It's Electric?

Adoption of Alternative Fuel Vehicles

Office of Legislative Research and General Counsel

Transportation Interim Committee

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Vehicle Registrations by Fuel Type

Electric vehicles (EVs) and hybrids comprise a small proportion of total standard passenger and light truck registrations…

Fuel Type	2015		2016		2017		2018		2019		2020		2021	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Electric	1,016	0.1%	1,519	0.1%	2,368	0.1%	3,454	0.2%	5,401	0.2%	7,886	0.3%	10,569	0.4%
All Hybrid	25,732	1.2%	29,505	1.4%	33,861	1.5%	38,349	1.7%	42,768	1.8%	47,709	1.9%	51,873	2.0%
All SP/LT Vehicles	2,097,878		2,168,581		2,242,918		2,329,549		2,435,169		2,512,711		2,539,729	

Source: Utah State Tax Commission, "On Highway Registrations by County, Vehicle Type and Fuel Type," 2015-2021, accessed: https://tax.utah.gov/econstats/mv/registrations

Registration Growth by Fuel Type

But, the # of registered electric and hybrid vehicles has increased rapidly since 2015.

Fuel Type	% Growth (15-21)	Compound Annual Growth (CAG)
Electric	940.3%	47.7%
All Hybrid	101.6%	12.4%
All SP/LT Vehicles	21.1%	3.2%

New Vehicle Sales

New passenger vehicle and light truck sales align with registration trends…

Fuel Type	2017		2018		2019		2020		% Growth (17-20)	CAG
	# Sold	% Total	# Sold	% Total	# Sold	% Total	# Sold	% Total		
Gasoline	115,374	86.07%	113,062	84.3%	112,469	85.14%	97,339	84.07%	-15.6%	-5.5%
Diesel	14,545	10.85%	15,814	11.8%	13,843	10.48%	11,582	10.00%	-20.4%	-7.3%
Hybrid	3,022	2.25%	2,858	2.1%	3,512	2.66%	4,170	3.60%	+38.0%	+11.3%
Electric	611	0.46%	1,753	1.3%	1,843	1.40%	2,227	1.92%	+264.5%	+53.9%
Plug-in Hybrid	483	0.36%	658	0.5%	393	0.30%	454	0.39%	-6.0%	-2.0%

Source: Utah State Tax Commission, "New Passenger and Light Truck Dealer Sales by Fuel Type," 2017-2020, accessed: https://tax.utah.gov/econstats/mv/new-vehicle-sales

National Sales Picture

Nationally, plug-in hybrid and all electric vehicles show similar sales growth, with hybrids lagging…

But, hybrid sales grew by 3635.1% between 2000 and 2007 and have fluctuated since.

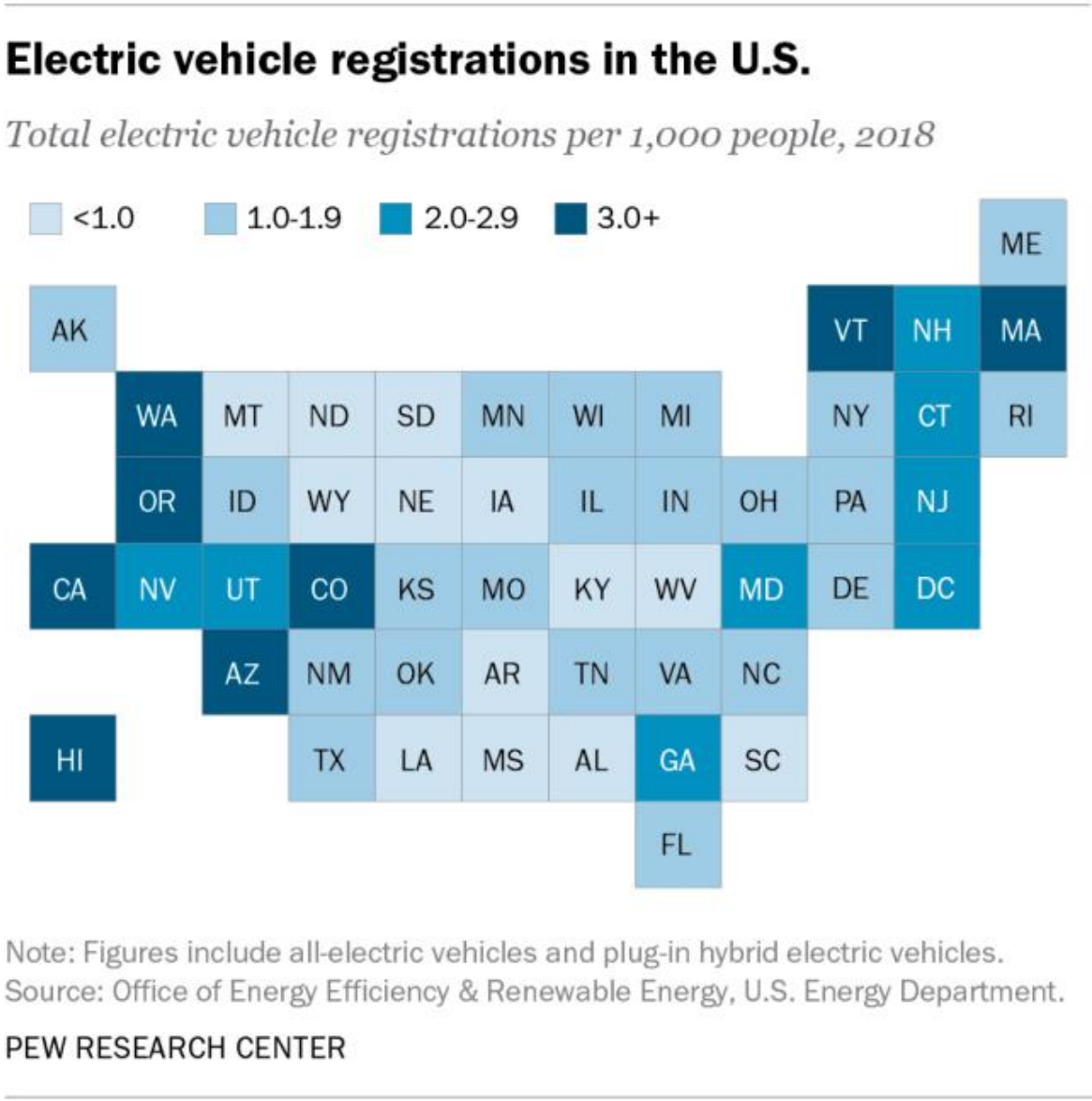
Year	Hybrid		Plug-in Hybrid		All Electric		# LVs Sold*
	# Sold*	%	# Sold*	%	# Sold*	%	
2011	266.5	2.1%	7.7	0.1%	10.1	0.1%	12,542
2012	434.6	3.1%	38.6	0.3%	14.6	0.1%	14,220
2013	495.5	3.2%	49	0.3%	48.1	0.3%	15,279
2014	452.2	2.8%	55.4	0.3%	63.5	0.4%	16,192
2015	384.4	2.2%	43	0.3%	71.1	0.4%	17,095
2016	346.9	2.0%	72.9	0.4%	86.7	0.5%	17,169
2017	362.9	2.2%	91.1	0.5%	104.4	0.6%	16,818
2018	343.2	2.0%	122.8	0.7%	238.8	1.4%	16,913
% Sales Growth (11-18)	28.8%		1494.8%		2264.4%		34.9%
CAG	3.7%		48.5%		57.1%		4.4%

*Number sold in thousands

Source: Oak Ridge National Laboratory, *Transportation Energy Data Book: Edition 38,* "Table 6.2: Hybrid and Plug-In Vehicle Sales, 1999-2018," January 2020, https://tedb.ornl.gov/wp-content/uploads/2021/02/Edition38_Full_Doc.pdf

Comparing States

Pew Research Center mapped total EVs per 1000 people in 2018



Future Projection

Studies project increased adoption of electric and hybrid vehicles:

- UDOT-commissioned study from 2015 modeled 3 scenarios for hybrid and EV adoption in Utah by 2040:
  1. Current market share: 5% of all vehicles
  2. Moderate adoption: 57%
  3. Aggressive adoption: 75%

- Deloitte's 2020 EV forecast projects battery electric vehicles and plug-in hybrid vehicles to have 27% US market share by 2030 with growth slowing thereafter

- BloombergNEF's *Electric Vehicle Outlook 2020* expects global passenger EV sales to increase from 1.7 million in 2020 to 54 million by 2040 and comprise 10% of passenger vehicle sales by 2025, 28% by 2030 and 58% by 2040

What factors are driving these trends and projections?

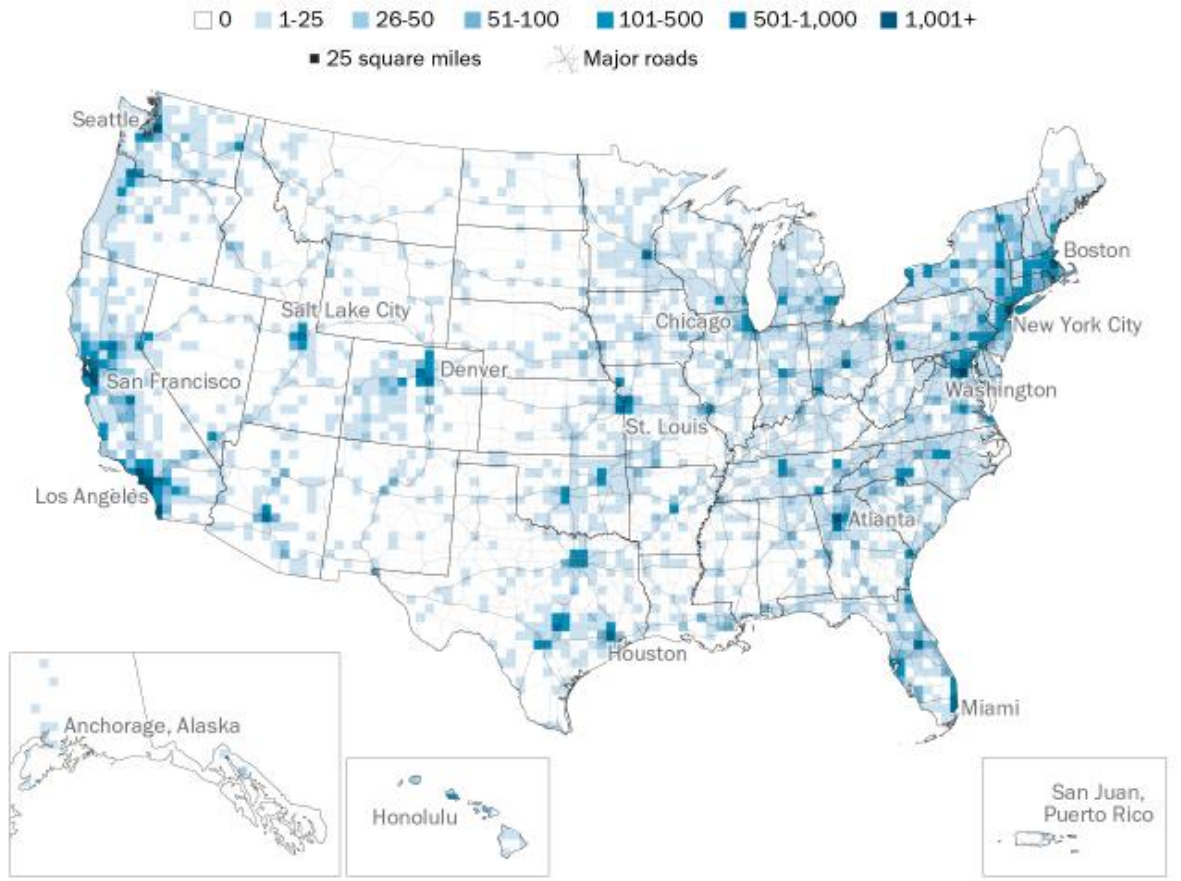
Consumer	Industry	Regulatory
• 2020 Consumer Reports survey found 71% of US drivers would consider buying EV in the future and about 1/3 interested in an EV for their next vehicle • Similarly, 2018 AAA survey found that 20% of Americans will likely purchase an electric vehicle with their next purchase, up from 15% in 2017 • 2020 AAA survey of current EV owners found that 96% would buy or lease another EV; but, recent study of CA drivers found that about 1 in 5 would not	• GM plans to stop selling light-duty vehicles with gas or diesel engines by 2035, spending $27 billion to launch 30 EV models by 2025 • Ford plans to invest $30 billion in electrification through 2025 and expects 40% of global vehicle. volume to be all-electric by 2030 • VW plans for all electric vehicles to exceed 50 percent of US sales by 2030 • Bloomberg reports EVs are approaching internal combustion engine vehicles in terms of cost	• CA executive order requires new passenger vehicle sales to be zero-emission by 2035; MA announced a similar plan, also with a 2035 timeframe; WA is proposing plan to stop sale of vehicles with gasoline engines by 2030 • UK plans to ban sale of cars and vans with gasoline and diesel engines by 2030; Canada has 2040 target for zero-emissions vehicles; Japan announced plans to end sale of gasoline-only vehicles by 2035; China is exploring similar policies

EV Charging Stations in US

Pew also mapped public charging stations in US, and noted that the number of stations have tripled since 2015

Electric vehicle charging outlets mostly concentrated in large U.S. cities

Number of public charging outlets, May 2021



Note: Data accessed May 25, 2021. Figures refer to publicly accessible stations with Level 2 or DC Fast chargers.
Source: U.S. Energy Department, Alternative Fuels Data Center, Census Bureau.

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