



Medium and Heavy-Duty Vehicle Forecast

Bob McBride

California Energy Commission

Transportation Energy Forecasting Unit

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California Energy Commission

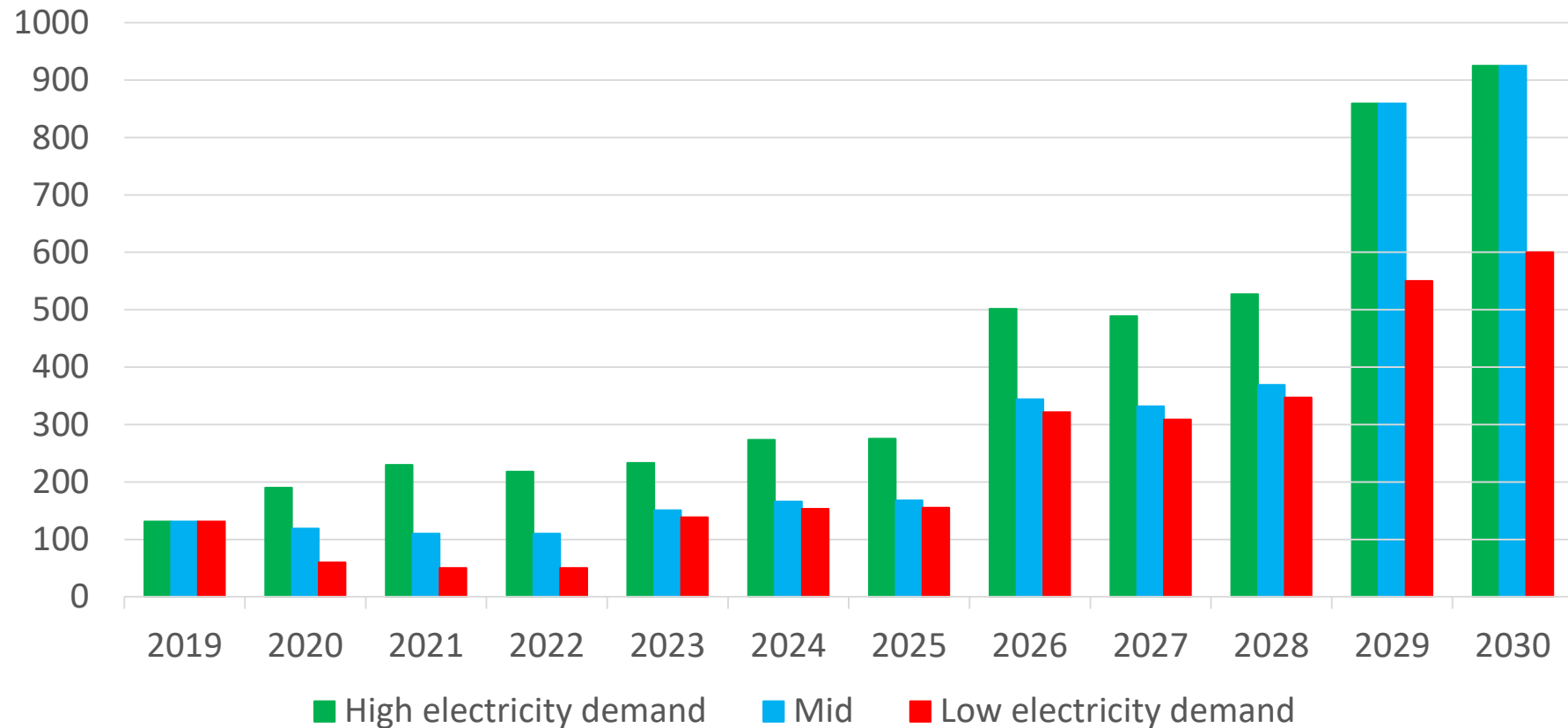
Vehicle/Fuel Types

(O-OEM, A-Aftermarket, P- Pilot production)

		Gasoline	Diesel	Diesel Electric Hybrid	Diesel Hydraulic Hybrid	Battery Electric Vehicles	FCV	E85	CNG	Liquefied Natural gas (LNG)	Propane
GVWR 3	GVWR 3	O	O	P		P		O	A		A
GVWR 4 to 6	GVWR 4	O	O	P		P		O	A		A
	GVWR 5	O	O			P		O	A		
	GVWR 6		O	P	P	P			A		
GVWR 7 & 8	GVWR 7		O	P					A		
	GVWR 8 Single Unit		O						A	A	
GVWR 8	Combination (California)		O			P	A		A	A	
GVWR 8	Garbage		O		A				A		
GVWR 8	IRP (combination)		O							A	
Motorhomes	GVWR 3	O	O								
	GVWR 4 to 6		O						A		
	GVWR 7 & 8		O						A		
Bus	Urban Transit		O	O	P	P	P		A		
	Motor Coach		O								
	School Bus	O	O			P			A		A

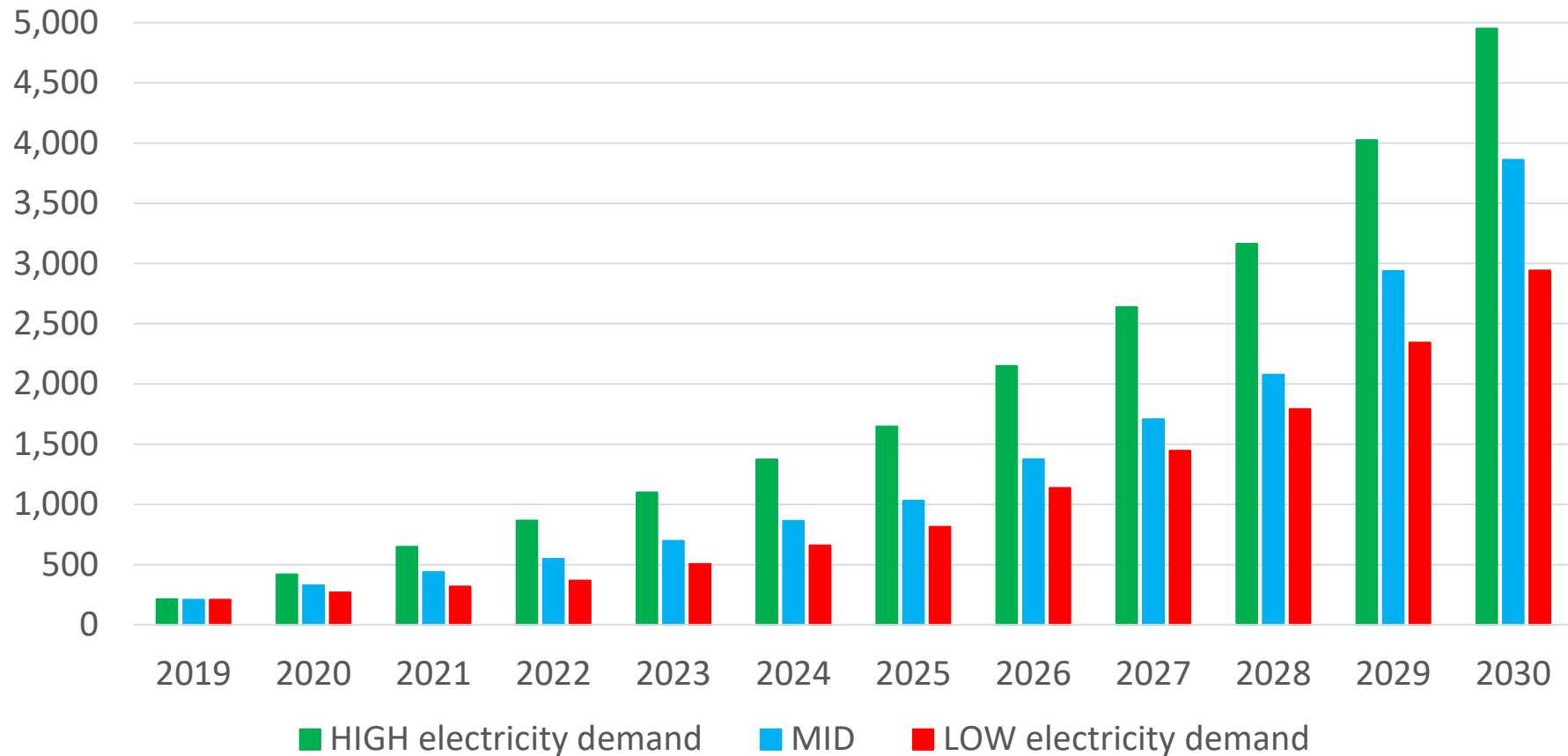


Electric Bus Acquisitions, Three Scenarios, 2019-2030



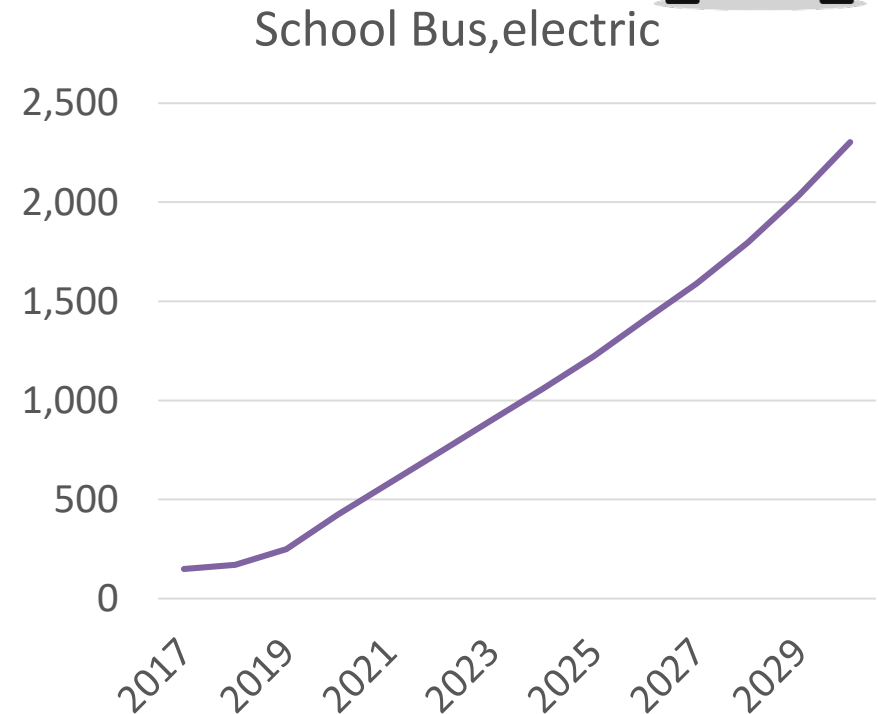
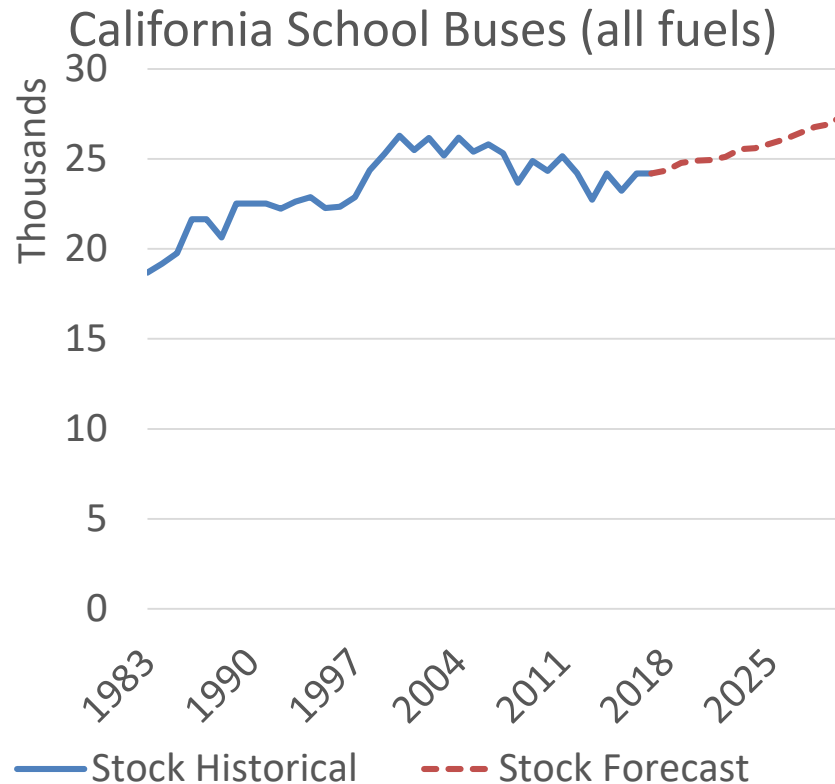


Electric Bus Stock, Three Scenarios, 2019-2030





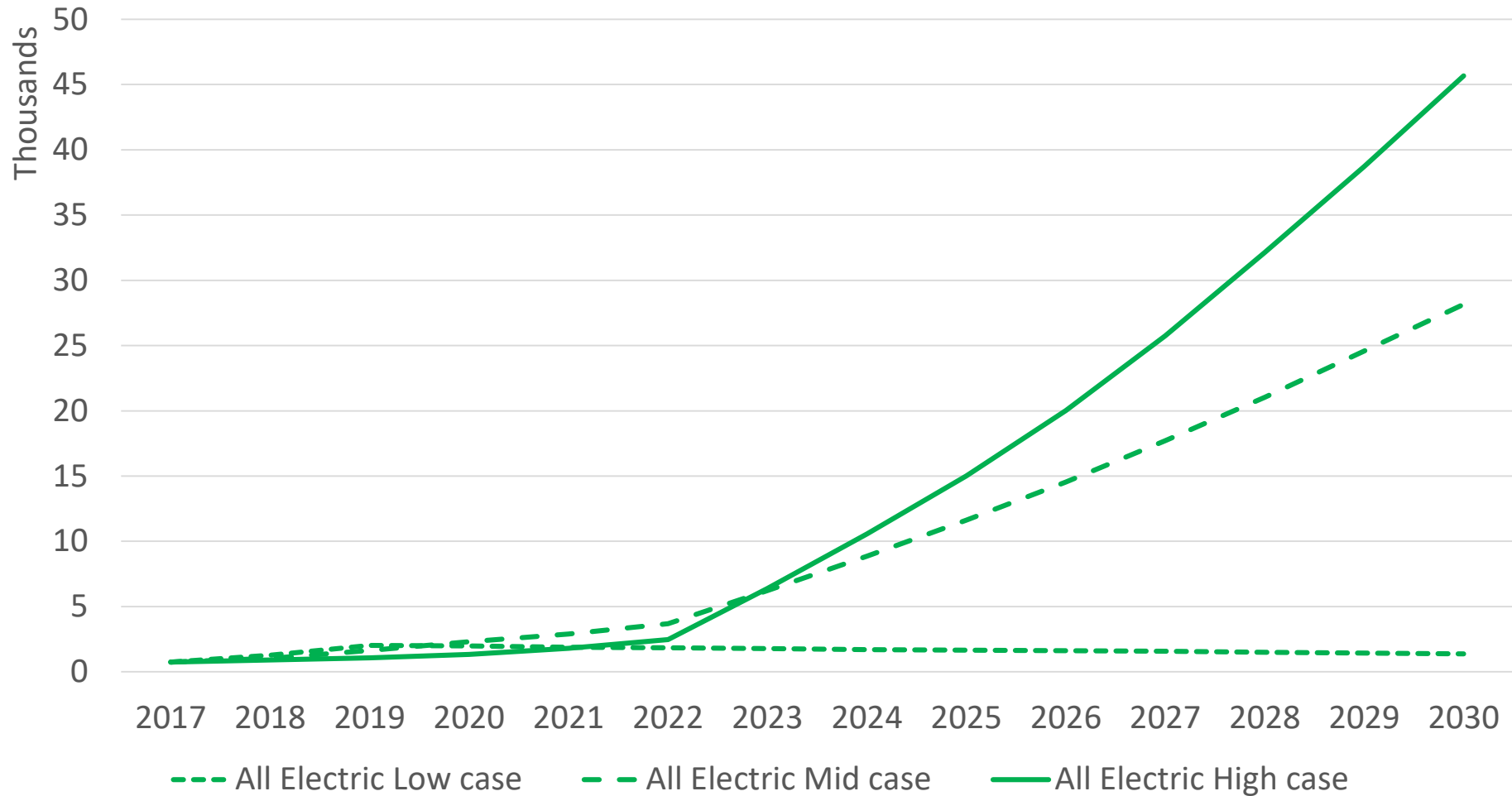
Electrification Assumptions School Bus



Source: CHP historic, IEPR 2019 preliminary

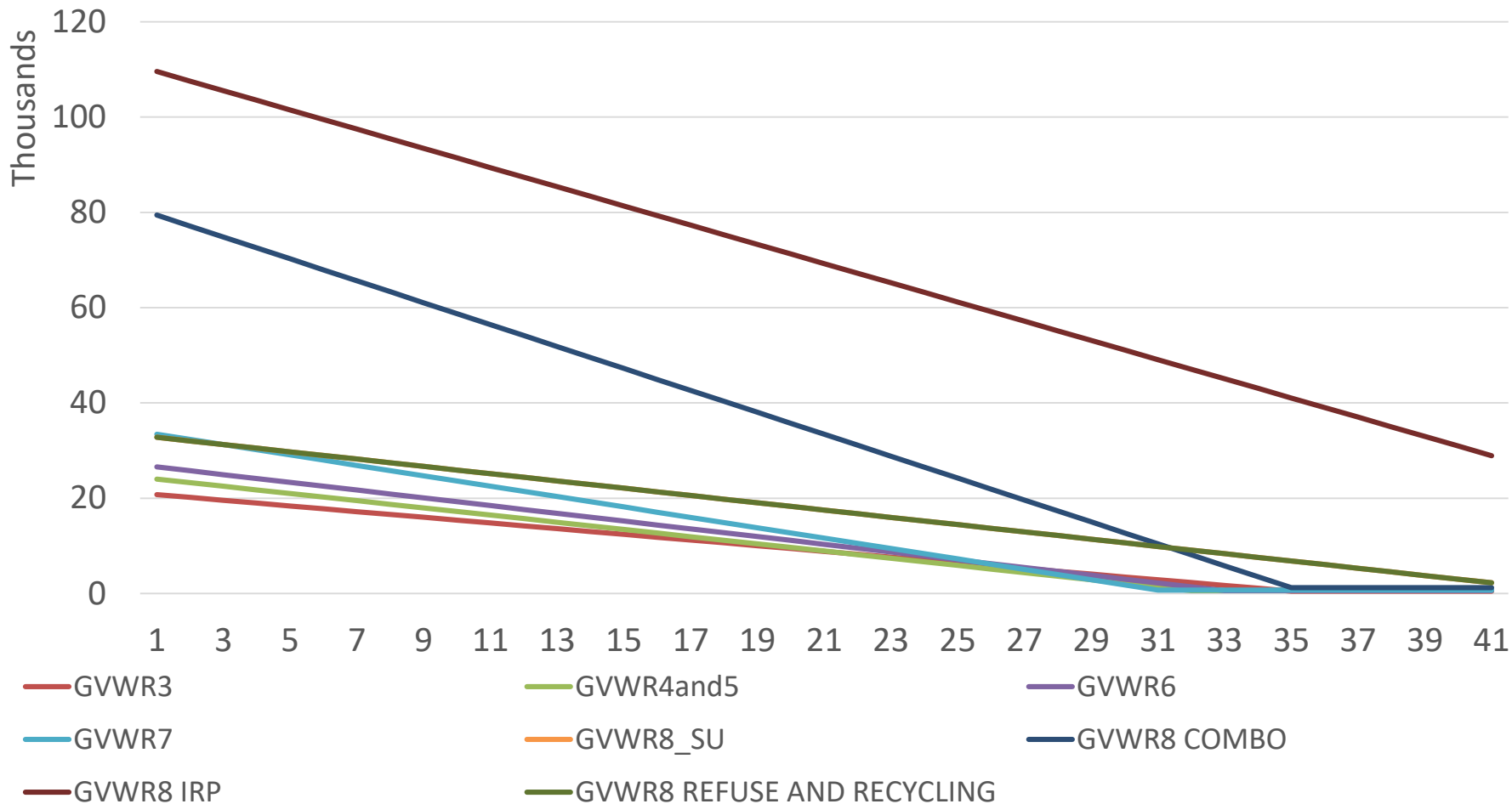


Electric Medium and Heavy Truck Forecast



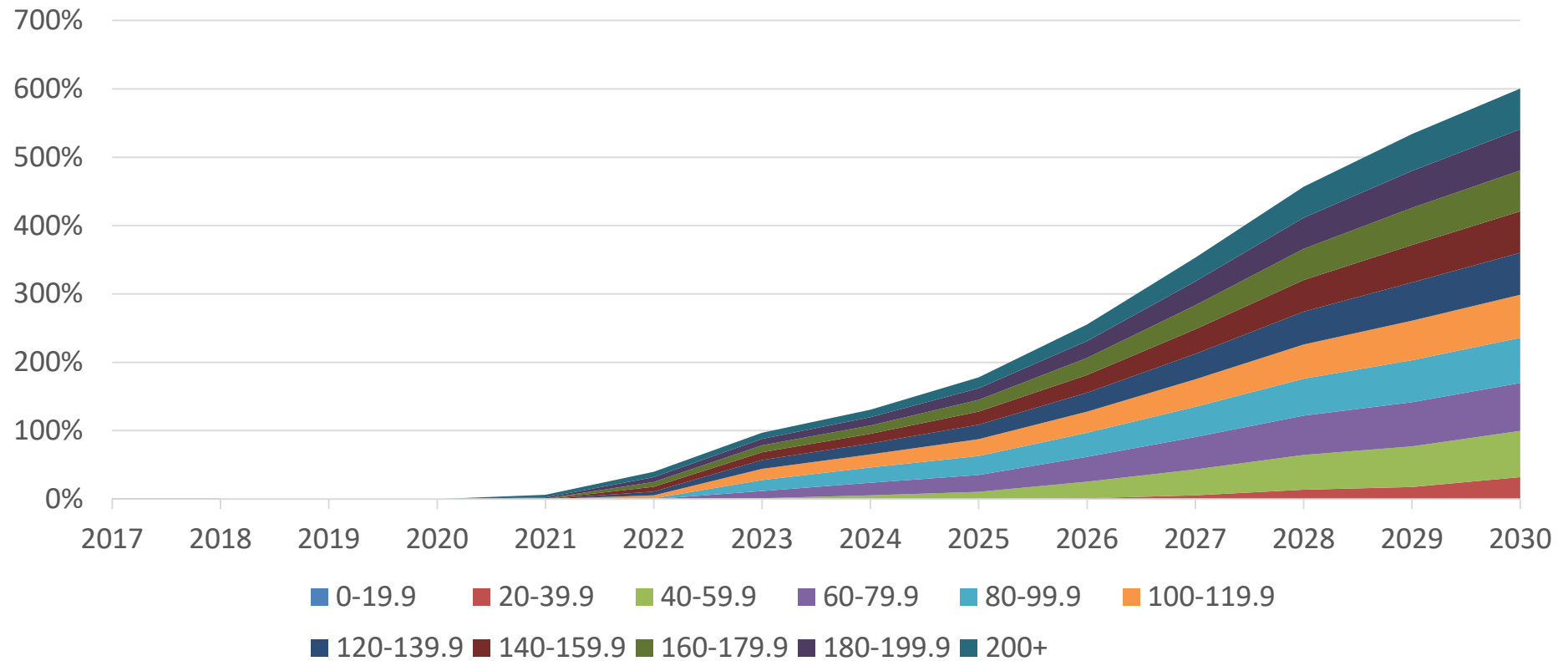


Annual Miles by Truck Class and Age 2017 California Vehicle Inventory and Use Survey





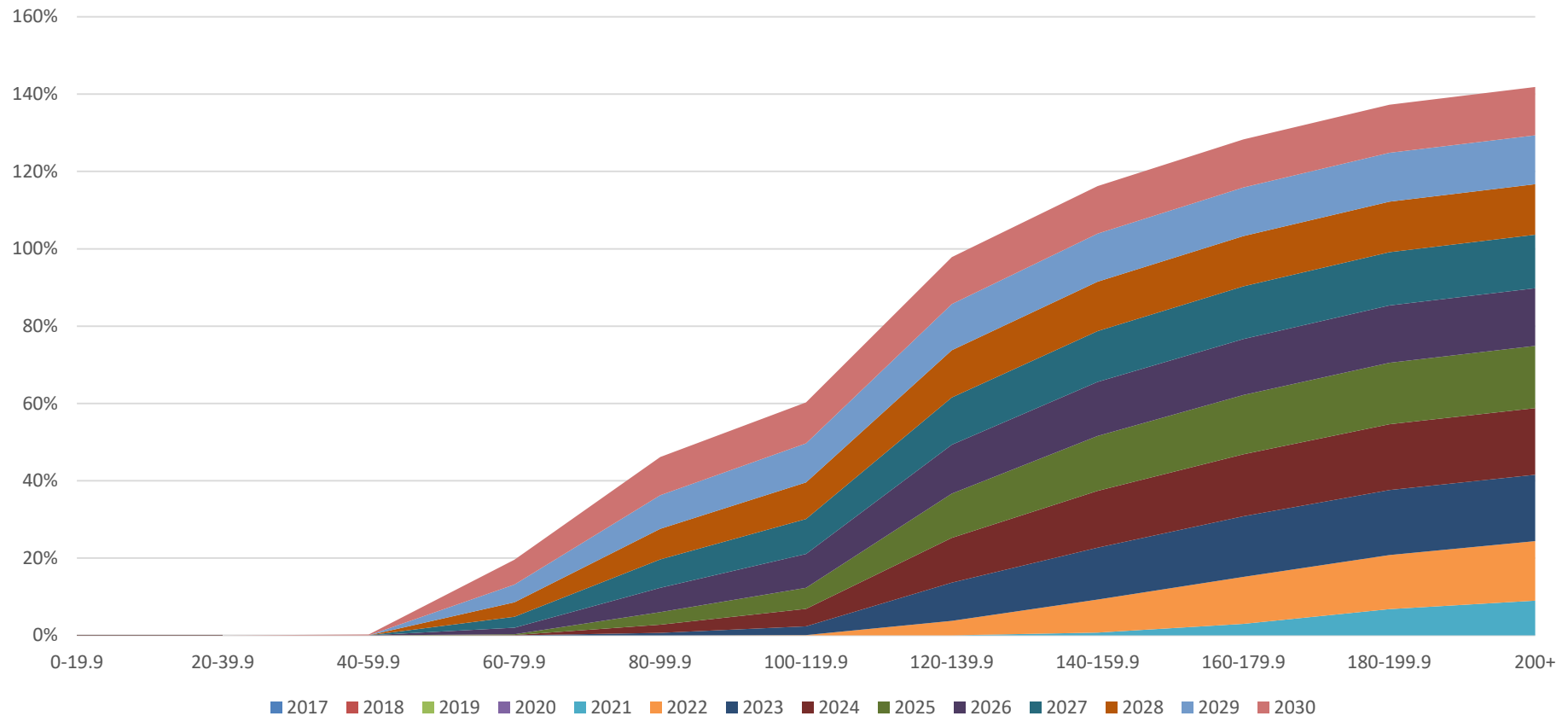
Isolated Market Share Calculation, Argonne Truck 5 Catenary Port Truck Summed Percentages of Eleven Annual VMT Ranges





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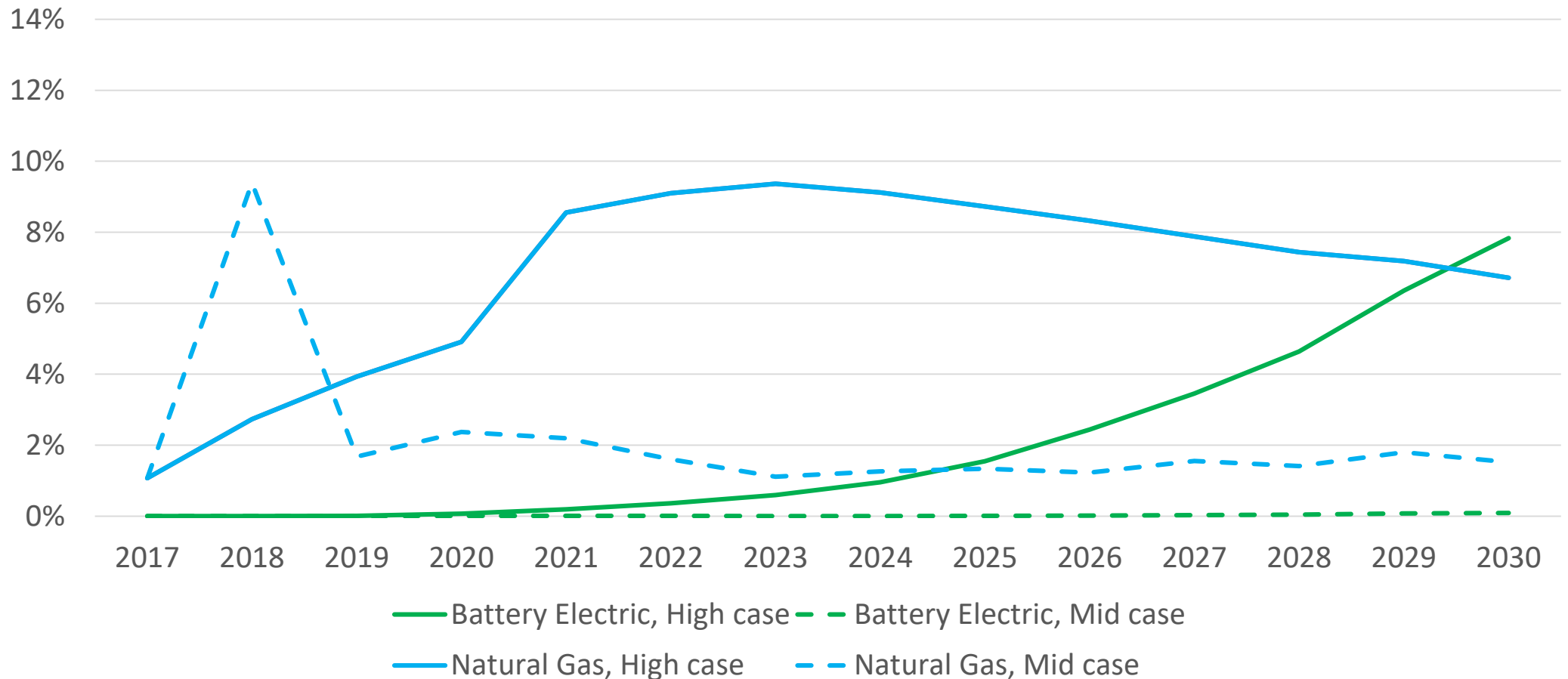
Isolated Market Share Calculation, Argonne Truck 5 Class 7 Diesel-Electric Hybrid Summed Percentages of Eleven VMT Ranges





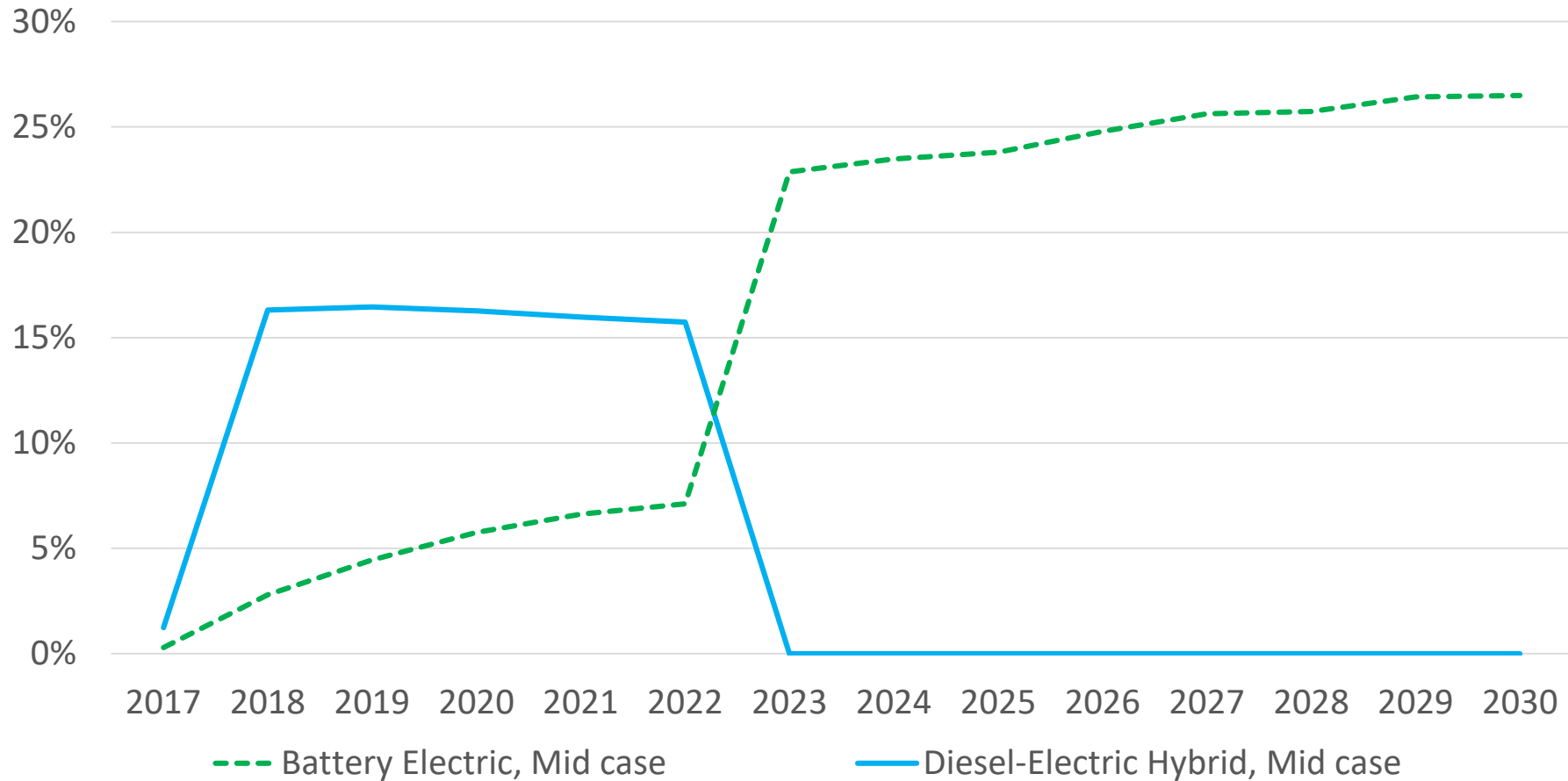
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Class 8 Tractor Trailer Combination Market share forecast





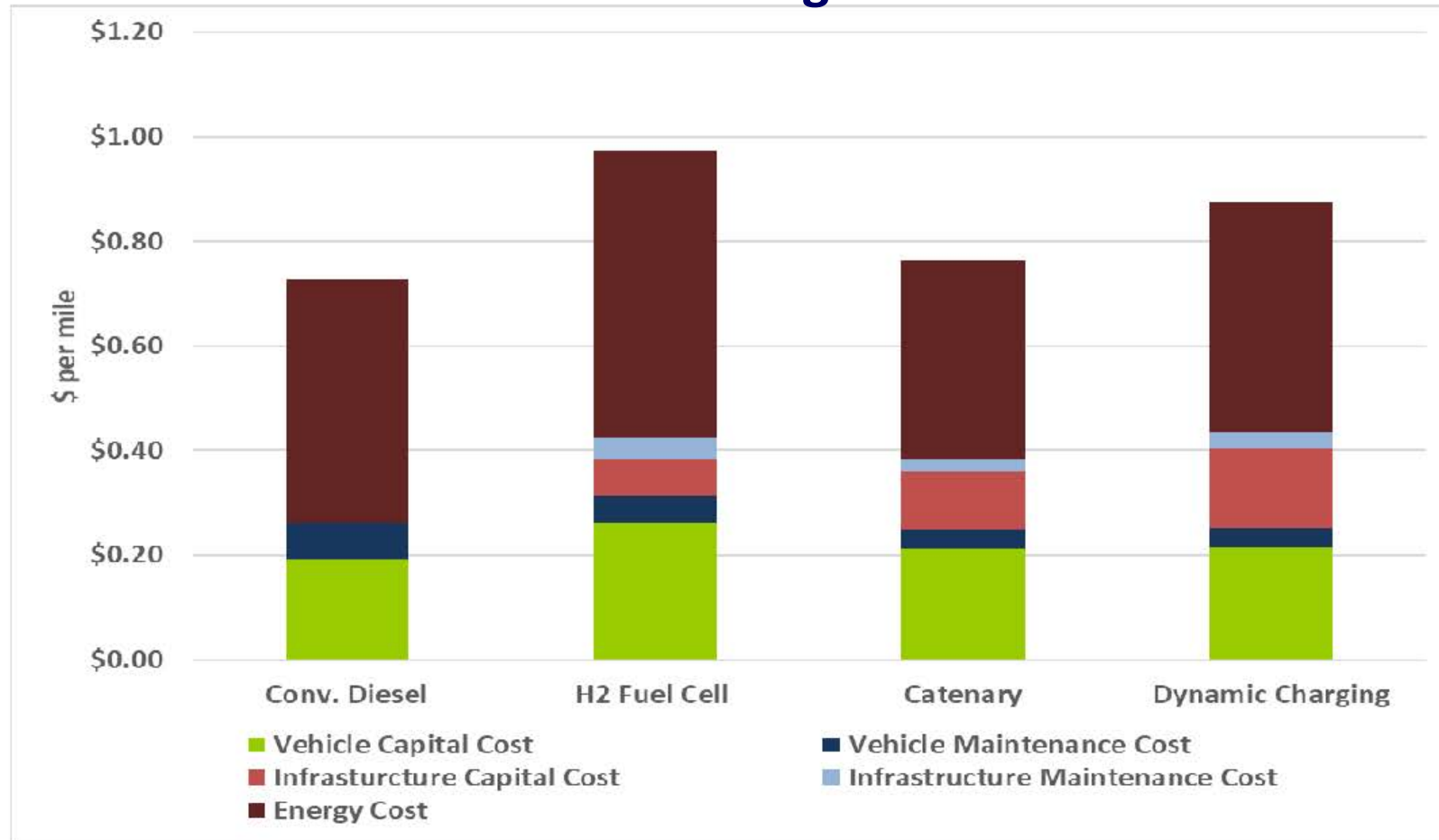
Class 4 and 5 Delivery Van Market Share Diesel-Electric Hybrid Incentive Ended after 2022





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Cost Comparison of Zero Emission Class 8 Truck Technologies



Source: Zhao et al, A Comparison of Zero-Emission Highway Trucking Technologies, UC Davis ITS (10/2018)