



# 2024 SEPA Snapshots Series

## TRANSPORTATION



# Introduction

The SEPA Snapshots Program presents a series of focused, stand-alone research chapters (Snapshots) aligned with SEPA's six focus areas: resilience, transportation, emerging technology, energy storage, policy, and energy equity. Each snapshot offers a unique perspective on these critical topics within the energy industry. The series draws on insights from two key surveys—one targeting utilities and the other capturing input from broader energy industry participants—as well as project nominations to the 2024 Power Player Awards. With response rates varying across chapters, each section highlights tailored findings and trends. Whether exploring a single Snapshot or engaging with the series as a whole, SEPA Snapshots delivers a versatile and insightful resource built on data-driven perspectives.

## Importance of the Transportation Transformation

The transportation sector is the most significant contributor to greenhouse gas emissions (GHG) in the United States, responsible for nearly 30% of the total, with light-, medium-, and heavy-duty vehicles accounting for about 80% of these emissions.<sup>1</sup> Electric vehicles (EVs) play a critical role in reducing emissions, lowering transportation costs, and improving local air quality. The rapid adoption of EVs, projected to reach over 26 million vehicles by 2030, will increase demand on the electric grid.<sup>2</sup> Still, electrification promises benefits such as reduced source emissions, the ability to leverage EVs as a grid resource, and lower consumer costs.

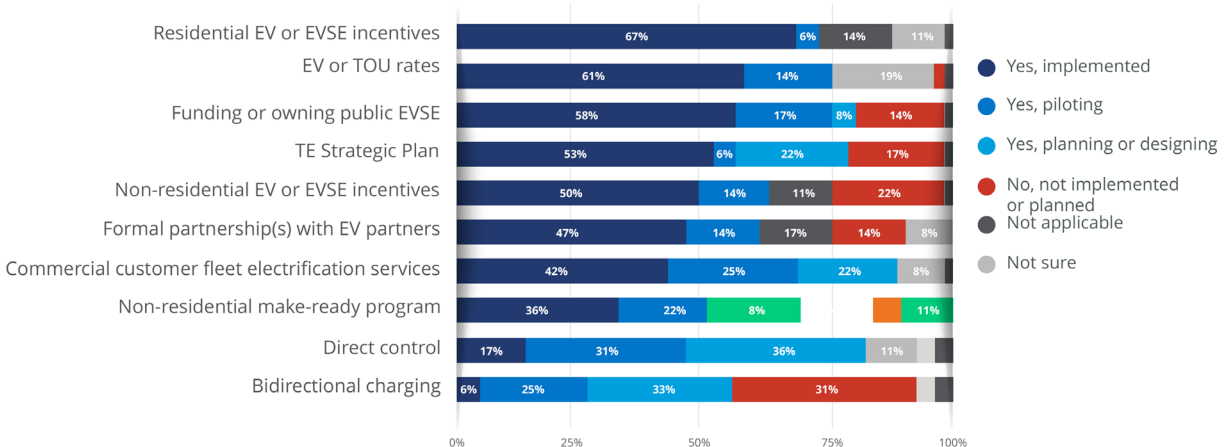
One hundred thirty respondents across the clean energy industry, representing 115 distinct organizations,<sup>3</sup> including both utilities and organizations identified as participating in the transportation sector, provided input on their transportation-related initiatives and perspectives. For more information about the respondents and methods used, please refer to the addendum, which explains the data collection process.

## Transportation Electrification Programs

### Utility Programs

Utility survey responses highlight a strong focus on residential EV or electric vehicle supply equipment (EVSE) incentives and EV-specific rates or time-of-use (TOU) rates, with 67% and 61% of respondents, respectively, having already implemented these programs (Figure 1). Funding or owning public EVSE (58%) and developing transportation electrification (TE) strategic plans (53%) are also areas of significant activity, signaling utilities' recognition of the importance of infrastructure investment and long-term planning in enabling EV adoption.

**Figure 1. Utility implementation of transportation electrification programs (n=36\*)**



\*The results presented should be considered directional rather than statistically significant due to the sample size.

1 <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

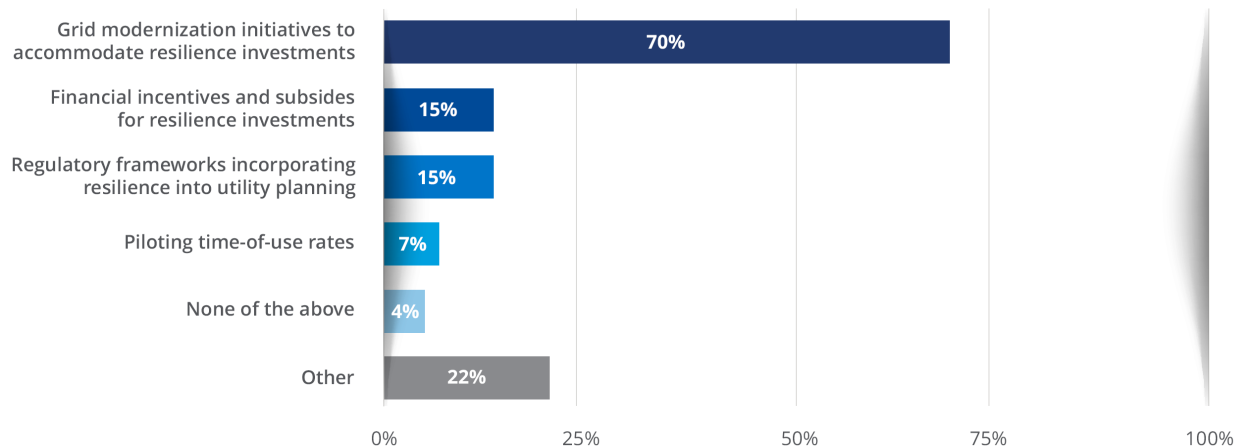
2 <https://sepapower.org/knowledge/future-of-electric-vehicles/>

3 Individual sample sizes from the various audiences and data collection activities will vary in the results sections below.

More advanced or complex technologies, such as direct control (e.g., a utility controlling an EV charger) and bidirectional charging (i.e., technology to allow an EV to push energy back to the grid), are still in their early phases, as demonstrated by rates of 17% and 6%, respectively, among surveyed utilities. For many utility respondents, these newer technologies are still in the piloting or planning stages, but others have less concrete plans to move forward in these areas. Overall, while surveyed utilities are showing strides in foundational EV programs, more technically sophisticated and non-residential initiatives remain in the earlier stages of adoption.

Of utilities offering special transportation electrification (TE) rates, 70% currently offer Time of Use (TOU) rates for charging, making it the most common EV rate structure by a significant margin (Figure 2).<sup>4</sup> Other options, such as EV-specific subscription rates (15%) and off-peak financial incentives or rebates for charging (15%), are less common.

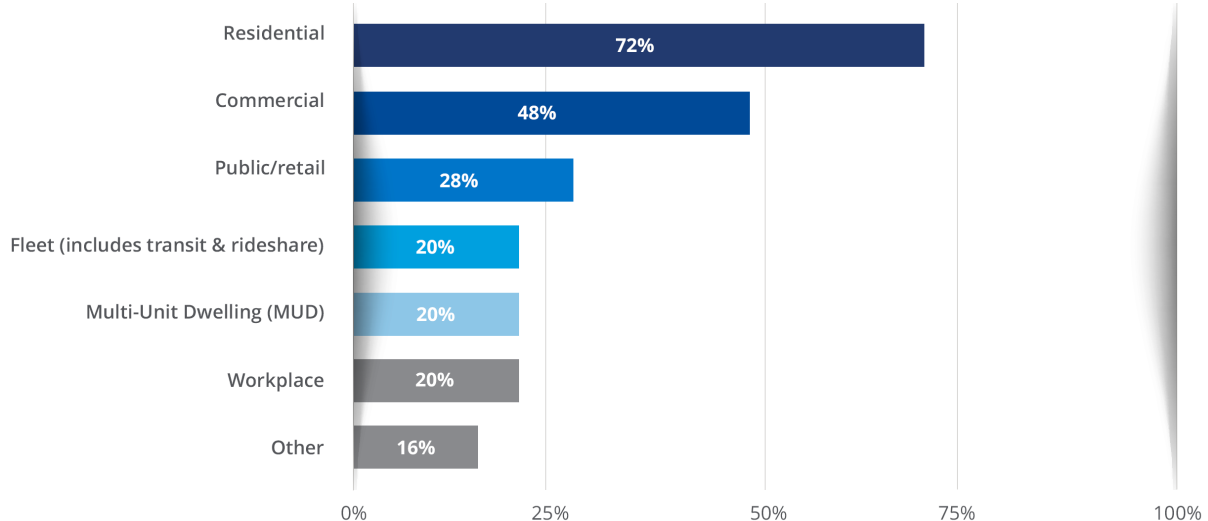
**Figure 2. Types of EV rates offered by utilities (n=27\*)**



\*The results presented should be considered directional rather than statistically significant due to the sample size.

These TE programs and rates are focused on residential customers, with seventy-two percent of surveyed utilities reporting predominantly offering EV-specific time-varying or subscription rates to residential customers (Figure 3). Of utilities surveyed that offer EV rates, only about half (48%) make them available for commercial customers. Fewer utilities offer EV rates and programs designed specifically for public/retail spaces (28%), fleets (20%), multi-unit dwellings (20%), and workplace (20%).

**Figure 3. Customer segments eligible for EV rates (n=25\*)**



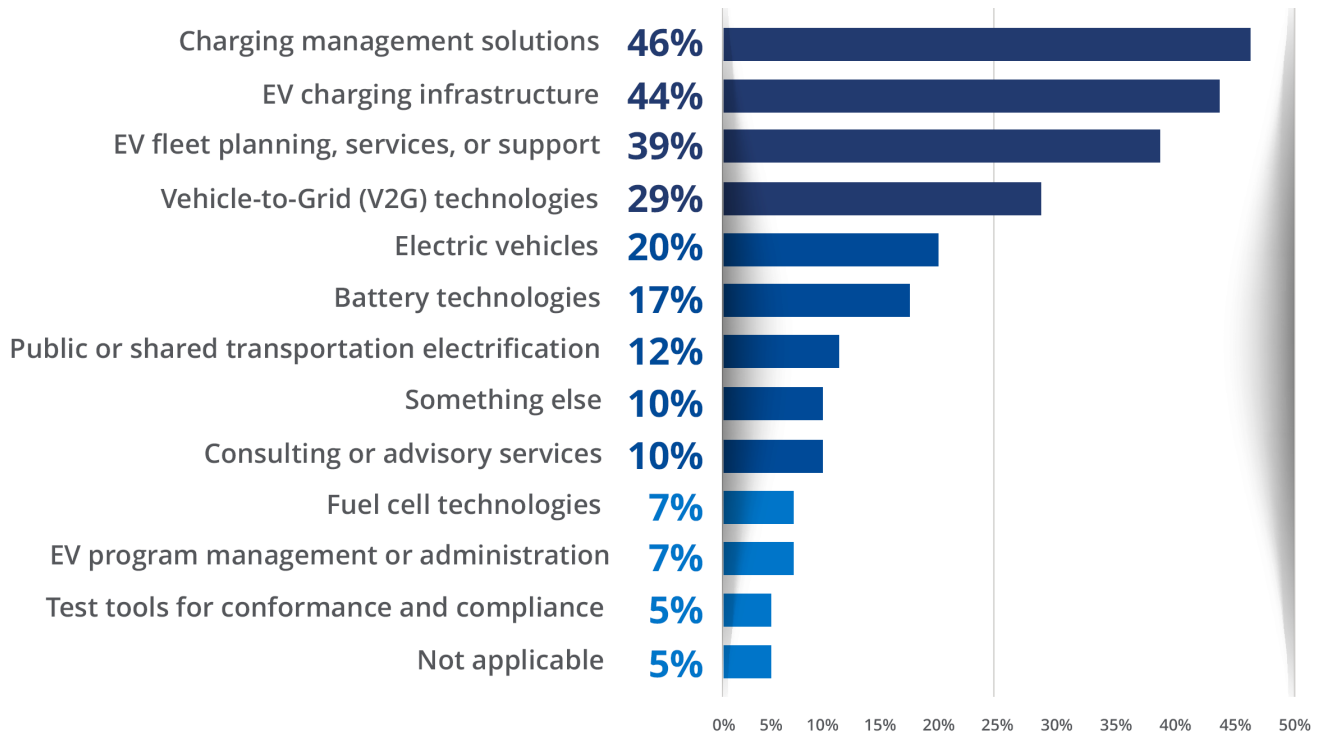
\*The results presented should be considered directional rather than statistically significant due to the sample size.

<sup>4</sup> Customer adoption rates of TOU were not collected in the Snapshots program.

## Business and Service Provider Programs

Businesses operating in the TE field reveal a strong focus on charging infrastructure technologies and customer charging experiences. The most commonly developed products reported by corporate respondents are charging management solutions (46%) and EV charging infrastructure (44%), emphasizing the continued importance of deploying charging services to support EV adoption (Figure 4). In addition, EV fleet planning services (39%) are growing.


**Figure 4. Transportation-related technologies and solutions offered by corporate survey respondents (n=41\*)**



\*The results presented should be considered directional rather than statistically significant due to the sample size.

## Supporting and Increasing EV Adoption

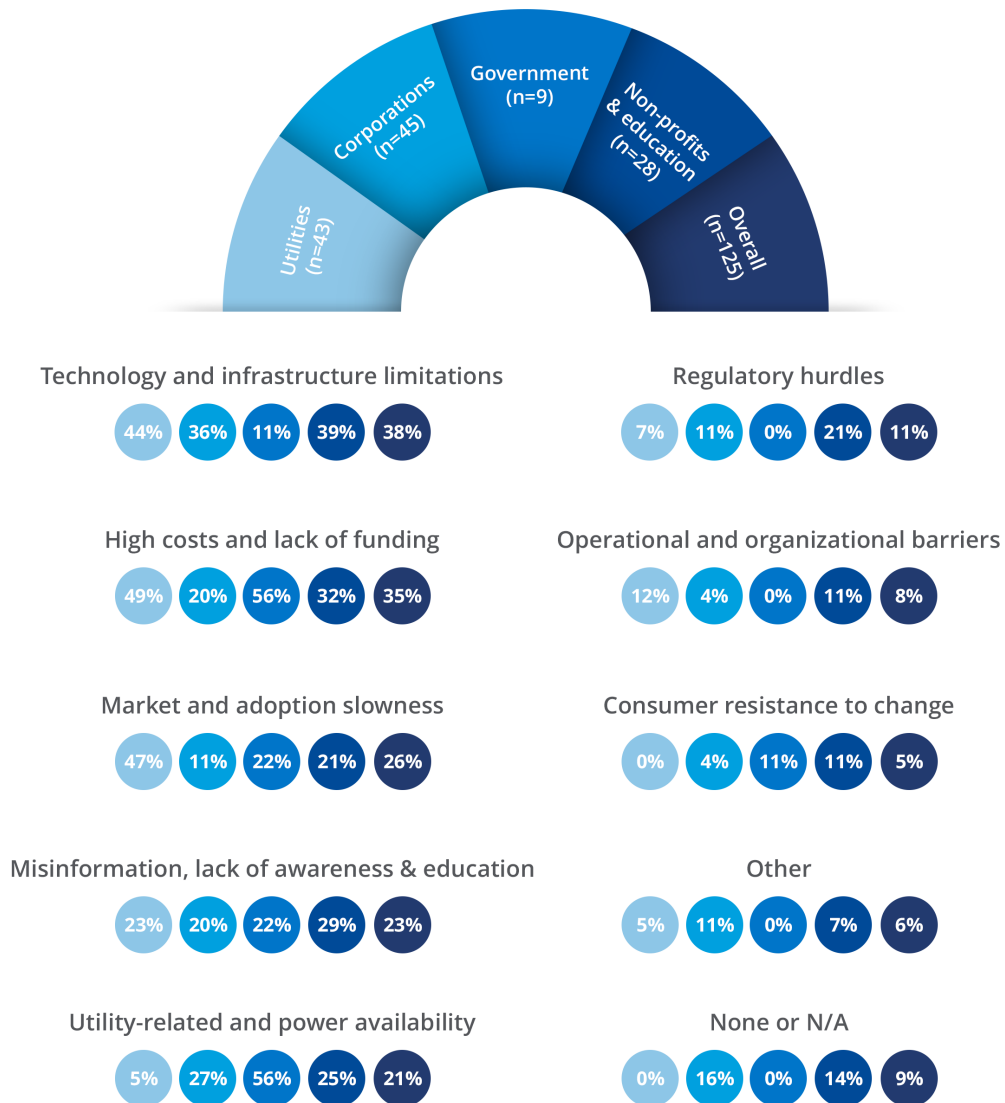
Across the various surveyed organizations, participants responded that technology limitations, high costs, and market readiness were the most significant barriers to advancing EV adoption (Figure 5). One utility respondent noted,



"In my opinion, the single largest barrier for adoption in our area is the lack of fast charger availability (150kW or more) across all of the places people travel. Many places here may only have a single fast charger within 100 miles, and it may be a 50kW. This can be a huge deterrent even for those who are eager to adopt EVs."

Businesses and nonprofits echo this concern, highlighting that the lack of infrastructure can significantly slow adoption.

**Figure 5. Barriers to advancing EV adoption**  
(sourced from all Snapshots data collection activities; n=125)



According to survey respondents, another significant barrier is the high cost of EVs and the lack of program funding, grants, and rebates to offset these costs, particularly for low-income populations. As a nonprofit respondent stated,



“Funding is the primary issue (for almost everything). We are unclear how, without significant subsidy, our low-income (LI) population will be able to purchase EVs.”

Government respondents similarly emphasize the difficulty in convincing consumers to look beyond the initial price and consider the total cost of ownership. One government respondent shared their main challenges,



“Skeptics, and range anxiety. Changing mindset to look at the full cost of ownership rather than just the first-time sticker price.”

Surveyed organizations identified expanding charging infrastructure (24%) and offering financial incentives like EV and EVSE rebates (16%) as the most impactful initiatives for driving EV adoption (Table 1). Additionally, organizations emphasize the need for fleet electrification services and customer education about the benefits of EVs, along with EV-related research and technical studies, focusing on both practical application and informed decision-making.

**Table 1. Most impactful solutions and services for EV adoption among utilities, government, non-profits, and educational institutions (n=67)**

Initiative	Percent
Development of publicly available charging infrastructure	24%
EV or EVSE rebates & financial discounts	16%
Residential EV programs	10%
Make ready programs	9%
Fleet electrification services	7%
Customer education on EV benefits	7%
Multifamily or LI customer-focused initiatives	6%
TE or ZEV strategic planning	6%
Policy support & advocacy	6%
TOU rates for EV owners	4%
Consulting and advisory services	4%

Utilities, in particular underline several specific strategies that can significantly influence EV adoption. In addition, utilities said that developing robust and reliable charging infrastructure in high-traffic and workplace settings would help mitigate range anxiety. Additionally, the financial incentives such as rebates and make-ready programs for commercial and residential sectors were stated to play a pivotal role by reducing the upfront costs associated with EVs and charging stations.

From a strategic standpoint, utility respondents also emphasized the importance of comprehensive planning and community engagement through initiatives like TE Strategic Investment Plans. These plans prioritize investments and foster partnerships for EV integration. Flexible load management via TOU rates encourages off-peak charging, which can aid in managing grid demand and ensure the infrastructure's readiness without extensive upgrades. Coupled with educational campaigns and customer support that demystify EV technology and benefits, these initiatives can create a conducive environment for EV adoption.

## Road Ahead

The insights gathered in this snapshot underscore the crucial role that collaborative efforts across utilities, businesses, nonprofits, and governments play in accelerating the electrification of the transportation sector. By addressing barriers such as infrastructure gaps, high costs, and consumer education, stakeholders can drive the adoption of electric vehicles and unlock their potential for reducing emissions, enhancing energy resilience, and improving equity. Dive deeper into SEPA's transportation research, including best practices and working groups, to explore actionable strategies to empower the energy industry to lead the transition to a cleaner, more sustainable future. Let's work together to power the road ahead.



For more information on  
Transportation projects, initiatives,  
and partners please visit:

<https://sepapower.org/our-focus/transportation/>