



2022

EV ADOPTION OUTLOOK

AI-powered, data-driven insights predicting
EV adoption trends across the US

Based on BlastPoint's proprietary model

Overview: Where will EV adoption grow fastest in 2022?

2021 was a landmark year for transportation electrification in the US. EV sales through Q3 more than doubled from the first 3 quarters of 2020 to reach over one million vehicles. This is a huge increase over last year's numbers despite the ongoing pandemic and major supply chain issues. In fact, it's an even bigger increase than we anticipated in our *2021 EV Outlook*. With the passage of President Biden's Infrastructure Bill that provides \$7.5b to create a nationwide network of EV charging stations, 2022 promises more exponential growth.

However, areas across the US vary wildly when it comes to EV readiness. Even within states at the forefront of EV expansion, such as California, there's a big disparity between urban, suburban, and rural areas. Other states, like West Virginia, are being passed by almost entirely. In order to achieve nationwide electrification goals, utilities, automotive companies, and other stakeholders will need to understand their customer footprints and target specific areas with personalized offerings. The BlastPoint EV adoption model makes micro-targeting for adoption and equity possible.

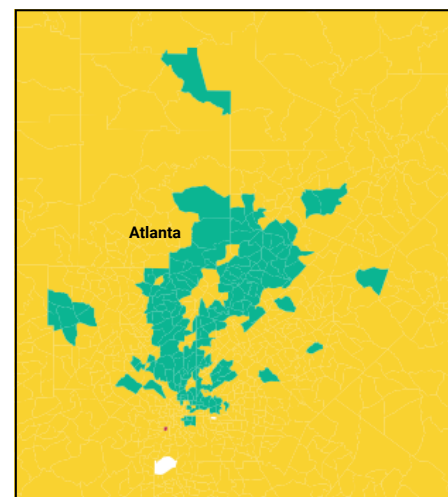
BlastPoint's EV Adoption Model

BlastPoint fed our proprietary AI algorithms a large EV adoption dataset. Our algorithms identified **three levels of EV adoption readiness** at the Census Tract level based on key attributes. We then applied this model to the entire US, which allows us to predict high, moderate, and low levels of EV adoption readiness for every Census Tract in the country with a relatively low margin of error. Our model reveals that, across the US, there's a suburban ring of accelerated EV adoption around most major cities, while city centers and rural areas are slower to adopt. We call this the "suburban donut" pattern.

Adoption Hotspot: The Suburbs & Exurbs

It might seem surprising at first, since suburbs usually aren't considered hotbeds of innovation, but most EV growth has occurred and will continue occurring in suburban areas. The two major reasons for this are fairly simple: logistics and economics. Most EV charging takes place at private residences, and suburban homes are set up ideally for private EVSE installation. Many have garages and driveways with electrical access, making installing a charger very straightforward. The old adage "keeping up with the Joneses" also helps to explain the viral nature of EV growth in suburban areas: seeing an EV in a neighbor's driveway makes EV more desirable.

While suburban and exurban areas are the fastest adopters on the residential front, a target area for growth will be commercial & public charging infrastructure. Suburbs often have a lower concentration of publicly available chargers, which limits charging to homeowners.




Atlanta's "suburban donut" EV growth pattern.
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Engaging Customers & Removing Barriers

While urban and rural areas are very different culturally and politically, they share higher barriers to EV adoption based on location and economics. In dense urban areas, more people rent their homes, live in multi-family units, or use on-street parking, meaning that they don't have the authority and/or the space to install a personal charger. In sparsely populated rural areas, where people sometimes drive many miles to work and buy necessities, range anxiety makes EVs seem impractical. Even more significantly, there are higher levels of poverty in both urban and rural areas, placing EVs even further out of reach.


To overcome these barriers, community partnerships, strong economic incentives, and creative solutions will be necessary. Similarly, finding the best messaging for educating potential EV drivers in these areas is key for cultivating future adoption. BlastPoint's customer intelligence provides data-driven insights that help meet urban and rural customers where they are. Our data model is a starting point for effectively targeting consumers to grow EV adoption and achieve climate goals.

BlastPoint's AI-powered system has identified **three broad EV adoption segments** at the Census Tract level that are applicable across the US. **Green consumers** live in areas where adoption is currently accelerating. **Yellow consumers** live in areas with up-and-coming EV adoption. **Red consumers** live in regions experiencing roadblocks to EV adoption. These segment designations help organizations target customers with relevant content and interventions. Note that BlastPoint is also able to identify green, yellow, and red segments **at the household level** within specific customer databases.




Green Segment
Ready to Adopt

- Higher income
- Most are married
- Live in single-family homes with a garage/driveway
- Most are homeowners
- College & graduate degrees
- Own 2 or more vehicles



Red Segment
Roadblocks to Adoption

- Lower income
- Most are single
- Many live in MFUs or other situations without access to charging
- More renters
- High School degrees
- Own fewer vehicles



Yellow Segment
Ready to Adopt Soon

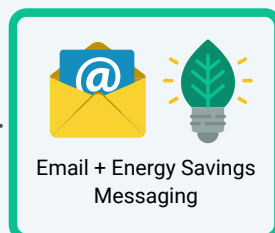
- Middle Income
- Some married, some single
- Many live in single-family homes with more limited private parking options
- Some own, some rent their homes
- Range of educational attainment
- Own 1-2 vehicles

**Note that these segment profiles are based on averages. Not all consumers in a segment will be the same.*

Case Study: Engaging EV Segments

BlastPoint worked with an electricity provider to identify green, yellow, and red customers at the household level within their footprint to drive EV awareness & adoption.

The team ran two campaigns aimed at green residential customers. Based on BlastPoint's segments, they were able to choose the right channels and messaging for maximum impact. As a result, they boosted enrollment in their EV rebate and variable rate program, as well as drove engagement to relevant web resources.



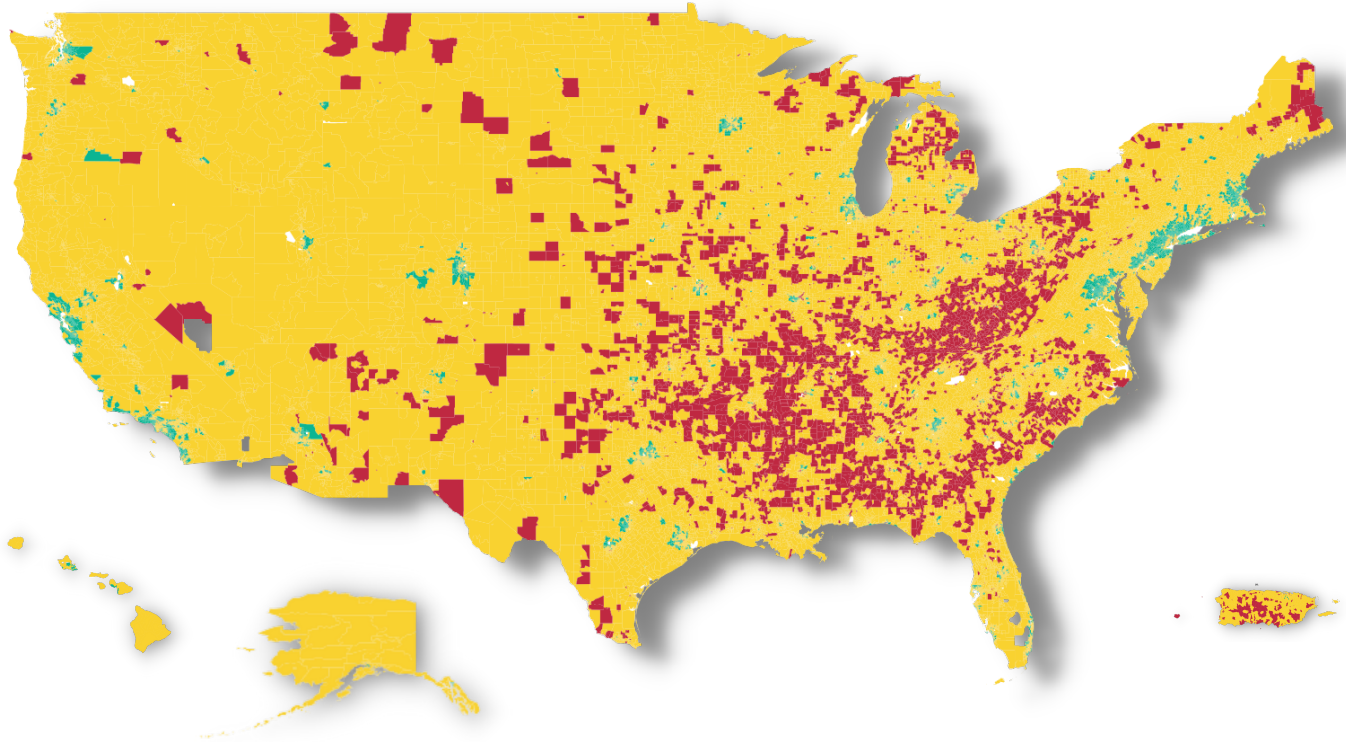
310% Increase in visits to EV web resources

98% Increase in variable rate enrollment

55% Increase in rebate enrollment

It's a major understatement to say that the US has a lot of variations in EV adoption. The "suburban donut" phenomenon holds true throughout the US, with the suburbs getting ahead of most urban and rural areas. Zooming out on the country, we can see regional patterns of green, yellow, and red consumer segments.

● Ready to Adopt ● Ready to Adopt Soon ● Roadblocks to Adoption



The West Coast

The states of the "left" coast lead the nation in fostering EV adoption, particularly through government incentives and charging infrastructure development. As a result, this region has the highest concentrations of the green segment. However, given the amount of undeveloped, mountainous space, green customers are clustered around cities and there are large swaths of yellow, particularly inland. In these more remote areas, the challenge will be to make EV ownership feasible.

The South

The American South is a fascinating patchwork of green, yellow, and red segments, with red dominating several states. With some of the highest poverty rates in the country, southern states will need to focus on establishing equity in transportation electrification. The cost savings of EVs will be the most important driver for many southern consumers.

The Northeast & Mid-Atlantic

Unsurprisingly, the coastal northeast contains the highest concentration of the green segment outside of California. Densely populated, the sprawling suburbs of New York City, Boston, Philadelphia, DC, and Baltimore are ripe for EV adoption, as are smaller inland cities. Look more closely at the map, however, and you'll see a lot of yellow and red in the city centers themselves as well as in more rural areas.

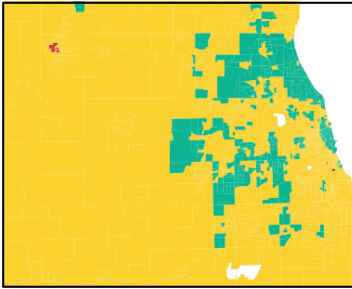
The Midwest

Representing a huge amount of space on the US map, the Midwest presents many opportunities for growing EV adoption. Except for the suburbs of major cities like Chicago and Detroit, as well as some smaller cities, the dominant segment is yellow, indicating that, with targeted financial incentives and public charging infrastructure expansion, the Midwest could soon be the epicenter of EV growth.

BlastPoint's adoption model predicts the propensity to adopt EVs at the Census Tract level across the country. EV propensity essentially means the likelihood that people will take the action of purchasing EVs. So where are the Census Tracts with the highest EV adoption propensity located? We ranked every tract in the US to locate the areas where EVs will take off next. While some of the top tracts are located in areas we'd expect, like the Bay Area, northern New Jersey, and the greater DC area, some are more surprising. Below is a selection of areas with tracts that score highest (above 90%) for EV propensity. A commonality that we see among these locations is proximity to colleges and universities and plenty of space for residents to install charging at home.

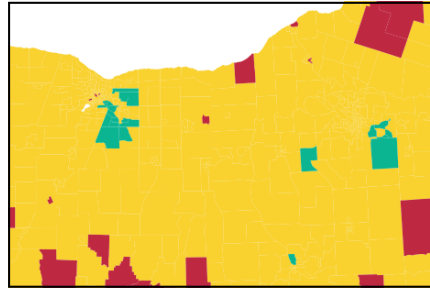
● Ready to Adopt
 ● Ready to Adopt Soon
 ● Roadblocks to Adoption

The Chicago Suburbs



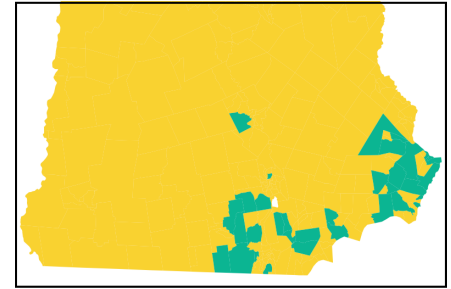
Cook and Lake counties have some of the highest EV propensity scores in the country.

Rochester & Syracuse, NY



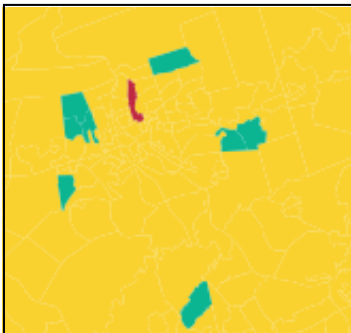
These western NY cities, home to the University of Rochester and Syracuse University, respectively, contain several high-scoring tracts.

Southern New Hampshire



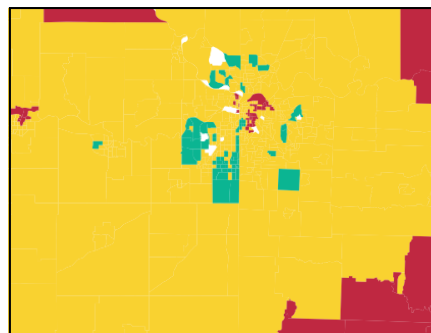
Adjacent to suburban Boston, the southern New Hampshire cities of Manchester and Portsmouth are ready to go electric.

South Central PA



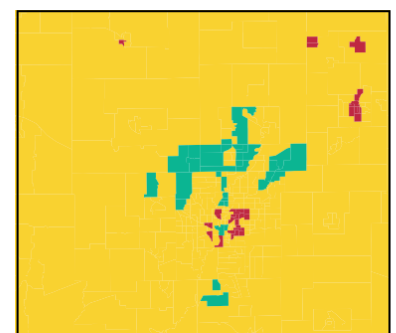
While Philadelphia and Pittsburgh have the highest concentrations of green segments in PA, state capitol Harrisburg, hip college town Lancaster, and their sister city, York, stand out in a sea of yellow.

Kansas City



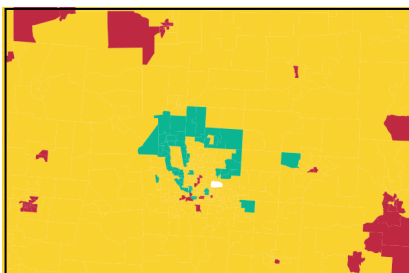
Split between Missouri and Kansas, Kansas City is a destination for jazz and barbecue lovers and has the most green tracts in both states.

Indianapolis, IN



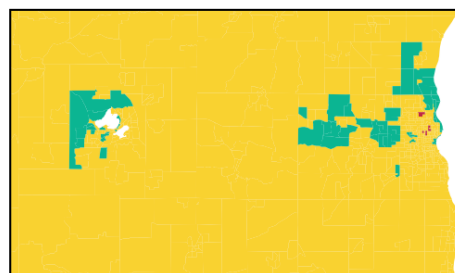
Indianapolis's northern suburbs and exurbs stand out in a state that is mostly yellow and red.

Greater Columbus, OH



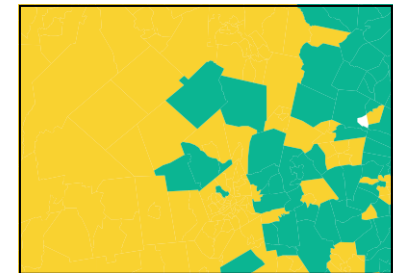
Showing the suburban donut pattern, the suburbs surrounding Columbus - particularly those north and east of the city proper - have the right conditions for EV adoption.

Milwaukee & Madison, WI



These southern Wisconsin cities are the state's brightest spots for the next wave of EV adoption.

Worcester, MA

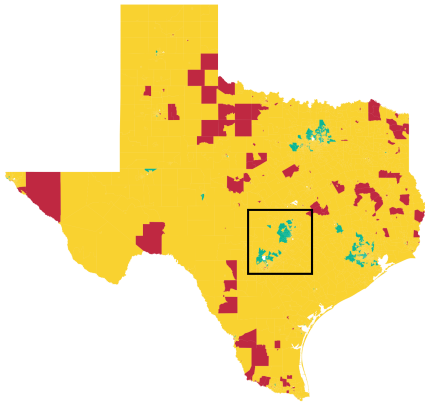


Just outside of the Boston metropolitan area, the city of Worcester (pronounced *Wuh-stah* by locals) is home to multiple colleges, giving the area a high propensity for EV adoption.

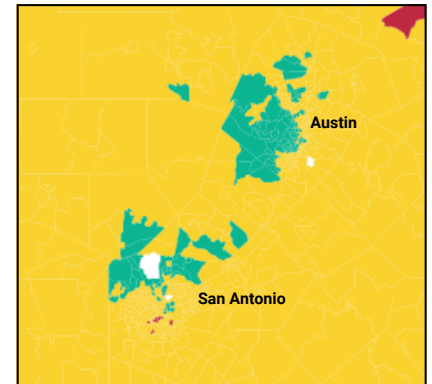
These states present unique opportunities and challenges for EV adoption that customer intelligence helps address. Here we color-code states at the Census Tract level to show areas of high, moderate, and slow EV growth.

● Ready to Adopt ● Ready to Adopt Soon ● Roadblocks to Adoption

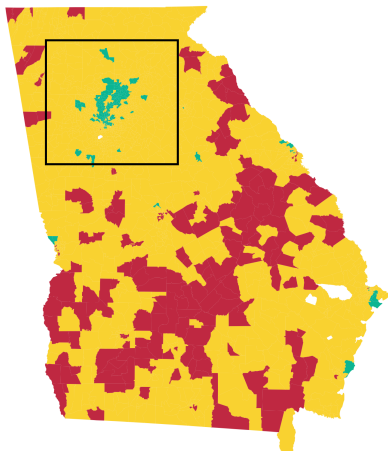
Texas



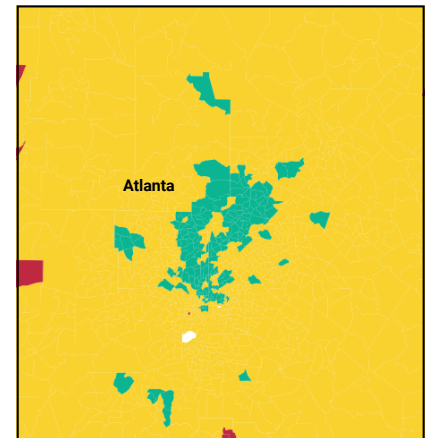
Despite being the oil and gas capital of the US, Texas has over 5K public charging stations* - more than other southern states. However, readiness to adopt varies wildly, with cities like Austin and San Antonio (right) taking the lead, and areas like western Texas lagging behind.



Georgia

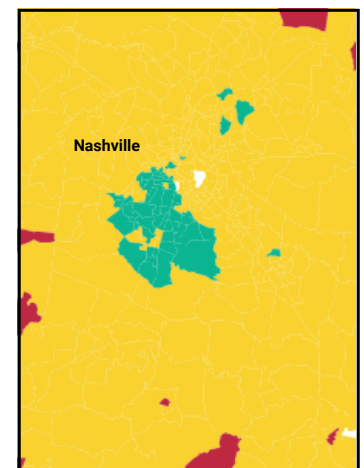
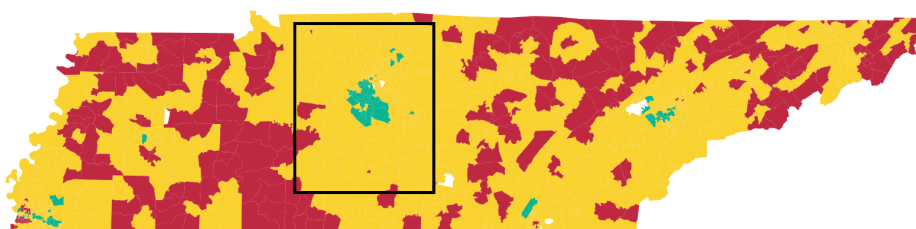


With over 3,500 public charging stations in the state,* Georgia stands out in the southeast. Unsurprisingly, the highest concentration of green surrounds Atlanta. The smaller coastal cities of Savannah and Brunswick, as well as Augusta and Columbus, also light up a map otherwise dominated by yellow and red. The Rt. 75 corridor cuts directly through the deeply red area from Macon to Valdosta; interventions will be needed there in order to make Georgia a connected corridor.



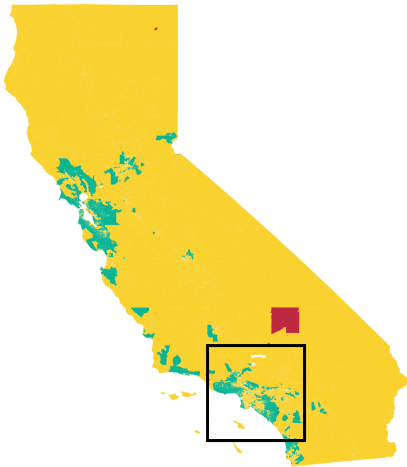
Tennessee

Home to the famous music cities Nashville and Memphis, TN has made some progress toward EV adoption over the last few years. Areas with the highest propensity for adoption surround Nashville, with others in Memphis, Chattanooga, and Knoxville. Most public charging stations are located in greater Nashville; hotels and dealerships, which are less accessible to the majority of travelers, dominate the rest of the state.

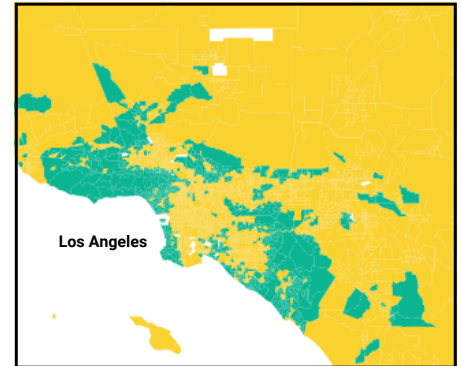


*EVSE count data provided by the DoE's Alternative Fuels Data Center.

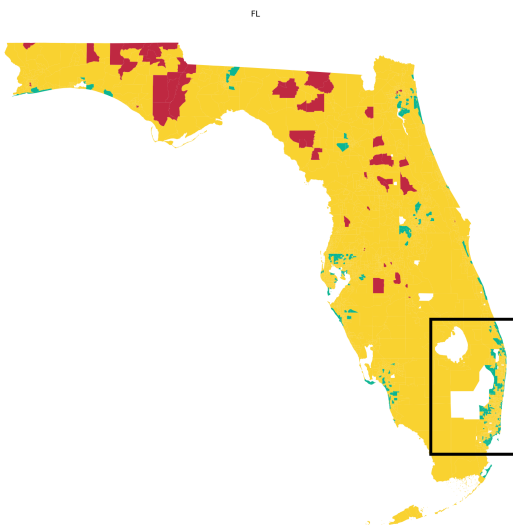
California



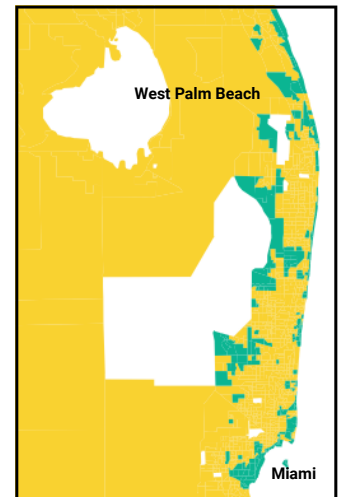
California is the clear leader when it comes to driving EV adoption. Specifically, the San Francisco and Los Angeles areas have the densest high EV propensity in the country, meaning that there's a lot of opportunity for further adoption here. However, as pictured (right), urban LA is yellow, signaling that there are still some barriers remaining here, as well as in central San Francisco, Oakland, and San Diego. Additionally, inland the state is as yellow as much of the Midwest, emphasizing that there's still work to do in the golden state.



Florida



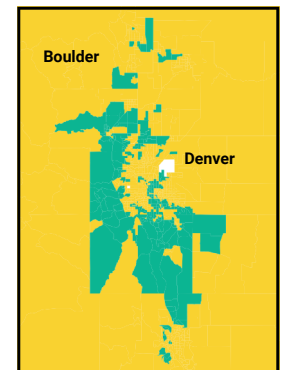
Home to many northern transplants, much of coastal Florida is ready to adopt EVs. In particular, the strip of Atlantic Coast between West Palm Beach and Miami, including Boca Raton and Fort Lauderdale, has a high density of green tracts. On the Gulf Coast, Pensacola and Panama City, Tampa/Clearwater, and Fort Myers are likely to be areas of EV expansion in 2022. Most of suburban Florida is yellow, indicating that there's a lot of opportunity to grow adoption in the coming years.



Colorado



A state of dramatic landscapes and unpredictable weather, Colorado is also home to numerous consumers ready to adopt EVs. Most are in the Denver/Boulder or Colorado Springs areas, with another substantial patch of green in Aspen. With nearly 3,500 public charging stations,* Colorado's biggest challenge will be to ensure connectivity in remote areas.



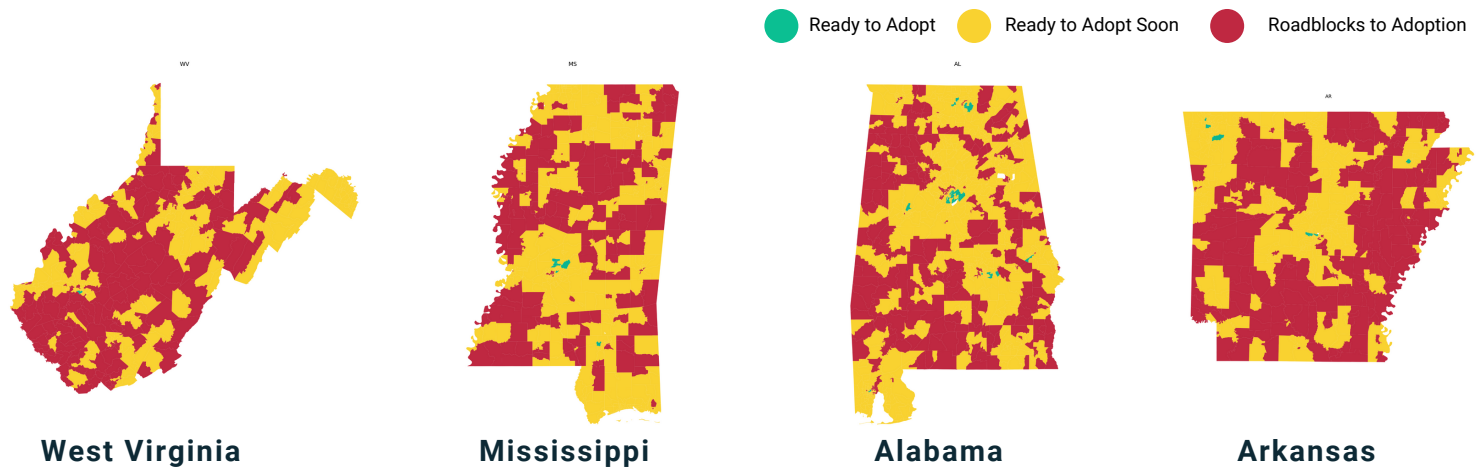
*EVSE count data provided by the DoE's Alternative Fuels Data Center.

Red Census Tracts are those with residents facing the biggest roadblocks to EV adoption. While most of the US is yellow, meaning ready to adopt soon, the four states pictured below have a large percentage of red tracts, indicating the lowest current adoption potential in the country.

There are multiple barriers to transportation electrification in these largely rural states with poverty rates above the national average. Money is at the top of the list: lower income and higher unemployment rates mean that even used EV models are far out of price range for these consumers. Pair that with less concern about climate change and frequent long-distance drives across mountainous terrain, and it becomes clear why these areas won't be ready to adopt anytime soon.

Expanding public charging infrastructure strategically and offering economic incentives beyond a relatively small refund will be crucial to removing roadblocks for individual consumers. Personalizing educational outreach and amplifying supportive community voices will be valuable tools. Additionally, treating landlords like customers - even if they aren't technically paying energy bills - can promote equity among renters in red tracts.

It should also be noted that many of these red areas contain interstate highways, and EVs from other states will be passing through. Partnerships between utilities, state and local governments, and the private sector - particularly gas stations and fast-food restaurants - offer a way forward.



What consumer data attributes indicate the need for equity intervention in a region?

BlastPoint utilized AI and machine learning to determine which data attributes are most predictive of the need for EV equity. Red tracts overall have a higher percentage of people who rent, are single, have low income, and are less highly educated. Other predictors for these areas include lower home values, fewer vehicles per household, higher unemployment rates, and a higher-than-average percentage of people with disabilities.

To fully commit to transportation electrification in the US, strategic interventions will be needed in red tracts. These data attributes can point the way to partner organizations that are already committed to equity within lower-income, disabled, and senior communities.



Forecast EV adoption patterns in your region.

BlastPoint's technology identifies EV adoption propensity down to the household level, so companies can target the right consumers, in the right way, at the right time. Read more by visiting our [EV Solutions page](#).

To find out more about EV adoption segments in your region, email us at info@blastpoint.com.



Sources & Notes

Introduction

- 2021 EV sales data is taken directly from [Kelley Blue Book Electrified Vehicle Sales Report: Q3 2021](#). To be specific, 1,057,490 electrified vehicles were sold. This represents a 108.2% increase in sales over the first 3 quarters of 2020.
- Information about EV provisions in the infrastructure bill is summarized in [Business Insider, "What's in the Infrastructure Bill?"](#) The \$7.5 b is earmarked for expanding the EV charging network across the country. Additional funds are allocated for zero-emission public transportation.
- BlastPoint's EV adoption model utilizes datasets from the 2020 US Census, the [DoE Alternative Fuels Data Center](#), as well as proprietary consumer data.

Emerging High-Propensity EV Areas

For more information about specific Census Tracts, visit datacommons.org/place.

Spotlight Adoption Areas

The current number of charging stations per state, which updates regularly, can be found at afdc.energy.gov/states/.



BlastPoint

Discover the humans in your data.