and Costs for Calendar Years 2024-2050 for Light Truck Fleet Produced Through MY 2050 (2024\$ BILLIONS), 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	-189.3	-189.3	-182.1
Sacrifice in Other Vehicle Attributes	-232.7	-232.6	-224.3
Consumer Surplus Loss from Reduced New Vehicle Sales	0	0	0
Safety Costs Internalized by Drivers	-162.3	-162.3	-158.3
Subtotal - Incremental Private Costs	-584.3	-584.2	-564.8
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	-1256.2	-1256.2	-1254.9
Safety Costs Not Internalized by Drivers	-2,994.0	-2,994.0	-2,994.2
Loss in Fuel Tax Revenue	135.1	135.1	137.2
Subtotal - Incremental External Costs	-4,115.1	-4,115.1	-4,111.9
Total Incremental Social Costs	-4,699.4	-4,699.3	-4,676.7
Private Benefits			
Reduced Fuel Costs	840.9	841	854.2
Benefits from Additional Driving	-233.1	-233.1	-227.2
Less Frequent Refueling	48.8	48.8	49.4
Subtotal - Incremental Private Benefits	656.6	656.6	676.3
External Benefits			
Reduction in Petroleum Market Externality	35.6	35.6	36.1
Reduced Health Damages	60.6	60.6	60.9
Subtotal - Incremental External Benefits	96.1	96.1	97
Total Incremental Social Benefits	752.7	752.8	773.3
Net Incremental Social Benefits	5,452.1	5,452.1	5,450.0

Table 73 - Incremental Benefits and Costs for Calendar Years 2024-2050 for Total Fleet Produced Through MY 2050 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative

Incremental Benefits and Costs for Calendar Years 2024-2050 for Total Fleet Produced Through MY 2050 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	-94.0	-94.0	-86.3
Sacrifice in Other Vehicle Attributes	-57.4	-57.4	-50.5
Consumer Surplus Loss from Reduced New Vehicle Sales	0.1	0.1	0.1
Safety Costs Internalized by Drivers	-32.5	-32.5	-28.7
Subtotal - Incremental Private Costs	-183.8	-183.8	-165.4
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	-14.6	-14.6	-12.9
Safety Costs Not Internalized by Drivers	-4.8	-4.8	-4.5
Loss in Fuel Tax Revenue	-16.3	-16.3	-14.3
Subtotal - Incremental External Costs	-35.8	-35.7	-31.8
Total Incremental Social Costs	-219.6	-219.5	-197.2
Private Benefits			
Reduced Fuel Costs	-100.6	-100.6	-88.4
Benefits from Additional Driving	-45.4	-45.4	-39.8
Less Frequent Refueling	-5.5	-5.5	-4.9
Subtotal - Incremental Private Benefits	-151.5	-151.4	-133.2
External Benefits			
Reduction in Petroleum Market Externality	-4.2	-4.2	-3.7
Reduced Health Damages	-1.7	-1.7	-1.5
Subtotal - Incremental External Benefits	-5.9	-5.9	-5.2
Total Incremental Social Benefits	-157.4	-157.4	-138.4
Net Incremental Social Benefits	62.1	62.1	58.8

Table 74 - Incremental Benefits and Costs for Calendar Years 2024-2050 for Passenger Car Fleet Produced Through MY 2050 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative

Incremental Benefits and Costs for Calendar Years 2024-2050 for Passenger Car Fleet Produced Through MY 2050 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	24.0	24.0	27.1
Sacrifice in Other Vehicle Attributes	53.5	53.5	56.4
Consumer Surplus Loss from Reduced New Vehicle Sales	0.1	0.1	0.1
Safety Costs Internalized by Drivers	54.0	54.0	55.7
Subtotal - Incremental Private Costs	131.6	131.6	139.2
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	670.3	670.3	671.2
Safety Costs Not Internalized by Drivers	1,595.6	1,595.6	1,596.1
Loss in Fuel Tax Revenue	-90.4	-90.4	-89.6
Subtotal - Incremental External Costs	2,175.5	2,175.5	2,177.8
Total Incremental Social Costs	2,307.1	2,307.1	2,317.0
Private Benefits			
Reduced Fuel Costs	-556.7	-556.7	-551.8
Benefits from Additional Driving	79.2	79.2	81.5
Less Frequent Refueling	-32.1	-32.1	-31.9
Subtotal - Incremental Private Benefits	-509.6	-509.6	-502.1
External Benefits			
Reduction in Petroleum Market Externality	-23.3	-23.3	-23.1
Reduced Health Damages	-32.0	-32.0	-31.9
Subtotal - Incremental External Benefits	-55.3	-55.3	-55.0
Total Incremental Social Benefits	-564.9	-564.9	-557.2
Net Incremental Social Benefits	-2,872.0	-2,872.0	-2,874.2

Table 75 - Incremental Benefits and Costs for Calendar Years 2024-2050 for Light Truck Fleet Produced Through MY 2050 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative

Incremental Benefits and Costs for Calendar Years 2024-2050 for Light Truck Fleet Produced Through MY 2050 (2024\$ BILLIONS), 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Private Costs			
Technology Costs to Increase Fuel Economy	-118.0	-118.0	-113.4
Sacrifice in Other Vehicle Attributes	-110.9	-110.9	-106.8
Consumer Surplus Loss from Reduced New Vehicle Sales	0.0	0.0	0.0
Safety Costs Internalized by Drivers	-86.5	-86.5	-84.4
Subtotal - Incremental Private Costs	-315.4	-315.4	-304.6
External Costs			
Congestion and Noise Costs from Rebound-Effect Driving	-684.9	-684.9	-684.2
Safety Costs Not Internalized by Drivers	-1,600.4	-1,600.4	-1,600.6
Loss in Fuel Tax Revenue	74.0	74.1	75.2
Subtotal - Incremental External Costs	-2,211.3	-2,211.2	-2,209.6
Total Incremental Social Costs	-2,526.7	-2,526.6	-2,514.2
Private Benefits			
Reduced Fuel Costs	456.1	456.1	463.4
Benefits from Additional Driving	-124.6	-124.6	-121.3
Less Frequent Refueling	26.6	26.6	27.0
Subtotal - Incremental Private Benefits	358.1	358.1	369.1
External Benefits			
Reduction in Petroleum Market Externality	19.1	19.1	19.4
Reduced Health Damages	30.2	30.2	30.4
Subtotal - Incremental External Benefits	49.3	49.3	49.8
Total Incremental Social Benefits	407.5	407.5	418.9
Net Incremental Social Benefits	2,934.2	2,934.1	2,933.1

A6. Incremental Societal Impacts

Table 76 - Incremental Total Societal Costs (\$b) by Year and Alternative for Total Fleet, Discounted at 3%

Incremental Total Societal Costs (\$b) by Year and Alternative for Total Fleet, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	-11.8	-1.1	-1.1	-10.1	-16.9	-21.5	-23.4	-23.4	-109.2
Alt 2 - scen 2	-11.8	-1.1	-1.1	-10.0	-16.8	-21.5	-23.4	-23.4	-109.1
Alt 3 - scen 3	-11.2	-1.0	-1.1	-8.5	-14.9	-18.9	-20.7	-20.9	-97.1

Table 77 - Incremental Total Societal Costs (\$b) by Year and Alternative for Passenger Car Fleet, Discounted at 3%

Incremental Total Societal Costs (\$b) by Year and Alternative for Passenger Car Fleet, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	-6.4	-0.4	-0.4	-3.0	375.7	354.9	341.4	320.5	1382.4
Alt 2 - scen 2	-6.4	-0.4	-0.4	-3.0	375.7	354.9	341.4	320.5	1382.4
Alt 3 - scen 3	-6.0	-0.3	-0.3	-2.8	376.9	356.1	342.7	321.7	1387.8

Table 78 - Incremental Total Societal Costs (\$b) by Year and Alternative for Light Truck Fleet, Discounted at 3%

Incremental Total Societal Costs (\$b) by Year and Alternative for Light Truck Fleet, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	-5.4	-0.7	-0.8	-7.0	-392.6	-376.4	-364.8	-343.9	-1491.6
Alt 2 - scen 2	-5.4	-0.7	-0.8	-7.0	-392.5	-376.5	-364.8	-343.9	-1491.6
Alt 3 - scen 3	-5.1	-0.7	-0.7	-5.8	-391.8	-375.0	-363.4	-342.5	-1485.0

Table 79 - Incremental Total Societal Costs (\$b) by Year and Alternative for Total Fleet, Discounted at 7%

Incremental Total Societal Costs (\$b) by Year and Alternative for Total Fleet, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	-7.9	-0.6	-0.7	-7.5	-12.5	-15.4	-16.0	-15.4	-76.1
Alt 2 - scen 2	-7.9	-0.6	-0.7	-7.5	-12.5	-15.4	-16.0	-15.4	-76.0
Alt 3 - scen 3	-7.5	-0.6	-0.6	-6.4	-11.1	-13.5	-14.2	-13.8	-67.7

Table 80 - Incremental Total Societal Costs (\$b) by Year and Alternative for Passenger Car Fleet, Discounted at 7%

Incremental Total Societal Costs (\$b) by Year and Alternative for Passenger Car Fleet, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	-4.4	-0.2	-0.2	-2.2	248.3	225.6	208.9	188.7	864.4
Alt 2 - scen 2	-4.4	-0.2	-0.2	-2.2	248.3	225.6	208.9	188.7	864.4
Alt 3 - scen 3	-4.2	-0.2	-0.2	-2.0	249.1	226.4	209.7	189.5	868.1

Table 81 - Incremental Total Societal Costs (\$b) by Year and Alternative for Light Truck Fleet, Discounted at 7%

Incremental Total Societal Costs (\$b) by Year and Alternative for Light Truck Fleet, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	-3.4	-0.4	-0.4	-5.3	-260.8	-241.0	-224.9	-204.1	-940.4
Alt 2 - scen 2	-3.4	-0.4	-0.4	-5.3	-260.8	-241.0	-224.9	-204.1	-940.4
Alt 3 - scen 3	-3.2	-0.4	-0.4	-4.4	-260.2	-239.9	-224.0	-203.3	-935.8

Table 82 - Incremental Total Societal Benefits (\$b) by Year and Alternative for Total Fleet Level, Discounted at 3%

Incremental Total Societal Benefits (\$b) by Year and Alternative for Total Fleet Level, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	3.8	0.3	0.3	-8.6	-15.6	-20.5	-22.5	-22.4	-85.2
Alt 2 - scen 2	3.8	0.3	0.3	-8.5	-15.6	-20.5	-22.5	-22.4	-85.1
Alt 3 - scen 3	3.6	0.3	0.3	-7.1	-13.5	-17.6	-19.6	-19.7	-73.5

Table 83 - Incremental Total Societal Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 3%

Incremental Total Societal Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	1.9	0.1	0.1	-2.0	-87.1	-84.7	-80.8	-75.3	-327.9
Alt 2 - scen 2	1.9	0.1	0.1	-2.0	-87.1	-84.7	-80.8	-75.3	-327.9
Alt 3 - scen 3	1.8	0.1	0.1	-1.9	-85.9	-83.5	-79.6	-74.2	-323.2

Table 84 - Incremental Total Societal Benefits (\$b) by Year and Alternative for Light Truck Fleet Level, Discounted at 3%

Incremental Total Societal Benefits (\$b) by Year and Alternative for Light Truck Fleet Level, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	1.8	0.2	0.2	-6.6	71.5	64.3	58.4	52.9	242.7
Alt 2 - scen 2	1.8	0.2	0.2	-6.5	71.5	64.3	58.4	52.9	242.8
Alt 3 - scen 3	1.7	0.2	0.2	-5.2	72.4	65.9	60.0	54.4	249.7

Table 85 - Incremental Total Societal Benefits (\$b) by Year and Alternative for Total Fleet Level, Discounted at 7%

Incremental Total Societal Benefits (\$b) by Year and Alternative for Total Fleet Level, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	2.4	0.2	0.2	-6.0	-10.4	-13.1	-13.8	-13.3	-53.9
Alt 2 - scen 2	2.4	0.2	0.2	-5.9	-10.4	-13.1	-13.8	-13.3	-53.8
Alt 3 - scen 3	2.3	0.2	0.1	-4.9	-9.0	-11.3	-12.1	-11.7	-46.5

Table 86 - Incremental Total Societal Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 7%

Incremental Total Societal Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	1.3	0.0	0.0	-1.4	-58.0	-54.3	-49.9	-44.9	-207.2
Alt 2 - scen 2	1.3	0.0	0.0	-1.4	-58.0	-54.3	-49.9	-44.9	-207.2
Alt 3 - scen 3	1.2	0.0	0.0	-1.3	-57.2	-53.6	-49.2	-44.2	-204.2

**Table 87 - Incremental Total Societal Benefits (\$b) by Year and Alternative for Light Truck Fleet Level,
Discounted at 7%**

Incremental Total Societal Benefits (\$b) by Year and Alternative for Light Truck Fleet Level, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	1.1	0.1	0.1	-4.6	47.6	41.2	36.1	31.6	153.3
Alt 2 - scen 2	1.1	0.1	0.1	-4.5	47.6	41.2	36.1	31.6	153.3
Alt 3 - scen 3	1.1	0.1	0.1	-3.6	48.2	42.3	37.1	32.5	157.7

Table 88 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Total Fleet Level, Discounted at 3%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Total Fleet Level, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	15.6	1.3	1.4	1.5	1.3	1.1	0.9	1.0	24.0
Alt 2 - scen 2	15.5	1.3	1.4	1.5	1.3	1.1	0.9	1.0	24.0
Alt 3 - scen 3	14.7	1.3	1.3	1.5	1.4	1.3	1.1	1.1	23.7

Table 89 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 3%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	8.3	0.4	0.4	1.0	-462.7	-439.6	-422.3	-395.8	-1710.3
Alt 2 - scen 2	8.3	0.4	0.4	1.0	-462.7	-439.6	-422.3	-395.8	-1710.3
Alt 3 - scen 3	7.8	0.4	0.4	0.9	-462.8	-439.6	-422.3	-395.8	-1711.0

Table 90 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Light Truck Fleet Level, Discounted at 3%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Light Truck Fleet Level, Discounted at 3%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	7.3	0.9	1.0	0.5	464.0	440.7	423.2	396.8	1734.4
Alt 2 - scen 2	7.3	0.9	1.0	0.5	464.0	440.7	423.2	396.8	1734.4
Alt 3 - scen 3	6.9	0.9	0.9	0.6	464.1	440.9	423.4	397.0	1734.7

**Table 91 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Total Fleet Level,
Discounted at 7%**

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Total Fleet Level, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	10.3	0.8	0.8	1.6	2.1	2.3	2.2	2.1	22.2
Alt 2 - scen 2	10.3	0.8	0.8	1.6	2.1	2.3	2.2	2.1	22.2
Alt 3 - scen 3	9.7	0.7	0.8	1.5	2.1	2.2	2.1	2.1	21.2

Table 92 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 7%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Passenger Car Fleet Level, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	5.7	0.3	0.3	0.8	-306.2	-279.9	-258.8	-233.6	-1071.5
Alt 2 - scen 2	5.7	0.3	0.3	0.8	-306.2	-279.9	-258.8	-233.6	-1071.5
Alt 3 - scen 3	5.4	0.3	0.2	0.7	-306.3	-280.0	-258.9	-233.7	-1072.3

Table 93 - Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Light Truck Fleet Level, Discounted at 7%

Incremental Total Societal Net Benefits (\$b) by Year and Alternative for Light Truck Fleet Level, Discounted at 7%									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	4.6	0.5	0.6	0.7	308.4	282.2	261.0	235.7	1093.7
Alt 2 - scen 2	4.6	0.5	0.6	0.7	308.4	282.2	261.0	235.7	1093.7
Alt 3 - scen 3	4.3	0.5	0.5	0.8	308.4	282.2	261.0	235.7	1093.5

A7. Regulatory Costs per Vehicle, by Model Year

Table 94 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Total)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Total)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	451	1,106	1,471	1,825	2,006	2,078	2,104
Alt 1 - scen 1	0	451	1,106	1,186	1,194	1,186	1,182	1,179
Alt 2 - scen 2	0	451	1,106	1,187	1,195	1,186	1,182	1,179
Alt 3 - scen 3	0	451	1,106	1,221	1,246	1,262	1,260	1,257

Table 95 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Total)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Total)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	503	1,230	1,476	1,705	2,000	1,997	2,019
Alt 1 - scen 1	0	503	1,230	1,237	1,108	1,100	1,092	1,090
Alt 2 - scen 2	0	503	1,230	1,237	1,108	1,100	1,092	1,090
Alt 3 - scen 3	0	503	1,230	1,248	1,150	1,142	1,138	1,136

Table 96 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Total)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Total)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	425	1,049	1,469	1,874	2,008	2,111	2,139
Alt 1 - scen 1	0	425	1,049	1,165	1,423	1,419	1,423	1,414
Alt 2 - scen 2	0	425	1,049	1,166	1,427	1,419	1,423	1,414
Alt 3 - scen 3	0	425	1,049	1,210	1,502	1,584	1,586	1,581

Table 97 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (BMW)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (BMW)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	817	1,122	1,573	1,718	1,801	1,800	1,844
Alt 1 - scen 1	0	817	1,122	1,174	1,242	1,233	1,218	1,208
Alt 2 - scen 2	0	817	1,122	1,174	1,242	1,233	1,218	1,208
Alt 3 - scen 3	0	817	1,122	1,174	1,243	1,233	1,218	1,208

Table 98 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Ferrari)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Ferrari)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	14	2,296	2,228	2,252	2,184	2,906	2,968
Alt 1 - scen 1	0	14	2,296	2,228	2,252	2,183	2,907	2,970
Alt 2 - scen 2	0	14	2,296	2,228	2,252	2,183	2,907	2,970
Alt 3 - scen 3	0	14	2,296	2,228	2,251	2,184	2,906	2,969

Table 99 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Ford)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Ford)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	517	713	1,432	1,697	1,676	1,896	1,874
Alt 1 - scen 1	0	517	713	940	945	935	943	932
Alt 2 - scen 2	0	517	713	941	945	935	943	932
Alt 3 - scen 3	0	517	713	1,090	1,094	1,082	1,088	1,075

Table 100 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (GM)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (GM)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	585	2,340	2,437	3,236	3,458	3,515	3,596
Alt 1 - scen 1	0	585	2,340	2,361	2,410	2,375	2,358	2,356
Alt 2 - scen 2	0	585	2,340	2,361	2,410	2,375	2,358	2,356
Alt 3 - scen 3	0	585	2,340	2,361	2,410	2,375	2,358	2,356

Table 101 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Honda)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Honda)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	359	803	858	1,175	1,422	1,433	1,420
Alt 1 - scen 1	0	359	803	799	752	692	657	649
Alt 2 - scen 2	0	359	803	799	752	692	657	649
Alt 3 - scen 3	0	359	803	799	752	692	657	648

Table 102 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Hyundai)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Hyundai)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	250	941	1,455	2,257	2,652	2,617	2,585
Alt 1 - scen 1	0	250	941	990	1,024	1,010	1,001	991
Alt 2 - scen 2	0	250	941	990	1,024	1,010	1,001	991
Alt 3 - scen 3	0	250	941	990	1,024	1,010	1,001	991

Table 103 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Ineos)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Ineos)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	0	0	814	810	802	795	2,735
Alt 1 - scen 1	0	0	0	814	810	802	795	2,735
Alt 2 - scen 2	0	0	0	814	810	802	795	2,735
Alt 3 - scen 3	0	0	0	814	810	802	795	2,735

Table 104 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (JLR)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (JLR)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	576	1,232	1,480	1,453	1,536	1,517	1,284
Alt 1 - scen 1	0	576	1,232	1,330	1,304	911	899	274
Alt 2 - scen 2	0	576	1,232	1,330	1,304	911	899	274
Alt 3 - scen 3	0	576	1,232	1,330	1,304	1,382	1,365	735

Table 105 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (KIA)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (KIA)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	1,056	1,738	1,787	2,374	2,770	2,733	2,715
Alt 1 - scen 1	0	1,056	1,738	1,747	1,730	1,704	1,685	1,665
Alt 2 - scen 2	0	1,056	1,738	1,747	1,730	1,704	1,685	1,665
Alt 3 - scen 3	0	1,056	1,738	1,747	1,730	1,703	1,685	1,665

Table 106 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Mazda)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Mazda)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	102	303	1,374	1,354	1,882	1,861	2,078
Alt 1 - scen 1	0	102	303	429	416	445	437	593
Alt 2 - scen 2	0	102	303	429	416	445	437	593
Alt 3 - scen 3	0	102	303	429	416	445	437	594

Table 107 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Mercedes-Benz)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Mercedes-Benz)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	92	729	908	928	992	1,451	1,442
Alt 1 - scen 1	0	92	729	771	783	718	741	709
Alt 2 - scen 2	0	92	729	770	783	718	741	709
Alt 3 - scen 3	0	92	729	908	929	863	882	848

Table 108 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Mitsubishi)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Mitsubishi)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	476	1,430	1,410	1,391	1,372	1,399	1,380
Alt 1 - scen 1	0	476	1,430	1,410	1,391	1,372	1,253	1,235
Alt 2 - scen 2	0	476	1,430	1,410	1,391	1,372	1,253	1,235
Alt 3 - scen 3	0	476	1,430	1,410	1,391	1,372	1,253	1,235

Table 109 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Nissan)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Nissan)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	554	786	1,205	1,186	1,356	1,492	1,513
Alt 1 - scen 1	0	554	786	953	932	873	900	885
Alt 2 - scen 2	0	554	786	968	948	873	900	885
Alt 3 - scen 3	0	554	786	968	948	889	917	902

Table 110 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Stellantis)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Stellantis)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	277	592	1,636	2,161	2,502	2,477	2,447
Alt 1 - scen 1	0	277	592	1,004	1,064	1,186	1,172	1,161
Alt 2 - scen 2	0	277	592	1,004	1,064	1,186	1,172	1,161
Alt 3 - scen 3	0	277	592	1,144	1,215	1,334	1,323	1,306

Table 111 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Subaru)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Subaru)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	102	93	887	1,254	1,327	1,305	1,285
Alt 1 - scen 1	0	102	93	80	36	54	48	44
Alt 2 - scen 2	0	102	93	80	36	54	48	44
Alt 3 - scen 3	0	102	93	90	159	194	187	182

Table 112 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Toyota)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Toyota)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	239	952	972	1,030	1,164	1,327	1,392
Alt 1 - scen 1	0	239	952	932	935	957	983	994
Alt 2 - scen 2	0	239	952	932	935	957	983	994
Alt 3 - scen 3	0	239	952	932	991	1,125	1,151	1,166

Table 113 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Volvo)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (Volvo)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	445	1,220	1,332	1,446	1,434	1,419	1,396
Alt 1 - scen 1	0	445	1,220	1,167	1,170	1,161	1,152	1,136
Alt 2 - scen 2	0	445	1,220	1,167	1,170	1,161	1,152	1,136
Alt 3 - scen 3	0	445	1,220	1,167	1,170	1,161	1,152	1,136

Table 114 - Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (VWA)

Estimated Average Per Vehicle Regulatory Costs (\$), Total Fleet for Manufacturer (VWA)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	996	1,325	1,909	2,207	2,180	2,155	2,188
Alt 1 - scen 1	0	996	1,325	1,449	1,455	1,440	1,423	1,413
Alt 2 - scen 2	0	996	1,325	1,449	1,455	1,440	1,423	1,413
Alt 3 - scen 3	0	996	1,325	1,514	1,519	1,503	1,532	1,537

Table 115 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (BMW)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (BMW)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	827	1,267	1,348	1,710	1,690	1,692	1,831
Alt 1 - scen 1	0	827	1,267	1,280	1,229	1,221	1,206	1,199
Alt 2 - scen 2	0	827	1,267	1,280	1,229	1,221	1,206	1,199
Alt 3 - scen 3	0	827	1,267	1,280	1,229	1,221	1,206	1,199

Table 116 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Ferrari)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Ferrari)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	14	2,296	2,228	2,252	2,184	2,906	2,968
Alt 1 - scen 1	0	14	2,296	2,228	2,252	2,183	2,907	2,970
Alt 2 - scen 2	0	14	2,296	2,228	2,252	2,183	2,907	2,970
Alt 3 - scen 3	0	14	2,296	2,228	2,251	2,184	2,906	2,969

Table 117 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Ford)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Ford)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	0	730	1,048	1,037	1,026	1,015	1,004
Alt 1 - scen 1	0	0	730	776	1,225	1,208	1,200	1,187
Alt 2 - scen 2	0	0	730	776	1,225	1,208	1,200	1,187
Alt 3 - scen 3	0	0	730	938	1,607	1,584	1,571	1,554

Table 118 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (GM)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (GM)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	713	1,767	2,073	2,048	2,830	2,797	2,775
Alt 1 - scen 1	0	713	1,767	1,806	1,932	1,924	1,909	1,878
Alt 2 - scen 2	0	713	1,767	1,806	1,932	1,924	1,909	1,878
Alt 3 - scen 3	0	713	1,767	1,806	1,931	1,924	1,909	1,877

Table 119 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Honda)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Honda)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	0	672	776	1,237	1,711	1,681	1,652
Alt 1 - scen 1	0	0	672	667	722	662	626	618
Alt 2 - scen 2	0	0	672	667	722	662	626	618
Alt 3 - scen 3	0	0	672	667	722	662	626	618

Table 120 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Hyundai)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Hyundai)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	196	647	1,793	2,555	2,860	2,821	2,783
Alt 1 - scen 1	0	196	647	702	1,034	1,019	1,010	1,000
Alt 2 - scen 2	0	196	647	702	1,034	1,019	1,010	1,000
Alt 3 - scen 3	0	196	647	702	1,034	1,019	1,010	1,000

Table 121 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (JLR)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (JLR)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	0	4,944	4,848	4,752	4,656	4,563	4,431
Alt 1 - scen 1	0	0	4,944	4,848	2,244	2,221	2,184	2,144
Alt 2 - scen 2	0	0	4,944	4,848	2,244	2,221	2,184	2,144
Alt 3 - scen 3	0	0	4,944	4,848	2,245	2,223	2,185	2,145

Table 122 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (KIA)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (KIA)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	865	1,258	1,369	1,743	2,770	2,729	2,689
Alt 1 - scen 1	0	865	1,258	1,272	1,730	1,704	1,685	1,665
Alt 2 - scen 2	0	865	1,258	1,272	1,730	1,704	1,685	1,665
Alt 3 - scen 3	0	865	1,258	1,272	1,730	1,703	1,685	1,665

Table 123 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Mazda)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Mazda)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	807	2,889	2,852	2,814	2,777	2,741	2,704
Alt 1 - scen 1	0	807	2,889	2,852	416	445	437	593
Alt 2 - scen 2	0	807	2,889	2,852	416	445	437	593
Alt 3 - scen 3	0	807	2,889	2,852	416	445	437	594

Table 124 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Mercedes-Benz)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Mercedes-Benz)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	75	228	488	551	775	1,139	1,166
Alt 1 - scen 1	0	75	228	311	382	288	336	299
Alt 2 - scen 2	0	75	228	311	382	288	336	299
Alt 3 - scen 3	0	75	228	488	648	548	593	552

Table 125 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Mitsubishi)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Mitsubishi)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	4	1,362	1,336	1,311	1,289	1,267	1,248
Alt 1 - scen 1	0	4	1,362	1,336	1,391	1,372	1,253	1,235
Alt 2 - scen 2	0	4	1,362	1,336	1,391	1,372	1,253	1,235
Alt 3 - scen 3	0	4	1,362	1,336	1,391	1,372	1,253	1,235

Table 126 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Nissan)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Nissan)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	735	1,066	1,264	1,247	1,224	1,203	1,259
Alt 1 - scen 1	0	735	1,066	1,047	785	779	760	745
Alt 2 - scen 2	0	735	1,066	1,047	785	779	760	745
Alt 3 - scen 3	0	735	1,066	1,047	785	779	760	745

Table 127 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Stellantis)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Stellantis)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	168	163	310	305	300	338	329
Alt 1 - scen 1	0	168	163	140	967	951	939	926
Alt 2 - scen 2	0	168	163	140	967	951	939	926
Alt 3 - scen 3	0	168	163	310	1,010	994	994	980

Table 128 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Subaru)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Subaru)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	693	677	1,995	2,877	2,831	2,785	2,738
Alt 1 - scen 1	0	693	677	630	36	54	48	44
Alt 2 - scen 2	0	693	677	630	36	54	48	44
Alt 3 - scen 3	0	693	677	630	159	194	187	182

Table 129 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Toyota)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Toyota)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	563	1,634	1,647	1,674	1,675	1,728	1,807
Alt 1 - scen 1	0	563	1,634	1,614	1,171	1,193	1,230	1,244
Alt 2 - scen 2	0	563	1,634	1,614	1,171	1,193	1,230	1,244
Alt 3 - scen 3	0	563	1,634	1,614	1,171	1,193	1,230	1,245

Table 130 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Volvo)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (Volvo)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	0	1,467	1,446	2,141	2,108	2,075	2,027
Alt 1 - scen 1	0	0	1,467	1,446	1,170	1,161	1,152	1,136
Alt 2 - scen 2	0	0	1,467	1,446	1,170	1,161	1,152	1,136
Alt 3 - scen 3	0	0	1,467	1,446	1,170	1,161	1,152	1,136

Table 131 - Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (VWA)

Estimated Average Per Vehicle Regulatory Costs (\$), Passenger Car Fleet for Manufacturer (VWA)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	952	1,578	1,698	2,222	2,193	2,165	2,334
Alt 1 - scen 1	0	952	1,578	1,615	1,490	1,474	1,457	1,447
Alt 2 - scen 2	0	952	1,578	1,615	1,490	1,474	1,457	1,447
Alt 3 - scen 3	0	952	1,578	1,615	1,551	1,534	1,566	1,558

Table 132 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (BMW)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (BMW)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	808	1,001	1,746	1,723	1,885	1,881	1,854
Alt 1 - scen 1	0	808	1,001	1,094	1,384	1,362	1,340	1,308
Alt 2 - scen 2	0	808	1,001	1,094	1,384	1,362	1,340	1,308
Alt 3 - scen 3	0	808	1,001	1,094	1,384	1,362	1,340	1,308

Table 133 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Ford)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Ford)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	574	711	1,468	1,757	1,736	1,977	1,954
Alt 1 - scen 1	0	574	711	956	767	760	780	770
Alt 2 - scen 2	0	574	711	956	767	760	780	770
Alt 3 - scen 3	0	574	711	1,105	767	760	780	771

Table 134 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (GM)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (GM)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	525	2,590	2,583	3,696	3,707	3,796	3,916
Alt 1 - scen 1	0	525	2,590	2,583	2,944	2,885	2,862	2,893
Alt 2 - scen 2	0	525	2,590	2,583	2,944	2,885	2,862	2,893
Alt 3 - scen 3	0	525	2,590	2,583	2,944	2,885	2,862	2,893

Table 135 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Honda)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Honda)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	853	970	954	1,104	1,088	1,151	1,156
Alt 1 - scen 1	0	853	970	954	1,778	1,752	1,725	1,699
Alt 2 - scen 2	0	853	970	954	1,778	1,752	1,725	1,699
Alt 3 - scen 3	0	853	970	954	1,778	1,752	1,725	1,699

Table 136 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Hyundai)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Hyundai)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	295	1,168	1,217	2,054	2,507	2,477	2,448
Alt 1 - scen 1	0	295	1,168	1,193	858	850	842	836
Alt 2 - scen 2	0	295	1,168	1,193	858	850	842	836
Alt 3 - scen 3	0	295	1,168	1,193	858	850	842	836

Table 137 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Ineos)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Ineos)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	0	0	814	810	802	795	2,735
Alt 1 - scen 1	0	0	0	814	810	802	795	2,735
Alt 2 - scen 2	0	0	0	814	810	802	795	2,735
Alt 3 - scen 3	0	0	0	814	810	802	795	2,735

Table 138 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (JLR)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (JLR)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	605	1,060	1,336	1,316	1,404	1,390	1,153
Alt 1 - scen 1	0	605	1,060	1,180	979	457	455	-373
Alt 2 - scen 2	0	605	1,060	1,180	979	457	455	-373
Alt 3 - scen 3	0	605	1,060	1,180	979	1,091	1,081	247

Table 139 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (KIA)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (KIA)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	1,214	2,105	2,080	2,804	2,769	2,735	2,733
Alt 1 - scen 1	0	1,214	2,105	2,080	0	0	0	0
Alt 2 - scen 2	0	1,214	2,105	2,080	0	0	0	0
Alt 3 - scen 3	0	1,214	2,105	2,080	0	0	0	0

Table 140 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Mazda)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Mazda)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	17	17	1,224	1,210	1,792	1,773	2,016
Alt 1 - scen 1	0	17	17	183	0	0	0	0
Alt 2 - scen 2	0	17	17	183	0	0	0	0
Alt 3 - scen 3	0	17	17	183	0	0	0	0

Table 141 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Mercedes-Benz)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Mercedes-Benz)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	103	1,016	1,129	1,120	1,105	1,612	1,584
Alt 1 - scen 1	0	103	1,016	1,012	1,272	1,254	1,238	1,212
Alt 2 - scen 2	0	103	1,016	1,012	1,272	1,254	1,238	1,212
Alt 3 - scen 3	0	103	1,016	1,129	1,272	1,254	1,238	1,212

Table 142 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Mitsubishi)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Mitsubishi)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	665	1,454	1,436	1,418	1,400	1,443	1,423
Alt 1 - scen 1	0	665	1,454	1,436	0	0	0	0
Alt 2 - scen 2	0	665	1,454	1,436	0	0	0	0
Alt 3 - scen 3	0	665	1,454	1,436	0	0	0	0

Table 143 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Nissan)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Nissan)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	262	371	1,123	1,105	1,534	1,877	1,851
Alt 1 - scen 1	0	262	371	824	1,800	1,436	1,731	1,713
Alt 2 - scen 2	0	262	371	861	1,909	1,436	1,731	1,713
Alt 3 - scen 3	0	262	371	861	1,909	1,552	1,846	1,827

Table 144 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Stellantis)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Stellantis)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	281	606	1,677	2,218	2,570	2,542	2,511
Alt 1 - scen 1	0	281	606	1,031	1,113	1,305	1,290	1,279
Alt 2 - scen 2	0	281	606	1,031	1,113	1,305	1,290	1,279
Alt 3 - scen 3	0	281	606	1,170	1,319	1,506	1,490	1,471

Table 145 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Subaru)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Subaru)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	0	0	725	1,025	1,110	1,094	1,079
Alt 1 - scen 1	0	0	0	0	0	0	0	0
Alt 2 - scen 2	0	0	0	0	0	0	0	0
Alt 3 - scen 3	0	0	0	11	0	0	0	0

Table 146 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Toyota)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Toyota)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	40	564	619	704	900	1,122	1,180
Alt 1 - scen 1	0	40	564	576	172	185	183	184
Alt 2 - scen 2	0	40	564	576	172	185	183	184
Alt 3 - scen 3	0	40	564	576	408	902	893	910

Table 147 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Volvo)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (Volvo)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	556	1,163	1,308	1,304	1,293	1,283	1,266
Alt 1 - scen 1	0	556	1,163	1,108	0	0	0	0
Alt 2 - scen 2	0	556	1,163	1,108	0	0	0	0
Alt 3 - scen 3	0	556	1,163	1,108	0	0	0	0

Table 148 - Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (VWA)

Estimated Average Per Vehicle Regulatory Costs (\$), Light Truck Fleet for Manufacturer (VWA)								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Alt 0 - No Action	0	1,019	1,203	2,002	2,201	2,175	2,150	2,125
Alt 1 - scen 1	0	1,019	1,203	1,376	830	822	815	807
Alt 2 - scen 2	0	1,019	1,203	1,376	830	822	815	807
Alt 3 - scen 3	0	1,019	1,203	1,469	951	942	933	1,163

A8. Labor Impacts

Table 149 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Total)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Total)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	887	887	887	887
2025	865	865	865	865
2026	873	873	873	873
2027	874	873	873	873
2028	846	842	842	842
2029	834	827	827	828
2030	824	817	817	818
2031	797	790	790	791

Table 150 - Estimated Labor Utilization (1000s of Person-Years), Passenger Car Fleet for Manufacturer (Total)

Estimated Labor Utilization (1000s of Person-Years), Passenger Car Fleet for Manufacturer (Total)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	204	204	204	204
2025	213	213	213	213
2026	203	203	203	203
2027	190	190	190	190
2028	179	510	510	510
2029	180	503	503	504
2030	176	496	496	496
2031	169	479	479	480

Table 151 - Estimated Labor Utilization (1000s of Person-Years), Light Truck Fleet for Manufacturer (Total)

Estimated Labor Utilization (1000s of Person-Years), Light Truck Fleet for Manufacturer (Total)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	683	683	683	683
2025	652	652	652	652
2026	670	670	670	670
2027	684	683	683	683
2028	667	331	331	332
2029	654	324	324	325
2030	649	321	321	322
2031	628	311	311	311

Table 152 - Estimated Labor Utilization (1000s of Person-Years), Domestic Car Fleet for Manufacturer (Total)

Estimated Labor Utilization (1000s of Person-Years), Domestic Car Fleet for Manufacturer (Total)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	126	126	126	126
2025	132	132	132	132
2026	125	125	125	125
2027	117	117	117	117
2028	110	226	226	226
2029	111	223	223	224
2030	108	219	219	220
2031	104	212	212	212

Table 153 - Estimated Labor Utilization (1000s of Person-Years), Imported Car Fleet for Manufacturer (Total)

Estimated Labor Utilization (1000s of Person-Years), Imported Car Fleet for Manufacturer (Total)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	78	78	78	78
2025	81	81	81	81
2026	78	78	78	78
2027	73	73	73	73
2028	69	285	285	285
2029	69	280	280	280
2030	67	277	277	277
2031	65	267	267	267

Table 154 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (BMW)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (BMW)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	18	18	18	18
2025	17	17	17	17
2026	18	18	18	18
2027	18	18	18	18
2028	17	17	17	17
2029	17	17	17	17
2030	16	16	16	16
2031	16	16	16	16

Table 155 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Ferrari)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Ferrari)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	0	0	0	0
2025	0	0	0	0
2026	0	0	0	0
2027	0	0	0	0
2028	0	0	0	0
2029	0	0	0	0
2030	0	0	0	0
2031	0	0	0	0

Table 156 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Ford)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Ford)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	132	132	132	132
2025	127	127	127	127
2026	128	128	128	128
2027	130	130	130	130
2028	126	126	126	126
2029	123	123	123	123
2030	122	122	122	122
2031	118	118	118	118

Table 157 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (GM)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (GM)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	170	170	170	170
2025	164	164	164	164
2026	169	169	169	169
2027	170	170	170	170
2028	165	164	164	164
2029	163	161	161	161
2030	161	159	159	159
2031	156	154	154	154

Table 158 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Honda)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Honda)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	102	102	102	102
2025	101	101	101	101
2026	100	100	100	100
2027	98	98	98	98
2028	95	94	94	94
2029	94	93	93	93
2030	92	91	91	91
2031	89	88	88	88

Table 159 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Hyundai)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Hyundai)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	22	22	22	22
2025	21	21	21	21
2026	21	21	21	21
2027	21	21	21	21
2028	20	20	20	20
2029	20	20	20	20
2030	20	20	20	20
2031	19	19	19	19

Table 160 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Ineos)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Ineos)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	0	0	0	0
2025	0	0	0	0
2026	0	0	0	0
2027	0	0	0	0
2028	0	0	0	0
2029	0	0	0	0
2030	0	0	0	0
2031	0	0	0	0

Table 161 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (JLR)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (JLR)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	1	1	1	1
2025	1	1	1	1
2026	1	1	1	1
2027	1	1	1	1
2028	1	1	1	1
2029	1	1	1	1
2030	1	1	1	1
2031	1	1	1	1

Table 162 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (KIA)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (KIA)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	37	37	37	37
2025	37	37	37	37
2026	37	37	37	37
2027	37	37	37	37
2028	36	36	36	36
2029	35	35	35	35
2030	35	35	35	35
2031	34	33	33	33

Table 163 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Mazda)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Mazda)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	12	12	12	12
2025	12	12	12	12
2026	12	12	12	12
2027	12	12	12	12
2028	12	12	12	12
2029	12	12	12	12
2030	12	11	11	11
2031	11	11	11	11

Table 164 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Mercedes-Benz)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Mercedes-Benz)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	12	12	12	12
2025	11	11	11	11
2026	12	12	12	12
2027	12	12	12	12
2028	11	11	11	11
2029	11	11	11	11
2030	11	11	11	11
2031	11	11	11	11

Table 165 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Mitsubishi)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Mitsubishi)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	2	2	2	2
2025	2	2	2	2
2026	2	2	2	2
2027	2	2	2	2
2028	2	2	2	2
2029	2	2	2	2
2030	2	2	2	2
2031	2	2	2	2

Table 166 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Nissan)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Nissan)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	51	51	51	51
2025	51	51	51	51
2026	50	50	50	50
2027	49	49	49	49
2028	47	47	47	47
2029	46	46	46	46
2030	46	46	46	46
2031	44	44	44	44

Table 167 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Stellantis)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Stellantis)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	94	94	94	94
2025	90	90	90	90
2026	92	92	92	92
2027	95	94	94	95
2028	93	92	92	92
2029	91	90	90	90
2030	91	89	89	89
2031	88	86	86	86

Table 168 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Subaru)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Subaru)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	38	38	38	38
2025	37	37	37	37
2026	37	37	37	37
2027	38	37	37	37
2028	37	36	36	36
2029	36	35	35	36
2030	36	35	35	35
2031	34	34	34	34

Table 169 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Toyota)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Toyota)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	171	171	171	171
2025	169	169	169	169
2026	170	170	170	170
2027	167	167	167	167
2028	161	161	161	161
2029	159	159	159	159
2030	157	156	156	157
2031	152	151	151	152

Table 170 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Volvo)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (Volvo)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	3	3	3	3
2025	3	3	3	3
2026	3	3	3	3
2027	3	3	3	3
2028	3	3	3	3
2029	3	3	3	3
2030	3	3	3	3
2031	3	3	3	3

Table 171 - Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (VWA)

Estimated Labor Utilization (1000s of Person-Years), Total Fleet for Manufacturer (VWA)				
Model Year	Regulatory Alternative			
	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
2024	22	22	22	22
2025	21	21	21	21
2026	22	22	22	22
2027	22	22	22	22
2028	21	21	21	21
2029	21	21	21	21
2030	21	20	20	20
2031	20	20	20	20

Table 172 - Changes in Work Loss Days (thousand instances), Total Fleet through MY 2031

Changes in Work Loss Days (thousand instances), Total Fleet through MY 2031			
Category	Regulatory Alternative		
	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Work Loss Days from Upstream Emissions	18.8	18.8	16.2
Work Loss Days from Tailpipe Emissions	-6.6	-6.6	-6.0
Total Work Loss Days	12.3	12.3	10.2

Table 173 - Changes in Work Loss Days (thousand instances), Passenger Car Fleet through MY 2031

Changes in Work Loss Days (thousand instances), Passenger Car Fleet through MY 2031			
Category	Regulatory Alternative		
	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Work Loss Days from Upstream Emissions	113.0	113.0	112.0
Work Loss Days from Tailpipe Emissions	258.8	258.8	259.2
Total Work Loss Days	371.9	371.9	371.2

Table 174 - Changes in Work Loss Days (thousand instances), Light Truck Fleet through MY 2031

Changes in Work Loss Days (thousand instances), Light Truck Fleet through MY 2031			
Category	Regulatory Alternative		
	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Work Loss Days from Upstream Emissions	-94.2	-94.2	-95.8
Work Loss Days from Tailpipe Emissions	-265.4	-265.4	-265.2
Total Work Loss Days	-359.6	-359.6	-361.0

A9. Compliance Impacts

Table 175 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Total Fleet, Alt 1 - scen 1

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Total Fleet, Alt 1 - scen 1									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	38.8	42.4	46.9	29.6	33.3	33.4	33.5	33.6	N/A
Change from Baseline (%)	0%	0%	0%	-37%	-29%	-30%	-31%	-33%	N/A
Average Achieved (mpg)	33.2	35.5	38.3	39.5	40.3	40.8	41.1	41.3	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-3.7	-7.9	-10.1	-10.9	-10.9	-43.5
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0159	0.0379	0.0466	0.0486	0.0471	0.20

Table 176 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Passenger Car Fleet, Alt 1 - scen 1

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Passenger Car Fleet, Alt 1 - scen 1									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.3	53.6	59.5	35.9	36.0	36.1	36.2	36.2	N/A
Change from Baseline (%)	0%	0%	0%	-41%	-42%	-43%	-44%	-45%	N/A
Average Achieved (mpg)	41.2	44.3	49.8	51.2	45.5	45.9	46.1	46.3	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.9	3.9	2.7	2.6	2.5	10.8
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0002	5.5266	5.4186	5.3657	5.1924	21.50

Table 177 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Light Truck Fleet, Alt 1 - scen 1

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Light Truck Fleet, Alt 1 - scen 1									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	35.4	38.4	42.7	27.6	27.8	27.9	27.9	28.0	N/A
Change from Baseline (%)	0%	0%	0%	-35%	-35%	-36%	-37%	-38%	N/A
Average Achieved (mpg)	30.5	32.3	34.6	36.1	31.0	31.5	31.8	32.1	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-2.8	-11.8	-12.8	-13.5	-13.3	-54.3
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0157	-5.489	-5.372	-5.317	-5.145	-21.31

Table 178 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Domestic Car Fleet, Alt 1 - scen 1

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Domestic Car Fleet, Alt 1 - scen 1									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.0	53.2	59.1	35.7	35.9	36.0	36.1	36.1	N/A
Change from Baseline (%)	0%	0%	0%	-41%	-42%	-43%	-44%	-45%	N/A
Average Achieved (mpg)	41.3	45.4	50.9	52.0	45.7	46.3	46.4	46.5	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.2	1.3	0.6	0.6	0.6	2.9
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	9E-05	1.4815	1.4555	1.4404	1.3941	5.77

Table 179 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Imported Car Fleet, Alt 1 - scen 1

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Imported Car Fleet, Alt 1 - scen 1									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.5	53.9	59.8	36.0	36.0	36.1	36.2	36.3	N/A
Change from Baseline (%)	0%	0%	0%	-41%	-42%	-43%	-44%	-45%	N/A
Average Achieved (mpg)	41.2	43.4	49.0	50.6	45.4	45.7	46.0	46.2	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.8	2.7	2.0	2.0	1.9	7.9
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0001	4.0451	3.9631	3.9252	3.7983	15.73

Table 180 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Total Fleet, Alt 2 - scen 2

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Total Fleet, Alt 2 - scen 2									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	38.8	42.4	46.9	30.4	34.2	34.4	34.4	34.5	N/A
Change from Baseline (%)	0%	0%	0%	-35%	-27%	-28%	-30%	-31%	N/A
Average Achieved (mpg)	33.2	35.5	38.3	39.5	40.4	40.8	41.1	41.3	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-3.7	-7.9	-10.1	-10.9	-10.9	-43.5
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0159	0.0379	0.0467	0.0486	0.0471	0.20

Table 181 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Passenger Car Fleet, Alt 2 - scen 2

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Passenger Car Fleet, Alt 2 - scen 2									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.3	53.6	59.5	36.9	37.1	37.2	37.3	37.4	N/A
Change from Baseline (%)	0%	0%	0%	-39%	-40%	-41%	-42%	-43%	N/A
Average Achieved (mpg)	41.2	44.3	49.8	51.2	45.5	45.9	46.1	46.3	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.9	3.9	2.7	2.6	2.5	10.8
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0003	5.5266	5.4187	5.3657	5.1924	21.50

Table 182 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Light Truck Fleet, Alt 2 - scen 2

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Light Truck Fleet, Alt 2 - scen 2									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	35.4	38.4	42.7	28.3	28.4	28.5	28.5	28.6	N/A
Change from Baseline (%)	0%	0%	0%	-34%	-33%	-35%	-36%	-37%	N/A
Average Achieved (mpg)	30.5	32.3	34.6	36.1	31.1	31.5	31.8	32.1	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-2.8	-11.8	-12.8	-13.5	-13.3	-54.2
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0156	-5.489	-5.372	-5.317	-5.145	-21.31

Table 183 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Domestic Car Fleet, Alt 2 - scen 2

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Domestic Car Fleet, Alt 2 - scen 2									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.0	53.2	59.1	36.8	37.0	37.1	37.2	37.3	N/A
Change from Baseline (%)	0%	0%	0%	-39%	-40%	-41%	-42%	-43%	N/A
Average Achieved (mpg)	41.3	45.4	50.9	52.0	45.7	46.3	46.4	46.5	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.2	1.3	0.6	0.6	0.6	2.9
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0001	1.4815	1.4555	1.4404	1.3941	5.77

Table 184 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Imported Car Fleet, Alt 2 - scen 2

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Imported Car Fleet, Alt 2 - scen 2									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.5	53.9	59.8	37.1	37.1	37.2	37.3	37.4	N/A
Change from Baseline (%)	0%	0%	0%	-39%	-40%	-42%	-43%	-44%	N/A
Average Achieved (mpg)	41.2	43.4	49.0	50.6	45.4	45.7	46.0	46.2	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.8	2.7	2.0	2.0	1.9	7.9
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0001	4.0451	3.9631	3.9252	3.7983	15.73

Table 185 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Total Fleet, Alt 3 - scen 3

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Total Fleet, Alt 3 - scen 3									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	38.8	42.4	46.9	32.3	36.4	36.8	37.2	37.5	N/A
Change from Baseline (%)	0%	0%	0%	-31%	-22%	-23%	-24%	-25%	N/A
Average Achieved (mpg)	33.2	35.5	38.3	39.7	40.6	41.3	41.6	41.8	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-3.3	-7.2	-9.2	-9.9	-9.9	-39.6
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0147	0.0361	0.0439	0.0459	0.0445	0.19

Table 186 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Passenger Car Fleet, Alt 3 - scen 3

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Passenger Car Fleet, Alt 3 - scen 3									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.3	53.6	59.5	38.8	39.4	39.8	40.2	40.6	N/A
Change from Baseline (%)	0%	0%	0%	-36%	-36%	-37%	-38%	-38%	N/A
Average Achieved (mpg)	41.2	44.3	49.8	51.3	45.8	46.2	46.5	46.7	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.9	4.3	3.1	3.0	2.9	12.4
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0018	5.5266	5.4187	5.3657	5.1924	21.51

Table 187 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Light Truck Fleet, Alt 3 - scen 3

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Light Truck Fleet, Alt 3 - scen 3									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	35.4	38.4	42.7	30.2	30.3	30.6	30.9	31.2	N/A
Change from Baseline (%)	0%	0%	0%	-29%	-29%	-30%	-31%	-31%	N/A
Average Achieved (mpg)	30.5	32.3	34.6	36.3	31.3	32.0	32.4	32.6	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-2.4	-11.6	-12.2	-13.0	-12.8	-52.0
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0129	-5.49	-5.375	-5.32	-5.148	-21.32

Table 188 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Domestic Car Fleet, Alt 3 - scen 3

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Domestic Car Fleet, Alt 3 - scen 3									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.0	53.2	59.1	38.6	39.3	39.7	40.1	40.5	N/A
Change from Baseline (%)	0%	0%	0%	-36%	-36%	-37%	-37%	-38%	N/A
Average Achieved (mpg)	41.3	45.4	50.9	52.1	46.2	46.8	47.0	47.2	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.2	1.5	0.9	0.9	0.8	4.0
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.0008	1.4819	1.4563	1.4412	1.3948	5.78

Table 189 - Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Imported Car Fleet, Alt 3 - scen 3

Compliance Impacts and Cumulative Industry Costs by Model Year for Total and Imported Car Fleet, Alt 3 - scen 3									
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total
Fuel Economy									
Average Required (mpg)	49.5	53.9	59.8	38.9	39.4	39.9	40.3	40.7	N/A
Change from Baseline (%)	0%	0%	0%	-36%	-37%	-37%	-38%	-39%	N/A
Average Achieved (mpg)	41.2	43.4	49.0	50.7	45.5	45.9	46.2	46.4	N/A
Total Regulatory Costs									
Total Regulatory Costs (\$b)	0.0	0.0	0.0	-0.7	2.8	2.2	2.2	2.0	8.5
Sales Impacts									
Sales Change from Baseline (m)	0	0	0	0.001	4.0446	3.9624	3.9245	3.7976	15.73

A10. Powertrain Technology Penetration Rate, by Model Year

Table 190 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	14.6	12.9	8.3	8.1	8.1	6.9	7.5	6.9
Cylinder Deactivation	2.9	1.6	1.1	1.1	1.1	0.5	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	42.0	34.2	25.5	19.2	15.0	10.1	6.1	3.7
Variable Geometry Turbo	1.5	0.4	0.3	0.2	0.2	0.2	0.2	0.0
Electric Variable Geometry Turbo	0.5	0.8	0.8	1.2	0.9	0.5	0.4	0.1
Diesel Engines	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8
12V Stop-Start (non-hybrid)	63.0	52.6	38.7	27.8	17.9	12.8	8.4	6.2
Mild Hybrid Powertrains	3.8	3.6	2.8	2.7	2.7	1.7	1.6	0.8
Strong Hybrid Powertrains Total	10.4	24.5	40.6	53.3	62.4	71.7	76.7	80.2
Plug-In Hybrid Powertrains	2.9	2.8	5.4	5.5	7.3	7.3	7.3	7.3
5-Speed Automatic	0.7	0.7	0.7	0.8	0.0	0.0	0.0	0.0
6-Speed Automatic	6.0	4.5	4.1	0.6	0.6	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	33.0	20.8	10.5	4.2	3.0	1.4	1.5	1.5
9-Speed Automatic	7.1	4.5	0.7	0.2	0.1	0.0	0.0	0.0
10-Speed Automatic	14.1	17.9	20.9	23.0	16.2	12.1	7.1	3.7
CVT Transmissions	21.8	21.3	15.2	11.2	9.4	7.3	7.3	7.2
DCT Transmissions	3.7	2.8	1.7	1.4	0.9	0.3	0.2	0.1

Table 191 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	25.1	22.1	15.7	17.4	14.5	11.4	11.4	10.0
Cylinder Deactivation	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	38.8	31.3	19.1	17.4	11.2	3.7	2.3	1.2
Variable Geometry Turbo	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	51.7	44.5	30.1	25.8	16.9	9.8	8.9	7.4
Mild Hybrid Powertrains	3.2	3.5	2.6	2.6	2.3	1.4	1.2	0.0
Strong Hybrid Powertrains Total	8.7	25.1	50.5	57.5	68.0	82.0	83.4	86.2
Plug-In Hybrid Powertrains	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	9.4	6.8	5.8	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	23.2	12.3	3.1	0.8	0.2	0.0	0.0	0.0
9-Speed Automatic	3.0	1.8	1.0	0.7	0.4	0.0	0.0	0.0
10-Speed Automatic	2.2	6.3	11.2	19.2	14.9	8.2	6.9	4.7
CVT Transmissions	45.1	40.7	24.3	18.6	13.9	7.4	7.4	7.1
DCT Transmissions	6.5	5.1	2.3	1.5	0.9	0.6	0.6	0.3

Table 192 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	9.8	8.3	4.9	4.2	5.5	4.9	5.8	5.6
Cylinder Deactivation	3.8	2.0	1.7	1.6	1.5	0.7	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	43.4	35.6	28.4	20.0	16.5	12.7	7.6	4.7
Variable Geometry Turbo	1.9	0.4	0.4	0.3	0.3	0.3	0.3	0.0
Electric Variable Geometry Turbo	0.7	1.1	1.1	1.7	1.2	0.8	0.5	0.1
Diesel Engines	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
12V Stop-Start (non-hybrid)	68.1	56.6	42.6	28.6	18.3	14.1	8.1	5.7
Mild Hybrid Powertrains	4.0	3.6	2.9	2.7	2.9	1.8	1.8	1.1
Strong Hybrid Powertrains Total	11.2	24.3	36.1	51.5	60.2	67.3	74.0	77.8
Plug-In Hybrid Powertrains	3.4	3.4	7.1	7.1	9.6	9.6	9.6	9.6
5-Speed Automatic	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0
6-Speed Automatic	4.5	3.3	3.3	0.8	0.8	0.0	0.0	0.0
7-Speed Automatic	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	37.5	24.9	13.8	5.6	4.2	2.1	2.1	2.1
9-Speed Automatic	9.0	5.8	0.5	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.5	23.6	25.4	24.6	16.8	13.7	7.1	3.3
CVT Transmissions	11.2	11.6	11.0	8.0	7.6	7.2	7.2	7.2
DCT Transmissions	2.5	1.7	1.4	1.3	0.9	0.1	0.0	0.0

Table 193 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	13.5	10.8	10.8	18.7	18.7	13.5	13.5	12.7
Cylinder Deactivation	1.9	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.6	28.2	11.8	9.6	2.2	1.7	1.7	1.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	49.0	41.3	19.4	17.2	9.8	9.8	9.8	9.8
Mild Hybrid Powertrains	0.8	1.6	0.8	0.8	0.8	0.8	0.8	0.1
Strong Hybrid Powertrains Total	7.8	31.0	58.6	61.0	68.4	81.8	81.8	82.6
Plug-In Hybrid Powertrains	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	13.3	4.5	0.4	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	2.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	4.7	5.0	4.2	4.0	4.0	4.0	4.0	4.0
CVT Transmissions	60.9	53.7	34.5	33.1	25.7	12.7	12.7	12.0
DCT Transmissions	4.4	4.3	1.4	1.0	1.0	0.6	0.6	0.6

Table 194 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	34.4	31.2	19.7	16.4	11.0	9.8	9.8	7.7
Cylinder Deactivation	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	41.4	33.8	25.1	23.7	18.5	5.3	2.8	0.8
Variable Geometry Turbo	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	53.9	47.0	38.8	32.8	22.5	9.8	8.2	5.4
Mild Hybrid Powertrains	5.1	5.1	4.2	4.1	3.5	1.9	1.5	0.0
Strong Hybrid Powertrains Total	9.4	20.3	43.9	54.6	67.6	82.1	84.6	89.1
Plug-In Hybrid Powertrains	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	12.4	12.3	10.5	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	31.3	18.6	5.3	1.4	0.4	0.0	0.0	0.0
9-Speed Automatic	3.4	2.7	1.8	1.2	0.8	0.0	0.0	0.0
10-Speed Automatic	0.2	7.4	16.9	31.5	23.8	11.6	9.2	5.2
CVT Transmissions	32.4	30.2	16.1	7.0	4.4	3.1	3.1	3.1
DCT Transmissions	8.2	5.8	3.1	1.9	0.7	0.7	0.7	0.2

Table 195 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	14.6	12.9	8.3	10.3	13.4	15.4	16.3	16.4
Cylinder Deactivation	2.9	1.6	1.1	1.1	1.1	0.5	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	42.0	34.2	25.5	23.4	24.6	23.9	23.5	23.1
Variable Geometry Turbo	1.5	0.4	0.3	0.2	0.2	0.2	0.2	0.0
Electric Variable Geometry Turbo	0.5	0.8	0.8	1.0	0.6	0.3	0.3	0.0
Diesel Engines	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8
12V Stop-Start (non-hybrid)	63.0	52.6	38.7	33.7	31.8	31.7	31.0	30.7
Mild Hybrid Powertrains	3.8	3.6	2.8	2.7	2.6	1.8	1.7	1.4
Strong Hybrid Powertrains Total	10.4	24.5	40.6	46.1	48.5	50.4	51.3	52.4
Plug-In Hybrid Powertrains	2.9	2.8	5.4	5.5	5.5	5.5	5.5	5.5
5-Speed Automatic	0.7	0.7	0.7	0.8	0.0	0.0	0.0	0.0
6-Speed Automatic	6.0	4.5	4.1	0.6	0.6	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0
8-Speed Automatic	33.0	20.8	10.5	12.0	12.6	13.0	13.0	12.5
9-Speed Automatic	7.1	4.5	0.7	0.2	0.1	0.0	0.0	0.0
10-Speed Automatic	14.1	17.9	20.9	19.5	17.4	15.9	15.0	14.4
CVT Transmissions	21.8	21.3	15.2	13.7	13.6	13.7	13.7	13.6
DCT Transmissions	3.7	2.8	1.7	1.6	1.5	1.5	1.5	1.5

Table 196 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	9.8	8.3	4.9	5.9	0.7	0.7	0.7	0.7
Cylinder Deactivation	3.8	2.0	1.7	1.6	2.2	0.1	0.1	0.1
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	43.4	35.6	28.4	25.5	31.1	29.5	28.6	27.9
Variable Geometry Turbo	1.9	0.4	0.4	0.3	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.7	1.1	1.1	1.3	1.9	0.7	0.7	0.0
Diesel Engines	1.1	1.1	1.1	1.1	2.8	2.8	2.8	2.8
12V Stop-Start (non-hybrid)	68.1	56.6	42.6	36.0	26.8	26.8	23.9	23.0
Mild Hybrid Powertrains	4.0	3.6	2.9	2.8	5.3	3.2	3.2	2.9
Strong Hybrid Powertrains Total	11.2	24.3	36.1	43.3	42.0	47.6	50.5	52.4
Plug-In Hybrid Powertrains	3.4	3.4	7.1	7.1	13.3	13.3	13.3	13.3
5-Speed Automatic	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0
6-Speed Automatic	4.5	3.3	3.3	0.8	0.0	0.0	0.0	0.0
7-Speed Automatic	0.3	0.3	0.3	0.1	0.2	0.0	0.0	0.0
8-Speed Automatic	37.5	24.9	13.8	13.5	14.7	14.2	14.2	13.6
9-Speed Automatic	9.0	5.8	0.5	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.5	23.6	25.4	22.8	29.2	24.3	21.4	20.1
CVT Transmissions	11.2	11.6	11.0	10.0	0.2	0.2	0.2	0.2
DCT Transmissions	2.5	1.7	1.4	1.4	0.4	0.4	0.4	0.4

Table 197 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	25.1	22.1	15.7	20.7	18.1	20.9	22.2	22.3
Cylinder Deactivation	0.9	0.6	0.0	0.0	0.7	0.7	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	38.8	31.3	19.1	18.6	22.2	21.8	21.7	21.3
Variable Geometry Turbo	0.5	0.5	0.0	0.0	0.3	0.3	0.3	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	51.7	44.5	30.1	28.2	33.6	33.6	33.6	33.5
Mild Hybrid Powertrains	3.2	3.5	2.6	2.6	1.6	1.2	1.1	0.8
Strong Hybrid Powertrains Total	8.7	25.1	50.5	52.7	51.0	51.4	51.5	52.4
Plug-In Hybrid Powertrains	1.7	1.7	1.7	1.7	2.6	2.6	2.6	2.6
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	9.4	6.8	5.8	0.0	0.8	0.0	0.0	0.0
7-Speed Automatic	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	23.2	12.3	3.1	8.4	11.8	12.5	12.6	12.2
9-Speed Automatic	3.0	1.8	1.0	0.7	0.2	0.0	0.0	0.0
10-Speed Automatic	2.2	6.3	11.2	11.9	13.0	12.8	12.6	12.3
CVT Transmissions	45.1	40.7	24.3	22.7	18.7	18.7	18.7	18.7
DCT Transmissions	6.5	5.1	2.3	1.9	2.0	2.0	2.0	1.9

Table 198 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	13.5	10.8	10.8	18.7	10.3	17.6	19.5	19.5
Cylinder Deactivation	1.9	1.4	0.0	0.0	2.1	2.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.6	28.2	11.8	11.6	23.8	23.6	23.7	23.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.2	0.0	0.4	0.4	0.4	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	49.0	41.3	19.4	19.2	33.5	33.3	33.4	33.4
Mild Hybrid Powertrains	0.8	1.6	0.8	0.8	0.4	0.4	0.4	0.4
Strong Hybrid Powertrains Total	7.8	31.0	58.6	59.0	53.6	53.7	53.6	54.0
Plug-In Hybrid Powertrains	0.8	0.8	0.9	0.9	1.7	1.7	1.7	1.7
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	13.3	4.5	0.4	0.0	6.5	6.4	6.5	6.5
9-Speed Automatic	2.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	4.7	5.0	4.2	4.4	15.7	15.6	15.7	15.3
CVT Transmissions	60.9	53.7	34.5	34.5	21.9	22.1	21.9	21.9
DCT Transmissions	4.4	4.3	1.4	1.2	0.6	0.6	0.6	0.6

Table 199 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	34.4	31.2	19.7	22.3	22.2	22.6	23.6	23.7
Cylinder Deactivation	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	41.4	33.8	25.1	24.3	21.4	20.9	20.6	20.0
Variable Geometry Turbo	0.8	0.8	0.0	0.0	0.5	0.5	0.5	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	53.9	47.0	38.8	35.4	33.7	33.7	33.7	33.6
Mild Hybrid Powertrains	5.1	5.1	4.2	4.1	2.2	1.7	1.5	1.0
Strong Hybrid Powertrains Total	9.4	20.3	43.9	47.7	49.6	50.2	50.5	51.5
Plug-In Hybrid Powertrains	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	12.4	12.3	10.5	0.0	1.2	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	31.3	18.6	5.3	15.2	14.5	15.7	15.7	15.1
9-Speed Automatic	3.4	2.7	1.8	1.2	0.3	0.0	0.0	0.0
10-Speed Automatic	0.2	7.4	16.9	17.9	11.6	11.3	11.1	10.7
CVT Transmissions	32.4	30.2	16.1	13.1	17.1	17.0	17.0	17.0
DCT Transmissions	8.2	5.8	3.1	2.5	2.7	2.7	2.7	2.6

Table 200 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	14.6	12.9	8.3	10.3	13.4	15.4	16.3	16.4
Cylinder Deactivation	2.9	1.6	1.1	1.1	1.1	0.5	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	42.0	34.2	25.5	23.4	24.6	23.9	23.5	23.1
Variable Geometry Turbo	1.5	0.4	0.3	0.2	0.2	0.2	0.2	0.0
Electric Variable Geometry Turbo	0.5	0.8	0.8	1.0	0.6	0.3	0.3	0.0
Diesel Engines	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8
12V Stop-Start (non-hybrid)	63.0	52.6	38.7	33.7	31.8	31.7	31.0	30.7
Mild Hybrid Powertrains	3.8	3.6	2.8	2.7	2.6	1.8	1.7	1.4
Strong Hybrid Powertrains Total	10.4	24.5	40.6	46.1	48.5	50.4	51.3	52.4
Plug-In Hybrid Powertrains	2.9	2.8	5.4	5.5	5.5	5.5	5.5	5.5
5-Speed Automatic	0.7	0.7	0.7	0.8	0.0	0.0	0.0	0.0
6-Speed Automatic	6.0	4.5	4.1	0.6	0.6	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	33.0	20.8	10.5	11.8	12.5	13.0	13.0	12.5
9-Speed Automatic	7.1	4.5	0.7	0.2	0.1	0.0	0.0	0.0
10-Speed Automatic	14.1	17.9	20.9	19.7	17.6	15.9	15.0	14.4
CVT Transmissions	21.8	21.3	15.2	13.7	13.6	13.7	13.7	13.6
DCT Transmissions	3.7	2.8	1.7	1.6	1.5	1.5	1.5	1.5

Table 201 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	25.1	22.1	15.7	20.7	18.1	20.9	22.2	22.3
Cylinder Deactivation	0.9	0.6	0.0	0.0	0.7	0.7	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	38.8	31.3	19.1	18.6	22.2	21.8	21.7	21.3
Variable Geometry Turbo	0.5	0.5	0.0	0.0	0.3	0.3	0.3	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	51.7	44.5	30.1	28.2	33.6	33.6	33.6	33.5
Mild Hybrid Powertrains	3.2	3.5	2.6	2.6	1.6	1.2	1.1	0.8
Strong Hybrid Powertrains Total	8.7	25.1	50.5	52.7	51.0	51.4	51.5	52.4
Plug-In Hybrid Powertrains	1.7	1.7	1.7	1.7	2.6	2.6	2.6	2.6
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	9.4	6.8	5.8	0.0	0.8	0.0	0.0	0.0
7-Speed Automatic	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	23.2	12.3	3.1	8.4	11.8	12.5	12.6	12.2
9-Speed Automatic	3.0	1.8	1.0	0.7	0.2	0.0	0.0	0.0
10-Speed Automatic	2.2	6.3	11.2	11.9	13.0	12.8	12.6	12.3
CVT Transmissions	45.1	40.7	24.3	22.7	18.7	18.7	18.7	18.7
DCT Transmissions	6.5	5.1	2.3	1.9	2.0	2.0	2.0	1.9

Table 202 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	9.8	8.3	4.9	5.9	0.7	0.7	0.7	0.7
Cylinder Deactivation	3.8	2.0	1.7	1.6	2.2	0.1	0.1	0.1
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	43.4	35.6	28.4	25.5	31.1	29.5	28.6	27.9
Variable Geometry Turbo	1.9	0.4	0.4	0.3	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.7	1.1	1.1	1.3	1.9	0.7	0.7	0.0
Diesel Engines	1.1	1.1	1.1	1.1	2.8	2.8	2.8	2.8
12V Stop-Start (non-hybrid)	68.1	56.6	42.6	36.0	26.8	26.8	23.9	23.0
Mild Hybrid Powertrains	4.0	3.6	2.9	2.8	5.3	3.2	3.2	2.9
Strong Hybrid Powertrains Total	11.2	24.3	36.1	43.3	42.0	47.6	50.5	52.4
Plug-In Hybrid Powertrains	3.4	3.4	7.1	7.1	13.3	13.3	13.3	13.3
5-Speed Automatic	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0
6-Speed Automatic	4.5	3.3	3.3	0.8	0.0	0.0	0.0	0.0
7-Speed Automatic	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	37.5	24.9	13.8	13.3	14.3	14.2	14.2	13.6
9-Speed Automatic	9.0	5.8	0.5	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.5	23.6	25.4	23.0	29.9	24.3	21.4	20.1
CVT Transmissions	11.2	11.6	11.0	10.0	0.2	0.2	0.2	0.2
DCT Transmissions	2.5	1.7	1.4	1.4	0.4	0.4	0.4	0.4

Table 203 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	13.5	10.8	10.8	18.7	10.3	17.6	19.5	19.5
Cylinder Deactivation	1.9	1.4	0.0	0.0	2.1	2.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.6	28.2	11.8	11.6	23.8	23.6	23.7	23.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.2	0.0	0.4	0.4	0.4	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	49.0	41.3	19.4	19.2	33.5	33.3	33.4	33.4
Mild Hybrid Powertrains	0.8	1.6	0.8	0.8	0.4	0.4	0.4	0.4
Strong Hybrid Powertrains Total	7.8	31.0	58.6	59.0	53.6	53.7	53.6	54.0
Plug-In Hybrid Powertrains	0.8	0.8	0.9	0.9	1.7	1.7	1.7	1.7
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	13.3	4.5	0.4	0.0	6.5	6.4	6.5	6.5
9-Speed Automatic	2.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	4.7	5.0	4.2	4.4	15.7	15.6	15.7	15.3
CVT Transmissions	60.9	53.7	34.5	34.5	21.9	22.1	21.9	21.9
DCT Transmissions	4.4	4.3	1.4	1.2	0.6	0.6	0.6	0.6

Table 204 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	34.4	31.2	19.7	22.3	22.2	22.6	23.6	23.7
Cylinder Deactivation	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	41.4	33.8	25.1	24.3	21.4	20.9	20.6	20.0
Variable Geometry Turbo	0.8	0.8	0.0	0.0	0.5	0.5	0.5	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	53.9	47.0	38.8	35.4	33.7	33.7	33.7	33.6
Mild Hybrid Powertrains	5.1	5.1	4.2	4.1	2.2	1.7	1.5	1.0
Strong Hybrid Powertrains Total	9.4	20.3	43.9	47.7	49.6	50.2	50.5	51.5
Plug-In Hybrid Powertrains	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	12.4	12.3	10.5	0.0	1.2	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	31.3	18.6	5.3	15.2	14.5	15.7	15.7	15.1
9-Speed Automatic	3.4	2.7	1.8	1.2	0.3	0.0	0.0	0.0
10-Speed Automatic	0.2	7.4	16.9	17.9	11.6	11.3	11.1	10.7
CVT Transmissions	32.4	30.2	16.1	13.1	17.1	17.0	17.0	17.0
DCT Transmissions	8.2	5.8	3.1	2.5	2.7	2.7	2.7	2.6

Table 205 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	14.6	12.9	8.3	10.3	13.4	15.4	16.3	16.4
Cylinder Deactivation	2.9	1.6	1.1	1.1	1.1	0.5	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	42.0	34.2	25.5	21.8	23.0	21.2	20.9	20.2
Variable Geometry Turbo	1.5	0.4	0.3	0.2	0.2	0.2	0.2	0.0
Electric Variable Geometry Turbo	0.5	0.8	0.8	1.0	0.6	0.3	0.3	0.0
Diesel Engines	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8
12V Stop-Start (non-hybrid)	63.0	52.6	38.7	32.0	30.1	29.1	28.3	28.0
Mild Hybrid Powertrains	3.8	3.6	2.8	2.7	2.6	1.8	1.7	1.4
Strong Hybrid Powertrains Total	10.4	24.5	40.6	47.9	50.3	53.2	54.1	55.3
Plug-In Hybrid Powertrains	2.9	2.8	5.4	5.5	5.5	5.5	5.5	5.5
5-Speed Automatic	0.7	0.7	0.7	0.8	0.0	0.0	0.0	0.0
6-Speed Automatic	6.0	4.5	4.1	0.6	0.6	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	33.0	20.8	10.5	11.5	10.0	10.5	10.0	9.3
9-Speed Automatic	7.1	4.5	0.7	0.2	0.1	0.0	0.0	0.0
10-Speed Automatic	14.1	17.9	20.9	18.4	17.7	15.0	14.6	14.0
CVT Transmissions	21.8	21.3	15.2	13.7	14.4	14.4	14.4	14.6
DCT Transmissions	3.7	2.8	1.7	1.5	1.4	1.4	1.4	1.4

Table 206 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	25.1	22.1	15.7	20.7	18.1	20.9	22.2	22.3
Cylinder Deactivation	0.9	0.6	0.0	0.0	0.7	0.7	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	38.8	31.3	19.1	18.4	20.0	19.6	19.5	19.1
Variable Geometry Turbo	0.5	0.5	0.0	0.0	0.3	0.3	0.3	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	51.7	44.5	30.1	28.1	31.6	31.6	31.6	31.5
Mild Hybrid Powertrains	3.2	3.5	2.6	2.6	1.6	1.2	1.1	0.8
Strong Hybrid Powertrains Total	8.7	25.1	50.5	52.9	53.1	53.5	53.7	54.6
Plug-In Hybrid Powertrains	1.7	1.7	1.7	1.7	2.6	2.6	2.6	2.6
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	9.4	6.8	5.8	0.0	0.8	0.0	0.0	0.0
7-Speed Automatic	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	23.2	12.3	3.1	8.3	11.6	12.3	11.7	11.2
9-Speed Automatic	3.0	1.8	1.0	0.7	0.2	0.0	0.0	0.0
10-Speed Automatic	2.2	6.3	11.2	11.9	11.2	11.0	11.5	11.1
CVT Transmissions	45.1	40.7	24.3	22.7	18.7	18.7	18.7	18.7
DCT Transmissions	6.5	5.1	2.3	1.7	1.8	1.8	1.8	1.7

Table 207 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	9.8	8.3	4.9	5.9	0.7	0.7	0.7	0.7
Cylinder Deactivation	3.8	2.0	1.7	1.6	2.2	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	43.4	35.6	28.4	23.2	30.9	25.5	24.6	23.2
Variable Geometry Turbo	1.9	0.4	0.4	0.3	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.7	1.1	1.1	1.3	1.9	0.7	0.7	0.0
Diesel Engines	1.1	1.1	1.1	1.1	2.8	2.8	2.8	2.8
12V Stop-Start (non-hybrid)	68.1	56.6	42.6	33.6	26.0	22.6	19.7	18.6
Mild Hybrid Powertrains	4.0	3.6	2.9	2.8	5.3	3.2	3.2	2.9
Strong Hybrid Powertrains Total	11.2	24.3	36.1	45.8	42.8	52.2	55.1	57.2
Plug-In Hybrid Powertrains	3.4	3.4	7.1	7.1	13.3	13.3	13.3	13.3
5-Speed Automatic	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0
6-Speed Automatic	4.5	3.3	3.3	0.8	0.0	0.0	0.0	0.0
7-Speed Automatic	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	37.5	24.9	13.8	12.8	5.5	5.5	5.5	4.2
9-Speed Automatic	9.0	5.8	0.5	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.5	23.6	25.4	21.2	35.0	25.9	23.0	21.6
CVT Transmissions	11.2	11.6	11.0	10.0	3.0	2.8	2.8	3.4
DCT Transmissions	2.5	1.7	1.4	1.3	0.3	0.3	0.3	0.3

Table 208 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	13.5	10.8	10.8	18.7	10.3	17.6	19.5	19.5
Cylinder Deactivation	1.9	1.4	0.0	0.0	2.1	2.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.6	28.2	11.8	11.6	18.0	17.9	18.0	18.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.2	0.0	0.4	0.4	0.4	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	49.0	41.3	19.4	19.2	27.7	27.6	27.7	27.7
Mild Hybrid Powertrains	0.8	1.6	0.8	0.8	0.4	0.4	0.4	0.4
Strong Hybrid Powertrains Total	7.8	31.0	58.6	59.0	59.3	59.3	59.3	59.7
Plug-In Hybrid Powertrains	0.8	0.8	0.9	0.9	1.7	1.7	1.7	1.7
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	13.3	4.5	0.4	0.0	6.2	6.1	4.1	4.1
9-Speed Automatic	2.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	4.7	5.0	4.2	4.4	10.3	10.2	12.3	12.0
CVT Transmissions	60.9	53.7	34.5	34.5	21.9	22.1	22.0	21.9
DCT Transmissions	4.4	4.3	1.4	1.2	0.6	0.6	0.6	0.6

Table 209 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	34.4	31.2	19.7	22.3	22.2	22.6	23.6	23.7
Cylinder Deactivation	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	41.4	33.8	25.1	23.9	21.1	20.5	20.3	19.7
Variable Geometry Turbo	0.8	0.8	0.0	0.0	0.5	0.5	0.5	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	53.9	47.0	38.8	35.3	33.6	33.6	33.6	33.5
Mild Hybrid Powertrains	5.1	5.1	4.2	4.1	2.2	1.7	1.5	1.0
Strong Hybrid Powertrains Total	9.4	20.3	43.9	48.1	50.0	50.5	50.8	51.9
Plug-In Hybrid Powertrains	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	12.4	12.3	10.5	0.0	1.2	0.0	0.0	0.0
7-Speed Automatic	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	31.3	18.6	5.3	15.1	14.4	15.6	15.6	14.9
9-Speed Automatic	3.4	2.7	1.8	1.2	0.3	0.0	0.0	0.0
10-Speed Automatic	0.2	7.4	16.9	17.9	11.6	11.4	11.1	10.7
CVT Transmissions	32.4	30.2	16.1	13.1	17.0	17.0	17.0	17.1
DCT Transmissions	8.2	5.8	3.1	2.2	2.4	2.4	2.4	2.3

Table 210 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.1	64.8	44.5	25.1	14.7	9.8	9.1	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	66.5	39.5	30.9	14.5	8.5	3.5	2.9	0.0
Mild Hybrid Powertrains	22.9	20.0	10.3	7.9	6.1	6.2	6.2	0.0
Strong Hybrid Powertrains Total	0.0	30.4	50.6	69.9	80.2	85.1	85.9	95.0
Plug-In Hybrid Powertrains	4.9	4.8	4.9	5.0	5.1	5.0	5.0	5.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	83.9	49.6	29.6	6.7	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	7.9	11.3	8.0	8.1	7.9	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	11.2	7.1	7.0	7.1	6.7	1.8	1.1	0.0

Table 211 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	23.8	23.9	23.8	23.8	12.7	12.7	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	0.0	0.0	0.0	13.3	13.3	31.3	45.4
Plug-In Hybrid Powertrains	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.6
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	45.3	45.3	45.3	45.3	32.0	32.0	14.0	0.0

Table 212 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.8	60.4	53.4	26.9	16.1	16.1	2.0	2.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	1.3	1.3	1.3	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	82.7	66.2	59.2	27.1	16.2	16.3	2.1	2.1
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	12.2	28.5	35.7	68.5	79.5	79.4	94.9	94.9
Plug-In Hybrid Powertrains	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	32.1	9.8	2.6	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	53.6	59.7	59.8	29.6	18.7	18.7	3.7	3.7
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.1	1.2	1.1	1.1	1.0	1.0	0.6	0.6

Table 213 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.0
Cylinder Deactivation	1.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	62.8	47.5	23.2	22.3	22.0	11.7	7.3	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.0
Diesel Engines	4.5	4.4	4.5	4.6	4.7	4.7	4.7	4.7
12V Stop-Start (non-hybrid)	98.0	78.9	35.4	34.8	22.8	12.5	8.1	0.0
Mild Hybrid Powertrains	0.0	0.0	3.7	3.7	4.7	4.7	4.7	4.7
Strong Hybrid Powertrains Total	0.1	19.3	45.3	44.9	44.8	55.3	59.7	68.3
Plug-In Hybrid Powertrains	0.0	0.0	15.6	16.0	27.1	26.9	27.0	27.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	20.8	11.8	11.1	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	19.6	19.1	11.4	11.7	7.3	0.0	0.0	0.0
9-Speed Automatic	16.8	7.8	1.4	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	31.9	30.7	15.2	27.5	20.8	17.8	13.3	4.7
CVT Transmissions	9.1	9.7	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0

Table 214 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5
Cylinder Deactivation	19.6	6.9	5.3	5.6	5.7	5.6	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.1	32.1	24.6	21.9	4.7	4.7	4.7	4.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	3.4	3.9	3.7	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	58.5	49.3	29.9	27.5	10.4	10.3	6.2	6.2
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	22.3	33.7	54.3	57.4	78.3	89.7	93.8	93.8
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	4.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.0	9.2	9.6	9.7	5.7	5.6	1.5	1.5
CVT Transmissions	52.2	53.3	35.5	32.9	16.0	4.7	4.7	4.7
DCT Transmissions	1.9	1.9	0.6	0.0	0.0	0.0	0.0	0.0

Table 215 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	62.7	63.0	44.0	30.7	7.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	20.1	19.9	18.7	18.4	12.5	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	63.6	63.0	48.1	46.1	16.5	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
Strong Hybrid Powertrains Total	12.2	12.0	32.4	46.1	79.2	98.8	98.8	98.8
Plug-In Hybrid Powertrains	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	54.3	24.7	3.1	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	29.2	31.7	34.9	5.3	0.0	0.0	0.0
CVT Transmissions	24.1	25.0	24.1	10.6	7.0	0.0	0.0	0.0
DCT Transmissions	8.3	8.1	7.6	7.3	7.4	0.0	0.0	0.0

Table 216 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Mild Hybrid Powertrains	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	99.6
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	100.0	100.0	100.0	0.4	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	99.6	100.0	100.0	100.0	0.4
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 217 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	47.8	44.7	26.9	21.5	21.6	10.3	10.3	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	51.2	48.9	47.8	47.2	47.3	27.2	27.2	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	10.3	10.2	10.3	10.3	10.3	10.3	10.3	0.0
Strong Hybrid Powertrains Total	0.0	5.4	24.4	30.3	30.2	61.5	61.5	99.0
Plug-In Hybrid Powertrains	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	89.5	55.5	27.6	1.4	1.4	0.0	0.0	0.0
9-Speed Automatic	9.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	21.9	39.3	59.6	59.7	37.5	37.5	0.0
CVT Transmissions	0.0	7.7	7.7	7.8	7.8	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 218 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	71.5	46.4	32.1	31.4	14.4	0.9	0.9	0.9
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	12.9	7.2	1.3	1.3	1.2	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	59.4	33.5	16.8	16.8	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
Strong Hybrid Powertrains Total	5.8	36.9	56.7	57.2	82.5	97.2	97.2	97.2
Plug-In Hybrid Powertrains	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	55.2	23.1	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	16.8	16.8	0.0	0.0	0.0	0.0
CVT Transmissions	31.9	33.6	23.4	22.9	14.4	0.9	0.9	0.9
DCT Transmissions	5.2	4.6	1.3	1.3	1.2	0.0	0.0	0.0

Table 219 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	59.5	57.7	51.0	32.7	32.8	27.8	27.9	27.9
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.8	24.6	24.8	25.0	25.0	12.5	12.5	0.0
Variable Geometry Turbo	10.4	10.5	9.0	7.0	7.0	7.0	7.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	14.9	14.7	14.9	15.0	15.0	2.5	2.5	2.5
Mild Hybrid Powertrains	12.4	12.3	12.4	12.5	12.5	12.5	12.5	0.0
Strong Hybrid Powertrains Total	0.0	2.1	9.9	30.1	29.9	47.4	47.4	66.8
Plug-In Hybrid Powertrains	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	80.6	80.0	72.4	17.4	17.4	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	12.4	12.3	12.4	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	47.2	47.3	47.3	47.3	27.9
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0

**Table 220 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz)
Total Fleet, Alt 0 - No Action**

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.9	92.9	51.9	44.6	41.5	27.3	4.2	0.1
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	67.7	67.9	28.3	27.0	24.0	9.8	4.2	0.1
Strong Hybrid Powertrains Total	0.0	3.0	43.9	51.2	54.4	68.5	91.6	95.8
Plug-In Hybrid Powertrains	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	88.3	77.8	16.9	11.0	6.6	0.0	0.0	0.0
10-Speed Automatic	0.0	7.3	28.9	33.6	34.9	27.3	4.2	0.1
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	7.6	7.7	6.2	0.0	0.0	0.0	0.0	0.0

Table 221 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	20.4	19.1	18.7	19.0	61.1	61.1
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	12.9	34.1	34.3	34.4	34.4	34.4	34.4
Plug-In Hybrid Powertrains	4.4	4.3	4.4	4.5	4.5	4.5	4.5	4.5
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	95.6	82.8	61.5	61.2	61.1	61.2	61.1	61.1
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 222 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	10.3	10.0	27.1	26.8	27.0	26.9	25.3
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	1.6	1.6	0.9	0.9	0.8	0.8	2.3	2.3
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	3.0	3.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	60.3	59.4	60.2	42.1	42.3	26.4	18.8	18.8
Mild Hybrid Powertrains	0.0	1.8	1.8	1.7	1.7	1.7	1.7	0.2
Strong Hybrid Powertrains Total	0.0	19.0	24.6	44.1	44.0	62.9	70.8	72.4
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	3.5	3.3	2.8	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	26.2	14.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	24.0	28.1	28.6	9.5	2.0	2.0
CVT Transmissions	69.7	54.1	48.2	27.4	27.0	27.3	26.9	25.3
DCT Transmissions	0.6	0.6	0.4	0.4	0.3	0.3	0.3	0.3

Table 223 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	11.3	10.1	8.8	8.0	7.8	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.1	23.8	23.7	8.5	8.5	0.3	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	57.4	57.0	54.5	20.0	0.3	0.3	0.0	0.0
Mild Hybrid Powertrains	10.1	10.0	10.1	10.1	10.1	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	3.0	7.1	41.4	61.3	79.6	80.0	80.0
Plug-In Hybrid Powertrains	19.0	19.2	19.0	18.8	18.8	18.8	18.8	18.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	71.7	52.1	28.3	1.8	1.8	0.0	0.0	0.0
9-Speed Automatic	8.9	8.9	2.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	16.5	43.3	38.0	18.1	1.5	1.2	1.2
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0

Table 224 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	43.9	43.8	43.9	43.9
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	21.7	18.5	18.7	18.8	18.3	18.2	18.2	18.3
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	86.1	86.0	86.1	55.7	51.6	51.5	51.6	51.6
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	3.2	3.0	33.8	37.8	38.0	37.9	37.8
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	97.2	96.3	96.5	66.2	62.2	62.0	62.1	62.2
DCT Transmissions	2.7	0.3	0.3	0.0	0.0	0.0	0.0	0.0

Table 225 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	30.0	24.2	9.0	9.6	8.9	9.0	8.9	7.1
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	27.3	26.7	24.2	24.8	25.0	19.7	12.5	10.7
Variable Geometry Turbo	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	33.8	33.5	24.9	24.9	24.4	19.2	11.9	8.1
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	33.3	40.4	58.9	58.7	59.2	64.4	71.7	75.6
Plug-In Hybrid Powertrains	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
5-Speed Automatic	4.1	4.0	4.1	4.2	0.0	0.0	0.0	0.0
6-Speed Automatic	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	41.1	33.0	18.6	10.7	9.3	7.9	7.9	8.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	6.5	7.0	12.6	20.6	22.1	18.3	11.0	7.2
CVT Transmissions	11.6	12.1	3.0	2.9	6.6	6.6	6.6	6.6
DCT Transmissions	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.3

Table 226 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	59.8	40.7	8.6	5.3	3.5	3.5	3.5	3.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	14.5	14.3	14.5	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	57.8	38.6	6.7	3.5	3.5	3.5	3.5	3.5
Strong Hybrid Powertrains Total	0.0	19.4	51.1	68.9	70.7	70.7	70.7	70.7
Plug-In Hybrid Powertrains	25.7	25.6	25.7	25.8	25.8	25.8	25.8	25.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	72.3	52.9	21.2	3.5	3.5	3.5	3.5	3.5
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.9	2.1	1.9	1.8	0.0	0.0	0.0	0.0

Table 227 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 0 - No Action

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.5	52.1	37.0	14.2	0.3	0.3	0.3	0.0
Variable Geometry Turbo	20.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	92.1	48.5	35.1	13.0	0.3	0.3	0.3	0.0
Mild Hybrid Powertrains	3.2	3.3	0.9	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	44.0	60.6	83.7	97.6	97.6	97.6	98.0
Plug-In Hybrid Powertrains	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	69.0	30.3	20.7	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	6.3	6.0	5.7	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	29.0	17.4	10.8	8.6	0.3	0.3	0.3	0.0

Table 228 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.1	64.8	44.5	42.1	32.1	32.0	32.0	24.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	66.5	39.5	30.9	31.3	25.6	25.4	25.6	24.2
Mild Hybrid Powertrains	22.9	20.0	10.3	7.9	6.1	6.2	6.2	0.0
Strong Hybrid Powertrains Total	0.0	30.4	50.6	52.9	62.8	63.0	63.0	70.4
Plug-In Hybrid Powertrains	4.9	4.8	4.9	5.0	5.1	5.0	5.1	5.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	83.9	49.6	29.6	27.4	21.7	21.6	21.7	18.7
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	7.9	7.5	3.6	3.7	3.5	0.2
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	11.2	7.1	7.0	7.1	6.8	6.7	6.7	5.6

Table 229 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	23.8	23.9	23.8	23.8	12.7	12.7	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	0.0	0.0	0.0	13.3	13.3	31.3	45.3
Plug-In Hybrid Powertrains	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	45.3	45.3	45.3	45.3	32.0	32.1	14.0	0.0

Table 230 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.8	60.4	53.4	39.5	39.5	39.5	32.5	32.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	82.7	66.2	59.2	39.3	39.3	39.3	32.4	32.4
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	12.2	28.5	35.7	57.3	57.3	57.3	64.3	64.3
Plug-In Hybrid Powertrains	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	32.1	9.8	2.6	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	53.6	59.7	59.8	40.9	40.9	40.9	33.9	33.9
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.1	1.2	1.1	1.1	1.0	1.0	1.0	1.0

Table 231 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
Cylinder Deactivation	1.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	62.8	47.5	23.2	22.3	22.1	22.2	22.2	21.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.0
Diesel Engines	4.5	4.4	4.5	4.6	4.7	4.7	4.7	4.7
12V Stop-Start (non-hybrid)	98.0	78.9	35.4	34.8	23.8	23.9	23.9	22.7
Mild Hybrid Powertrains	0.0	0.0	3.7	3.7	3.8	3.8	3.8	3.8
Strong Hybrid Powertrains Total	0.1	19.3	45.3	44.9	55.6	55.7	55.6	57.4
Plug-In Hybrid Powertrains	0.0	0.0	15.6	16.0	16.2	16.0	16.1	16.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	20.8	11.8	11.1	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	19.6	19.1	11.4	22.1	22.0	22.1	22.0	20.9
9-Speed Automatic	16.8	7.8	1.4	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	31.9	30.7	15.2	17.0	6.3	6.2	6.2	5.6
CVT Transmissions	9.1	9.7	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0

Table 232 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	11.4	17.0	17.0
Cylinder Deactivation	19.6	6.9	5.3	5.6	5.7	5.6	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.1	32.1	24.6	24.2	24.2	24.2	24.2	24.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	3.4	3.9	3.7	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	58.5	49.3	29.9	29.8	30.0	29.9	29.9	29.9
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	22.3	33.7	54.3	55.0	58.8	58.8	58.8	58.8
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	4.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.0	9.2	9.6	9.8	6.2	6.1	6.1	6.1
CVT Transmissions	52.2	53.3	35.5	35.0	34.8	34.9	34.9	34.8
DCT Transmissions	1.9	1.9	0.6	0.2	0.2	0.2	0.2	0.2

Table 233 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	62.7	63.0	44.0	43.3	46.5	46.8	46.6	46.6
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	20.1	19.9	18.7	18.9	19.0	18.9	18.9	19.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	63.6	63.0	48.1	48.3	48.3	48.3	48.3	48.3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	12.2	12.0	32.4	33.0	33.2	33.2	33.3	33.3
Plug-In Hybrid Powertrains	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	54.3	24.7	3.1	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	29.2	31.7	34.9	35.0	34.8	34.8	34.8
CVT Transmissions	24.1	25.0	24.1	23.2	22.9	23.1	23.0	22.9
DCT Transmissions	8.3	8.1	7.6	7.7	7.8	7.7	7.8	7.8

Table 234 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Mild Hybrid Powertrains	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	99.6
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	100.0	100.0	100.0	0.4	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	99.6	100.0	100.0	100.0	0.4
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 235 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	47.8	44.7	26.9	26.9	27.0	27.0	27.0	16.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	51.2	48.9	47.8	47.2	47.3	27.2	27.2	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	10.3	10.2	10.3	10.3	10.3	10.3	10.3	0.0
Strong Hybrid Powertrains Total	0.0	5.4	24.4	24.8	24.7	44.9	44.8	82.4
Plug-In Hybrid Powertrains	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	89.5	55.5	27.6	1.4	1.4	0.0	0.0	0.0
9-Speed Automatic	9.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	21.9	39.3	59.6	59.7	41.0	41.0	3.4
CVT Transmissions	0.0	7.7	7.7	13.2	13.2	13.2	13.2	13.2
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 236 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	71.5	46.4	32.1	31.4	39.5	39.6	39.5	39.5
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	12.9	7.2	1.3	1.3	1.2	1.3	1.2	1.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	59.4	33.5	16.8	16.8	16.8	16.8	16.8	16.8
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	5.8	36.9	56.7	57.2	57.4	57.3	57.4	57.4
Plug-In Hybrid Powertrains	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	55.2	23.1	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	16.8	16.8	16.8	16.8	16.8	16.8
CVT Transmissions	31.9	33.6	23.4	22.9	22.7	22.9	22.8	22.8
DCT Transmissions	5.2	4.6	1.3	1.3	1.2	1.3	1.2	1.2

Table 237 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	59.5	57.7	51.0	51.5	51.6	51.5	51.6	51.6
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.8	24.6	24.8	25.0	25.1	25.0	25.0	25.0
Variable Geometry Turbo	10.4	10.5	9.0	7.0	7.0	7.0	7.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	14.9	14.7	14.9	15.0	15.0	15.0	15.0	15.0
Mild Hybrid Powertrains	12.4	12.3	12.4	12.5	12.5	12.5	12.5	12.5
Strong Hybrid Powertrains Total	0.0	2.1	9.9	11.3	11.0	11.2	11.1	18.0
Plug-In Hybrid Powertrains	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	80.6	80.0	72.4	17.4	17.4	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	12.4	12.3	12.4	66.0	66.2	83.5	83.6	76.6
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0

**Table 238 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz)
Total Fleet, Alt 1 - scen 1**

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.9	92.9	51.9	50.7	47.5	33.4	27.8	23.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	67.7	67.9	28.3	27.0	23.8	9.8	4.2	0.1
Strong Hybrid Powertrains Total	0.0	3.0	43.9	45.2	48.4	62.5	68.0	72.2
Plug-In Hybrid Powertrains	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	88.3	77.8	16.9	11.0	6.6	0.0	0.0	0.0
10-Speed Automatic	0.0	7.3	28.9	33.6	34.8	27.3	21.7	17.6
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	7.6	7.7	6.2	6.1	6.1	6.1	6.1	6.1

Table 239 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	20.4	19.1	18.6	19.0	61.1	61.1
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	12.9	34.1	34.3	34.4	34.4	34.4	34.4
Plug-In Hybrid Powertrains	4.4	4.3	4.4	4.5	4.5	4.5	4.5	4.5
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	95.6	82.8	61.5	61.2	61.1	61.2	61.1	61.1
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 240 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	10.3	10.0	27.1	26.7	42.8	42.7	42.7
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	1.6	1.6	0.9	0.9	0.9	0.9	10.0	10.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	3.0	3.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	60.3	59.4	60.2	42.1	42.4	42.2	42.3	42.3
Mild Hybrid Powertrains	0.0	1.8	1.8	1.7	1.7	1.7	1.7	1.7
Strong Hybrid Powertrains Total	0.0	19.0	24.6	44.1	44.0	47.1	47.3	47.3
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	3.5	3.3	2.8	0.9	0.9	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	2.1	2.1	0.0	0.0	0.0
9-Speed Automatic	26.2	14.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	24.0	25.2	25.7	25.3	25.5	25.6
CVT Transmissions	69.7	54.1	48.2	27.4	27.0	27.3	26.8	26.8
DCT Transmissions	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4

Table 241 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	11.3	10.1	8.8	8.0	8.1	0.2	0.2	0.2
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.1	23.8	23.7	20.8	40.5	34.5	34.4	36.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	57.4	57.0	54.5	34.2	34.3	34.2	34.1	34.1
Mild Hybrid Powertrains	10.1	10.0	10.1	10.1	10.1	2.3	2.3	2.3
Strong Hybrid Powertrains Total	0.0	3.0	7.1	28.4	28.4	44.5	44.6	44.6
Plug-In Hybrid Powertrains	19.0	19.2	19.0	18.8	18.8	18.8	18.8	18.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	71.7	52.1	28.3	14.7	14.8	14.8	14.8	14.8
9-Speed Automatic	8.9	8.9	2.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	16.5	43.3	37.8	37.9	21.7	21.7	21.7
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2

Table 242 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	16.0	63.4	63.4	63.4	63.4
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	21.7	18.5	18.7	18.8	18.9	18.9	18.9	18.9
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	86.1	86.0	86.1	86.2	86.3	86.2	86.3	86.3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	3.2	3.0	2.8	2.7	2.7	2.7	2.7
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	97.2	96.3	96.5	96.8	96.9	96.8	96.8	96.9
DCT Transmissions	2.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Table 243 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	30.0	24.2	9.0	9.6	9.4	9.6	9.5	9.8
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	27.3	26.7	24.2	24.8	25.1	24.9	25.0	25.0
Variable Geometry Turbo	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	33.8	33.5	24.9	24.9	24.9	24.9	24.9	24.9
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	33.3	40.4	58.9	58.7	58.6	58.6	58.6	58.6
Plug-In Hybrid Powertrains	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
5-Speed Automatic	4.1	4.0	4.1	4.2	0.0	0.0	0.0	0.0
6-Speed Automatic	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	41.1	33.0	18.6	18.9	23.3	23.2	23.2	23.2
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	6.5	7.0	12.6	12.5	12.4	12.5	12.5	12.4
CVT Transmissions	11.6	12.1	3.0	2.9	2.9	2.9	2.9	2.9
DCT Transmissions	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.4

Table 244 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	59.8	40.7	8.6	8.6	8.1	8.1	8.1	8.1
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	14.5	14.3	14.5	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	57.8	38.6	6.7	6.8	6.8	6.8	6.8	6.8
Strong Hybrid Powertrains Total	0.0	19.4	51.1	65.6	66.0	66.1	66.1	66.0
Plug-In Hybrid Powertrains	25.7	25.6	25.7	25.8	25.9	25.8	25.8	25.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	72.3	52.9	21.2	6.8	6.8	6.8	6.8	6.8
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.9	2.1	1.9	1.8	1.3	1.3	1.3	1.3

Table 245 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 1 - scen 1

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3
Cylinder Deactivation	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.5	52.1	37.0	33.6	33.3	33.2	33.2	33.0
Variable Geometry Turbo	20.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	92.1	48.5	35.1	32.6	32.3	32.2	32.2	32.0
Mild Hybrid Powertrains	3.2	3.3	0.9	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	44.0	60.6	64.0	64.4	64.4	64.4	64.6
Plug-In Hybrid Powertrains	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	69.0	30.3	20.7	15.3	15.4	15.3	15.4	15.4
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	6.3	6.0	9.9	9.8	9.8	9.8	9.8
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	29.0	17.4	10.8	8.9	8.4	8.4	8.4	8.1

Table 246 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.1	64.8	44.5	42.1	32.1	32.0	32.0	24.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	66.5	39.5	30.9	31.3	25.6	25.4	25.6	24.2
Mild Hybrid Powertrains	22.9	20.0	10.3	7.9	6.1	6.2	6.2	0.0
Strong Hybrid Powertrains Total	0.0	30.4	50.6	52.9	62.8	63.0	63.0	70.4
Plug-In Hybrid Powertrains	4.9	4.8	4.9	5.0	5.1	5.0	5.1	5.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	83.9	49.6	29.6	27.4	21.7	21.6	21.7	18.7
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	7.9	7.5	3.6	3.7	3.5	0.2
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	11.2	7.1	7.0	7.1	6.8	6.7	6.7	5.6

Table 247 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	23.8	23.9	23.8	23.8	12.7	12.7	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	0.0	0.0	0.0	13.3	13.3	31.3	45.3
Plug-In Hybrid Powertrains	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	45.3	45.3	45.3	45.3	32.0	32.1	14.0	0.0

Table 248 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.8	60.4	53.4	39.5	39.5	39.5	32.5	32.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	82.7	66.2	59.2	39.3	39.3	39.3	32.4	32.4
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	12.2	28.5	35.7	57.3	57.3	57.3	64.3	64.3
Plug-In Hybrid Powertrains	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	32.1	9.8	2.6	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	53.6	59.7	59.8	40.9	40.9	40.9	33.9	33.9
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.1	1.2	1.1	1.1	1.0	1.0	1.0	1.0

Table 249 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
Cylinder Deactivation	1.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	62.8	47.5	23.2	22.3	22.1	22.2	22.2	21.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.0
Diesel Engines	4.5	4.4	4.5	4.6	4.7	4.7	4.7	4.7
12V Stop-Start (non-hybrid)	98.0	78.9	35.4	34.8	23.8	23.9	23.9	22.7
Mild Hybrid Powertrains	0.0	0.0	3.7	3.7	3.8	3.8	3.8	3.8
Strong Hybrid Powertrains Total	0.1	19.3	45.3	44.9	55.6	55.7	55.6	57.4
Plug-In Hybrid Powertrains	0.0	0.0	15.6	16.0	16.2	16.0	16.1	16.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	20.8	11.8	11.1	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	19.6	19.1	11.4	22.1	22.0	22.1	22.0	20.9
9-Speed Automatic	16.8	7.8	1.4	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	31.9	30.7	15.2	17.0	6.3	6.2	6.2	5.6
CVT Transmissions	9.1	9.7	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0

Table 250 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	11.4	17.0	17.0
Cylinder Deactivation	19.6	6.9	5.3	5.6	5.7	5.6	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.1	32.1	24.6	24.2	24.2	24.2	24.2	24.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	3.4	3.9	3.7	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	58.5	49.3	29.9	29.8	30.0	29.9	29.9	29.9
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	22.3	33.7	54.3	55.0	58.8	58.8	58.8	58.8
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	4.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.0	9.2	9.6	9.8	6.2	6.1	6.1	6.1
CVT Transmissions	52.2	53.3	35.5	35.0	34.8	34.9	34.9	34.8
DCT Transmissions	1.9	1.9	0.6	0.2	0.2	0.2	0.2	0.2

Table 251 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	62.7	63.0	44.0	43.3	46.5	46.8	46.6	46.6
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	20.1	19.9	18.7	18.9	19.0	18.9	18.9	19.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	63.6	63.0	48.1	48.3	48.3	48.3	48.3	48.3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	12.2	12.0	32.4	33.0	33.2	33.2	33.3	33.3
Plug-In Hybrid Powertrains	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	54.3	24.7	3.1	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	29.2	31.7	34.9	35.0	34.8	34.8	34.8
CVT Transmissions	24.1	25.0	24.1	23.2	22.9	23.1	23.0	22.9
DCT Transmissions	8.3	8.1	7.6	7.7	7.8	7.7	7.8	7.8

Table 252 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Mild Hybrid Powertrains	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	99.6
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	100.0	100.0	100.0	0.4	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	99.6	100.0	100.0	100.0	0.4
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 253 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	47.8	44.7	26.9	26.9	27.0	27.0	27.0	16.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	51.2	48.9	47.8	47.2	47.3	27.2	27.2	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	10.3	10.2	10.3	10.3	10.3	10.3	10.3	0.0
Strong Hybrid Powertrains Total	0.0	5.4	24.4	24.8	24.7	44.9	44.8	82.4
Plug-In Hybrid Powertrains	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	89.5	55.5	27.6	1.4	1.4	0.0	0.0	0.0
9-Speed Automatic	9.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	21.9	39.3	59.6	59.7	41.0	41.0	3.4
CVT Transmissions	0.0	7.7	7.7	13.2	13.2	13.2	13.2	13.2
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 254 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	71.5	46.4	32.1	31.4	39.5	39.6	39.5	39.5
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	12.9	7.2	1.3	1.3	1.2	1.3	1.2	1.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	59.4	33.5	16.8	16.8	16.8	16.8	16.8	16.8
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	5.8	36.9	56.7	57.2	57.4	57.3	57.4	57.4
Plug-In Hybrid Powertrains	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	55.2	23.1	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	16.8	16.8	16.8	16.8	16.8	16.8
CVT Transmissions	31.9	33.6	23.4	22.9	22.7	22.9	22.8	22.8
DCT Transmissions	5.2	4.6	1.3	1.3	1.2	1.3	1.2	1.2

Table 255 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	59.5	57.7	51.0	51.5	51.6	51.5	51.6	51.6
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.8	24.6	24.8	25.0	25.1	25.0	25.0	25.0
Variable Geometry Turbo	10.4	10.5	9.0	7.0	7.0	7.0	7.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	14.9	14.7	14.9	15.0	15.0	15.0	15.0	15.0
Mild Hybrid Powertrains	12.4	12.3	12.4	12.5	12.5	12.5	12.5	12.5
Strong Hybrid Powertrains Total	0.0	2.1	9.9	11.3	11.0	11.2	11.1	18.0
Plug-In Hybrid Powertrains	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	80.6	80.0	72.4	17.4	17.4	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	12.4	12.3	12.4	66.0	66.2	83.5	83.6	76.6
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0

**Table 256 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz)
Total Fleet, Alt 2 - scen 2**

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.9	92.9	51.9	50.7	47.5	33.4	27.8	23.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	67.7	67.9	28.3	27.0	23.8	9.8	4.2	0.1
Strong Hybrid Powertrains Total	0.0	3.0	43.9	45.2	48.4	62.5	68.0	72.2
Plug-In Hybrid Powertrains	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	88.3	77.8	16.9	11.0	6.6	0.0	0.0	0.0
10-Speed Automatic	0.0	7.3	28.9	33.6	34.8	27.3	21.7	17.6
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	7.6	7.7	6.2	6.1	6.1	6.1	6.1	6.1

Table 257 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	20.4	19.1	18.6	19.0	61.1	61.1
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	12.9	34.1	34.3	34.4	34.4	34.4	34.4
Plug-In Hybrid Powertrains	4.4	4.3	4.4	4.5	4.5	4.5	4.5	4.5
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	95.6	82.8	61.5	61.2	61.1	61.2	61.1	61.1
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 258 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	10.3	10.0	27.1	26.7	42.8	42.7	42.7
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	1.6	1.6	0.9	0.9	0.9	0.9	10.0	10.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	3.0	3.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	60.3	59.4	60.2	42.1	42.4	42.2	42.3	42.3
Mild Hybrid Powertrains	0.0	1.8	1.8	1.7	1.7	1.7	1.7	1.7
Strong Hybrid Powertrains Total	0.0	19.0	24.6	44.1	44.0	47.1	47.3	47.3
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	3.5	3.3	2.8	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	26.2	14.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	24.0	28.1	28.7	25.3	25.5	25.6
CVT Transmissions	69.7	54.1	48.2	27.4	27.0	27.3	26.8	26.8
DCT Transmissions	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4

Table 259 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	11.3	10.1	8.8	8.0	8.1	0.2	0.2	0.2
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.1	23.8	23.7	20.8	40.5	34.5	34.4	36.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	57.4	57.0	54.5	34.2	34.3	34.2	34.1	34.1
Mild Hybrid Powertrains	10.1	10.0	10.1	10.1	10.1	2.3	2.3	2.3
Strong Hybrid Powertrains Total	0.0	3.0	7.1	28.4	28.4	44.5	44.6	44.6
Plug-In Hybrid Powertrains	19.0	19.2	19.0	18.8	18.8	18.8	18.8	18.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	71.7	52.1	28.3	14.7	14.8	14.8	14.8	14.8
9-Speed Automatic	8.9	8.9	2.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	16.5	43.3	37.8	37.9	21.7	21.7	21.7
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2

Table 260 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	16.0	63.4	63.4	63.4	63.4
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	21.7	18.5	18.7	18.8	18.9	18.9	18.9	18.9
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	86.1	86.0	86.1	86.2	86.3	86.2	86.3	86.3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	3.2	3.0	2.8	2.7	2.7	2.7	2.7
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	97.2	96.3	96.5	96.8	96.9	96.8	96.8	96.9
DCT Transmissions	2.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Table 261 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	30.0	24.2	9.0	9.6	9.4	9.6	9.5	9.8
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	27.3	26.7	24.2	24.8	25.1	24.9	25.0	25.0
Variable Geometry Turbo	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	33.8	33.5	24.9	24.9	24.9	24.9	24.9	24.9
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	33.3	40.4	58.9	58.7	58.6	58.6	58.6	58.6
Plug-In Hybrid Powertrains	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
5-Speed Automatic	4.1	4.0	4.1	4.2	0.0	0.0	0.0	0.0
6-Speed Automatic	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	41.1	33.0	18.6	18.9	23.3	23.2	23.2	23.2
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	6.5	7.0	12.6	12.5	12.4	12.5	12.5	12.4
CVT Transmissions	11.6	12.1	3.0	2.9	2.9	2.9	2.9	2.9
DCT Transmissions	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.4

Table 262 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	59.8	40.7	8.6	8.6	8.1	8.1	8.1	8.1
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	14.5	14.3	14.5	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	57.8	38.6	6.7	6.8	6.8	6.8	6.8	6.8
Strong Hybrid Powertrains Total	0.0	19.4	51.1	65.6	66.0	66.1	66.1	66.0
Plug-In Hybrid Powertrains	25.7	25.6	25.7	25.8	25.9	25.8	25.8	25.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	72.3	52.9	21.2	6.8	6.8	6.8	6.8	6.8
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.9	2.1	1.9	1.8	1.3	1.3	1.3	1.3

Table 263 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 2 - scen 2

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3
Cylinder Deactivation	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.5	52.1	37.0	33.6	33.3	33.2	33.2	33.0
Variable Geometry Turbo	20.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	92.1	48.5	35.1	32.6	32.3	32.2	32.2	32.0
Mild Hybrid Powertrains	3.2	3.3	0.9	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	44.0	60.6	64.0	64.4	64.4	64.4	64.6
Plug-In Hybrid Powertrains	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	69.0	30.3	20.7	15.3	15.4	15.3	15.4	15.4
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	6.3	6.0	9.9	9.8	9.8	9.8	9.8
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	29.0	17.4	10.8	8.9	8.4	8.4	8.4	8.1

Table 264 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (BMW) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.1	64.8	44.5	42.1	32.1	32.0	32.0	24.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	66.5	39.5	30.9	31.3	25.6	25.4	25.5	24.2
Mild Hybrid Powertrains	22.9	20.0	10.3	7.9	6.1	6.2	6.2	0.0
Strong Hybrid Powertrains Total	0.0	30.4	50.6	52.9	62.8	63.0	63.0	70.5
Plug-In Hybrid Powertrains	4.9	4.8	4.9	5.0	5.1	5.0	5.0	5.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	83.9	49.6	29.6	27.4	21.7	21.6	21.7	18.7
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	7.9	7.5	3.6	3.7	3.6	0.2
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	11.2	7.1	7.0	7.1	6.8	6.7	6.7	5.6

Table 265 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	23.8	23.9	23.8	23.8	12.7	12.7	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	0.0	0.0	0.0	13.3	13.3	31.3	45.3
Plug-In Hybrid Powertrains	54.7	54.7	54.7	54.7	54.7	54.7	54.7	54.7
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	45.3	45.3	45.3	45.3	32.1	32.0	14.1	0.0

Table 266 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ford) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.8	60.4	53.4	29.7	29.7	29.7	22.8	22.8
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	82.7	66.2	59.2	29.6	29.6	29.6	22.6	22.6
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	12.2	28.5	35.7	67.0	67.1	67.0	74.0	74.0
Plug-In Hybrid Powertrains	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	32.1	9.8	2.6	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	53.6	59.7	59.8	31.2	31.1	31.1	24.2	24.2
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.1	1.2	1.1	1.1	1.0	1.0	1.0	1.0

Table 267 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (GM) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
Cylinder Deactivation	1.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	62.8	47.5	23.2	22.3	22.1	22.2	22.2	21.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.0
Diesel Engines	4.5	4.4	4.5	4.6	4.7	4.7	4.7	4.7
12V Stop-Start (non-hybrid)	98.0	78.9	35.4	34.8	23.8	23.9	23.9	22.7
Mild Hybrid Powertrains	0.0	0.0	3.7	3.7	3.8	3.8	3.8	3.8
Strong Hybrid Powertrains Total	0.1	19.3	45.3	44.9	55.6	55.7	55.6	57.4
Plug-In Hybrid Powertrains	0.0	0.0	15.6	16.0	16.2	16.0	16.1	16.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	20.8	11.8	11.1	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	19.6	19.1	11.4	22.1	22.0	22.1	22.0	20.9
9-Speed Automatic	16.8	7.8	1.4	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	31.9	30.7	15.2	17.0	6.3	6.2	6.2	5.6
CVT Transmissions	9.1	9.7	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0

Table 268 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Honda) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	11.4	17.0	17.0
Cylinder Deactivation	19.6	6.9	5.3	5.6	5.7	5.6	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	35.1	32.1	24.6	24.2	24.2	24.2	24.2	24.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	3.4	3.9	3.7	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	58.5	49.3	29.9	29.8	29.9	29.9	29.9	29.9
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	22.3	33.7	54.3	55.0	58.8	58.7	58.8	58.8
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	4.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	19.0	9.2	9.6	9.8	6.2	6.1	6.1	6.1
CVT Transmissions	52.2	53.3	35.5	35.0	34.8	35.0	34.9	34.8
DCT Transmissions	1.9	1.9	0.6	0.2	0.2	0.2	0.2	0.2

Table 269 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	62.7	63.0	44.0	43.3	46.5	46.8	46.6	46.6
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	20.1	19.9	18.7	18.8	19.0	18.9	18.9	19.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	63.6	63.0	48.1	48.3	48.3	48.3	48.3	48.3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	12.2	12.0	32.4	33.0	33.2	33.2	33.3	33.3
Plug-In Hybrid Powertrains	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	54.3	24.7	3.1	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	29.2	31.7	34.9	35.0	34.8	34.8	34.8
CVT Transmissions	24.1	25.0	24.1	23.3	22.9	23.2	23.0	23.0
DCT Transmissions	8.3	8.1	7.6	7.7	7.8	7.7	7.8	7.8

Table 270 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Ineos) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Mild Hybrid Powertrains	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	99.6
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	100.0	100.0	100.0	0.4	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	99.6	100.0	100.0	100.0	0.4
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 271 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (JLR) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	47.8	44.7	26.9	26.9	27.0	15.7	15.8	5.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	51.2	48.9	47.8	47.2	47.3	27.2	27.2	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	10.3	10.2	10.3	10.3	10.3	10.3	10.3	0.0
Strong Hybrid Powertrains Total	0.0	5.4	24.4	24.8	24.7	56.1	56.0	93.6
Plug-In Hybrid Powertrains	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	89.5	55.5	27.6	1.4	1.4	0.0	0.0	0.0
9-Speed Automatic	9.6	8.6	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	21.9	39.3	59.6	59.7	37.5	37.6	0.0
CVT Transmissions	0.0	7.7	7.7	13.2	13.2	5.4	5.4	5.4
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 272 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (KIA) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	71.5	46.4	32.1	31.4	39.5	39.6	39.6	39.5
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	12.9	7.2	1.3	1.3	1.2	1.3	1.2	1.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	59.4	33.5	16.8	16.8	16.8	16.8	16.8	16.8
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	5.8	36.9	56.7	57.2	57.4	57.3	57.4	57.4
Plug-In Hybrid Powertrains	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	55.2	23.1	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	16.8	16.8	16.8	16.8	16.8	16.8
CVT Transmissions	31.9	33.6	23.4	22.9	22.7	22.9	22.8	22.8
DCT Transmissions	5.2	4.6	1.3	1.3	1.2	1.3	1.2	1.2

Table 273 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mazda) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	59.5	57.7	51.0	51.5	51.6	51.5	51.6	51.6
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.8	24.6	24.8	25.0	25.1	25.0	25.0	25.0
Variable Geometry Turbo	10.4	10.5	9.0	7.0	7.0	7.0	7.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	14.9	14.7	14.9	15.0	15.0	15.0	15.0	15.0
Mild Hybrid Powertrains	12.4	12.3	12.4	12.5	12.5	12.5	12.5	12.5
Strong Hybrid Powertrains Total	0.0	2.1	9.9	11.3	11.0	11.2	11.1	18.0
Plug-In Hybrid Powertrains	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	80.6	80.0	72.4	17.4	17.4	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	12.4	12.3	12.4	66.0	66.2	83.5	83.6	76.6
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0

**Table 274 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz)
Total Fleet, Alt 3 - scen 3**

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mercedes-Benz) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	95.9	92.9	51.9	44.6	41.4	27.3	21.7	17.6
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	67.7	67.9	28.3	27.0	23.9	9.8	4.2	0.1
Strong Hybrid Powertrains Total	0.0	3.0	43.9	51.2	54.5	68.5	74.1	78.3
Plug-In Hybrid Powertrains	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	88.3	77.8	16.9	11.0	6.6	0.0	0.0	0.0
10-Speed Automatic	0.0	7.3	28.9	33.6	34.8	27.3	21.7	17.6
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	7.6	7.7	6.2	0.0	0.0	0.0	0.0	0.0

Table 275 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	20.4	19.1	18.6	19.0	61.1	61.1
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	13.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	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
Strong Hybrid Powertrains Total	0.0	12.9	34.1	34.3	34.4	34.4	34.4	34.4
Plug-In Hybrid Powertrains	4.4	4.3	4.4	4.5	4.5	4.5	4.5	4.5
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	95.6	82.8	61.5	61.2	61.1	61.2	61.1	61.1
DCT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 276 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Nissan) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	10.3	10.0	27.1	26.7	42.8	42.7	42.7
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	1.6	1.6	0.9	0.9	0.9	0.9	10.0	10.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	3.0	3.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	60.3	59.4	60.2	42.1	42.4	42.2	42.3	42.3
Mild Hybrid Powertrains	0.0	1.8	1.8	1.7	1.7	1.7	1.7	1.7
Strong Hybrid Powertrains Total	0.0	19.0	24.6	44.1	44.0	47.1	47.3	47.3
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	3.5	3.3	2.8	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9-Speed Automatic	26.2	14.7	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	8.1	24.0	28.1	28.7	25.3	25.5	25.5
CVT Transmissions	69.7	54.1	48.2	27.4	27.0	27.3	26.8	26.8
DCT Transmissions	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.4

Table 277 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	11.3	10.1	8.8	8.0	7.8	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	24.1	23.8	23.7	19.6	39.3	33.3	33.0	33.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	57.4	57.0	54.5	31.1	31.1	31.1	30.8	30.8
Mild Hybrid Powertrains	10.1	10.0	10.1	10.1	10.1	2.3	2.3	2.3
Strong Hybrid Powertrains Total	0.0	3.0	7.1	31.6	31.8	47.8	48.2	48.2
Plug-In Hybrid Powertrains	19.0	19.2	19.0	18.8	18.8	18.8	18.8	18.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	71.7	52.1	28.3	11.6	11.6	11.6	11.6	11.6
9-Speed Automatic	8.9	8.9	2.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	16.5	43.3	38.0	37.8	21.7	21.4	21.4
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0

Table 278 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Subaru) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	16.0	63.4	63.4	63.4	63.4
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	21.7	18.5	18.7	18.8	18.9	18.9	18.9	18.9
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	86.1	86.0	86.1	86.2	86.3	86.2	86.3	86.3
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	3.2	3.0	2.8	2.7	2.8	2.7	2.7
Plug-In Hybrid Powertrains	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	0.0	0.0	0.0	0.0
6-Speed Automatic	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	97.2	96.3	96.5	96.8	96.9	96.8	96.8	96.9
DCT Transmissions	2.7	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Table 279 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Toyota) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	30.0	24.2	9.0	9.6	9.4	9.6	9.5	9.8
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	27.3	26.7	24.2	24.8	25.0	19.7	19.8	19.5
Variable Geometry Turbo	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	33.8	33.5	24.9	24.9	24.9	19.8	19.7	19.4
Mild Hybrid Powertrains	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	33.3	40.4	58.9	58.7	58.6	63.8	63.8	64.1
Plug-In Hybrid Powertrains	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
5-Speed Automatic	4.1	4.0	4.1	4.2	0.0	0.0	0.0	0.0
6-Speed Automatic	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	41.1	33.0	18.6	18.9	11.0	11.0	11.0	11.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	6.5	7.0	12.6	12.5	20.4	15.2	15.2	14.9
CVT Transmissions	11.6	12.1	3.0	2.9	7.2	7.2	7.2	7.2
DCT Transmissions	0.7	0.7	0.4	0.4	0.4	0.4	0.4	0.4

Table 280 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (Volvo) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	59.8	40.7	8.6	8.6	8.1	8.1	8.1	8.1
Variable Geometry Turbo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	14.5	14.3	14.5	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mild Hybrid Powertrains	57.8	38.6	6.7	6.8	6.8	6.8	6.8	6.8
Strong Hybrid Powertrains Total	0.0	19.4	51.1	65.6	66.0	66.1	66.1	66.0
Plug-In Hybrid Powertrains	25.7	25.6	25.7	25.8	25.8	25.8	25.8	25.8
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	72.3	52.9	21.2	6.8	6.8	6.8	6.8	6.8
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DCT Transmissions	1.9	2.1	1.9	1.8	1.3	1.3	1.3	1.3

Table 281 - Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 3 - scen 3

Powertrain Technology Penetration Rate (%) by Model Year for Manufacturer (VWA) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.3	0.3	0.3	0.3	0.3
Cylinder Deactivation	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	76.5	52.1	37.0	27.4	27.0	27.0	27.0	26.7
Variable Geometry Turbo	20.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	92.1	48.5	35.1	26.4	26.0	26.0	26.0	25.8
Mild Hybrid Powertrains	3.2	3.3	0.9	0.0	0.0	0.0	0.0	0.0
Strong Hybrid Powertrains Total	0.0	44.0	60.6	70.2	70.6	70.6	70.6	70.9
Plug-In Hybrid Powertrains	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0
5-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-Speed Automatic	69.0	30.3	20.7	13.3	13.4	13.3	3.9	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	6.3	6.0	5.7	5.5	5.6	15.0	15.0
CVT Transmissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9
DCT Transmissions	29.0	17.4	10.8	8.9	8.4	8.4	8.4	8.1

A11. Mass Reduction Penetration Rate, by Model Year

Table 282 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Total Fleet, Alt 0 - No Action

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Total Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	27.2	25.1	19.0	13.2	10.1	8.3	5.2	2.9
Mass Reduction Level 1 (%)	15.2	10.6	10.3	7.1	4.0	3.3	3.2	2.1
Mass Reduction Level 2 (%)	12.8	11.1	7.8	6.7	4.6	3.3	2.8	2.2
Mass Reduction Level 3 (%)	38.6	37.1	30.1	27.6	18.9	12.7	12.0	9.9
Mass Reduction Level 4 (%)	6.1	16.0	32.6	45.2	62.2	72.3	76.6	82.7
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2

**Table 283 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Passenger Car Fleet, Alt 0 - No Action**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	14.1	13.7	11.7	10.9	7.8	7.7	7.2	4.3
Mass Reduction Level 1 (%)	13.0	9.1	8.0	2.8	1.9	1.5	1.5	1.5
Mass Reduction Level 2 (%)	18.2	14.6	7.7	7.7	2.3	0.8	0.8	0.8
Mass Reduction Level 3 (%)	54.4	51.5	44.2	39.5	34.8	21.5	20.6	14.3
Mass Reduction Level 4 (%)	0.2	11.1	28.3	38.8	52.9	68.0	69.3	78.4
Mass Reduction Level 5 (%)	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.6

**Table 284 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Light Truck Fleet, Alt 0 - No Action**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	33.2	30.7	22.4	14.2	11.0	8.6	4.4	2.3
Mass Reduction Level 1 (%)	16.2	11.4	11.4	8.9	4.8	4.0	4.0	2.3
Mass Reduction Level 2 (%)	10.4	9.4	7.9	6.3	5.6	4.3	3.6	2.8
Mass Reduction Level 3 (%)	31.4	30.0	23.6	22.6	12.4	9.0	8.4	8.1
Mass Reduction Level 4 (%)	8.8	18.4	34.6	47.9	66.0	74.1	79.7	84.4
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**Table 285 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Domestic Car Fleet, Alt 0 - No Action**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	5.1	5.1	4.0	3.8	3.8	3.8	3.8	3.8
Mass Reduction Level 1 (%)	15.3	7.9	7.9	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	19.7	11.8	11.8	11.8	1.8	1.8	1.8	1.8
Mass Reduction Level 3 (%)	59.8	55.6	32.8	31.0	26.1	12.3	12.3	3.5
Mass Reduction Level 4 (%)	0.0	19.6	43.5	53.2	68.1	81.9	81.9	90.6
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2

**Table 286 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Imported Car Fleet, Alt 0 - No Action**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 0 - No Action								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	21.4	20.7	17.8	16.7	11.0	10.8	9.9	4.7
Mass Reduction Level 1 (%)	11.1	10.0	8.0	5.0	3.4	2.7	2.7	2.7
Mass Reduction Level 2 (%)	16.9	16.9	4.4	4.3	2.6	0.0	0.0	0.0
Mass Reduction Level 3 (%)	50.1	48.1	53.5	46.3	41.8	29.0	27.4	23.1
Mass Reduction Level 4 (%)	0.4	4.2	15.9	27.2	40.6	56.8	59.1	68.5
Mass Reduction Level 5 (%)	0.1	0.2	0.3	0.4	0.6	0.7	0.8	1.0

**Table 287 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Total Fleet, Alt 1 - scen 1**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Total Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	27.2	25.1	19.0	15.2	12.0	11.6	9.1	7.2
Mass Reduction Level 1 (%)	15.2	10.6	10.3	13.2	13.6	13.8	15.9	15.3
Mass Reduction Level 2 (%)	12.8	11.1	7.8	6.7	4.7	3.3	2.8	2.2
Mass Reduction Level 3 (%)	38.6	37.1	30.1	30.9	33.4	31.8	30.8	31.4
Mass Reduction Level 4 (%)	6.1	16.0	32.6	34.0	36.2	39.4	41.5	43.8
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**Table 288 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Passenger Car Fleet, Alt 1 - scen 1**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	14.1	13.7	11.7	10.9	6.4	6.1	5.5	3.0
Mass Reduction Level 1 (%)	13.0	9.1	8.0	8.1	12.6	12.5	13.1	14.0
Mass Reduction Level 2 (%)	18.2	14.6	7.7	7.7	6.0	4.1	3.5	2.7
Mass Reduction Level 3 (%)	54.4	51.5	44.2	43.0	41.9	39.6	37.5	36.8
Mass Reduction Level 4 (%)	0.2	11.1	28.3	30.1	33.1	37.5	40.3	43.4
Mass Reduction Level 5 (%)	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1

**Table 289 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Light Truck Fleet, Alt 1 - scen 1**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	33.2	30.7	22.4	16.9	27.2	26.4	18.5	18.2
Mass Reduction Level 1 (%)	16.2	11.4	11.4	15.3	16.4	17.3	23.1	18.8
Mass Reduction Level 2 (%)	10.4	9.4	7.9	6.3	0.9	0.9	0.9	0.9
Mass Reduction Level 3 (%)	31.4	30.0	23.6	25.8	10.7	10.7	12.7	17.1
Mass Reduction Level 4 (%)	8.8	18.4	34.6	35.6	44.6	44.6	44.6	44.9
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**Table 290 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Domestic Car Fleet, Alt 1 - scen 1**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	5.1	5.1	4.0	3.8	2.0	2.0	2.0	2.0
Mass Reduction Level 1 (%)	15.3	7.9	7.9	7.9	4.2	4.2	4.2	4.2
Mass Reduction Level 2 (%)	19.7	11.8	11.8	11.8	14.2	10.9	9.0	6.8
Mass Reduction Level 3 (%)	59.8	55.6	32.8	31.2	43.9	39.8	41.9	37.4
Mass Reduction Level 4 (%)	0.0	19.6	43.5	45.3	35.8	43.1	43.0	49.6
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 291 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Imported Car Fleet, Alt 1 - scen 1**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 1 - scen 1								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	21.4	20.7	17.8	16.7	8.6	8.3	7.3	3.6
Mass Reduction Level 1 (%)	11.1	10.0	8.0	8.3	16.9	16.8	17.8	19.0
Mass Reduction Level 2 (%)	16.9	16.9	4.4	4.3	1.9	0.6	0.6	0.6
Mass Reduction Level 3 (%)	50.1	48.1	53.5	52.5	40.9	39.6	35.3	36.4
Mass Reduction Level 4 (%)	0.4	4.2	15.9	17.9	31.7	34.6	38.9	40.2
Mass Reduction Level 5 (%)	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1

**Table 292 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	27.2	25.1	19.0	15.2	12.0	11.6	9.1	7.2
Mass Reduction Level 1 (%)	15.2	10.6	10.3	13.2	13.6	13.8	15.9	15.3
Mass Reduction Level 2 (%)	12.8	11.1	7.8	6.7	4.7	3.3	2.8	2.2
Mass Reduction Level 3 (%)	38.6	37.1	30.1	30.9	33.4	31.8	30.8	31.4
Mass Reduction Level 4 (%)	6.1	16.0	32.6	34.0	36.2	39.4	41.5	43.8
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**Table 293 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Passenger Car Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	14.1	13.7	11.7	10.9	6.4	6.1	5.5	3.0
Mass Reduction Level 1 (%)	13.0	9.1	8.0	8.1	12.6	12.5	13.1	14.0
Mass Reduction Level 2 (%)	18.2	14.6	7.7	7.7	6.0	4.1	3.5	2.7
Mass Reduction Level 3 (%)	54.4	51.5	44.2	43.0	41.9	39.6	37.5	36.8
Mass Reduction Level 4 (%)	0.2	11.1	28.3	30.1	33.1	37.5	40.3	43.4
Mass Reduction Level 5 (%)	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1

**Table 294 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Light Truck Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	33.2	30.7	22.4	16.9	27.2	26.4	18.5	18.2
Mass Reduction Level 1 (%)	16.2	11.4	11.4	15.3	16.4	17.3	23.1	18.8
Mass Reduction Level 2 (%)	10.4	9.4	7.9	6.3	0.9	0.9	0.9	0.9
Mass Reduction Level 3 (%)	31.4	30.0	23.6	25.8	10.7	10.7	12.7	17.1
Mass Reduction Level 4 (%)	8.8	18.4	34.6	35.6	44.6	44.6	44.6	44.9
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**Table 295 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Domestic Car Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	5.1	5.1	4.0	3.8	2.0	2.0	2.0	2.0
Mass Reduction Level 1 (%)	15.3	7.9	7.9	7.9	4.2	4.2	4.2	4.2
Mass Reduction Level 2 (%)	19.7	11.8	11.8	11.8	14.2	10.9	9.0	6.8
Mass Reduction Level 3 (%)	59.8	55.6	32.8	31.2	43.9	39.8	41.9	37.4
Mass Reduction Level 4 (%)	0.0	19.6	43.5	45.3	35.8	43.1	43.0	49.6
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 296 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Imported Car Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	21.4	20.7	17.8	16.7	8.6	8.3	7.3	3.6
Mass Reduction Level 1 (%)	11.1	10.0	8.0	8.3	16.9	16.8	17.8	19.0
Mass Reduction Level 2 (%)	16.9	16.9	4.4	4.3	1.9	0.6	0.6	0.6
Mass Reduction Level 3 (%)	50.1	48.1	53.5	52.5	40.9	39.6	35.3	36.4
Mass Reduction Level 4 (%)	0.4	4.2	15.9	17.9	31.7	34.6	38.9	40.2
Mass Reduction Level 5 (%)	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1

**Table 297 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Total Fleet, Alt 3 - scen 3**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Total Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	27.2	25.1	19.0	13.2	10.1	9.7	7.1	5.2
Mass Reduction Level 1 (%)	15.2	10.6	10.3	13.1	10.5	9.9	12.0	11.4
Mass Reduction Level 2 (%)	12.8	11.1	7.8	6.7	4.7	3.3	2.8	2.2
Mass Reduction Level 3 (%)	38.6	37.1	30.1	32.8	38.3	37.2	36.2	36.8
Mass Reduction Level 4 (%)	6.1	16.0	32.6	34.1	36.4	39.8	41.9	44.2
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**Table 298 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Passenger Car Fleet, Alt 3 - scen 3**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Passenger Car Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	14.1	13.7	11.7	10.9	6.4	6.1	5.5	3.0
Mass Reduction Level 1 (%)	13.0	9.1	8.0	8.0	8.3	7.5	8.1	9.0
Mass Reduction Level 2 (%)	18.2	14.6	7.7	7.7	6.0	4.1	3.5	2.7
Mass Reduction Level 3 (%)	54.4	51.5	44.2	42.9	45.9	44.4	42.3	41.5
Mass Reduction Level 4 (%)	0.2	11.1	28.3	30.4	33.3	37.7	40.5	43.7
Mass Reduction Level 5 (%)	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1

**Table 299 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Light Truck Fleet, Alt 3 - scen 3**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Light Truck Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	33.2	30.7	22.4	14.2	20.0	19.2	11.3	11.0
Mass Reduction Level 1 (%)	16.2	11.4	11.4	15.2	16.4	16.4	22.3	18.0
Mass Reduction Level 2 (%)	10.4	9.4	7.9	6.3	0.9	0.9	0.9	0.9
Mass Reduction Level 3 (%)	31.4	30.0	23.6	28.5	17.9	17.9	19.9	24.3
Mass Reduction Level 4 (%)	8.8	18.4	34.6	35.7	44.6	45.4	45.4	45.7
Mass Reduction Level 5 (%)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1

**Table 300 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Domestic Car Fleet, Alt 3 - scen 3**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Domestic Car Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	5.1	5.1	4.0	3.8	2.0	2.0	2.0	2.0
Mass Reduction Level 1 (%)	15.3	7.9	7.9	7.9	4.2	4.2	4.2	4.2
Mass Reduction Level 2 (%)	19.7	11.8	11.8	11.8	14.1	10.9	9.0	6.8
Mass Reduction Level 3 (%)	59.8	55.6	32.8	31.2	43.9	39.7	41.8	37.4
Mass Reduction Level 4 (%)	0.0	19.6	43.5	45.3	35.8	43.1	43.0	49.7
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 301 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total)
Imported Car Fleet, Alt 3 - scen 3**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Total) Imported Car Fleet, Alt 3 - scen 3								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	21.4	20.7	17.8	16.7	8.6	8.3	7.3	3.6
Mass Reduction Level 1 (%)	11.1	10.0	8.0	8.0	10.4	9.2	10.2	11.4
Mass Reduction Level 2 (%)	16.9	16.9	4.4	4.3	1.9	0.6	0.6	0.6
Mass Reduction Level 3 (%)	50.1	48.1	53.5	52.4	46.9	46.8	42.5	43.6
Mass Reduction Level 4 (%)	0.4	4.2	15.9	18.4	32.0	35.0	39.3	40.6
Mass Reduction Level 5 (%)	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1

**Table 302 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (BMW)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (BMW) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	43.2	40.4	28.6	27.7	17.2	12.4	11.6	8.7
Mass Reduction Level 1 (%)	56.8	30.0	31.1	32.3	33.0	37.6	38.5	41.5
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 4 (%)	0.0	29.7	40.3	40.0	49.8	50.0	49.9	49.8
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,351	4,240	4,214	4,234	4,202	4,188	4,191	4,188
Diff. from Baseline - Fleet (pounds)	0	0	0	-87	-91	-105	-108	-145

**Table 303 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Ferrari)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Ferrari) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	23.8	23.9	23.8	23.8	23.8	23.9	11.1	11.1
Mass Reduction Level 4 (%)	38.1	38.1	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 5 (%)	38.1	38.0	76.2	76.2	76.2	76.1	88.9	88.9
Avg Curb Weight - Fleet (pounds)	4,097	4,097	4,036	4,035	4,035	4,036	3,996	3,996
Diff. from Baseline - Fleet (pounds)	0	0	0	0	0	-1	0	0

Table 304 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Ford) Total Fleet, Alt 2 - scen 2

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Ford) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	54.4	54.4	54.4	27.6	27.5	27.6	13.4	13.4
Mass Reduction Level 1 (%)	7.4	0.0	0.0	26.8	26.9	26.9	41.0	41.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	32.9	33.0	32.9	32.8	32.8	32.8	32.8	32.8
Mass Reduction Level 4 (%)	5.2	12.6	12.7	12.8	12.8	12.8	12.8	12.8
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,571	4,540	4,547	4,501	4,504	4,502	4,479	4,479
Diff. from Baseline - Fleet (pounds)	0	0	0	-103	-120	-119	-173	-173

Table 305 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (GM) Total Fleet, Alt 2 - scen 2

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (GM) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	39.7	38.7	11.6	11.9	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	21.5	6.9	7.0	7.2	7.3	7.2	7.3	0.0
Mass Reduction Level 2 (%)	6.6	2.4	1.4	1.4	1.4	1.4	1.4	0.0
Mass Reduction Level 3 (%)	27.9	28.6	18.1	17.3	17.0	17.2	17.1	24.3
Mass Reduction Level 4 (%)	4.4	23.5	61.9	62.2	74.3	74.1	74.3	75.7
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,353	4,274	4,130	4,157	4,090	4,082	4,087	4,072
Diff. from Baseline - Fleet (pounds)	0	0	0	-1	-2	-12	-13	-30

**Table 306 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Honda)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Honda) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	0.3	0.4	0.3	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	38.5	38.0	38.5	39.0	24.8	24.5	19.0	15.5
Mass Reduction Level 3 (%)	61.1	61.6	43.1	41.0	55.5	44.3	50.0	53.5
Mass Reduction Level 4 (%)	0.0	0.0	18.1	20.0	19.7	31.3	31.0	31.0
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,635	3,617	3,614	3,629	3,628	3,608	3,606	3,605
Diff. from Baseline - Fleet (pounds)	0	0	0	-1	-63	-63	-62	-69

**Table 307 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Hyundai)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Hyundai) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	4.5	4.7	3.7	3.5	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	5.7	5.8	5.7	5.7	2.1	0.0	0.0	0.0
Mass Reduction Level 2 (%)	14.7	14.2	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	75.1	75.4	75.1	74.8	81.7	84.0	83.9	83.9
Mass Reduction Level 4 (%)	0.0	0.0	15.5	16.0	16.2	16.0	16.1	16.1
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,683	3,665	3,641	3,657	3,651	3,642	3,645	3,646
Diff. from Baseline - Fleet (pounds)	0	0	0	-17	-78	-109	-110	-110

**Table 308 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Ineos)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Ineos) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.4
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 4 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.6
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,294
Diff. from Baseline - Fleet (pounds)	0	0	0	0	0	0	0	0

Table 309 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (JLR) Total Fleet, Alt 2 - scen 2

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (JLR) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	85.4	80.8	70.4	70.7	70.8	39.5	39.5	39.5
Mass Reduction Level 1 (%)	14.6	14.8	14.6	14.5	14.4	45.7	45.7	45.7
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 4 (%)	0.0	0.0	8.6	8.6	8.7	8.6	8.6	8.6
Mass Reduction Level 5 (%)	0.0	4.4	6.3	6.2	6.2	6.2	6.2	6.2
Avg Curb Weight - Fleet (pounds)	5,233	5,194	5,149	5,154	5,157	5,093	5,094	5,094
Diff. from Baseline - Fleet (pounds)	0	0	0	-20	-21	-143	-143	-373

Table 310 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (KIA) Total Fleet, Alt 2 - scen 2

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (KIA) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	100.0	74.8	61.8	61.3	61.1	61.3	61.2	61.2
Mass Reduction Level 4 (%)	0.0	25.2	38.2	38.7	38.9	38.7	38.8	38.8
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,624	3,564	3,568	3,587	3,596	3,590	3,593	3,594
Diff. from Baseline - Fleet (pounds)	0	0	0	0	-50	-73	-73	-86

**Table 311 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Mazda)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Mazda) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	34.5	34.2	34.5	34.8	34.9	34.8	34.8	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	63.6	63.8	63.6	63.5	63.4	63.5	63.4	98.3
Mass Reduction Level 4 (%)	1.9	2.1	1.9	1.8	1.7	1.8	1.7	1.7
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,834	3,827	3,834	3,840	3,843	3,841	3,842	3,747
Diff. from Baseline - Fleet (pounds)	0	0	0	-28	-28	-54	-54	-55

Table 312 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Mercedes-Benz) Total Fleet, Alt 2 - scen 2

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Mercedes-Benz) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	100.0	97.0	54.7	47.3	46.7	45.9	22.6	18.4
Mass Reduction Level 1 (%)	0.0	0.0	0.0	6.1	6.1	6.1	28.6	32.8
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0	0.0	1.2	1.6	1.6
Mass Reduction Level 4 (%)	0.0	3.0	45.3	46.6	47.3	46.8	47.1	47.1
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,714	4,678	4,454	4,456	4,460	4,453	4,419	4,413
Diff. from Baseline - Fleet (pounds)	0	0	0	-17	-17	-20	-92	-105

**Table 313 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Mitsubishi)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Mitsubishi) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	73.3	58.7	60.0	61.4	62.0	61.5	61.8	61.8
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	26.7	28.4	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 4 (%)	0.0	12.9	40.0	38.6	38.0	38.5	38.2	38.2
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,286	3,210	3,213	3,239	3,250	3,242	3,247	3,248
Diff. from Baseline - Fleet (pounds)	0	0	0	-1	-2	0	-130	-130

**Table 314 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Nissan)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Nissan) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	15.1	14.5	15.1	15.7	16.0	15.8	6.8	6.8
Mass Reduction Level 1 (%)	38.2	38.5	38.2	37.9	37.8	37.9	37.8	37.8
Mass Reduction Level 2 (%)	33.1	14.2	14.9	15.7	16.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	13.6	5.6	0.0	0.0	0.1	0.1	9.2	9.2
Mass Reduction Level 4 (%)	0.0	27.3	31.8	30.7	30.2	46.3	46.3	46.2
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,722	3,650	3,672	3,700	3,713	3,663	3,638	3,639
Diff. from Baseline - Fleet (pounds)	0	0	0	-94	-97	-95	-96	-96

**Table 315 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Stellantis)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Stellantis) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	64.9	62.0	57.9	48.0	47.9	48.0	47.9	47.9
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	25.8	25.8	25.8	35.6	35.7	35.6	35.6	35.7
Mass Reduction Level 4 (%)	9.3	12.1	16.2	16.2	16.2	16.2	16.2	16.2
Mass Reduction Level 5 (%)	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Avg Curb Weight - Fleet (pounds)	4,808	4,789	4,768	4,745	4,745	4,745	4,745	4,745
Diff. from Baseline - Fleet (pounds)	0	0	0	-154	-198	-311	-312	-312

**Table 316 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Subaru)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Subaru) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	99.5	99.5	99.5	99.5	99.6	99.6	99.6	99.6
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
Mass Reduction Level 4 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,640	3,637	3,640	3,643	3,644	3,643	3,644	3,644
Diff. from Baseline - Fleet (pounds)	0	0	0	-1	-153	-188	-189	-189

**Table 317 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Toyota)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Toyota) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	1.1	1.2	0.3	0.1	0.1	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	18.9	19.7	6.8	6.7	2.3	0.0	0.0	0.0
Mass Reduction Level 3 (%)	57.3	57.2	45.2	42.6	46.6	42.2	30.7	19.2
Mass Reduction Level 4 (%)	22.7	22.0	47.7	50.6	51.0	57.8	69.3	80.8
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,063	4,041	4,017	4,035	4,042	4,021	4,006	3,990
Diff. from Baseline - Fleet (pounds)	0	0	0	-1	-2	0	-1	-1

**Table 318 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Volvo)
Total Fleet, Alt 2 - scen 2**

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (Volvo) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	17.6	17.4	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	82.4	82.6	82.4	48.3	46.2	46.4	46.3	46.3
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8
Mass Reduction Level 4 (%)	0.0	0.0	17.6	51.7	52.0	51.8	51.9	51.9
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,413	4,406	4,339	4,250	4,251	4,250	4,251	4,251
Diff. from Baseline - Fleet (pounds)	0	0	0	0	-5	-5	-5	-5

Table 319 - Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (VWA) Total Fleet, Alt 2 - scen 2

Mass Reduction Penetration Rate and Curb Weights by Model Year for Manufacturer (VWA) Total Fleet, Alt 2 - scen 2								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Mass Reduction Level 0 (%)	51.6	29.9	28.7	25.5	11.4	11.6	11.5	1.6
Mass Reduction Level 1 (%)	25.5	13.0	6.2	0.0	11.0	11.0	11.0	19.5
Mass Reduction Level 2 (%)	22.6	22.1	22.6	8.0	8.0	8.0	8.0	8.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	17.0	19.8	19.8	19.8	21.1
Mass Reduction Level 4 (%)	0.0	34.7	42.2	49.3	49.6	49.4	49.5	49.5
Mass Reduction Level 5 (%)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Avg Curb Weight - Fleet (pounds)	3,954	3,810	3,800	3,770	3,754	3,751	3,753	3,741
Diff. from Baseline - Fleet (pounds)	0	0	0	-29	-59	-59	-59	-81

A12. Powertrain Technology Penetration Rate, by Alternative

Table 320 - Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	6.9	16.4	16.4	16.4
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	3.7	23.1	23.1	20.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.1	0.0	0.0	0.0
Diesel Engines	0.8	0.8	0.8	0.8
12V Stop-Start (non-hybrid)	6.2	30.7	30.7	28.0
Mild Hybrid	0.8	1.4	1.4	1.4
Strong Hybrid	80.2	52.4	52.4	55.3
Plug-In Hybrid	7.3	5.5	5.5	5.5
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	1.5	12.5	12.5	9.3
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	3.7	14.4	14.4	14.0
CVT Transmissions	7.2	13.6	13.6	14.6
DCT Transmissions	0.1	1.5	1.5	1.4

Table 321 - Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Passenger Car Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Passenger Car Fleet by Alternative					
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3	
Non-Hybrid High Compression Engines	10.0	22.3	22.3	22.3	
Cylinder Deactivation	0.0	0.0	0.0	0.0	
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	
Non-Hybrid Turbocharged Engines	1.2	21.3	21.3	19.1	
Variable Geometry Turbo	0.0	0.0	0.0	0.0	
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0	
Diesel Engines	0.0	0.0	0.0	0.0	
12V Stop-Start (non-hybrid)	7.4	33.5	33.5	31.5	
Mild Hybrid	0.0	0.8	0.8	0.8	
Strong Hybrid	86.2	52.4	52.4	54.6	
Plug-In Hybrid	1.7	2.6	2.6	2.6	
5-Speed Automatic	0.0	0.0	0.0	0.0	
6-Speed Automatic	0.0	0.0	0.0	0.0	
7-Speed Automatic	0.0	0.0	0.0	0.0	
8-Speed Automatic	0.0	12.2	12.2	11.2	
9-Speed Automatic	0.0	0.0	0.0	0.0	
10-Speed Automatic	4.7	12.3	12.3	11.1	
CVT Transmissions	7.1	18.7	18.7	18.7	
DCT Transmissions	0.3	1.9	1.9	1.7	

Table 322 - Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Light Truck Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Light Truck Fleet by Alternative					
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3	
Non-Hybrid High Compression Engines	5.6	0.7	0.7	0.7	
Cylinder Deactivation	0.0	0.1	0.1	0.0	
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0	
Non-Hybrid Turbocharged Engines	4.7	27.9	27.9	23.3	
Variable Geometry Turbo	0.0	0.0	0.0	0.0	
Electric Variable Geometry Turbo	0.1	0.0	0.0	0.0	
Diesel Engines	1.1	2.8	2.8	2.8	
12V Stop-Start (non-hybrid)	5.7	23.0	23.0	18.6	
Mild Hybrid	1.1	2.9	2.9	2.9	
Strong Hybrid	77.8	52.4	52.4	57.2	
Plug-In Hybrid	9.6	13.3	13.3	13.3	
5-Speed Automatic	0.0	0.0	0.0	0.0	
6-Speed Automatic	0.0	0.0	0.0	0.0	
7-Speed Automatic	0.0	0.0	0.0	0.0	
8-Speed Automatic	2.1	13.6	13.6	4.2	
9-Speed Automatic	0.0	0.0	0.0	0.0	
10-Speed Automatic	3.3	20.1	20.1	21.6	
CVT Transmissions	7.2	0.2	0.2	3.4	
DCT Transmissions	0.0	0.4	0.4	0.3	

Table 323 - Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Domestic Car Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Domestic Car Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	12.7	19.5	19.5	19.5
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	1.7	23.7	23.7	18.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	9.8	33.4	33.4	27.7
Mild Hybrid	0.1	0.4	0.4	0.4
Strong Hybrid	82.6	54.0	54.0	59.7
Plug-In Hybrid	0.9	1.7	1.7	1.7
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	6.5	6.5	4.1
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	4.0	15.3	15.3	12.0
CVT Transmissions	12.0	21.9	21.9	21.9
DCT Transmissions	0.6	0.6	0.6	0.6

Table 324 - Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Imported Car Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Total), MY 2031 Imported Car Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	7.7	23.7	23.7	23.7
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.8	20.0	20.0	19.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	5.4	33.6	33.6	33.5
Mild Hybrid	0.0	1.0	1.0	1.0
Strong Hybrid	89.1	51.5	51.5	51.9
Plug-In Hybrid	2.4	3.1	3.1	3.1
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	15.1	15.1	14.9
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	5.2	10.7	10.7	10.7
CVT Transmissions	3.1	17.0	17.0	17.1
DCT Transmissions	0.2	2.6	2.6	2.3

Table 325 - Powertrain Technology Penetration Rate (%) for Manufacturer (BMW), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (BMW), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	24.5	24.5	24.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	24.2	24.2	24.2
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	95.0	70.4	70.4	70.5
Plug-In Hybrid	5.0	5.1	5.1	5.1
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	18.7	18.7	18.7
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.2	0.2	0.2
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	5.6	5.6	5.6

Table 326 - Powertrain Technology Penetration Rate (%) for Manufacturer (Ferrari), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Ferrari), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	45.4	45.3	45.3	45.3
Plug-In Hybrid	54.6	54.7	54.7	54.7
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0

Table 327 - Powertrain Technology Penetration Rate (%) for Manufacturer (Ford), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Ford), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	2.0	32.5	32.5	22.8
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	2.1	32.4	32.4	22.6
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	94.9	64.3	64.3	74.0
Plug-In Hybrid	0.8	0.8	0.8	0.8
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	3.7	33.9	33.9	24.2
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.6	1.0	1.0	1.0

Table 328 - Powertrain Technology Penetration Rate (%) for Manufacturer (GM), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (GM), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.8	0.8	0.8
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	21.0	21.0	21.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	4.7	4.7	4.7	4.7
12V Stop-Start (non-hybrid)	0.0	22.7	22.7	22.7
Mild Hybrid	4.7	3.8	3.8	3.8
Strong Hybrid	68.3	57.4	57.4	57.4
Plug-In Hybrid	27.0	16.1	16.1	16.1
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	20.9	20.9	20.9
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	4.7	5.6	5.6	5.6
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0

Table 329 - Powertrain Technology Penetration Rate (%) for Manufacturer (Honda), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Honda), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	1.5	17.0	17.0	17.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	4.7	24.2	24.2	24.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	6.2	29.9	29.9	29.9
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	93.8	58.8	58.8	58.8
Plug-In Hybrid	0.0	0.0	0.0	0.0
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	1.5	6.1	6.1	6.1
CVT Transmissions	4.7	34.8	34.8	34.8
DCT Transmissions	0.0	0.2	0.2	0.2

Table 330 - Powertrain Technology Penetration Rate (%) for Manufacturer (Hyundai), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Hyundai), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	46.6	46.6	46.6
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	19.0	19.0	19.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	48.3	48.3	48.3
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	98.8	33.3	33.3	33.3
Plug-In Hybrid	1.2	1.2	1.2	1.2
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	34.8	34.8	34.8
CVT Transmissions	0.0	22.9	22.9	23.0
DCT Transmissions	0.0	7.8	7.8	7.8

Table 331 - Powertrain Technology Penetration Rate (%) for Manufacturer (Ineos), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Ineos), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.4	0.4	0.4	0.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.4	0.4	0.4	0.4
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	99.6	99.6	99.6	99.6
Plug-In Hybrid	0.0	0.0	0.0	0.0
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.4	0.4	0.4	0.4
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0

Table 332 - Powertrain Technology Penetration Rate (%) for Manufacturer (JLR), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (JLR), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	16.7	16.7	5.4
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	99.0	82.4	82.4	93.6
Plug-In Hybrid	1.0	1.0	1.0	1.0
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	3.4	3.4	0.0
CVT Transmissions	0.0	13.2	13.2	5.4
DCT Transmissions	0.0	0.0	0.0	0.0

Table 333 - Powertrain Technology Penetration Rate (%) for Manufacturer (KIA), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (KIA), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.9	39.5	39.5	39.5
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	1.2	1.2	1.2
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	16.8	16.8	16.8
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	97.2	57.4	57.4	57.4
Plug-In Hybrid	1.8	1.8	1.8	1.8
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	16.8	16.8	16.8
CVT Transmissions	0.9	22.8	22.8	22.8
DCT Transmissions	0.0	1.2	1.2	1.2

Table 334 - Powertrain Technology Penetration Rate (%) for Manufacturer (Mazda), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Mazda), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	27.9	51.6	51.6	51.6
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	25.0	25.0	25.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	2.5	15.0	15.0	15.0
Mild Hybrid	0.0	12.5	12.5	12.5
Strong Hybrid	66.8	18.0	18.0	18.0
Plug-In Hybrid	5.3	5.3	5.3	5.3
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	76.6	76.6	76.6
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	27.9	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.0	0.0	0.0

Table 335 - Powertrain Technology Penetration Rate (%) for Manufacturer (Mercedes-Benz), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Mercedes-Benz), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.1	23.7	23.7	17.6
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0
Mild Hybrid	0.1	0.1	0.1	0.1
Strong Hybrid	95.8	72.2	72.2	78.3
Plug-In Hybrid	4.1	4.1	4.1	4.1
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.1	17.6	17.6	17.6
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	6.1	6.1	0.0

Table 336 - Powertrain Technology Penetration Rate (%) for Manufacturer (Mitsubishi), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Mitsubishi), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	61.1	61.1	61.1	61.1
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	0.0	0.0	0.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	34.4	34.4	34.4	34.4
Plug-In Hybrid	4.5	4.5	4.5	4.5
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0
CVT Transmissions	61.1	61.1	61.1	61.1
DCT Transmissions	0.0	0.0	0.0	0.0

Table 337 - Powertrain Technology Penetration Rate (%) for Manufacturer (Nissan), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Nissan), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	25.3	42.7	42.7	42.7
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	2.3	10.0	10.0	10.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	18.8	42.3	42.3	42.3
Mild Hybrid	0.2	1.7	1.7	1.7
Strong Hybrid	72.4	47.3	47.3	47.3
Plug-In Hybrid	0.0	0.0	0.0	0.0
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.0	0.0	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	2.0	25.6	25.6	25.5
CVT Transmissions	25.3	26.8	26.8	26.8
DCT Transmissions	0.3	0.4	0.4	0.4

Table 338 - Powertrain Technology Penetration Rate (%) for Manufacturer (Stellantis), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Stellantis), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.2	0.2	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	36.4	36.4	33.0
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	1.2	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	34.1	34.1	30.8
Mild Hybrid	0.0	2.3	2.3	2.3
Strong Hybrid	80.0	44.6	44.6	48.2
Plug-In Hybrid	18.8	18.8	18.8	18.8
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	14.8	14.8	11.6
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	1.2	21.7	21.7	21.4
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	0.2	0.2	0.0

Table 339 - Powertrain Technology Penetration Rate (%) for Manufacturer (Subaru), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Subaru), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	43.9	63.4	63.4	63.4
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	18.3	18.9	18.9	18.9
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	51.6	86.3	86.3	86.3
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	37.8	2.7	2.7	2.7
Plug-In Hybrid	0.0	0.0	0.0	0.0
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	0.2	0.2	0.2
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0
CVT Transmissions	62.2	96.9	96.9	96.9
DCT Transmissions	0.0	0.3	0.3	0.3

Table 340 - Powertrain Technology Penetration Rate (%) for Manufacturer (Toyota), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Toyota), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	7.1	9.8	9.8	9.8
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	10.7	25.0	25.0	19.5
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	8.1	24.9	24.9	19.4
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	75.6	58.6	58.6	64.1
Plug-In Hybrid	2.4	2.4	2.4	2.4
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	8.0	23.2	23.2	11.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	7.2	12.4	12.4	14.9
CVT Transmissions	6.6	2.9	2.9	7.2
DCT Transmissions	0.3	0.4	0.4	0.4

Table 341 - Powertrain Technology Penetration Rate (%) for Manufacturer (Volvo), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (Volvo), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.0	0.0	0.0
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	3.5	8.1	8.1	8.1
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	0.0	0.0	0.0
Mild Hybrid	3.5	6.8	6.8	6.8
Strong Hybrid	70.7	66.0	66.0	66.0
Plug-In Hybrid	25.8	25.8	25.8	25.8
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	3.5	6.8	6.8	6.8
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	0.0	0.0	0.0
CVT Transmissions	0.0	0.0	0.0	0.0
DCT Transmissions	0.0	1.3	1.3	1.3

Table 342 - Powertrain Technology Penetration Rate (%) for Manufacturer (VWA), MY 2031 Total Fleet by Alternative

Powertrain Technology Penetration Rate (%) for Manufacturer (VWA), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Hybrid High Compression Engines	0.0	0.3	0.3	0.3
Cylinder Deactivation	0.0	0.0	0.0	0.0
Dynamic Cylinder Deactivation	0.0	0.0	0.0	0.0
Non-Hybrid Turbocharged Engines	0.0	33.0	33.0	26.7
Variable Geometry Turbo	0.0	0.0	0.0	0.0
Electric Variable Geometry Turbo	0.0	0.0	0.0	0.0
Diesel Engines	0.0	0.0	0.0	0.0
12V Stop-Start (non-hybrid)	0.0	32.0	32.0	25.8
Mild Hybrid	0.0	0.0	0.0	0.0
Strong Hybrid	98.0	64.6	64.6	70.9
Plug-In Hybrid	2.0	2.0	2.0	2.0
5-Speed Automatic	0.0	0.0	0.0	0.0
6-Speed Automatic	0.0	0.0	0.0	0.0
7-Speed Automatic	0.0	0.0	0.0	0.0
8-Speed Automatic	0.0	15.4	15.4	0.0
9-Speed Automatic	0.0	0.0	0.0	0.0
10-Speed Automatic	0.0	9.8	9.8	15.0
CVT Transmissions	0.0	0.0	0.0	3.9
DCT Transmissions	0.0	8.1	8.1	8.1

Table 343 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	2.9	7.2	7.2	5.2
Mass Reduction Level 1 (%)	2.1	15.3	15.3	11.4
Mass Reduction Level 2 (%)	2.2	2.2	2.2	2.2
Mass Reduction Level 3 (%)	9.9	31.4	31.4	36.8
Mass Reduction Level 4 (%)	82.7	43.8	43.8	44.2
Mass Reduction Level 5 (%)	0.2	0.1	0.1	0.1
Avg Curb Weight - Fleet (pounds)	3,900	3,997	3,997	3,983
Diff. from Baseline - Fleet (pounds)	0	-97	-97	-83
Avg Curb Weight - Passenger Car (pounds)	3,160	3,653	3,653	3,645
Diff. from Baseline - Passenger Car (pounds)	0	-493	-493	-485
Avg Curb Weight - Light Truck (pounds)	4,204	4,915	4,915	4,886
Diff. from Baseline - Light Trucks (pounds)	0	-711	-711	-682

A13. Mass Reduction Penetration Rate, by Alternative

Table 344 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	2.9	7.2	7.2	5.2
Mass Reduction Level 1 (%)	2.1	15.3	15.3	11.4
Mass Reduction Level 2 (%)	2.2	2.2	2.2	2.2
Mass Reduction Level 3 (%)	9.9	31.4	31.4	36.8
Mass Reduction Level 4 (%)	82.7	43.8	43.8	44.2
Mass Reduction Level 5 (%)	0.2	0.1	0.1	0.1
Avg Curb Weight - Fleet (pounds)	3,900	3,997	3,997	3,983
Diff. from Baseline - Fleet (pounds)	0	-97	-97	-83
Avg Curb Weight - Passenger Car (pounds)	3,160	3,653	3,653	3,645
Diff. from Baseline - Passenger Car (pounds)	0	-493	-493	-485
Avg Curb Weight - Light Truck (pounds)	4,204	4,915	4,915	4,886
Diff. from Baseline - Light Trucks (pounds)	0	-711	-711	-682

**Table 345 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031
Passenger Car Fleet by Alternative**

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Passenger Car Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	4.3	3.0	3.0	3.0
Mass Reduction Level 1 (%)	1.5	14.0	14.0	9.0
Mass Reduction Level 2 (%)	0.8	2.7	2.7	2.7
Mass Reduction Level 3 (%)	14.3	36.8	36.8	41.5
Mass Reduction Level 4 (%)	78.4	43.4	43.4	43.7
Mass Reduction Level 5 (%)	0.6	0.1	0.1	0.1
Avg Curb Weight - Fleet (pounds)	3,900	3,997	3,997	3,983
Diff. from Baseline - Fleet (pounds)	0	-97	-97	-83
Avg Curb Weight - Passenger Car (pounds)	3,160	3,653	3,653	3,645
Diff. from Baseline - Passenger Car (pounds)	0	-493	-493	-485
Avg Curb Weight - Light Truck (pounds)	4,204	4,915	4,915	4,886
Diff. from Baseline - Light Trucks (pounds)	0	-711	-711	-682

Table 346 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Light Truck Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Light Truck Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	2.3	18.2	18.2	11.0
Mass Reduction Level 1 (%)	2.3	18.8	18.8	18.0
Mass Reduction Level 2 (%)	2.8	0.9	0.9	0.9
Mass Reduction Level 3 (%)	8.1	17.1	17.1	24.3
Mass Reduction Level 4 (%)	84.4	44.9	44.9	45.7
Mass Reduction Level 5 (%)	0.1	0.1	0.1	0.1
Avg Curb Weight - Fleet (pounds)	3,900	3,997	3,997	3,983
Diff. from Baseline - Fleet (pounds)	0	-97	-97	-83
Avg Curb Weight - Passenger Car (pounds)	3,160	3,653	3,653	3,645
Diff. from Baseline - Passenger Car (pounds)	0	-493	-493	-485
Avg Curb Weight - Light Truck (pounds)	4,204	4,915	4,915	4,886
Diff. from Baseline - Light Trucks (pounds)	0	-711	-711	-682

Table 347- Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Domestic Car Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Domestic Car Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	3.8	2.0	2.0	2.0
Mass Reduction Level 1 (%)	0.0	4.2	4.2	4.2
Mass Reduction Level 2 (%)	1.8	6.8	6.8	6.8
Mass Reduction Level 3 (%)	3.5	37.4	37.4	37.4
Mass Reduction Level 4 (%)	90.6	49.6	49.6	49.7
Mass Reduction Level 5 (%)	0.2	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,900	3,997	3,997	3,983
Diff. from Baseline - Fleet (pounds)	0	-97	-97	-83
Avg Curb Weight - Passenger Car (pounds)	3,160	3,653	3,653	3,645
Diff. from Baseline - Passenger Car (pounds)	0	-493	-493	-485
Avg Curb Weight - Light Truck (pounds)	4,204	4,915	4,915	4,886
Diff. from Baseline - Light Trucks (pounds)	0	-711	-711	-682

Table 348 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Imported Car Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Total), MY 2031 Imported Car Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	4.7	3.6	3.6	3.6
Mass Reduction Level 1 (%)	2.7	19.0	19.0	11.4
Mass Reduction Level 2 (%)	0.0	0.6	0.6	0.6
Mass Reduction Level 3 (%)	23.1	36.4	36.4	43.6
Mass Reduction Level 4 (%)	68.5	40.2	40.2	40.6
Mass Reduction Level 5 (%)	1.0	0.1	0.1	0.1
Avg Curb Weight - Fleet (pounds)	3,900	3,997	3,997	3,983
Diff. from Baseline - Fleet (pounds)	0	-97	-97	-83
Avg Curb Weight - Passenger Car (pounds)	3,160	3,653	3,653	3,645
Diff. from Baseline - Passenger Car (pounds)	0	-493	-493	-485
Avg Curb Weight - Light Truck (pounds)	4,204	4,915	4,915	4,886
Diff. from Baseline - Light Trucks (pounds)	0	-711	-711	-682

Table 349 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (BMW), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (BMW), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	2.4	8.7	8.7	8.7
Mass Reduction Level 1 (%)	8.8	41.5	41.5	41.4
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 4 (%)	88.5	49.8	49.8	49.9
Mass Reduction Level 5 (%)	0.3	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,043	4,188	4,188	4,188
Diff. from Baseline - Fleet (pounds)	0	-145	-145	-145
Avg Curb Weight - Passenger Car (pounds)	3,494	4,060	4,060	4,059
Diff. from Baseline - Passenger Car (pounds)	0	-566	-566	-565
Avg Curb Weight - Light Truck (pounds)	4,451	5,514	5,514	5,514
Diff. from Baseline - Light Trucks (pounds)	0	-1,063	-1,063	-1,063

Table 350 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Ferrari), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Ferrari), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	11.1	11.1	11.1	11.1
Mass Reduction Level 4 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 5 (%)	88.9	88.9	88.9	88.9
Avg Curb Weight - Fleet (pounds)	3,996	3,996	3,996	3,996
Diff. from Baseline - Fleet (pounds)	0	0	0	0
Avg Curb Weight - Passenger Car (pounds)	3,996	3,996	3,996	3,996
Diff. from Baseline - Passenger Car (pounds)	0	0	0	0
Avg Curb Weight - Light Truck (pounds)	0	0	0	0
Diff. from Baseline - Light Trucks (pounds)	0	0	0	0

Table 351 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Ford), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Ford), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	13.4	13.4	13.4	13.4
Mass Reduction Level 1 (%)	0.0	41.0	41.0	41.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	19.5	32.8	32.8	32.8
Mass Reduction Level 4 (%)	67.1	12.8	12.8	12.8
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,306	4,479	4,479	4,479
Diff. from Baseline - Fleet (pounds)	0	-173	-173	-173
Avg Curb Weight - Passenger Car (pounds)	3,717	3,854	3,854	3,854
Diff. from Baseline - Passenger Car (pounds)	0	-137	-137	-137
Avg Curb Weight - Light Truck (pounds)	4,360	4,876	4,876	4,876
Diff. from Baseline - Light Trucks (pounds)	0	-516	-516	-516

Table 352 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (GM), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (GM), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	3.1	24.3	24.3	24.3
Mass Reduction Level 4 (%)	96.9	75.7	75.7	75.7
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,042	4,072	4,072	4,071
Diff. from Baseline - Fleet (pounds)	0	-30	-30	-29
Avg Curb Weight - Passenger Car (pounds)	3,029	3,423	3,423	3,423
Diff. from Baseline - Passenger Car (pounds)	0	-394	-394	-394
Avg Curb Weight - Light Truck (pounds)	4,437	4,798	4,798	4,798
Diff. from Baseline - Light Trucks (pounds)	0	-361	-361	-361

Table 353 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Honda), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Honda), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	15.5	15.5	15.5	15.5
Mass Reduction Level 3 (%)	5.7	53.5	53.5	53.5
Mass Reduction Level 4 (%)	78.5	31.0	31.0	31.0
Mass Reduction Level 5 (%)	0.3	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,536	3,605	3,605	3,604
Diff. from Baseline - Fleet (pounds)	0	-69	-69	-68
Avg Curb Weight - Passenger Car (pounds)	3,107	3,579	3,579	3,579
Diff. from Baseline - Passenger Car (pounds)	0	-472	-472	-472
Avg Curb Weight - Light Truck (pounds)	4,024	4,470	4,470	4,470
Diff. from Baseline - Light Trucks (pounds)	0	-446	-446	-446

Table 354 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Hyundai), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Hyundai), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	5.7	83.9	83.9	83.9
Mass Reduction Level 4 (%)	94.3	16.1	16.1	16.1
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,536	3,646	3,646	3,646
Diff. from Baseline - Fleet (pounds)	0	-110	-110	-110
Avg Curb Weight - Passenger Car (pounds)	3,073	3,624	3,624	3,623
Diff. from Baseline - Passenger Car (pounds)	0	-551	-551	-550
Avg Curb Weight - Light Truck (pounds)	3,854	4,021	4,021	4,021
Diff. from Baseline - Light Trucks (pounds)	0	-167	-167	-167

Table 355 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Ineos), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Ineos), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.4	0.4	0.4	0.4
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 4 (%)	99.6	99.6	99.6	99.6
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	5,294	5,294	5,294	5,294
Diff. from Baseline - Fleet (pounds)	0	0	0	0
Avg Curb Weight - Passenger Car (pounds)	0	0	0	0
Diff. from Baseline - Passenger Car (pounds)	0	0	0	0
Avg Curb Weight - Light Truck (pounds)	5,294	5,294	5,294	5,294
Diff. from Baseline - Light Trucks (pounds)	0	0	0	0

Table 356 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (JLR), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (JLR), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	1.0	39.5	39.5	39.5
Mass Reduction Level 1 (%)	8.3	45.7	45.7	14.4
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 4 (%)	84.6	8.6	8.6	39.9
Mass Reduction Level 5 (%)	6.2	6.2	6.2	6.2
Avg Curb Weight - Fleet (pounds)	4,721	5,094	5,094	4,971
Diff. from Baseline - Fleet (pounds)	0	-373	-373	-250
Avg Curb Weight - Passenger Car (pounds)	3,710	4,110	4,110	4,109
Diff. from Baseline - Passenger Car (pounds)	0	-400	-400	-399
Avg Curb Weight - Light Truck (pounds)	4,763	5,435	5,435	5,269
Diff. from Baseline - Light Trucks (pounds)	0	-672	-672	-506

Table 357 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (KIA), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (KIA), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	61.2	61.2	61.2
Mass Reduction Level 4 (%)	100.0	38.8	38.8	38.8
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,508	3,594	3,594	3,593
Diff. from Baseline - Fleet (pounds)	0	-86	-86	-85
Avg Curb Weight - Passenger Car (pounds)	2,952	3,594	3,594	3,593
Diff. from Baseline - Passenger Car (pounds)	0	-642	-642	-641
Avg Curb Weight - Light Truck (pounds)	3,888	0	0	0
Diff. from Baseline - Light Trucks (pounds)	0	3,888	3,888	3,888

Table 358 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Mazda), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Mazda), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	59.9	98.3	98.3	98.3
Mass Reduction Level 4 (%)	40.1	1.7	1.7	1.7
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,692	3,747	3,747	3,747
Diff. from Baseline - Fleet (pounds)	0	-55	-55	-55
Avg Curb Weight - Passenger Car (pounds)	3,054	3,747	3,747	3,747
Diff. from Baseline - Passenger Car (pounds)	0	-693	-693	-693
Avg Curb Weight - Light Truck (pounds)	3,755	0	0	0
Diff. from Baseline - Light Trucks (pounds)	0	3,755	3,755	3,755

Table 359 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Mercedes-Benz), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Mercedes-Benz), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	18.5	18.4	18.4	18.5
Mass Reduction Level 1 (%)	0.0	32.8	32.8	26.7
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	1.6	1.6	1.6
Mass Reduction Level 4 (%)	79.9	47.1	47.1	53.2
Mass Reduction Level 5 (%)	1.6	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,308	4,413	4,413	4,396
Diff. from Baseline - Fleet (pounds)	0	-105	-105	-88
Avg Curb Weight - Passenger Car (pounds)	3,931	4,120	4,120	4,090
Diff. from Baseline - Passenger Car (pounds)	0	-189	-189	-159
Avg Curb Weight - Light Truck (pounds)	4,502	4,773	4,773	4,773
Diff. from Baseline - Light Trucks (pounds)	0	-271	-271	-271

**Table 360 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Mitsubishi), MY 2031
Total Fleet by Alternative**

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Mitsubishi), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	14.9	61.8	61.8	61.8
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	46.9	0.0	0.0	0.0
Mass Reduction Level 4 (%)	38.2	38.2	38.2	38.2
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,118	3,248	3,248	3,247
Diff. from Baseline - Fleet (pounds)	0	-130	-130	-129
Avg Curb Weight - Passenger Car (pounds)	2,059	3,248	3,248	3,247
Diff. from Baseline - Passenger Car (pounds)	0	-1,189	-1,189	-1,188
Avg Curb Weight - Light Truck (pounds)	3,467	0	0	0
Diff. from Baseline - Light Trucks (pounds)	0	3,467	3,467	3,467

Table 361 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Nissan), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Nissan), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	6.8	6.8	6.8	6.8
Mass Reduction Level 1 (%)	0.0	37.8	37.8	37.8
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	9.1	9.2	9.2	9.2
Mass Reduction Level 4 (%)	84.1	46.2	46.2	46.3
Mass Reduction Level 5 (%)	0.1	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,543	3,639	3,639	3,638
Diff. from Baseline - Fleet (pounds)	0	-96	-96	-95
Avg Curb Weight - Passenger Car (pounds)	3,003	3,417	3,417	3,417
Diff. from Baseline - Passenger Car (pounds)	0	-414	-414	-414
Avg Curb Weight - Light Truck (pounds)	4,260	4,947	4,947	4,947
Diff. from Baseline - Light Trucks (pounds)	0	-687	-687	-687

Table 362 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Stellantis), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Stellantis), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	3.6	47.9	47.9	22.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	35.7	35.7	60.4
Mass Reduction Level 4 (%)	96.1	16.2	16.2	17.4
Mass Reduction Level 5 (%)	0.2	0.2	0.2	0.2
Avg Curb Weight - Fleet (pounds)	4,433	4,745	4,745	4,651
Diff. from Baseline - Fleet (pounds)	0	-312	-312	-218
Avg Curb Weight - Passenger Car (pounds)	4,103	4,202	4,202	4,196
Diff. from Baseline - Passenger Car (pounds)	0	-99	-99	-93
Avg Curb Weight - Light Truck (pounds)	4,443	5,020	5,020	4,880
Diff. from Baseline - Light Trucks (pounds)	0	-577	-577	-437

Table 363 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Subaru), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Subaru), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	33.2	99.6	99.6	33.2
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	0.0	0.4	0.4	66.8
Mass Reduction Level 4 (%)	66.4	0.0	0.0	0.0
Mass Reduction Level 5 (%)	0.4	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,455	3,644	3,644	3,550
Diff. from Baseline - Fleet (pounds)	0	-189	-189	-95
Avg Curb Weight - Passenger Car (pounds)	3,279	3,644	3,644	3,550
Diff. from Baseline - Passenger Car (pounds)	0	-365	-365	-271
Avg Curb Weight - Light Truck (pounds)	3,480	0	0	0
Diff. from Baseline - Light Trucks (pounds)	0	3,480	3,480	3,480

Table 364 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Toyota), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Toyota), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 3 (%)	18.9	19.2	19.2	19.3
Mass Reduction Level 4 (%)	81.1	80.8	80.8	80.7
Mass Reduction Level 5 (%)	0.0	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	3,989	3,990	3,990	3,990
Diff. from Baseline - Fleet (pounds)	0	-1	-1	-1
Avg Curb Weight - Passenger Car (pounds)	3,252	3,645	3,645	3,645
Diff. from Baseline - Passenger Car (pounds)	0	-393	-393	-393
Avg Curb Weight - Light Truck (pounds)	4,364	5,111	5,111	5,111
Diff. from Baseline - Light Trucks (pounds)	0	-747	-747	-747

Table 365 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Volvo), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (Volvo), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 1 (%)	0.0	0.0	0.0	0.0
Mass Reduction Level 2 (%)	46.3	46.3	46.3	46.3
Mass Reduction Level 3 (%)	0.0	1.8	1.8	1.8
Mass Reduction Level 4 (%)	51.9	51.9	51.9	51.9
Mass Reduction Level 5 (%)	1.8	0.0	0.0	0.0
Avg Curb Weight - Fleet (pounds)	4,246	4,251	4,251	4,251
Diff. from Baseline - Fleet (pounds)	0	-5	-5	-5
Avg Curb Weight - Passenger Car (pounds)	3,926	4,251	4,251	4,251
Diff. from Baseline - Passenger Car (pounds)	0	-325	-325	-325
Avg Curb Weight - Light Truck (pounds)	4,312	0	0	0
Diff. from Baseline - Light Trucks (pounds)	0	4,312	4,312	4,312

Table 366 - Mass Reduction Penetration Rate and Curb Weights for Manufacturer (VWA), MY 2031 Total Fleet by Alternative

Mass Reduction Penetration Rate and Curb Weights for Manufacturer (VWA), MY 2031 Total Fleet by Alternative				
Alternative	Alt 0 - No Action	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Mass Reduction Level 0 (%)	1.6	1.6	1.6	1.6
Mass Reduction Level 1 (%)	0.0	19.5	19.5	19.5
Mass Reduction Level 2 (%)	8.0	8.0	8.0	8.0
Mass Reduction Level 3 (%)	0.0	21.1	21.1	21.1
Mass Reduction Level 4 (%)	89.7	49.5	49.5	49.5
Mass Reduction Level 5 (%)	0.7	0.2	0.2	0.2
Avg Curb Weight - Fleet (pounds)	3,660	3,741	3,741	3,740
Diff. from Baseline - Fleet (pounds)	0	-81	-81	-80
Avg Curb Weight - Passenger Car (pounds)	3,151	3,701	3,701	3,701
Diff. from Baseline - Passenger Car (pounds)	0	-550	-550	-550
Avg Curb Weight - Light Truck (pounds)	3,879	4,449	4,449	4,449
Diff. from Baseline - Light Trucks (pounds)	0	-570	-570	-570

A14. Required and Achieved CAFE Levels, Comparison

Table 367 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	40.7	32.3	-8.4	47.6	21.2	-26.4	34.4	29.2	-5.2	35.9	29.2	-6.7
2025	44.5	36.2	-8.3	51.7	21.3	-30.4	37.5	31.3	-6.2	39.3	31.2	-8.1
2026	49.1	38.9	-10.2	57.5	21.4	-36.1	41.6	32.1	-9.5	43.4	35.9	-7.5
2027	31.0	40.0	9.0	35.1	21.4	-13.7	26.5	35.2	8.7	27.2	36.0	8.8
2028	33.9	41.2	7.3	36.0	22.0	-14.0	30.3	35.2	4.9	30.9	37.3	6.4
2029	34.0	41.3	7.3	36.1	22.0	-14.1	30.3	35.2	4.9	31.0	37.6	6.6
2030	34.1	41.3	7.2	36.1	23.0	-13.1	30.4	36.0	5.6	31.0	37.6	6.6
2031	34.2	41.8	7.6	36.2	24.2	-12.0	30.5	36.0	5.5	31.1	38.0	6.9

Table 368 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	43.1	39.9	-3.2	41.5	36.1	-5.4	36.6	19.9	-16.7	35.7	26.9	-8.8
2025	47.2	42.3	-4.9	45.5	37.9	-7.6	39.7	19.9	-19.8	38.9	28.4	-10.5
2026	52.1	45.9	-6.2	50.2	41.4	-8.8	44.1	19.9	-24.2	43.2	30.8	-12.4
2027	32.5	45.8	13.3	31.6	42.0	10.4	28.6	22.7	-5.9	27.8	31.8	4.0
2028	35.9	46.3	10.4	35.1	42.7	7.6	30.7	22.7	-8.0	30.8	31.8	1.0
2029	36.0	46.9	10.9	35.2	42.8	7.6	30.8	22.7	-8.1	30.9	32.9	2.0
2030	36.0	47.4	11.4	35.3	42.8	7.5	30.9	22.7	-8.2	31.0	32.9	1.9
2031	36.1	47.4	11.3	35.4	42.8	7.4	31.0	31.0	0.0	31.0	34.0	3.0

Table 369 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	41.6	35.5	-6.1	39.4	35.1	-4.3	39.0	29.5	-9.5	43.9	39.5	-4.4
2025	45.5	40.7	-4.8	42.9	35.8	-7.1	42.5	30.3	-12.2	47.9	42.0	-5.9
2026	50.3	44.6	-5.7	47.6	36.7	-10.9	47.0	35.9	-11.1	53.0	51.1	-1.9
2027	31.6	44.7	13.1	30.8	39.9	9.1	29.9	36.4	6.5	33.6	50.7	17.1
2028	35.3	45.6	10.3	35.8	39.8	4.0	32.2	36.8	4.6	38.6	50.5	11.9
2029	35.4	45.7	10.3	35.9	40.2	4.3	32.3	37.6	5.3	38.7	50.6	11.9
2030	35.5	45.7	10.2	36.0	40.2	4.2	32.4	38.3	5.9	38.8	53.4	14.6
2031	35.6	45.6	10.0	36.1	42.1	6.0	32.5	38.4	5.9	38.9	53.4	14.5

Table 370 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	43.2	37.5	-5.7	34.9	27.6	-7.3	41.5	36.1	-5.4	39.7	37.8	-1.9
2025	47.2	41.7	-5.5	37.9	28.5	-9.4	45.2	36.6	-8.6	43.4	39.4	-4.0
2026	52.1	43.2	-8.9	42.1	29.6	-12.5	50.1	36.5	-13.6	47.9	43.1	-4.8
2027	32.3	45.7	13.4	27.1	32.4	5.3	32.5	37.7	5.2	30.2	43.4	13.2
2028	35.1	45.5	10.4	30.4	33.2	2.8	38.1	41.1	3.0	33.7	44.5	10.8
2029	35.3	47.6	12.3	30.5	34.5	4.0	38.2	41.7	3.5	33.8	44.8	11.0
2030	35.3	48.6	13.3	30.5	34.5	4.0	38.3	41.7	3.4	33.9	45.1	11.2
2031	35.4	48.6	13.2	30.6	34.6	4.0	38.4	41.7	3.3	34.0	45.3	11.3

Table 371 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 1 - scen 1									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	38.5	34.2	-4.3	41.1	32.3	-8.8	38.8	33.2	-5.6
2025	42.0	36.8	-5.2	44.9	37.7	-7.2	42.4	35.5	-6.9
2026	46.5	41.0	-5.5	49.7	40.1	-9.6	46.9	38.3	-8.6
2027	29.8	44.5	14.7	31.5	42.2	10.7	29.6	39.5	9.9
2028	33.9	44.6	10.7	36.1	42.4	6.3	33.3	40.3	7.0
2029	34.0	44.6	10.6	36.3	42.4	6.1	33.4	40.8	7.4
2030	34.1	44.6	10.5	36.3	42.4	6.1	33.5	41.1	7.6
2031	34.2	44.6	10.4	36.4	42.5	6.1	33.6	41.3	7.7

Table 372 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.6	34.2	-13.4	47.6	21.2	-26.4	48.8	32.8	-16.0	49.5	38.3	-11.2
2025	51.7	38.2	-13.5	51.7	21.3	-30.4	53.0	32.8	-20.2	53.8	41.5	-12.3
2026	57.4	42.0	-15.4	57.5	21.4	-36.1	58.9	35.4	-23.5	59.8	48.5	-11.3
2027	34.9	42.3	7.4	35.1	21.4	-13.7	35.6	36.7	1.1	36.0	49.9	13.9
2028	34.4	41.6	7.2	36.0	22.0	-14.0	35.5	40.4	4.9	36.3	46.4	10.1
2029	34.5	41.7	7.2	36.1	22.0	-14.1	35.6	40.4	4.8	36.4	46.6	10.2
2030	34.6	41.7	7.1	36.1	23.0	-13.1	35.7	40.4	4.7	36.5	46.7	10.2
2031	34.7	42.3	7.6	36.2	24.2	-12.0	35.8	40.4	4.6	36.5	46.9	10.4

Table 373 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.1	45.2	-3.9	48.6	41.1	-7.5	0.0	0.0	0.0	47.4	28.4	-19.0
2025	53.4	45.2	-8.2	52.9	42.4	-10.5	0.0	0.0	0.0	51.5	28.4	-23.1
2026	59.3	51.3	-8.0	58.7	45.4	-13.3	0.0	0.0	0.0	57.2	42.6	-14.6
2027	35.8	51.5	15.7	35.5	46.8	11.3	0.0	0.0	0.0	34.8	42.6	7.8
2028	36.2	46.6	10.4	35.4	43.3	7.9	0.0	0.0	0.0	35.1	41.1	6.0
2029	36.3	47.3	11.0	35.5	43.4	7.9	0.0	0.0	0.0	35.2	41.1	5.9
2030	36.3	47.8	11.5	35.6	43.4	7.8	0.0	0.0	0.0	35.3	41.1	5.8
2031	36.4	47.8	11.4	35.7	43.4	7.7	0.0	0.0	0.0	35.3	41.1	5.8

Table 374 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.7	42.7	-7.0	50.7	39.9	-10.8	46.1	34.0	-12.1	55.4	53.9	-1.5
2025	54.0	48.3	-5.7	55.1	43.2	-11.9	50.1	35.1	-15.0	60.2	53.9	-6.3
2026	60.0	51.4	-8.6	61.2	60.9	-0.3	55.7	36.3	-19.4	66.9	77.1	10.2
2027	36.1	52.3	16.2	36.4	60.9	24.5	34.2	37.4	3.2	37.9	77.1	39.2
2028	35.3	45.6	10.3	35.8	39.8	4.0	34.5	36.6	2.1	38.6	50.5	11.9
2029	35.4	45.7	10.3	35.9	40.2	4.3	34.6	37.9	3.3	38.7	50.6	11.9
2030	35.5	45.7	10.2	36.0	40.2	4.2	34.7	39.2	4.5	38.8	53.4	14.6
2031	35.6	45.6	10.0	36.1	42.1	6.0	34.8	39.6	4.8	38.9	53.4	14.5

Table 375 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	44.1	-5.5	50.5	38.7	-11.8	50.5	36.3	-14.2	49.3	45.6	-3.7
2025	53.9	51.2	-2.7	54.9	39.2	-15.7	54.9	39.7	-15.2	53.6	49.5	-4.1
2026	59.9	54.1	-5.8	61.0	39.2	-21.8	61.0	39.7	-21.3	59.5	59.5	0.0
2027	36.0	58.2	22.2	36.6	43.8	7.2	36.5	42.3	5.8	35.9	60.4	24.5
2028	36.4	50.2	13.8	33.7	39.1	5.4	38.1	41.1	3.0	36.0	53.7	17.7
2029	36.6	52.6	16.0	33.8	39.1	5.3	38.2	41.7	3.5	36.1	54.1	18.0
2030	36.6	52.6	16.0	33.9	39.1	5.2	38.3	41.7	3.4	36.2	54.8	18.6
2031	36.7	52.6	15.9	33.9	39.1	5.2	38.4	41.7	3.3	36.3	55.1	18.8

Table 376 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 1 - scen 1									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	46.8	37.2	-9.6	50.2	36.1	-14.1	49.3	41.2	-8.1
2025	50.9	37.2	-13.7	54.6	40.3	-14.3	53.6	44.3	-9.3
2026	56.6	46.6	-10.0	60.6	45.9	-14.7	59.5	49.8	-9.7
2027	34.5	47.5	13.0	36.3	47.2	10.9	35.9	51.2	15.3
2028	33.9	44.6	10.7	36.5	43.1	6.6	36.0	45.5	9.5
2029	34.0	44.6	10.6	36.6	43.1	6.5	36.1	45.9	9.8
2030	34.1	44.6	10.5	36.6	43.1	6.5	36.2	46.1	9.9
2031	34.2	44.6	10.4	36.7	43.2	6.5	36.2	46.3	10.1

Table 377 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	36.4	31.0	-5.4	0.0	0.0	0.0	33.4	28.9	-4.5	32.1	26.5	-5.6
2025	39.6	34.6	-5.0	0.0	0.0	0.0	36.3	31.1	-5.2	34.9	27.9	-7.0
2026	43.9	36.7	-7.2	0.0	0.0	0.0	40.4	31.8	-8.6	38.8	32.2	-6.6
2027	28.5	38.5	10.0	0.0	0.0	0.0	25.9	35.0	9.1	24.8	32.4	7.6
2028	29.2	37.3	8.1	0.0	0.0	0.0	27.7	32.6	4.9	26.5	30.7	4.2
2029	29.3	37.3	8.0	0.0	0.0	0.0	27.7	32.6	4.9	26.6	30.8	4.2
2030	29.4	37.3	7.9	0.0	0.0	0.0	27.8	33.7	5.9	26.6	30.8	4.2
2031	29.5	37.3	7.8	0.0	0.0	0.0	27.9	33.7	5.8	26.7	31.3	4.6

Table 378 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.4	34.7	-2.7	37.4	33.1	-4.3	36.6	19.9	-16.7	35.3	26.9	-8.4
2025	40.7	38.9	-1.8	40.7	34.9	-5.8	39.7	19.9	-19.8	38.4	28.4	-10.0
2026	45.2	40.5	-4.7	45.2	38.7	-6.5	44.1	19.9	-24.2	42.7	30.4	-12.3
2027	29.4	40.5	11.1	29.4	39.2	9.8	28.6	22.7	-5.9	27.6	31.5	3.9
2028	28.7	37.0	8.3	30.3	34.5	4.2	30.7	22.7	-8.0	29.6	29.5	-0.1
2029	28.7	37.0	8.3	30.4	34.5	4.1	30.8	22.7	-8.1	29.7	30.8	1.1
2030	28.8	37.0	8.2	30.5	34.5	4.0	30.9	22.7	-8.2	29.7	30.8	1.1
2031	28.9	37.0	8.1	30.6	34.5	3.9	31.0	31.0	0.0	29.8	32.1	2.3

Table 379 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.0	31.4	-5.6	38.5	34.7	-3.8	35.8	27.4	-8.4	40.8	35.9	-4.9
2025	40.3	36.0	-4.3	41.8	35.1	-6.7	38.9	28.0	-10.9	44.3	38.6	-5.7
2026	44.7	40.6	-4.1	46.5	35.1	-11.4	43.2	35.7	-7.5	49.2	45.4	-3.8
2027	29.1	40.6	11.5	30.3	38.5	8.2	28.0	35.9	7.9	32.3	45.4	13.1
2028	0.0	0.0	0.0	0.0	0.0	0.0	29.8	37.1	7.3	0.0	0.0	0.0
2029	0.0	0.0	0.0	0.0	0.0	0.0	29.9	37.1	7.2	0.0	0.0	0.0
2030	0.0	0.0	0.0	0.0	0.0	0.0	30.0	37.1	7.1	0.0	0.0	0.0
2031	0.0	0.0	0.0	0.0	0.0	0.0	30.0	37.1	7.1	0.0	0.0	0.0

Table 380 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	36.2	30.7	-5.5	34.5	27.3	-7.2	40.4	36.1	-4.3	35.7	34.4	-1.3
2025	39.4	32.1	-7.3	37.5	28.3	-9.2	43.9	36.1	-7.8	38.8	35.0	-3.8
2026	43.7	33.3	-10.4	41.7	29.4	-12.3	48.7	36.1	-12.6	43.1	37.3	-5.8
2027	28.3	35.4	7.1	26.9	32.2	5.3	32.0	37.1	5.1	27.9	37.9	10.0
2028	29.1	29.3	0.2	28.9	30.8	1.9	0.0	0.0	0.0	27.9	28.6	0.7
2029	29.2	30.3	1.1	29.0	32.6	3.6	0.0	0.0	0.0	27.9	28.7	0.8
2030	29.2	33.6	4.4	29.1	32.6	3.5	0.0	0.0	0.0	28.0	28.7	0.7
2031	29.3	33.6	4.3	29.1	32.7	3.6	0.0	0.0	0.0	28.1	28.8	0.7

Table 381 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 1 - scen 1									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.0	33.6	-3.4	37.8	30.7	-7.1	35.4	30.5	-4.9
2025	40.2	36.7	-3.5	41.1	36.5	-4.6	38.4	32.3	-6.1
2026	44.7	39.9	-4.8	45.7	37.9	-7.8	42.7	34.6	-8.1
2027	29.0	43.9	14.9	29.8	40.3	10.5	27.6	36.1	8.5
2028	0.0	0.0	0.0	30.4	33.2	2.8	27.8	31.0	3.2
2029	0.0	0.0	0.0	30.5	33.2	2.7	27.9	31.5	3.6
2030	0.0	0.0	0.0	30.6	33.2	2.6	27.9	31.8	3.9
2031	0.0	0.0	0.0	30.7	33.2	2.5	28.0	32.1	4.1

Table 382 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	48.8	32.8	-16.0	48.4	35.3	-13.1
2025	0.0	0.0	0.0	0.0	0.0	0.0	53.0	32.8	-20.2	52.6	41.0	-11.6
2026	0.0	0.0	0.0	0.0	0.0	0.0	58.9	35.4	-23.5	58.5	51.7	-6.8
2027	0.0	0.0	0.0	0.0	0.0	0.0	35.6	36.7	1.1	35.4	51.7	16.3
2028	0.0	0.0	0.0	0.0	0.0	0.0	37.7	39.3	1.6	36.5	49.1	12.6
2029	0.0	0.0	0.0	0.0	0.0	0.0	37.8	39.2	1.4	36.6	49.1	12.5
2030	0.0	0.0	0.0	0.0	0.0	0.0	37.9	39.2	1.3	36.7	49.1	12.4
2031	0.0	0.0	0.0	0.0	0.0	0.0	38.0	39.2	1.2	36.7	49.4	12.7

Table 383 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.1	45.2	-3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	53.4	45.2	-8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	59.3	51.3	-8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	35.8	51.5	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	36.2	46.6	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	36.3	47.3	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	36.3	47.8	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	36.4	47.8	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 384 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	50.6	44.3	-6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	55.0	44.3	-10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	61.1	44.3	-16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	36.6	46.2	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	39.1	46.2	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	39.2	46.2	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	39.3	46.2	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	39.4	46.2	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 385 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	44.6	-5.0	0.0	0.0	0.0	0.0	0.0	0.0	47.7	42.3	-5.4
2025	53.9	53.6	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	51.8	60.8	9.0
2026	59.9	56.7	-3.2	0.0	0.0	0.0	0.0	0.0	0.0	57.6	60.8	3.2
2027	36.0	60.4	24.4	0.0	0.0	0.0	0.0	0.0	0.0	35.0	60.8	25.8
2028	36.2	51.6	15.4	33.1	38.9	5.8	0.0	0.0	0.0	35.0	51.9	16.9
2029	36.3	54.5	18.2	33.2	38.9	5.7	0.0	0.0	0.0	35.1	52.1	17.0
2030	36.4	54.5	18.1	33.2	38.9	5.7	0.0	0.0	0.0	35.2	52.0	16.8
2031	36.4	54.4	18.0	33.3	38.9	5.6	0.0	0.0	0.0	35.3	53.6	18.3

Table 386 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 1 - scen 1									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	46.6	39.5	-7.1	44.3	29.7	-14.6	49.0	41.3	-7.7
2025	50.7	39.5	-11.2	48.1	29.7	-18.4	53.2	45.4	-7.8
2026	56.3	53.3	-3.0	53.5	43.5	-10.0	59.1	50.9	-8.2
2027	34.4	53.3	18.9	33.0	43.5	10.5	35.7	52.0	16.3
2028	35.1	53.3	18.2	33.1	35.2	2.1	35.9	45.7	9.8
2029	35.2	53.3	18.1	33.2	35.3	2.1	36.0	46.3	10.3
2030	35.2	53.3	18.1	33.2	35.3	2.1	36.1	46.4	10.3
2031	35.3	53.3	18.0	33.3	35.3	2.0	36.1	46.5	10.4

Table 387 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.6	34.2	-13.4	47.6	21.2	-26.4	0.0	0.0	0.0	50.6	42.0	-8.6
2025	51.7	38.2	-13.5	51.7	21.3	-30.4	0.0	0.0	0.0	55.0	42.0	-13.0
2026	57.4	42.0	-15.4	57.5	21.4	-36.1	0.0	0.0	0.0	61.2	45.6	-15.6
2027	34.9	42.3	7.4	35.1	21.4	-13.7	0.0	0.0	0.0	36.6	48.1	11.5
2028	34.4	41.6	7.2	36.0	22.0	-14.0	33.7	41.5	7.8	36.0	43.6	7.6
2029	34.5	41.7	7.2	36.1	22.0	-14.1	33.8	41.5	7.7	36.1	44.1	8.0
2030	34.6	41.7	7.1	36.1	23.0	-13.1	33.9	41.6	7.7	36.2	44.3	8.1
2031	34.7	42.3	7.6	36.2	24.2	-12.0	34.0	41.6	7.6	36.3	44.3	8.0

Table 388 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	0.0	0.0	0.0	48.6	41.1	-7.5	0.0	0.0	0.0	47.4	28.4	-19.0
2025	0.0	0.0	0.0	52.9	42.4	-10.5	0.0	0.0	0.0	51.5	28.4	-23.1
2026	0.0	0.0	0.0	58.7	45.4	-13.3	0.0	0.0	0.0	57.2	42.6	-14.6
2027	0.0	0.0	0.0	35.5	46.8	11.3	0.0	0.0	0.0	34.8	42.6	7.8
2028	0.0	0.0	0.0	35.4	43.3	7.9	0.0	0.0	0.0	35.1	41.1	6.0
2029	0.0	0.0	0.0	35.5	43.4	7.9	0.0	0.0	0.0	35.2	41.1	5.9
2030	0.0	0.0	0.0	35.6	43.4	7.8	0.0	0.0	0.0	35.3	41.1	5.8
2031	0.0	0.0	0.0	35.7	43.4	7.7	0.0	0.0	0.0	35.3	41.1	5.8

Table 389 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.2	41.8	-7.4	50.7	39.9	-10.8	46.1	34.0	-12.1	55.4	53.9	-1.5
2025	53.4	51.2	-2.2	55.1	43.2	-11.9	50.1	35.1	-15.0	60.2	53.9	-6.3
2026	59.4	57.1	-2.3	61.2	60.9	-0.3	55.7	36.3	-19.4	66.9	77.1	10.2
2027	35.8	57.1	21.3	36.4	60.9	24.5	34.2	37.4	3.2	37.9	77.1	39.2
2028	34.7	45.5	10.8	35.8	39.8	4.0	34.5	36.6	2.1	38.6	50.5	11.9
2029	34.8	45.6	10.8	35.9	40.2	4.3	34.6	37.9	3.3	38.7	50.6	11.9
2030	34.9	45.6	10.7	36.0	40.2	4.2	34.7	39.2	4.5	38.8	53.4	14.6
2031	35.0	45.5	10.5	36.1	42.1	6.0	34.8	39.6	4.8	38.9	53.4	14.5

Table 390 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	41.9	-7.7	50.5	38.7	-11.8	50.5	36.3	-14.2	49.7	46.5	-3.2
2025	54.0	41.9	-12.1	54.9	39.2	-15.7	54.9	39.7	-15.2	54.0	47.5	-6.5
2026	60.0	43.8	-16.2	61.0	39.2	-21.8	61.0	39.7	-21.3	60.0	59.2	-0.8
2027	36.1	49.0	12.9	36.6	43.8	7.2	36.5	42.3	5.8	36.1	60.3	24.2
2028	37.0	47.2	10.2	37.9	40.0	2.1	38.1	41.1	3.0	36.1	53.9	17.8
2029	37.2	48.5	11.3	38.0	40.1	2.1	38.2	41.7	3.5	36.2	54.4	18.2
2030	37.2	48.6	11.4	38.1	40.3	2.2	38.3	41.7	3.4	36.3	55.1	18.8
2031	37.3	48.6	11.3	38.1	40.3	2.2	38.4	41.7	3.3	36.4	55.2	18.8

Table 391 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 1 - scen 1									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.8	30.5	-17.3	50.7	36.7	-14.0	49.5	41.2	-8.3
2025	51.9	30.5	-21.4	55.1	41.4	-13.7	53.9	43.4	-10.5
2026	57.7	31.7	-26.0	61.2	46.0	-15.2	59.8	49.0	-10.8
2027	35.0	33.7	-1.3	36.6	47.5	10.9	36.0	50.6	14.6
2028	33.7	43.5	9.8	37.8	46.4	8.6	36.0	45.4	9.4
2029	33.8	43.5	9.7	37.9	46.4	8.5	36.1	45.7	9.6
2030	33.9	43.5	9.6	37.9	46.4	8.5	36.2	46.0	9.8
2031	34.0	43.5	9.5	38.0	46.6	8.6	36.3	46.2	9.9

Table 392 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	40.7	32.3	-8.4	47.6	21.2	-26.4	34.4	29.2	-5.2	35.9	29.2	-6.7
2025	44.5	36.2	-8.3	51.7	21.3	-30.4	37.5	31.3	-6.2	39.3	31.2	-8.1
2026	49.1	38.9	-10.2	57.5	21.4	-36.1	41.6	32.1	-9.5	43.4	35.9	-7.5
2027	31.8	40.0	8.2	36.1	21.4	-14.7	27.2	35.2	8.0	28.0	36.0	8.0
2028	34.9	41.2	6.3	37.1	22.0	-15.1	31.0	35.2	4.2	31.7	37.3	5.6
2029	35.0	41.3	6.3	37.2	22.0	-15.2	31.2	35.2	4.0	31.8	37.6	5.8
2030	35.1	41.3	6.2	37.3	23.0	-14.3	31.2	36.0	4.8	31.8	37.6	5.8
2031	35.1	41.8	6.7	37.3	24.2	-13.1	31.3	36.0	4.7	31.9	38.0	6.1

Table 393 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	43.1	39.9	-3.2	41.5	36.1	-5.4	36.6	19.9	-16.7	35.7	26.9	-8.8
2025	47.2	42.3	-4.9	45.5	37.9	-7.6	39.7	19.9	-19.8	38.9	28.4	-10.5
2026	52.1	45.9	-6.2	50.2	41.4	-8.8	44.1	19.9	-24.2	43.2	30.8	-12.4
2027	33.5	45.8	12.3	32.5	42.0	9.5	29.4	22.7	-6.7	28.5	31.8	3.3
2028	37.0	46.3	9.3	36.1	42.7	6.6	31.4	22.7	-8.7	31.6	31.8	0.2
2029	37.1	46.9	9.8	36.2	42.8	6.6	31.5	22.7	-8.8	31.6	32.9	1.3
2030	37.2	47.4	10.2	36.3	42.8	6.5	31.6	22.7	-8.9	31.7	32.9	1.2
2031	37.2	47.4	10.2	36.4	42.8	6.4	31.7	31.0	-0.7	31.8	34.0	2.2

Table 394 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	41.6	35.5	-6.1	39.4	35.1	-4.3	39.0	29.5	-9.5	43.9	39.5	-4.4
2025	45.5	40.7	-4.8	42.9	35.8	-7.1	42.5	30.3	-12.2	47.9	42.0	-5.9
2026	50.3	44.6	-5.7	47.6	36.7	-10.9	47.0	35.9	-11.1	53.0	51.1	-1.9
2027	32.5	44.7	12.2	31.6	39.9	8.3	30.7	36.4	5.7	34.5	50.7	16.2
2028	36.4	45.6	9.2	36.9	39.8	2.9	33.1	36.8	3.7	39.8	50.5	10.7
2029	36.5	45.7	9.2	37.0	40.2	3.2	33.2	37.6	4.4	39.9	50.6	10.7
2030	36.6	45.7	9.1	37.1	40.2	3.1	33.3	38.3	5.0	40.0	53.4	13.4
2031	36.7	45.6	8.9	37.2	42.1	4.9	33.4	38.4	5.0	40.1	53.4	13.3

Table 395 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	43.2	37.5	-5.7	34.9	27.6	-7.3	41.5	36.1	-5.4	39.7	37.8	-1.9
2025	47.2	41.7	-5.5	37.9	28.5	-9.4	45.2	36.6	-8.6	43.4	39.4	-4.0
2026	52.1	43.2	-8.9	42.1	29.6	-12.5	50.1	36.5	-13.6	47.9	43.1	-4.8
2027	33.2	45.8	12.6	27.8	32.4	4.6	33.3	37.7	4.4	31.0	43.4	12.4
2028	36.2	45.6	9.4	31.1	33.2	2.1	39.3	41.1	1.8	34.6	44.5	9.9
2029	36.3	47.6	11.3	31.2	34.5	3.3	39.4	41.7	2.3	34.7	44.8	10.1
2030	36.4	48.6	12.2	31.3	34.5	3.2	39.5	41.7	2.2	34.8	45.1	10.3
2031	36.5	48.6	12.1	31.4	34.6	3.2	39.6	41.7	2.1	34.9	45.3	10.4

Table 396 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	38.5	34.2	-4.3	41.1	32.3	-8.8	38.8	33.2	-5.6
2025	42.0	36.8	-5.2	44.9	37.7	-7.2	42.4	35.5	-6.9
2026	46.5	41.0	-5.5	49.7	40.1	-9.6	46.9	38.3	-8.6
2027	30.7	44.5	13.8	32.4	42.2	9.8	30.4	39.5	9.1
2028	35.0	44.6	9.6	37.2	42.4	5.2	34.2	40.4	6.2
2029	35.0	44.6	9.6	37.3	42.4	5.1	34.4	40.8	6.4
2030	35.1	44.6	9.5	37.4	42.4	5.0	34.4	41.1	6.7
2031	35.2	44.6	9.4	37.5	42.5	5.0	34.5	41.3	6.8

Table 397 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.6	34.2	-13.4	47.6	21.2	-26.4	48.8	32.8	-16.0	49.5	38.3	-11.2
2025	51.7	38.2	-13.5	51.7	21.3	-30.4	53.0	32.8	-20.2	53.8	41.5	-12.3
2026	57.4	42.0	-15.4	57.5	21.4	-36.1	58.9	35.4	-23.5	59.8	48.5	-11.3
2027	36.0	42.3	6.3	36.1	21.4	-14.7	36.7	36.7	0.0	37.1	49.9	12.8
2028	35.5	41.6	6.1	37.1	22.0	-15.1	36.6	40.4	3.8	37.4	46.4	9.0
2029	35.6	41.7	6.1	37.2	22.0	-15.2	36.7	40.4	3.7	37.5	46.6	9.1
2030	35.7	41.7	6.0	37.3	23.0	-14.3	36.8	40.4	3.6	37.6	46.7	9.1
2031	35.7	42.3	6.6	37.3	24.2	-13.1	36.9	40.4	3.5	37.7	46.9	9.2

Table 398 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.1	45.2	-3.9	48.6	41.1	-7.5	0.0	0.0	0.0	47.4	28.4	-19.0
2025	53.4	45.2	-8.2	52.9	42.4	-10.5	0.0	0.0	0.0	51.5	28.4	-23.1
2026	59.3	51.3	-8.0	58.7	45.4	-13.3	0.0	0.0	0.0	57.2	42.6	-14.6
2027	36.9	51.5	14.6	36.5	46.8	10.3	0.0	0.0	0.0	35.9	42.6	6.7
2028	37.3	46.6	9.3	36.5	43.3	6.8	0.0	0.0	0.0	36.1	41.1	5.0
2029	37.4	47.3	9.9	36.6	43.4	6.8	0.0	0.0	0.0	36.2	41.1	4.9
2030	37.5	47.8	10.3	36.7	43.4	6.7	0.0	0.0	0.0	36.3	41.1	4.8
2031	37.5	47.8	10.3	36.8	43.4	6.6	0.0	0.0	0.0	36.4	41.1	4.7

Table 399 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.7	42.7	-7.0	50.7	39.9	-10.8	46.1	34.0	-12.1	55.4	53.9	-1.5
2025	54.0	48.3	-5.7	55.1	43.2	-11.9	50.1	35.1	-15.0	60.2	53.9	-6.3
2026	60.0	51.4	-8.6	61.2	60.9	-0.3	55.7	36.3	-19.4	66.9	77.1	10.2
2027	37.2	52.3	15.1	37.5	60.9	23.4	35.3	37.4	2.1	39.0	77.1	38.1
2028	36.4	45.6	9.2	36.9	39.8	2.9	35.6	36.6	1.0	39.8	50.5	10.7
2029	36.5	45.7	9.2	37.0	40.2	3.2	35.7	37.9	2.2	39.9	50.6	10.7
2030	36.6	45.7	9.1	37.1	40.2	3.1	35.8	39.2	3.4	40.0	53.4	13.4
2031	36.7	45.6	8.9	37.2	42.1	4.9	35.9	39.6	3.7	40.1	53.4	13.3

Table 400 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	44.1	-5.5	50.5	38.7	-11.8	50.5	36.3	-14.2	49.3	45.6	-3.7
2025	53.9	51.2	-2.7	54.9	39.2	-15.7	54.9	39.7	-15.2	53.6	49.5	-4.1
2026	59.9	54.1	-5.8	61.0	39.2	-21.8	61.0	39.7	-21.3	59.5	59.5	0.0
2027	37.1	58.2	21.1	37.7	43.8	6.1	37.6	42.3	4.7	37.0	60.4	23.4
2028	37.6	50.2	12.6	34.8	39.1	4.3	39.3	41.1	1.8	37.1	53.7	16.6
2029	37.7	52.6	14.9	34.9	39.1	4.2	39.4	41.7	2.3	37.2	54.1	16.9
2030	37.8	52.6	14.8	34.9	39.1	4.2	39.5	41.7	2.2	37.3	54.8	17.5
2031	37.9	52.6	14.7	35.0	39.1	4.1	39.6	41.7	2.1	37.4	55.1	17.7

Table 401 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	46.8	37.2	-9.6	50.2	36.1	-14.1	49.3	41.2	-8.1
2025	50.9	37.2	-13.7	54.6	40.3	-14.3	53.6	44.3	-9.3
2026	56.6	46.6	-10.0	60.6	45.9	-14.7	59.5	49.8	-9.7
2027	35.6	47.5	11.9	37.4	47.2	9.8	36.9	51.2	14.3
2028	35.0	44.6	9.6	37.6	43.1	5.5	37.1	45.5	8.4
2029	35.0	44.6	9.6	37.7	43.1	5.4	37.2	45.9	8.7
2030	35.1	44.6	9.5	37.8	43.1	5.3	37.3	46.1	8.8
2031	35.2	44.6	9.4	37.9	43.2	5.3	37.4	46.3	8.9

Table 402 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	36.4	31.0	-5.4	0.0	0.0	0.0	33.4	28.9	-4.5	32.1	26.5	-5.6
2025	39.6	34.6	-5.0	0.0	0.0	0.0	36.3	31.1	-5.2	34.9	27.9	-7.0
2026	43.9	36.7	-7.2	0.0	0.0	0.0	40.4	31.8	-8.6	38.8	32.2	-6.6
2027	29.2	38.5	9.3	0.0	0.0	0.0	26.6	35.0	8.4	25.5	32.4	6.9
2028	29.9	37.3	7.4	0.0	0.0	0.0	28.3	32.6	4.3	27.1	30.7	3.6
2029	30.0	37.3	7.3	0.0	0.0	0.0	28.4	32.6	4.2	27.2	30.8	3.6
2030	30.1	37.3	7.2	0.0	0.0	0.0	28.4	33.7	5.3	27.2	30.8	3.6
2031	30.1	37.3	7.2	0.0	0.0	0.0	28.5	33.7	5.2	27.3	31.3	4.0

Table 403 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.4	34.7	-2.7	37.4	33.1	-4.3	36.6	19.9	-16.7	35.3	26.9	-8.4
2025	40.7	38.9	-1.8	40.7	34.9	-5.8	39.7	19.9	-19.8	38.4	28.4	-10.0
2026	45.2	40.5	-4.7	45.2	38.7	-6.5	44.1	19.9	-24.2	42.7	30.4	-12.3
2027	30.2	40.5	10.3	30.2	39.2	9.0	29.4	22.7	-6.7	28.3	31.5	3.2
2028	29.3	37.0	7.7	31.0	34.5	3.5	31.4	22.7	-8.7	30.3	29.5	-0.8
2029	29.4	37.0	7.6	31.1	34.5	3.4	31.5	22.7	-8.8	30.3	30.8	0.5
2030	29.5	37.0	7.5	31.2	34.5	3.3	31.6	22.7	-8.9	30.4	30.8	0.4
2031	29.6	37.0	7.4	31.2	34.5	3.3	31.7	31.0	-0.7	30.5	32.1	1.6

Table 404 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.0	31.4	-5.6	38.5	34.7	-3.8	35.8	27.4	-8.4	40.8	35.9	-4.9
2025	40.3	36.0	-4.3	41.8	35.1	-6.7	38.9	28.0	-10.9	44.3	38.6	-5.7
2026	44.7	40.6	-4.1	46.5	35.1	-11.4	43.2	35.7	-7.5	49.2	45.4	-3.8
2027	29.8	40.6	10.8	31.1	38.5	7.4	28.7	35.9	7.2	33.2	45.4	12.2
2028	0.0	0.0	0.0	0.0	0.0	0.0	30.5	37.1	6.6	0.0	0.0	0.0
2029	0.0	0.0	0.0	0.0	0.0	0.0	30.6	37.1	6.5	0.0	0.0	0.0
2030	0.0	0.0	0.0	0.0	0.0	0.0	30.7	37.1	6.4	0.0	0.0	0.0
2031	0.0	0.0	0.0	0.0	0.0	0.0	30.7	37.1	6.4	0.0	0.0	0.0

Table 405 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	36.2	30.7	-5.5	34.5	27.3	-7.2	40.4	36.1	-4.3	35.7	34.4	-1.3
2025	39.4	32.1	-7.3	37.5	28.3	-9.2	43.9	36.1	-7.8	38.8	35.0	-3.8
2026	43.7	33.3	-10.4	41.7	29.4	-12.3	48.7	36.1	-12.6	43.1	37.3	-5.8
2027	29.1	35.5	6.4	27.6	32.2	4.6	32.8	37.1	4.3	28.6	37.9	9.3
2028	29.8	29.7	-0.1	29.6	30.8	1.2	0.0	0.0	0.0	28.5	28.6	0.1
2029	29.8	30.3	0.5	29.6	32.6	3.0	0.0	0.0	0.0	28.6	28.7	0.1
2030	29.9	33.6	3.7	29.7	32.6	2.9	0.0	0.0	0.0	28.6	28.7	0.1
2031	30.0	33.6	3.6	29.8	32.7	2.9	0.0	0.0	0.0	28.7	28.8	0.1

Table 406 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.0	33.6	-3.4	37.8	30.7	-7.1	35.4	30.5	-4.9
2025	40.2	36.7	-3.5	41.1	36.5	-4.6	38.4	32.3	-6.1
2026	44.7	39.9	-4.8	45.7	37.9	-7.8	42.7	34.6	-8.1
2027	29.8	43.9	14.1	30.6	40.3	9.7	28.3	36.1	7.8
2028	0.0	0.0	0.0	31.1	33.2	2.1	28.4	31.1	2.7
2029	0.0	0.0	0.0	31.2	33.2	2.0	28.5	31.5	3.0
2030	0.0	0.0	0.0	31.3	33.2	1.9	28.5	31.8	3.3
2031	0.0	0.0	0.0	31.4	33.2	1.8	28.6	32.1	3.5

Table 407 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	48.8	32.8	-16.0	48.4	35.3	-13.1
2025	0.0	0.0	0.0	0.0	0.0	0.0	53.0	32.8	-20.2	52.6	41.0	-11.6
2026	0.0	0.0	0.0	0.0	0.0	0.0	58.9	35.4	-23.5	58.5	51.7	-6.8
2027	0.0	0.0	0.0	0.0	0.0	0.0	36.7	36.7	0.0	36.5	51.7	15.2
2028	0.0	0.0	0.0	0.0	0.0	0.0	38.8	39.3	0.5	37.6	49.1	11.5
2029	0.0	0.0	0.0	0.0	0.0	0.0	38.9	39.2	0.3	37.7	49.1	11.4
2030	0.0	0.0	0.0	0.0	0.0	0.0	39.0	39.2	0.2	37.8	49.1	11.3
2031	0.0	0.0	0.0	0.0	0.0	0.0	39.1	39.2	0.1	37.9	49.4	11.5

Table 408 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.1	45.2	-3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	53.4	45.2	-8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	59.3	51.3	-8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	36.9	51.5	14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	37.3	46.6	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	37.4	47.3	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	37.5	47.8	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	37.5	47.8	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 409 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	50.6	44.3	-6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	55.0	44.3	-10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	61.1	44.3	-16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	37.7	46.2	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	40.3	46.2	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	40.4	46.2	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	40.5	46.2	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	40.6	46.2	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 410 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	44.6	-5.0	0.0	0.0	0.0	0.0	0.0	0.0	47.7	42.3	-5.4
2025	53.9	53.6	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	51.8	60.8	9.0
2026	59.9	56.7	-3.2	0.0	0.0	0.0	0.0	0.0	0.0	57.6	60.8	3.2
2027	37.1	60.4	23.3	0.0	0.0	0.0	0.0	0.0	0.0	36.1	60.8	24.7
2028	37.3	51.6	14.3	34.1	38.9	4.8	0.0	0.0	0.0	36.1	51.9	15.8
2029	37.4	54.5	17.1	34.2	38.9	4.7	0.0	0.0	0.0	36.2	52.1	15.9
2030	37.5	54.5	17.0	34.2	38.9	4.7	0.0	0.0	0.0	36.3	52.0	15.7
2031	37.6	54.4	16.8	34.3	38.9	4.6	0.0	0.0	0.0	36.4	53.6	17.2

Table 411 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	46.6	39.5	-7.1	44.3	29.7	-14.6	49.0	41.3	-7.7
2025	50.7	39.5	-11.2	48.1	29.7	-18.4	53.2	45.4	-7.8
2026	56.3	53.3	-3.0	53.5	43.5	-10.0	59.1	50.9	-8.2
2027	35.5	53.3	17.8	34.0	43.5	9.5	36.8	52.0	15.2
2028	36.1	53.3	17.2	34.1	35.2	1.1	37.0	45.7	8.7
2029	36.2	53.3	17.1	34.2	35.3	1.1	37.1	46.3	9.2
2030	36.3	53.3	17.0	34.2	35.3	1.1	37.2	46.4	9.2
2031	36.4	53.3	16.9	34.3	35.3	1.0	37.3	46.5	9.2

Table 412 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.6	34.2	-13.4	47.6	21.2	-26.4	0.0	0.0	0.0	50.6	42.0	-8.6
2025	51.7	38.2	-13.5	51.7	21.3	-30.4	0.0	0.0	0.0	55.0	42.0	-13.0
2026	57.4	42.0	-15.4	57.5	21.4	-36.1	0.0	0.0	0.0	61.2	45.6	-15.6
2027	36.0	42.3	6.3	36.1	21.4	-14.7	0.0	0.0	0.0	37.7	48.1	10.4
2028	35.5	41.6	6.1	37.1	22.0	-15.1	34.8	41.5	6.7	37.1	43.6	6.5
2029	35.6	41.7	6.1	37.2	22.0	-15.2	34.9	41.5	6.6	37.2	44.1	6.9
2030	35.7	41.7	6.0	37.3	23.0	-14.3	34.9	41.6	6.7	37.3	44.3	7.0
2031	35.7	42.3	6.6	37.3	24.2	-13.1	35.0	41.6	6.6	37.4	44.3	6.9

Table 413 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	0.0	0.0	0.0	48.6	41.1	-7.5	0.0	0.0	0.0	47.4	28.4	-19.0
2025	0.0	0.0	0.0	52.9	42.4	-10.5	0.0	0.0	0.0	51.5	28.4	-23.1
2026	0.0	0.0	0.0	58.7	45.4	-13.3	0.0	0.0	0.0	57.2	42.6	-14.6
2027	0.0	0.0	0.0	36.5	46.8	10.3	0.0	0.0	0.0	35.9	42.6	6.7
2028	0.0	0.0	0.0	36.5	43.3	6.8	0.0	0.0	0.0	36.1	41.1	5.0
2029	0.0	0.0	0.0	36.6	43.4	6.8	0.0	0.0	0.0	36.2	41.1	4.9
2030	0.0	0.0	0.0	36.7	43.4	6.7	0.0	0.0	0.0	36.3	41.1	4.8
2031	0.0	0.0	0.0	36.8	43.4	6.6	0.0	0.0	0.0	36.4	41.1	4.7

Table 414 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.2	41.8	-7.4	50.7	39.9	-10.8	46.1	34.0	-12.1	55.4	53.9	-1.5
2025	53.4	51.2	-2.2	55.1	43.2	-11.9	50.1	35.1	-15.0	60.2	53.9	-6.3
2026	59.4	57.1	-2.3	61.2	60.9	-0.3	55.7	36.3	-19.4	66.9	77.1	10.2
2027	36.9	57.1	20.2	37.5	60.9	23.4	35.3	37.4	2.1	39.0	77.1	38.1
2028	35.8	45.5	9.7	36.9	39.8	2.9	35.6	36.6	1.0	39.8	50.5	10.7
2029	35.9	45.6	9.7	37.0	40.2	3.2	35.7	37.9	2.2	39.9	50.6	10.7
2030	36.0	45.6	9.6	37.1	40.2	3.1	35.8	39.2	3.4	40.0	53.4	13.4
2031	36.1	45.5	9.4	37.2	42.1	4.9	35.9	39.6	3.7	40.1	53.4	13.3

Table 415 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	41.9	-7.7	50.5	38.7	-11.8	50.5	36.3	-14.2	49.7	46.5	-3.2
2025	54.0	41.9	-12.1	54.9	39.2	-15.7	54.9	39.7	-15.2	54.0	47.5	-6.5
2026	60.0	43.8	-16.2	61.0	39.2	-21.8	61.0	39.7	-21.3	60.0	59.2	-0.8
2027	37.2	49.0	11.8	37.7	43.8	6.1	37.6	42.3	4.7	37.2	60.3	23.1
2028	38.2	47.2	9.0	39.0	40.0	1.0	39.3	41.1	1.8	37.2	53.9	16.7
2029	38.3	48.5	10.2	39.1	40.1	1.0	39.4	41.7	2.3	37.3	54.4	17.1
2030	38.4	48.6	10.2	39.2	40.3	1.1	39.5	41.7	2.2	37.4	55.1	17.7
2031	38.5	48.6	10.1	39.3	40.3	1.0	39.6	41.7	2.1	37.5	55.2	17.7

Table 416 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.8	30.5	-17.3	50.7	36.7	-14.0	49.5	41.2	-8.3
2025	51.9	30.5	-21.4	55.1	41.4	-13.7	53.9	43.4	-10.5
2026	57.7	31.7	-26.0	61.2	46.0	-15.2	59.8	49.0	-10.8
2027	36.1	33.7	-2.4	37.7	47.5	9.8	37.1	50.6	13.5
2028	34.8	43.5	8.7	38.9	46.4	7.5	37.1	45.4	8.3
2029	34.8	43.5	8.7	39.0	46.4	7.4	37.2	45.7	8.5
2030	34.9	43.5	8.6	39.1	46.4	7.3	37.3	46.0	8.7
2031	35.0	43.5	8.5	39.2	46.6	7.4	37.4	46.2	8.8

Table 417 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	40.7	32.3	-8.4	47.6	21.2	-26.4	34.4	29.2	-5.2	35.9	29.2	-6.7
2025	44.5	36.2	-8.3	51.7	21.3	-30.4	37.5	31.3	-6.2	39.3	31.2	-8.1
2026	49.1	38.9	-10.2	57.5	21.4	-36.1	41.6	32.1	-9.5	43.4	35.9	-7.5
2027	33.7	40.0	6.3	37.9	21.4	-16.5	29.1	35.7	6.6	29.8	36.0	6.2
2028	37.1	41.2	4.1	39.4	22.0	-17.4	33.0	35.8	2.8	33.7	37.3	3.6
2029	37.5	41.3	3.8	39.8	22.0	-17.8	33.3	35.8	2.5	34.1	37.6	3.5
2030	37.8	41.3	3.5	40.2	23.0	-17.2	33.7	36.6	2.9	34.4	37.6	3.2
2031	38.2	41.8	3.6	40.6	24.2	-16.4	34.1	36.6	2.5	34.8	38.0	3.2

Table 418 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	43.1	39.9	-3.2	41.5	36.1	-5.4	36.6	19.9	-16.7	35.7	26.9	-8.8
2025	47.2	42.3	-4.9	45.5	37.9	-7.6	39.7	19.9	-19.8	38.9	28.4	-10.5
2026	52.1	45.9	-6.2	50.2	41.4	-8.8	44.1	19.9	-24.2	43.2	30.8	-12.4
2027	35.4	45.8	10.4	34.5	42.0	7.5	31.3	22.7	-8.6	30.4	31.8	1.4
2028	39.3	46.3	7.0	38.4	42.7	4.3	33.5	22.7	-10.8	33.7	31.8	-1.9
2029	39.7	46.9	7.2	38.8	42.8	4.0	33.9	22.7	-11.2	34.0	34.7	0.7
2030	40.1	47.4	7.3	39.2	42.8	3.6	34.2	22.7	-11.5	34.3	34.7	0.4
2031	40.5	47.4	6.9	39.6	42.8	3.2	34.5	31.0	-3.5	34.6	35.9	1.3

Table 419 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	41.6	35.5	-6.1	39.4	35.1	-4.3	39.0	29.5	-9.5	43.9	39.5	-4.4
2025	45.5	40.7	-4.8	42.9	35.8	-7.1	42.5	30.3	-12.2	47.9	42.0	-5.9
2026	50.3	44.6	-5.7	47.6	36.7	-10.9	47.0	35.9	-11.1	53.0	51.1	-1.9
2027	34.4	44.7	10.3	33.7	39.9	6.2	32.5	36.9	4.4	36.7	50.7	14.0
2028	38.7	45.6	6.9	39.2	39.8	0.6	35.2	37.4	2.2	42.3	50.5	8.2
2029	39.1	45.7	6.6	39.6	40.2	0.6	35.6	38.2	2.6	42.7	50.7	8.0
2030	39.5	45.7	6.2	40.0	40.2	0.2	36.0	38.9	2.9	43.1	53.4	10.3
2031	39.9	45.7	5.8	40.4	42.1	1.7	36.3	39.1	2.8	43.6	53.4	9.8

Table 420 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	43.2	37.5	-5.7	34.9	27.6	-7.3	41.5	36.1	-5.4	39.7	37.8	-1.9
2025	47.2	41.7	-5.5	37.9	28.5	-9.4	45.2	36.6	-8.6	43.4	39.4	-4.0
2026	52.1	43.2	-8.9	42.1	29.6	-12.5	50.1	36.5	-13.6	47.9	43.1	-4.8
2027	35.1	45.8	10.7	29.6	33.1	3.5	35.5	37.8	2.3	32.9	43.4	10.5
2028	38.4	45.6	7.2	33.1	33.9	0.8	41.7	42.2	0.5	36.8	44.7	7.9
2029	38.8	47.7	8.9	33.5	35.4	1.9	42.2	43.0	0.8	37.3	45.8	8.5
2030	39.2	48.7	9.5	33.8	35.4	1.6	42.6	43.0	0.4	37.6	46.1	8.5
2031	39.6	48.7	9.1	34.2	35.4	1.2	43.0	43.0	0.0	38.0	46.3	8.3

Table 421 - Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Total Fleet for Alt 3 - scen 3									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	38.5	34.2	-4.3	41.1	32.3	-8.8	38.8	33.2	-5.6
2025	42.0	36.8	-5.2	44.9	37.7	-7.2	42.4	35.5	-6.9
2026	46.5	41.0	-5.5	49.7	40.1	-9.6	46.9	38.3	-8.6
2027	32.6	44.5	11.9	34.4	42.7	8.3	32.3	39.7	7.4
2028	37.1	44.6	7.5	39.5	42.9	3.4	36.4	40.6	4.2
2029	37.5	44.6	7.1	39.9	43.0	3.1	36.8	41.3	4.5
2030	37.9	44.6	6.7	40.3	43.2	2.9	37.2	41.6	4.4
2031	38.2	44.6	6.4	40.7	43.4	2.7	37.5	41.8	4.3

Table 422 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.6	34.2	-13.4	47.6	21.2	-26.4	48.8	32.8	-16.0	49.5	38.3	-11.2
2025	51.7	38.2	-13.5	51.7	21.3	-30.4	53.0	32.8	-20.2	53.8	41.5	-12.3
2026	57.4	42.0	-15.4	57.5	21.4	-36.1	58.9	35.4	-23.5	59.8	48.5	-11.3
2027	37.7	42.3	4.6	37.9	21.4	-16.5	38.5	37.7	-0.8	38.9	49.9	11.0
2028	37.7	41.6	3.9	39.4	22.0	-17.4	38.9	42.2	3.3	39.7	46.4	6.7
2029	38.1	41.7	3.6	39.8	22.0	-17.8	39.3	42.2	2.9	40.1	46.6	6.5
2030	38.4	41.7	3.3	40.2	23.0	-17.2	39.7	42.3	2.6	40.5	46.7	6.2
2031	38.8	42.3	3.5	40.6	24.2	-16.4	40.1	42.3	2.2	40.9	46.9	6.0

Table 423 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.1	45.2	-3.9	48.6	41.1	-7.5	0.0	0.0	0.0	47.4	28.4	-19.0
2025	53.4	45.2	-8.2	52.9	42.4	-10.5	0.0	0.0	0.0	51.5	28.4	-23.1
2026	59.3	51.3	-8.0	58.7	45.4	-13.3	0.0	0.0	0.0	57.2	42.6	-14.6
2027	38.7	51.5	12.8	38.3	46.8	8.5	0.0	0.0	0.0	37.7	42.6	4.9
2028	39.6	46.6	7.0	38.8	43.3	4.5	0.0	0.0	0.0	38.4	41.1	2.7
2029	40.0	47.3	7.3	39.2	43.4	4.2	0.0	0.0	0.0	38.8	41.1	2.3
2030	40.4	47.8	7.4	39.6	43.4	3.8	0.0	0.0	0.0	39.2	41.1	1.9
2031	40.8	47.8	7.0	40.0	43.4	3.4	0.0	0.0	0.0	39.6	41.1	1.5

Table 424 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.7	42.7	-7.0	50.7	39.9	-10.8	46.1	34.0	-12.1	55.4	53.9	-1.5
2025	54.0	48.3	-5.7	55.1	43.2	-11.9	50.1	35.1	-15.0	60.2	53.9	-6.3
2026	60.0	51.4	-8.6	61.2	60.9	-0.3	55.7	36.3	-19.4	66.9	77.1	10.2
2027	39.0	52.3	13.3	39.4	60.9	21.5	37.0	38.1	1.1	41.0	77.1	36.1
2028	38.7	45.6	6.9	39.2	39.8	0.6	37.8	37.6	-0.2	42.3	50.5	8.2
2029	39.1	45.7	6.6	39.6	40.2	0.6	38.2	39.0	0.8	42.7	50.7	8.0
2030	39.5	45.7	6.2	40.0	40.2	0.2	38.6	40.4	1.8	43.1	53.4	10.3
2031	39.9	45.7	5.8	40.4	42.1	1.7	38.9	40.8	1.9	43.6	53.4	9.8

Table 425 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	44.1	-5.5	50.5	38.7	-11.8	50.5	36.3	-14.2	49.3	45.6	-3.7
2025	53.9	51.2	-2.7	54.9	39.2	-15.7	54.9	39.7	-15.2	53.6	49.5	-4.1
2026	59.9	54.1	-5.8	61.0	39.2	-21.8	61.0	39.7	-21.3	59.5	59.5	0.0
2027	38.9	58.2	19.3	39.5	44.8	5.3	39.5	42.3	2.8	38.8	60.4	21.6
2028	39.9	50.2	10.3	36.9	39.3	2.4	41.7	42.2	0.5	39.4	53.7	14.3
2029	40.3	52.6	12.3	37.3	39.3	2.0	42.2	43.0	0.8	39.9	54.1	14.2
2030	40.7	52.6	11.9	37.6	39.4	1.8	42.6	43.0	0.4	40.3	54.8	14.5
2031	41.1	52.6	11.5	38.0	39.4	1.4	43.0	43.0	0.0	40.7	55.1	14.4

Table 426 - Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Passenger Car Fleet for Alt 3 - scen 3									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	46.8	37.2	-9.6	50.2	36.1	-14.1	49.3	41.2	-8.1
2025	50.9	37.2	-13.7	54.6	40.3	-14.3	53.6	44.3	-9.3
2026	56.6	46.6	-10.0	60.6	45.9	-14.7	59.5	49.8	-9.7
2027	37.3	47.5	10.2	39.2	47.2	8.0	38.8	51.3	12.5
2028	37.1	44.6	7.5	39.9	43.6	3.7	39.4	45.8	6.4
2029	37.5	44.6	7.1	40.3	43.6	3.3	39.8	46.2	6.4
2030	37.9	44.6	6.7	40.8	43.9	3.1	40.2	46.5	6.3
2031	38.2	44.6	6.4	41.2	44.0	2.8	40.6	46.7	6.1

Table 427 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	36.4	31.0	-5.4	0.0	0.0	0.0	33.4	28.9	-4.5	32.1	26.5	-5.6
2025	39.6	34.6	-5.0	0.0	0.0	0.0	36.3	31.1	-5.2	34.9	27.9	-7.0
2026	43.9	36.7	-7.2	0.0	0.0	0.0	40.4	31.8	-8.6	38.8	32.2	-6.6
2027	31.2	38.5	7.3	0.0	0.0	0.0	28.4	35.5	7.1	27.2	32.4	5.2
2028	31.9	37.3	5.4	0.0	0.0	0.0	30.1	32.6	2.5	28.9	30.7	1.8
2029	32.2	37.3	5.1	0.0	0.0	0.0	30.4	32.6	2.2	29.2	30.8	1.6
2030	32.5	37.3	4.8	0.0	0.0	0.0	30.8	33.7	2.9	29.5	30.8	1.3
2031	32.8	37.3	4.5	0.0	0.0	0.0	31.1	33.7	2.6	29.8	31.3	1.5

Table 428 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.4	34.7	-2.7	37.4	33.1	-4.3	36.6	19.9	-16.7	35.3	26.9	-8.4
2025	40.7	38.9	-1.8	40.7	34.9	-5.8	39.7	19.9	-19.8	38.4	28.4	-10.0
2026	45.2	40.5	-4.7	45.2	38.7	-6.5	44.1	19.9	-24.2	42.7	30.4	-12.3
2027	32.2	40.5	8.3	32.2	39.2	7.0	31.3	22.7	-8.6	30.2	31.5	1.3
2028	31.3	37.0	5.7	33.0	34.5	1.5	33.5	22.7	-10.8	32.3	29.5	-2.8
2029	31.6	37.0	5.4	33.4	34.5	1.1	33.9	22.7	-11.2	32.6	32.9	0.3
2030	31.9	37.0	5.1	33.7	34.5	0.8	34.2	22.7	-11.5	32.9	32.9	0.0
2031	32.2	37.0	4.8	34.1	34.5	0.4	34.5	31.0	-3.5	33.2	34.3	1.1

Table 429 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.0	31.4	-5.6	38.5	34.7	-3.8	35.8	27.4	-8.4	40.8	35.9	-4.9
2025	40.3	36.0	-4.3	41.8	35.1	-6.7	38.9	28.0	-10.9	44.3	38.6	-5.7
2026	44.7	40.6	-4.1	46.5	35.1	-11.4	43.2	35.7	-7.5	49.2	45.4	-3.8
2027	31.8	40.6	8.8	33.2	38.5	5.3	30.6	36.3	5.7	35.4	45.4	10.0
2028	0.0	0.0	0.0	0.0	0.0	0.0	32.5	37.1	4.6	0.0	0.0	0.0
2029	0.0	0.0	0.0	0.0	0.0	0.0	32.8	37.1	4.3	0.0	0.0	0.0
2030	0.0	0.0	0.0	0.0	0.0	0.0	33.2	37.1	3.9	0.0	0.0	0.0
2031	0.0	0.0	0.0	0.0	0.0	0.0	33.5	37.1	3.6	0.0	0.0	0.0

Table 430 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	36.2	30.7	-5.5	34.5	27.3	-7.2	40.4	36.1	-4.3	35.7	34.4	-1.3
2025	39.4	32.1	-7.3	37.5	28.3	-9.2	43.9	36.1	-7.8	38.8	35.0	-3.8
2026	43.7	33.3	-10.4	41.7	29.4	-12.3	48.7	36.1	-12.6	43.1	37.3	-5.8
2027	31.0	35.5	4.5	29.4	32.8	3.4	35.0	37.2	2.2	30.5	37.9	7.4
2028	31.7	29.7	-2.0	31.5	31.7	0.2	0.0	0.0	0.0	30.4	29.0	-1.4
2029	32.0	30.6	-1.4	31.8	33.7	1.9	0.0	0.0	0.0	30.7	30.4	-0.3
2030	32.4	34.0	1.6	32.1	33.7	1.6	0.0	0.0	0.0	31.0	30.4	-0.6
2031	32.7	34.0	1.3	32.5	33.7	1.2	0.0	0.0	0.0	31.3	30.5	-0.8

Table 431 - Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Light Truck Fleet for Alt 3 - scen 3									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	37.0	33.6	-3.4	37.8	30.7	-7.1	35.4	30.5	-4.9
2025	40.2	36.7	-3.5	41.1	36.5	-4.6	38.4	32.3	-6.1
2026	44.7	39.9	-4.8	45.7	37.9	-7.8	42.7	34.6	-8.1
2027	31.7	43.9	12.2	32.6	41.0	8.4	30.2	36.3	6.1
2028	0.0	0.0	0.0	33.2	33.9	0.7	30.3	31.3	1.0
2029	0.0	0.0	0.0	33.5	33.9	0.4	30.6	32.0	1.4
2030	0.0	0.0	0.0	33.9	33.9	0.0	30.9	32.4	1.5
2031	0.0	0.0	0.0	34.2	34.7	0.5	31.2	32.6	1.4

Table 432 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	48.8	32.8	-16.0	48.4	35.3	-13.1
2025	0.0	0.0	0.0	0.0	0.0	0.0	53.0	32.8	-20.2	52.6	41.0	-11.6
2026	0.0	0.0	0.0	0.0	0.0	0.0	58.9	35.4	-23.5	58.5	51.7	-6.8
2027	0.0	0.0	0.0	0.0	0.0	0.0	38.5	37.7	-0.8	38.3	51.7	13.4
2028	0.0	0.0	0.0	0.0	0.0	0.0	41.2	43.1	1.9	39.9	49.1	9.2
2029	0.0	0.0	0.0	0.0	0.0	0.0	41.6	43.0	1.4	40.3	49.1	8.8
2030	0.0	0.0	0.0	0.0	0.0	0.0	42.1	43.0	0.9	40.7	49.1	8.4
2031	0.0	0.0	0.0	0.0	0.0	0.0	42.5	43.0	0.5	41.1	49.4	8.3

Table 433 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.1	45.2	-3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	53.4	45.2	-8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	59.3	51.3	-8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	38.7	51.5	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	39.6	46.6	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	40.0	47.3	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	40.4	47.8	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	40.8	47.8	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 434 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	50.6	44.3	-6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	55.0	44.3	-10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	61.1	44.3	-16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	39.6	46.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2028	42.8	46.2	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2029	43.2	46.2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2030	43.6	46.2	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2031	44.1	46.2	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 435 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	44.6	-5.0	0.0	0.0	0.0	0.0	0.0	0.0	47.7	42.3	-5.4
2025	53.9	53.6	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	51.8	60.8	9.0
2026	59.9	56.7	-3.2	0.0	0.0	0.0	0.0	0.0	0.0	57.6	60.8	3.2
2027	38.9	60.4	21.5	0.0	0.0	0.0	0.0	0.0	0.0	37.8	60.8	23.0
2028	39.6	51.6	12.0	36.2	38.9	2.7	0.0	0.0	0.0	38.3	51.9	13.6
2029	40.0	54.5	14.5	36.6	38.9	2.3	0.0	0.0	0.0	38.8	52.1	13.3
2030	40.4	54.5	14.1	36.9	38.9	2.0	0.0	0.0	0.0	39.1	52.0	12.9
2031	40.8	54.5	13.7	37.3	38.9	1.6	0.0	0.0	0.0	39.5	53.6	14.1

Table 436 - Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Domestic Car Fleet for Alt 3 - scen 3									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	46.6	39.5	-7.1	44.3	29.7	-14.6	49.0	41.3	-7.7
2025	50.7	39.5	-11.2	48.1	29.7	-18.4	53.2	45.4	-7.8
2026	56.3	53.3	-3.0	53.5	43.5	-10.0	59.1	50.9	-8.2
2027	37.2	53.3	16.1	35.7	43.5	7.8	38.6	52.1	13.5
2028	38.4	53.3	14.9	36.2	36.6	0.4	39.3	46.2	6.9
2029	38.8	53.3	14.5	36.6	36.7	0.1	39.7	46.8	7.1
2030	39.2	53.3	14.1	36.9	37.5	0.6	40.1	47.0	6.9
2031	39.5	53.3	13.8	37.3	37.5	0.2	40.5	47.2	6.7

Table 437 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3												
Model Year	BMW			Ferrari			Ford			GM		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.6	34.2	-13.4	47.6	21.2	-26.4	0.0	0.0	0.0	50.6	42.0	-8.6
2025	51.7	38.2	-13.5	51.7	21.3	-30.4	0.0	0.0	0.0	55.0	42.0	-13.0
2026	57.4	42.0	-15.4	57.5	21.4	-36.1	0.0	0.0	0.0	61.2	45.6	-15.6
2027	37.7	42.3	4.6	37.9	21.4	-16.5	0.0	0.0	0.0	39.6	48.1	8.5
2028	37.7	41.6	3.9	39.4	22.0	-17.4	36.9	41.5	4.6	39.4	43.6	4.2
2029	38.1	41.7	3.6	39.8	22.0	-17.8	37.3	41.5	4.2	39.9	44.1	4.2
2030	38.4	41.7	3.3	40.2	23.0	-17.2	37.7	41.6	3.9	40.2	44.3	4.1
2031	38.8	42.3	3.5	40.6	24.2	-16.4	38.1	41.6	3.5	40.6	44.3	3.7

Table 438 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3												
Model Year	Honda			Hyundai			Ineos			JLR		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	0.0	0.0	0.0	48.6	41.1	-7.5	0.0	0.0	0.0	47.4	28.4	-19.0
2025	0.0	0.0	0.0	52.9	42.4	-10.5	0.0	0.0	0.0	51.5	28.4	-23.1
2026	0.0	0.0	0.0	58.7	45.4	-13.3	0.0	0.0	0.0	57.2	42.6	-14.6
2027	0.0	0.0	0.0	38.3	46.8	8.5	0.0	0.0	0.0	37.7	42.6	4.9
2028	0.0	0.0	0.0	38.8	43.3	4.5	0.0	0.0	0.0	38.4	41.1	2.7
2029	0.0	0.0	0.0	39.2	43.4	4.2	0.0	0.0	0.0	38.8	41.1	2.3
2030	0.0	0.0	0.0	39.6	43.4	3.8	0.0	0.0	0.0	39.2	41.1	1.9
2031	0.0	0.0	0.0	40.0	43.4	3.4	0.0	0.0	0.0	39.6	41.1	1.5

Table 439 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.2	41.8	-7.4	50.7	39.9	-10.8	46.1	34.0	-12.1	55.4	53.9	-1.5
2025	53.4	51.2	-2.2	55.1	43.2	-11.9	50.1	35.1	-15.0	60.2	53.9	-6.3
2026	59.4	57.1	-2.3	61.2	60.9	-0.3	55.7	36.3	-19.4	66.9	77.1	10.2
2027	38.7	57.1	18.4	39.4	60.9	21.5	37.0	38.1	1.1	41.0	77.1	36.1
2028	38.0	45.5	7.5	39.2	39.8	0.6	37.8	37.6	-0.2	42.3	50.5	8.2
2029	38.4	45.6	7.2	39.6	40.2	0.6	38.2	39.0	0.8	42.7	50.7	8.0
2030	38.8	45.6	6.8	40.0	40.2	0.2	38.6	40.4	1.8	43.1	53.4	10.3
2031	39.2	45.6	6.4	40.4	42.1	1.7	38.9	40.8	1.9	43.6	53.4	9.8

Table 440 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	49.6	41.9	-7.7	50.5	38.7	-11.8	50.5	36.3	-14.2	49.7	46.5	-3.2
2025	54.0	41.9	-12.1	54.9	39.2	-15.7	54.9	39.7	-15.2	54.0	47.5	-6.5
2026	60.0	43.8	-16.2	61.0	39.2	-21.8	61.0	39.7	-21.3	60.0	59.2	-0.8
2027	39.0	49.0	10.0	39.5	44.8	5.3	39.5	42.3	2.8	39.0	60.3	21.3
2028	40.6	47.2	6.6	41.4	41.8	0.4	41.7	42.2	0.5	39.5	53.9	14.4
2029	41.0	48.5	7.5	41.9	41.8	-0.1	42.2	43.0	0.8	40.0	54.4	14.4
2030	41.4	48.6	7.2	42.3	42.4	0.1	42.6	43.0	0.4	40.4	55.1	14.7
2031	41.8	48.6	6.8	42.7	42.4	-0.3	43.0	43.0	0.0	40.8	55.2	14.4

Table 441 - Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3

Required and Achieved CAFE Levels (mpg) for Imported Car Fleet for Alt 3 - scen 3									
Model Year	Volvo			VWA			Total		
	Required	Achieved	Difference	Required	Achieved	Difference	Required	Achieved	Difference
2024	47.8	30.5	-17.3	50.7	36.7	-14.0	49.5	41.2	-8.3
2025	51.9	30.5	-21.4	55.1	41.4	-13.7	53.9	43.4	-10.5
2026	57.7	31.7	-26.0	61.2	46.0	-15.2	59.8	49.0	-10.8
2027	37.9	33.7	-4.2	39.5	47.5	8.0	38.9	50.7	11.8
2028	36.9	43.5	6.6	41.3	46.4	5.1	39.4	45.5	6.1
2029	37.3	43.5	6.2	41.7	46.4	4.7	39.9	45.9	6.0
2030	37.7	43.5	5.8	42.2	46.4	4.2	40.3	46.2	5.9
2031	38.0	43.5	5.5	42.6	46.6	4.0	40.7	46.4	5.7

A15. Regulatory Cost, Comparison

Table 442 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 1 - scen 1

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 1 - scen 1			
Model Year	Total		
	Alt 0 - No Action	Alt 1 - scen 1	Difference
2024	0.0	0.0	0.0
2025	6.0	6.0	0.0
2026	14.6	14.6	0.0
2027	19.3	15.6	-3.7
2028	23.0	15.1	-7.9
2029	24.9	14.8	-10.1
2030	25.4	14.5	-10.9
2031	24.9	14.0	-10.9

Table 443 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 1 - scen 1

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 1 - scen 1			
Model Year	Total		
	Alt 0 - No Action	Alt 1 - scen 1	Difference
2024	0.0	0.0	0.0
2025	2.2	2.2	0.0
2026	5.1	5.1	0.0
2027	5.7	4.8	-0.9
2028	6.2	10.2	3.9
2029	7.3	10.0	2.7
2030	7.1	9.8	2.6
2031	6.9	9.4	2.5

Table 444 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 1 - scen 1

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 1 - scen 1			
Model Year	Total		
	Alt 0 - No Action	Alt 1 - scen 1	Difference
2024	0.0	0.0	0.0
2025	3.8	3.8	0.0
2026	9.5	9.5	0.0
2027	13.6	10.8	-2.8
2028	16.7	4.9	-11.8
2029	17.6	4.8	-12.8
2030	18.3	4.8	-13.5
2031	17.9	4.6	-13.3

Table 445 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2			
Model Year	Total		
	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0
2025	6.0	6.0	0.0
2026	14.6	14.6	0.0
2027	19.3	15.6	-3.7
2028	23.0	15.1	-7.9
2029	24.9	14.8	-10.1
2030	25.4	14.5	-10.9
2031	24.9	14.0	-10.9

Table 446 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2			
Model Year	Total		
	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0
2025	2.2	2.2	0.0
2026	5.1	5.1	0.0
2027	5.7	4.8	-0.9
2028	6.2	10.2	3.9
2029	7.3	10.0	2.7
2030	7.1	9.8	2.6
2031	6.9	9.4	2.5

Table 447 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2			
Model Year	Total		
	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0
2025	3.8	3.8	0.0
2026	9.5	9.5	0.0
2027	13.6	10.8	-2.8
2028	16.7	4.9	-11.8
2029	17.6	4.8	-12.8
2030	18.3	4.8	-13.5
2031	17.9	4.6	-13.3

Table 448 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 3 - scen 3

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 3 - scen 3			
Model Year	Total		
	Alt 0 - No Action	Alt 3 - scen 3	Difference
2024	0.0	0.0	0.0
2025	6.0	6.0	0.0
2026	14.6	14.6	0.0
2027	19.3	16.0	-3.3
2028	23.0	15.7	-7.2
2029	24.9	15.7	-9.2
2030	25.4	15.5	-9.9
2031	24.9	14.9	-9.9

Table 449 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 3 - scen 3

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 3 - scen 3			
Model Year	Total		
	Alt 0 - No Action	Alt 3 - scen 3	Difference
2024	0.0	0.0	0.0
2025	2.2	2.2	0.0
2026	5.1	5.1	0.0
2027	5.7	4.9	-0.9
2028	6.2	10.6	4.3
2029	7.3	10.4	3.1
2030	7.1	10.2	3.0
2031	6.9	9.8	2.9

Table 450 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 3 - scen 3

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 3 - scen 3			
Model Year	Total		
	Alt 0 - No Action	Alt 3 - scen 3	Difference
2024	0.0	0.0	0.0
2025	3.8	3.8	0.0
2026	9.5	9.5	0.0
2027	13.6	11.2	-2.4
2028	16.7	5.2	-11.6
2029	17.6	5.3	-12.2
2030	18.3	5.3	-13.0
2031	17.9	5.1	-12.8

Table 451 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.3	0.3	0.0	0.0	0.0	0.0	0.8	0.8	0.0	1.3	1.3	0.0
2026	0.4	0.4	0.0	0.0	0.0	0.0	1.0	1.0	0.0	5.1	5.1	0.0
2027	0.5	0.4	-0.1	0.0	0.0	0.0	2.1	1.4	-0.7	5.2	5.1	-0.2
2028	0.6	0.4	-0.2	0.0	0.0	0.0	2.4	1.4	-1.1	6.7	5.0	-1.7
2029	0.6	0.4	-0.2	0.0	0.0	0.0	2.4	1.3	-1.0	7.0	4.8	-2.2
2030	0.6	0.4	-0.2	0.0	0.0	0.0	2.6	1.3	-1.3	7.0	4.7	-2.3
2031	0.6	0.4	-0.2	0.0	0.0	0.0	2.5	1.3	-1.3	6.9	4.6	-2.4

Table 452 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.4	0.4	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2026	1.0	1.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2027	1.0	0.9	-0.1	1.1	0.7	-0.4	0.0	0.0	0.0	0.1	0.1	0.0
2028	1.3	0.8	-0.5	1.6	0.7	-0.9	0.0	0.0	0.0	0.1	0.1	0.0
2029	1.6	0.8	-0.8	1.9	0.7	-1.2	0.0	0.0	0.0	0.1	0.1	-0.1
2030	1.6	0.7	-0.8	1.8	0.7	-1.1	0.0	0.0	0.0	0.1	0.1	-0.1
2031	1.5	0.7	-0.8	1.8	0.7	-1.1	0.0	0.0	0.0	0.1	0.0	-0.1

Table 453 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2026	1.2	1.2	0.0	0.1	0.1	0.0	0.2	0.2	0.0	0.2	0.2	0.0
2027	1.2	1.2	0.0	0.6	0.2	-0.4	0.2	0.2	0.0	0.2	0.2	0.0
2028	1.5	1.1	-0.4	0.6	0.2	-0.4	0.2	0.2	0.0	0.2	0.2	0.0
2029	1.7	1.1	-0.7	0.8	0.2	-0.6	0.2	0.2	-0.1	0.2	0.2	0.0
2030	1.7	1.0	-0.6	0.7	0.2	-0.6	0.3	0.2	-0.2	0.2	0.2	0.0
2031	1.6	1.0	-0.6	0.8	0.2	-0.6	0.3	0.2	-0.2	0.2	0.2	0.0

Table 454 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.5	0.5	0.0	0.3	0.3	0.0	0.1	0.1	0.0	0.6	0.6	0.0
2026	0.6	0.6	0.0	0.6	0.6	0.0	0.1	0.1	0.0	2.3	2.3	0.0
2027	1.0	0.8	-0.2	1.6	1.0	-0.6	0.6	0.1	-0.6	2.3	2.2	-0.1
2028	0.9	0.7	-0.2	2.1	1.0	-1.0	0.8	0.0	-0.8	2.3	2.1	-0.2
2029	1.0	0.7	-0.4	2.3	1.1	-1.2	0.9	0.0	-0.8	2.6	2.1	-0.5
2030	1.1	0.7	-0.4	2.3	1.1	-1.2	0.9	0.0	-0.8	2.9	2.2	-0.7
2031	1.1	0.6	-0.4	2.2	1.0	-1.1	0.8	0.0	-0.8	2.9	2.1	-0.8

Table 455 - Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.1	0.1	0.0	0.7	0.7	0.0	6.0	6.0	0.0
2026	0.1	0.1	0.0	0.9	0.9	0.0	14.6	14.6	0.0
2027	0.2	0.1	0.0	1.3	1.0	-0.3	19.3	15.6	-3.7
2028	0.2	0.1	0.0	1.5	1.0	-0.5	23.0	15.1	-7.9
2029	0.2	0.1	0.0	1.4	1.0	-0.5	24.9	14.8	-10.1
2030	0.2	0.1	0.0	1.4	0.9	-0.5	25.4	14.5	-10.9
2031	0.2	0.1	0.0	1.4	0.9	-0.5	24.9	14.0	-10.9

Table 456 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0
2026	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	1.2	1.2	0.0
2027	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	1.3	1.1	-0.2
2028	0.2	0.4	0.1	0.0	0.0	0.0	0.1	0.7	0.6	1.2	2.1	0.9
2029	0.2	0.4	0.1	0.0	0.0	0.0	0.1	0.7	0.5	1.6	2.1	0.4
2030	0.2	0.4	0.1	0.0	0.0	0.0	0.1	0.7	0.5	1.6	2.0	0.5
2031	0.2	0.3	0.1	0.0	0.0	0.0	0.1	0.6	0.5	1.5	1.9	0.4

Table 457 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	0.5	0.5	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2027	0.5	0.4	-0.1	0.6	0.2	-0.3	0.0	0.0	0.0	0.0	0.0	0.0
2028	0.7	0.8	0.1	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.1	0.0
2029	1.0	0.7	-0.3	0.8	0.7	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
2030	1.0	0.7	-0.3	0.8	0.7	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
2031	0.9	0.6	-0.3	0.8	0.6	-0.1	0.0	0.0	0.0	0.0	0.0	0.0

Table 458 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2026	0.4	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2027	0.4	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2028	0.4	1.1	0.7	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.2
2029	0.7	1.1	0.4	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.1
2030	0.7	1.0	0.4	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.1
2031	0.7	1.0	0.3	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.2	0.1

Table 459 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.4	0.4	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.5	0.5	0.0
2026	0.5	0.5	0.0	0.0	0.0	0.0	0.1	0.1	0.0	1.4	1.4	0.0
2027	0.6	0.5	-0.1	0.0	0.0	0.0	0.2	0.1	-0.1	1.3	1.3	0.0
2028	0.5	0.5	0.0	0.0	0.3	0.3	0.2	0.0	-0.2	1.3	2.0	0.8
2029	0.5	0.5	0.0	0.0	0.3	0.3	0.2	0.0	-0.2	1.3	2.0	0.8
2030	0.5	0.5	0.0	0.0	0.3	0.3	0.2	0.0	-0.2	1.3	2.1	0.8
2031	0.5	0.5	-0.1	0.0	0.3	0.3	0.2	0.0	-0.2	1.3	2.0	0.7

Table 460 - Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.0	0.0	0.0	0.2	0.2	0.0	2.2	2.2	0.0
2026	0.0	0.0	0.0	0.4	0.4	0.0	5.1	5.1	0.0
2027	0.0	0.0	0.0	0.4	0.3	0.0	5.7	4.8	-0.9
2028	0.0	0.1	0.1	0.4	1.0	0.5	6.2	10.2	3.9
2029	0.0	0.1	0.1	0.4	0.9	0.5	7.3	10.0	2.7
2030	0.0	0.1	0.1	0.4	0.9	0.5	7.1	9.8	2.6
2031	0.0	0.1	0.1	0.4	0.9	0.4	6.9	9.4	2.5

Table 461 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	BMW			Ferrari			Ford			GM		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.2	0.2	0.0	0.0	0.0	0.0	0.8	0.8	0.0	0.8	0.8	0.0
2026	0.2	0.2	0.0	0.0	0.0	0.0	0.9	0.9	0.0	3.9	3.9	0.0
2027	0.3	0.2	-0.1	0.0	0.0	0.0	2.0	1.3	-0.7	4.0	4.0	0.0
2028	0.3	0.0	-0.3	0.0	0.0	0.0	2.3	0.7	-1.6	5.5	2.9	-2.6
2029	0.3	0.0	-0.3	0.0	0.0	0.0	2.2	0.7	-1.6	5.4	2.8	-2.6
2030	0.3	0.0	-0.3	0.0	0.0	0.0	2.5	0.7	-1.8	5.5	2.7	-2.7
2031	0.3	0.0	-0.3	0.0	0.0	0.0	2.4	0.6	-1.8	5.4	2.6	-2.8

Table 462 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	Honda			Hyundai			Ineos			JLR		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.4	0.4	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2026	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2027	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2028	0.6	0.1	-0.5	0.9	0.0	-0.8	0.0	0.0	0.0	0.1	0.1	0.0
2029	0.6	0.1	-0.5	1.1	0.0	-1.0	0.0	0.0	0.0	0.1	0.0	-0.1
2030	0.6	0.1	-0.5	1.0	0.0	-1.0	0.0	0.0	0.0	0.1	0.0	-0.1
2031	0.6	0.1	-0.5	1.0	0.0	-1.0	0.0	0.0	0.0	0.1	0.0	-0.1

Table 463 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	KIA			Mazda			Mercedes-Benz			Mitsubishi		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2026	0.8	0.8	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.2	0.2	0.0
2027	0.8	0.8	0.0	0.5	0.1	-0.4	0.2	0.2	0.0	0.2	0.2	0.0
2028	1.1	0.0	-1.1	0.4	0.0	-0.4	0.2	0.1	0.0	0.2	0.0	-0.2
2029	1.0	0.0	-1.0	0.6	0.0	-0.6	0.2	0.1	0.0	0.1	0.0	-0.1
2030	1.0	0.0	-1.0	0.6	0.0	-0.6	0.2	0.1	-0.1	0.2	0.0	-0.2
2031	1.0	0.0	-1.0	0.7	0.0	-0.7	0.2	0.1	-0.1	0.1	0.0	-0.1

Table 464 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2												
Model Year	Nissan			Stellantis			Subaru			Toyota		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.1	0.1	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.0
2026	0.1	0.1	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.9	0.9	0.0
2027	0.4	0.3	-0.1	1.6	1.0	-0.6	0.4	0.0	-0.4	1.0	0.9	-0.1
2028	0.4	0.2	-0.1	2.0	0.7	-1.3	0.6	0.0	-0.6	1.1	0.1	-1.0
2029	0.5	0.2	-0.3	2.3	0.8	-1.5	0.6	0.0	-0.6	1.3	0.1	-1.2
2030	0.6	0.2	-0.4	2.3	0.8	-1.5	0.6	0.0	-0.6	1.6	0.1	-1.5
2031	0.6	0.2	-0.4	2.2	0.8	-1.4	0.6	0.0	-0.6	1.7	0.1	-1.6

Table 465 - Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Regulatory Costs (\$b) for Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2									
Model Year	Volvo			VWA			Total		
	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference	Alt 0 - No Action	Alt 2 - scen 2	Difference
2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2025	0.1	0.1	0.0	0.5	0.5	0.0	3.8	3.8	0.0
2026	0.1	0.1	0.0	0.6	0.6	0.0	9.5	9.5	0.0
2027	0.1	0.1	0.0	1.0	0.7	-0.3	13.6	10.8	-2.8
2028	0.1	0.0	-0.1	1.0	0.0	-1.0	16.7	4.9	-11.8
2029	0.1	0.0	-0.1	1.0	0.0	-1.0	17.6	4.8	-12.8
2030	0.1	0.0	-0.1	1.0	0.0	-1.0	18.3	4.8	-13.5
2031	0.1	0.0	-0.1	0.9	0.0	-0.9	17.9	4.6	-13.3

A16. Regulatory Costs, Price Increases, Sales, and Labor Utilization

Table 466 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Total Fleet Between Alt 0 - No Action and Alt 1 - scen 1

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Total Fleet Between Alt 0 - No Action and Alt 1 - scen 1																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	13.7	13.7	0.0	0.0%	887	887	0.0	0.0%
2025	6	6	0	0%	451	451	0	0%	13.4	13.4	0.0	0.0%	865	865	0.0	0.0%
2026	15	15	0	0%	1,106	1,106	0	0%	13.2	13.2	0.0	0.0%	873	873	0.0	0.0%
2027	19	16	-4	-19%	1,471	1,186	-285	-19%	13.1	13.1	0.0	0.1%	874	873	-1.7	-0.2%
2028	23	15	-8	-34%	1,825	1,194	-630	-35%	12.6	12.6	0.0	0.3%	846	842	-4.2	-0.5%
2029	25	15	-10	-41%	2,006	1,186	-820	-41%	12.4	12.4	0.0	0.4%	834	827	-6.3	-0.8%
2030	25	15	-11	-43%	2,078	1,182	-896	-43%	12.2	12.3	0.0	0.4%	824	817	-7.0	-0.8%
2031	25	14	-11	-44%	2,104	1,179	-925	-44%	11.8	11.9	0.0	0.4%	797	790	-7.2	-0.9%

Table 467 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Passenger Car Fleet Between Alt 0 - No Action and Alt 1 - scen 1

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Passenger Car Fleet Between Alt 0 - No Action and Alt 1 - scen 1																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	4.3	4.3	0.0	0.0%	204	204	0.0	0.0%
2025	2	2	0	0%	503	503	0	0%	4.4	4.4	0.0	0.0%	213	213	0.0	0.0%
2026	5	5	0	0%	1,230	1,230	0	0%	4.2	4.2	0.0	0.0%	203	203	0.0	0.0%
2027	6	5	-1	-16%	1,476	1,237	-239	-16%	3.9	3.9	0.0	0.0%	190	190	-0.4	-0.2%
2028	6	10	4	63%	1,705	1,108	-597	-35%	3.6	9.2	5.5	151.4%	179	510	330.9	184.7%
2029	7	10	3	37%	2,000	1,100	-900	-45%	3.6	9.1	5.4	148.5%	180	503	323.6	180.1%
2030	7	10	3	37%	1,997	1,092	-905	-45%	3.6	8.9	5.4	150.6%	176	496	320.5	182.6%
2031	7	9	2	36%	2,019	1,090	-929	-46%	3.4	8.6	5.2	151.0%	169	479	310.0	183.0%

Table 468 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Light Truck Fleet Between Alt 0 - No Action and Alt 1 - scen 1

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Light Truck Fleet Between Alt 0 - No Action and Alt 1 - scen 1																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent	Alt 0 - No Action	Alt 1 - scen 1	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	9.4	9.4	0.0	0.0%	683	683	0.0	0.0%
2025	4	4	0	0%	425	425	0	0%	8.9	8.9	0.0	0.0%	652	652	0.0	0.0%
2026	10	10	0	0%	1,049	1,049	0	0%	9.1	9.1	0.0	0.0%	670	670	0.0	0.0%
2027	14	11	-3	-21%	1,469	1,165	-304	-21%	9.2	9.2	0.0	0.2%	684	683	-1.3	-0.2%
2028	17	5	-12	-71%	1,874	1,423	-450	-24%	8.9	3.4	-5.5	-61.4%	667	331	-335.1	-50.3%
2029	18	5	-13	-73%	2,008	1,419	-589	-29%	8.7	3.4	-5.4	-61.4%	654	324	-329.9	-50.4%
2030	18	5	-14	-74%	2,111	1,423	-688	-33%	8.7	3.3	-5.3	-61.4%	649	321	-327.4	-50.5%
2031	18	5	-13	-74%	2,139	1,414	-724	-34%	8.4	3.2	-5.1	-61.4%	628	311	-317.2	-50.5%

Table 469 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	13.7	13.7	0.0	0.0%	887	887	0.0	0.0%
2025	6	6	0	0%	451	451	0	0%	13.4	13.4	0.0	0.0%	865	865	0.0	0.0%
2026	15	15	0	0%	1,106	1,106	0	0%	13.2	13.2	0.0	0.0%	873	873	0.0	0.0%
2027	19	16	-4	-19%	1,471	1,187	-284	-19%	13.1	13.1	0.0	0.1%	874	873	-1.7	-0.2%
2028	23	15	-8	-34%	1,825	1,195	-630	-34%	12.6	12.6	0.0	0.3%	846	842	-4.2	-0.5%
2029	25	15	-10	-41%	2,006	1,186	-820	-41%	12.4	12.4	0.0	0.4%	834	827	-6.3	-0.8%
2030	25	15	-11	-43%	2,078	1,182	-896	-43%	12.2	12.3	0.0	0.4%	824	817	-7.0	-0.8%
2031	25	14	-11	-44%	2,104	1,179	-925	-44%	11.8	11.9	0.0	0.4%	797	790	-7.2	-0.9%

Table 470 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Passenger Car Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	4.3	4.3	0.0	0.0%	204	204	0.0	0.0%
2025	2	2	0	0%	503	503	0	0%	4.4	4.4	0.0	0.0%	213	213	0.0	0.0%
2026	5	5	0	0%	1,230	1,230	0	0%	4.2	4.2	0.0	0.0%	203	203	0.0	0.0%
2027	6	5	-1	-16%	1,476	1,237	-239	-16%	3.9	3.9	0.0	0.0%	190	190	-0.4	-0.2%
2028	6	10	4	63%	1,705	1,108	-597	-35%	3.6	9.2	5.5	151.4%	179	510	330.9	184.7%
2029	7	10	3	37%	2,000	1,100	-900	-45%	3.6	9.1	5.4	148.5%	180	503	323.6	180.1%
2030	7	10	3	37%	1,997	1,092	-905	-45%	3.6	8.9	5.4	150.6%	176	496	320.5	182.6%
2031	7	9	2	36%	2,019	1,090	-929	-46%	3.4	8.6	5.2	151.0%	169	479	310.0	183.0%

Table 471 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Light Truck Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	9.4	9.4	0.0	0.0%	683	683	0.0	0.0%
2025	4	4	0	0%	425	425	0	0%	8.9	8.9	0.0	0.0%	652	652	0.0	0.0%
2026	10	10	0	0%	1,049	1,049	0	0%	9.1	9.1	0.0	0.0%	670	670	0.0	0.0%
2027	14	11	-3	-20%	1,469	1,166	-303	-21%	9.2	9.2	0.0	0.2%	684	683	-1.3	-0.2%
2028	17	5	-12	-71%	1,874	1,427	-447	-24%	8.9	3.4	-5.5	-61.4%	667	331	-335.1	-50.3%
2029	18	5	-13	-73%	2,008	1,419	-589	-29%	8.7	3.4	-5.4	-61.4%	654	324	-329.9	-50.4%
2030	18	5	-14	-74%	2,111	1,423	-688	-33%	8.7	3.3	-5.3	-61.4%	649	321	-327.4	-50.5%
2031	18	5	-13	-74%	2,139	1,414	-724	-34%	8.4	3.2	-5.1	-61.4%	628	311	-317.2	-50.5%

Table 472 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Total Fleet Between Alt 0 - No Action and Alt 3 - scen 3

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Total Fleet Between Alt 0 - No Action and Alt 3 - scen 3																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	13.7	13.7	0.0	0.0%	887	887	0.0	0.0%
2025	6	6	0	0%	451	451	0	0%	13.4	13.4	0.0	0.0%	865	865	0.0	0.0%
2026	15	15	0	0%	1,106	1,106	0	0%	13.2	13.2	0.0	0.0%	873	873	0.0	0.0%
2027	19	16	-3	-17%	1,471	1,221	-250	-17%	13.1	13.1	0.0	0.1%	874	873	-1.3	-0.1%
2028	23	16	-7	-32%	1,825	1,246	-579	-32%	12.6	12.6	0.0	0.3%	846	842	-3.8	-0.4%
2029	25	16	-9	-37%	2,006	1,262	-744	-37%	12.4	12.4	0.0	0.4%	834	828	-5.5	-0.7%
2030	25	15	-10	-39%	2,078	1,260	-818	-39%	12.2	12.3	0.0	0.4%	824	818	-6.1	-0.7%
2031	25	15	-10	-40%	2,104	1,257	-847	-40%	11.8	11.9	0.0	0.4%	797	791	-6.4	-0.8%

Table 473 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Passenger Car Fleet Between Alt 0 - No Action and Alt 3 - scen 3

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Passenger Car Fleet Between Alt 0 - No Action and Alt 3 - scen 3																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	4.3	4.3	0.0	0.0%	204	204	0.0	0.0%
2025	2	2	0	0%	503	503	0	0%	4.4	4.4	0.0	0.0%	213	213	0.0	0.0%
2026	5	5	0	0%	1,230	1,230	0	0%	4.2	4.2	0.0	0.0%	203	203	0.0	0.0%
2027	6	5	-1	-15%	1,476	1,248	-229	-15%	3.9	3.9	0.0	0.0%	190	190	-0.3	-0.2%
2028	6	11	4	70%	1,705	1,150	-555	-33%	3.6	9.2	5.5	151.4%	179	510	331.2	184.8%
2029	7	10	3	42%	2,000	1,142	-858	-43%	3.6	9.1	5.4	148.5%	180	504	323.9	180.2%
2030	7	10	3	43%	1,997	1,138	-859	-43%	3.6	8.9	5.4	150.6%	176	496	320.8	182.8%
2031	7	10	3	41%	2,019	1,136	-883	-44%	3.4	8.6	5.2	151.0%	169	480	310.3	183.2%

Table 474 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Light Truck Fleet Between Alt 0 - No Action and Alt 3 - scen 3

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Total) Light Truck Fleet Between Alt 0 - No Action and Alt 3 - scen 3																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent	Alt 0 - No Action	Alt 3 - scen 3	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	9.4	9.4	0.0	0.0%	683	683	0.0	0.0%
2025	4	4	0	0%	425	425	0	0%	8.9	8.9	0.0	0.0%	652	652	0.0	0.0%
2026	10	10	0	0%	1,049	1,049	0	0%	9.1	9.1	0.0	0.0%	670	670	0.0	0.0%
2027	14	11	-2	-18%	1,469	1,210	-259	-18%	9.2	9.2	0.0	0.1%	684	683	-1.0	-0.1%
2028	17	5	-12	-69%	1,874	1,502	-371	-20%	8.9	3.4	-5.5	-61.4%	667	332	-334.9	-50.2%
2029	18	5	-12	-70%	2,008	1,584	-424	-21%	8.7	3.4	-5.4	-61.5%	654	325	-329.4	-50.4%
2030	18	5	-13	-71%	2,111	1,586	-525	-25%	8.7	3.3	-5.3	-61.4%	649	322	-326.9	-50.4%
2031	18	5	-13	-71%	2,139	1,581	-557	-26%	8.4	3.2	-5.1	-61.4%	628	311	-316.7	-50.4%

Table 475 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (BMW) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (BMW) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.4	0.4	0.0	0.0%	18	18	0.0	0.0%
2025	0	0	0	0%	817	817	0	0%	0.4	0.4	0.0	0.0%	17	17	0.0	0.0%
2026	0	0	0	0%	1,122	1,122	0	0%	0.4	0.4	0.0	0.0%	18	18	0.0	0.0%
2027	1	0	0	-25%	1,573	1,174	-399	-25%	0.3	0.3	0.0	0.1%	18	18	-0.1	-0.5%
2028	1	0	0	-28%	1,718	1,242	-475	-28%	0.3	0.3	0.0	0.2%	17	17	0.0	-0.3%
2029	1	0	0	-31%	1,801	1,233	-568	-32%	0.3	0.3	0.0	0.3%	17	17	0.0	-0.2%
2030	1	0	0	-32%	1,800	1,218	-583	-32%	0.3	0.3	0.0	0.3%	16	16	0.0	-0.2%
2031	1	0	0	-34%	1,844	1,208	-636	-34%	0.3	0.3	0.0	0.3%	16	16	0.0	-0.2%

Table 476 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ferrari) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ferrari) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2025	0	0	0	0%	14	14	0	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2026	0	0	0	0%	2,296	2,296	0	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2027	0	0	0	0%	2,228	2,228	0	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2028	0	0	0	0%	2,252	2,252	-1	0%	0.0	0.0	0.0	-0.3%	0	0	0.0	-0.3%
2029	0	0	0	0%	2,184	2,183	-1	0%	0.0	0.0	0.0	0.1%	0	0	0.0	0.1%
2030	0	0	0	0%	2,906	2,907	1	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2031	0	0	0	0%	2,968	2,970	2	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%

Table 477 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ford) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	1.5	1.5	0.0	0.0%	132	132	0.0	0.0%
2025	1	1	0	0%	517	517	0	0%	1.5	1.5	0.0	0.0%	127	127	0.0	0.0%
2026	1	1	0	0%	713	713	0	0%	1.5	1.5	0.0	0.0%	128	128	0.0	0.0%
2027	2	1	-1	-34%	1,432	941	-491	-34%	1.5	1.5	0.0	0.2%	130	130	-0.4	-0.3%
2028	2	1	-1	-44%	1,697	945	-752	-44%	1.4	1.4	0.0	0.5%	126	126	-0.3	-0.2%
2029	2	1	-1	-44%	1,676	935	-741	-44%	1.4	1.4	0.0	0.4%	123	123	-0.3	-0.3%
2030	3	1	-1	-50%	1,896	943	-952	-50%	1.4	1.4	0.0	0.5%	122	122	-0.4	-0.3%
2031	3	1	-1	-50%	1,874	932	-942	-50%	1.3	1.3	0.0	0.5%	118	118	-0.4	-0.3%

Table 478 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (GM) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	2.2	2.2	0.0	0.0%	170	170	0.0	0.0%
2025	1	1	0	0%	585	585	0	0%	2.2	2.2	0.0	0.0%	164	164	0.0	0.0%
2026	5	5	0	0%	2,340	2,340	0	0%	2.2	2.2	0.0	0.0%	169	169	0.0	0.0%
2027	5	5	0	-3%	2,437	2,361	-76	-3%	2.1	2.1	0.0	0.1%	170	170	0.2	0.1%
2028	7	5	-2	-25%	3,236	2,410	-825	-26%	2.1	2.1	0.0	0.3%	165	164	-1.2	-0.7%
2029	7	5	-2	-31%	3,458	2,375	-1,083	-31%	2.0	2.0	0.0	0.4%	163	161	-1.6	-1.0%
2030	7	5	-2	-33%	3,515	2,358	-1,157	-33%	2.0	2.0	0.0	0.4%	161	159	-1.6	-1.0%
2031	7	5	-2	-34%	3,596	2,356	-1,240	-34%	1.9	1.9	0.0	0.4%	156	154	-1.8	-1.2%

Table 479 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Honda) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Honda) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	1.2	1.2	0.0	0.0%	102	102	0.0	0.0%
2025	0	0	0	0%	359	359	0	0%	1.2	1.2	0.0	0.0%	101	101	0.0	0.0%
2026	1	1	0	0%	803	803	0	0%	1.2	1.2	0.0	0.0%	100	100	0.0	0.0%
2027	1	1	0	-7%	858	799	-59	-7%	1.2	1.2	0.0	0.1%	98	98	0.0	0.0%
2028	1	1	0	-36%	1,175	752	-423	-36%	1.1	1.1	0.0	0.1%	95	94	-0.7	-0.8%
2029	2	1	-1	-51%	1,422	692	-729	-51%	1.1	1.1	0.0	0.3%	94	93	-0.9	-1.0%
2030	2	1	-1	-54%	1,433	657	-777	-54%	1.1	1.1	0.0	0.3%	92	91	-1.0	-1.1%
2031	1	1	-1	-54%	1,420	649	-771	-54%	1.0	1.1	0.0	0.3%	89	88	-1.0	-1.1%

Table 480 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Hyundai) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Hyundai) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.8	0.8	0.0	0.0%	22	22	0.0	0.0%
2025	0	0	0	0%	250	250	0	0%	0.8	0.8	0.0	0.0%	21	21	0.0	0.0%
2026	1	1	0	0%	941	941	0	0%	0.8	0.8	0.0	0.0%	21	21	0.0	0.0%
2027	1	1	0	-32%	1,455	990	-465	-32%	0.8	0.8	0.0	0.1%	21	21	0.0	0.1%
2028	2	1	-1	-55%	2,257	1,024	-1,233	-55%	0.7	0.7	0.0	0.2%	20	20	-0.1	-0.6%
2029	2	1	-1	-62%	2,652	1,010	-1,642	-62%	0.7	0.7	0.0	0.3%	20	20	-0.3	-1.6%
2030	2	1	-1	-62%	2,617	1,001	-1,616	-62%	0.7	0.7	0.0	0.3%	20	20	-0.3	-1.5%
2031	2	1	-1	-62%	2,585	991	-1,594	-62%	0.7	0.7	0.0	0.4%	19	19	-0.3	-1.5%

Table 481 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ineos) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Ineos) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2025	0	0	0	0%	0	0	0	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2026	0	0	0	0%	0	0	0	0%	0.0	0.0	0.0	0.0%	0	0	0.0	0.0%
2027	0	0	0	0%	814	814	0	0%	0.0	0.0	0.0	0.2%	0	0	0.0	0.2%
2028	0	0	0	1%	810	810	0	0%	0.0	0.0	0.0	0.5%	0	0	0.0	0.5%
2029	0	0	0	0%	802	802	0	0%	0.0	0.0	0.0	0.5%	0	0	0.0	0.5%
2030	0	0	0	1%	795	795	0	0%	0.0	0.0	0.0	0.6%	0	0	0.0	0.6%
2031	0	0	0	1%	2,735	2,735	0	0%	0.0	0.0	0.0	0.5%	0	0	0.0	0.5%

Table 482 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (JLR) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (JLR) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.1	0.1	0.0	0.0%	1	1	0.0	0.0%
2025	0	0	0	0%	576	576	0	0%	0.1	0.1	0.0	0.0%	1	1	0.0	0.0%
2026	0	0	0	0%	1,232	1,232	0	0%	0.1	0.1	0.0	0.0%	1	1	0.0	0.0%
2027	0	0	0	-10%	1,480	1,330	-150	-10%	0.1	0.1	0.0	0.2%	1	1	0.0	-0.1%
2028	0	0	0	-10%	1,453	1,304	-149	-10%	0.1	0.1	0.0	0.5%	1	1	0.0	0.2%
2029	0	0	0	-40%	1,536	911	-625	-41%	0.1	0.1	0.0	0.4%	1	1	0.0	0.1%
2030	0	0	0	-40%	1,517	899	-618	-41%	0.1	0.1	0.0	0.5%	1	1	0.0	0.1%
2031	0	0	0	-79%	1,284	274	-1,010	-79%	0.1	0.1	0.0	0.5%	1	1	0.0	-0.3%

Table 483 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (KIA) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (KIA) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.7	0.7	0.0	0.0%	37	37	0.0	0.0%
2025	1	1	0	0%	1,056	1,056	0	0%	0.7	0.7	0.0	0.0%	37	37	0.0	0.0%
2026	1	1	0	0%	1,738	1,738	0	0%	0.7	0.7	0.0	0.0%	37	37	0.0	0.0%
2027	1	1	0	-2%	1,787	1,747	-40	-2%	0.7	0.7	0.0	0.1%	37	37	0.0	0.1%
2028	2	1	0	-27%	2,374	1,730	-644	-27%	0.6	0.6	0.0	0.2%	36	36	-0.1	-0.3%
2029	2	1	-1	-38%	2,770	1,704	-1,066	-38%	0.6	0.6	0.0	0.3%	35	35	-0.2	-0.5%
2030	2	1	-1	-38%	2,733	1,685	-1,048	-38%	0.6	0.6	0.0	0.3%	35	35	-0.1	-0.4%
2031	2	1	-1	-38%	2,715	1,665	-1,050	-39%	0.6	0.6	0.0	0.4%	34	33	-0.2	-0.5%

Table 484 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mazda) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mazda) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.4	0.4	0.0	0.0%	12	12	0.0	0.0%
2025	0	0	0	0%	102	102	0	0%	0.4	0.4	0.0	0.0%	12	12	0.0	0.0%
2026	0	0	0	0%	303	303	0	0%	0.4	0.4	0.0	0.0%	12	12	0.0	0.0%
2027	1	0	0	-69%	1,374	429	-946	-69%	0.4	0.4	0.0	0.2%	12	12	0.0	0.0%
2028	1	0	0	-69%	1,354	416	-938	-69%	0.4	0.4	0.0	0.5%	12	12	0.0	0.3%
2029	1	0	-1	-76%	1,882	445	-1,437	-76%	0.4	0.4	0.0	0.4%	12	12	-0.3	-2.5%
2030	1	0	-1	-76%	1,861	437	-1,424	-77%	0.4	0.4	0.0	0.5%	12	11	-0.3	-2.4%
2031	1	0	-1	-71%	2,078	593	-1,484	-71%	0.4	0.4	0.0	0.5%	11	11	-0.3	-2.4%

Table 485 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mercedes-Benz) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.3	0.3	0.0	0.0%	12	12	0.0	0.0%
2025	0	0	0	0%	92	92	0	0%	0.2	0.2	0.0	0.0%	11	11	0.0	0.0%
2026	0	0	0	0%	729	729	0	0%	0.2	0.2	0.0	0.0%	12	12	0.0	0.0%
2027	0	0	0	-15%	908	770	-137	-15%	0.2	0.2	0.0	0.1%	12	12	0.0	0.1%
2028	0	0	0	-15%	928	783	-145	-16%	0.2	0.2	0.0	0.3%	11	11	0.1	0.4%
2029	0	0	0	-27%	992	718	-273	-28%	0.2	0.2	0.0	0.4%	11	11	0.0	0.4%
2030	0	0	0	-49%	1,451	741	-711	-49%	0.2	0.2	0.0	0.4%	11	11	0.1	0.5%
2031	0	0	0	-51%	1,442	709	-734	-51%	0.2	0.2	0.0	0.4%	11	11	0.0	0.5%

Table 486 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mitsubishi) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Mitsubishi) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.2	0.2	0.0	0.0%	2	2	0.0	0.0%
2025	0	0	0	0%	476	476	0	0%	0.2	0.2	0.0	0.0%	2	2	0.0	0.0%
2026	0	0	0	0%	1,430	1,430	0	0%	0.1	0.1	0.0	0.0%	2	2	0.0	0.0%
2027	0	0	0	0%	1,410	1,410	0	0%	0.1	0.1	0.0	0.1%	2	2	0.0	0.1%
2028	0	0	0	0%	1,391	1,391	0	0%	0.1	0.1	0.0	0.3%	2	2	0.0	0.3%
2029	0	0	0	0%	1,372	1,372	0	0%	0.1	0.1	0.0	0.4%	2	2	0.0	0.4%
2030	0	0	0	-10%	1,399	1,253	-146	-10%	0.1	0.1	0.0	0.4%	2	2	0.0	0.2%
2031	0	0	0	-10%	1,380	1,235	-144	-10%	0.1	0.1	0.0	0.4%	2	2	0.0	0.2%

Table 487 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Nissan) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.8	0.8	0.0	0.0%	51	51	0.0	0.0%
2025	0	0	0	0%	554	554	0	0%	0.8	0.8	0.0	0.0%	51	51	0.0	0.0%
2026	1	1	0	0%	786	786	0	0%	0.8	0.8	0.0	0.0%	50	50	0.0	0.0%
2027	1	1	0	-20%	1,205	968	-236	-20%	0.8	0.8	0.0	0.1%	49	49	-0.1	-0.2%
2028	1	1	0	-20%	1,186	948	-238	-20%	0.8	0.8	0.0	0.1%	47	47	0.0	-0.1%
2029	1	1	0	-35%	1,356	873	-484	-36%	0.7	0.7	0.0	0.3%	46	46	-0.3	-0.5%
2030	1	1	0	-39%	1,492	900	-592	-40%	0.7	0.7	0.0	0.3%	46	46	-0.4	-0.8%
2031	1	1	0	-41%	1,513	885	-628	-42%	0.7	0.7	0.0	0.3%	44	44	-0.4	-0.8%

Table 488 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Stellantis) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	1.0	1.0	0.0	0.0%	94	94	0.0	0.0%
2025	0	0	0	0%	277	277	0	0%	1.0	1.0	0.0	0.0%	90	90	0.0	0.0%
2026	1	1	0	0%	592	592	0	0%	1.0	1.0	0.0	0.0%	92	92	0.0	0.0%
2027	2	1	-1	-39%	1,636	1,004	-632	-39%	1.0	1.0	0.0	0.2%	95	94	-0.6	-0.7%
2028	2	1	-1	-51%	2,161	1,064	-1,097	-51%	0.9	1.0	0.0	0.5%	93	92	-1.1	-1.2%
2029	2	1	-1	-52%	2,502	1,186	-1,316	-53%	0.9	0.9	0.0	0.4%	91	90	-1.6	-1.7%
2030	2	1	-1	-52%	2,477	1,172	-1,305	-53%	0.9	0.9	0.0	0.5%	91	89	-1.5	-1.6%
2031	2	1	-1	-52%	2,447	1,161	-1,286	-53%	0.9	0.9	0.0	0.5%	88	86	-1.4	-1.6%

Table 489 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Subaru) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Subaru) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.7	0.7	0.0	0.0%	38	38	0.0	0.0%
2025	0	0	0	0%	102	102	0	0%	0.7	0.7	0.0	0.0%	37	37	0.0	0.0%
2026	0	0	0	0%	93	93	0	0%	0.7	0.7	0.0	0.0%	37	37	0.0	0.0%
2027	1	0	-1	-91%	887	80	-806	-91%	0.7	0.7	0.0	0.1%	38	37	-0.3	-0.8%
2028	1	0	-1	-97%	1,254	36	-1,218	-97%	0.7	0.7	0.0	0.4%	37	36	-0.5	-1.3%
2029	1	0	-1	-96%	1,327	54	-1,274	-96%	0.7	0.7	0.0	0.4%	36	35	-0.5	-1.5%
2030	1	0	-1	-96%	1,305	48	-1,256	-96%	0.7	0.7	0.0	0.5%	36	35	-0.5	-1.4%
2031	1	0	-1	-97%	1,285	44	-1,241	-97%	0.6	0.6	0.0	0.5%	34	34	-0.5	-1.4%

Table 490 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Toyota) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Toyota) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	2.5	2.5	0.0	0.0%	171	171	0.0	0.0%
2025	1	1	0	0%	239	239	0	0%	2.4	2.4	0.0	0.0%	169	169	0.0	0.0%
2026	2	2	0	0%	952	952	0	0%	2.4	2.4	0.0	0.0%	170	170	0.0	0.0%
2027	2	2	0	-4%	972	932	-40	-4%	2.3	2.3	0.0	0.1%	167	167	0.0	0.0%
2028	2	2	0	-9%	1,030	935	-95	-9%	2.2	2.3	0.0	0.3%	161	161	0.1	0.1%
2029	3	2	0	-18%	1,164	957	-208	-18%	2.2	2.2	0.0	0.4%	159	159	-0.2	-0.1%
2030	3	2	-1	-26%	1,327	983	-343	-26%	2.2	2.2	0.0	0.4%	157	156	-0.7	-0.4%
2031	3	2	-1	-28%	1,392	994	-397	-29%	2.1	2.1	0.0	0.4%	152	151	-0.9	-0.6%

Table 491 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Volvo) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (Volvo) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.1	0.1	0.0	0.0%	3	3	0.0	0.0%
2025	0	0	0	0%	445	445	0	0%	0.1	0.1	0.0	0.0%	3	3	0.0	0.0%
2026	0	0	0	0%	1,220	1,220	0	0%	0.1	0.1	0.0	0.0%	3	3	0.0	0.0%
2027	0	0	0	-12%	1,332	1,167	-165	-12%	0.1	0.1	0.0	0.1%	3	3	0.0	0.1%
2028	0	0	0	-19%	1,446	1,170	-276	-19%	0.1	0.1	0.0	0.4%	3	3	0.0	-0.1%
2029	0	0	0	-19%	1,434	1,161	-272	-19%	0.1	0.1	0.0	0.4%	3	3	0.0	0.2%
2030	0	0	0	-18%	1,419	1,152	-267	-19%	0.1	0.1	0.0	0.4%	3	3	0.0	0.1%
2031	0	0	0	-18%	1,396	1,136	-260	-19%	0.1	0.1	0.0	0.4%	3	3	0.0	0.2%

Table 492 - Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (VWA) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2

Comparison of Technology Costs, Average Price Increase, Sales, and Labor Utilization for Manufacturer (VWA) Total Fleet Between Alt 0 - No Action and Alt 2 - scen 2																
	Technology Costs Increase (\$b)				Avg. Vehicle Price Increase (\$)				Annual Sales (million vehicles)				Labor (person years)			
	Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action		Standards		Change from No Action	
Model Year	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent	Alt 0 - No Action	Alt 2 - scen 2	Absolute	Percent
2024	0	0	0	0%	0	0	0	0%	0.7	0.7	0.0	0.0%	22	22	0.0	0.0%
2025	1	1	0	0%	996	996	0	0%	0.7	0.7	0.0	0.0%	21	21	0.0	0.0%
2026	1	1	0	0%	1,325	1,325	0	0%	0.7	0.7	0.0	0.0%	22	22	0.0	0.0%
2027	1	1	0	-24%	1,909	1,449	-460	-24%	0.7	0.7	0.0	0.1%	22	22	-0.3	-1.5%
2028	1	1	-1	-34%	2,207	1,455	-753	-34%	0.7	0.7	0.0	0.3%	21	21	-0.3	-1.3%
2029	1	1	0	-34%	2,180	1,440	-741	-34%	0.7	0.7	0.0	0.4%	21	21	-0.3	-1.2%
2030	1	1	0	-34%	2,155	1,423	-732	-34%	0.7	0.7	0.0	0.4%	21	20	-0.2	-1.2%
2031	1	1	0	-35%	2,188	1,413	-774	-35%	0.6	0.6	0.0	0.4%	20	20	-0.2	-1.1%

A17. CAFE Compliance Credits

Table 493 - CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 0 - No Action

CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 0 - No Action								
Manufacturer	2024	2025	2026	2027	2028	2029	2030	2031
BMW	-26.0	-23.9	-28.5	-15.6	-9.99	-11.2	-14.0	-14.0
Ferrari	-0.85	-1.02	-1.13	-1.09	-1.04	-1.07	-1.06	-1.02
Ford	-39.7	-65.1	-111	-40.5	-24.2	-35.9	-13.8	-32.0
GM	-122	-146	-113	-103	-68.8	-44.5	-54.1	-57.7
Honda	-3.78	-26.6	-29.4	-31.7	3.86	45.9	43.4	27.7
Hyundai	-31.1	-46.8	-54.2	-26.2	9.25	24.3	16.0	5.85
Ineos	-1.50	-1.70	-2.13	-1.89	-1.83	-1.87	-1.94	-1.19
JLR	-7.03	-8.10	-9.60	-8.26	-8.03	-5.66	-6.38	-4.37
KIA	-32.5	-19.6	-22.6	-20.6	3.96	23.1	16.1	9.42
Mazda	-11.0	-21.5	-33.6	-6.45	-6.75	1.63	-2.43	6.89
Mercedes-Benz	-21.7	-27.8	-24.4	-21.7	-20.3	-19.7	-14.8	-15.5
Mitsubishi	-4.01	-6.63	3.58	2.67	1.96	0.44	4.99	3.35
Nissan	-30.5	-15.5	-38.4	-4.95	-10.1	0.86	5.13	-1.51
Stellantis	-56.6	-72.8	-104	-56.8	-28.5	-7.60	-15.7	-26.8
Subaru	-28.3	-49.3	-83.5	-48.0	8.34	11.7	4.82	-2.50
Toyota	5.74	-26.8	-9.90	-1.14	23.0	21.3	27.3	14.0
Volvo	-2.59	-3.11	-2.07	3.29	3.32	2.11	1.02	-0.52
VWA	-54.2	-37.2	-50.2	-14.1	-0.00	-7.09	-14.0	-20.1
Total	-468	-600	-714	-396	-126	-3.37	-19.6	-110

Table 494 - CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 1 - scen 1

CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 1 - scen 1								
Manufacturer	2024	2025	2026	2027	2028	2029	2030	2031
BMW	-26.0	-23.9	-28.5	40.4	24.0	23.7	23.0	23.6
Ferrari	-0.85	-1.02	-1.13	-0.40	-0.38	-0.39	-0.35	-0.31
Ford	-39.7	-65.1	-111	162	70.0	67.6	75.3	71.5
GM	-122	-146	-113	256	153	152	150	150
Honda	-3.78	-26.6	-29.4	205	116	121	124	119
Hyundai	-31.1	-46.8	-54.2	97.4	55.7	55.0	53.4	51.0
Ineos	-1.50	-1.70	-2.13	-0.45	-0.72	-0.71	-0.71	0.00
JLR	-7.03	-8.10	-9.60	5.49	1.31	2.04	2.00	2.68
KIA	-32.5	-19.6	-22.6	107	65.2	64.3	62.7	59.5
Mazda	-11.0	-21.5	-33.6	51.9	16.3	17.2	16.6	23.0
Mercedes-Benz	-21.7	-27.8	-24.4	19.6	10.3	11.5	12.7	12.7
Mitsubishi	-4.01	-6.63	3.58	33.0	17.1	16.8	20.4	19.6
Nissan	-30.5	-15.5	-38.4	149	89.3	105	106	101
Stellantis	-56.6	-72.8	-104	72.4	28.8	38.5	37.6	36.7
Subaru	-28.3	-49.3	-83.5	49.7	20.3	23.2	22.3	20.9
Toyota	5.74	-26.8	-9.90	428	309	312	315	307
Volvo	-2.59	-3.11	-2.07	22.8	12.9	12.6	12.3	11.8
VWA	-54.2	-37.2	-50.2	96.5	45.8	44.7	44.0	42.8
Total	-468	-600	-714	1800	1030	1070	1080	1050

Table 495 - CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 2 - scen 2

CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 2 - scen 2								
Manufacturer	2024	2025	2026	2027	2028	2029	2030	2031
BMW	-26.0	-23.9	-28.5	37.4	20.5	20.2	19.6	20.6
Ferrari	-0.85	-1.02	-1.13	-0.43	-0.41	-0.42	-0.38	-0.34
Ford	-39.7	-65.1	-111	152	58.6	55.6	64.5	61.0
GM	-122	-146	-113	238	135	135	133	133
Honda	-3.78	-26.6	-29.4	194	103	109	111	108
Hyundai	-31.1	-46.8	-54.2	90.8	47.9	47.3	45.8	43.7
Ineos	-1.50	-1.70	-2.13	-0.52	-0.78	-0.77	-0.77	-0.05
JLR	-7.03	-8.10	-9.60	4.83	0.61	1.43	1.33	2.01
KIA	-32.5	-19.6	-22.6	102	58.1	57.3	55.8	52.8
Mazda	-11.0	-21.5	-33.6	48.4	11.9	12.8	12.3	18.8
Mercedes-Benz	-21.7	-27.8	-24.4	17.6	8.13	9.38	10.7	10.7
Mitsubishi	-4.01	-6.63	3.58	31.6	15.4	15.1	18.7	17.9
Nissan	-30.5	-15.5	-38.4	142	81.7	96.9	97.9	93.4
Stellantis	-56.6	-72.8	-104	65.4	21.2	31.6	30.7	29.4
Subaru	-28.3	-49.3	-83.5	43.9	12.2	15.2	14.4	13.3
Toyota	5.74	-26.8	-9.90	408	287	290	294	286
Volvo	-2.59	-3.11	-2.07	21.8	11.6	11.5	11.2	10.7
VWA	-54.2	-37.2	-50.2	90.2	38.7	37.7	36.6	35.7
Total	-468	-600	-714	1690	910	944	956	936

Table 496 - CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 3 - scen 3

CAFE Compliance Credits (in millions) Earned by Manufacturers, Total Fleet by Model Year for Alt 3 - scen 3								
Manufacturer	2024	2025	2026	2027	2028	2029	2030	2031
BMW	-26.0	-23.9	-28.5	30.9	13.3	12.2	11.0	11.1
Ferrari	-0.85	-1.02	-1.13	-0.48	-0.48	-0.49	-0.46	-0.42
Ford	-39.7	-65.1	-111	133	40.4	34.5	38.0	32.2
GM	-122	-146	-113	201	92.4	87.2	80.2	76.9
Honda	-3.78	-26.6	-29.4	172	77.8	80.3	79.9	73.0
Hyundai	-31.1	-46.8	-54.2	76.3	31.3	28.8	25.6	22.0
Ineos	-1.50	-1.70	-2.13	-0.70	-0.97	-0.98	-1.01	-0.29
JLR	-7.03	-8.10	-9.60	3.09	-1.24	0.71	0.42	1.01
KIA	-32.5	-19.6	-22.6	88.8	43.8	41.2	38.1	34.4
Mazda	-11.0	-21.5	-33.6	39.6	2.45	2.40	0.79	6.51
Mercedes-Benz	-21.7	-27.8	-24.4	14.6	4.52	5.38	6.16	5.78
Mitsubishi	-4.01	-6.63	3.58	28.3	11.8	11.3	14.4	13.2
Nissan	-30.5	-15.5	-38.4	128	64.7	78.1	77.4	72.0
Stellantis	-56.6	-72.8	-104	55.6	8.81	17.8	15.1	11.1
Subaru	-28.3	-49.3	-83.5	29.4	3.38	5.30	2.62	0.00
Toyota	5.74	-26.8	-9.90	365	239	242	240	229
Volvo	-2.59	-3.11	-2.07	19.5	9.13	8.53	7.95	7.35
VWA	-54.2	-37.2	-50.2	80.5	25.5	22.7	20.6	18.6
Total	-468	-600	-714	1460	666	677	657	613

A18. Consumer Impacts

Table 497 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 1 - scen 1 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 1 - scen 1 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-285	-630	-820	-896	-925
Implicit Opportunity Cost	0	0	0	-222	-416	-573	-654	-699
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-27	-58	-78	-85	-87
Increase in Taxes/Fees	0	0	0	-16	-34	-46	-50	-52
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-549	-1,139	-1,516	-1,684	-1,763
Fuel Savings	-19	-20	-21	434	850	1,168	1,344	1,431
Mobility Benefit	0	-1	-1	-55	-106	-147	-171	-183
Reallocated Benefit	-17	-18	-20	-22	-24	-27	-31	-34
Refueling Benefit	-1	-1	-1	25	48	66	75	79
Total Consumer Benefit	3	3	2	-536	-1,028	-1,407	-1,620	-1,727
Net Consumer Benefit	3	3	2	13	112	108	64	36
Payback	0.0	0.0	0.0	-1.0	-1.3	-1.6	-1.6	-0.9

Table 498 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 1 - scen 1 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 1 - scen 1 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-239	-597	-900	-905	-929
Implicit Opportunity Cost	0	0	0	-176	-265	-495	-484	-507
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-23	372	338	341	339
Increase in Taxes/Fees	0	0	0	-14	220	200	201	200
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-452	-269	-857	-846	-896
Fuel Savings	-16	-16	-16	336	2,948	3,410	3,419	3,475
Mobility Benefit	0	-1	-1	-42	-11	-63	-61	-68
Reallocated Benefit	-12	-13	-13	-15	-20	-23	-26	-29
Refueling Benefit	-1	-1	-1	20	173	200	199	201
Total Consumer Benefit	5	4	3	-413	-3,151	-3,696	-3,705	-3,773
Net Consumer Benefit	5	4	3	38	-2,882	-2,840	-2,859	-2,877
Payback	0.0	0.0	0.0	-1.0	-2.0	-2.0	-2.0	-2.0

Table 499 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 1 - scen 1 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 1 - scen 1 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-304	-450	-589	-688	-724
Implicit Opportunity Cost	0	0	0	-241	-103	-170	-243	-268
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-29	823	809	800	796
Increase in Taxes/Fees	0	0	0	-17	486	478	472	470
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-591	756	529	341	275
Fuel Savings	-20	-22	-24	473	5,547	5,712	5,891	5,966
Mobility Benefit	0	0	-1	-60	-326	-345	-366	-375
Reallocated Benefit	-19	-21	-22	-25	-35	-38	-43	-48
Refueling Benefit	-1	-1	-1	27	143	152	161	163
Total Consumer Benefit	2	2	2	-584	-6,051	-6,247	-6,461	-6,552
Net Consumer Benefit	2	2	2	7	-6,806	-6,776	-6,802	-6,827
Payback	0.0	0.0	0.0	-1.0	-1.0	-2.0	-2.0	-1.0

Table 500 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 1 - scen 1 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 1 - scen 1 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-285	-630	-820	-896	-925
Implicit Opportunity Cost	0	0	0	-173	-325	-448	-511	-546
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-22	-48	-65	-70	-73
Increase in Taxes/Fees	0	0	0	-16	-34	-46	-50	-52
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-496	-1,038	-1,377	-1,526	-1,595
Fuel Savings	-11	-12	-13	341	662	909	1,045	1,112
Mobility Benefit	0	0	0	-43	-82	-114	-133	-142
Reallocated Benefit	-9	-11	-12	-14	-16	-18	-21	-24
Refueling Benefit	-1	-1	-1	20	38	52	58	62
Total Consumer Benefit	2	2	2	-417	-798	-1,093	-1,257	-1,340
Net Consumer Benefit	2	2	2	80	240	284	269	255
Payback	0.0	0.0	0.0	-1.0	-2.6	-2.2	-2.6	-2.9

Table 501 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 1 - scen 1 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 1 - scen 1 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-239	-597	-900	-905	-929
Implicit Opportunity Cost	0	0	0	-138	-207	-387	-378	-396
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-19	309	281	282	281
Increase in Taxes/Fees	0	0	0	-14	220	200	201	200
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-409	-275	-806	-798	-843
Fuel Savings	-10	-10	-10	266	2,254	2,617	2,623	2,668
Mobility Benefit	0	0	-1	-33	-14	-55	-53	-58
Reallocated Benefit	-7	-8	-8	-10	-13	-15	-18	-21
Refueling Benefit	-1	-1	-1	16	133	155	154	156
Total Consumer Benefit	3	3	2	-324	-2,414	-2,842	-2,848	-2,903
Net Consumer Benefit	3	3	2	85	-2,139	-2,036	-2,050	-2,060
Payback	0.0	0.0	0.0	-1.0	-3.0	-4.0	-4.0	-4.0

Table 502 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 1 - scen 1 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 1 - scen 1 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-304	-450	-589	-688	-724
Implicit Opportunity Cost	0	0	0	-188	-80	-133	-190	-210
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-24	682	671	663	660
Increase in Taxes/Fees	0	0	0	-17	486	478	472	470
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-534	638	428	258	198
Fuel Savings	-12	-13	-14	370	4,143	4,271	4,410	4,469
Mobility Benefit	0	0	0	-47	-256	-271	-288	-295
Reallocated Benefit	-11	-12	-13	-15	-22	-25	-29	-33
Refueling Benefit	-1	-1	-1	21	105	112	118	121
Total Consumer Benefit	2	1	1	-453	-4,526	-4,678	-4,845	-4,917
Net Consumer Benefit	2	1	1	81	-5,163	-5,106	-5,102	-5,115
Payback	0.0	0.0	0.0	-1.0	-3.0	-2.0	-2.0	-3.0

Table 503 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 2 - scen 2 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 2 - scen 2 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-284	-630	-820	-896	-925
Implicit Opportunity Cost	0	0	0	-221	-415	-573	-654	-699
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-27	-58	-78	-85	-87
Increase in Taxes/Fees	0	0	0	-16	-34	-46	-50	-52
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-547	-1,137	-1,516	-1,684	-1,763
Fuel Savings	-19	-20	-21	432	847	1,168	1,344	1,431
Mobility Benefit	0	-1	-1	-55	-105	-147	-171	-183
Reallocated Benefit	-17	-18	-20	-22	-24	-27	-31	-34
Refueling Benefit	-1	-1	-1	25	48	66	75	79
Total Consumer Benefit	3	3	2	-533	-1,025	-1,407	-1,620	-1,727
Net Consumer Benefit	3	3	2	14	112	108	64	36
Payback	0.0	0.0	0.0	-1.0	-1.3	-1.6	-1.6	-0.9

Table 504 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 2 - scen 2 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 2 - scen 2 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-239	-597	-900	-905	-929
Implicit Opportunity Cost	0	0	0	-176	-265	-495	-484	-507
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-23	372	338	341	339
Increase in Taxes/Fees	0	0	0	-14	220	200	201	200
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-452	-269	-857	-846	-896
Fuel Savings	-16	-16	-16	336	2,948	3,410	3,419	3,475
Mobility Benefit	0	-1	-1	-42	-11	-63	-61	-68
Reallocated Benefit	-12	-13	-13	-15	-20	-23	-26	-29
Refueling Benefit	-1	-1	-1	20	173	200	199	201
Total Consumer Benefit	5	4	3	-413	-3,151	-3,696	-3,705	-3,773
Net Consumer Benefit	5	4	3	38	-2,882	-2,840	-2,859	-2,877
Payback	0.0	0.0	0.0	-1.0	-2.0	-2.0	-2.0	-2.0

Table 505 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 2 - scen 2 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 2 - scen 2 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-303	-447	-589	-688	-724
Implicit Opportunity Cost	0	0	0	-239	-99	-170	-243	-268
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-29	823	809	800	796
Increase in Taxes/Fees	0	0	0	-17	486	478	472	470
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-588	764	529	341	275
Fuel Savings	-20	-22	-24	470	5,539	5,712	5,891	5,966
Mobility Benefit	0	0	-1	-60	-324	-345	-366	-375
Reallocated Benefit	-19	-21	-22	-25	-35	-38	-43	-48
Refueling Benefit	-1	-1	-1	27	143	152	161	163
Total Consumer Benefit	2	2	2	-581	-6,041	-6,247	-6,461	-6,552
Net Consumer Benefit	2	2	2	8	-6,805	-6,776	-6,802	-6,827
Payback	0.0	0.0	0.0	-1.0	-1.0	-2.0	-2.0	-1.0

Table 506 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 2 - scen 2 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 2 - scen 2 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-284	-630	-820	-896	-925
Implicit Opportunity Cost	0	0	0	-172	-324	-448	-511	-546
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-22	-48	-65	-70	-73
Increase in Taxes/Fees	0	0	0	-16	-34	-46	-50	-52
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-494	-1,036	-1,377	-1,526	-1,595
Fuel Savings	-11	-12	-13	339	661	909	1,045	1,112
Mobility Benefit	0	0	0	-42	-82	-114	-133	-142
Reallocated Benefit	-9	-11	-12	-14	-16	-18	-21	-24
Refueling Benefit	-1	-1	-1	20	38	52	58	62
Total Consumer Benefit	2	2	2	-415	-796	-1,093	-1,257	-1,340
Net Consumer Benefit	2	2	2	80	240	284	269	255
Payback	0.0	0.0	0.0	-1.0	-2.6	-2.2	-2.6	-2.9

Table 507 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 2 - scen 2 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 2 - scen 2 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-239	-597	-900	-905	-929
Implicit Opportunity Cost	0	0	0	-138	-207	-387	-378	-396
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-19	309	281	282	281
Increase in Taxes/Fees	0	0	0	-14	220	200	201	200
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-409	-275	-806	-798	-843
Fuel Savings	-10	-10	-10	266	2,254	2,617	2,623	2,668
Mobility Benefit	0	0	-1	-33	-14	-55	-53	-58
Reallocated Benefit	-7	-8	-8	-10	-13	-15	-18	-21
Refueling Benefit	-1	-1	-1	16	133	155	154	156
Total Consumer Benefit	3	3	2	-324	-2,414	-2,842	-2,848	-2,903
Net Consumer Benefit	3	3	2	85	-2,139	-2,036	-2,050	-2,060
Payback	0.0	0.0	0.0	-1.0	-3.0	-4.0	-4.0	-4.0

Table 508 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 2 - scen 2 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 2 - scen 2 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-303	-447	-589	-688	-724
Implicit Opportunity Cost	0	0	0	-187	-77	-133	-190	-210
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-24	682	671	663	660
Increase in Taxes/Fees	0	0	0	-17	486	478	472	470
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-531	645	428	258	198
Fuel Savings	-12	-13	-14	367	4,137	4,271	4,410	4,469
Mobility Benefit	0	0	0	-46	-255	-271	-288	-295
Reallocated Benefit	-11	-12	-13	-15	-22	-25	-29	-33
Refueling Benefit	-1	-1	-1	21	105	112	118	121
Total Consumer Benefit	2	1	1	-450	-4,518	-4,678	-4,845	-4,917
Net Consumer Benefit	2	1	1	81	-5,163	-5,106	-5,102	-5,115
Payback	0.0	0.0	0.0	-1.0	-3.0	-2.0	-2.0	-3.0

Table 509 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 3 - scen 3 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 3 - scen 3 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-250	-579	-744	-818	-847
Implicit Opportunity Cost	0	0	0	-183	-360	-493	-572	-615
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-24	-54	-71	-78	-80
Increase in Taxes/Fees	0	0	0	-14	-32	-42	-46	-48
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-470	-1,023	-1,350	-1,512	-1,589
Fuel Savings	-18	-19	-20	356	735	1,001	1,170	1,256
Mobility Benefit	0	0	-1	-44	-90	-123	-146	-158
Reallocated Benefit	-16	-17	-18	-20	-23	-25	-29	-32
Refueling Benefit	-1	-1	-1	21	42	57	66	70
Total Consumer Benefit	3	3	2	-442	-889	-1,207	-1,411	-1,516
Net Consumer Benefit	3	3	2	29	134	143	101	73
Payback	0.0	0.0	0.0	-1.0	-1.3	-1.3	-1.6	-0.9

Table 510 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 3 - scen 3 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 3 - scen 3 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-229	-555	-858	-859	-883
Implicit Opportunity Cost	0	0	0	-164	-220	-449	-433	-456
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-22	376	342	345	343
Increase in Taxes/Fees	0	0	0	-13	222	202	204	202
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-428	-177	-762	-743	-792
Fuel Savings	-15	-16	-15	316	2,856	3,314	3,315	3,371
Mobility Benefit	0	-1	-1	-38	1	-51	-48	-54
Reallocated Benefit	-11	-12	-13	-14	-19	-22	-24	-27
Refueling Benefit	-1	-1	-1	19	167	194	193	195
Total Consumer Benefit	5	4	3	-387	-3,042	-3,581	-3,580	-3,647
Net Consumer Benefit	5	4	3	41	-2,865	-2,819	-2,837	-2,854
Payback	0.0	0.0	0.0	-1.0	-2.0	-2.0	-2.0	-2.0

Table 511 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 3 - scen 3 at a 3% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 3 - scen 3 at a 3% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-259	-371	-424	-525	-557
Implicit Opportunity Cost	0	0	0	-190	-16	-1	-74	-96
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-25	830	825	815	812
Increase in Taxes/Fees	0	0	0	-15	490	487	482	480
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-489	934	888	698	639
Fuel Savings	-19	-21	-22	371	5,374	5,360	5,538	5,610
Mobility Benefit	0	0	-1	-47	-298	-291	-312	-320
Reallocated Benefit	-18	-20	-21	-23	-32	-36	-40	-44
Refueling Benefit	-1	-1	-1	21	135	136	145	148
Total Consumer Benefit	2	2	2	-463	-5,839	-5,824	-6,035	-6,122
Net Consumer Benefit	2	2	2	26	-6,773	-6,712	-6,733	-6,761
Payback	0.0	0.0	0.0	-1.0	-1.0	-1.0	-2.0	-1.0

Table 512 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 3 - scen 3 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Total Fleet, Alt 3 - scen 3 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-250	-579	-744	-818	-847
Implicit Opportunity Cost	0	0	0	-143	-281	-385	-447	-481
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-20	-45	-59	-64	-67
Increase in Taxes/Fees	0	0	0	-14	-32	-42	-46	-48
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-426	-935	-1,230	-1,374	-1,441
Fuel Savings	-11	-12	-12	280	573	781	911	977
Mobility Benefit	0	0	0	-34	-70	-96	-114	-123
Reallocated Benefit	-9	-10	-11	-13	-15	-17	-19	-22
Refueling Benefit	-1	-1	-1	16	33	45	52	55
Total Consumer Benefit	2	2	1	-343	-691	-938	-1,096	-1,177
Net Consumer Benefit	2	2	1	83	245	291	278	263
Payback	0.0	0.0	0.0	-1.0	-2.3	-2.2	-2.6	-2.6

Table 513 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 3 - scen 3 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Passenger Car Fleet, Alt 3 - scen 3 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-229	-555	-858	-859	-883
Implicit Opportunity Cost	0	0	0	-128	-172	-350	-338	-356
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-18	312	284	286	284
Increase in Taxes/Fees	0	0	0	-13	222	202	204	202
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-388	-193	-722	-707	-751
Fuel Savings	-9	-10	-10	250	2,183	2,542	2,542	2,586
Mobility Benefit	0	0	-1	-29	-5	-45	-43	-48
Reallocated Benefit	-6	-7	-8	-9	-12	-14	-17	-19
Refueling Benefit	-1	-1	-1	15	129	150	150	151
Total Consumer Benefit	3	3	2	-304	-2,329	-2,752	-2,751	-2,804
Net Consumer Benefit	3	3	2	84	-2,136	-2,030	-2,044	-2,053
Payback	0.0	0.0	0.0	-1.0	-3.0	-4.0	-4.0	-4.0

Table 514 - Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 3 - scen 3 at a 7% Discount Rate (dollars), per Vehicle Model Year

Average Impacts to Consumers Relative to Alternative 0 (Baseline) for the Light Truck Fleet, Alt 3 - scen 3 at a 7% Discount Rate (dollars), per Vehicle Model Year								
Model Year	2024	2025	2026	2027	2028	2029	2030	2031
Price Increase	0	0	0	-259	-371	-424	-525	-557
Implicit Opportunity Cost	0	0	0	-149	-12	-1	-58	-75
Increase in Financing Cost	0	0	0	0	0	0	0	0
Increase in Insurance Cost	0	0	0	-21	688	684	676	674
Increase in Taxes/Fees	0	0	0	-15	490	487	482	480
Lost Consumer Surplus	0	0	0	0	1	1	1	1
Total Consumer Cost	0	0	0	-443	795	747	575	522
Fuel Savings	-11	-12	-14	291	4,009	4,001	4,139	4,196
Mobility Benefit	0	0	0	-36	-235	-230	-246	-252
Reallocated Benefit	-10	-11	-13	-14	-20	-23	-27	-30
Refueling Benefit	-1	-1	-1	17	98	100	106	108
Total Consumer Benefit	1	1	1	-359	-4,362	-4,354	-4,518	-4,587
Net Consumer Benefit	1	1	1	85	-5,158	-5,101	-5,094	-5,109
Payback	0.0	0.0	0.0	-1.0	-2.0	-2.0	-2.0	-2.0

A19. Environmental Impacts

Table 515 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Total Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Total Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	0.2	0.2	0.2
VOC Upstream	1.2	1.2	1.1
NOx Upstream	0.5	0.5	0.4
SO2 Upstream	0.1	0.1	0.1
PM Upstream	0.0	0.0	0.0
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	-1.2	-1.2	-1.1
VOC Tailpipe	-0.1	-0.1	-0.1
NOx Tailpipe	0.0	0.0	0.0
SO2 Tailpipe	0.0	0.0	0.0
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	-1.0	-1.0	-0.9
VOC Total	1.2	1.2	1.0
NOx Total	0.5	0.5	0.4
SO2 Total	0.1	0.1	0.1
PM Total	0.0	0.0	0.0

Table 516 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Passenger Car Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Passenger Car Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	1.2	1.2	1.2
VOC Upstream	6.5	6.5	6.5
NOx Upstream	2.5	2.5	2.5
SO2 Upstream	0.7	0.7	0.7
PM Upstream	0.2	0.2	0.2
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	72.7	72.7	72.8
VOC Tailpipe	4.3	4.3	4.3
NOx Tailpipe	1.4	1.4	1.4
SO2 Tailpipe	0.1	0.1	0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	73.9	73.9	74.0
VOC Total	10.8	10.8	10.8
NOx Total	3.9	3.9	3.9
SO2 Total	0.8	0.8	0.8
PM Total	0.5	0.5	0.5

Table 517 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Light Truck Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Light Truck Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	-1.0	-1.0	-1.0
VOC Upstream	-5.3	-5.3	-5.4
NOx Upstream	-2.0	-2.0	-2.1
SO2 Upstream	-0.5	-0.5	-0.5
PM Upstream	-0.1	-0.1	-0.2
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	-73.9	-73.9	-73.8
VOC Tailpipe	-4.4	-4.4	-4.4
NOx Tailpipe	-1.4	-1.4	-1.4
SO2 Tailpipe	-0.1	-0.1	-0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	-74.9	-74.9	-74.9
VOC Total	-9.6	-9.6	-9.7
NOx Total	-3.5	-3.5	-3.5
SO2 Total	-0.6	-0.6	-0.6
PM Total	-0.5	-0.5	-0.5

Table 518 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Total Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Total Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	0.2	0.2	0.2
VOC Upstream	0.9	0.9	0.8
NOx Upstream	0.4	0.4	0.3
SO2 Upstream	0.1	0.1	0.1
PM Upstream	0.0	0.0	0.0
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	-1.2	-1.2	-1.1
VOC Tailpipe	-0.1	-0.1	-0.1
NOx Tailpipe	0.0	0.0	0.0
SO2 Tailpipe	0.0	0.0	0.0
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	-1.0	-1.0	-0.9
VOC Total	0.9	0.9	0.8
NOx Total	0.3	0.3	0.3
SO2 Total	0.1	0.1	0.1
PM Total	0.0	0.0	0.0

Table 519 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Passenger Car Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Passenger Car Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	0.9	0.9	0.9
VOC Upstream	5.0	5.0	4.9
NOx Upstream	1.9	1.9	1.9
SO2 Upstream	0.5	0.5	0.5
PM Upstream	0.1	0.1	0.1
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	69.9	69.9	70.0
VOC Tailpipe	4.1	4.1	4.1
NOx Tailpipe	1.3	1.3	1.3
SO2 Tailpipe	0.1	0.1	0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	70.8	70.8	70.9
VOC Total	9.1	9.1	9.0
NOx Total	3.2	3.2	3.1
SO2 Total	0.6	0.6	0.6
PM Total	0.4	0.4	0.4

Table 520 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Light Truck Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) from the MY 2031 Light Truck Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	-0.8	-0.8	-0.8
VOC Upstream	-4.0	-4.0	-4.1
NOx Upstream	-1.5	-1.5	-1.6
SO2 Upstream	-0.4	-0.4	-0.4
PM Upstream	-0.1	-0.1	-0.1
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	-71.1	-71.1	-71.1
VOC Tailpipe	-4.2	-4.2	-4.2
NOx Tailpipe	-1.3	-1.3	-1.3
SO2 Tailpipe	-0.1	-0.1	-0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	-71.9	-71.9	-71.8
VOC Total	-8.2	-8.2	-8.3
NOx Total	-2.8	-2.8	-2.8
SO2 Total	-0.5	-0.5	-0.5
PM Total	-0.3	-0.3	-0.4

Table 521 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) Over Lifetimes of Vehicles Through 2031 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 2031 for the Total Fleet, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	12.8	12.8	11.1
VOC Upstream	68.4	68.3	58.9
NOx Upstream	26.1	26.1	22.5
SO2 Upstream	6.9	6.9	5.9
PM Upstream	1.9	1.9	1.6
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	-269.0	-268.9	-246.3
VOC Tailpipe	-26.8	-26.8	-24.6
NOx Tailpipe	-5.0	-5.0	-4.6
SO2 Tailpipe	1.1	1.1	0.9
PM Tailpipe	-0.3	-0.3	-0.3
Fleetwide Change in Total Emissions			
CO Total	-256.2	-256.1	-235.3
VOC Total	41.6	41.6	34.3
NOx Total	21.1	21.0	17.8
SO2 Total	7.9	7.9	6.8
PM Total	1.1	1.1	0.9

Table 522 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) Over Lifetimes of Vehicles Through 2031 for the Light Truck Fleet, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) Over Lifetimes of Vehicles Through 2031 for the Light Truck Fleet, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	-63.8	-63.8	-64.9
VOC Upstream	-339.4	-339.4	-345.1
NOx Upstream	-129.9	-129.9	-132.1
SO2 Upstream	-34.5	-34.5	-35.0
PM Upstream	-9.5	-9.5	-9.7
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	-6,023.8	-6,023.8	-6,014
VOC Tailpipe	-527.9	-527.9	-526.9
NOx Tailpipe	-103.4	-103.4	-103.2
SO2 Tailpipe	-5.3	-5.3	-5.4
PM Tailpipe	-8.1	-8.1	-8.1
Fleetwide Change in Total Emissions			
CO Total	-6,087.7	-6,087.6	-6,079
VOC Total	-867.3	-867.4	-872.0
NOx Total	-233.3	-233.3	-235.3
SO2 Total	-39.8	-39.8	-40.4
PM Total	-36.2	-36.2	-36.4

Table 523 - Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) Over Lifetimes of Vehicles Through 2031 for the Passenger Car Fleet, by Alternative (1,000 metric tons)

Incremental Change in Criteria Emissions Relative to Alternative 0 (Baseline) Over Lifetimes of Vehicles Through 2031 for the Passenger Car Fleet, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	76.7	76.7	76.0
VOC Upstream	407.8	407.8	404.0
NOx Upstream	156.0	156.0	154.5
SO2 Upstream	41.3	41.3	41.0
PM Upstream	11.4	11.4	11.3
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	5,754.8	5,754.9	5,767.7
VOC Tailpipe	501.1	501.1	502.3
NOx Tailpipe	98.4	98.4	98.6
SO2 Tailpipe	6.4	6.4	6.3
PM Tailpipe	7.7	7.7	7.7
Fleetwide Change in Total Emissions			
CO Total	5,831.5	5,831.5	5,843.7
VOC Total	908.9	908.9	906.3
NOx Total	254.3	254.3	253.1
SO2 Total	47.7	47.7	47.2
PM Total	37.4	37.4	37.3

Table 524 - Total Criteria Emissions from the MY 2031 Total Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2031 Total Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	2.8	2.8	2.7
VOC Upstream	14.6	14.6	14.5
NOx Upstream	5.6	5.6	5.6
SO2 Upstream	1.5	1.5	1.5
PM Upstream	0.4	0.4	0.4
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	166.3	166.3	166.4
VOC Tailpipe	9.8	9.8	9.8
NOx Tailpipe	3.2	3.2	3.2
SO2 Tailpipe	0.2	0.2	0.2
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	169.1	169.1	169.2
VOC Total	24.4	24.4	24.3
NOx Total	8.8	8.8	8.8
SO2 Total	1.7	1.7	1.7
PM Total	1.1	1.1	1.1

Table 525 - Total Criteria Emissions from the MY 2031 Passenger Car Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2031 Passenger Car Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	1.8	1.8	1.8
VOC Upstream	9.5	9.5	9.4
NOx Upstream	3.6	3.6	3.6
SO2 Upstream	1.0	1.0	1.0
PM Upstream	0.3	0.3	0.3
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	120.1	120.1	120.2
VOC Tailpipe	7.0	7.0	7.1
NOx Tailpipe	2.3	2.3	2.3
SO2 Tailpipe	0.1	0.1	0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	121.9	121.9	122.0
VOC Total	16.5	16.5	16.5
NOx Total	6.0	6.0	5.9
SO2 Total	1.1	1.1	1.1
PM Total	0.8	0.8	0.8

Table 526 - Total Criteria Emissions from the MY 2031 Light Truck Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2031 Light Truck Fleet in Calendar Year 2035, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	1.0	1.0	1.0
VOC Upstream	5.2	5.2	5.1
NOx Upstream	2.0	2.0	2.0
SO2 Upstream	0.5	0.5	0.5
PM Upstream	0.1	0.1	0.1
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	46.2	46.2	46.3
VOC Tailpipe	2.7	2.7	2.7
NOx Tailpipe	0.9	0.9	0.9
SO2 Tailpipe	0.1	0.1	0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	47.2	47.2	47.2
VOC Total	7.9	7.9	7.8
NOx Total	2.9	2.9	2.8
SO2 Total	0.6	0.6	0.6
PM Total	0.3	0.3	0.3

Table 527 - Total Criteria Emissions from the MY 2031 Total Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2031 Total Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	2.1	2.1	2.0
VOC Upstream	11.0	11.0	10.9
NOx Upstream	4.2	4.2	4.2
SO2 Upstream	1.1	1.1	1.1
PM Upstream	0.3	0.3	0.3
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	158.2	158.2	158.4
VOC Tailpipe	9.1	9.1	9.2
NOx Tailpipe	2.8	2.8	2.8
SO2 Tailpipe	0.2	0.2	0.2
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	160.3	160.3	160.4
VOC Total	20.1	20.1	20.0
NOx Total	7.0	7.0	6.9
SO2 Total	1.3	1.3	1.3
PM Total	0.8	0.8	0.8

Table 528 - Total Criteria Emissions from the MY 2031 Passenger Car Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2031 Passenger Car Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	1.3	1.3	1.3
VOC Upstream	7.2	7.2	7.1
NOx Upstream	2.7	2.7	2.7
SO2 Upstream	0.7	0.7	0.7
PM Upstream	0.2	0.2	0.2
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	115.2	115.2	115.3
VOC Tailpipe	6.6	6.6	6.6
NOx Tailpipe	2.0	2.0	2.0
SO2 Tailpipe	0.1	0.1	0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	116.5	116.5	116.6
VOC Total	13.8	13.8	13.8
NOx Total	4.8	4.8	4.7
SO2 Total	0.8	0.8	0.8
PM Total	0.6	0.6	0.6

Table 529 - Total Criteria Emissions from the MY 2031 Light Truck Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)

Total Criteria Emissions from the MY 2031 Light Truck Fleet in Calendar Year 2040, by Alternative (1,000 metric tons)			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fleetwide Change in Upstream Emissions			
CO Upstream	0.7	0.7	0.7
VOC Upstream	3.8	3.8	3.7
NOx Upstream	1.5	1.5	1.4
SO2 Upstream	0.4	0.4	0.4
PM Upstream	0.1	0.1	0.1
Fleetwide Change in Tailpipe Emissions			
CO Tailpipe	43.1	43.1	43.1
VOC Tailpipe	2.5	2.5	2.5
NOx Tailpipe	0.8	0.8	0.8
SO2 Tailpipe	0.1	0.1	0.1
PM Tailpipe	0.0	0.0	0.0
Fleetwide Change in Total Emissions			
CO Total	43.8	43.8	43.8
VOC Total	6.3	6.3	6.3
NOx Total	2.2	2.2	2.2
SO2 Total	0.4	0.4	0.4
PM Total	0.3	0.3	0.2

A20. Fleet Characteristics

Table 530 - Changes in Fleet Characteristics for Model Years 2024-2031 for Alt 1 - scen 1

Changes in Fleet Characteristics for Model Years 2024-2031 for Alt 1 - scen 1										
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total	Avg.
Changes in Fleet Size, Usage and Fuel Consumption										
Changes in Fleet Size (m)	0.0	0.0	0.0	0.3	0.7	0.8	0.9	0.8	3.4	0.4
Light Truck Share (%)	70%	69%	70%	72%	30%	30%	30%	30%	N/A	50%
Pass. Car Share (%)	30%	31%	30%	28%	70%	70%	70%	70%	N/A	50%
VMT from Rebound (b)	-0.1	-0.1	-0.1	-8.6	-15.4	-21.0	-23.7	-24.4	-93.3	-11.7
Fuel Volume - Total (b gallons)	-0.1	-0.1	-0.1	2.4	4.6	6.2	6.9	7.1	26.9	3.4
Fuel Volume - Lt. Truck (b gallons)	-0.1	-0.1	-0.1	1.9	-34.3	-32.4	-31.0	-29.5	-125.6	-15.7
Fuel Volume - Pass. Car (b gallons)	0.0	0.0	0.0	0.5	38.9	38.5	37.9	36.6	152.4	19.1
Changes in Fatalities by Source										
Fatalities from Rebound Miles	0	0	-1	-39	-69	-94	-107	-110	-420	-53
Fatalities from Curb Weight Change	0	0	0	-3	-2	3	2	0	0	0
Total Changes in Fatalities	-17	-19	-20	-48	-54	-69	-81	-89	-398	-50
Changes in Non-Fatal Safety Impacts										
Injuries from Rebound Miles (thousands)	0.0	-0.1	-0.1	-6.1	-10.8	-14.8	-16.7	-17.2	-66	-8
Injuries from Curb Weight (thousands)	0.0	0.0	0.0	-0.5	-0.3	0.4	0.4	0.1	0.0	0.0
Total Change in Injuries (thousands)	-2.6	-2.8	-3.1	-7.4	-8.4	-10.8	-12.7	-13.9	-61.5	-7.7
Property Damage from Rebound Miles (thousands)	-0.1	-0.2	-0.2	-18.9	-33.7	-46.0	-51.8	-53.3	-204.2	-25.5
Property Damage from Curb Weight (thousands)	0.0	0.0	0.0	-1.7	-0.9	1.3	1.0	0.1	-0.1	0.0
Total Property Damaged Vehicles (thousands)	-6.1	-6.8	-7.6	-21.2	-24.9	-32.3	-38.2	-42.1	-179.2	-22.4

Table 531 - Changes in Fleet Characteristics for Model Years 2024-2031 for Alt 2 - scen 2

Changes in Fleet Characteristics for Model Years 2024-2031 for Alt 2 - scen 2										
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total	Avg.
Changes in Fleet Size, Usage and Fuel Consumption										
Changes in Fleet Size (m)	0.0	0.0	0.0	0.3	0.7	0.8	0.9	0.8	3.4	0.4
Light Truck Share (%)	70%	69%	70%	72%	30%	30%	30%	30%	N/A	50%
Pass. Car Share (%)	30%	31%	30%	28%	70%	70%	70%	70%	N/A	50%
VMT from Rebound (b)	-0.1	-0.1	-0.1	-8.5	-15.3	-21.0	-23.7	-24.4	-93.2	-11.7
Fuel Volume - Total (b gallons)	-0.1	-0.1	-0.1	2.4	4.6	6.2	6.9	7.1	26.8	3.4
Fuel Volume - Lt. Truck (b gallons)	-0.1	-0.1	-0.1	1.9	-34.3	-32.4	-31.0	-29.5	-125.6	-15.7
Fuel Volume - Pass. Car (b gallons)	0.0	0.0	0.0	0.5	38.9	38.5	37.9	36.6	152.4	19.1
Changes in Fatalities by Source										
Fatalities from Rebound Miles	0	0	-1	-39	-69	-94	-107	-110	-420	-52
Fatalities from Curb Weight Change	0	0	0	-3	-2	3	2	0	0	0
Total Changes in Fatalities	-17	-19	-20	-48	-54	-69	-81	-89	-398	-50
Changes in Non-Fatal Safety Impacts										
Injuries from Rebound Miles (thousands)	0.0	-0.1	-0.1	-6.0	-10.8	-14.8	-16.7	-17.2	-66	-8
Injuries from Curb Weight (thousands)	0.0	0.0	0.0	-0.5	-0.3	0.4	0.4	0.1	0.0	0.0
Total Change in Injuries (thousands)	-2.6	-2.8	-3.1	-7.3	-8.4	-10.8	-12.7	-13.9	-61.5	-7.7
Property Damage from Rebound Miles (thousands)	-0.1	-0.2	-0.2	-18.8	-33.6	-46.0	-51.8	-53.3	-204.0	-25.5
Property Damage from Curb Weight (thousands)	0.0	0.0	0.0	-1.7	-0.9	1.3	1.0	0.1	-0.1	0.0
Total Property Damaged Vehicles (thousands)	-6.1	-6.8	-7.6	-21.1	-24.8	-32.3	-38.2	-42.1	-179.1	-22.4

Table 532 - Changes in Fleet Characteristics for Model Years 2024-2031 for Alt 3 - scen 3

Changes in Fleet Characteristics for Model Years 2024-2031 for Alt 3 - scen 3										
Model Year	2024	2025	2026	2027	2028	2029	2030	2031	Total	Avg.
Changes in Fleet Size, Usage and Fuel Consumption										
Changes in Fleet Size (m)	0.0	0.0	0.0	0.2	0.6	0.8	0.8	0.8	3.2	0.4
Light Truck Share (%)	70%	69%	70%	72%	30%	30%	30%	30%	N/A	50%
Pass. Car Share (%)	30%	31%	30%	28%	70%	70%	70%	70%	N/A	50%
VMT from Rebound (b)	-0.1	-0.1	-0.1	-7.1	-13.3	-18.1	-20.7	-21.5	-81.1	-10.1
Fuel Volume - Total (b gallons)	-0.1	-0.1	-0.1	2.0	4.0	5.3	6.1	6.2	23.2	2.9
Fuel Volume - Lt. Truck (b gallons)	-0.1	-0.1	-0.1	1.5	-34.5	-32.9	-31.5	-30.0	-127.7	-16.0
Fuel Volume - Pass. Car (b gallons)	0.0	0.0	0.0	0.5	38.5	38.2	37.6	36.3	151.0	18.9
Changes in Fatalities by Source										
Fatalities from Rebound Miles	0	0	-1	-32	-60	-81	-93	-97	-365	-46
Fatalities from Curb Weight Change	0	0	0	-3	-2	2	1	0	-2	0
Total Changes in Fatalities	-17	-18	-19	-41	-46	-59	-71	-79	-349	-44
Changes in Non-Fatal Safety Impacts										
Injuries from Rebound Miles (thousands)	0.0	-0.1	-0.1	-5.0	-9.4	-12.8	-14.6	-15.2	-57	-7
Injuries from Curb Weight (thousands)	0.0	0.0	0.0	-0.5	-0.4	0.3	0.2	-0.1	-0.4	0.0
Total Change in Injuries (thousands)	-2.4	-2.6	-2.9	-6.3	-7.2	-9.2	-11.0	-12.2	-53.9	-6.7
Property Damage from Rebound Miles (thousands)	-0.1	-0.2	-0.2	-15.7	-29.2	-39.7	-45.4	-47.1	-177.6	-22.2
Property Damage from Curb Weight (thousands)	0.0	0.0	0.0	-1.4	-1.1	0.8	0.6	-0.3	-1.4	-0.2
Total Property Damaged Vehicles (thousands)	-5.8	-6.4	-7.2	-17.9	-21.1	-27.5	-33.2	-37.1	-156.2	-19.5

A21. Liquid Fuel Consumption

Table 533 - Change in Liquid Fuel Consumed (b Gallons), Total Fleet, Undiscounted Over the Lifetime of the Model Year

Change in Liquid Fuel Consumed (b Gallons), Total Fleet, Undiscounted Over the Lifetime of the Model Year									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	117.3	-0.1	-0.1	2.4	4.6	6.2	6.9	7.1	144.3
Alt 2 - scen 2	117.3	-0.1	-0.1	2.4	4.6	6.2	6.9	7.1	144.3
Alt 3 - scen 3	117.3	-0.1	-0.1	2.0	4.0	5.3	6.1	6.2	140.7

Table 534 - Change in Liquid Fuel Consumed (b Gallons), Passenger Car Fleet, Undiscounted Over the Lifetime of the Model Year

Change in Liquid Fuel Consumed (b Gallons), Passenger Car Fleet, Undiscounted Over the Lifetime of the Model Year									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	27.7	0.0	0.0	0.5	38.9	38.5	37.9	36.6	180.1
Alt 2 - scen 2	27.7	0.0	0.0	0.5	38.9	38.5	37.9	36.6	180.1
Alt 3 - scen 3	27.7	0.0	0.0	0.5	38.5	38.2	37.6	36.3	178.7

Table 535 - Change in Liquid Fuel Consumed (b Gallons), Light Truck Fleet, Undiscounted Over the Lifetime of the Model Year

Change in Liquid Fuel Consumed (b Gallons), Light Truck Fleet, Undiscounted Over the Lifetime of the Model Year									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Alt 1 - scen 1	89.6	-0.1	-0.1	1.9	-34.3	-32.4	-31.0	-29.5	-35.8
Alt 2 - scen 2	89.6	-0.1	-0.1	1.9	-34.3	-32.4	-31.0	-29.5	-35.8
Alt 3 - scen 3	89.6	-0.1	-0.1	1.5	-34.5	-32.9	-31.5	-30.0	-38.0

Table 536 - Estimated Average Per Vehicle Fuel Costs (\$) for MY 2031 Total Fleet, by Alternative

Estimated Average Per Vehicle Fuel Costs (\$) for MY 2031 Total Fleet, by Alternative				
	Lifetime Fuel Expenditures		Lifetime Increase	
	7% Discount Rate	3% Discount Rate	7% Discount Rate	3% Discount Rate
Alt 0 - No Action	12,677	16,350	0	0
Alt 1 - scen 1	13,789	17,780	1,112	1,431
Alt 2 - scen 2	13,789	17,780	1,112	1,431
Alt 3 - scen 3	13,654	17,606	977	1,256

Table 537 - Estimated Average Per Vehicle Fuel Costs (\$) for MY 2031 Passenger Car Fleet, by Alternative

Estimated Average Per Vehicle Fuel Costs (\$) for MY 2031 Passenger Car Fleet, by Alternative				
	Lifetime Fuel Expenditures		Lifetime Increase	
	7% Discount Rate	3% Discount Rate	7% Discount Rate	3% Discount Rate
Alt 0 - No Action	9,352	11,926	0	0
Alt 1 - scen 1	12,020	15,401	2,668	3,475
Alt 2 - scen 2	12,020	15,401	2,668	3,475
Alt 3 - scen 3	11,938	15,296	2,586	3,371

Table 538 - Estimated Average Per Vehicle Fuel Costs (\$) for MY 2031 Light Truck Fleet, by Alternative

Estimated Average Per Vehicle Fuel Costs (\$) for MY 2031 Light Truck Fleet, by Alternative				
	Lifetime Fuel Expenditures		Lifetime Increase	
	7% Discount Rate	3% Discount Rate	7% Discount Rate	3% Discount Rate
Alt 0 - No Action	14,041	18,165	0	0
Alt 1 - scen 1	18,510	24,131	4,469	5,966
Alt 2 - scen 2	18,510	24,131	4,469	5,966
Alt 3 - scen 3	18,237	23,775	4,196	5,610

A22. Regulatory Costs per Vehicle, by Vehicle Type

Table 539 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Total)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Total)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,019	2,139	2,104
Alt 1 - scen 1	1,090	1,414	1,179
Alt 2 - scen 2	1,090	1,414	1,179
Alt 3 - scen 3	1,136	1,581	1,257

Table 540 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (BMW)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (BMW)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	1,831	1,854	1,844
Alt 1 - scen 1	1,199	1,308	1,208
Alt 2 - scen 2	1,199	1,308	1,208
Alt 3 - scen 3	1,199	1,308	1,208

Table 541 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Ferrari)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Ferrari)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,968	0	2,968
Alt 1 - scen 1	2,970	0	2,970
Alt 2 - scen 2	2,970	0	2,970
Alt 3 - scen 3	2,969	0	2,969

Table 542 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Ford)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Ford)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	1,004	1,954	1,874
Alt 1 - scen 1	1,187	770	932
Alt 2 - scen 2	1,187	770	932
Alt 3 - scen 3	1,554	771	1,075

Table 543 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (GM)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (GM)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,775	3,916	3,596
Alt 1 - scen 1	1,878	2,893	2,356
Alt 2 - scen 2	1,878	2,893	2,356
Alt 3 - scen 3	1,877	2,893	2,356

Table 544 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Honda)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Honda)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	1,652	1,156	1,420
Alt 1 - scen 1	618	1,699	649
Alt 2 - scen 2	618	1,699	649
Alt 3 - scen 3	618	1,699	648

Table 545 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Hyundai)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Hyundai)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,783	2,448	2,585
Alt 1 - scen 1	1,000	836	991
Alt 2 - scen 2	1,000	836	991
Alt 3 - scen 3	1,000	836	991

Table 546 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Ineos)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Ineos)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	0	2,735	2,735
Alt 1 - scen 1	0	2,735	2,735
Alt 2 - scen 2	0	2,735	2,735
Alt 3 - scen 3	0	2,735	2,735

Table 547 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (JLR)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (JLR)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	4,431	1,153	1,284
Alt 1 - scen 1	2,144	-373	274
Alt 2 - scen 2	2,144	-373	274
Alt 3 - scen 3	2,145	247	735

Table 548 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (KIA)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (KIA)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,689	2,733	2,715
Alt 1 - scen 1	1,665	0	1,665
Alt 2 - scen 2	1,665	0	1,665
Alt 3 - scen 3	1,665	0	1,665

Table 549 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Mazda)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Mazda)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,704	2,016	2,078
Alt 1 - scen 1	593	0	593
Alt 2 - scen 2	593	0	593
Alt 3 - scen 3	594	0	594

Table 550 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Mercedes-Benz)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Mercedes-Benz)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	1,166	1,584	1,442
Alt 1 - scen 1	299	1,212	709
Alt 2 - scen 2	299	1,212	709
Alt 3 - scen 3	552	1,212	848

Table 551 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Mitsubishi)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Mitsubishi)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	1,248	1,423	1,380
Alt 1 - scen 1	1,235	0	1,235
Alt 2 - scen 2	1,235	0	1,235
Alt 3 - scen 3	1,235	0	1,235

Table 552 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Nissan)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Nissan)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	1,259	1,851	1,513
Alt 1 - scen 1	745	1,713	885
Alt 2 - scen 2	745	1,713	885
Alt 3 - scen 3	745	1,827	902

Table 553 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Stellantis)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Stellantis)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	329	2,511	2,447
Alt 1 - scen 1	926	1,279	1,161
Alt 2 - scen 2	926	1,279	1,161
Alt 3 - scen 3	980	1,471	1,306

Table 554 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Subaru)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Subaru)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,738	1,079	1,285
Alt 1 - scen 1	44	0	44
Alt 2 - scen 2	44	0	44
Alt 3 - scen 3	182	0	182

Table 555 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Toyota)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Toyota)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	1,807	1,180	1,392
Alt 1 - scen 1	1,244	184	994
Alt 2 - scen 2	1,244	184	994
Alt 3 - scen 3	1,245	910	1,166

Table 556 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Volvo)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (Volvo)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,027	1,266	1,396
Alt 1 - scen 1	1,136	0	1,136
Alt 2 - scen 2	1,136	0	1,136
Alt 3 - scen 3	1,136	0	1,136

Table 557 - Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (VWA)

Estimated Average Per Vehicle Regulatory Costs (\$) for MY 2031, by Alternative for Manufacturer (VWA)			
	Passenger Cars	Light Trucks	Total Fleet
Alt 0 - No Action	2,334	2,125	2,188
Alt 1 - scen 1	1,447	807	1,413
Alt 2 - scen 2	1,447	807	1,413
Alt 3 - scen 3	1,558	1,163	1,537

A23. Change in Safety Parameters

Table 558 - Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1985-2031 for Total Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%

Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1985-2031 for Total Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%			
Category	Regulatory Alternative		
	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities	-584	-583	-525
Fatality Costs (\$ Billion, 3% Discount Rate)	-5.5	-5.5	-5.0
Fatality Costs (\$ Billion, 7% Discount Rate)	-3.5	-3.5	-3.1
Non-Fatal Crash Costs (\$ Billion, 3% Discount Rate)	-19.9	-19.9	-17.8
Non-Fatal Crash Costs (\$ Billion, 7% Discount Rate)	-12.5	-12.5	-11.2
Total Crash Costs (\$ Billion, 3% Discount Rate)	-25.4	-25.4	-22.8
Total Crash Costs (\$ Billion, 7% Discount Rate)	-16.0	-16.0	-14.3

Table 559 - Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1985-2031 for Passenger Car Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%

Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1985-2031 for Passenger Car Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%			
Category	Regulatory Alternative		
	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities	21,206	21,206	21,235
Fatality Costs (\$ Billion, 3% Discount Rate)	197.2	197.2	197.5
Fatality Costs (\$ Billion, 7% Discount Rate)	120.8	120.8	121.0
Non-Fatal Crash Costs (\$ Billion, 3% Discount Rate)	747.5	747.5	748.6
Non-Fatal Crash Costs (\$ Billion, 7% Discount Rate)	462.5	462.5	463.2
Total Crash Costs (\$ Billion, 3% Discount Rate)	944.7	944.7	946.1
Total Crash Costs (\$ Billion, 7% Discount Rate)	583.3	583.3	584.2

Table 560 - Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1985-2031 for Light Truck Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%

Vehicle-Mass-Related Fatality Impacts over the Lifetime of MY 1985-2031 for Light Truck Fleet, Compared to Alternative 0 (Baseline) - Fatalities Undiscounted, Dollars Discounted at 3% and 7%			
Category	Regulatory Alternative		
	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities	-21,790	-21,789	-21,760
Fatality Costs (\$ Billion, 3% Discount Rate)	-202.8	-202.8	-202.5
Fatality Costs (\$ Billion, 7% Discount Rate)	-124.3	-124.3	-124.1
Non-Fatal Crash Costs (\$ Billion, 3% Discount Rate)	-767.4	-767.4	-766.4
Non-Fatal Crash Costs (\$ Billion, 7% Discount Rate)	-475.0	-475.0	-474.4
Total Crash Costs (\$ Billion, 3% Discount Rate)	-970.2	-970.2	-968.9
Total Crash Costs (\$ Billion, 7% Discount Rate)	-599.3	-599.3	-598.5

Table 561 - Incremental Vehicle-Mass-Related Fatality Impacts by Model Year and Fleet, Alt 1 - scen 1 Compared to Alternative 0 (Baseline), Undiscounted

Incremental Vehicle-Mass-Related Fatality Impacts by Model Year and Fleet, Alt 1 - scen 1 Compared to Alternative 0 (Baseline), Undiscounted									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-102	-6	-6	-21	5,498	5,376	5,323	5,145	21,206
Light Trucks	-101	-13	-14	-27	-5,553	-5,445	-5,404	-5,234	-21,790
Total	-203	-19	-20	-48	-54	-69	-81	-89	-584

Table 562 - Incremental Vehicle-Mass-Related Fatality Impacts by Model Year and Fleet, Alt 2 - scen 2 Compared to Alternative 0 (Baseline), Undiscounted

Incremental Vehicle-Mass-Related Fatality Impacts by Model Year and Fleet, Alt 2 - scen 2 Compared to Alternative 0 (Baseline), Undiscounted									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-102	-6	-6	-21	5,498	5,376	5,323	5,145	21,206
Light Trucks	-101	-13	-14	-27	-5,552	-5,445	-5,404	-5,234	-21,789
Total	-203	-19	-20	-48	-54	-69	-81	-89	-583

Table 563 - Incremental Vehicle-Mass-Related Fatality Impacts by Model Year and Fleet, Alt 3 - scen 3 Compared to Alternative 0 (Baseline), Undiscounted

Incremental Vehicle-Mass-Related Fatality Impacts by Model Year and Fleet, Alt 3 - scen 3 Compared to Alternative 0 (Baseline), Undiscounted									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-97	-6	-6	-18	5,503	5,380	5,328	5,150	21,235
Light Trucks	-95	-12	-13	-23	-5,550	-5,440	-5,399	-5,229	-21,760
Total	-192	-18	-19	-41	-46	-59	-71	-79	-525

Table 564 - Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 1 - scen 1 Compared to Alternative 0 (Baseline), 3% Discount Rate

Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 1 - scen 1 Compared to Alternative 0 (Baseline), 3% Discount Rate									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-1.1	-0.1	-0.1	-0.2	53.4	50.7	48.7	45.7	197.2
Light Trucks	-1.0	-0.1	-0.1	-0.3	-53.9	-51.3	-49.5	-46.5	-202.8
Total	-2.1	-0.2	-0.2	-0.5	-0.5	-0.6	-0.7	-0.8	-5.5

Table 565 - Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 2 - scen 2 Compared to Alternative 0 (Baseline), 3% Discount Rate

Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 2 - scen 2 Compared to Alternative 0 (Baseline), 3% Discount Rate									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-1.1	-0.1	-0.1	-0.2	53.4	50.7	48.7	45.7	197.2
Light Trucks	-1.0	-0.1	-0.1	-0.3	-53.9	-51.3	-49.5	-46.5	-202.8
Total	-2.1	-0.2	-0.2	-0.5	-0.5	-0.6	-0.7	-0.8	-5.5

Table 566 - Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 3 - scen 3 Compared to Alternative 0 (Baseline), 3% Discount Rate

Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 3 - scen 3 Compared to Alternative 0 (Baseline), 3% Discount Rate									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-1.0	-0.1	-0.1	-0.2	53.5	50.8	48.8	45.8	197.5
Light Trucks	-0.9	-0.1	-0.1	-0.2	-53.9	-51.3	-49.4	-46.5	-202.5
Total	-1.9	-0.2	-0.2	-0.4	-0.4	-0.5	-0.6	-0.7	-5.0

Table 567 - Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 1 - scen 1 Compared to Alternative 0 (Baseline), 7% Discount Rate

Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 1 - scen 1 Compared to Alternative 0 (Baseline), 7% Discount Rate									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-0.8	0.0	0.0	-0.1	34.6	31.6	29.2	26.4	120.8
Light Trucks	-0.6	-0.1	-0.1	-0.2	-34.9	-32.0	-29.7	-26.8	-124.3
Total	-1.4	-0.1	-0.1	-0.3	-0.3	-0.4	-0.4	-0.5	-3.5

Table 568 - Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 2 - scen 2 Compared to Alternative 0 (Baseline), 7% Discount Rate

Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 2 - scen 2 Compared to Alternative 0 (Baseline), 7% Discount Rate									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-0.8	0.0	0.0	-0.1	34.6	31.6	29.2	26.4	120.8
Light Trucks	-0.6	-0.1	-0.1	-0.2	-34.9	-32.0	-29.7	-26.8	-124.3
Total	-1.4	-0.1	-0.1	-0.3	-0.3	-0.4	-0.4	-0.5	-3.5

Table 569 - Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 3 - scen 3 Compared to Alternative 0 (Baseline), 7% Discount Rate

Incremental Vehicle-Mass-Related Fatality Costs (\$ billion) by Model Year and Fleet, Alt 3 - scen 3 Compared to Alternative 0 (Baseline), 7% Discount Rate									
Model Year	1985-2024	2025	2026	2027	2028	2029	2030	2031	Total
Passenger Cars	-0.7	0.0	0.0	-0.1	34.6	31.6	29.2	26.4	121.0
Light Trucks	-0.6	-0.1	-0.1	-0.1	-34.9	-31.9	-29.6	-26.8	-124.1
Total	-1.3	-0.1	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-3.1

Table 570 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Total Fleet, 3% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Total Fleet, 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities			
Fatalities From Mass Changes	0	0	-2
Fatalities from Rebound Effect	-422	-421	-367
Fatalities from Sales/Scrappage	-162	-162	-156
Total Changes in Fatalities	-584	-583	-525
Fatality Costs (\$b)			
Fatality Costs From Mass Changes	0.0	0.0	0.0
Fatality Costs From Rebound Effect	-4.0	-4.0	-3.4
Fatality Costs from Sales/Scrappage	-1.5	-1.5	-1.6
Total - Fatality Costs (\$b)	-5.5	-5.5	-5.0
Non-Fatal Crash Costs (\$b)			
Non-Fatal Crash Costs From Mass Changes	0.0	0.0	-0.1
Non-Fatal Crash Costs From Rebound Effect	-15.0	-15.0	-13.1
Non-Fatal Crash Costs from Sales/Scrappage	-4.9	-4.9	-4.6
Total - Non-Fatal Crash Costs (\$b)	-19.9	-19.9	-17.8
Property Damage Costs (\$b)			
Property Damage Costs From Mass Changes	0.0	0.0	0.0
Property Damage Costs From Rebound Effect	-1.4	-1.4	-1.2
Property Damage Costs From Sales/Scrappage	-0.2	-0.2	-0.2
Total - Property Damage Costs (\$b)	-1.6	-1.6	-1.4
Societal Crash Costs (\$b)			
Crash Costs from Mass Changes	0.0	0.0	-0.1
Crash Costs from Rebound Effect	-20.4	-20.4	-17.7
Crash Costs from Sales/Scrappage	-6.6	-6.6	-6.3
Total - Societal Crash Costs (\$b)	-27.0	-27.0	-24.2

Table 571 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Passenger Car Fleet, 3% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Passenger Car Fleet, 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities			
Fatalities From Mass Changes	-79	-79	-84
Fatalities from Rebound Effect	787	787	810
Fatalities from Sales/Scrappage	20,498	20,498	20,509
Total Changes in Fatalities	21,206	21,206	21,235
Fatality Costs (\$b)			
Fatality Costs From Mass Changes	-0.7	-0.7	-0.8
Fatality Costs From Rebound Effect	7.3	7.3	7.5
Fatality Costs from Sales/Scrappage	190.6	190.6	190.8
Total - Fatality Costs (\$b)	197.2	197.2	197.5
Non-Fatal Crash Costs (\$b)			
Non-Fatal Crash Costs From Mass Changes	-2.8	-2.8	-3.0
Non-Fatal Crash Costs From Rebound Effect	27.5	27.5	28.3
Non-Fatal Crash Costs from Sales/Scrappage	722.8	722.8	723.3
Total - Non-Fatal Crash Costs (\$b)	747.5	747.5	748.6
Property Damage Costs (\$b)			
Property Damage Costs From Mass Changes	-0.3	-0.3	-0.3
Property Damage Costs From Rebound Effect	2.5	2.5	2.6
Property Damage Costs From Sales/Scrappage	66.5	66.5	66.5
Total - Property Damage Costs (\$b)	68.7	68.7	68.8
Societal Crash Costs (\$b)			
Crash Costs from Mass Changes	-3.8	-3.8	-4.1
Crash Costs from Rebound Effect	37.3	37.3	38.4
Crash Costs from Sales/Scrappage	979.9	979.9	980.5
Total - Societal Crash Costs (\$b)	1,013.4	1,013.4	1,014.8

Table 572 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Light Truck Fleet, 3% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Light Truck Fleet, 3% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities			
Fatalities From Mass Changes	80	80	81
Fatalities from Rebound Effect	-1,209	-1,208	-1,177
Fatalities from Sales/Scrappage	-20,661	-20,661	-20,664
Total Changes in Fatalities	-21,790	-21,789	-21,760
Fatality Costs (\$b)			
Fatality Costs From Mass Changes	0.7	0.7	0.8
Fatality Costs From Rebound Effect	-11.2	-11.2	-10.9
Fatality Costs from Sales/Scrappage	-192.3	-192.3	-192.4
Total - Fatality Costs (\$b)	-202.8	-202.8	-202.5
Non-Fatal Crash Costs (\$b)			
Non-Fatal Crash Costs From Mass Changes	2.8	2.8	2.9
Non-Fatal Crash Costs From Rebound Effect	-42.5	-42.5	-41.4
Non-Fatal Crash Costs from Sales/Scrappage	-727.7	-727.7	-727.9
Total - Non-Fatal Crash Costs (\$b)	-767.4	-767.4	-766.4
Property Damage Costs (\$b)			
Property Damage Costs From Mass Changes	0.3	0.3	0.3
Property Damage Costs From Rebound Effect	-3.9	-3.9	-3.8
Property Damage Costs From Sales/Scrappage	-66.6	-66.6	-66.7
Total - Property Damage Costs (\$b)	-70.2	-70.2	-70.2
Societal Crash Costs (\$b)			
Crash Costs from Mass Changes	3.8	3.8	4.0
Crash Costs from Rebound Effect	-57.6	-57.6	-56.1
Crash Costs from Sales/Scrappage	-986.6	-986.6	-987.0
Total - Societal Crash Costs (\$b)	1,040.4	1,040.4	-1,039.1

Table 573 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Total Fleet, 7% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Total Fleet, 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities			
Fatalities From Mass Changes	0	0	-2
Fatalities from Rebound Effect	-422	-421	-367
Fatalities from Sales/Scrappage	-162	-162	-156
Total Changes in Fatalities	-584	-583	-525
Fatality Costs (\$b)			
Fatality Costs From Mass Changes	0.0	0.0	0.0
Fatality Costs From Rebound Effect	-2.5	-2.5	-2.1
Fatality Costs from Sales/Scrappage	-1.0	-1.0	-1.0
Total - Fatality Costs (\$b)	-3.5	-3.5	-3.1
Non-Fatal Crash Costs (\$b)			
Non-Fatal Crash Costs From Mass Changes	0.0	0.0	-0.1
Non-Fatal Crash Costs From Rebound Effect	-9.4	-9.4	-8.2
Non-Fatal Crash Costs from Sales/Scrappage	-3.1	-3.1	-2.9
Total - Non-Fatal Crash Costs (\$b)	-12.5	-12.5	-11.2
Property Damage Costs (\$b)			
Property Damage Costs From Mass Changes	0.0	0.0	0.0
Property Damage Costs From Rebound Effect	-0.9	-0.9	-0.8
Property Damage Costs From Sales/Scrappage	-0.1	-0.1	-0.1
Total - Property Damage Costs (\$b)	-1.0	-1.0	-0.9
Societal Crash Costs (\$b)			
Crash Costs from Mass Changes	0.0	0.0	-0.1
Crash Costs from Rebound Effect	-12.8	-12.8	-11.1
Crash Costs from Sales/Scrappage	-4.2	-4.2	-4.0
Total - Societal Crash Costs (\$b)	-17.0	-17.0	-15.2

Table 574 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Passenger Car Fleet, 7% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Passenger Car Fleet, 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities			
Fatalities From Mass Changes	-79	-79	-84
Fatalities from Rebound Effect	787	787	810
Fatalities from Sales/Scrappage	20,498	20,498	20,509
Total Changes in Fatalities	21,206	21,206	21,235
Fatality Costs (\$b)			
Fatality Costs From Mass Changes	-0.5	-0.5	-0.5
Fatality Costs From Rebound Effect	4.4	4.4	4.5
Fatality Costs from Sales/Scrappage	116.8	116.8	116.9
Total - Fatality Costs (\$b)	120.8	120.8	121.0
Non-Fatal Crash Costs (\$b)			
Non-Fatal Crash Costs From Mass Changes	-1.8	-1.8	-1.8
Non-Fatal Crash Costs From Rebound Effect	16.8	16.8	17.4
Non-Fatal Crash Costs from Sales/Scrappage	447.4	447.4	447.7
Total - Non-Fatal Crash Costs (\$b)	462.5	462.5	463.2
Property Damage Costs (\$b)			
Property Damage Costs From Mass Changes	-0.2	-0.2	-0.2
Property Damage Costs From Rebound Effect	1.6	1.6	1.7
Property Damage Costs From Sales/Scrappage	43.1	43.1	43.1
Total - Property Damage Costs (\$b)	44.5	44.5	44.6
Societal Crash Costs (\$b)			
Crash Costs from Mass Changes	-2.4	-2.4	-2.5
Crash Costs from Rebound Effect	22.8	22.8	23.6
Crash Costs from Sales/Scrappage	607.3	607.3	607.7
Total - Societal Crash Costs (\$b)	627.8	627.8	628.7

Table 575 - Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Light Truck Fleet, 7% Percent Discount Rate, by Alternative

Change in Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Light Truck Fleet, 7% Percent Discount Rate, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Fatalities			
Fatalities From Mass Changes	80	80	81
Fatalities from Rebound Effect	-1,209	-1,208	-1,177
Fatalities from Sales/Scrappage	-20,660	-20,661	-20,665
Total Changes in Fatalities	-21,790	-21,789	-21,760
Fatality Costs (\$b)			
Fatality Costs From Mass Changes	0.5	0.5	0.5
Fatality Costs From Rebound Effect	-6.9	-6.9	-6.7
Fatality Costs from Sales/Scrappage	-117.8	-117.8	-117.9
Total - Fatality Costs (\$b)	-124.3	-124.3	-124.1
Non-Fatal Crash Costs (\$b)			
Non-Fatal Crash Costs From Mass Changes	1.7	1.7	1.8
Non-Fatal Crash Costs From Rebound Effect	-26.3	-26.2	-25.6
Non-Fatal Crash Costs from Sales/Scrappage	-450.5	-450.5	-450.6
Total - Non-Fatal Crash Costs (\$b)	-475.0	-475.0	-474.4
Property Damage Costs (\$b)			
Property Damage Costs From Mass Changes	0.2	0.2	0.2
Property Damage Costs From Rebound Effect	-2.5	-2.5	-2.4
Property Damage Costs From Sales/Scrappage	-43.2	-43.2	-43.2
Total - Property Damage Costs (\$b)	-45.5	-45.5	-45.5
Societal Crash Costs (\$b)			
Crash Costs from Mass Changes	2.3	2.3	2.4
Crash Costs from Rebound Effect	-35.6	-35.6	-34.7
Crash Costs from Sales/Scrappage	-611.5	-611.5	-611.6
Total - Societal Crash Costs (\$b)	-644.8	-644.8	-643.9

Table 576 - Change in Non-Fatal Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Total Fleet, by Alternative

Change in Non-Fatal Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Total Fleet, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Fatal Injuries			
Non-Fatal Injuries From Mass Changes	40	40	-388
Non-Fatal Injuries from Rebound Effect	-66,061	-66,000	-57,442
Non-Fatal Injuries from Sales/Scrappage	-21,039	-21,042	-20,263
Total Changes in Non-Fatal Injuries	-87,060	-87,002	-78,093
Property Damaged Vehicles			
Property Damaged Vehicles From Mass Changes	-86	-86	-1,419
Property Damaged Vehicles from Rebound Effect	-204,814	-204,623	-178,227
Property Damaged Vehicles from Sales/Scrappage	-25,625	-25,633	-25,085
Total Changes in Property Damaged Vehicles	-230,525	-230,342	-204,731

Table 577 - Change in Non-Fatal Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Passenger Car Fleet, by Alternative

Change in Non-Fatal Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Passenger Car Fleet, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Fatal Injuries			
Non-Fatal Injuries From Mass Changes	-12,420	-12,420	-13,104
Non-Fatal Injuries from Rebound Effect	122,832	122,833	126,471
Non-Fatal Injuries from Sales/Scrappage	3,208,709	3,208,730	3,210,216
Total Changes in Non-Fatal Injuries	3,319,121	3,319,143	3,323,583
Property Damaged Vehicles			
Property Damaged Vehicles From Mass Changes	-38,362	-38,362	-40,452
Property Damaged Vehicles from Rebound Effect	372,885	372,887	384,254
Property Damaged Vehicles from Sales/Scrappage	9,862,236	9,862,299	9,865,985
Total Changes in Property Damaged Vehicles	10,196,759	10,196,824	10,209,787

Table 578 - Change in Non-Fatal Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Light Truck Fleet, by Alternative

Change in Non-Fatal Safety Parameters from Alternative 0 (Baseline) for MY 1985-2031 for Light Truck Fleet, by Alternative			
Alternative	Alt 1 - scen 1	Alt 2 - scen 2	Alt 3 - scen 3
Non-Fatal Injuries			
Non-Fatal Injuries From Mass Changes	12,459	12,459	12,716
Non-Fatal Injuries from Rebound Effect	-188,893	-188,832	-183,913
Non-Fatal Injuries from Sales/Scrappage	-3,229,748	-3,229,771	-3,230,479
Total Changes in Non-Fatal Injuries	-3,406,182	-3,406,144	-3,401,676
Property Damaged Vehicles			
Property Damaged Vehicles From Mass Changes	38,276	38,276	39,033
Property Damaged Vehicles from Rebound Effect	-577,699	-577,510	-562,481
Property Damaged Vehicles from Sales/Scrappage	-9,887,861	-9,887,932	-9,891,070
Total Changes in Property Damaged Vehicles	-10,427,284	-10,427,166	-10,414,518