



2030 Gasoline Phaseout

What it does, and why we need it

Who we are

Green Energy Consumers Alliance is a non-profit based in Boston and Providence. This is our 40th year as an organization.

Our mission is to harness the power of energy consumers to speed the transition to a low-carbon future.



How to use this resource

Green Energy Consumers Alliance is running a campaign in both Massachusetts and Rhode Island to phaseout the sale of new gas-powered cars starting in 2030. A phaseout starting in 2030 is doable and ambitious to transition away from polluting vehicles over the next 30 years. It is also necessary to meet the climate goals and improve health in each state.

This slideshow is a resource to hub for lawmakers, advocates, and concerned citizens to learn more about the climate, health, economic, and market impacts of a gasoline phaseout starting in 2030. The slideshow is divided into multiple sections:

- State climate goals and the state of the EV market – Slide 4
- Phasing out gasoline in 2030 – Slide 17
- Co-benefits of phasing out gasoline – Slide 25
- Technology & Market Outlook – Slide 34
- Contact us – Slide 45



State climate goals and the state of the EV market

Electric vehicle (EV) technology is advancing rapidly, but policy has not moved fast enough for Massachusetts and Rhode Island to meet their mandates to reduce climate-warming emissions by 2030.



EVs are crucial for emissions reduction

GASOLINE-ONLY

Conventional cars run on gasoline and tend to be dirtier and more expensive to fuel than EVs.



381

ⁱ
GRAMS
OF CO₂e
PER MILE

AVERAGE EMISSIONS IN 02908



PLUG-IN HYBRID ELECTRIC

Plug-in hybrids use both gasoline and electricity and can be recharged from an outlet.



180

ⁱ
GRAMS
OF CO₂e
PER MILE



BATTERY ELECTRIC

Battery electric vehicles run on electricity and are some the cleanest and cheapest cars to drive.

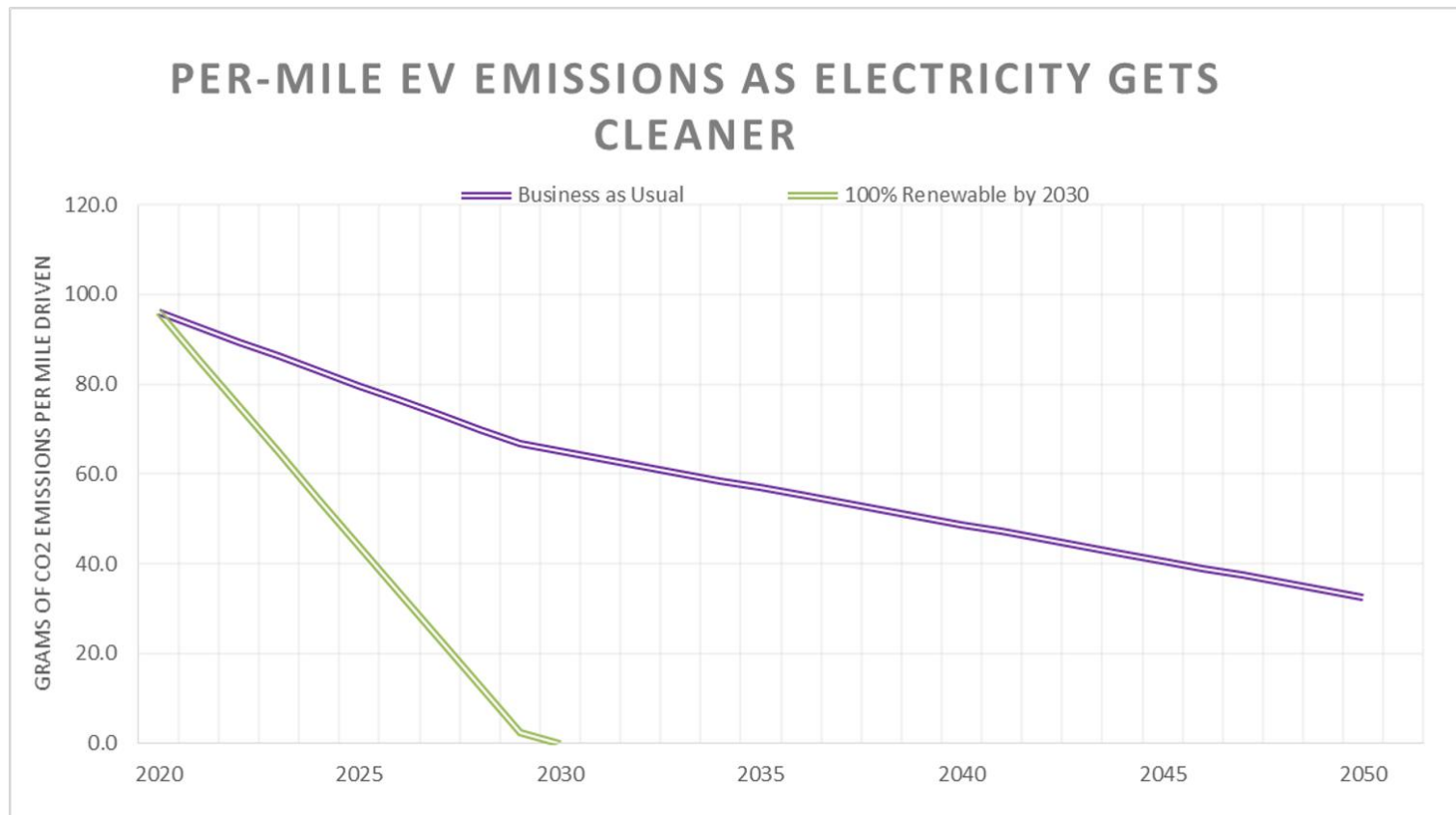


84

ⁱ
GRAMS
OF CO₂e
PER MILE



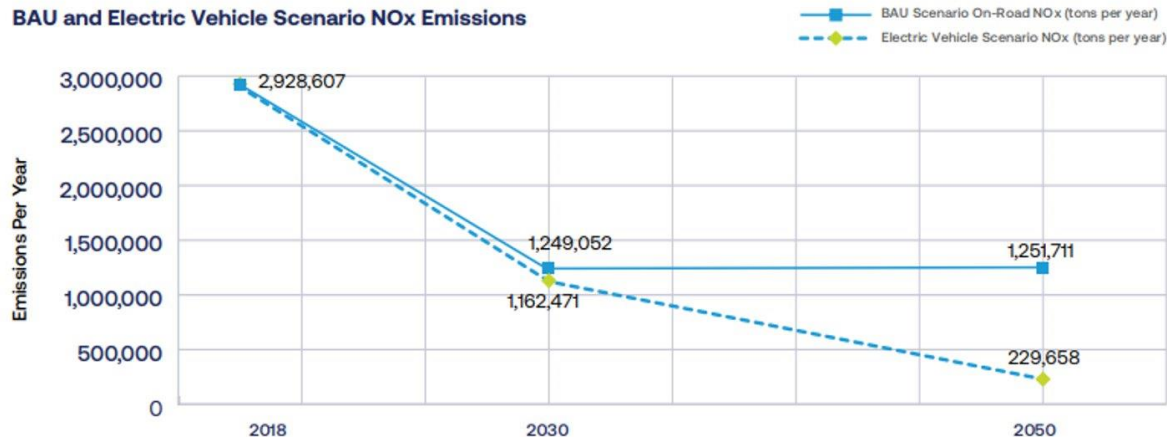
And electric cars will get cleaner every year



The transition to electric cars will also improve our health

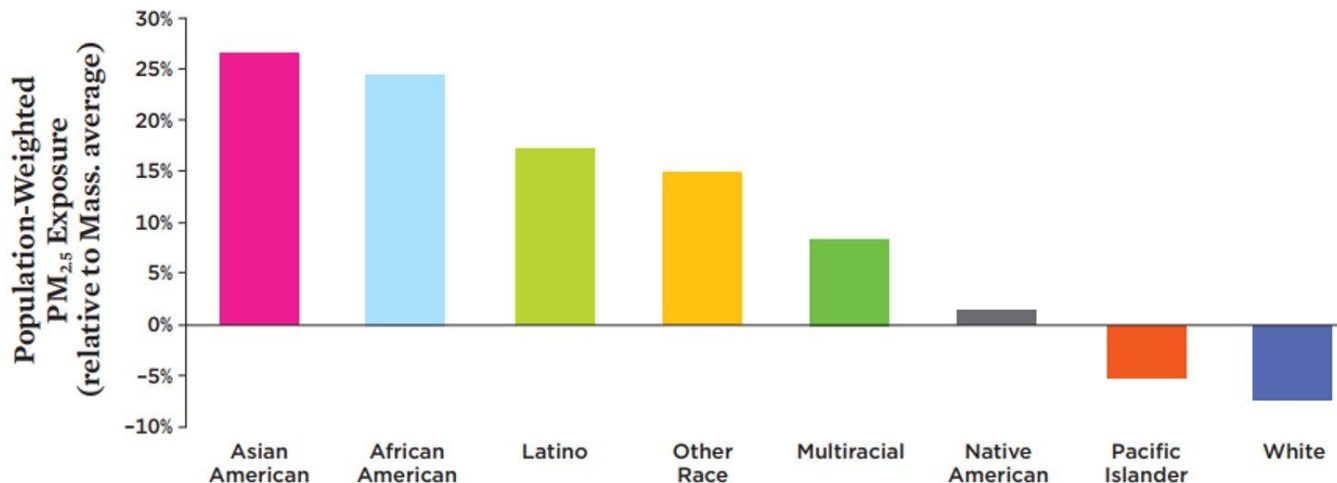
- A transition will save \$950 million annually in MA and \$178 million annually in RI in healthcare costs.
- Savings come from avoided trips to ER, fewer lost work-days, and fewer premature deaths associated with cleaner air.

BAU and Electric Vehicle Scenario NOx Emissions



Better air quality will improve health outcomes for everyone, especially communities of color and communities near major travel corridors (like I-95)

FIGURE 2. Disproportionately High Exposure for Asian American, African American, and Latino residents, and People of Other Races, in Massachusetts



Asian American residents have 26 percent higher exposure than the state average. African American residents have 24 percent higher exposures, and Latino residents have 17 percent higher exposures. Meanwhile, white residents are exposed to 7 percent lower concentrations.

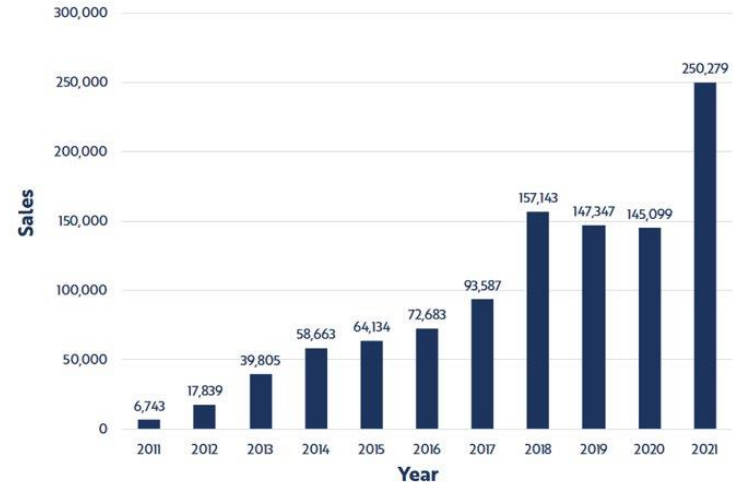


Growth in EV adoption can happen quickly, with the right policies



VELOZ

2011–2021 Annual Electric Vehicle Sales in California



Note: CA sales are 39% of national sales

Data Source: California Energy Commission (2021)

Retrieved Feb 2, 2022 from <http://www.energy.ca.gov/zevstats>

Q4 2021 Data Up



Massachusetts Climate Plan

- Interim Clean Energy & Climate Plan set a goal of 750,000 - 1 million EVs by 2030 to meet a 45% emission reduction mandate. Transportation & Climate Initiative (TCI) was listed as a major strategy to help fund and meet this goal.
- Since then, the Next Generation Roadmap bill increased the 2030 emissions mandate to 50% reduction and Governor Baker has pulled out of TCI.

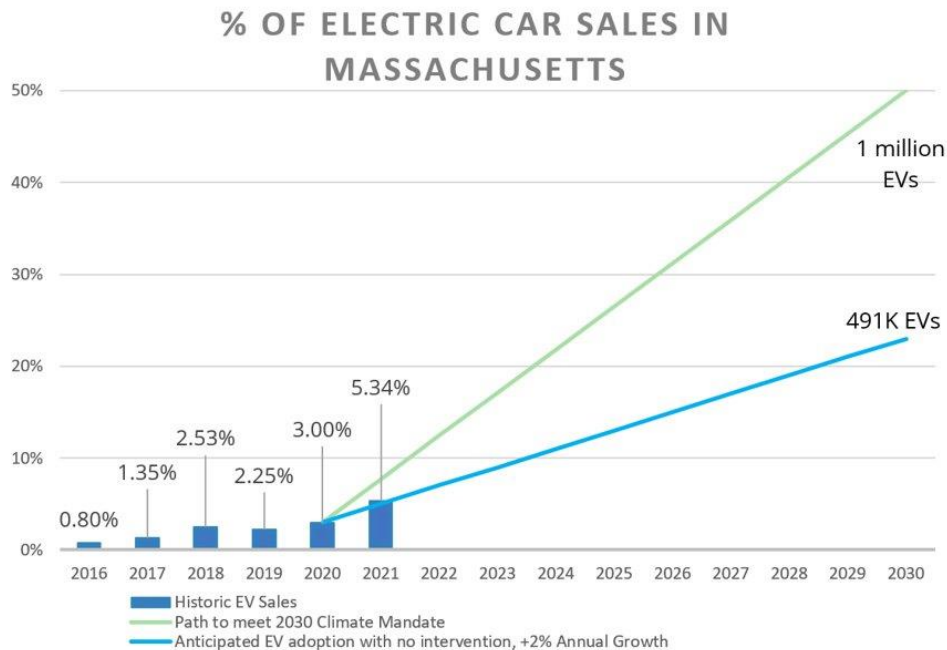
What is Plan B to get 1 million EVs on the road by 2030?



MA is not on track for 1 million EVs by 2030

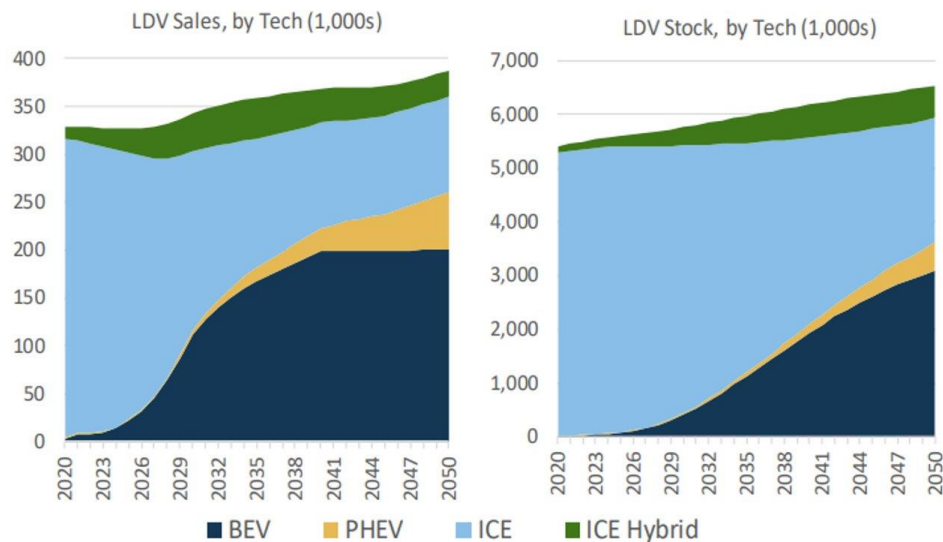
- Less than 1% total cars on the road are electric as of 2022.
- Without intervention, 9% of all cars and 22% of new sales will be electric by 2030.
- Massachusetts needs to get to 50% EV sales in 2030 to have 1 million EVs on the road in 2030.

The ramp-up in EV sales from now until 2030 to reach 50% EV sales is extremely steep.



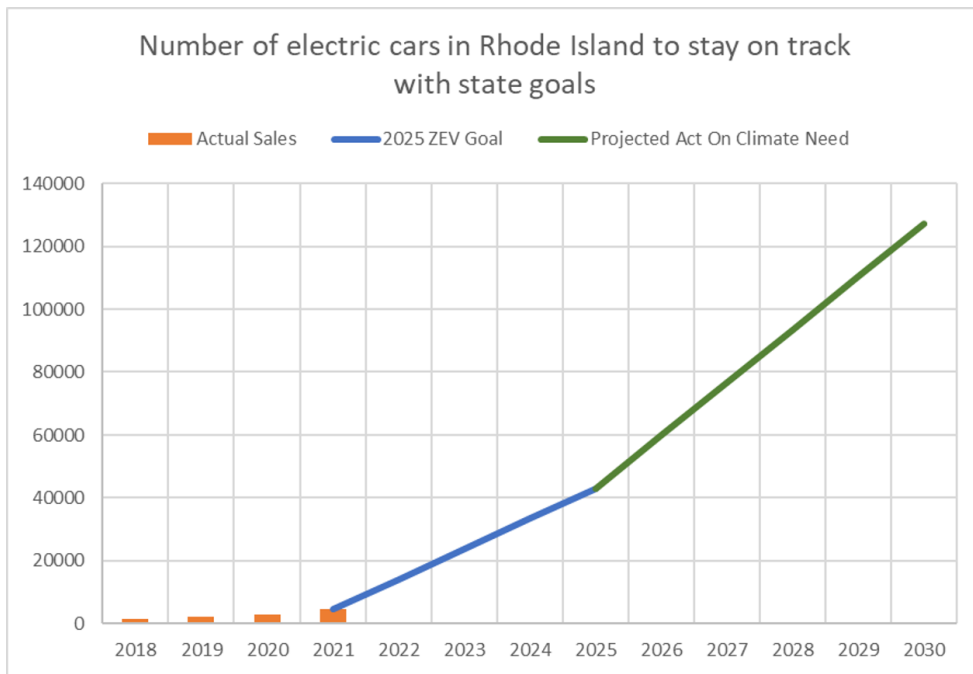
MA 2050 Roadmap says existing policy isn't enough

- We're behind because EV sales do not translate to fast fleet turnover; that means only about 5% of the 5.5 million cars in Mass. are replaced with new cars in any given year.
- **3%** new EV sales replaces just **0.0015%** of the existing car stock with EVs; we need to get to 20% vehicle stock by 2030.
- Modeling confirms that without policy intervention, Massachusetts will get to 500,000 EVs on the roads in 2030; half of what is needed to meet its mandatory emissions reduction target.

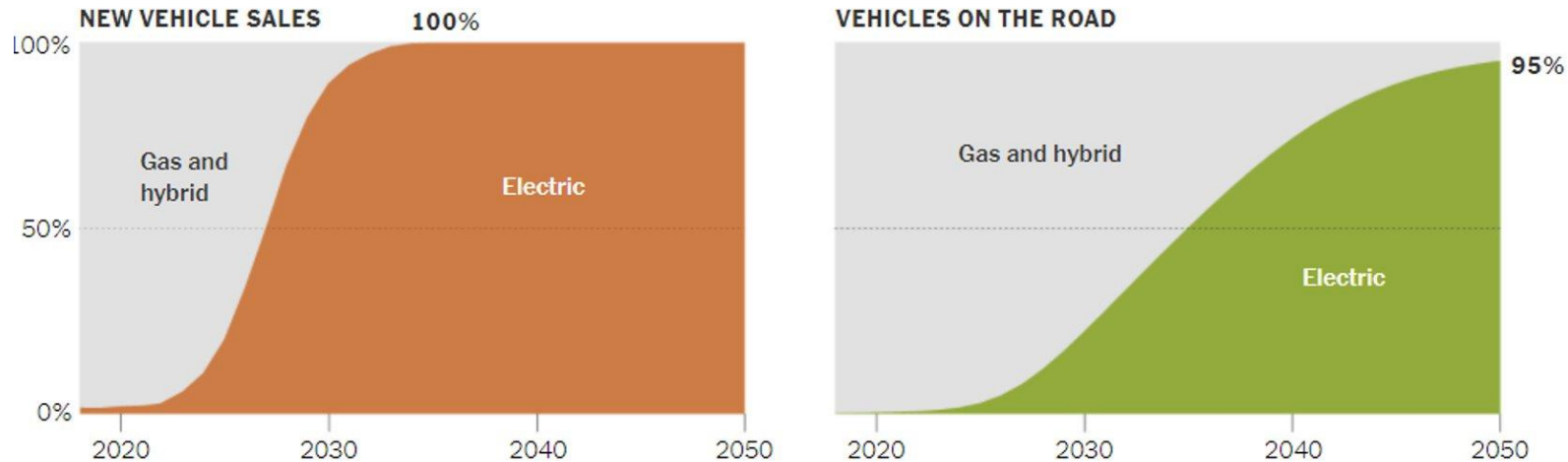


Rhode Island climate goals

- Act On Climate passed in 2021 and set mandatory emissions reduction of 45% by 2030.
- A plan is due by the end of 2022. Since transportation is the largest source of GHGs, we can expect EVs to be an important part of the plan.
- RI currently has 4,600 EVs on the road.
- ZEV goal to increase to 43,000 by 2025 (we're behind)
- To stay on pace with MA's goal of 1 million EVs by 2030, we estimate Rhode Island needs roughly 127,000 EVs to meet its Act On Climate mandate.



100% new EV sales doesn't mean gasoline-powered cars disappear overnight



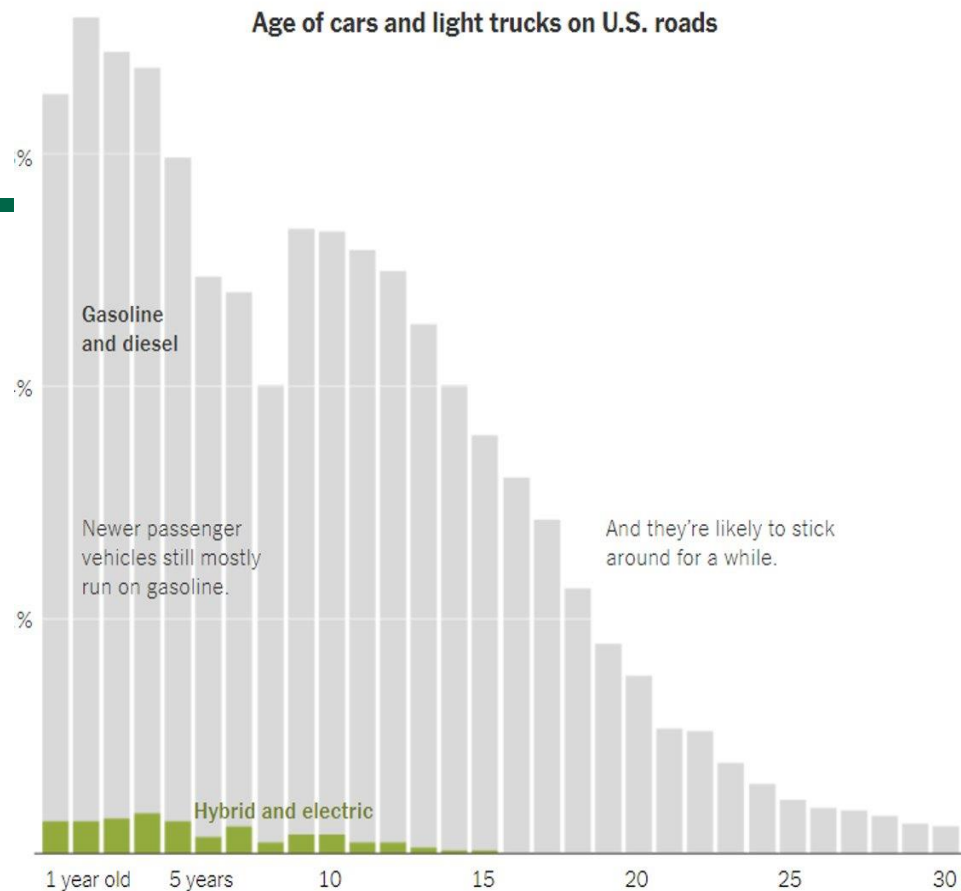
Sources: Fleet turnover model via Alarfaj, Griffin and Samaras in [Environmental Research Letters](#); Electric vehicle sales projection via IHS Markit

2035 phaseout is illustrated above with a steady ramp up in sales. Note that even when 100% of new sales are electric, it takes many years for the fleet to shift away from gasoline powered vehicles.



Fleet turnover takes a long time because cars last a long time

- Average vehicle age in New England is 11 years.
- The majority (>96%) of new cars being added to the roads now are gasoline-powered, which means gasoline isn't going anywhere anytime soon.



Source: 2017 National Household Travel Survey

Source: New York Times



Key Points

1. We can only expect to replace about 5% of the total fleet every year with new cars based on historical sales data in Massachusetts and Rhode Island.
2. New cars put on the road today will be on the road for 15-20 years, so every new gas-powered car sold locks us into another two decades of gasoline consumption.
3. Electric cars are coming, but not fast enough to align with our climate goals.
4. For most cars to be electric by 2050, we need to start phasing out gasoline by no later than 2030.
5. Increasing new electric car sales to 100% by 2030 requires investment and planning now.



Phasing out gasoline in 2030

It's more doable than it might sound, and it's a fair way to make sure secondhand car buyers will have access to clean cars.

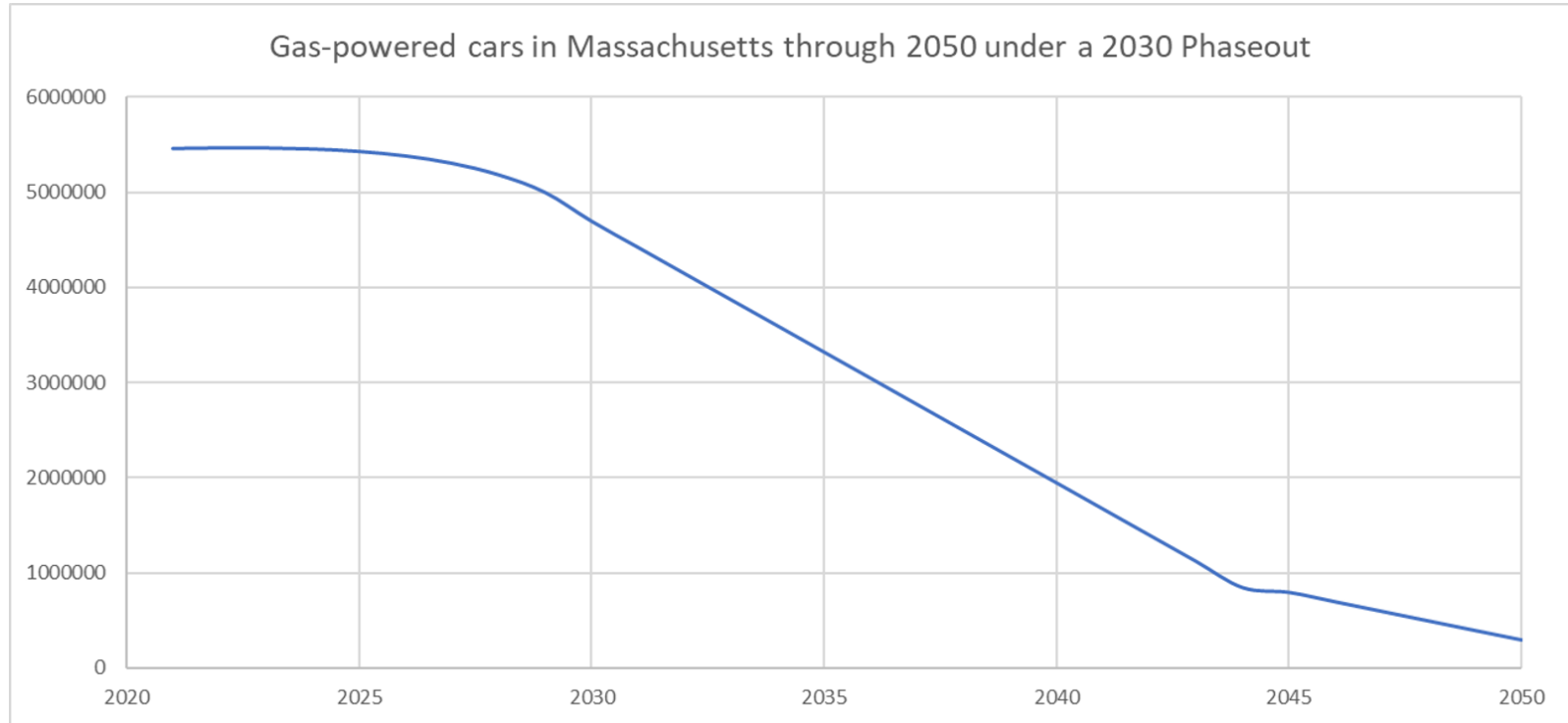


What does it mean to begin a phaseout of gasoline in 2030?

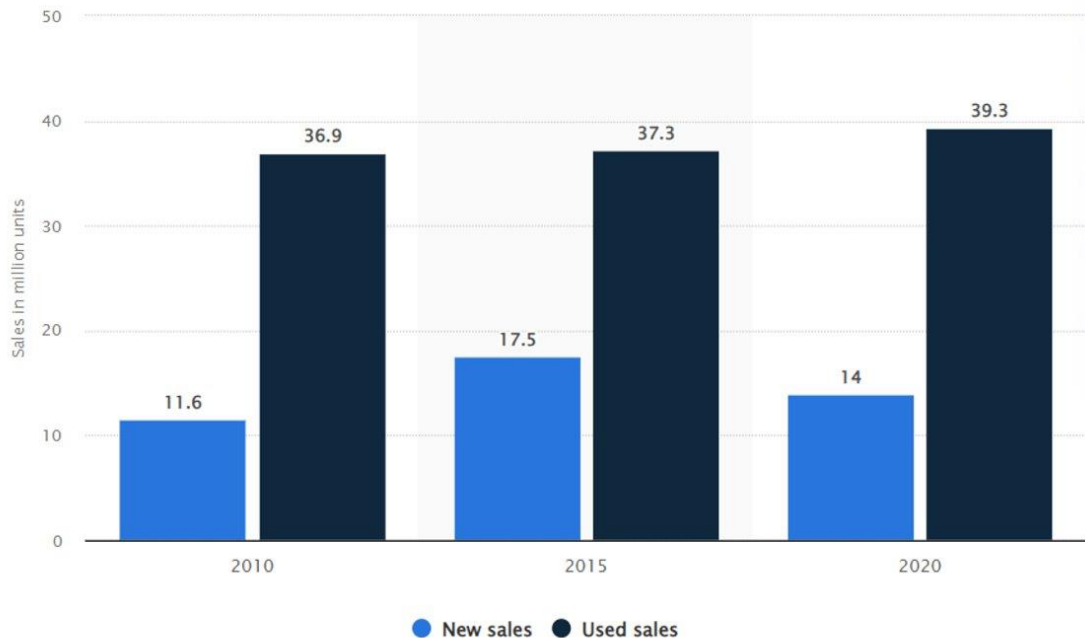
- It means we would set a target date for 100% of new car registrations for cars model year 2030 or newer to be electric.
- PHEVs (plug-in hybrid vehicles) that have a rechargeable battery and a small, efficient gasoline engine would be allowed.
- Such a policy would only affect *new* cars. Used cars model year 2029 or older would be unaffected.



100% EV sales in 2030 is the beginning of a gasoline phaseout transition period



The majority of Americans never buy a new vehicle in their lifetime

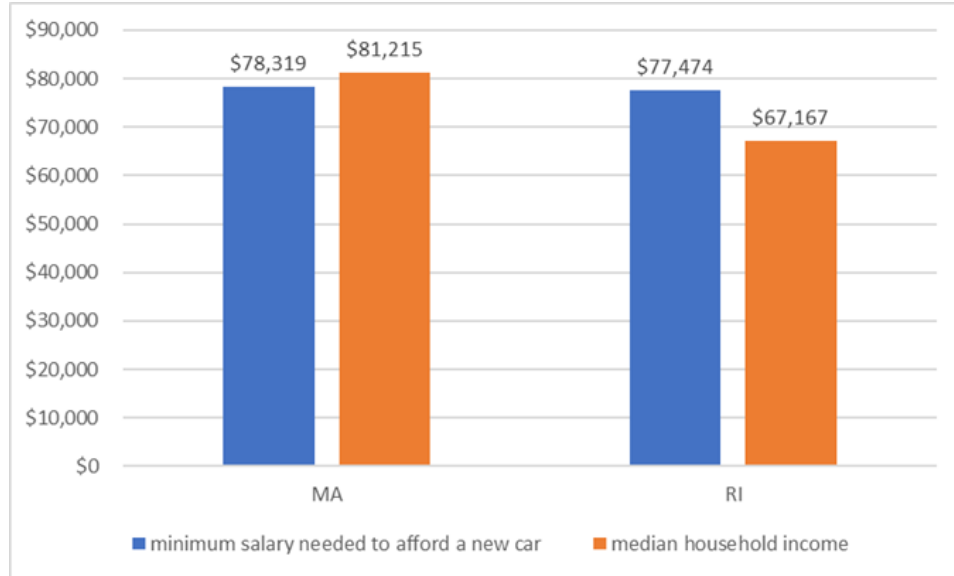


About 3x as many used vehicles are sold every year as new.

Secondhand options are limited by the purchase preferences of new-car buyers.



A phaseout of new gas-powered cars only affects new-car buyers, who are generally higher-income



The average cost of a new car was roughly \$40K in 2019. That number has skyrocketed to \$47K as of 2022. There are many EV options below \$40K.

A phase-out of new gas-powered cars starting in 2030 is a **fair way to increase EV adoption** and to make electric vehicles accessible to all consumers **without only relying on purchase incentives.**



Other states have committed to state-wide gasoline phaseouts by 2035

Governor Newsom Announces California Will Phase Out Gasoline-Powered Cars & Drastically Reduce Demand for Fossil Fuel in California's Fight Against Climate Change

Published: Sep 23, 2020

CLIMATE POLICY

New York law phases out most gas-powered vehicles by 2035

PUBLISHED THU, SEP 9 2021 7:07 PM EDT



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April 15, 2021
4:11 PM EDT

Last Updated a year ago

United States

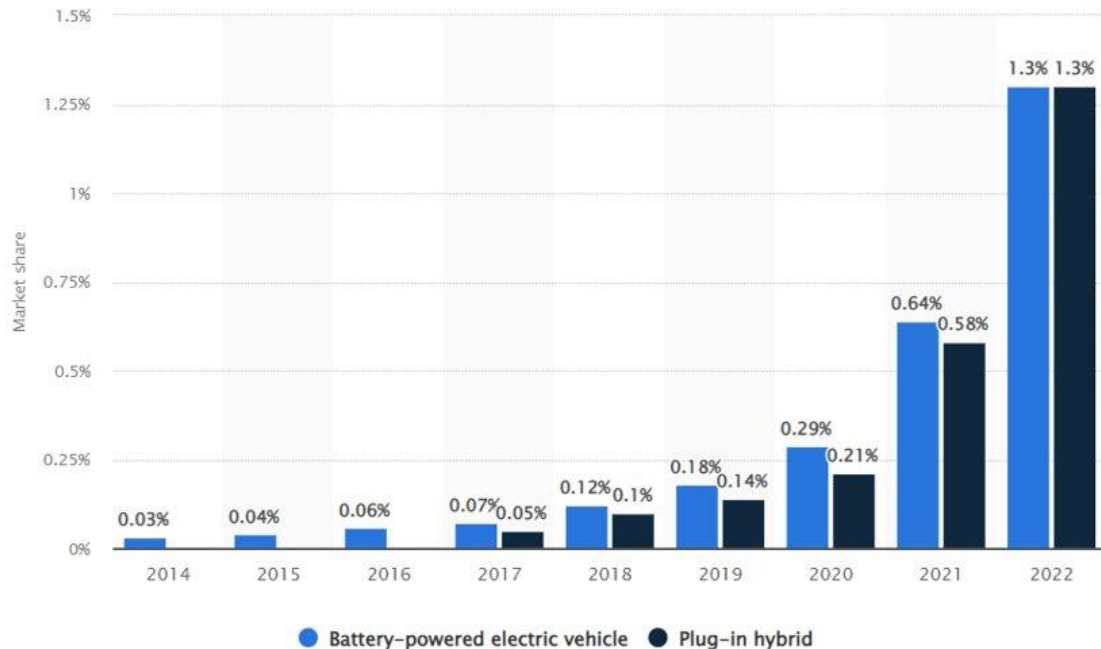
Washington state passes bill with goal to phase out gasoline cars

We believe 2030 is the right date for MA & RI because:

- It's aspirational, not binding.
- Shooting for 2030 means we'll probably land at 2035.
- The point is to mobilize the state's infrastructure and planning for 2030 emission reduction deadlines.



Mandates are not the only policy tool to increase EV adoption

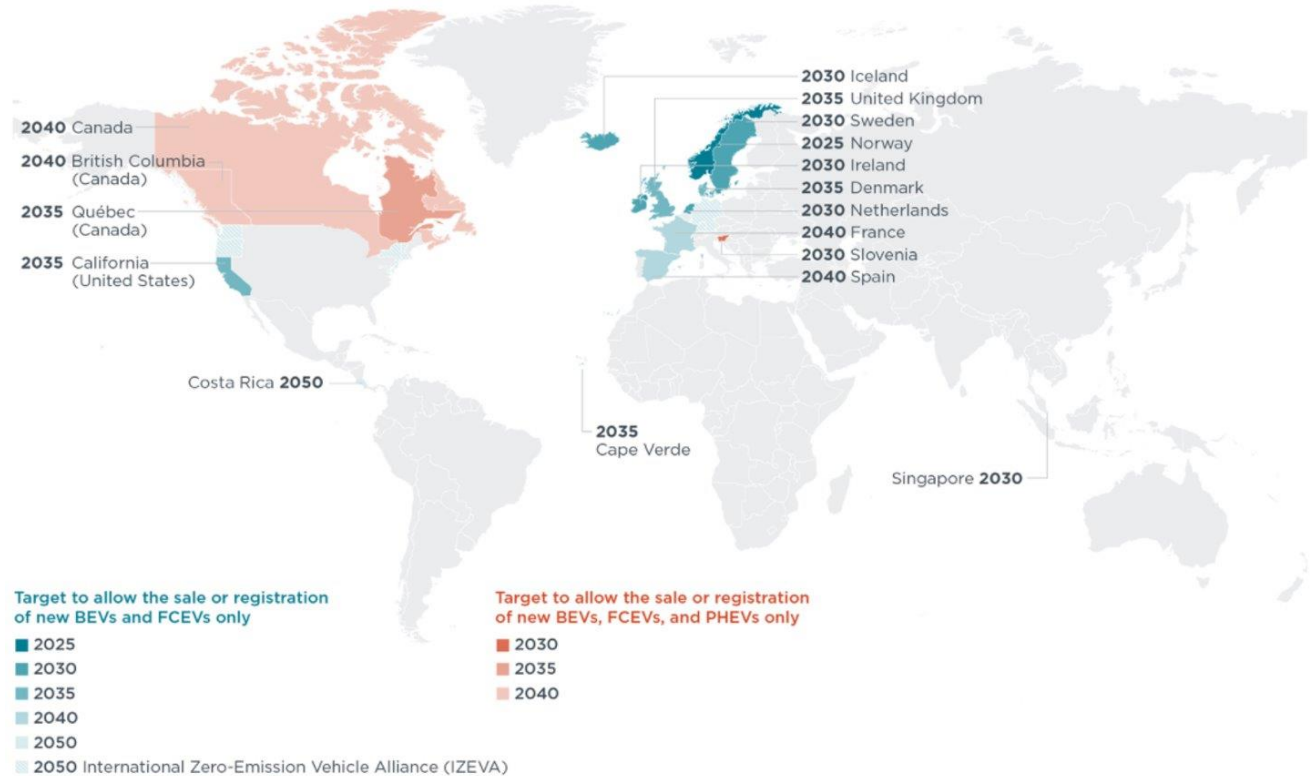


- However, in every country that is leading on EV adoption, there is some sort of mandate or goal in play.
- In Europe, both incentives and dis-incentives are rapidly increasing the adoption of electric vehicles.
- Germany enacted a suite of policies to support charging installation and EV purchases in late 2019- you can see the impact in 2020 and 2021.
- Pictured: **Market share of electric vehicles in Germany from 2014 to 2022**



Many countries have committed to setting a date to end new gas-powered car sales.

Governments with official targets to 100% phase out sales or registrations of new internal combustion engine cars by a certain date*
(Status: June 2021)



* Includes countries, states, and provinces that have set targets to only allow the sale or registration of new battery electric vehicles (BEVs), fuel cell electric vehicles (FCEVs), and plug-in hybrid electric vehicles (PHEVs). Countries such as Japan with pledges that include hybrid electric vehicles (HEVs) and mild hybrid electric vehicles (MHEVs) are excluded as these vehicles are non plug-in hybrids.



Co-benefits of phasing out gasoline

EVs aren't just better for the climate; they improve public health, create more local jobs, and lower fuel costs for drivers.



Polling indicates drivers want electric cars

- 71% of U.S. drivers say they would consider buying an EV at some point in the future, with nearly a third considering an EV for their next car purchase. ([Consumer Reports, Summer 2020](#))
- Interest in EVs is growing fast; in 2019, just 20% of Americans were considering EVs. ([AAA, Spring 2019](#))
- Massachusetts voters think it's important to improve transit AND electrify vehicles. It's not an either-or. ([MassINC Polling Group, March 2021](#))
- 96% of existing EV drivers say they will buy another EV the next time they're in the market for a new car ([AAA, Winter 2020](#))

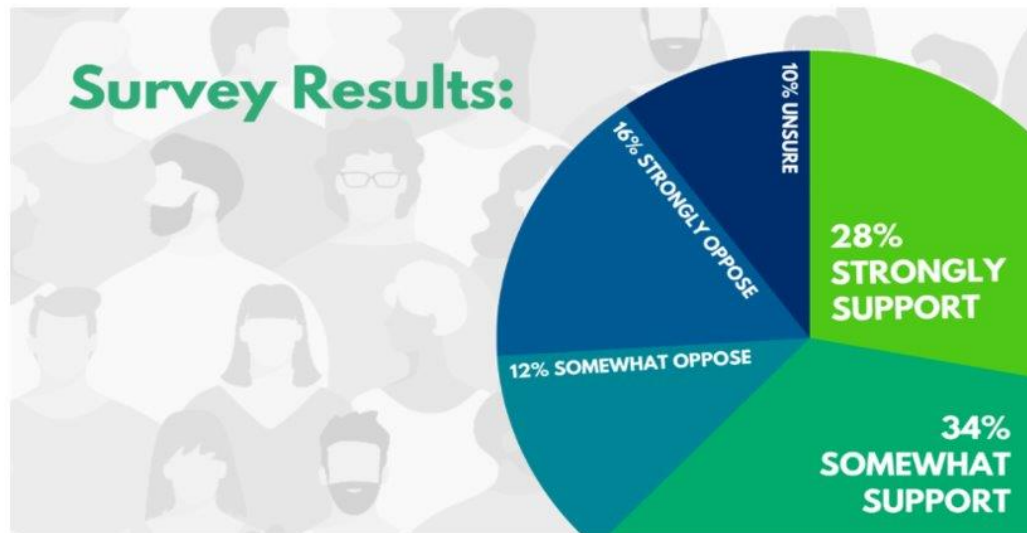


Polling specifically supports the idea of a gasoline phaseout no later than 2030

Two recent polls indicate most Americans want a policy to phase out the sale of new gasoline cars to take effect no later than 2030.

- [Climate Policy, Summer 2019](#)
- [Coltura, October 2021](#)

62% of Massachusetts respondents support a policy that would require all new cars sold in the Bay state to be electric starting in 2030.



Support for a gasoline phaseout is particularly high among Black and Hispanic voters

	Black respondents	Hispanic respondents	White Respondents	Respondents of other races
Somewhat or very worried about climate change	87%	78%	69%	80%
Somewhat or very worried about air pollution	84%	81%	72%	85%
Somewhat or very positive opinion of EVs	78%	77%	61%	78%
Somewhat or very likely to purchase an EV in the next five years	59%	65%	45%	65%
Think it's somewhat or very important for the US to transition	68%	68%	56%	73%
Somewhat or strongly support a policy that requires all new cars to be electric starting in 2030	68%	64%	51%	71%

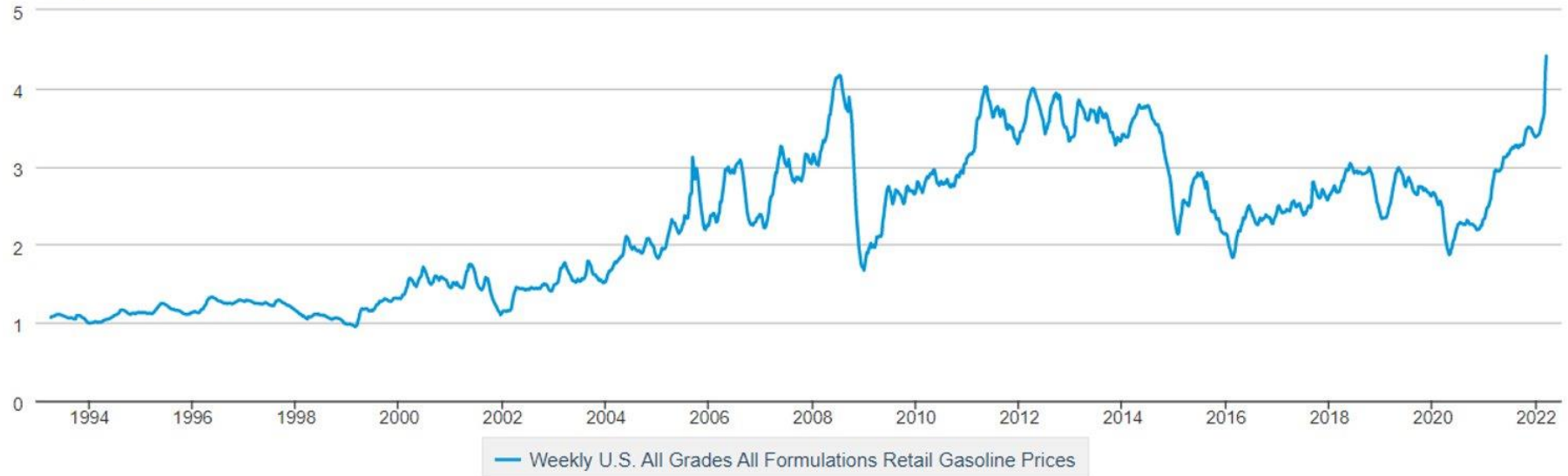


Volatile gas prices hurt drivers

Weekly U.S. All Grades All Formulations Retail Gasoline Prices

DOWNLOAD

Dollars per Gallon



A transition to electric cars will help key vehicle fuel costs stable and give New England, which does not produce or refine petroleum, greater energy independence.

[Source: Energy Information Administration](#)



EV drivers are already saving

This graph shows the lifetime savings of the best-selling EVs (that are under \$50,000) as compared to the Best Selling & Top Rated gas-powered vehicles in each EV's class.

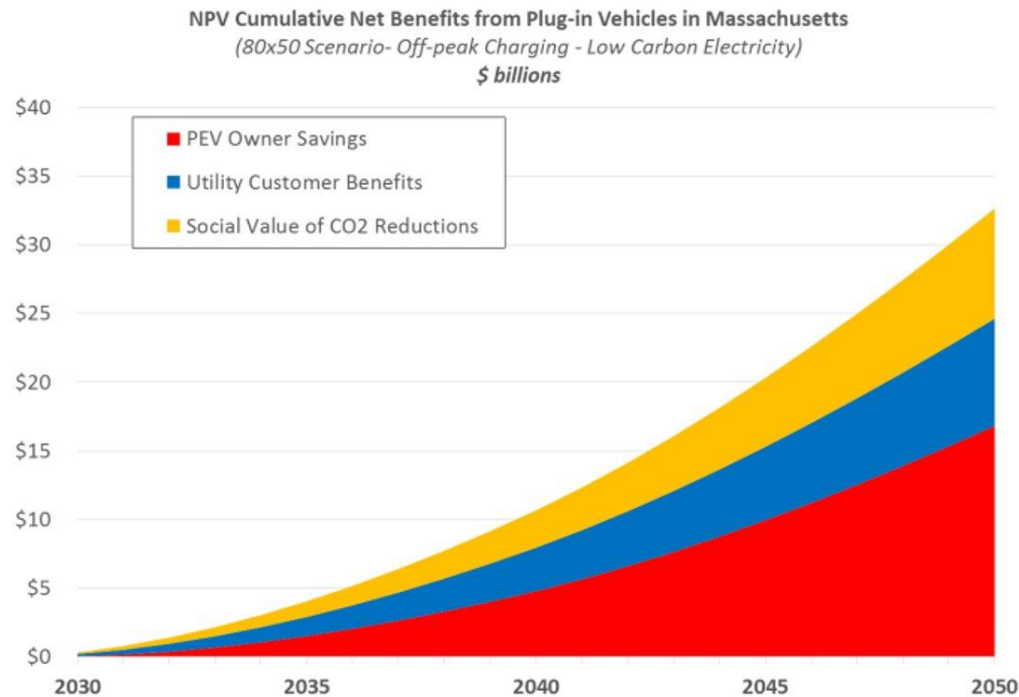


The average Massachusetts driver saves \$600 annually in fuel costs by switching to an EV.

Lower fuel and maintenance costs translate to \$6,000 in savings over the lifetime of the car.



Cumulative net benefits from greater EV use in Massachusetts could exceed \$32 billion state-wide by 2050



- 51% (\$16.8 billion) will accrue directly to PEV owners in the form of **reduced annual vehicle operating costs**
- 24% (\$7.8 billion) will accrue to electric utility customers in the form of **reduced electric bills**
- 25% (\$8.0 billion) will accrue to society at large, as the value of **reduced GHG emissions**.



Job increases for installing EV charging

- No car manufacturing or petroleum refining industry in RI or MA.
- The transition to electricity as a fuel source instead of gas will create electrician jobs in EV charging and grid management.
- Nationwide, the installation of public EV charging infrastructure alone is expected to create [22,720 job-years](#) from 2021 to 2030 if 15 million EVs are on the road in 2030.
- Assuming Massachusetts gets 1 million EVs on the road by 2030, that would mean 1500 job-years from now until then.
- Climate Jobs RI estimates 193 direct jobs over the next 8 years to install charging all over the state.



Job impacts for existing industries

- Autobody shops will not be affected; EVs will need body-work done, too.
- Dealerships will continue to sell cars; they will just be electric.
- Gas stations and convenience stores will transition to dispensing EV charging.

The job-type that will be most impacted by a phaseout of gasoline will be mechanics who work on ICE engines.

- **For existing mechanics:** Gasoline powered vehicles will still be on the road through 2050 because a 100% EV sales by 2030 means a gradual decline of gas-powered cars. Those who make a living repairing engines now will continue to have work.
- **For mechanics-to-be or those in training:** This bill will send a clear message to workforce development and job training programs to adapt training to focus on work that electric cars will need. The mechanic of the future may look more like an IT guy than a mechanic. We do more harm by pretending that electric cars aren't coming.



Technology and market outlook

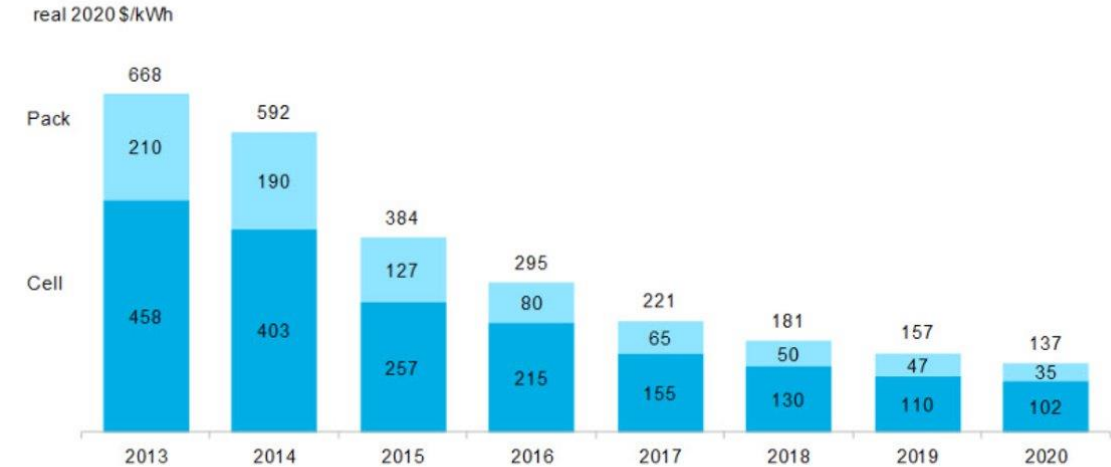
Electric vehicle technology will be ready for everyone to shift to EVs by 2030.



The upfront cost barrier is shrinking

- Many Americans cite high purchase prices as a barrier to owning an EV.
- EVs are getting cheaper faster than experts anticipated.
- In the last 10 years, lithium ion batteries used in EVs have dropped in cost by 89%
- For comparison, battery costs have fallen faster than the average cost of residential solar, which dropped by ~60% from 2008 to 2018.

Figure 1: Volume-weighted average pack and cell price split



Source: BloombergNEF



EVs will reach upfront cost parity between 2025-2027

- Cost parity is the point at which an electric vehicle costs as much as an equivalent gas-powered car to purchase on an upfront basis.
- The exact crossover point depends on the segment (sedan, SUV, pickup, van, etc).

Figure 30: Estimated pre-tax retail prices for SUV-C segment vehicles

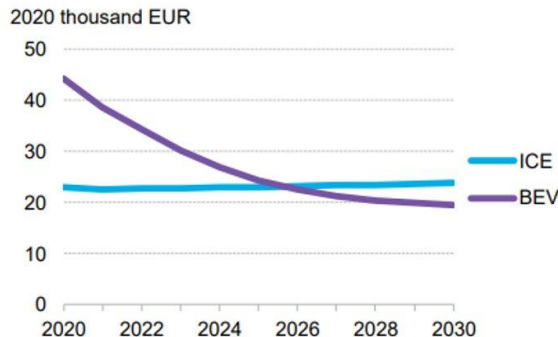
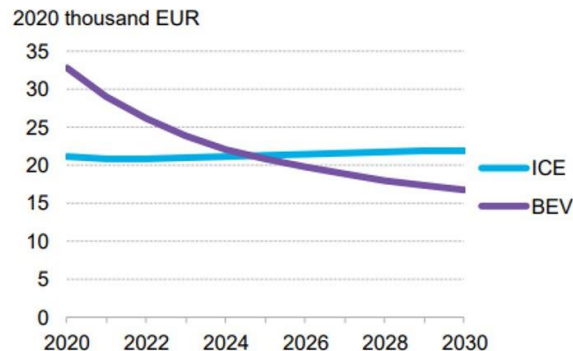


Figure 31: Estimated pre-tax retail prices for light vans



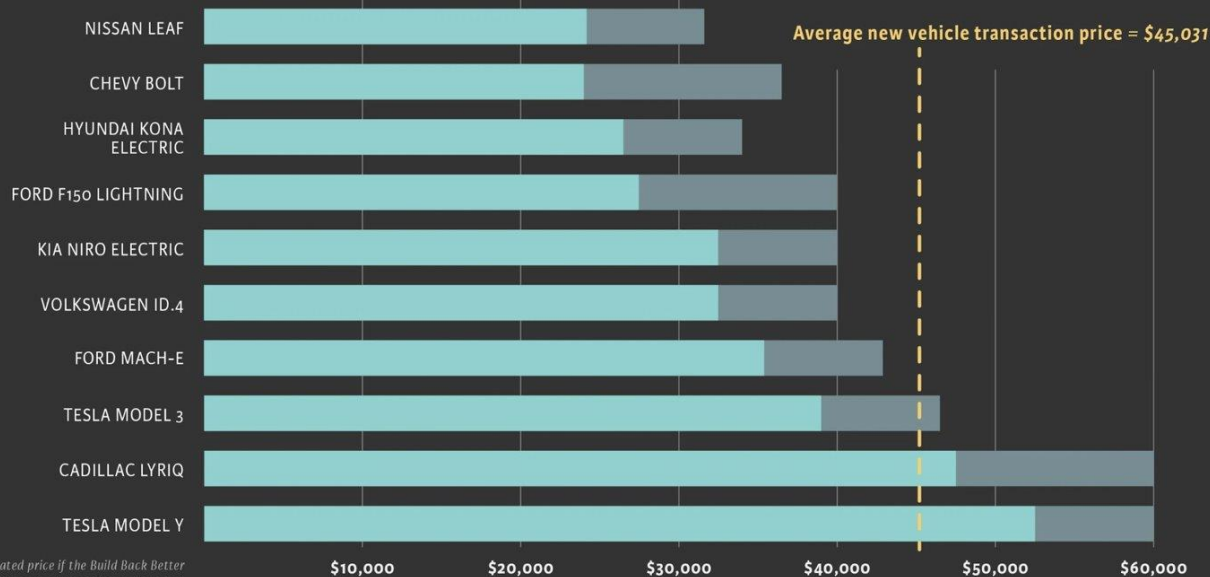
Source: BloombergNEF Note: ICE is internal combustion engine vehicle and BEV is battery electric vehicle





2021 AVERAGE MANUFACTURER SUGGESTED RETAIL PRICE ALL-ELECTRIC CARS AND TRUCKS

■ BASE PRICE
■ PRICE AFTER PROPOSED FEDERAL TAX CREDIT



**Estimated price if the Build Back Better framework becomes law and certain models are made in the U.S. with union labor.*

Sources: Average new vehicle transaction price as of September 2021 from Kelley Blue Book and Cox Automotive data, accessed November 5, 2021. Electric vehicle prices are from Car and Driver, Road and Track, and Kelley Blue Book, accessed November 5, 2021.

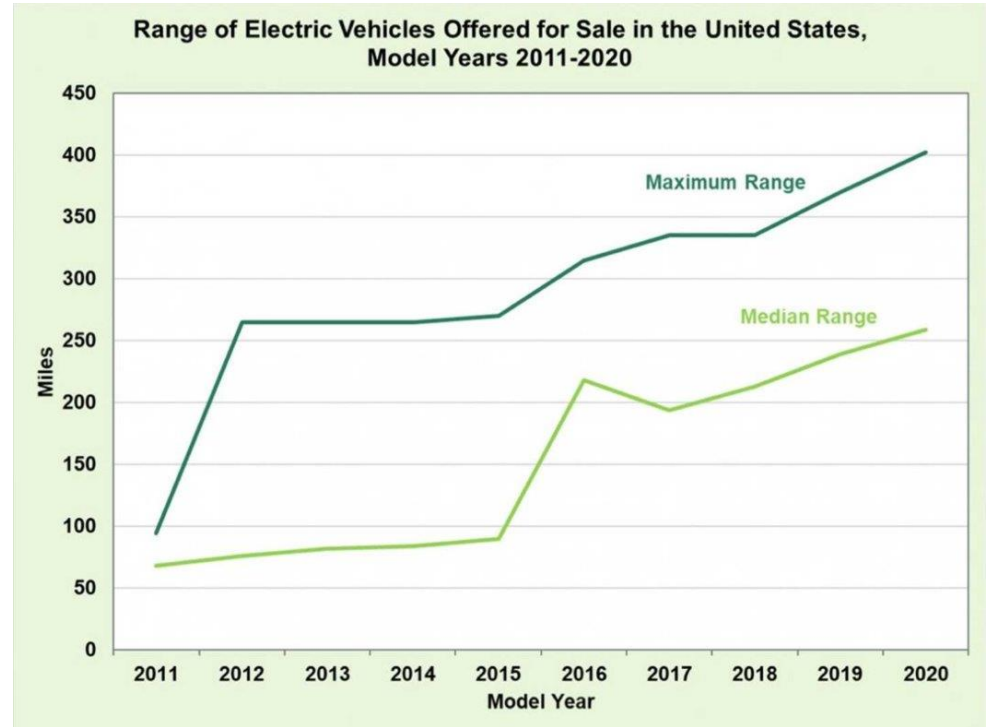
Many EVs are already cost-competitive with the average cost of a new gas-powered car.

[Source: Energy Foundation](#)



Better battery tech means longer driving ranges

- EVs are also getting better in terms of range, efficiency, and style.
- 100 new BEVs from a variety of automakers are set to debut by 2024.



Automakers are serious about EVs

Automaker	Commitments
BMW	50% of global sales will be electric by 2030
Ford	\$22 billion invested through 2025 in electric vehicles - Ford F-150 Lightning will be first all-electric pickup truck available in 2022
General Motors	- Plans to stop selling gas-powered cars after 2035 - Chevy Bolt, Cadillac Lyriq, Hummer EV all being sold or produced now - Chevy Silverado EV due in 2023-2024
Honda	40% of sales will be electric by 2030 - Plans to stop selling gas-powered cars by 2040
Hyundai-Kia	\$7.4 billion invested through 2025 in electric vehicle production 50% cut in gas-powered car production announced 20% of car sales will be electric by 2025
Nissan	8 electric car models released by end of 2023
Stellantis	50% sales will be electric in North America by 2030 \$35.5 billion invested in EVs by 2025
Toyota	70 electrified models will be available by 2025
Volkswagen	- Expects 50% sales will be electric by 2030 in America 70 electrified models in development - Last gas-powered car platform will launch in 2026



Commitments to EVs are accelerating

FULL SPEED BEV ROLL OUT IN U.S.

From 2024 all new launches⁽¹⁾ include a BEV version

Commercial Vans
(from 2023)

Light-Duty Pickups
(from 2024)

Pure Offroad UVs
(from 2024)

Lifestyle Family SUVs
(from 2024)

Performance Muscle Cars
(from 2024)

Lifestyle Family Cars
(from 2025)













U.S. BEV product portfolio

25+
2030



Ford Splits Into Electric and Gas Divisions to Speed Up Transition

E.V. operations will focus on technology and growth while the traditional business continues to chase profits. “You can’t have people work on both at the same time,” the chief executive said.

A photograph showing the rear of a blue Ford F-150 Lightning pickup truck on an assembly line. Two workers in high-visibility vests are standing near the vehicle, and another worker is visible further down the line. The truck is suspended by an orange overhead crane system.

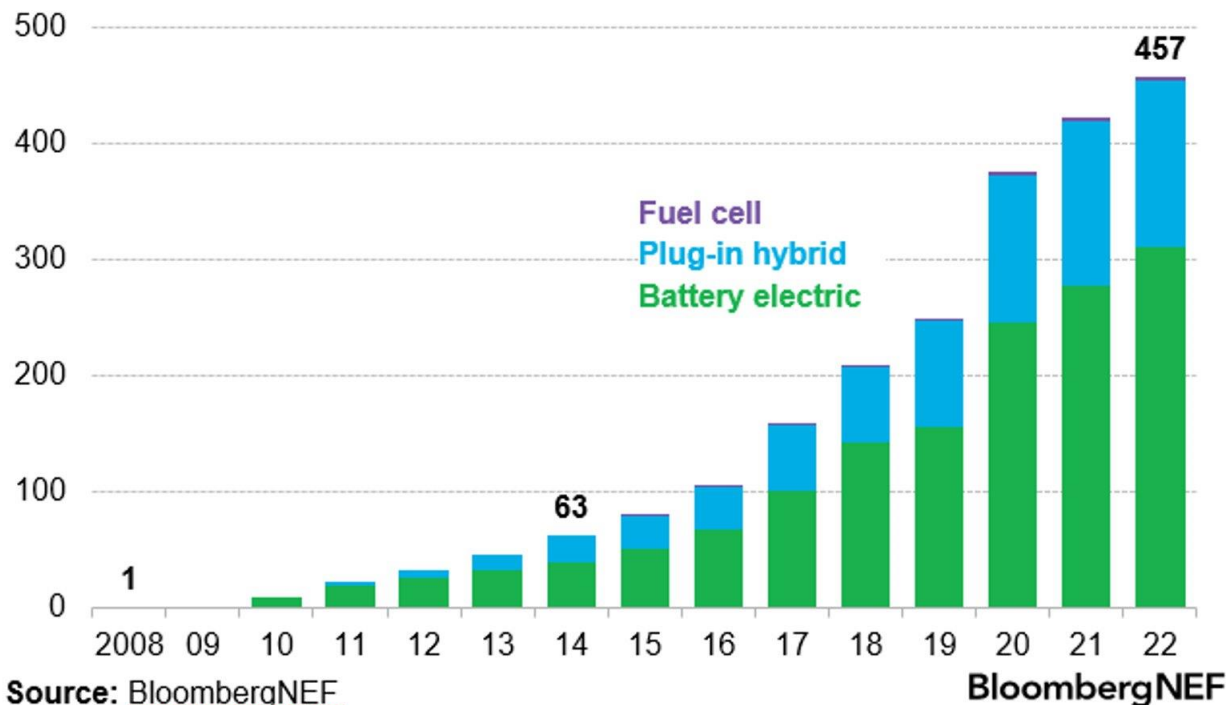
An electric Ford F-150 Lightning pickup truck being assembled in Dearborn, Mich., in January. Brittany Greeson for The New York Times

A green circular logo featuring a stylized letter 'G' with a leaf-like shape integrated into its design.

Countries with aggressive EV adoption goals also see more EV models available sooner.

The market is under enormous pressure globally to shift to EVs.

Electric vehicle models offered for sale, global





Chevy Bolt



Nissan LEAF



Hyundai Ioniq EV



Toyota Prius Prime



MINI Electric Hardtop



Hyundai Ioniq PHEV

Sedans



Nissan Ariya



Hyundai Ioniq 5



Chevy Bolt EUV



Ford Mustang Mach-E



Volkswagen ID.4



Mitsubishi Outlander PHEV

SUVs



Ford F-150 Lightning



Chevy Silverado EV



Rivian R1T



GM Hummer Truck EV



Lordstown Endurance

Pick Up Trucks

Automakers are now spending more on building EVs than they are gas cars.

Capex Is Destiny

Automakers' electric vehicle and digital R&D and capex commitments as a percentage of total R&D and capex

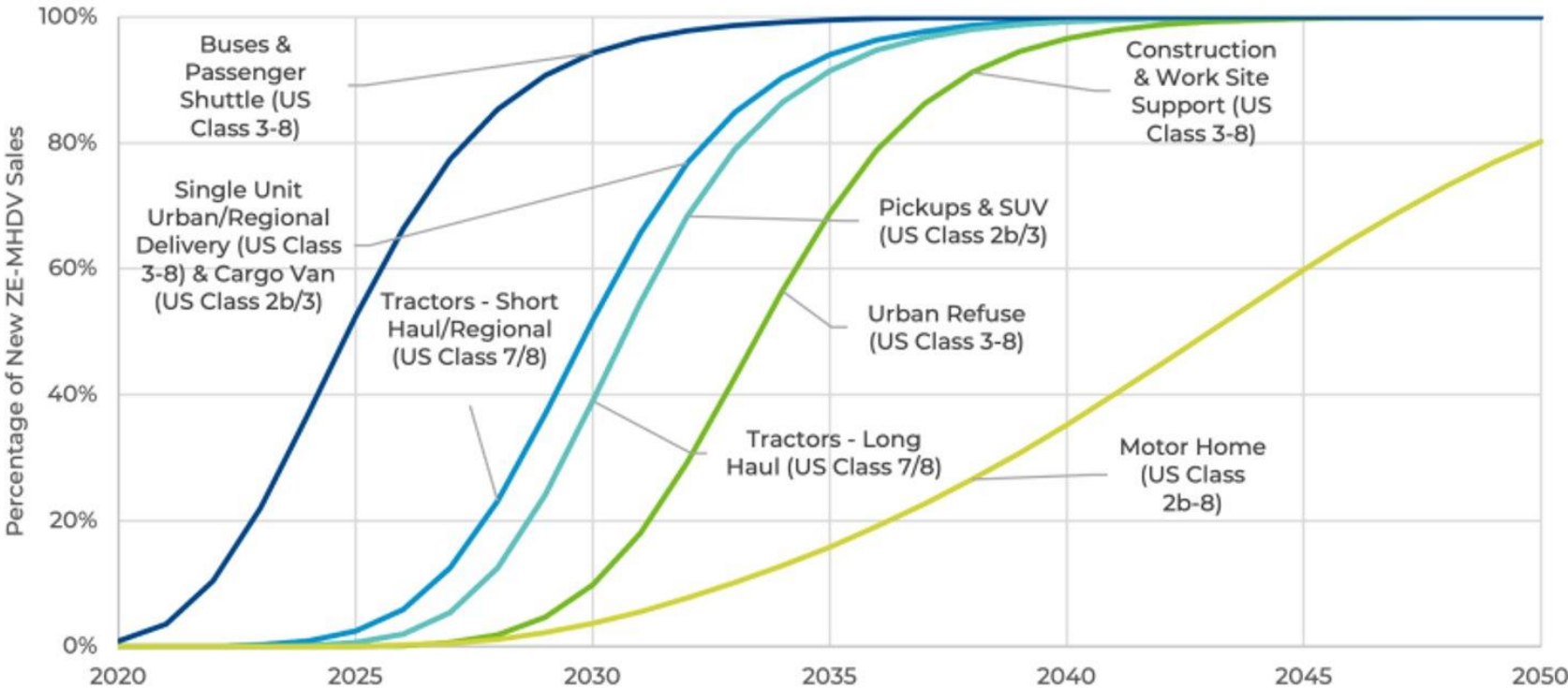


Sources: Companies, BloombergNEF

Note: calculated as equal annual investment over companies' stated investment periods, divided by 2020 R&D and Capex.



Medium and Heavy Duty Vehicles are coming, too



Questions?

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