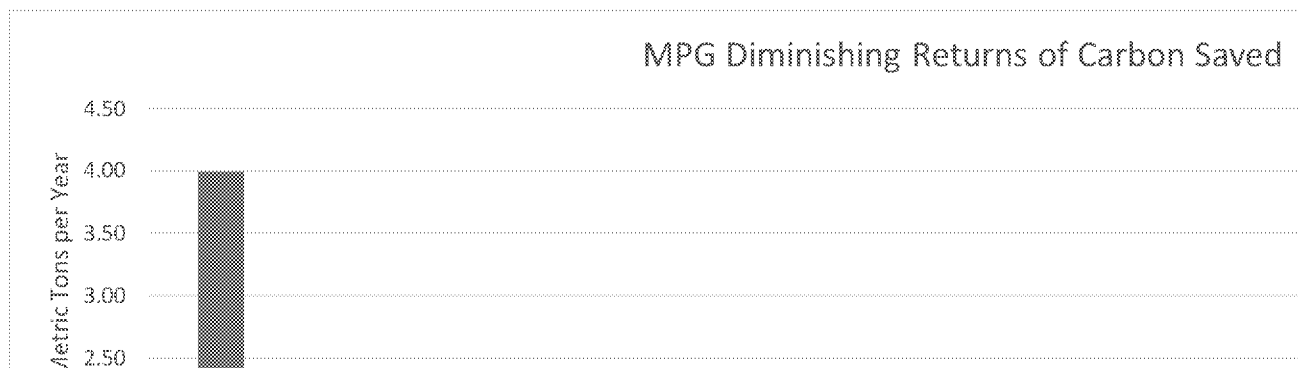


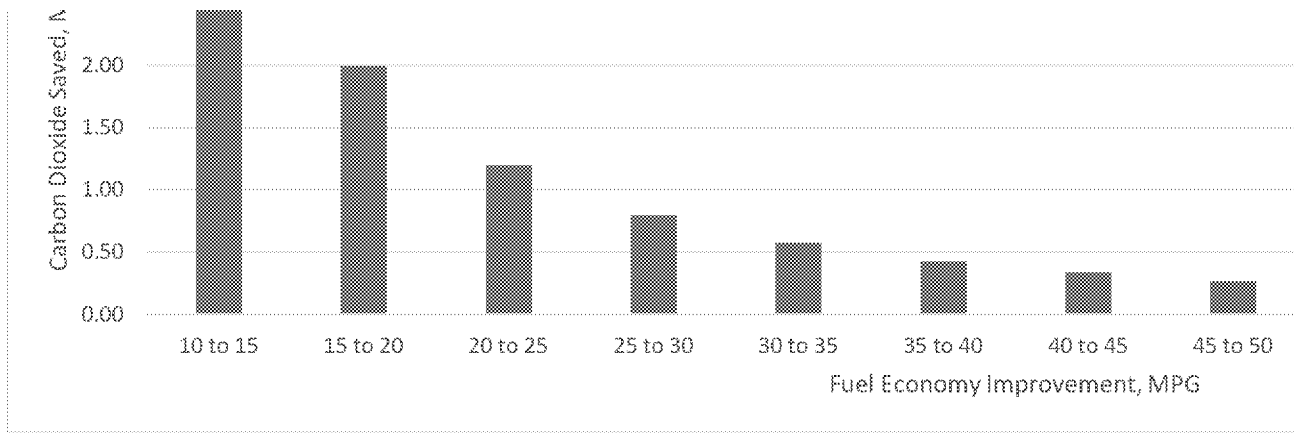
Price of Fuel  
Miles Per Year

\$2.50 dollars per gallon  
13,476 miles

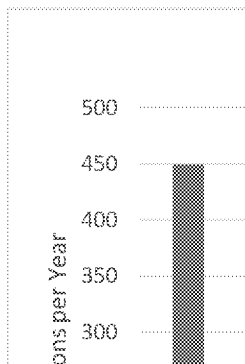
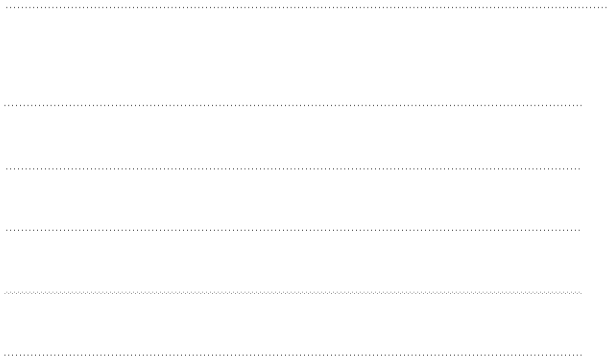
Miles per Gallon		Fuel Per Year		Annual Fuel Saved Gallons
Start	End	Start	End	
10	15	1348	898	449
15	20	898	674	225
20	25	674	539	135
25	30	539	449	90
30	35	449	385	64
35	40	385	337	48
40	45	337	299	37
45	50	299	270	30
50	55	270	245	25
55	60	245	225	20
60	65	225	207	17
65	70	207	193	15

Assumes: 8,887g of Carbon Dioxide per gallon of gasoline  
13,476 miles per year driven on average\*  
\*<https://www.fhwa.dot.gov/ohim/onh00/bar8.htm>





Annual Metric Tons of CO2 saved, Grams	Annual Savings, \$	
3.99	1123.00	10 to 15
2.00	561.50	15 to 20
1.20	336.90	20 to 25
0.80	224.60	25 to 30
0.57	160.43	30 to 35
0.43	120.32	35 to 40
0.33	93.58	40 to 45
0.27	74.87	45 to 50
0.22	61.25	50 to 55
0.18	51.05	55 to 60
0.15	43.19	60 to 65
0.13	37.02	65 to 70



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## MPG Diminishing of Fuel Savings

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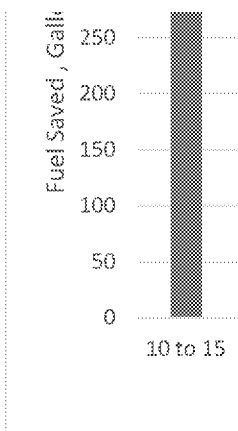
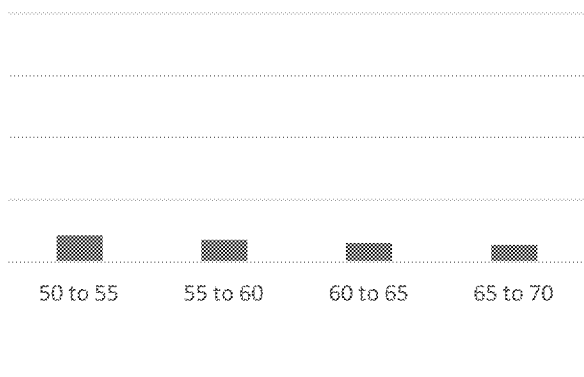
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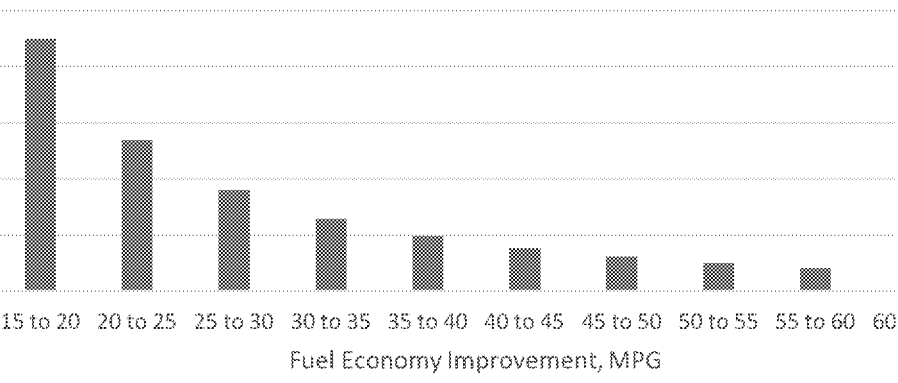
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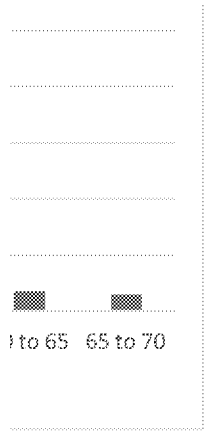
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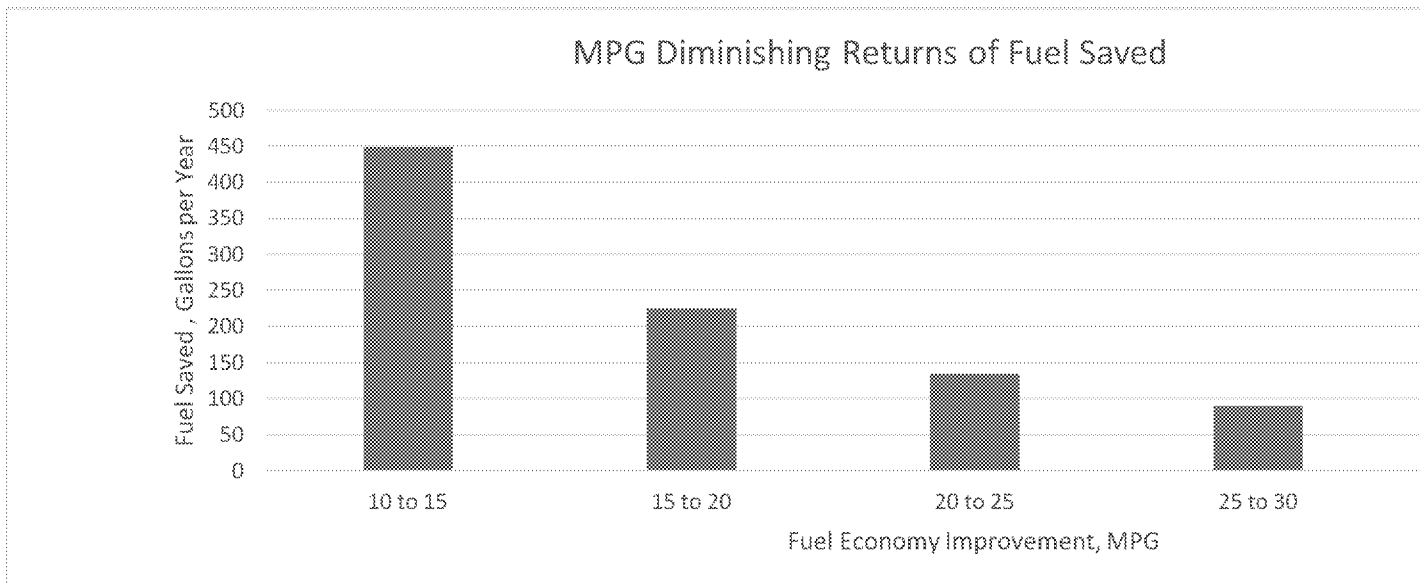


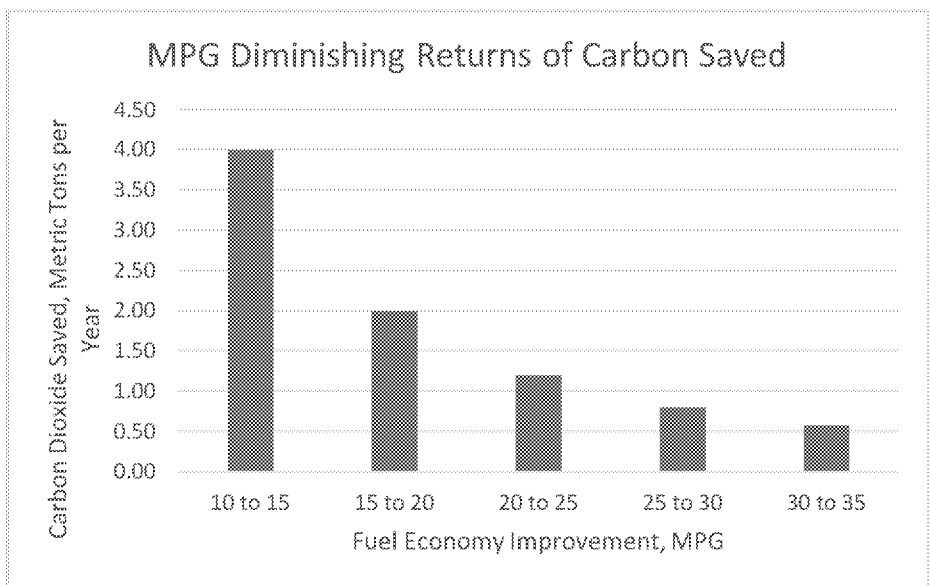
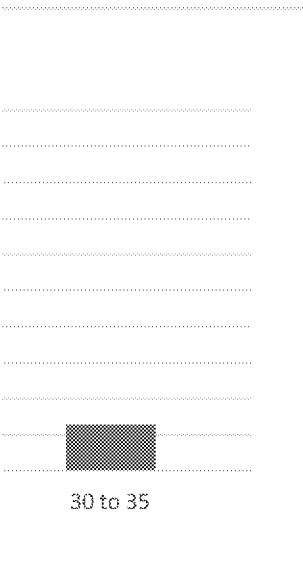
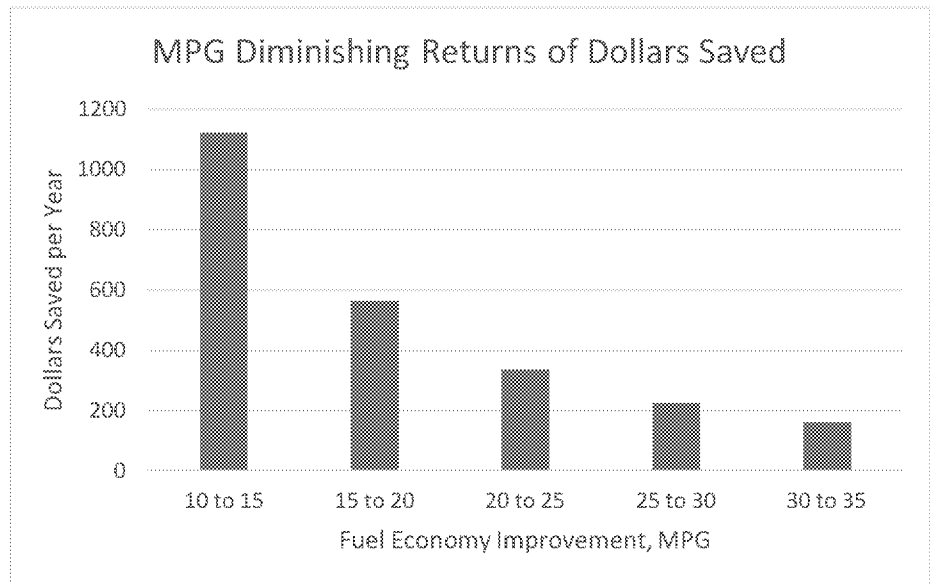






Just the first 5 Values----->





Simple Model

Gas Price, \$ per Gallon	2.5	Enter Inputs
Miles Driven Per Year	15000	
Fuel Economy Car 1, mpg	30	
Fuel Economy Car 2, higher than 1	35.2	
Savings per year	\$184.66	Assuming Added Technology Cost is Zero
Savings per month	\$15.39	
Savings per day	\$0.51	

Using Industry Cost and Tech Effectiveness to go from 30 to 35.2 mpg at the cost of 995\$

Gas Price, \$ per Gallon	2.5	Enter Inputs
Miles Driven Per Year	12000	
Fuel Economy Car 1, mpg	30	
Fuel Economy Car 2, higher than 1	35.2	
Initial Cost Increase for technology	\$995.00	See table
Interest Rate	3%	Bankrate.com
5 year loan monthly payment increase due to tech *	\$ 17.88	
Savings per year, 1st 5 years	-\$66.83	Assuming Industry Costs with 5 year loan
Savings per month	-\$5.57	
Savings per day	-\$0.18	
Savings per year, after loan is paid	\$147.73	After Loan is paid off
Savings per month, after loan is paid	\$12.31	
Savings per day, after loan is paid	\$0.40	

\* - Bankrate.com

Using NHTSA Cost and Tech Effectiveness to go from 30 to 36.17 mpg at the cost of 480\$

Gas Price, \$ per Gallon	2.5	Enter Inputs
Miles Driven Per Year	12000	

Fuel Economy Car 1, mpg	30	Enter inputs
Fuel Economy Car 2, higher than 1	36.17	
Initial Cost Increase for technology	\$480.00	See Table
Interest Rate	3%	
5 year loan monthly payment increase due to tech *	\$ 8.62	Bankrate.com
Savings per year, 1st 5 years	\$67.14	Assuming NHTSA Costs
Savings per month	\$5.60	
Savings per day	\$0.18	
Savings per year, after loan is paid	\$170.58	After Loan is paid off
Savings per month, after loan is paid	\$14.22	
Savings per day, after loan is paid	\$0.47	

\* - Bankrate.com





Large car

Base FE		% Improvement		Added Cost NHTS		New FE		Cumm. Cost NNTS		Base Engine Technology	Incremental Engine Technology
NHTSA	CAR	NHTSA	CAR	A	CAR	NNTSA	CAR	A	CAR	Column (A)	Column (B)
30.00	30.00	4.80%	2.20%	149	152	31.44	30.66	149	152	V6 PFI DOHC Fixed Valve	V6 PFI DOHC Fixed Valve with EFR-LUB
31.44	30.66	5.40%	5.40%	146	161	32.31564	32.31564	295	313	V6 PFI DOHC Fixed Valve with EFR-LUB	V6 PFI Variable Valve Timing (DCP)
32.32	32.32	3.90%	1.50%	168	240	33.57594996	32.8003746	463	553	V6 PFI Variable Valve Timing	V6 PFI Variable Valve Lift (Discrete)

33.58	32.80	1.50%	2.30%	290	257	33.29238022	33.55478322	753	810	V6 PFI Variable Valve Lift (w'/ Cylinder Deact)	V6 Gasoline Direct Injection
33.29	33.55	7.80%	4.90%	-455	32	36.17205631	35.19896759	298	842	V6 GDI	I4 Turbo 18 bar with cylinder reduction and DOHC
36.17	35.20	3.70%	1.80%	182	153	36.50132939	35.83254901	480	995	I4 Turbo 18 bar w/cylinder reduction	I4 Turbo I4 Turbo 24 bar w/50% downsizing (Level 2)
36.50	35.83	3.50%	1.40%	212	191	37.08668823	36.3342047	692	1186	I4 Turbo 24 bar	I4 Turbo 24 bar with CEGR

Small Car

Base FE		%		Added Cost NHTS		New FE		Cumm. Cost NNTS	
NHTSA	CAR	NHTSA	CAR	A	CAR	NNTSA	CAR	A	CAR
30.00	30.00	4.60%	2.10%	102	112	31.38	30.63	102	112
31.38	30.63	5.10%	3.20%	68	85	32.19213	31.61016	170	197
32.19	31.61	3.60%	1.60%	116	164	32.74812576	32.11592256	286	361
32.75	32.12	1.50%	2.10%	182	207	32.5976614	32.79035693	468	568
32.60	32.79	8.30%	8.70%	288	378	35.51195656	35.64311799	756	946