

Transportation Energy Demand Forecast

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Transportation Energy Demand Cases

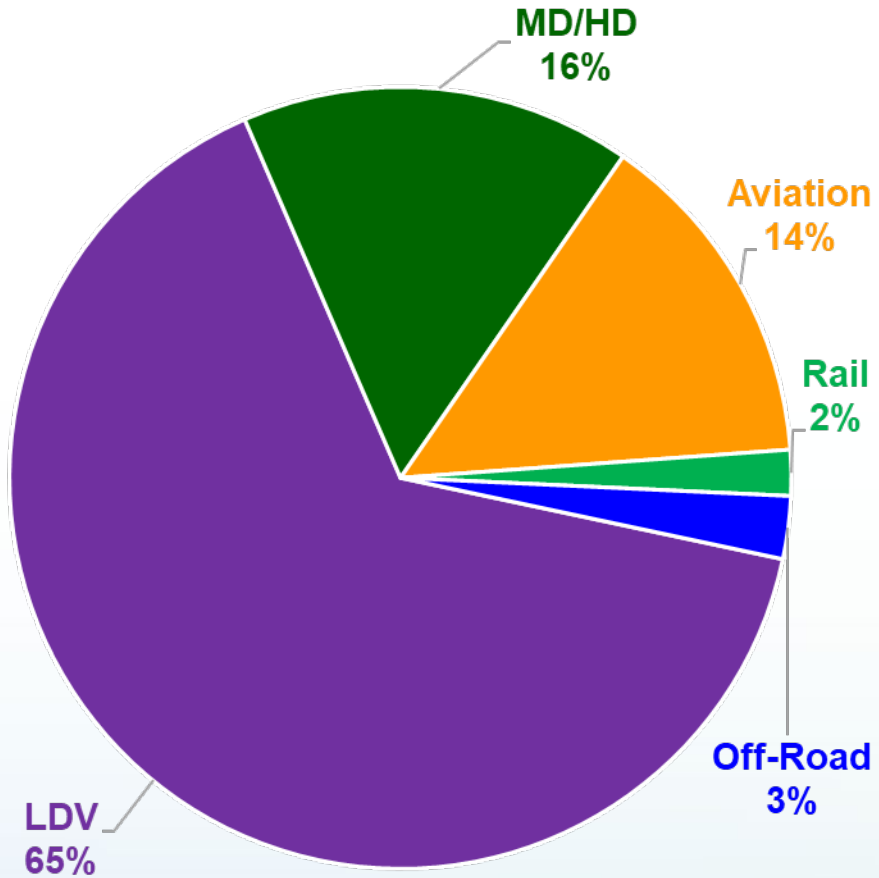
Demand cases represent different levels of transportation electricity demand

| Demand Case | Population | Income | Petroleum Fuel Prices | Electricity, Natural Gas, and Hydrogen Prices |
|-------------|------------|--------|-----------------------|---|
| High Demand | High | High | High | Low |
| Mid | Mid | Mid | Mid | Mid |
| Low Demand | Low | Low | Low | High |

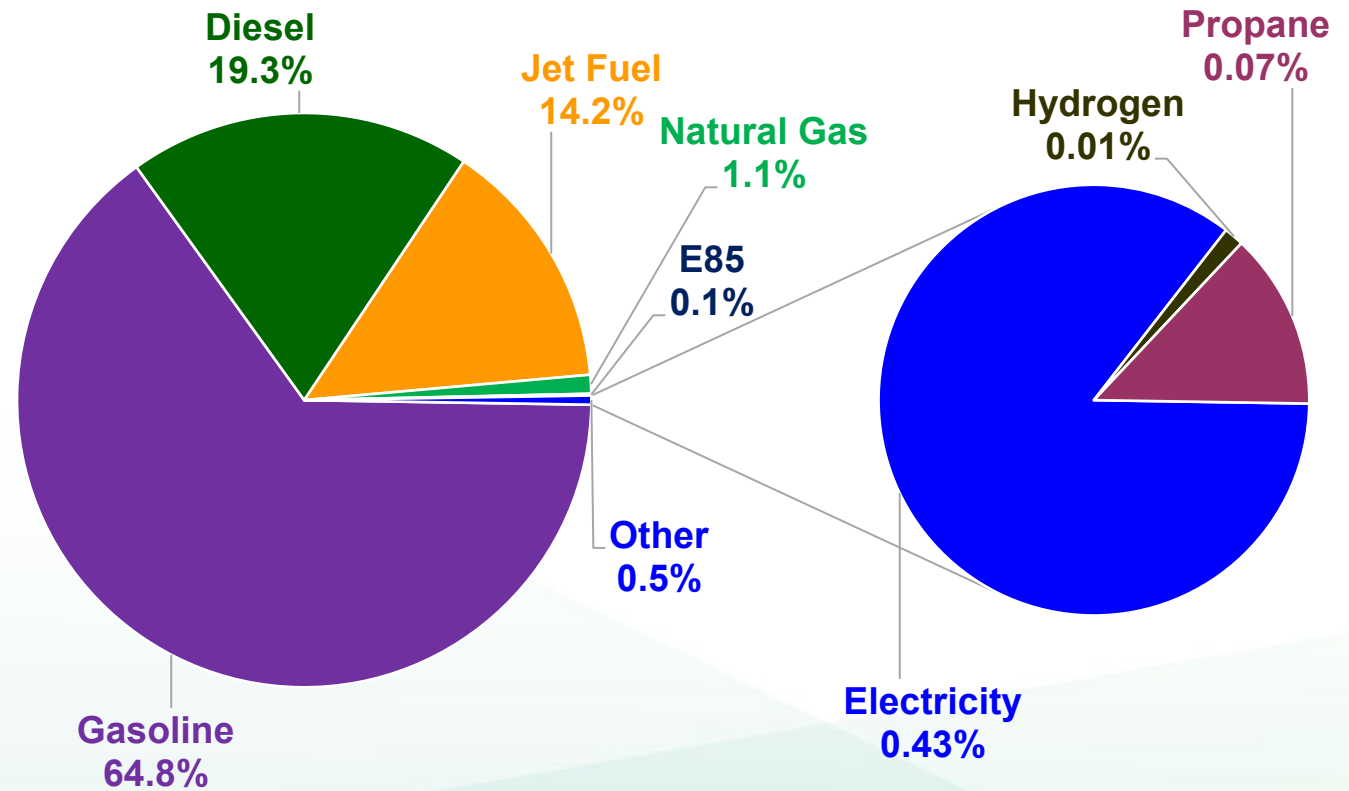


2020 Distribution of Transportation Energy (GGE) 65% LDV, 65% Gasoline

Distribution by Sector



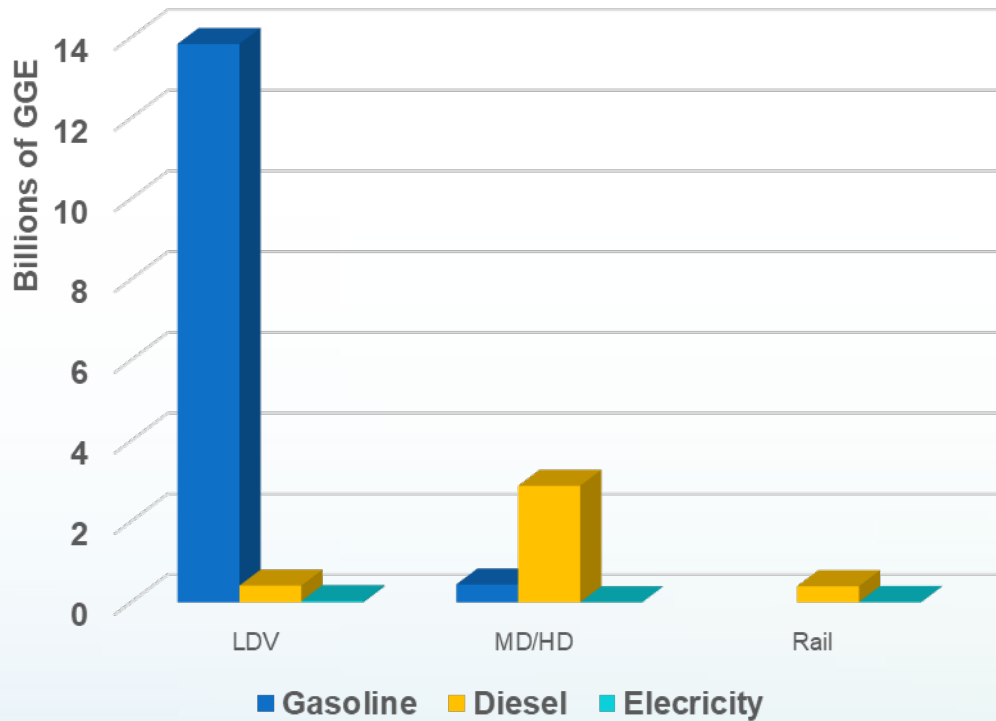
Distribution by Fuel Type



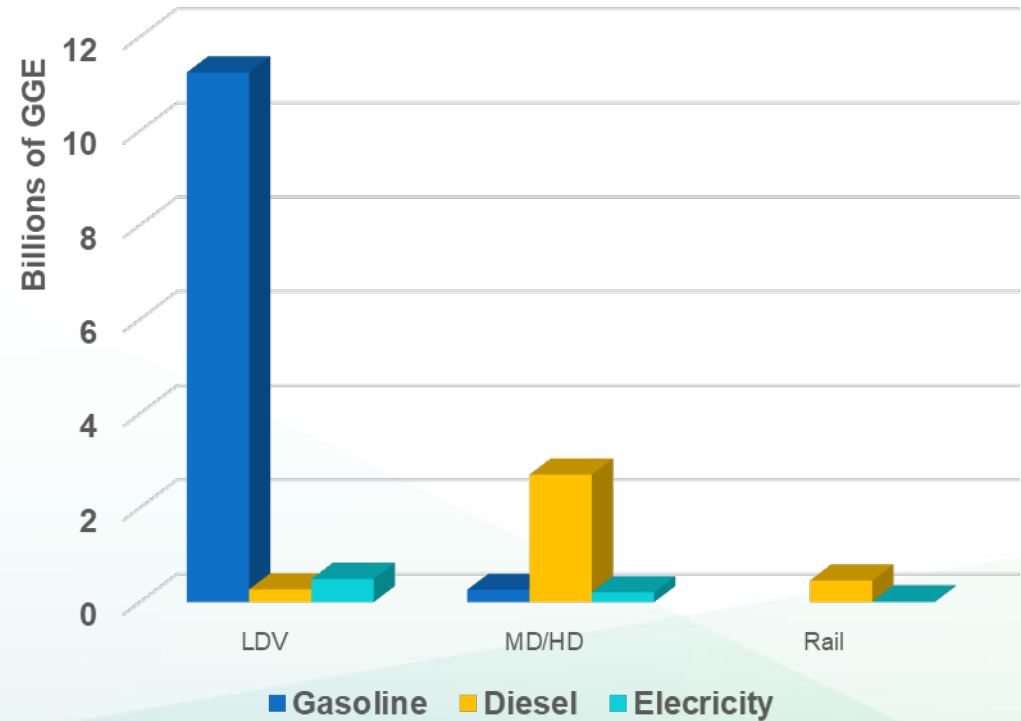


Diesel Dominates MD/HD & Gasoline is Dominant Fuel for Light Duty Vehicles

2020



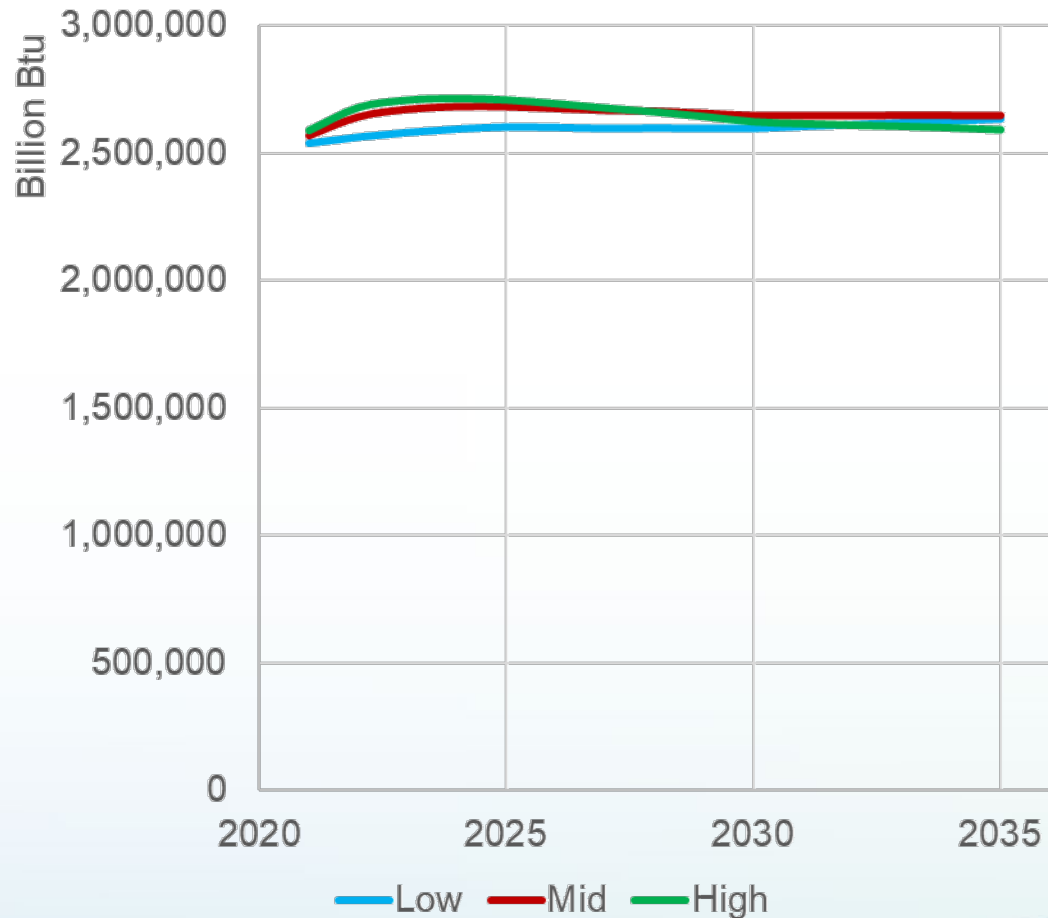
2035 (High Case)



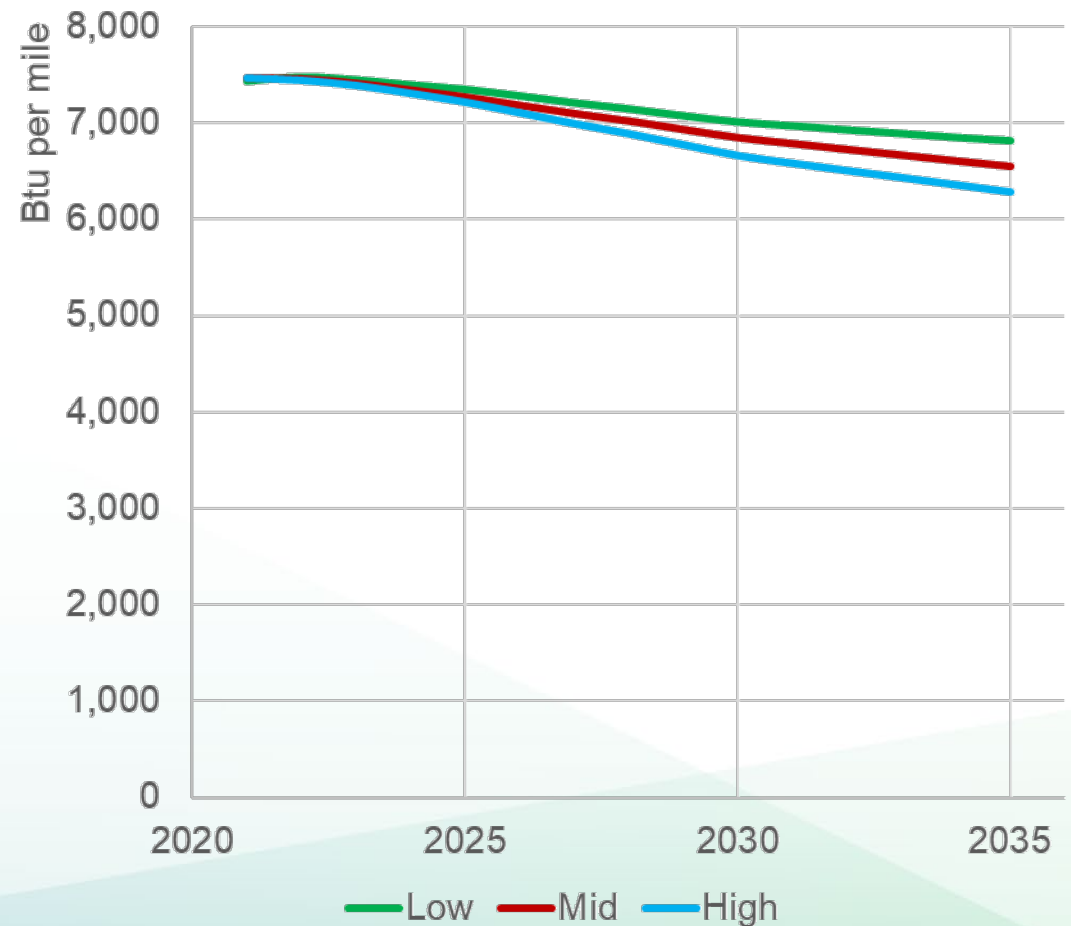


Higher Electrification and Improved Fuel Economy Lowers Energy Intensity

Transportation Energy Demand (Btu)

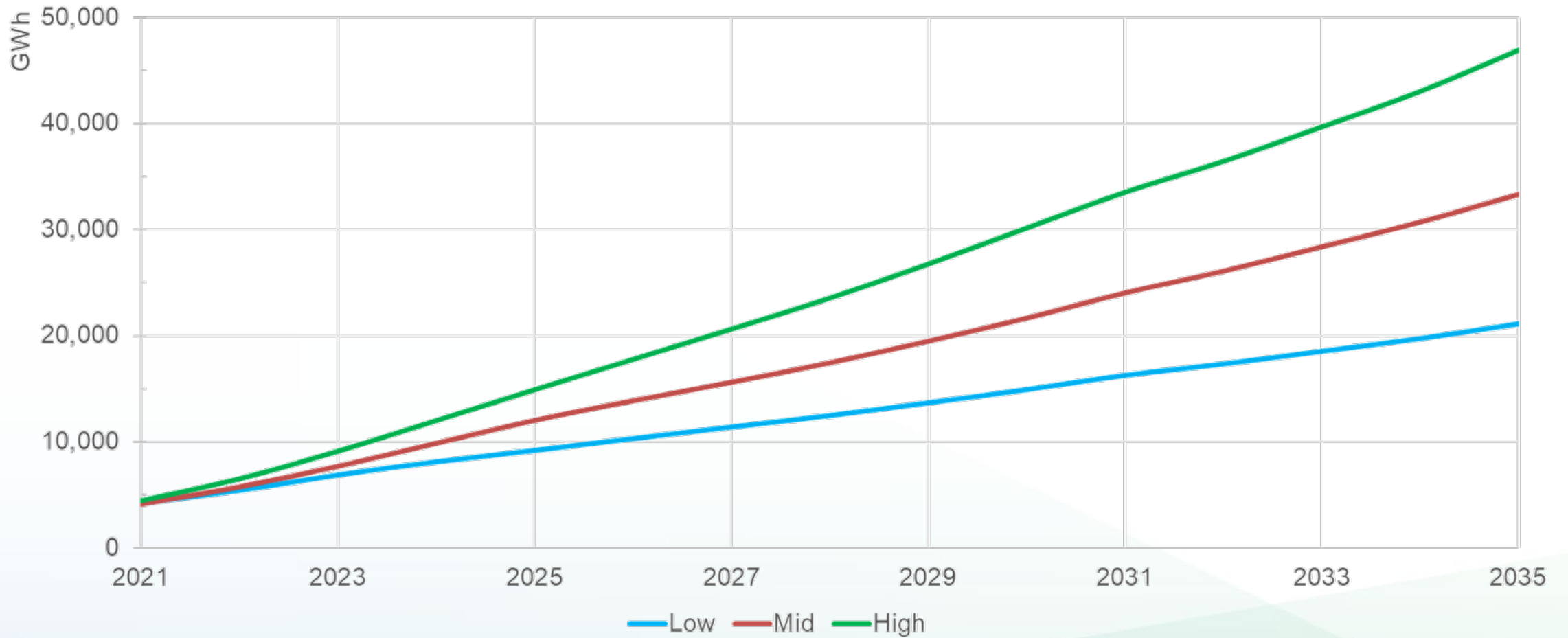


Transportation Energy (Btu) Per Mile



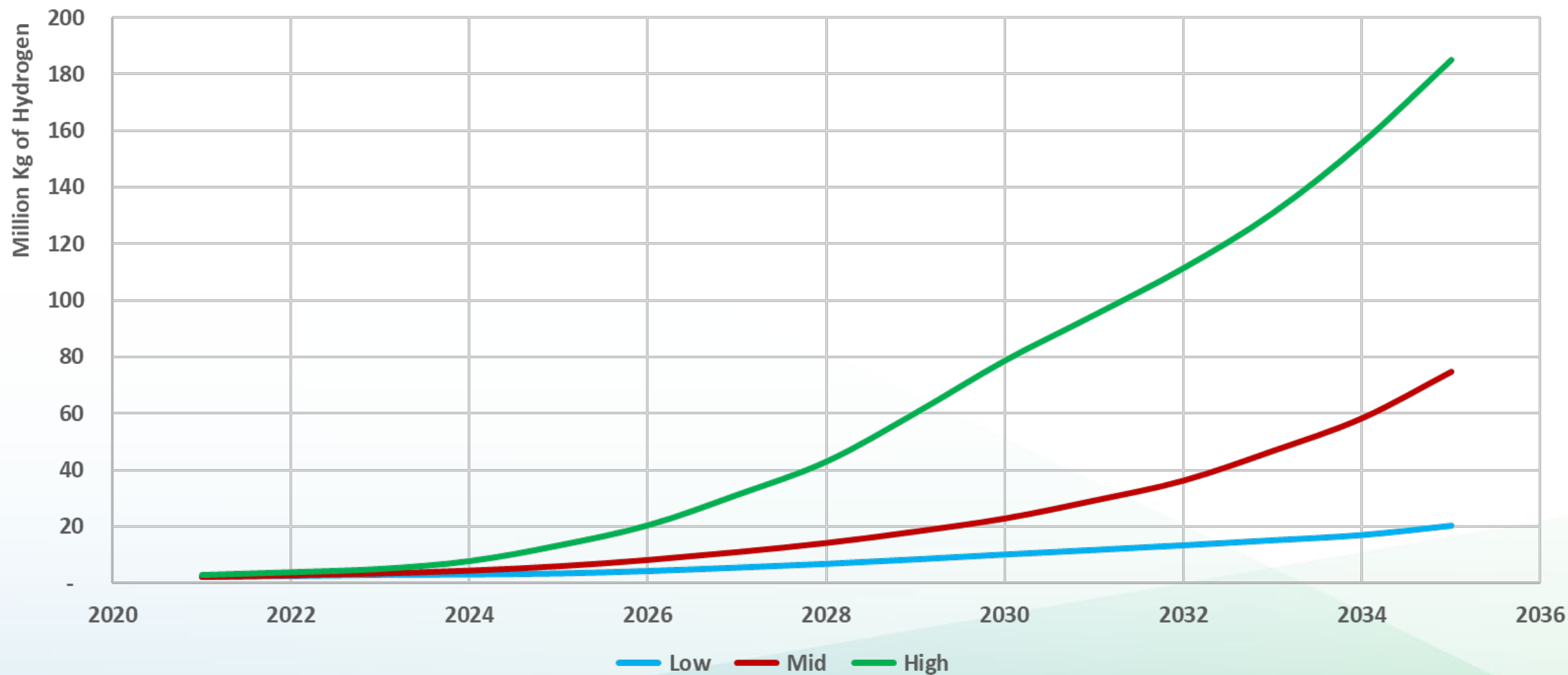


Transportation Electricity Demand Forecast





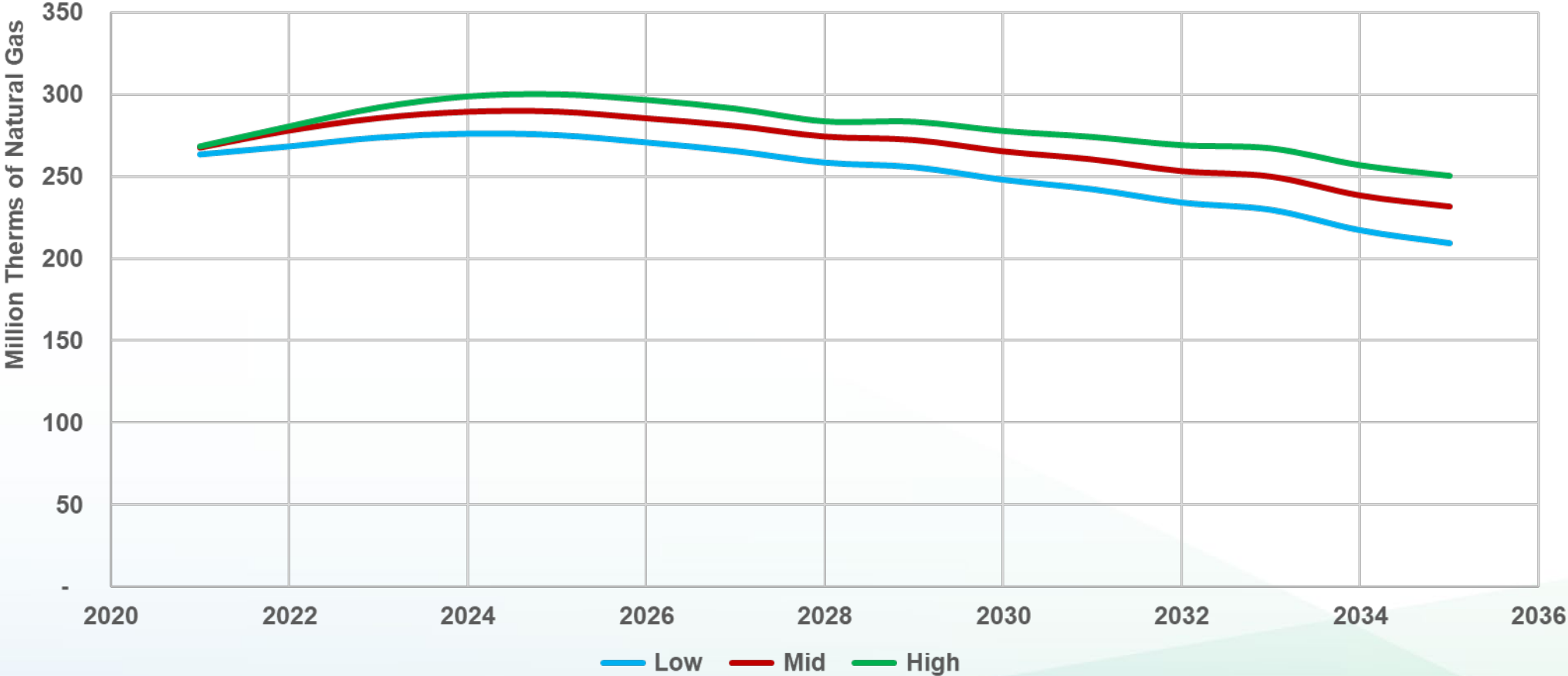
Transportation Hydrogen Demand Forecast



Source: Energy Commission Staff



Transportation Natural Gas Demand Forecast



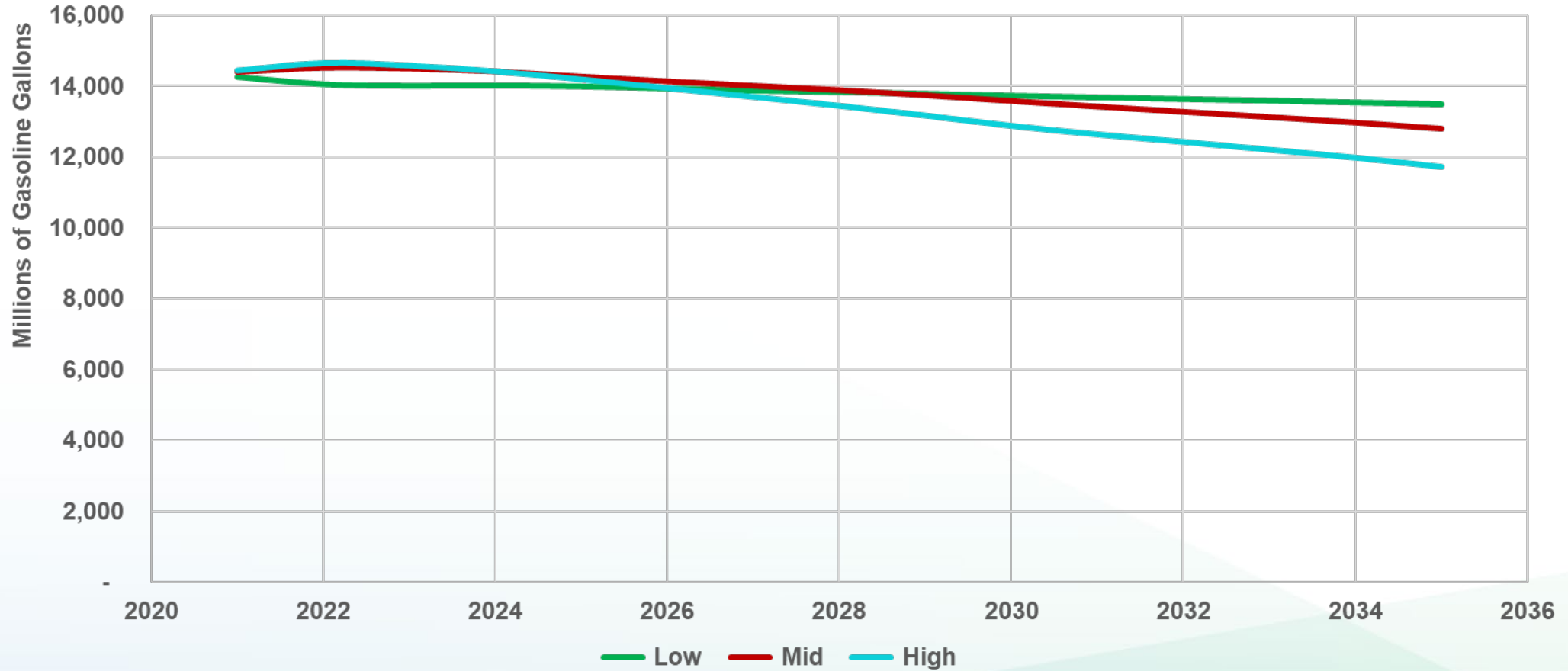
*Includes biomethane
Source: Energy Commission Staff



Appendix

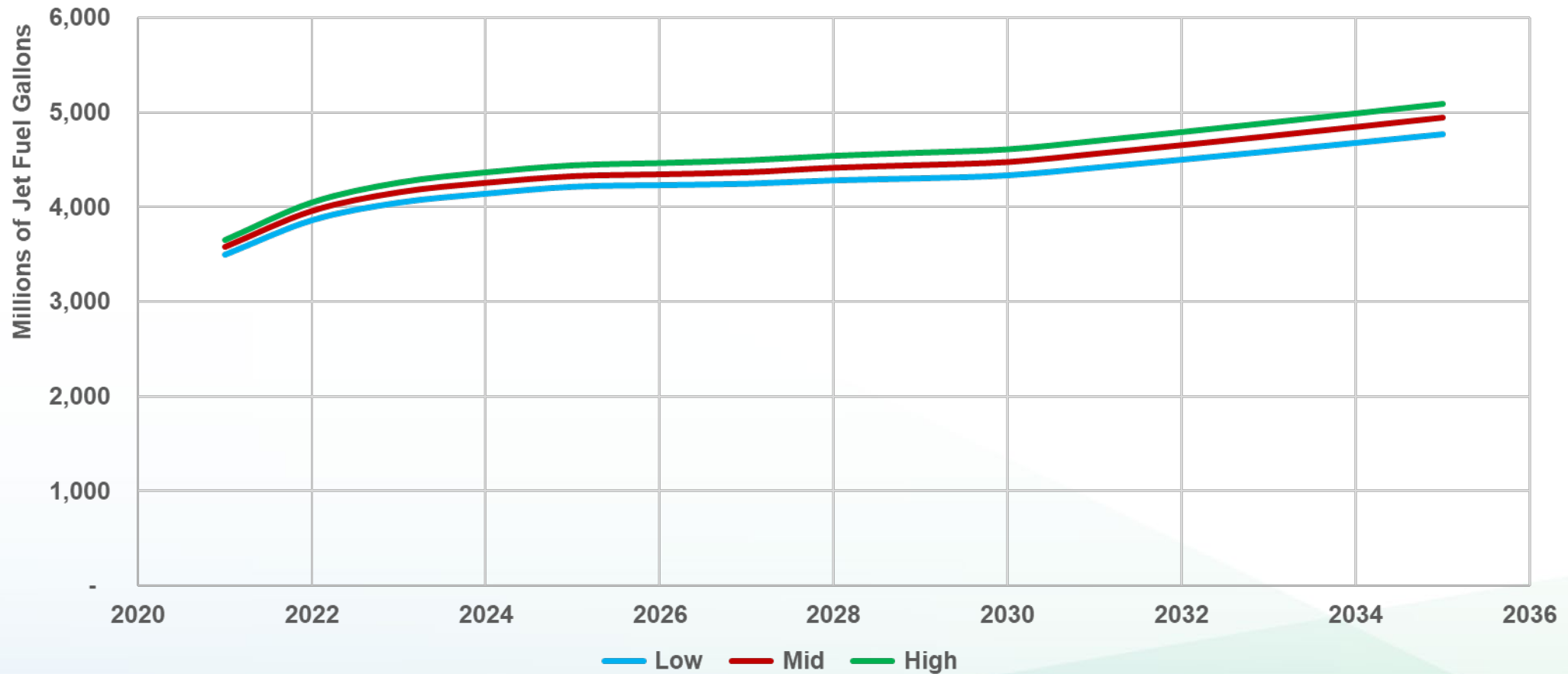


Gasoline Demand Forecast



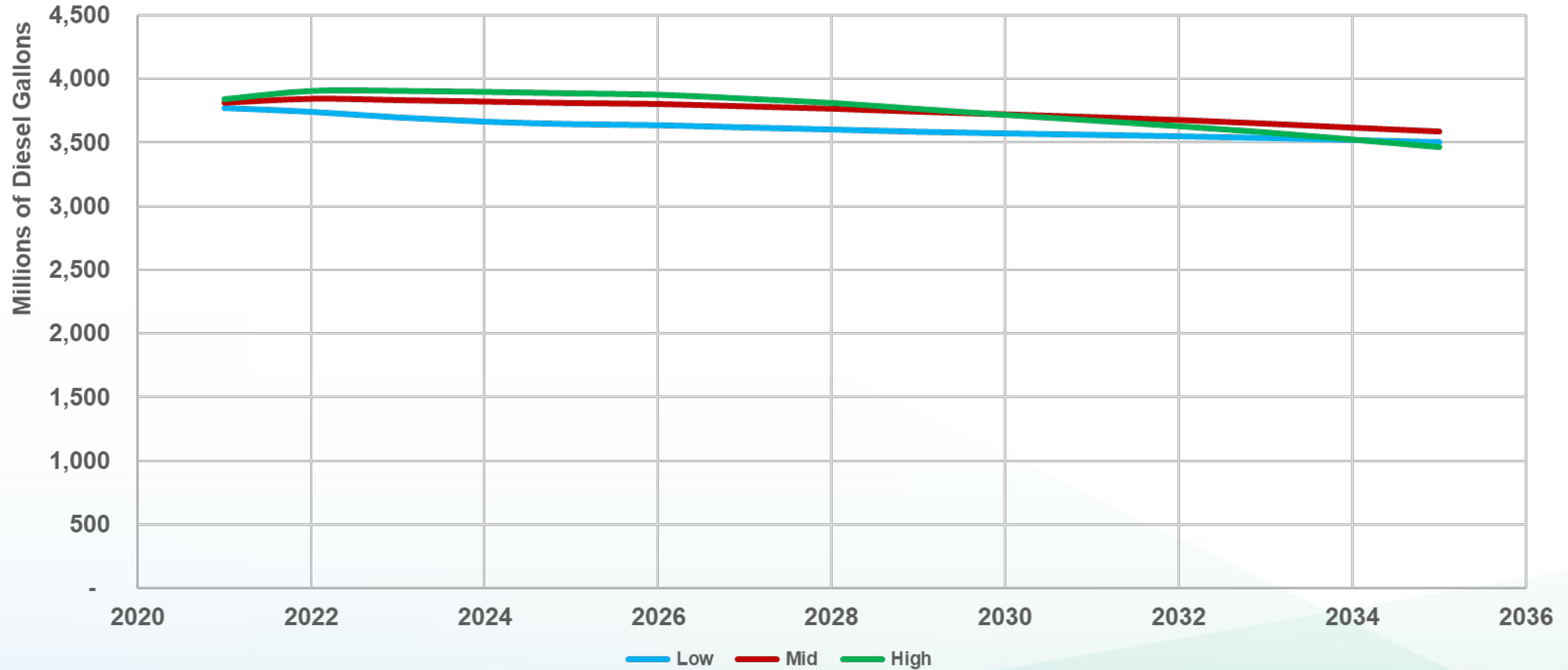


Jet Fuel Demand Forecast





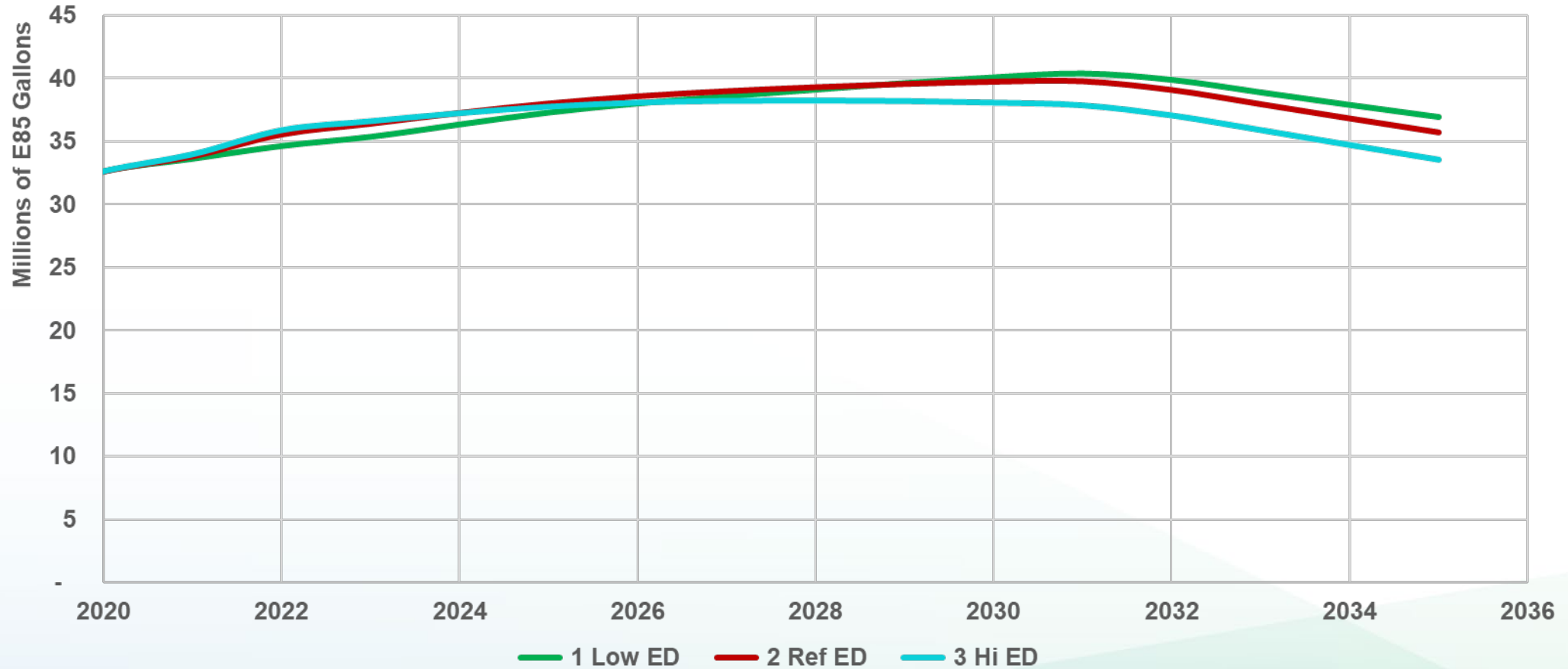
Diesel Demand Forecast



*Includes renewable diesel and biodiesel
Source: Energy Commission Staff

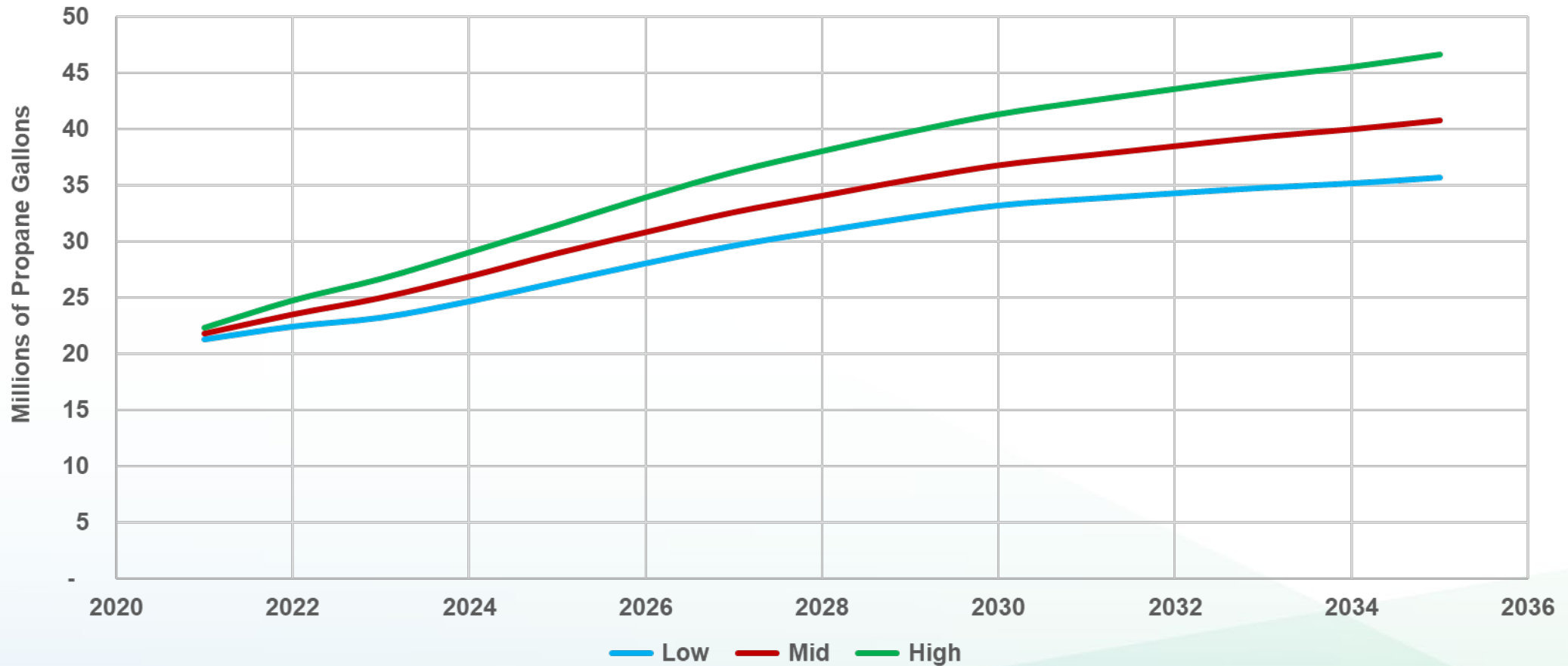


Ethanol E85 Demand Forecast





Propane Demand Forecast





Transportation Energy Price Forecasts



Gasoline and Diesel Price Forecasts

Gasoline, \$/GGE

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | 3.66 | 3.66 | 3.66 |
| 2019 | 3.72 | 3.72 | 3.72 |
| 2020 | 3.13 | 3.13 | 3.13 |
| 2021 | 3.86 | 3.86 | 3.86 |
| 2022 | 3.86 | 4.07 | 3.78 |
| 2023 | 3.86 | 4.29 | 3.70 |
| 2024 | 3.86 | 4.41 | 3.62 |
| 2025 | 3.90 | 4.50 | 3.61 |
| 2026 | 3.92 | 4.58 | 3.60 |
| 2027 | 3.96 | 4.66 | 3.59 |
| 2028 | 4.00 | 4.78 | 3.58 |
| 2029 | 4.04 | 4.85 | 3.57 |
| 2030 | 4.11 | 4.94 | 3.56 |
| 2031 | 4.18 | 5.02 | 3.55 |
| 2032 | 4.25 | 5.10 | 3.54 |
| 2033 | 4.28 | 5.17 | 3.53 |
| 2034 | 4.31 | 5.24 | 3.52 |
| 2035 | 4.34 | 5.31 | 3.51 |

Diesel, \$/DGE

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | 3.99 | 3.99 | 3.99 |
| 2019 | 3.97 | 3.97 | 3.97 |
| 2020 | 3.38 | 3.38 | 3.38 |
| 2021 | 3.91 | 3.91 | 3.91 |
| 2022 | 3.87 | 4.20 | 3.64 |
| 2023 | 4.00 | 4.52 | 3.70 |
| 2024 | 4.07 | 4.69 | 3.72 |
| 2025 | 4.12 | 4.81 | 3.73 |
| 2026 | 4.15 | 4.87 | 3.73 |
| 2027 | 4.18 | 4.97 | 3.72 |
| 2028 | 4.20 | 5.04 | 3.69 |
| 2029 | 4.21 | 5.11 | 3.67 |
| 2030 | 4.28 | 5.19 | 3.69 |
| 2031 | 4.30 | 5.19 | 3.68 |
| 2032 | 4.31 | 5.26 | 3.69 |
| 2033 | 4.31 | 5.31 | 3.67 |
| 2034 | 4.31 | 5.34 | 3.65 |
| 2035 | 4.31 | 5.38 | 3.64 |



Natural Gas and Hydrogen Price Forecasts

Natural Gas (\$/DGE)

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | 2.91 | 2.91 | 2.91 |
| 2019 | 3.15 | 3.15 | 3.15 |
| 2020 | 2.77 | 2.77 | 2.77 |
| 2021 | 2.60 | 2.60 | 2.60 |
| 2022 | 2.65 | 2.40 | 2.92 |
| 2023 | 2.72 | 2.45 | 3.01 |
| 2024 | 2.78 | 2.51 | 3.09 |
| 2025 | 2.85 | 2.57 | 3.19 |
| 2026 | 2.92 | 2.63 | 3.27 |
| 2027 | 2.99 | 2.70 | 3.36 |
| 2028 | 3.08 | 2.78 | 3.45 |
| 2029 | 3.16 | 2.85 | 3.56 |
| 2030 | 3.23 | 2.91 | 3.65 |
| 2031 | 3.29 | 2.96 | 3.72 |
| 2032 | 3.36 | 3.03 | 3.81 |
| 2033 | 3.43 | 3.09 | 3.90 |
| 2034 | 3.50 | 3.15 | 3.99 |
| 2035 | 3.57 | 3.22 | 4.08 |

Hydrogen (\$/GGE)

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | 16.73 | 16.73 | 16.73 |
| 2019 | 16.75 | 16.75 | 16.75 |
| 2020 | 16.52 | 16.52 | 16.52 |
| 2021 | 16.50 | 15.30 | 16.60 |
| 2022 | 16.40 | 14.60 | 16.50 |
| 2023 | 16.20 | 13.80 | 16.50 |
| 2024 | 16.10 | 12.70 | 16.40 |
| 2025 | 15.80 | 11.50 | 16.40 |
| 2026 | 15.50 | 10.30 | 16.30 |
| 2027 | 15.00 | 9.20 | 16.20 |
| 2028 | 14.30 | 8.40 | 16.10 |
| 2029 | 13.50 | 7.80 | 16.00 |
| 2030 | 12.60 | 7.40 | 15.80 |
| 2031 | 11.70 | 7.10 | 15.60 |
| 2032 | 11.00 | 7.00 | 15.20 |
| 2033 | 10.30 | 6.90 | 14.80 |
| 2034 | 9.90 | 6.80 | 14.30 |
| 2035 | 9.60 | 6.80 | 13.70 |



Electricity Price Forecasts

Commercial Electricity (\$/GGE)

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | \$5.56 | \$5.56 | \$5.56 |
| 2019 | \$5.61 | \$5.61 | \$5.61 |
| 2020 | \$6.04 | \$6.04 | \$6.04 |
| 2021 | \$6.19 | \$6.18 | \$6.20 |
| 2022 | \$6.23 | \$6.17 | \$6.26 |
| 2023 | \$6.35 | \$6.29 | \$6.46 |
| 2024 | \$6.45 | \$6.37 | \$6.58 |
| 2025 | \$6.62 | \$6.52 | \$6.80 |
| 2026 | \$6.71 | \$6.56 | \$6.93 |
| 2027 | \$6.76 | \$6.57 | \$7.04 |
| 2028 | \$6.88 | \$6.63 | \$7.19 |
| 2029 | \$7.00 | \$6.67 | \$7.35 |
| 2030 | \$7.08 | \$6.63 | \$7.43 |
| 2031 | \$7.14 | \$6.67 | \$7.53 |
| 2032 | \$7.21 | \$6.71 | \$7.65 |
| 2033 | \$7.29 | \$6.76 | \$7.76 |
| 2034 | \$7.36 | \$6.80 | \$7.88 |
| 2035 | \$7.43 | \$6.84 | \$7.99 |

Residential Electricity (\$/GGE)

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | \$6.29 | \$6.29 | \$6.29 |
| 2019 | \$6.32 | \$6.31 | \$6.32 |
| 2020 | \$6.64 | \$6.64 | \$6.64 |
| 2021 | \$7.36 | \$7.35 | \$7.36 |
| 2022 | \$7.44 | \$7.38 | \$7.49 |
| 2023 | \$7.62 | \$7.52 | \$7.80 |
| 2024 | \$7.72 | \$7.56 | \$7.96 |
| 2025 | \$7.93 | \$7.69 | \$8.26 |
| 2026 | \$8.06 | \$7.73 | \$8.48 |
| 2027 | \$8.10 | \$7.72 | \$8.66 |
| 2028 | \$8.25 | \$7.78 | \$8.83 |
| 2029 | \$8.38 | \$7.80 | \$9.03 |
| 2030 | \$8.49 | \$7.73 | \$9.16 |
| 2031 | \$8.57 | \$7.76 | \$9.31 |
| 2032 | \$8.67 | \$7.81 | \$9.48 |
| 2033 | \$8.76 | \$7.85 | \$9.66 |
| 2034 | \$8.85 | \$7.89 | \$9.83 |
| 2035 | \$8.94 | \$7.92 | \$9.99 |



Transportation Propane and Ethanol E85 Price Forecasts

Propane (\$/GGE)

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | 2.04 | 2.04 | 2.04 |
| 2019 | 1.85 | 1.85 | 1.85 |
| 2020 | 1.32 | 1.32 | 1.32 |
| 2021 | 1.66 | 1.66 | 1.66 |
| 2022 | 1.74 | 1.85 | 1.69 |
| 2023 | 1.76 | 1.97 | 1.71 |
| 2024 | 1.81 | 2.05 | 1.72 |
| 2025 | 1.85 | 2.12 | 1.73 |
| 2026 | 1.88 | 2.17 | 1.74 |
| 2027 | 1.90 | 2.22 | 1.76 |
| 2028 | 1.95 | 2.27 | 1.77 |
| 2029 | 1.97 | 2.32 | 1.77 |
| 2030 | 2.04 | 2.40 | 1.84 |
| 2031 | 2.06 | 2.42 | 1.85 |
| 2032 | 2.10 | 2.45 | 1.88 |
| 2033 | 2.12 | 2.47 | 1.89 |
| 2034 | 2.13 | 2.49 | 1.90 |
| 2035 | 2.14 | 2.51 | 1.91 |

E85 (\$/GGE)

| Year | Mid Demand | High Electricity Demand | Low Electricity Demand |
|------|------------|-------------------------|------------------------|
| 2018 | 3.66 | 3.66 | 3.66 |
| 2019 | 3.72 | 3.72 | 3.72 |
| 2020 | 3.13 | 3.13 | 3.13 |
| 2021 | 3.86 | 3.86 | 3.86 |
| 2022 | 3.86 | 4.07 | 3.78 |
| 2023 | 3.86 | 4.29 | 3.70 |
| 2024 | 3.86 | 4.41 | 3.62 |
| 2025 | 3.90 | 4.50 | 3.61 |
| 2026 | 3.92 | 4.58 | 3.60 |
| 2027 | 3.96 | 4.66 | 3.59 |
| 2028 | 4.00 | 4.78 | 3.58 |
| 2029 | 4.04 | 4.85 | 3.57 |
| 2030 | 4.11 | 4.94 | 3.56 |
| 2031 | 4.18 | 5.02 | 3.55 |
| 2032 | 4.25 | 5.10 | 3.54 |
| 2033 | 4.28 | 5.17 | 3.53 |
| 2034 | 4.31 | 5.24 | 3.52 |
| 2035 | 4.34 | 5.31 | 3.51 |



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