



Clean Car Roll-back

Estimated costs for American families if U.S. climate pollution and fuel economy standards are relaxed

July 12, 2018

MJB & A

U.S. Climate Pollution and Fuel Economy Standards

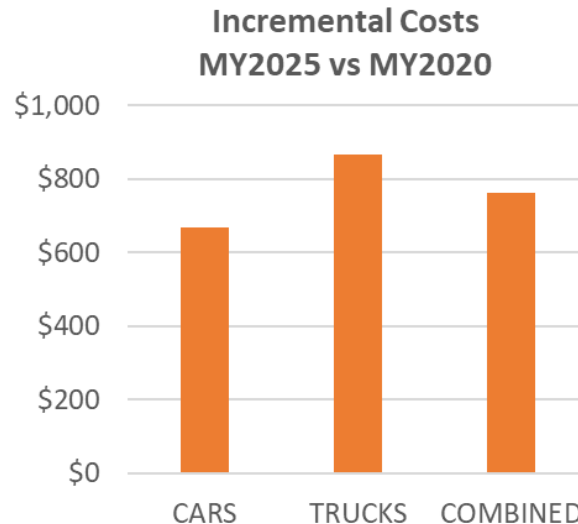
Save Families Money

- On May 30, 2018 the EPA and NHTSA forwarded to OMB a draft proposal to dramatically roll back the current U.S. climate pollution and Corporate Average Fuel Economy (CAFE) program. The current standards require gradual climate pollution reductions every year, which will spur increases in fuel efficiency for all new vehicles sold between now and 2025
- The exact details of this proposal are unknown, but it reportedly recommends capping U.S. climate pollution and fuel economy targets at model year 2020 – with no further increases in later years
- This analysis indicates that rolling back the current U.S. climate pollution and fuel economy standards in this way will **cost the average American family as much as \$500 per year after 2025**
- Families in every state stand to lose money due to higher annual gasoline costs – but those in some of the lowest income states will likely lose the most because they do more driving every year
- More stringent standards also protect families against rising gas prices – keeping the model year 2025 standards will save the average U.S. family an additional \$85/year for every \$0.50/gallon increase in gasoline prices
- Compared to vehicles that meet Model Year 2020 CAFE standards, **life-time savings** from vehicles that meet the current Model Year 2025 standards will be at least **\$2,800 more for cars** and at least **\$4,500 more for light trucks**

How do Families Save Money with Clean Cars?

Monthly fuel cost savings outweigh increased vehicle costs

More stringent U.S. climate pollution and fuel economy standards will add \$600 - \$800 to vehicle purchase costs...



**FAMILIES WILL
START SAVING
MONEY RIGHT AWAY
– AND CONTINUE
SAVING AS LONG AS
THEY OWN THE
VEHICLE**

.... but monthly fuel cost savings will be greater than increased monthly car and insurance payments

One New Vehicle	Per Month		
Incr car payment ¹	\$13.80		
Fuel Savings	(\$22.03)	Per year	6 years
NET SAVINGS	(\$8.23)	(\$98.76)	(\$592.56)
			Typical life of new car loan ²

¹ Incremental car payment includes sales tax and additional insurance cost

² Does not include potential increase in 6-year resale value due to higher fuel economy

Based on \$761 incremental purchase cost, 6 year new car loan at 4.25%, fuel cost \$3.19/gallon, and monthly fuel savings of 6.9 gallons

Annual Savings for the Average U.S. Family with Clean Cars

The average U.S. family owns **two cars** and drives **23,030 miles** per year.

For this family **net savings** from MY2025 U.S. climate pollution and fuel economy standards could be **over \$500/year** and **over \$3,000** during the time they own MY2025 vehicles¹, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$85 for every \$0.50/gallon increase in gasoline prices

Net Savings ² AVERAGE U.S. FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$202	\$512
6 Years ³ <i>Typical time a family owns a car</i>	\$1,212	\$3,072

¹ Annual savings could be even higher for the next new vehicles they purchased, if U.S. Climate pollution and fuel economy standards continued to increase each year.

² Based on gasoline price projections from U.S. Energy Information Administration. Reference Case price averages \$3.19/gal, High Oil Price Case price averages \$5.02/gallon between 2025 and 2031 (constant 2017 dollars)

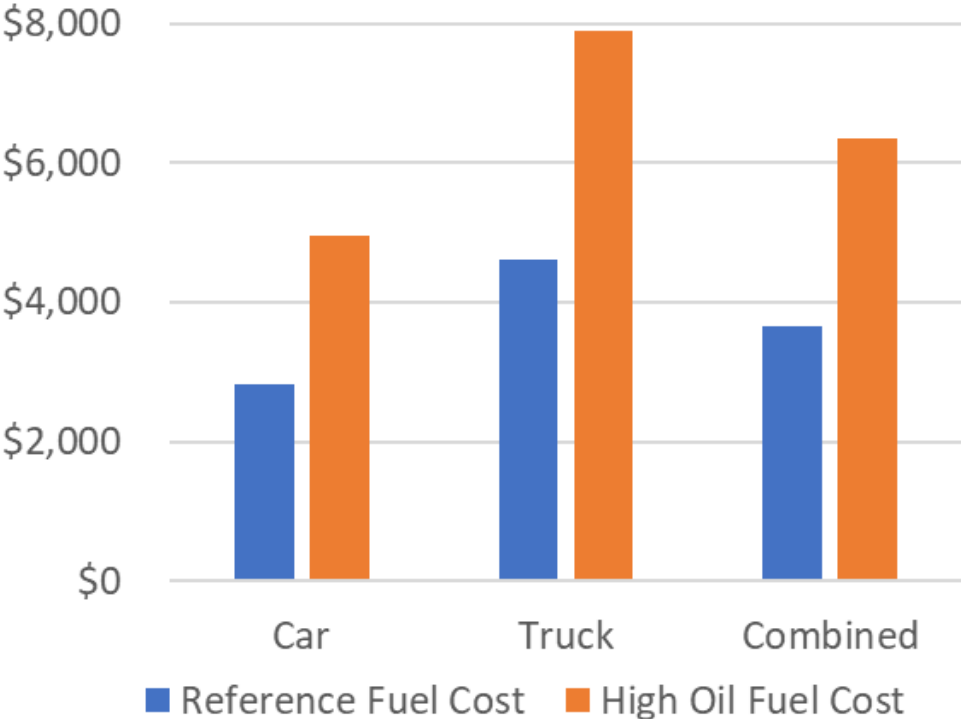
³ 6-year savings does not include potential increase in 6-year resale value due to higher fuel economy.

Life-time Savings for MY2025 Clean Car Vehicles

Over their entire life (typically multiple owners) cars on average travel over **184,000 miles** and light trucks travel more than **214,000 miles**.

Compared to MY2020 vehicles, over their life-time **MY2025 cars could save up to \$5,000** and **MY2025 trucks could save up to \$8,000**, depending on fuel costs.

Net Life-time Savings
Fleet Average MY2025 vs MY2020



Families in some of Poorer States Could Save the Most

- Family savings will vary based on how many cars they own, how much they drive, and how expensive gasoline is
- Families in some of the states with lowest median income on average own more cars and drive more miles than people in wealthier states – the average family in these states will suffer more from rising gas prices, and will save the most from more stringent climate pollution and fuel economy standards
- Examples of states with lower than average median income and higher than average family savings:
 - ✓ Mississippi
 - ✓ Alabama
 - ✓ New Mexico
 - ✓ Oklahoma
 - ✓ North Carolina
 - ✓ Florida
 - ✓ Indiana
 - ✓ Georgia

Annual Savings for Average Mississippi Family

The average **Mississippi** family owns **1.8 cars** and drives **32,209 miles** per year.

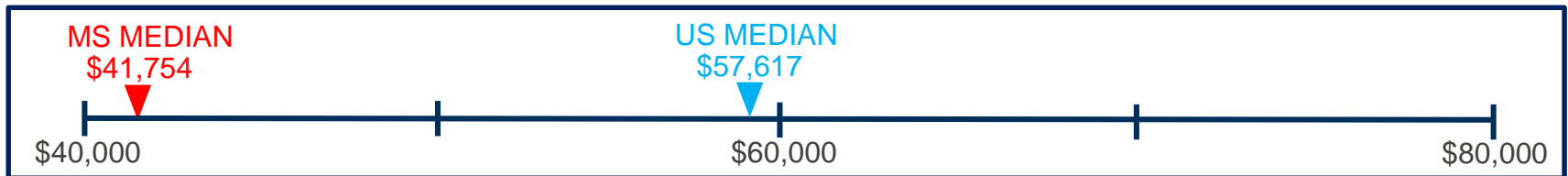
For this family *net savings* from MY2025 U.S. climate pollution and fuel economy standards could be *as high as \$800/year* and *almost \$4,800* during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$118 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE MS FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$401	\$800
6 Years ¹ <i>Typical time a family owns a car</i>	\$2,405	\$4,799

Fuel costs in Mississippi are 92% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



Annual Savings for Average Alabama Family

The average **Alabama** family owns **2.7 cars** and drives **31,786 miles** per year.

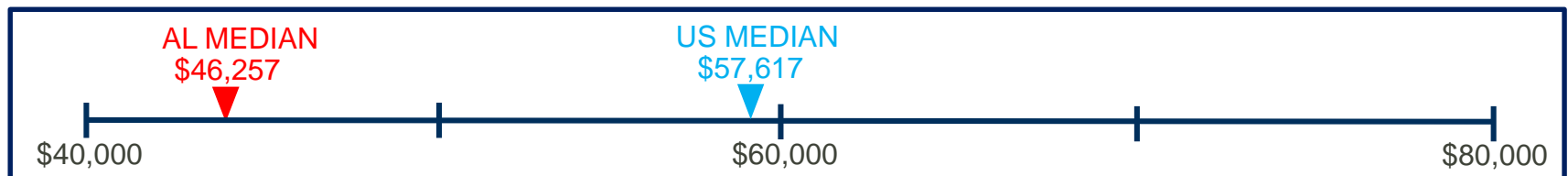
For this family *net savings* from MY2025 U.S. climate pollution and fuel economy standards could be *almost \$630/year* and *almost \$3,800* during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$117 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE AL FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$236	\$629
6 Years ¹ <i>Typical time a family owns a car</i>	\$1,414	\$3,777

Fuel costs in Alabama are 92% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



Annual Savings for Average New Mexico Family

The average **New Mexico** family owns **2.3 cars** and drives **29,783 miles** per year.

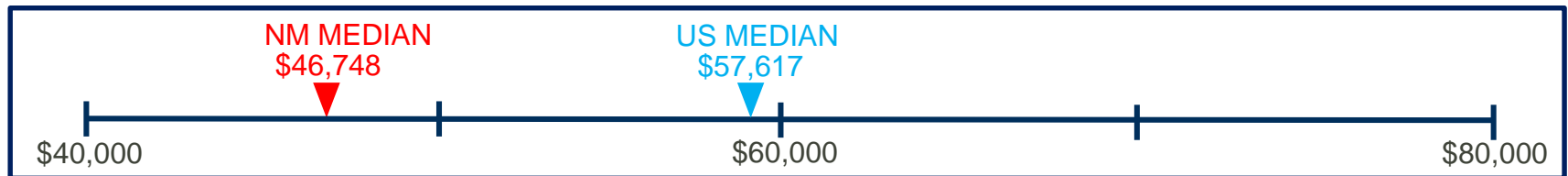
For this family **net savings** from MY2025 U.S. climate pollution and fuel economy standards could be **almost \$670/year** and **almost \$4,000** during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$109 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE NM FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$282	\$666
6 Years ¹ <i>Typical time a family owns a car</i>	\$1,690	\$3,994

Fuel costs in New Mexico are 96% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



Annual Savings for Average Oklahoma Family

The average Oklahoma family owns 2.2 cars and drives 29,243 miles per year.

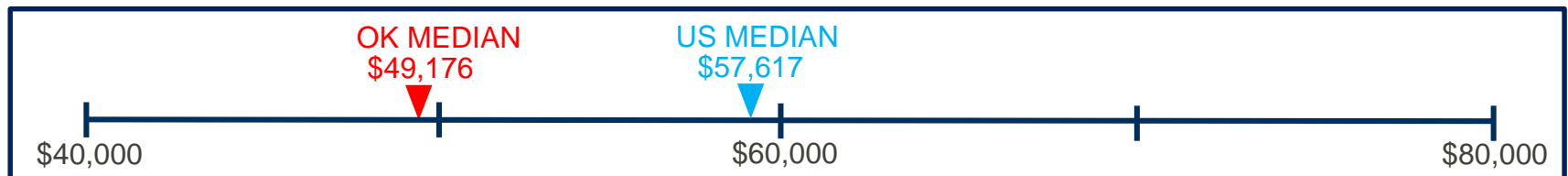
For this family *net savings* from MY2025 U.S. climate pollution and fuel economy standards could be *over \$620/year* and *over \$3,700* during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$107 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE OK FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$260	\$621
6 Years ¹ <i>Typical time a family owns a car</i>	\$1,561	\$3,725

Fuel costs in Oklahoma are 92% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



¹ Does not include potential increase in 6-year resale value due to higher fuel economy

Annual Savings for Average North Carolina Family

The average North Carolina family owns 1.9 cars and drives 25,365 miles per year.

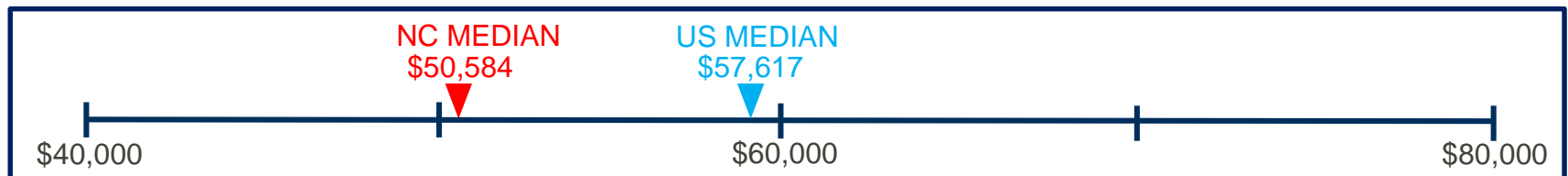
For this family *net savings* from MY2025 U.S. climate pollution and fuel economy standards could be *over \$600/year* and *over \$3,600* during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$93 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE NC FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$272	\$611
6 Years ¹ <i>Typical time a family owns a car</i>	\$1,630	\$3,664

Fuel costs in North Carolina are 99% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



¹ Does not include potential increase in 6-year resale value due to higher fuel economy

Annual Savings for Average Florida Family

The average Florida family owns 1.9 cars and drives 24,364 miles per year.

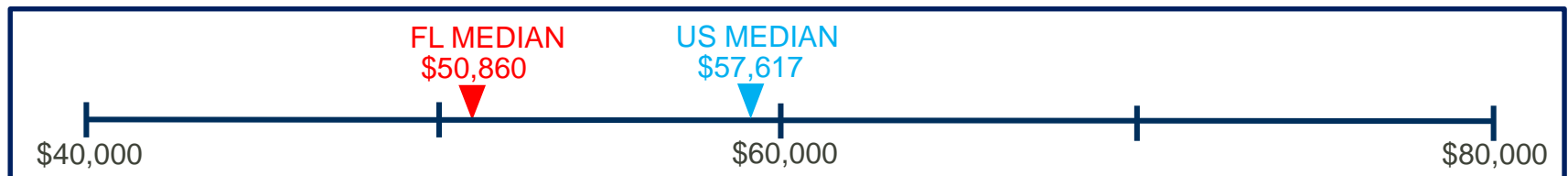
For this family *net savings* from MY2025 U.S. climate pollution and fuel economy standards could be *over \$570/year* and *over \$3,400* during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$90 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE FL FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$247	\$573
6 Years ¹ <i>Typical time a family owns a car</i>	\$1,483	\$3,437

Fuel costs in Florida are 99% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



¹ Does not include potential increase in 6-year resale value due to higher fuel economy

Annual Savings for Average Indiana Family

The average **Indiana** family owns **2.2 cars** and drives **28,230 miles** per year.

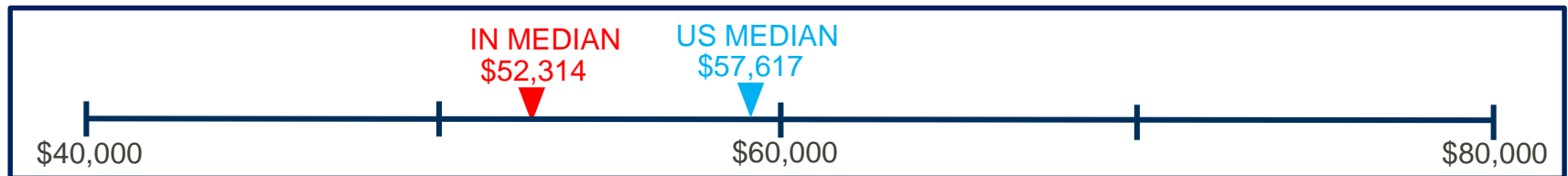
For this family *net savings* from MY2025 U.S. climate pollution and fuel economy standards could be *as high as \$650/year* and *almost \$3,900* during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$104 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE IN FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$279	\$650
6 Years ¹ <i>Typical time a family owns a car</i>	\$1,676	\$3,898

Fuel costs in Indiana are 97% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



Annual Savings for Average Georgia Family

The average Georgia family owns 2.1 cars and drives 27,670 miles per year.

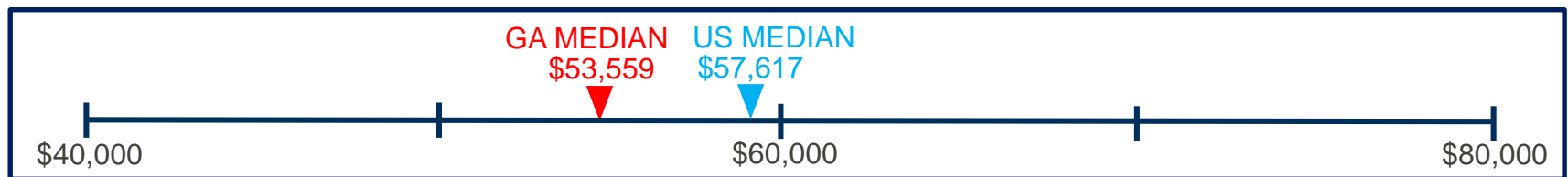
For this family *net savings* from MY2025 U.S. climate pollution and fuel economy standards could be *almost \$670/year* and *over \$3,900* during the time they own MY2025 vehicles, depending on fuel costs (High Oil Price)

Annual family savings will increase by \$102 for every \$0.50/gallon increase in gasoline prices

Net Savings AVERAGE GA FAMILY (2017\$)		
	Reference	High Oil Price
One Year	\$296	\$666
6 Years ¹ <i>Typical time a family owns a car</i>	\$1,775	\$3,994

Fuel costs in Georgia are 99% of the US average

HOUSEHOLD INCOME



AVERAGE FAMILY ANNUAL SAVINGS FROM MY2025 CAFE STANDARDS (REF CASE)



APPENDIX

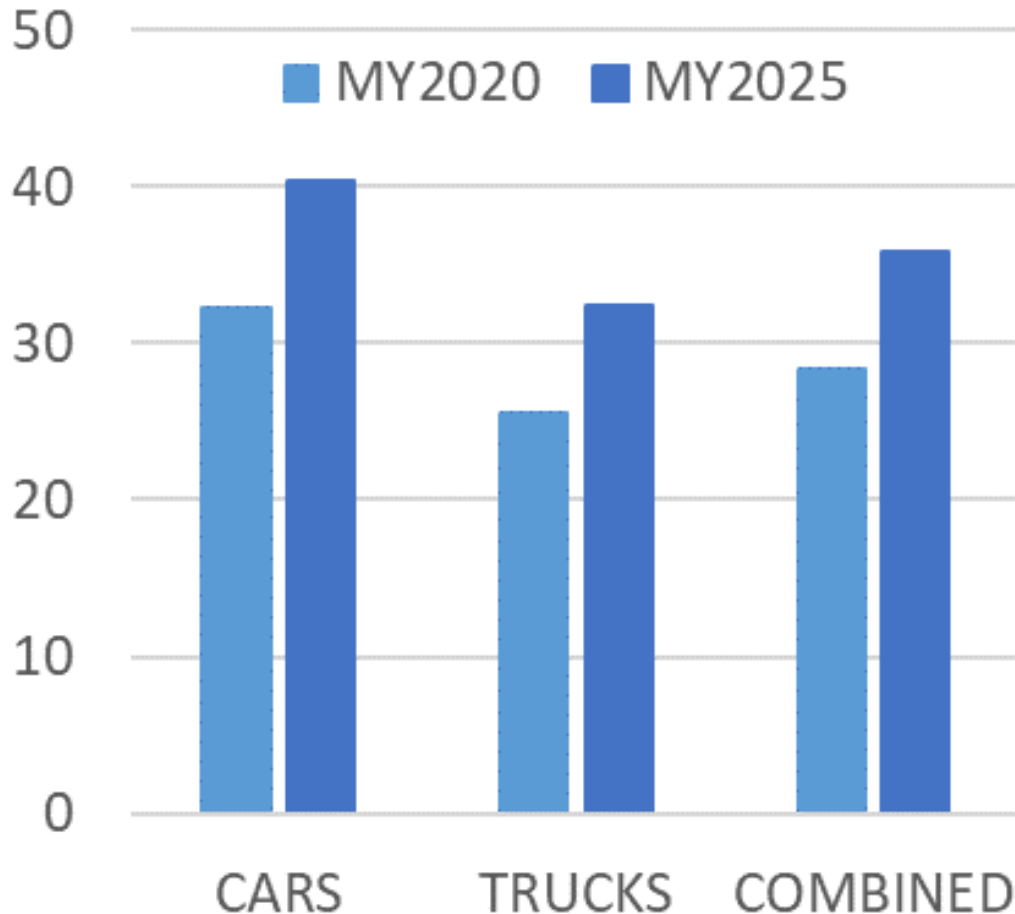
REFERENCES

Metric	Data Sources & Methodology
Incremental Vehicle Purchase Costs	<ul style="list-style-type: none"> EPA's OMEGA model was used to calculate fleet average incremental costs, for vehicles meeting MY2020 and MY2025 CAFE standards, compared to MY2015 vehicles OMEGA technology cost input assumptions were taken from the ICCT report: <i>"Efficiency Technology and Cost Assessment for U.S. 2020-2025 Light-Duty Vehicles"</i>, March 2017
Incremental Vehicle Ownership Costs	<ul style="list-style-type: none"> Incremental vehicle purchase costs were increased by 5.46% (sales tax) and the incremental monthly loan payment was calculated assuming a 72 month new car loan at 4.25% annual interest rate. Incremental annual insurance costs of 1.8% of incremental purchase price were added to the incremental loan payment.
Vehicle Fuel Economy	<ul style="list-style-type: none"> OMEGA results for fleet average CO₂ emissions (g/mi) were converted to gallons/mi and miles/gallon (MPG) assuming 8,788 g/gallon of CO₂. These MPG values, which represent CAFE compliance levels, were multiplied by 80%, to estimate "real world" fuel economy of compliant vehicles, consistent with EPA/NHTSA test data.
Fuel Costs	<ul style="list-style-type: none"> Energy Information Administration, <i>Annual Energy Outlook 2018</i>, Table 3, Energy Costs by Sector and Source, Transportation – Motor Gasoline; Reference Case and High Oil Cost Case For state-level analyses, regional fuel costs from Tables 3.1 – 3.9 were used to calculate state fuel costs (\$/gal) relative to US average fuel costs, for both the reference case and high oil price cases
Vehicle Usage	<ul style="list-style-type: none"> US-average and state-average annual miles per vehicle, and vehicles per household, were calculated based on U.S. Federal Highway Administration data on vehicles by state (Table MV-1, 2016) and vehicle miles by state (Table VM-2, 2016) and U.S. Census Bureau data on the number of households by state (occupied housing units, 2016) Life-time mileage per vehicle is assumed to be 184,789 miles for cars, and 214,997 miles for light trucks, consistent with assumptions used by EPA and NHTSA

Projected Fleet Average Fuel Economy (MPG)

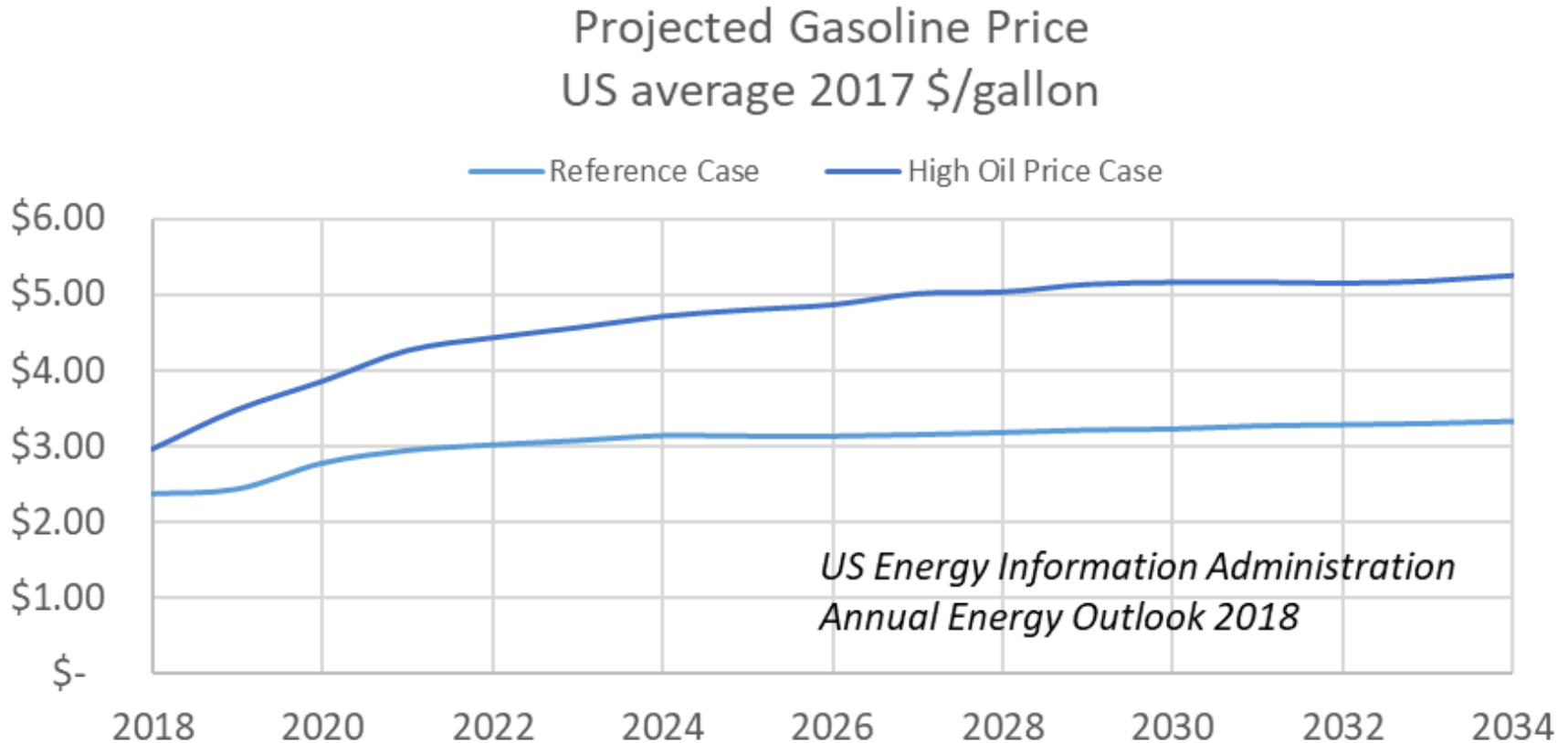
Current CAFE standards

Fleet Average MPG



- Based on EPA's OMEGA model
- This represents expected "real world" fuel economy (EPA window sticker), which is 20% lower than fuel economy measured during CAFE compliance testing

Gasoline Price Projections



This chart shows projected prices in constant 2017 dollars, without inflation. Nominal gasoline prices (including inflation) are projected to reach \$4.90/gallon in 2034 under the Reference case, and \$8.71/gallon under the High Oil Price case



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