



International Bridge, Tunnel and Turnpike Association

Summary of Member Survey Results: Electric Vehicle and Charging Infrastructure

1. Background

In August 2021, the International Bridge, Tunnel and Turnpike Association (IBTTA) responded to member inquiries by surveying toll operator members of the association about their experience with a range of electric vehicle (EV) and charging infrastructure uses and plans. The survey touched upon a range of topics from current uses and future plans to business models and service offerings.

Twenty-one organizations responded with completed the surveys. Survey responses were received from toll operators in North America and Europe.

2. Survey Results Highlights

Implementation Trends: The survey results indicated that more than 71% of the respondents have electric vehicles and charging infrastructure deployed and in use or in the process of being evaluated through pilot programs or testing. Of the remaining respondents, all but three organizations are either planning or assessing the economics and opportunities for deployment.

The most popular locations for charging infrastructure are:

- headquarters of administrative office buildings (79%);
- operations and maintenance facilities (63%); and
- service plazas (43%).

Funding and Financing Trends: More than half of the survey respondents indicated that they have deployed EVs and charging infrastructure with federal or state funding assistance to cover the capital investments required. Another eight of the 21 respondents reported that they self-funded the required capital investment, with half using toll revenues and the other half using non-toll revenue sources. The remaining respondents indicated that initial capital costs were covered fully or in part by contributions from commercial partners or EV manufacturers.

Of the survey respondents providing information of how they cover the cost of operations, half were self-funding operating expenses either with toll or non-toll revenue. Another 20% were taking advantage of agreements with energy or utility companies to fund operating costs. One respondent indicated that they funded operating expenses through payments from customers, and another indicated that their service plaza contractor was responsible for the cost of operations.

EV Experience with Agency Fleet Vehicles: Several agencies are seeking to gain experience with EVs and address emissions reductions from their own operations by introducing EVs into the agency vehicle fleets. However, the experience appears to be in its formative stages. Survey respondents that have deployed EVs within their agency fleet indicated that they have 5-20 vehicles in operation. Respondents with plans to add EVs to their vehicle fleets are planning as many as 100 vehicles. The most popular vehicle uses are:

- operations vehicles (73%);
- maintenance vehicles (46%); and
- passenger and employee shuttles (27%).

Experience with Other Alternative Fuels in Agency Fleets: The survey responses showed the greatest experience with hybrid-electric vehicles with 72% of respondents having deployed or plans to use these vehicles in their operations. Compressed natural gas (CNG) vehicles were also cited to be in use by 23% of the respondents. Other alternatively fueled vehicles have been deployed in far lower numbers in agency fleets included liquified natural gas (LNG) and biofuels.

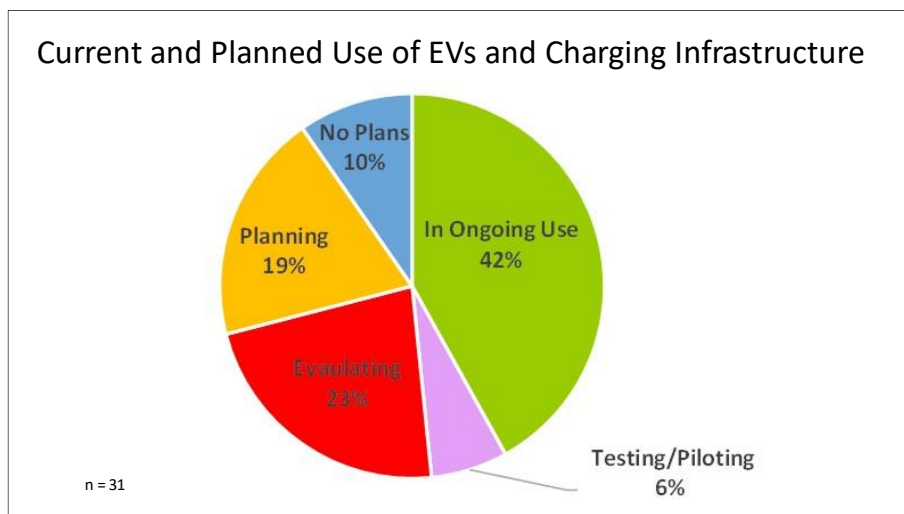
Service Offering for Charging Stations: The types of service offerings and pricing for EV charging showed considerable diversity in response, indicative of the nascent stage of the business. There was a great variety of response with many indicating that they are still undecided on how the service may be offered and priced. One common approach was the 55% of respondents that indicated offering free charging options for employees. Respondents also cited that they are working with a variety of private partners to formulate pricing plans.

There was more consensus on payment options being contemplated, with mobile payment apps and credit/debit cards leading the current thinking. Notably, only one respondent indicated that they would be considering payment options through electronic toll accounts and use of transponders.

3. Detailed Survey Results

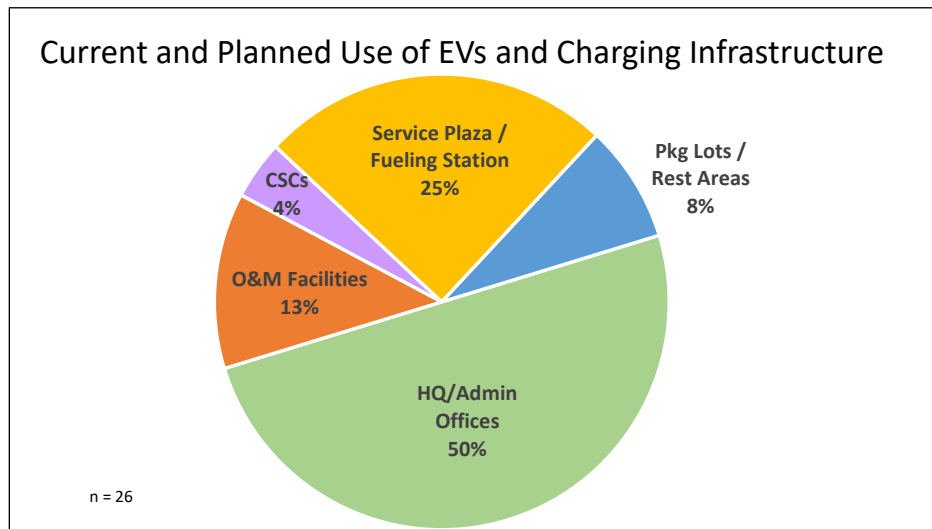
3.1 EV Use and Plans

Does your organization currently use, or plan to deploy, Electric Vehicle charging stations or charging infrastructure for Electric Vehicles in the next five years?



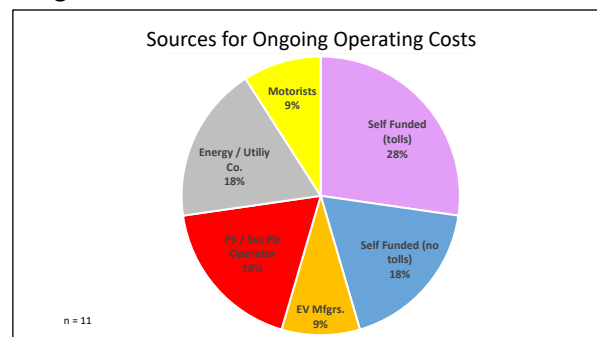
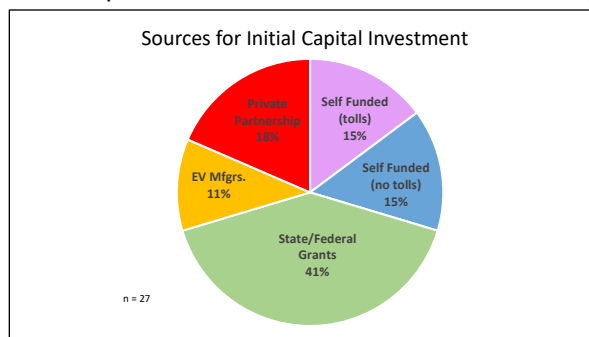
3.2 EV Charging Station Locations

What locations do you currently use or are you considering for EV charging stations?



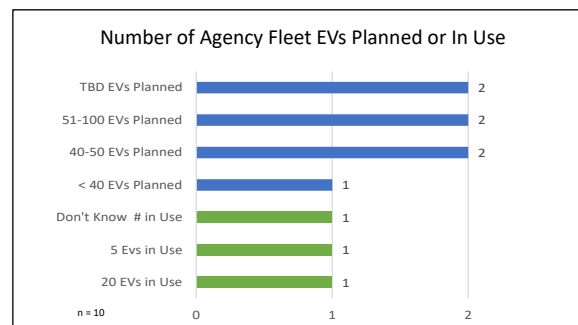
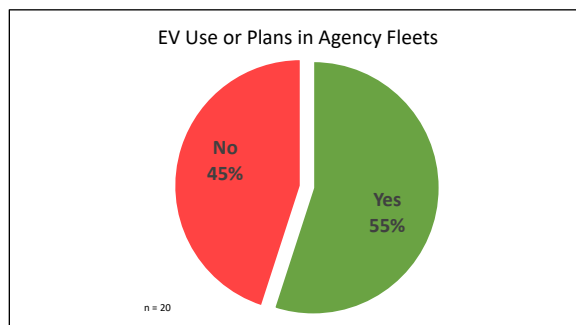
3.3 Financing and Funding Sources

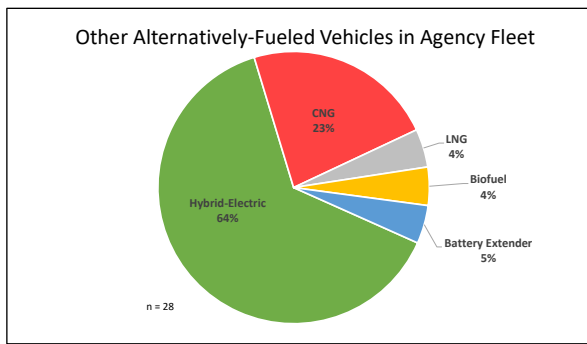
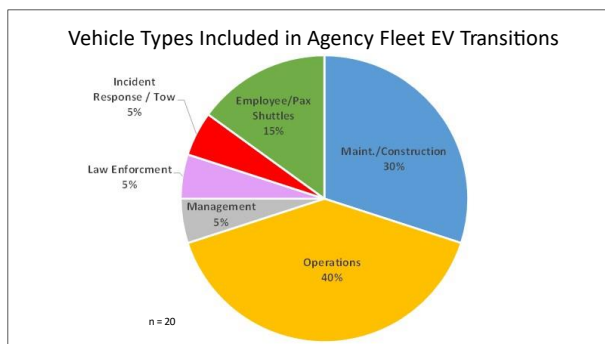
If you currently use or are planning to install Electric Vehicle charging infrastructure, how was the initial capital investment funded? How are the operating costs covered?



3.4 EV Plans and Use in Agency Fleets

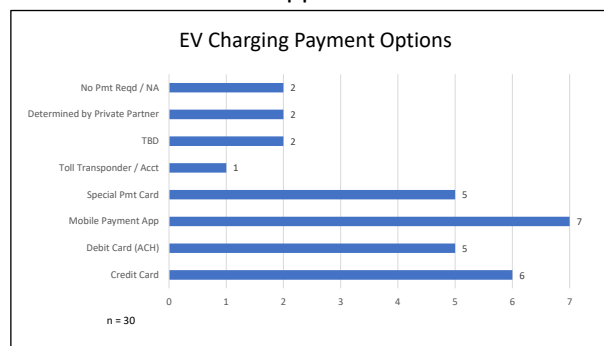
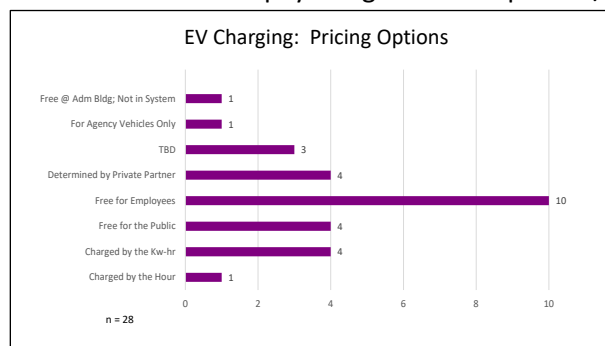
Are you currently using or considering EVs for maintenance or other agency fleet vehicles? How many agency fleet EVs are currently in use or planned? What type of agency vehicles are included in EV transition?





3.5 Charging Service Offerings and Pricing

What is the service offering for EV charging? If there is a charge, how will customers be charged? Will customers be able to pay using their transponder/toll or account or mobile app?



3.6 EV Charging Station Revenue-Sharing Practices

Agencies responded with the following comments about the revenue-sharing options that have been adopted or are being considered for EV charging stations.

- One agency reported having leases with two entities who have installed chargers at service plazas: Tesla and Chargepoint. Tesla does not currently collect fees from their drivers of their vehicle. Chargepoint will pay rent after an initial term.
- One agency reported that revenues derived from EV charging at the service plazas will be built into the rent calculations as part of the ground leases at the service plazas.
- Another agency reported that tenders for EV charging station operators include a percentage of revenues to be proposed by them and paid to the toll operator; the percentage revenue share is one criterion of in the tender selection process.
- Another agency is passing all revenue fully to the third-party operator as part of the exclusivity terms on their service area concession.
- One agency reported they have a fixed-fee lease agreement with the charging vendors set as a unit price per charging/parking stall.

4. Other Electric Vehicle and Charging Station Experiences

Agencies responded with the following additional input on electric vehicles and charging infrastructure experiences that were not covered in the survey questions.

- One agency installed outlets at their administration building in 2015 for three electric vehicles and they were well utilized. Considering total staff of 18 at the time, the deployment represented about 15% of employees.
- One agency is concentrating on adding more EV locations at the airport. Since their toll road is mostly a commuter road the decision was to not look at the EV option on the road at this time.
- Another agency intends to use available federal funding to offer grants to the private sector to turn “gas” stations into “fuel” stations including electric charging, hydrogen, CNG, biofuels, etc. They will also have separate charging stations for agency-owned vehicles.
- The existing charging stations that one agency deployed are getting minimal usage. They are also interested in more information from others about the application to heavy vehicles such as CDL-class dump trucks, loaders, etc.
- Another agency is just beginning to use EVs but hopes to expand their fleet when EV trucks become available.
- One west coast multi-modal transportation agency noted that much of the EV charging is directly related to buses and fleet vehicles.
- One agency deployed 44 West Coast Electric Highway sites about 10 years ago as a P3; they are now upgrading/refurbishing those sites through a P3 agreement, with some additional sites also planned.
- A state DOT reported it has 2 DC fast chargers and 88 L2 chargers at state-owned facilities and 6 L2 stations at leased facilities. These serve the 89 plug-in passenger electric vehicles in the fleet and are also available for visitors and employees. The DOT also manages state grant programs for electric buses at transit agencies and zero-emission vehicle infrastructure along highways at private retail locations.

5. Electric Vehicle and Charging Station Challenges

A few challenges were cited in the open-ended responses of the survey.

- In the early stages of planning EV charging, it is very difficult to understand how project finance structure can be established to support a convincing business plan. The main objective has been essentially from an environmental and sustainability angle to date.
- Difficulty to know if the investment pays for itself and if the demand exists and is sustainable in the long run. Perhaps return-on-investment is not as stand-alone EV charging area but integrated with other services in highway service areas.
- Revisions / regulations should be considered at the national level to address electric vehicle charging standards.

6. Appendix: Survey Questionnaire

IBTTA Survey On Electric Vehicles and Charging Infrastructure Deployment

The IBTTA Sustainability and Resilience Task Force and several IBTTA members are interested in learning more about toll operators' current programs and plans for use and accommodation of electric vehicles (EVs). Please complete this short survey.

We will share a summary of the survey results with all respondents who complete the survey. All individual responses are confidential and will be reported only in aggregate form, unless otherwise indicated by the respondent.

1. Does your organization currently use, or plan to deploy, Electric Vehicle charging stations or charging infrastructure for Electric Vehicles in the next 5 years? *Please check all that apply.*

- ☐ Currently have charging stations and infrastructure as a pilot or in testing.
- ☐ Currently have charging stations and infrastructure in ongoing use.
- ☐ Planning for charging station installation
- ☐ Currently assessing deployment economics and opportunities
- ☐ No current plans for charging station deployment

2. What locations do you currently use or are you considering for EV charging stations? Please check all that apply.

- ☐ Administrative offices / Headquarters facilities
- ☐ Operations and Maintenance facilities
- ☐ Customer Service Centers
- ☐ Service plazas
- ☐ Other - Write In (Required) *

3. If you currently use or are planning to install Electric Vehicle charging infrastructure, how was the initial capital investment funded? How are the operating costs covered?

	Capital Investment	Operating Expenses
Self-Funded (with use of toll revenues)	<input type="radio"/>	<input type="radio"/>
Self-Funded (with non-toll revenue sources)	<input type="radio"/>	<input type="radio"/>
State or Federal partnerships / grants	<input type="radio"/>	<input type="radio"/>
Partnership with EV manufacturer(s)	<input type="radio"/>	<input type="radio"/>
Partnership with a utility or energy company	<input type="radio"/>	<input type="radio"/>
Partnership with other commercial interests	<input type="radio"/>	<input type="radio"/>
<input type="text"/>	<input type="radio"/>	<input type="radio"/>

4. Are you currently using or considering EV's for maintenance or other agency fleet vehicles?
- ☐ Yes
- ☐ No
5. What is the service offering for EV charging? Will they be free to employees or public? If there is a charge, how will customers be charged? Will customers be able to pay using their transponder/toll account or mobile app? Please check all that apply.
- ☐ Free for Employees
- ☐ Free for the Public
- ☐ Free to a minimal level, and then charges apply
- ☐ Charged by the hour
- ☐ Charged by the Kw-hour
- ☐ Other - Write In (Required) *
6. What payment options are available or planned for EV charging stations? Please check all that apply.
- ☐ Credit card
- ☐ Debit Card (ACH)
- ☐ Mobile Payment App
- ☐ Specialized Payment Card / account credit card
- ☐ Toll transponder/ Toll Account
- ☐ Cash Payment Options
- ☐ Other - Write In (Required) *
7. What revenue-sharing options have you enacted or are you considering for EV charging stations? Please write in a response here.

8. Does your organization use or plan to use other alternatively fueled vehicles?

	In Use	Planned
Hybrid Electric	<input type="radio"/>	<input type="radio"/>
Compressed Natural Gas (CNG)	<input type="radio"/>	<input type="radio"/>
Liquified Natural Gas (LNG)	<input type="radio"/>	<input type="radio"/>
<input type="text"/>	<input type="radio"/>	<input type="radio"/>

9. If you would like to receive a summary of the results of the survey, please provide your contact information below.

Name

Email Address

10. If you have any notable success stories or lessons learned that you would be willing to share with IBTTA colleagues, please enter a point of contact so we may contact you.

Name

Email Address

11. Is there anything else you would like to add?