DOCKETED	
Docket Number:	21-TRAN-01
Project Title:	Electric Vehicle Infrastructure Training Program Public Engagement
TN #:	237469
Document Title:	DOE Presentation - 4-16-2021
Description:	Document supersedes TN: 237466
Filer:	Spencer Kelley
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	4/15/2021 4:38:46 PM
Docketed Date:	4/15/2021

U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

California Energy Commission and California Public Utilities Commission - Electric Vehicle Infrastructure Training Program (EVITP)

April 16, 2021

Mark Smith
U.S. Department of Energy
Vehicle Technologies Office






VEHICLE TECHNOLOGIES OFFICE FOCUS

ALL LEVELS

Component Vehicle System

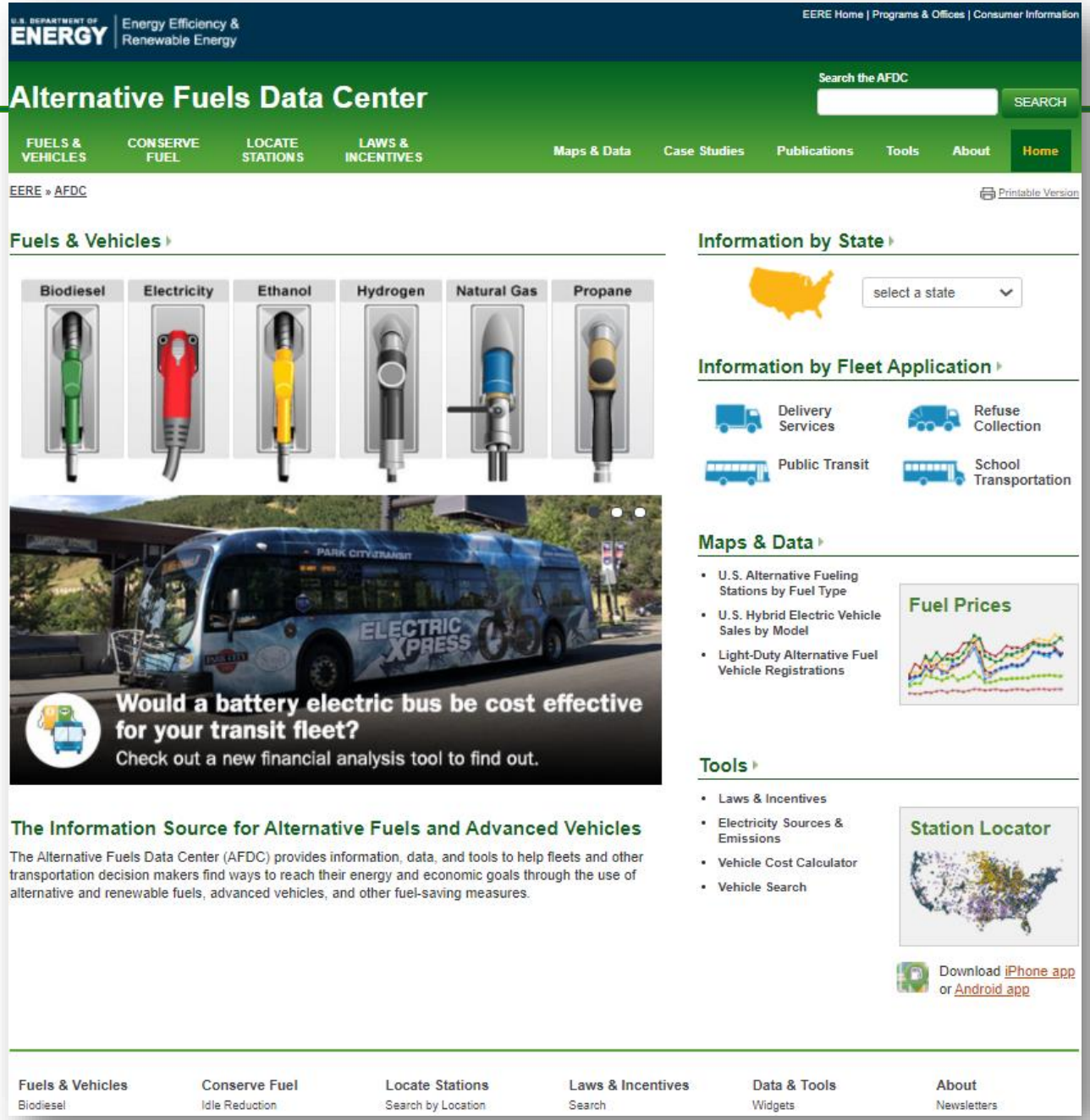
How Does Technology Integration Fit into VTO?

VTO develops advanced transportation technologies to:

- ✓ Improve energy ***efficiency***
- ✓ Increase domestic energy ***security***
- ✓ Reduce operating ***cost*** for consumers & business
- ✓ Improve global ***competitiveness*** of US economy

Alternative Fuels Data Center (AFDC)

afdc.energy.gov

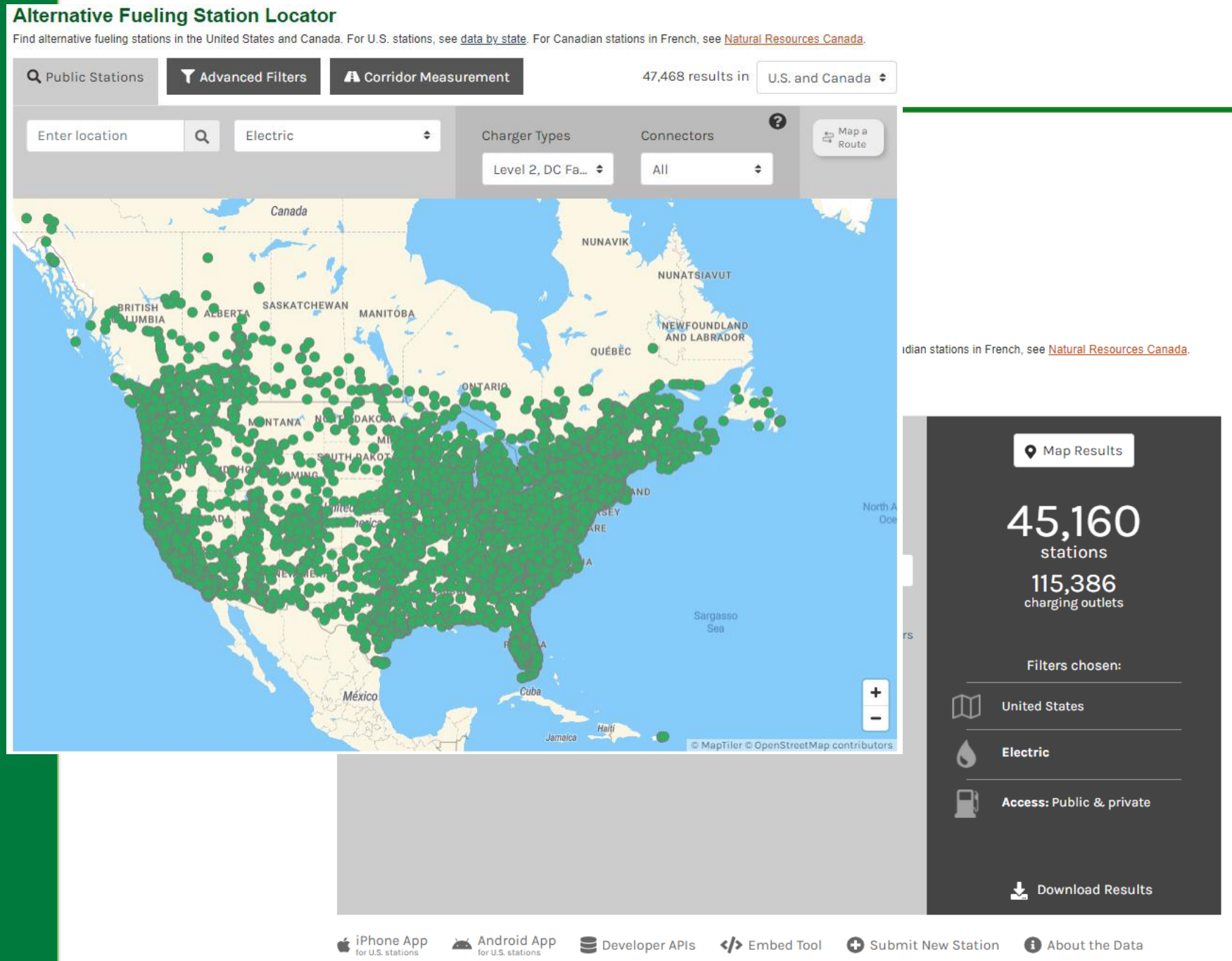


Alternative Fueling Station Locator

Alternative Fueling Station Locator

Locate alternative fueling stations and get maps and driving directions.

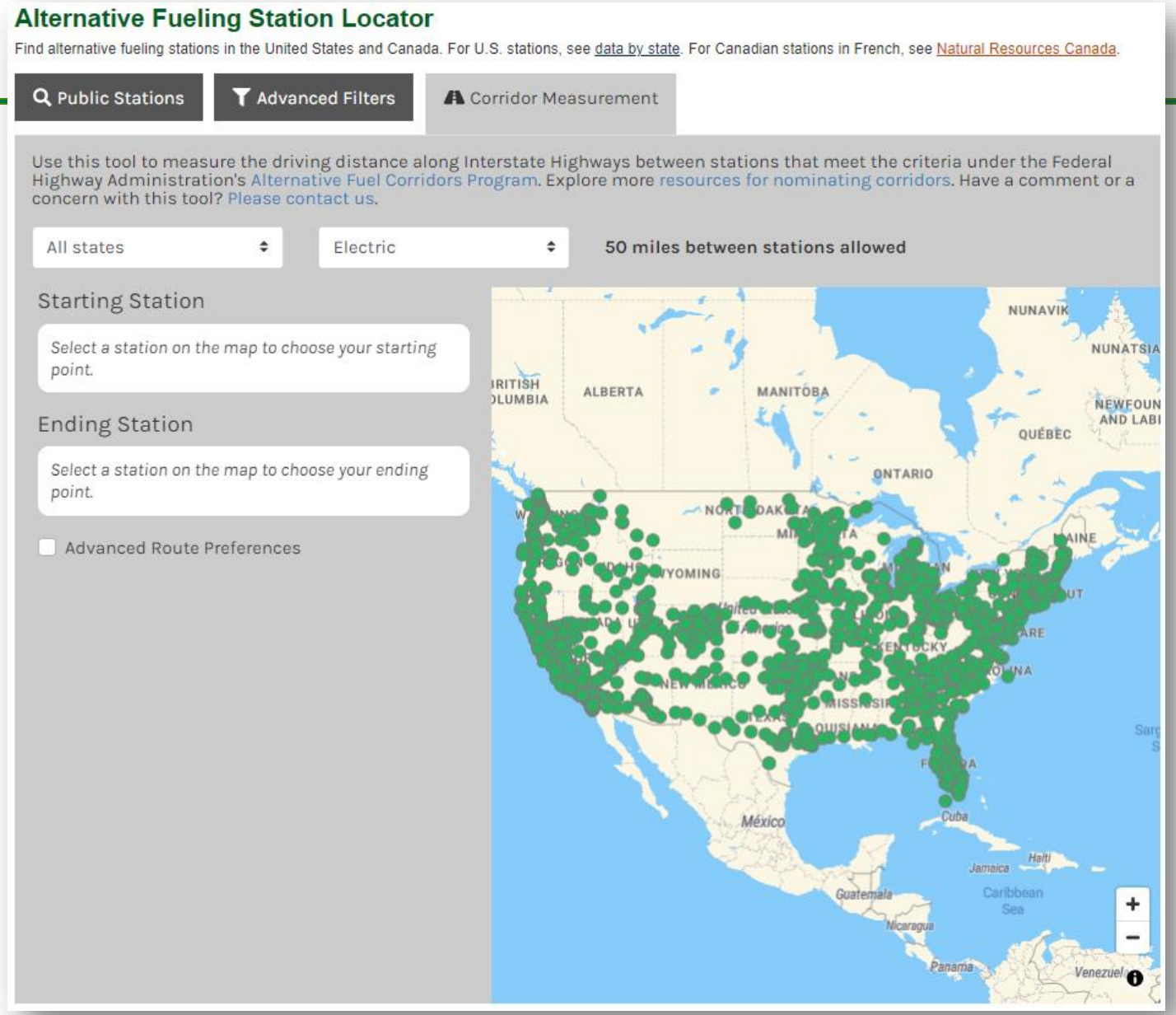
afdc.energy.gov/stations/



Alternative Fueling Corridor Tool

Use this tool to measure the driving distance along Interstate Highways between stations that meet the criteria under the Federal Highway Administration's Alternative Fuel Corridors Program.

afdc.energy.gov/stations/#/corridors



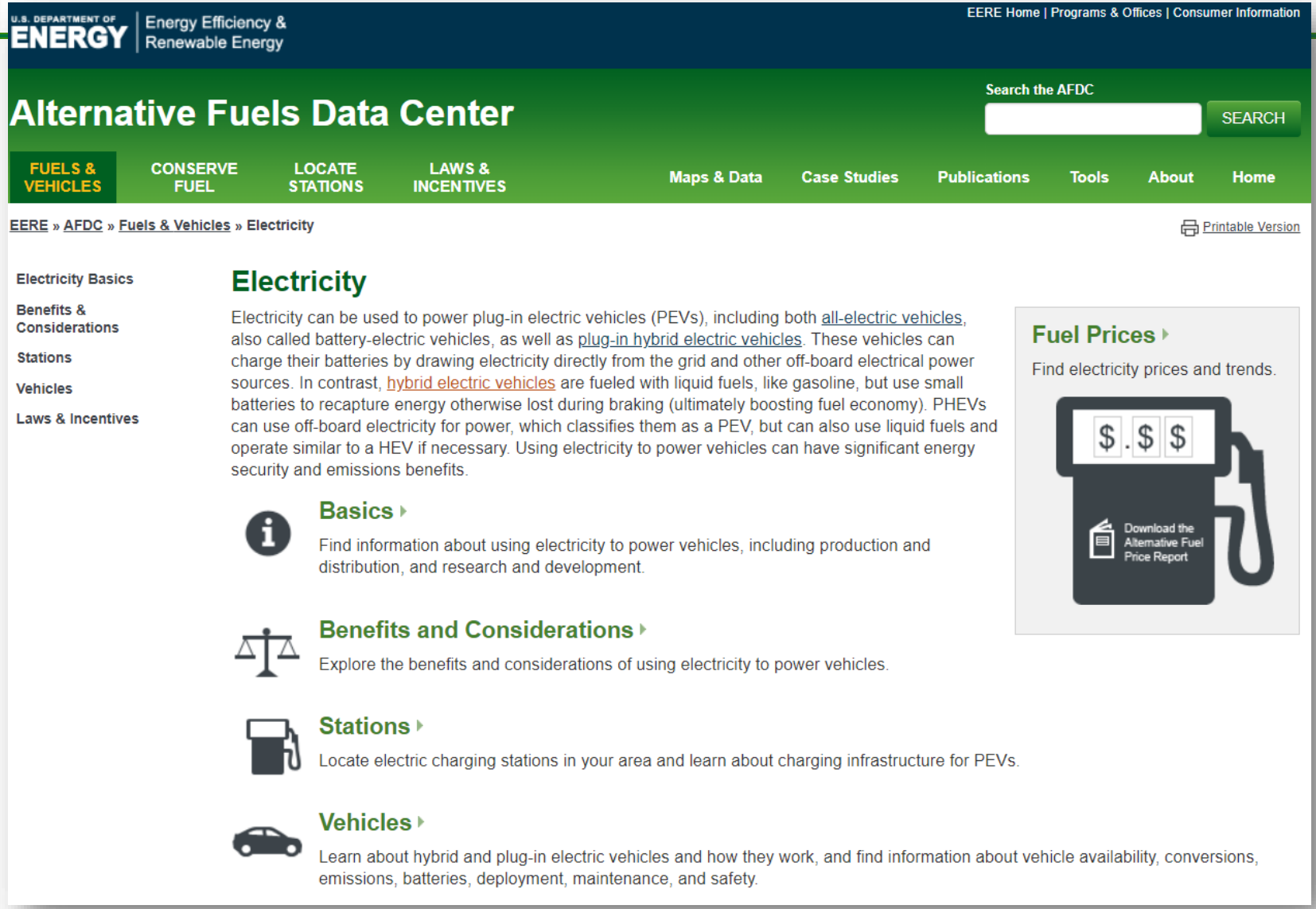
fhwa.dot.gov/environment/alternative_fuel_corridors/

AFDC Electricity Pages

Electricity Pages

Basics, benefits and considerations, stations, infrastructure development, vehicles, and more!

afdc.energy.gov/fuels/electricity



Charging Infrastructure Procurement & Installation

Link to EVTIP resources

afdc.energy.gov/fuels/electricity_infrastructure_development

Charging Infrastructure Procurement and Installation

A variety of options for plug-in electric vehicle (PEV) charging infrastructure exist, thereby creating a multifaceted infrastructure procurement process. In addition to typical infrastructure considerations like cost, regulations, safety, siting, and type of equipment, installing charging infrastructure can involve complex payment structures, data collection, ownership models, parking, and signage requirements. Some organizations may also need to issue a formal solicitation, such as a request for proposal (RFP). See the Infrastructure Development Checklist for important factors to consider when selecting and procuring charging infrastructure.

For examples of how other organizations have completed the charging infrastructure procurement process, see the following case studies.

- Public Charging Procurement Case Study: Colorado Energy Office: EV Fast-Charging Corridor Grant Program
- Multi-Unit Dwelling Charging Procurement Case Study: Green Rock Apartments

Identify the Need

An initial action in the charging infrastructure procurement process is to identify potential users (i.e., plug-in electric vehicle (PEV) drivers). It is important to understand their expected charging needs based on travel patterns, PEV ownership, amount of time it may take to charge the vehicle battery, and the number and type of PEVs expected to be served at each location. This type of information can help better determine the number and type of charging infrastructure required for the project.

The EVI-Pro Lite tool can also provide an informed estimate of the quantity and type of charging infrastructure necessary to support regional adoption of electric vehicles by state or city/urban area.

Cost Considerations

Another important consideration is to determine the cost associated with the required charging needs. This includes equipment, installation, and operation and maintenance (including electricity, demand charges, and any annual charging network fees).

Equipment
Equipment costs may vary based on factors such as application, location, charging level, and type. Single connector unit costs range from $300 to $1,500 for Level 1, $400 to $6,500 for Level 2, and $10,000 to $40,000 for DC fast charging. When choosing charging infrastructure,

Infrastructure Development Checklist

- ✔ Determine project scope, budget, funding mechanism, and timeline using the following considerations
- ✔ Determine ideal project site, based on existing infrastructure and infrastructure needs
- ✔ Determine the number, type(s), and costs of charging equipment needed, typically:
  - Workplaces and multi-unit dwellings should consider Level 1 and Level 2 charging
  - Public charging hosts should consider Level 2 and DC fast charging
- ✔ Decide whether the stations will need to be networked, including if utilization data will be collected and if payment capabilities are necessary
- ✔ Determine if a formal solicitation is needed
- ✔ Choose a network and/or charging infrastructure manufacturer and provider
- ✔ Identify installation needs and costs, including upgrades to electrical wiring, and find a certified electrical contractor
- ✔ Obtain required permits
- ✔ Determine additional site needs, including signage and security
- ✔ Identify project partners, including electric utilities and Clean Cities coalitions
- ✔ Assess charging infrastructure maintenance and operation needs and costs

Publications and Resources

Highlight: Electricity Handbooks

- Fleet Managers
- Workplace Charging Hosts
- Public Charging Hosts
- Consumers

afdc.energy.gov/publications/

Technical Assistance

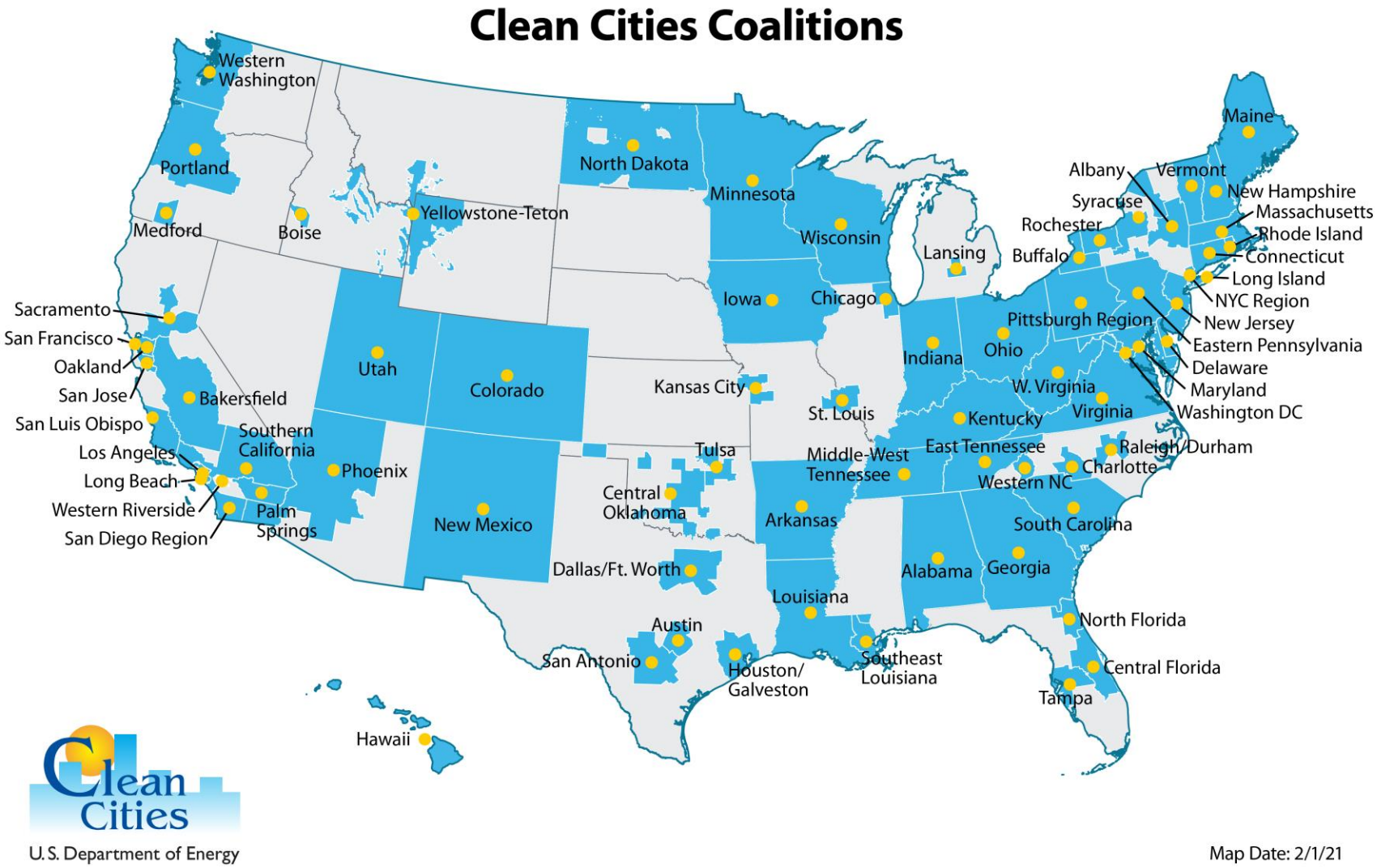
Technical Response Service (TRS)

TechnicalResponse@icf.com
800-254-6735

- **First-level** resource for stakeholders, consumers, and others
- Research and response to general inquiries
- **Direct users to EVTIP for more information**
- Help with challenging questions
- Education for legislators and government officials

National Network of Clean Cities Coalitions

Nearly 100 Clean Cities coalitions with thousands of stakeholders, representing ~80% of U.S. population



cleancities.energy.gov

Mark Smith,
Program Manager, Technology Integration
Mark.smith@ee.doe.gov