



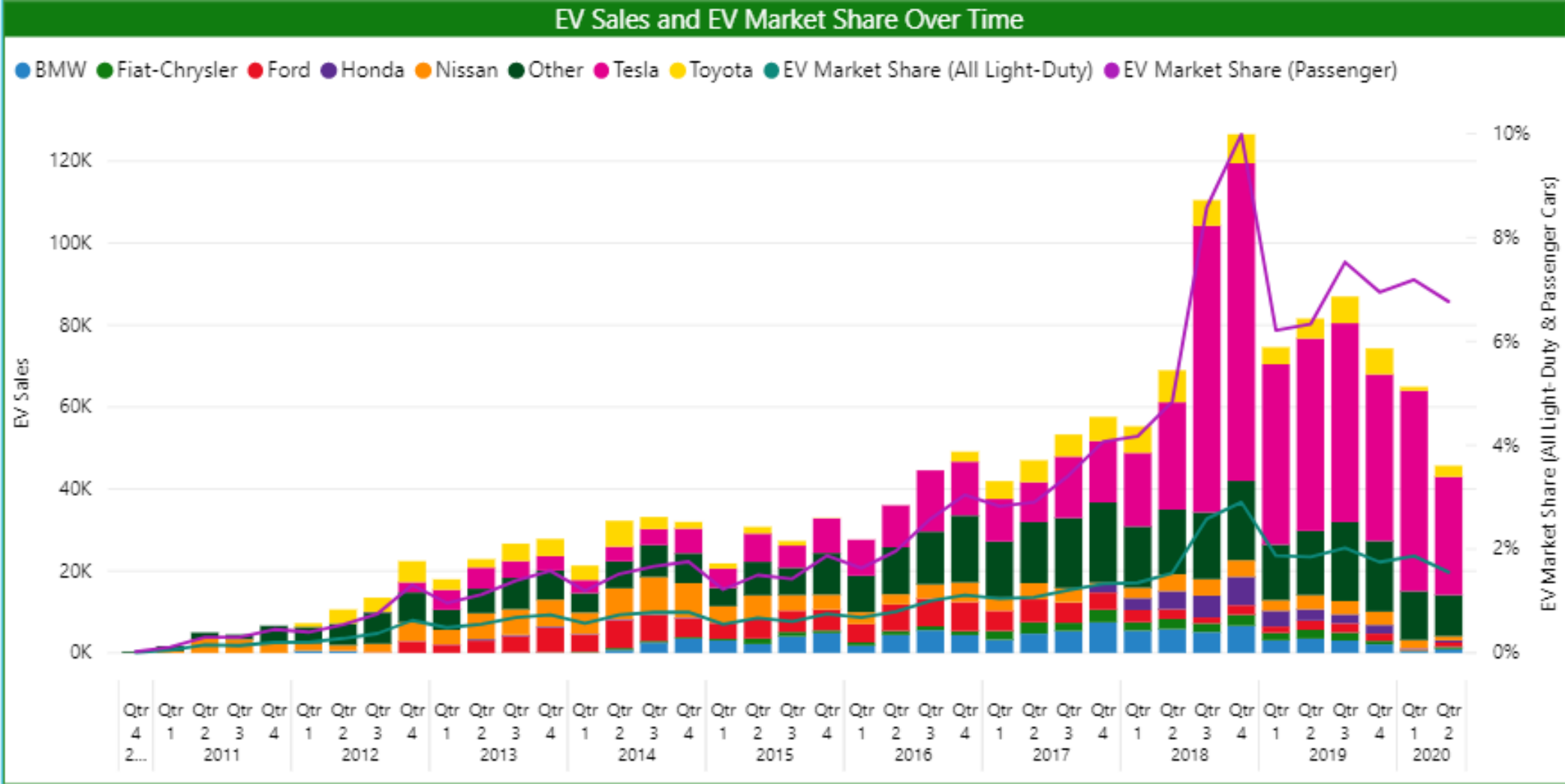
Keynote

NGA EV Grid Integration: Virtual State Policy Summit

Stacy Noblet, Senior Director, Transportation, ICF

09.16.2020

EV market growth has been strong



Source: EV Hub, Atlas Public Policy (as of September 2020)

The pandemic's impacts are mostly uncertain

Led by Tesla, electric vehicle sales are predicted to surge in 2021

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KEY POINTS

- Production of electric vehicles is estimated to climb to at least 1.3 million and could reach 1.5 million depending on market conditions this year.

Electric Vehicle Sales Set to Crash in 2020 Amid Coronavirus and Oil Price Shocks

Global EV sales will plunge by more than 40 percent this year, Wood Mackenzie forecasts — and the coronavirus is not the only culprit.

KARL-ERIK STROMSTA | APRIL 08, 2020

Electric Vehicle Sales to Fall 18% in 2020 but Long-term Prospects Remain Undimmed

BloombergNEF May 19, 2020

EV's more resilient as overall car market expected to shrink by 23% in response to health and economic crisis

The EV industry faces several clear challenges



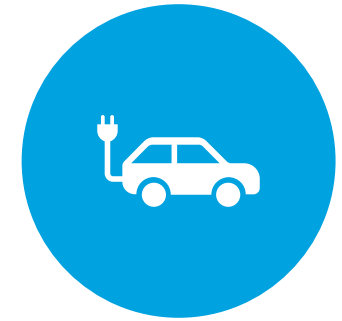
The **up-front cost** of EVs is even more daunting during times of economic hardship.



Gas prices have dropped, making the **economics of EV ownership** slightly less attractive.



Potential charging station hosts are faced with **different priorities**.



Some utility and state agency **programs** have scaled back or are on hold.

Regional and local challenges also exist

Forbes

6,081 views | Jul 26, 2020, 03:00pm EDT

Building Out Electric Vehicle Charging In The West Means All Hands On Deck

Stacy Noblet Contributor @
Transportation
I focus on clean, efficient transportation technologies and strategies

Government agencies, utilities, automakers and technology providers alike are working hard to establish plug-in electric vehicle (EV) charging infrastructure to support the growing EV wave nationwide. [Electrify America](#) announced its first cross-country EV charging route, the U.S. Department of Transportation launched a [charging station locator](#), and [Apple](#) AAPL +2.5% launched a new feature in its Maps app to help EV drivers locate charging stations. While these solutions are promising, the industry still faces significant challenges on the carefree cross-country road trip: the West.

While the eastern half of the United States is home to many of the greater opportunities for intercity EV travel, many rural areas in the West lack sufficient electrical infrastructure and other amenities for sustainable, widespread EV charging. It is home to some of the most challenging terrain and weather conditions for EV charging.

Connecting the Dots

The good news is that there are several potential solutions in the works and, despite setbacks related to the Covid-19 pandemic, the EV industry has more government buy-in, technology and funding momentum than ever before.

For starters, EV chargers can be paired with renewables, improving the reliability of charging stations and reducing carbon emissions. This is a particularly viable solution for EV charging build-out in the West because that part of the country is ripe for solar power. Companies like [Envision Solar](#) and [EVgo](#) are actively pursuing EV charging with renewables at a large scale. Many western states have aggressive clean energy goals that will magnify the climate and clean air benefits EVs provide over their internal combustion engine counterparts.

Mobile charging is another solution on the rise to help address gaps in the electrical service infrastructure necessary for higher power charging. This technology could provide EV drivers some peace of mind on trips through rural areas with limited charging stops. There are a few companies piloting mobile charging, including [SparkCharge](#) and [Freewire](#).

One entity can't solve these complex challenges alone — the key is leveraging the

- Insufficient dealership inventory
- Lack of vehicle types (e.g., light trucks)
- Complex or confusing permitting processes

Opportunities outweigh the barriers to growth



Momentum – progress, policies, and programs to date.



Environment – clear skies and clean water are getting noticed.



Funding – potential for federal stimulus, extended tax credits, and more.

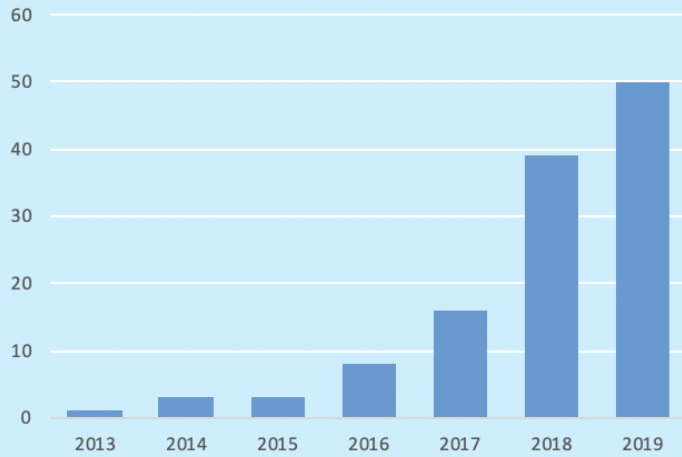


Clean commuter option – public transit may not be feasible for some.



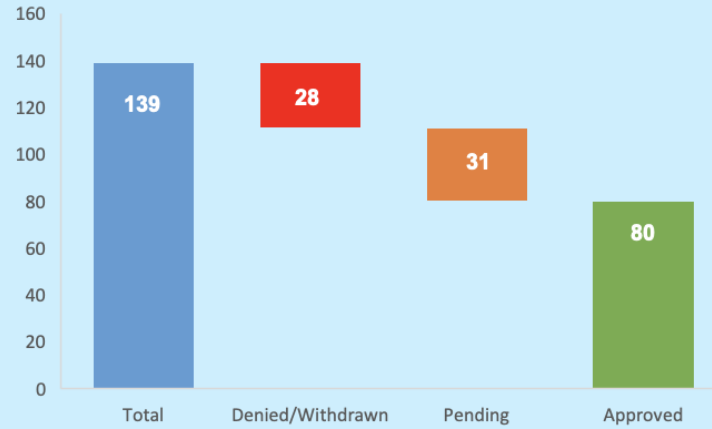
“Captive” audience – ideal time for online research into EVs.

Utility engagement in transportation electrification is increasing



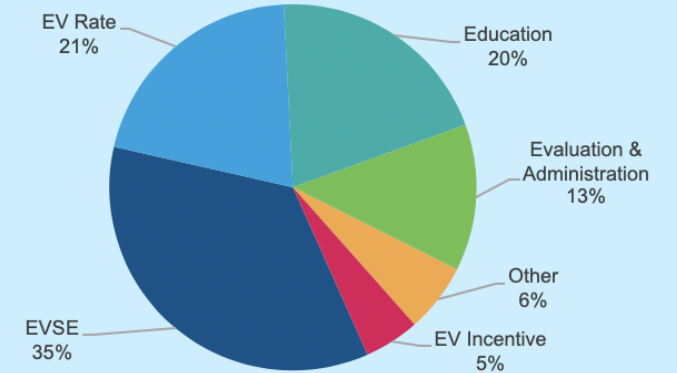
Count of Transportation Filings by Year

- Increasing number suggests greater interest and awareness.
- Not just California; notable activity in the mid-Atlantic and Midwest regions.
- The way commissions do business will shape 2020+ numbers.
- Still learning from active programs.



Count of Transportation Filings by Disposition 2013-2020 (through April)

- High approval rates in 2018 (87%) and 2019 (72%).
- Make-ready programs are consistently approved/have seen the fewest denials.
- Approval rate of utility owned/operated proposals has increased.



Frequency of Program Components

- Primary focus is building out infrastructure.
- Managed charging (passive or active) is increasingly important.
- Utilities are prioritizing underserved communities.
- Partnerships are critical.

State policy is driving EV programs and partnerships

■ Utility Transportation Electrification Plans

- Legislature or Commission directed
- AZ, CO, MN, NM, OR, VA, WA

■ Zero Emission Vehicle Initiatives

- State sales requirements
- Multi-State Task Force
- REV West MOU

■ Volkswagen Environmental Mitigation Plans

- Light-duty EV charging
- Medium- and heavy-duty EVs and charging



Xcel Energy's electric vehicle vision is supported by dozens of leading automakers, environmental organizations, EV technology companies and more.

SUPPORTIVE COMPANIES AND ORGANIZATIONS

- AAA Colorado
- Alliance for Transportation Electrification
- Amazon Web Services
- American Lung Association
- Aurora Public Schools (CO)
- Bay Area Rural Transit (WI)
- Center for Energy & Environment
- ChargePoint
- Cheq Bay Renewables (WI)
- Chippewa Valley Technical College (WI)
- Colorado Cleantech Industries Association
- Colorado Energy Office
- Colorado Governor Jared Polis
- Cummins
- Denver Metro Clean Cities
- Edison Electric Institute
- Enel X North America
- Energy Impact Partners
- EVgo
- Fresh Energy
- Ford Motor Company
- General Motors
- Great Plains Institute
- HOURCAR
- L3Harris Technologies
- Lyft
- McKnight Foundation
- Microsoft
- Minnesota Department of Administration
- Minnesota Department of Transportation
- Minnesota Pollution Control Agency
- Mortenson Construction
- National Renewable Energy Laboratory
- Northern Colorado Clean Cities
- Regional Air Quality Council (CO)
- RENEW Wisconsin
- Rocky Mountain Institute
- Siemens
- Southwest Energy Efficiency Project
- Sterling Ranch Development Company
- Sustainable Growth Coalition
- University of Wisconsin-Stout

Edison Electric Institute

"Investing in electric vehicle charging infrastructure and accelerating electric transportation benefits customers, the environment and the energy grid. As an industry, we have a tremendous opportunity in front of us to electrify the transportation sector to further leverage our industry's impressive emissions reductions. Xcel Energy continues to lead by example with its bold vision and as it works to deploy even more electric vehicles across its fleet."

— Tom Kuhn,
EEl President

7 | XCEL ENERGY ELECTRIC VEHICLE VISION

Thank you!

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