



GENERAL MOTORS

Health Effects Institute

5 May 2019

New Mobility: Changing Health?

Britta K. Gross

GM, Director Advanced Vehicle
Commercialization Policy

GM is committed to a future of:

ZERO
CRASHES

ZERO
EMISSIONS

ZERO
CONGESTION



Electric

Autonomous

Shared

Connected



Chevrolet Bolt Electric Vehicle
(EV)
238 mile range

Cruise Automation
180 Bolt EV/Autonomous Vehicles
(AVs) on roads today

Maven
1,000 Bolt EVs in 7 cities

OnStar
>13 million connected vehicles

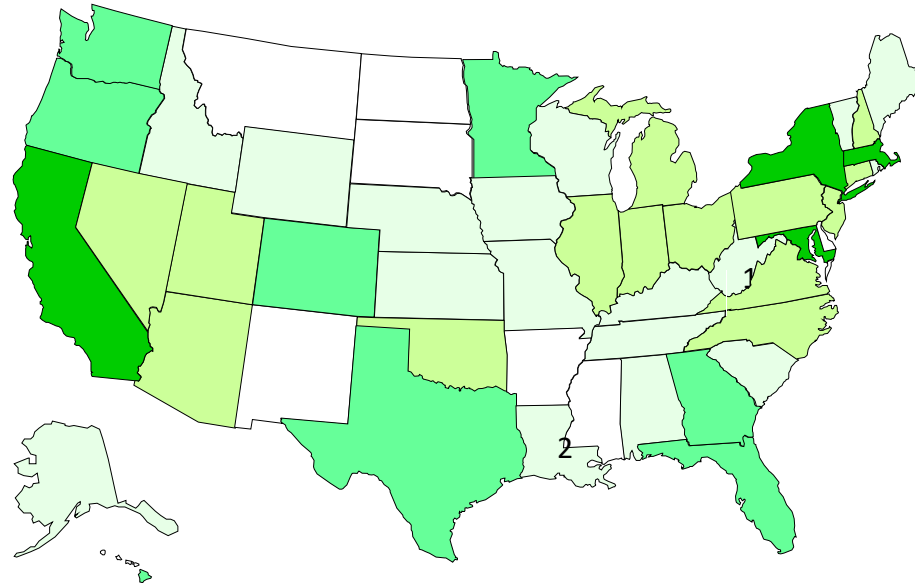
Electric Vehicle (EV) MARKET GROWTH REQUIRES A STRONG FOUNDATION OF ENABLERS

Infrastructure



- **Highway** corridor direct current (DC) fast-charging
 - **Urban** DC Fast-Charging Hubs
 - **Workplace** charging
 - **Multi-unit dwelling** charging
 - Public charging at **key destinations**
- “Story-telling”

Policy



- **Vehicle Incentives** – federal and state
- **High Occupancy vehicle (HOV) Lane Privileges**
- **Building Codes**
- **Preferential EV electricity rates**
- **Fleet purchase commitments**

Education & Outreach



- **Drive Consumer Demand**
- **Build Awareness**
- **Ride & Drives**
- **Utilities as trusted 3rd parties**

3 Key Barriers: EV Cost, Infrastructure and EV Awareness

ELECTRIC VEHICLE (EV) CHARGING INFRASTRUCTURE GROWTH (2015-2019)

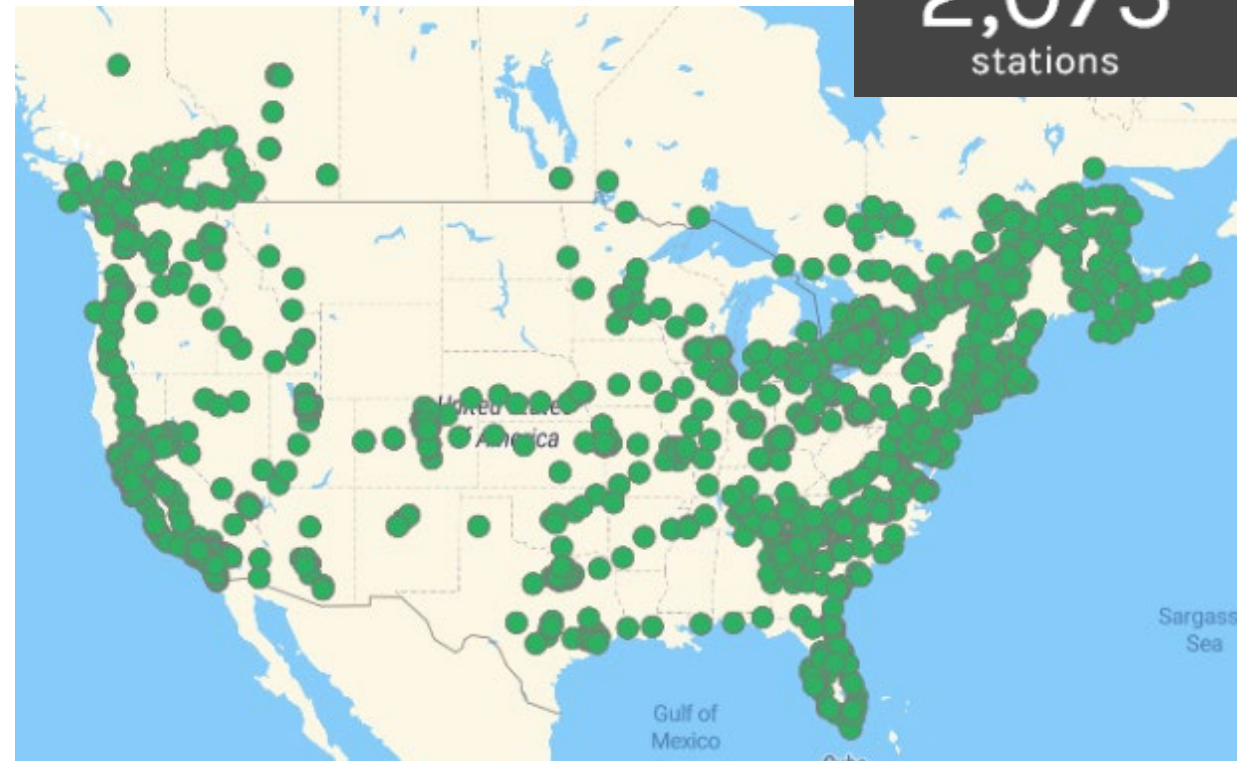
**SAE Direct Current
(DC) Fast-Chargers**
July 2015

204
stations



SAE DC Fast-Chargers
April 2019

2,075
stations



INFRASTRUCTURE PROGRESS IN THREE MAJOR AREAS

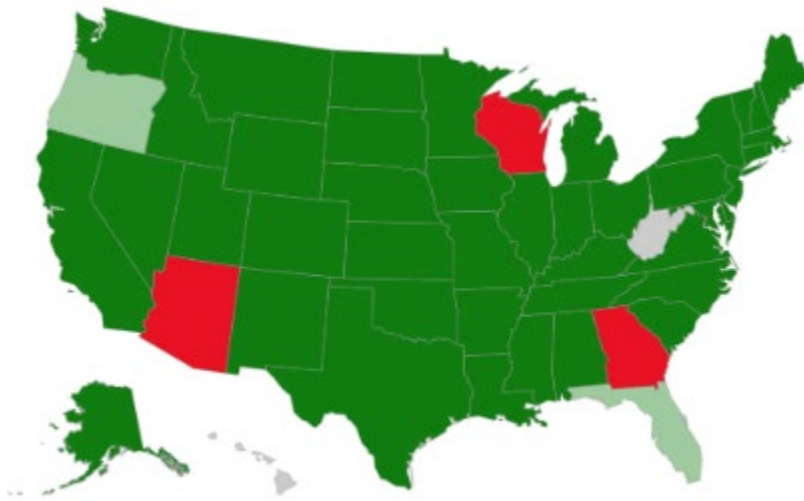
Electrify America

(operational in 2019)



- Compelling “storytelling”
- Part of a \$2Bil investment

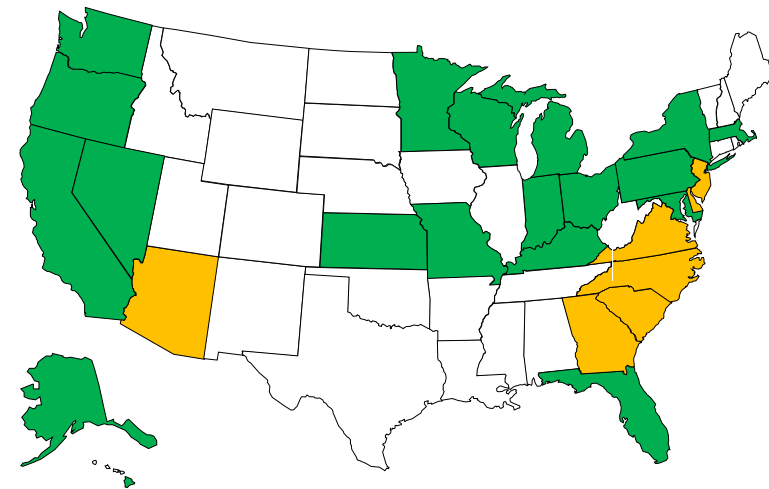
State Appendix “D” Funds



- 44 States to invest in EV charging
- \$343mil investment

Utility Investment

(filings approved and pending)



- Utility engagement is key
- \$1B approved / \$1.5B pending

Infrastructure growth will significantly contribute to consumer electric vehicle (EV) awareness

Shared and Autonomous Mobility

Since Maven Electric Vehicle (EV) launch (~ 2 years):

>125 miles per day

>2M
passengers

390,000+ charging events

11.6 GWh

Key Insights:

- Commercial services → many miles driven each day
- Lots of new EV awareness
- >95% DC fast charge
- 8:1 EV to station ratio required (given current station availability)
- Need station availability certainty
- Scale of mobility services requires infrastructure up-front



Cruise Automation

180 Bolt EV/AVs on roads today



Maven

1,000 Bolt EVs operating in 7 markets

