Who is the Electrification Coalition?

To facilitate and accelerate the adoption of plug-in electric vehicles nationwide, the Electrification Coalition (EC) has launched a suite of initiatives that advance EV deployment by engaging the entire value chain and a broad group of stakeholders at the national, state, and local level.

Current efforts include: The Smart City Challenge, Drive Electric Orlando, Drive Electric Northern Colorado, The Energy Security Cities Coalition, The Aggregated Alternative Technology Alliance, and a newly funded community program in Rochester New York.

The Smart City Challenge Concept

To change the future of transportation, Vulcan Philanthropy has partnered with the U.S. Department of Transportation on the Smart City Challenge. The Challenge is designed to enable an innovative, ambitious and forward-thinking American city to lay a practical path to transportation without oil.

Vulcan is contributing up to $10 million to the challenge, as well as technical assistance and guidance, alongside the U.S. DOT's $40 million commitment.

Additional support will come from private organizations that have joined the Smart City Challenge, including Mobileye, Autodesk, NXP, Amazon Web Services and Sidewalk Labs. View the full list of connected organizations.

The Changing Role of Cities

Why Can Cities Lead?

- Political gridlock at national level creating enhanced role for cities:
  - Decentralization and globalization
  - Higher exposure to competition
  - Cities becoming first point of contact
- Labs of innovation
- Cities are fast implementers
- History of learning from one another

The Challenge
Demonstrated Need

SMART CITY CHALLENGE FINALISTS

#SMARTCITYCHALLENGE

1,400 local officials, companies, academics and non-profits joined our webinars

800 people participated in our Smart City Forum

300 companies have expressed interest in partnering

78 applications received for the Smart City Challenge

5 Smart City Challenge Finalists to be announced in March at SXSW

1 Smart City Challenge Winner announced in June

#DOTSmartCity
www.transportation.gov/smartcity

U.S. Department of Transportation

ALASKA
Anchorage

OREGON
Portland

CALIFORNIA
Chula Vista
Fremont
Fresno
Long Beach
Moreno Valley
Oakland
Oceanside
Riverside
Sacramento
San Francisco
San Jose

WASHINGTON
Seattle
Spokane

MINNESOTA
Minneapolis/St. Paul

NEBRASKA
Lincoln
Omaha

IOWA
Des Moines

INDIANA
Indianapolis

MICHIGAN
Detroit
Port Huron/Marysville

WISCONSIN
Madison

OHIO
Akron
Canton
Cleveland
Columbus
Toledo

PENNSYLVANIA
Pittsburgh

NEW YORK
Albany/Schenectady/Troy/Saratoga Springs
Buffalo
Yonkers/New Rochelle/Mt. Vernon
Rochester

MASSACHUSETTS
Boston

CONNECTICUT
New Haven

RHODE ISLAND
Providence

NEW JERSEY
Jersey City
Newark

MARYLAND
Baltimore

WASHINGTON, DC

NORTH CAROLINA
Charlotte
Greensboro
Raleigh

VIRGINIA
Richmond
Newport News
Norfolk
Virginia Beach

SOUTH CAROLINA
Greenville

KENTUCKY
Louisville

GEORGIA
Atlanta
Brookhaven
Columbus

NEVADA
Las Vegas
Reno

COLORADO
Denver

NEW MEXICO
Albuquerque

ARIZONA
Scottsdale
Tucson

TEXAS
Austin
Lubbock

OKLAHOMA
Oklahoma City
Tulsa

MISSOURI
Kansas City
St. Louis

ALABAMA
Birmingham
Montgomery

FLORIDA
Jacksonville
Miami
Orlando
St. Petersburg
Tallahassee
Tampa

TENNESSEE
Chattanooga
Memphis
Nashville

LOUISIANA
Baton Rouge
New Orleans
Shreveport

VULCAN

Electrification Coalition

Impact of Public/Private Partnerships

- Increased program visibility to community

- Engaged the transportation ecosystem to create a comprehensive vision

- Accelerated design thinking, increased partnerships at the local level, and enabled broader suite of solutions

- Engaged additional partners and attracted greater investment (Sidewalk Labs, Amazon, AT&T, Nissan, Lyft, Daimler)

- Established GHG reduction as a central theme

- Increased financial investment at all levels

Core Technological Vision

Technology Elements (Highest Priority)

Vision Element #1
Urban Automation

Vision Element #2
Connected Vehicles

Vision Element #3
Intelligent, Sensor-Based Infrastructure

Innovative Approaches to Urban Transportation Elements (High Priority)

Vision Element #4
User-Focused Mobility Services and Choices

Vision Element #5
Urban Analytics

Vision Element #6
Urban Delivery and Logistics

Vision Element #7
Strategic Business Models & Partnering

Vision Element #8
Smart Grid, Roadway Electrification, & EVs

Vision Element #9
Connected, Involved Citizens

Smart City Elements (Priority)
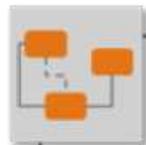
Vision Element #10
Architecture and Standards

Vision Element #11
Low-Cost, Efficient, Secure, & Resilient ICT

Vision Element #12
Smart Land Use

Criteria for Cities

Key Characteristics

- A dense urban population with population between 200,000 to 850,000 individuals
- An environment conducive to demonstrating advanced technologies
- A commitment to integrating transportation services with the sharing economy
- A commitment to making data open, discoverable, and usable by the public to fuel entrepreneurship and innovation
- Continuity of committed leadership and capacity to carry out the demonstration throughout the period of performance.

Vulcan Priorities and the 7 Finalists

SMART CITY CHALLENGE FINALISTS
#SMARTCITYCHALLENGE

7 finalists created a bold effort to electrify their cities with the following goals:

- Decarbonize the electricity grid

- Convert city and private vehicle fleets, taxis, from gasoline cars to EVs

- Drive consumer adoption of EVs

- Deploy and field test autonomous vehicles

- Develop a "playbook" for other cities to follow

MEET THE SMART CITY CHALLENGE FINALISTS

Portland
San Francisco
Denver
Kansas City
Columbus
Pittsburgh
Austin

City Assessment

Method of Evaluation

- EC staff observation
- Expertise/advice from city planning and innovation experts
- Assessment of city staff's ability to execute a complex, long-term project like the Vulcan Smart City Challenge.

Key Elements

- A city that can execute complex projects will exhibit communication responsiveness, cohesiveness between project partners, and staff and executive-level support from utility, private-sector, and city.

Communication Responsiveness and Consistency	• Subjective: Overall rating based on EC staff emails, phone calls, scheduling city visits.
Implementation Team	• Objective: Demonstrated executive-level commitments from city, utility, & private-sector
Overall Ease of Collaboration	• Subjective: Combined rating based on finalist work experience and city visits.
Confidence in Ability to Execute	• Subjective: Combined assessment based on the above tactics.

Metrics for the Assessment Model

Metric	Weight	Metric	Weight
State Purchase Incentive	9%	Average Temps	6%
Home EVSE Incentive	4%	Commuting Times	4%
Other Incentives	4%	Procurement Approach	6%
Dealerships w/ EVs	6%	Size LD Muni Fleet	7%
Public EVSE	6%	Size MD/HD Muni Fleet	7%
Non-attainment Area	2%	CO2 Metric	8%
City's Financial Stability	3%	Transit & Multimodal	3%
Household Income	8%	Workplace EVSE Partners	5%
Fuel Prices	4%	Support for AVs	5%
Current EV Sales Rate	3%		

Corporate Engagement to Support Cities

- Over 70 companies in the EV and Transportation supply chain were engaged
- 25 companies were represented in full day industry roundtable meeting
- 30 companies responded to requests for follow-up and expressed interest in supporting the finalists in proposal development, planning and execution
- 26 have committed to going beyond the minimum requirements, with follow-up ongoing
- Highlights from participants for top performing cities:
  - EV ecosystem that include EV friendly policies
  - Tech-friendly environment
  - Favorable geographic location
  - Access to strong regional partners

Why Columbus: A Snapshot

SMART CITY CHALLENGE FINALISTS
#SMARTCITYCHALLENGE

Program Highlights:
- Strong commitment to DOT goals and "ladders of opportunity"
- Strong commitment to municipal and commercial fleet transition
- Commitment of 50 CEOs to purchase EVs and launch aggressive workplace charging program impacting up to 300,000 employees
- Acceleration Fund (Commitment of $90 Million)
- Commitment to community outreach accelerate EV adoption

Strengths:
- General partners: Clean Fuels Ohio, Battelle, OSU, the Columbus Partnership
- American "test market"
- Strong presence of Fortune 500 Companies
- 15th largest city in US
- Home of Battelle and Center for Automotive Research (CARS) at Ohio State

Challenges:
- Early stage market for EVS
- Low vehicle availability
- Minimal pro-EV policies

Creating a Smart Columbus

Scalable and Leading Programs:

- Outreach and education
- Comprehensive infrastructure plan
- OEM commitments
- Concrete partner commitments
- Creating strong policy framework
- Data tracking
- Amplified programs
- Best practices and sharing
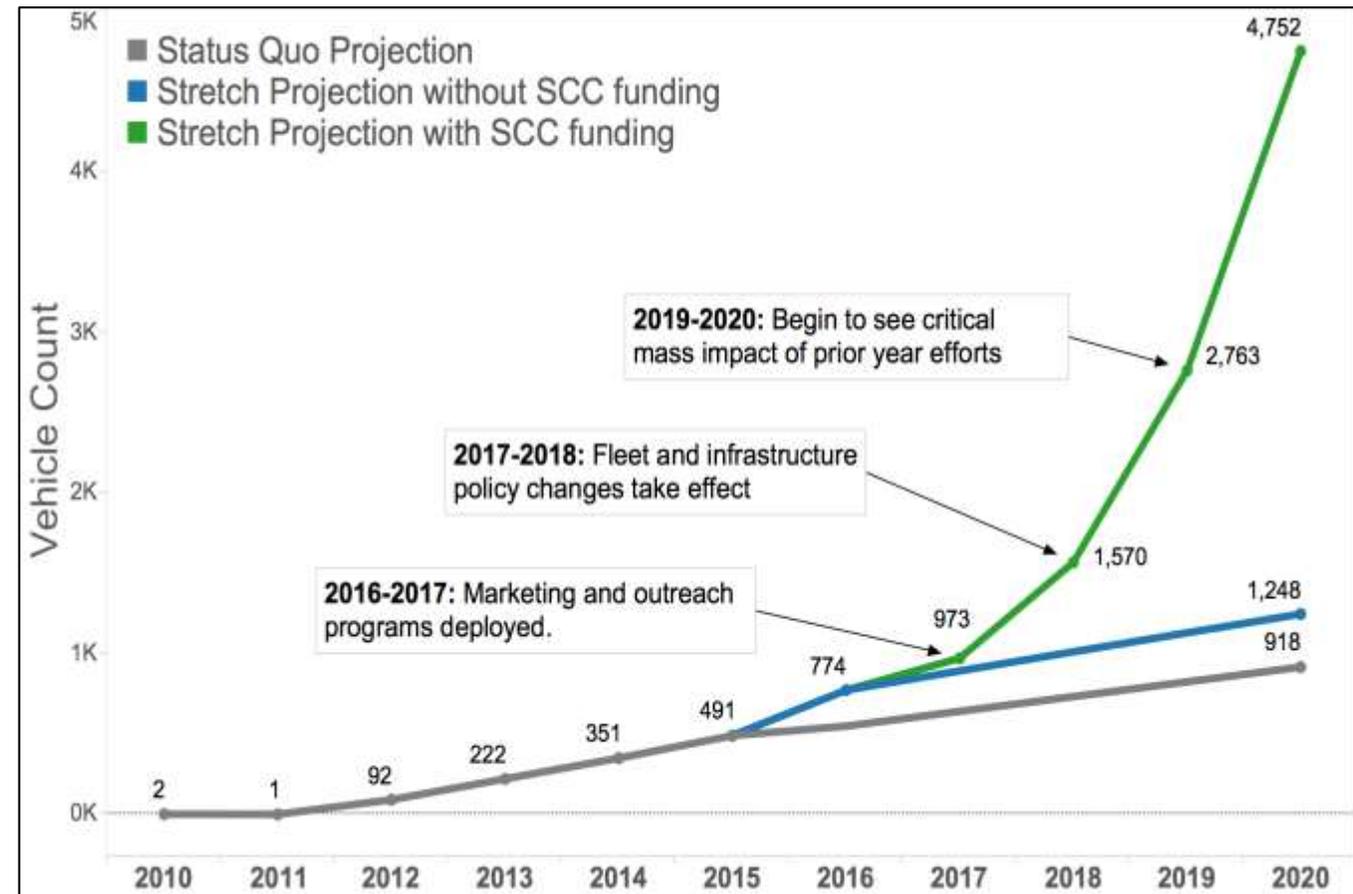
- Status Quo Projection
- Stretch Projection without SCC funding
- Stretch Projection with SCC funding

2019-2020: Begin to see critical mass impact of prior year efforts

2017-2018: Fleet and infrastructure policy changes take effect

2016-2017: Marketing and outreach programs deployed.

The Catalytic Impact

Beyond Columbus:

- "Coalition of 7" has formed that will create a peer-to-peer network between the 7 finalists and support efforts to find additional funding

- Will continue to provide best practices and other information to 71 cities seeking to boost electrification and other transportation solutions

- Sparking important and ongoing conversations with decision makers and thought leaders around the country
    - Focus at U.S. Conference of Mayors, National Association of State Energy Officials, etc.

- Increased interest from funders?

The Electrification Coalition
Revolutionizing Transportation and Achieving Energy Security

Online:

www.secureenergy.org

www.electrificationcoalition.org

www.energysecurecities.org

www.driveelectricnoco.org

www.driveelectricorlando.org

Download the Electrification Roadmap: www.electrificationcoalition.org/policy

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