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Utility-Ownership Models and Practices for Electric Vehicle Supply Equipment

A Policy Review and Best Practices for NARUC

February 2025

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U.S. DEPARTMENT of ENERGY

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Summary

This report, *Utility-Ownership Models and Practices for EVSE: A Policy Review and Best Practices*, provides a comprehensive analysis of state-level policies and utility programs for electric vehicle supply equipment (EVSE). It explores trends, challenges, and regulatory models shaping EVSE expansion, with a focus on utility-owned initiatives. The document includes evaluations of stakeholder coordination, reporting requirements, economic frameworks, rate designs, and funding mechanisms. By studying a broad dataset of policies and programs, the report identifies best practices for transparent reporting, targeted market interventions, stakeholder collaboration, and effective economic strategies. Key examples from states such as Maryland, California, Illinois, and Minnesota highlight various approaches to addressing infrastructure gaps, ensuring equity, and integrating EVSE with smart grid planning.

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Acronyms and Abbreviations

ACC	Arizona Corporation Commission
ATE	Alliance of Transportation Electrification
BESS	battery energy storage systems
BGE	Baltimore Gas & Electric
CPUC	California Public Utilities Commission
DCFC	direct current fast charging
DOT	Department of Transportation
DPU	Department of Public Utilities
DR	demand response
EV	electric vehicle
EVIIWG	Electric Vehicle Infrastructure Interconnection Working Group
EVSE	electric vehicle supply equipment
HECO	Hawaiian Electric Company
LBNL	Lawrence Berkeley National Laboratory
IOU	investor-owned utility
MUD	multiunit dwelling
NARUC	National Association of Regulatory Utility Commissioners
NEVI	National Electric Vehicle Infrastructure
NDOT	Nevada Department of Transportation
OIR	Order Instituting Rulemaking
O&M	operations and maintenance
PGE	Portland General Electric
PG&E	Pacific Gas & Electric
PNNL	Pacific Northwest National Laboratory
PSC	Public Service Commission
PSE	Puget Sound Energy
PUC	public utility commission
SCE	Southern California Edison
SDG&E	San Diego Gas & Electric
TEP	transportation electrification plan
TOU	time-of-use
VGI	Vehicle-Grid Integration
V2G	vehicle-to-grid
WUTC	Washington Utilities and Transportation Commission
W&M	Weights & Measures

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1.0 Introduction

This report explores the evolving policy landscape surrounding electric vehicle supply equipment (EVSE) owned, operated, or funded by regulated electric utilities. This research aims to identify trends and best practices to inform policy recommendations for regulatory bodies. Leveraging a representative sample of state-level policies and utility programs across the United States (**Section 2.0**), this study analyzes the following five key categories that shape the deployment of EVSE:

Evaluation and Reporting Requirements (Section 3.0): This section defines topics and metrics that serve as criteria for future policy development.

Stakeholder Coordination (Section 4.0): Strategies for effective stakeholder engagement from program design to implementation.

Economic Criteria for Program Engagement (Section 5.0): Provides a higher-level analysis and review of several main drivers behind program engagement including market gaps, financial barriers, market competitiveness, and smart grid integration.

Rate and Incentive Design (Section 6.0): Frameworks for the treatment of capital costs, economic efficiency and fairness, and addressing grid stability.

Funding Pathways (Section 7.0): Addresses potential funding design and sustainable pathways for program management.

2.0 Landscape of Reviewed Programs

The analysis is built on a broad sample of state-level EVSE policies and utility programs. While this approach does not encompass all regulatory activities nationwide, the geographic and programmatic diversity captured offers robust insights into primary models, drivers, and challenges. Observations derived from this sample provide valuable lessons and showcase varied approaches to addressing key infrastructure challenges facing regulators.

2.1 Overview of the Dataset in This Report

This section introduces the geographic reach and thematic diversity of the analyzed programs. By focusing on trends across different regions, the dataset uncovers actionable examples to guide state-level interventions and utility-owned EVSE program development. In total, this report looks at 15 states and 64 distinct utility-owned EVSE programs (refer to Appendix A for the list of programs, along with the policy drivers and working links). California, Maryland, and Florida are the most prominent members of the dataset, representing about half of all the programs assessed here, as shown in Figure 2.1 below.

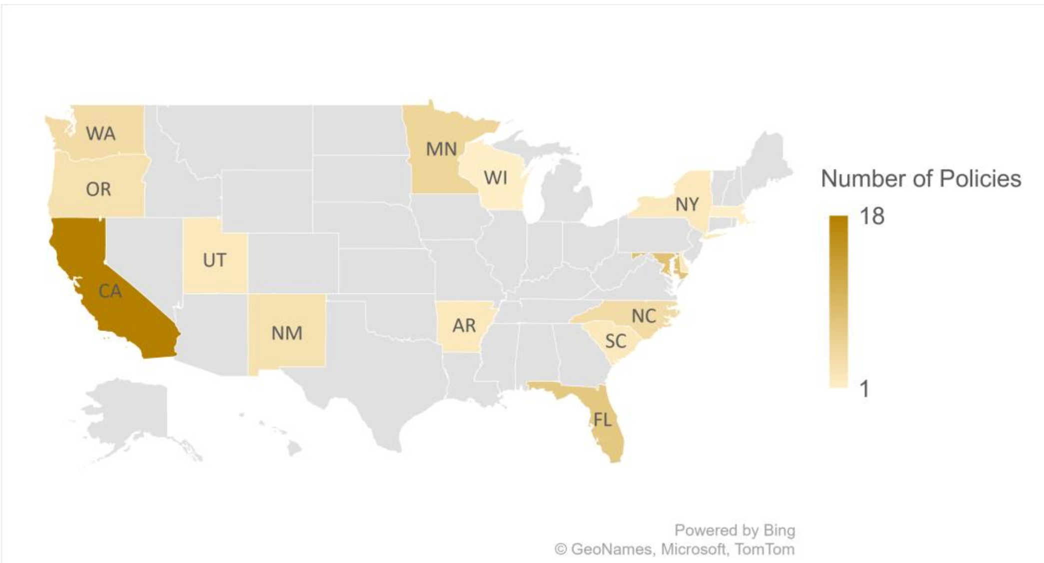

Figure 2.1. Geography of Dataset

This dataset is restricted to programs that were approved by regulators, but includes three that were partially approved and one that was canceled after approval at the request of the utility, as shown in the chart below.

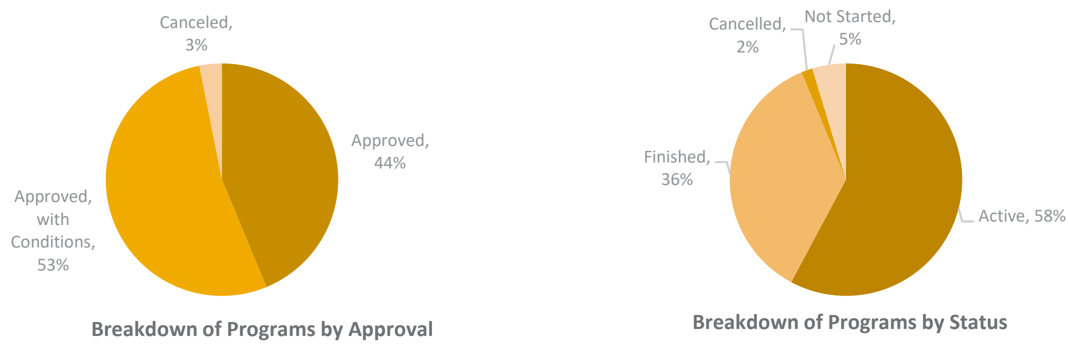

Figure 2.2. Breakdown of Programs by Approval and Status

However, this report also closely examines the policy decisions supporting the involvement of regulated utilities in a developing EVSE market. This reveals a tension between leveraging the utility's unique capabilities and extensive experience in developing and managing electrical infrastructure and the parallel policy objective of fostering a robust, competitive private market for EVSE hardware and services. To help regulators address this challenge, this report provides a comprehensive analysis of the evaluation and reporting requirements, stakeholder coordination, and economic considerations across the programs discussed here.

2.2 Taxonomy of Utility-Owned EVSE Programs

State regulators have not adopted a single, uniform approach to utility involvement in EVSE. Analysis of regulatory dockets and state-level programs reveals a clear trend toward portfolio approaches, wherein utilities employ different models concurrently to address the distinct needs and market barriers of different segments, such as residential, workplace, public, and fleet charging. Among these models, using only the "make-ready" approach is the less common strategy, appearing in nine programs, while direct utility ownership of the charger represents 44 of the programs this report examined.

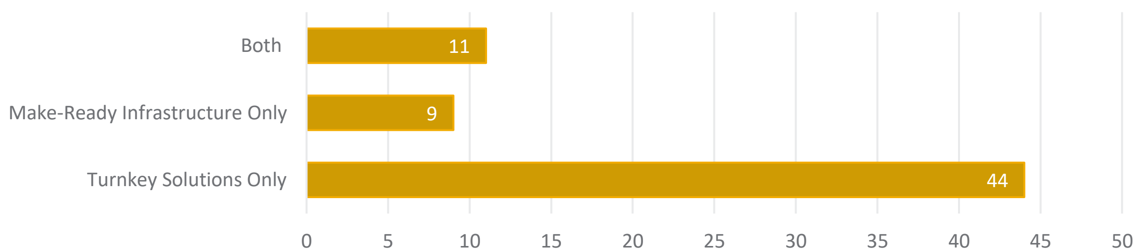

Figure 2.3. Breakdown of Program by Taxonomy

2.2.1 The Turnkey Model

The direct utility ownership, or turnkey, model represents a comprehensive form of utility involvement in EVSE. Under this model, the utility owns, operates, and maintains the entire charging station, from the grid interconnection to the EVSE hardware and associated network services. This approach positions the utility as the direct service provider to the EV driver.

The rationale supporting this model is typically based on addressing market failures where the private sector is unable or unwilling to invest. Avista’s pilot program in Washington, for instance, employed a full ownership model for its direct current fast charging (DCFC) sites to guarantee their long-term operability and ensure public access in a region with low initial EV penetration (Farley et al. 2019). Similarly, the turnkey model can be deployed to serve hard-to-reach segments like multiunit dwellings (MUDs). This is what occurred when Potomac Electric was authorized to deploy utility-owned turnkey solutions within MUDs; the Commission found it in the public interest to “jumpstart the deployment of a public EV charging network, reduce EV owner range anxiety in the near term, and lay the foundation for a competitive market to develop in this space” (Public Service Commission of Maryland 2019a).

The turnkey model, however, presents a key regulatory challenge: meeting state EV and EVSE deployment goals while fostering a competitive private market. This model can create friction between utilities and private EVSE providers. On one hand, private sector stakeholders generally argue that utility ownership, backed by a captive ratepayer base and access to low-cost capital, creates an uneven playing field that can crowd out private investment and stifle innovation (Brooks 2021). On the other hand, utilities may contend that their direct involvement is a catalyst for overcoming specific market failures, particularly during the initial stages of market development.

To navigate this conflict, some regulators impose specific programmatic requirements. These can include capping the total number or percentage of chargers a utility can own, restricting the model to specific geographic areas or market segments, framing the authorization as a limited-duration pilot program, involving specific stakeholders in the discussion and creation of the programs, or establishing clear reporting and evaluation criteria for informing future programmatic designs. Each of these issues is discussed separately throughout this report.

2.2.2 The Make-Ready Infrastructure Model

The make-ready model functions as a compromise between direct utility ownership and a completely hands-off approach. In this model, the utility invests in, owns, and maintains the electrical infrastructure required to energize the charging equipment, but does not own the EVSE itself. This infrastructure, referred to as the “service connection and supply infrastructure,” typically extends from the utility’s distribution circuit to the “stub” where the charging station is connected. The scope of make-ready infrastructure can include upgrades to service panels, as well as the installation of conduit and wiring on the customer side of the electric meter (Public Utilities Commission of the State of California 2016c). All make-ready models require that the EVSE hardware and network services (i.e., the charger) be owned and operated by a site host or a third-party provider.

This model is designed to foster a competitive market for EVSE services. By having the utility cover the make-ready infrastructure costs, the financial burden on site hosts (e.g., workplaces, MUDs, public destination centers, or fleets) is significantly reduced. This cost reduction increases the economic viability of installing charging infrastructure and encourages broader participation. For example, Southern California Edison’s (SCE’s) Charge Ready program covers approximately 70% of the capital costs of installing a new EV charging station, significantly reducing upfront expenses for participants (Public Utilities Commission of the State of California 2016b). Such a cost reduction increases the economic viability of installing charging infrastructure and encourages more rapid and widespread deployment of EVSE.

While this model helps reduce the barriers to development of the private sector, its primary regulatory challenge lies in the allocation of costs and risks to ratepayers. The make-ready model raises questions regarding the appropriate ratemaking treatment for long-term maintenance, the risks from technological obsolescence, and the cost of stranded assets if the private market cannot support a private business model. The remainder of this report analyzes some key considerations for regulators in addressing this challenge, particularly the principles for rate and incentive design and the economic justification central to the programs.

2.3 Primary Drivers of State-Level Policy and Regulation

Analysis of policies in this report revealed that 65% of utility-owned EVSE programs were the result of legislative mandates or regulatory requirements. This indicates a strong interest from policymakers in aligning utility programs with state or public utility commission (PUC) developed goals and objectives. This report divides drivers into four groups: proactive regulation by PUCs, direct statutory requirements from state legislatures, negotiated settlements with utilities, and direct filings by utilities.

2.3.1 Regulation Driven by Public Utility Commissions

Direct, proactive regulation by state PUCs is the key driver for 27% of policies examined in this report. In states where this driver is the most prominent, such as Minnesota and Maryland, commissions have initiated inquiries, rulemakings, or generated policy statements to establish frameworks for utility-proposed programs, as shown in Figure 2.4.

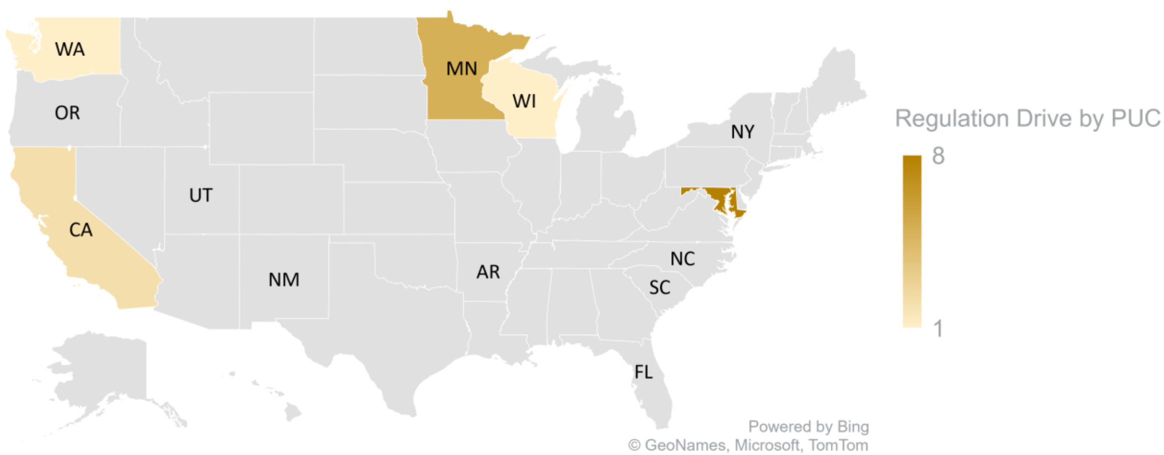

Figure 2.4. Geographic Breakdown of Proactive Regulation by PUCs Driving EVSE Programs

Procedurally, this policy driver involves the PUC issuing a formal order that defines the public interest as related to EVs, outlines the expectations for utilities, establishes criteria or expectations for future filings, and sometimes directs the state's utilities to submit applications for new programs within a certain timeframe. One of the most prominent examples is the California PUC's EV rulemaking, which established a detailed set of principles and requirements that have guided all subsequent utility EVSE-related applications in the state (Public Utilities Commission of the State of California 2014). This top-down, commission-led approach provides a structured and predictable process for developing and evaluating utility programs.

2.3.2 Statutory Requirements

Of the programs examined in this report, 38% are the result of actions from the state legislature. As shown in Figure 2.5, this driver is geographically diverse, with California standing out as the leader of this approach. This driver includes statutes that explicitly authorize, and sometimes mandate, utility investment in the EV market. These laws often provide utilities with a clear legal and financial framework to propose programs and define under what circumstances regulators can approve them. For example, Washington State's RCW 80.28.360 specifically allows electric utilities to earn an incentive rate of return on capital expenditures for EVSE, a provision that directly enabled Avista's 2016 pilot program (Farley et al. 2019). Similarly, California's Senate Bill 350 included a broad mandate for the state's large investor-owned utilities (IOUs) to file applications for EVSE programs, which catalyzed a significant wave of large-scale proposals from Pacific Gas & Electric (PG&E), SCE, and San Diego Gas & Electric (SDG&E) from 2016 to 2019 (Public Utilities Commission of the State of California 2016b; 2018b; 2016c). Legislative action of this nature can prioritize EVSE deployment as a matter of state policy, prompting comprehensive action by both utilities and regulators.

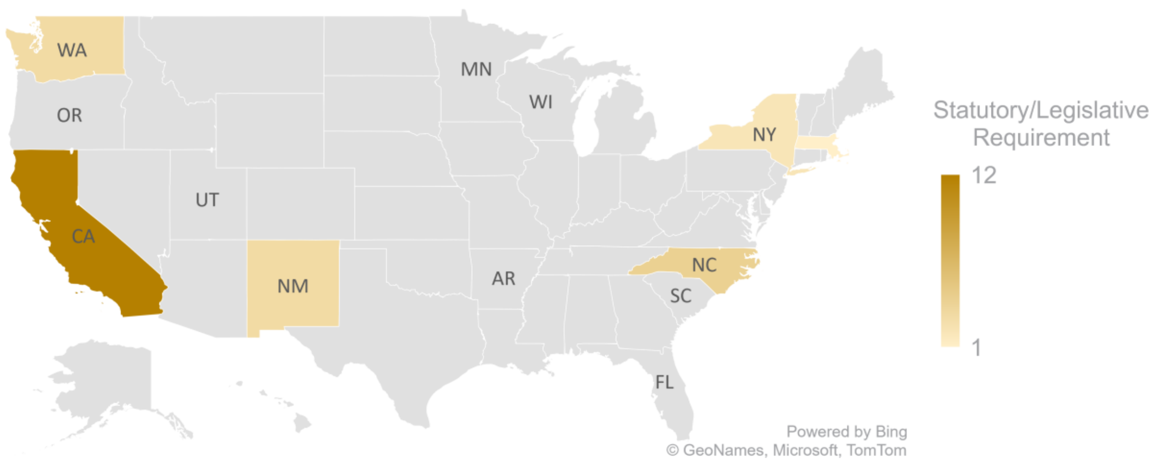

Figure 2.5. Geographic Breakdown of Statutory/Legislative Requirements Driving EVSE Programs

2.3.3 Utility Settlements and Direct Filings

The final 35% of the pathways examined consist of utility settlements and utility filings representing 30% and 5%, respectively, of the programs researched in this report. As shown in the figures below, settlements are a key driver in the California and Florida programs used in this report's dataset (Figure 2.6), whereas proactive action by the utility in the form of utility filings is rare (Figure 2.7).

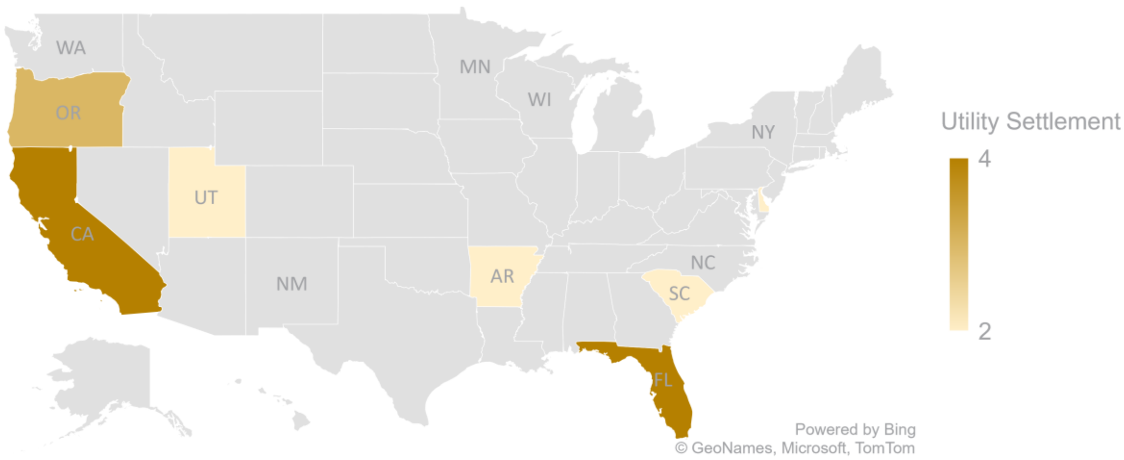

Figure 2.6. Geographic Breakdown of Utility Settlements Driving EVSE Programs

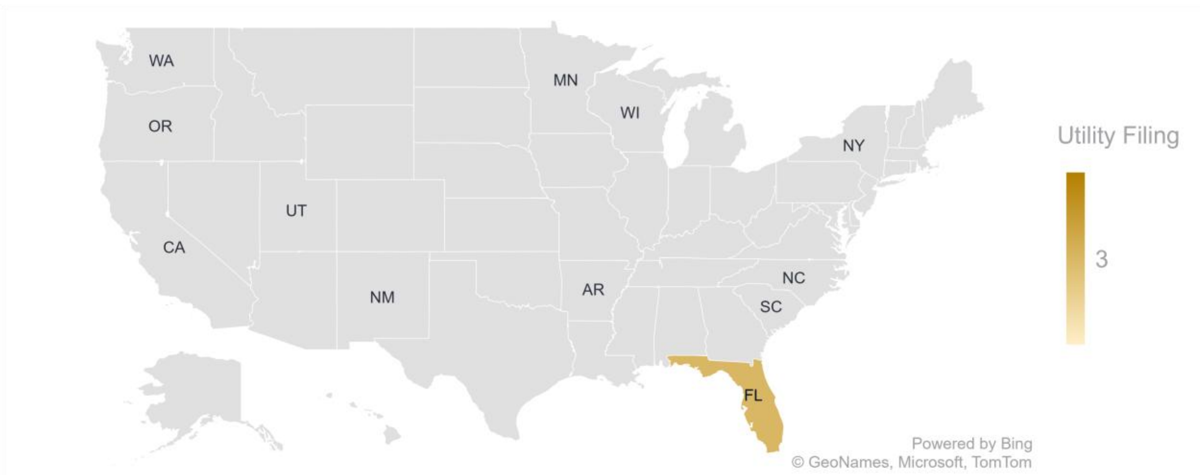

Figure 2.7. Geographic Breakdown of Utility Filings Driving EVSE Programs

With this last set of policy pathways, EVSE programs are created through negotiated settlements or proactive action by the utility, typically arising within the context of a utility's general rate case. In such proceedings, utilities often negotiate with consumer advocates, environmental organizations, and other stakeholders on a wide range of issues, including overall revenue requirements, capital investment plans, and rate design. This negotiation can be direct (i.e., the result of meetings between parties to create a formal proposal) or indirect (i.e., via filings responsive to each other's positions and proposing alternatives for the PUC to consider).

One key way that EVSE programs result from utility settlements is as part of a comprehensive settlement agreement for the entire rate case, serving as a point of compromise where the utility agrees to undertake specific EVSE-related investments in exchange for stakeholder support on other aspects of the rate case. For example, Florida's Duke Energy pilot program resulted from a settlement that provided a five-year scope and capped the program at $8 million plus operating expenses (Florida Public Service Commission 2017). While effective in getting programs established, initiatives that arise from settlements may be more limited in scope or duration, reflecting the specific give-and-take of the negotiation process rather than a holistic, statewide policy vision.

2.4 Common Regulatory Strategies for Structuring Programs

The complexity of utility-owned EVSE has led regulators to adopt procedural frameworks that emphasize collaboration, data collection, and adaptive management across the programs included in this report. Rather than approving large, multidecade programs based on forecasts alone, regulators have chosen iterative strategies designed to manage uncertainty and ensure that programs evolve based on real-world evidence. This section examines three of these common strategies: the use of pilot programs, formal stakeholder collaboration, and targeted market interventions.

2.4.1 The “Pilot-to-Program” Pathway

Of the utility programs in this report, 80% are structured as pilots. This designation is a deliberate strategy designed to manage the inherent uncertainties of a rapidly evolving market (Florida Public Service Commission 2020; Public Utilities Commission of the State of California 2016c; Washington Utilities and Transportation Commission 2017). The primary objective of pilots is not merely to deploy a set number of chargers but to function as large-scale data collection initiatives. They are often designed to generate empirical data on a wide range of variables, including actual installation costs, driver charging behaviors, grid impacts at the local level, and the effectiveness of different program designs in stimulating EV adoption. The structured, iterative pathway of a pilot de-risks large-scale investment by allowing regulators to take incremental, evidence-based steps instead of making single long-term decisions based on imperfect forecasts (Hledik et al. 2017). However, pilots universally run the risk of not being able to scale due to unforeseen technical issues discussed in greater detail in subsequent sections (e.g., Duke Energy’s Electric Vehicle and Battery Storage program), evolving scope (e.g., Potomac Edison’s V2X program), or sheer procedural complexity (e.g., SDG&E’s Vehicle-Grid Integration [VGI] Program). As discussed across various sections of this report, the design and evaluation of the pilot become critical check-ins and off-ramps to decide when pilots should continue, when they should stop, and when they can be used to develop market-wide EVSE rate offerings.

2.4.2 Formal Stakeholder Collaboration

An important feature across 75% of the programs in this report is the presence of formal stakeholder collaborative bodies, sometimes called program advisory councils or working groups. As shown in Figure 2.8, most of the programs reviewed have temporary working groups dedicated exclusively to dealing with EVSE issues.

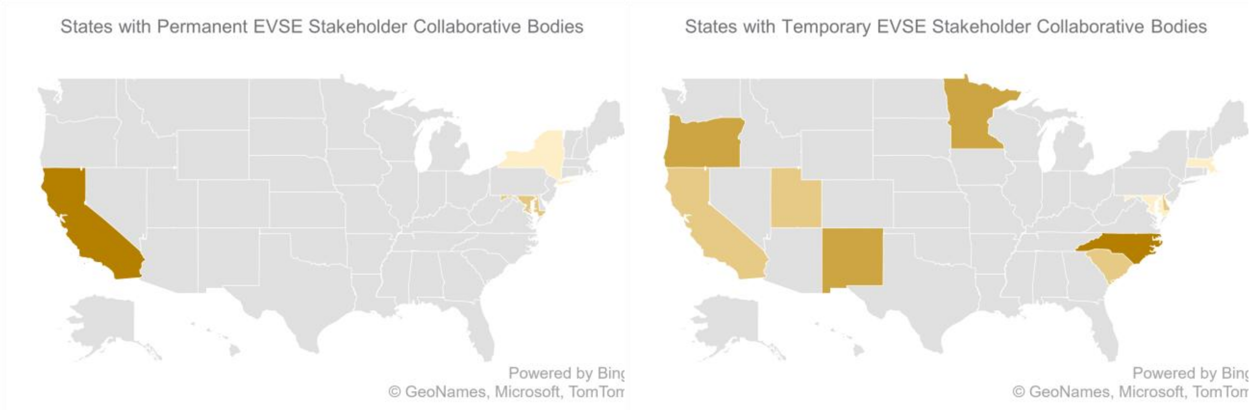

Figure 2.8. Geographic Breakdowns of EVSE Stakeholder Collaborative Bodies

These groups serve as a formal forum for ongoing dialogue, expert input, and guidance throughout a program's life cycle, bringing together diverse stakeholders such as utilities, private EVSE providers, consumer and environmental advocates, and regulatory staff. Their purpose is to provide expert input on implementation, review marketing plans, and recommend modifications. By providing a formal forum for negotiation before a utility finalizes a program for regulatory filing, these collaborative bodies function as a crucial mechanism for prelitigation settlement. As discussed in the stakeholder section, this process allows potential conflicts to be identified and addressed early, leading to proposals that arrive at the commission with broader support and a reduced need for contentious and time-consuming formal hearings.

2.4.3 Targeted Market Interventions

There is a trend among the programs in this report to guide utilities toward more nuanced program designs that position them as market enablers rather than owners. This approach involves targeting infrastructure gaps in segments with high barriers to private entry, such as MUDs, where complex landlord–tenant dynamics deter investment, and disadvantaged or rural communities, which are often overlooked by private developers. This results in an uneven distribution of charging infrastructure.

This strategic focus has a direct impact on how programs are justified as being "in the interests of ratepayers" (Public Utilities Commission of the State of California 2019). While some programs justified their costs primarily through direct grid benefits, other programs build the case for ratepayer recovery on non-energy benefits, such as the "reduction of health and environmental impacts from air pollution" and the creation of "economic benefits...in disadvantaged communities" (Public Utilities Commission of the State of California 2018a). As discussed in Section 7.0, this allows regulators to approve programs where the direct grid benefits alone might not meet a traditional cost-effectiveness test.

3.0 Evaluation and Reporting Requirements

Evaluation and reporting frameworks are foundational to the governance of utility-owned or funded EVSE programs. This section outlines the types of reporting requirements implemented across states and utilities, identifies key trends, and highlights best practices. Across the United States, PUCs use reporting requirements not only to track infrastructure deployment but to assess whether EVSE investments are advancing public policy goals—such as access to infrastructure, prudent rate recovery, peak load mitigation, and support for transportation electric load growth. While state approaches vary in formality and depth, most PUCs require utilities to submit periodic reports—either annually, semiannually, or quarterly—that document program outcomes, performance metrics, and compliance with authorized plans. These filings serve multiple purposes:

- Ensuring transparency for ratepayers and stakeholders
- Informing future regulatory decisions or pilot expansions
- Measuring progress against various goals.

To address the previously mentioned dual challenge for regulators—to accelerate deployment where the market is underserved while also preserving competitive neutrality and ratepayer protection—PUCs have turned to structured evaluation frameworks that mandate recurring, standardized reporting of both quantitative metrics (e.g., usage data, costs, site geography) and qualitative elements (e.g., low-income accessibility, customer satisfaction, market transformation potential). Ultimately, evaluation and reporting requirements reflect a broader regulatory goal to ensure that public investments in transportation electrification deliver measurable benefits, are aligned with state policy objectives, and remain adaptable to technological and market evolution.

3.1 Reporting Frequency and Duration

Most utility-owned EVSE programs require periodic reporting to the commission—typically on an annual or semiannual basis. For instance:

- In Maryland, utilities like Baltimore Gas & Electric (BGE), Delmarva, and Pepco are required to submit semiannual progress reports under the state's five-year pilot (Public Service Commission of Maryland 2022).
- In Arkansas, utilities must file annual reports detailing construction and operation outcomes (AFDC, n.d.).
- In Florida, Tampa Electric Company, Florida Power and Light, and Duke Energy must submit annual reports for each market segment, including operations and management (O&M) costs, installation metrics, and user feedback (Florida Public Service Commission 2020).
- In California, some programs require quarterly reports, while others extend reporting obligations for several years beyond the pilot's operational close, such as with SDG&E's Power Your Drive program (Public Utilities Commission of the State of California 2021).

These timelines ensure continued regulatory oversight and provide early visibility into program challenges.

3.2 Standardization of Reporting

Several states require or strongly encourage structured reporting formats. For example:

- Maryland's Public Service Commission (PSC) defined five deployment components—residential, nonresidential, public, innovation, and technology—that all IOUs must report against (Public Service Commission of Maryland 2019a).
- California's PUC uses common templates for data submissions across utilities, covering elements like charging sessions, revenue, grid impacts, and capital expenditures ("Resources and Reporting," n.d.).
- In Minnesota, utilities like Xcel Energy and Otter Tail Power provide detailed tabular reports on site-level usage, demand profiles, and charger-specific operational status (Minnesota Public Utilities Commission 2019).

These consistent formats make it possible to compare programs over time and across service territories, improving the usefulness of the data for policy decisions.

3.3 Advanced Metering and Interval Data

Utilities in multiple jurisdictions are now required to report charging station data, often at 15-minute or hourly resolution, to better understand demand patterns and support grid planning:

- Xcel Energy (Minnesota) and Otter Tail Power collect and report load profiles, peak demand (coincident and noncoincident), and session data segmented by time-of-use (TOU) periods (Minnesota Department of Commerce 2024).
- In some cases, filings include session start/stop times, plug-in duration, and 15-minute interval demand metrics (New York State Electric and Gas Company 2024).
- While not required, some utilities also include metadata on power delivery characteristics such as voltage or demand spikes, enabling integration with distribution system planning (Farley et al. 2019).

These data help evaluate grid stress, off-peak usage effectiveness, and load management potential.

3.4 Customer Metrics

Evaluation requirements increasingly include customer demographic tracking and deployment areas. Examples include:

- Maryland mandates deployment at MUDs in underserved areas and tracks installations accordingly (Public Service Commission of Maryland 2022).
- California's programs set site targets for low-income areas and require utilities to report what percent of infrastructure reaches these areas (Public Utilities Commission of the State of California 2019).
- In New York, site host characteristics and pricing are included in reporting to evaluate market fairness and customer accessibility (State of New York Public Service Commission 2023).

- Minnesota utilities report deployment in low-income areas and community host engagement (Northern States Power Company 2023).

This ensures that public EVSE investments address cost and access barriers in program design.

3.5 Third-Party Evaluations and Compliance Reporting

Some states require or permit independent evaluation of program effectiveness, as in the following examples:

- California utilities such as SCE and PG&E set aside up to 4 percent of the pilot budget for neutral third-party evaluation (Public Utilities Commission of the State of California 2019).
- Minnesota Power and Otter Tail must file compliance reports at the conclusion of pilot phases, including divestment strategies and lessons learned (Minnesota Public Utilities Commission 2020; 2021).
- In New York, evaluations of Con Edison’s curbside charging program include financial sustainability and community acceptance metrics (ConEdison 2024).

These external reviews add an important layer of credibility and ensure that lessons from pilot programs inform future policy and infrastructure investments.

3.6 Best Practices

The best practices identified across multiple jurisdictions should promote transparency, comparability, and accountability while enabling utilities and regulators to learn, iterate, and improve program outcomes over time.

3.6.1 Granular, Standardized Reporting Templates

In a regulatory environment where multiple utilities operate under varied dockets, templates bring consistency to what is reported and how. They allow regulators to compare results across utilities, identify trends, and evaluate progress toward state goals without requiring bespoke analysis for every filing. Standardization also ensures that utilities interpret their reporting obligations similarly, reducing ambiguity and enhancing data quality. Without this uniformity, commissions face an administrative burden when trying to compare implementation outcomes or assess rate impacts across territories—especially when programs span categories like residential, nonresidential, public, innovation, or technology pilots. Templates are a pragmatic tool for comparability, transparency, and governance, particularly in complex, multiutility environments like Maryland or California.

3.6.2 Interval-Level and Load Profile Data

As EVs shift from being marginal loads to significant drivers of residential and commercial demand, understanding when and how energy is consumed becomes incrementally more important. Fifteen-minute or hourly usage data allows regulators to monitor the real-time impact of EVSE on distribution infrastructure, assess the efficacy of TOU rates or managed charging programs, and anticipate load growth patterns with far greater precision than monthly or aggregate data allow. This level of resolution is also crucial for utilities to design demand response (DR) programs and inform grid modernization investments. Without interval data, regulators are unable to distinguish between peak-aligned charging and off-peak optimization or between high- and low-utilization sites.

3.6.3 Program Outcome and Affordability Tracking

Tracking how much infrastructure reaches rural areas or MUDs is necessary to ensure that programs achieve their adoption goals. Similarly, data on the actual cost to the end user—disaggregated by site host type or geographic region—enables a much-needed assessment of affordability. And when affordability metrics are transparent, they expose whether pricing models are driving new adoptions or primarily benefiting early adopters, who may be potential “free riders.”

3.6.4 Third-Party Oversight

Independent evaluators bring objectivity, methodological rigor, and public credibility to what might otherwise be utility-affirmed success stories. They are particularly valuable in pilot programs, where lessons learned are intended to guide long-term infrastructure planning. Setting aside a modest percentage of program budgets for evaluation—as seen in California—is a small investment relative to the insight it provides. These evaluations can assess cost-effectiveness, grid benefits, customer adoption, and even employment outcomes associated with EVSE deployment. Crucially, third-party oversight reduces the perception that utilities are “grading their own homework” and lends legitimacy to claims made in regulatory filings.

3.6.5 Transparent Public Access and Data Sharing

Finally, transparent public access and data sharing represent an emerging best practice with significant potential to enhance accountability and program effectiveness. While few utilities currently provide public dashboards or regularly release granular usage data, several regulatory proceedings have acknowledged the value of broader transparency. Making anonymized (to ensure customer data security) data available—whether through GIS-based tools, annual public summaries, or open data portals—could enable municipalities, researchers, and advocates to better understand deployment trends, usage patterns, and infrastructure gaps. This visibility would allow community organizations and local planners to identify underserved areas, align complementary investments, and participate more meaningfully in the siting process. Transparency also supports trust in regulatory decisions by allowing stakeholders outside the commission to independently assess how public investments are performing. While not yet widely adopted, public data access has the potential to be a powerful mechanism for improving the quality of participation, oversight, and long-term planning in EVSE deployment.

4.0 Stakeholder Coordination

Robust stakeholder processes are a key enabler for beneficial and cost-effective EVSE deployment. So much so that a recent report from S&P Global characterized coordination of stakeholders as today's biggest challenge to the build-out of a complete EV charging infrastructure (S&P Global Mobility 2023). Navigating complex regulatory requirements for infrastructure development requires stakeholders and utilities to coordinate with utility commissions or other oversight bodies, increasing the need for robust stakeholder processes. In this research, we examine EVSE policies and programs across the United States to examine trends in stakeholder coordination processes and identify best practices. Best practices in this section were identified from key policy frameworks or requirements that encouraged active stakeholder coordination on salient programmatic elements of EVSE deployment. Best practices were evaluated across several dimensions using a case study approach.

4.1 Themes

Several states have used stakeholder engagement frameworks to advance their transportation system, driven by key themes such as aligning strategies with state transportation goals, addressing market barriers, and optimizing public and systemwide benefits. States like Maryland, Minnesota, and New York exemplify this approach, leveraging stakeholder engagement to foster EV adoption while achieving public and systemwide benefits and cost-effective outcomes. Their frameworks are aligned with broader policy objectives, including grid preparedness, increasing renewable energy integration, and reducing transportation-related emissions. Stakeholder engagement was also pivotal in identifying and mitigating barriers, such as a lack of sufficient EV charging infrastructure, range anxiety, cost recovery concerns, unclear utility roles, and in ensuring equitable market access. By prioritizing stakeholder engagement, states aimed to deliver widespread benefits such as improved grid utilization, strategic deployment of EVSE, and cost-saving opportunities for ratepayers, utility systems, and the environment.

To implement these frameworks, states had different approaches and strategies, such as holding public workshops or panels, establishing working groups or committees, and soliciting feedback during public comment periods or on draft straw proposals and white papers. Iterative processes helped sustain engagement through regular reviews, evaluations, and updates informed by stakeholder input. Additionally, outreach and education initiatives were used to enhance public awareness and encourage widespread EV and EVSE adoption.

4.2 Policy Frameworks with Defined Stakeholder Engagement

Several state regulatory commissions developed overarching policy statements or frameworks with defined stakeholder engagement.

4.2.1 Maryland

The Maryland PSC developed an EV working group—in coordination with other state agencies and utilities—to address EV adoption-related issues and implement a coordinated, statewide EV portfolio (see Order No. 88997 – Case No. 9478 and Order No. 90036 – Case No. 9478). The PSC then docketed a proceeding, with a formal procedural schedule, full evidentiary process, and discovery (Case No. 9478). Various Maryland agencies, advocacy groups, and other stakeholders participated in the proceeding with an overarching goal to speed adoption of tariffs and other measures pertinent to EV adoption (Public Service Commission of Maryland 2019a).

Maryland PSC adopted its policy framework to support growing transportation electric loads through investments in EV charging infrastructure. The MD PSC recognized the necessity of establishing a statewide charging network to enhance grid utilization, empower customers to better manage their electrical load, and reduce overall costs for all ratepayers over time. This framework gained broad support from stakeholders, including individual consumers, elected officials, automobile manufacturers, trade associations, environmental groups, and private sector EV participants. Stakeholders agreed that investments in EVSE were crucial to achieving state policy objectives and preparing both the grid and infrastructure for widespread EV adoption (Public Service Commission of Maryland 2019a).

The Maryland PSC's proceedings included semiannual reporting, mid-course evaluations, and a final review conducted through legislative hearings before the Commission to continue engagement with the public and other stakeholders. Throughout the whole process, stakeholders were given opportunities to submit comments to incorporate concerns and ideas into program development. An EVSE workgroup was established by the Maryland PSC to address issues related to EVSE deployment by collaborating with stakeholders. The group consisted of 13 members: two members of the Maryland Senate appointed by the Senate President, two members of the House of Delegates appointed by the Speaker of the House, and nine representatives including the Maryland Department of Agriculture, Maryland PSC, Office of the Comptroller, Maryland Department of Transportation (DOT), Maryland Energy Administration, two representatives of the public interest sector, and two representatives of the private sector. The inclusion of nine representatives ensured that state agencies were represented, as well as nongovernmental organizations and leaders in the EV private sector. The workgroup engaged stakeholders through structured proceedings, including hearings and requests for stakeholder comments on proposals. The workgroup also collaborated on education and outreach efforts alongside the Zero Emission Electric Vehicle Infrastructure Council[2] to inform consumers about EV adoption and EVSE deployment (Public Service Commission of Maryland 2019a).

The EVSE workgroup contributed to the development of policies that addressed barriers to EV adoption, including deployment of EVs, increased efficiency and reliability of the distribution system, lower electricity use at times of high demand, and equal access to the market. Further, the work group is tasked to address, in collaboration with state agencies, retail choices for EV tariffs in all utility territories, considering additional rate structures and unique tariffs for corporate fleets and workplace and commercial charging stations (Public Service Commission of Maryland 2019a).

As part of its mandate to recommend which government agency should oversee accountability of EV charging stations, including enforcement of device accuracy, the EVSE workgroup evaluated using the Maryland Department of Agriculture's (MDA's) Weights & Measures (W&M) program. The W&M program is set to ensure fairness and equity in commercial transactions, specifically determining the quantity of charging stations. During discussions, one of the workgroup members raised concerns regarding the inspection process, associated fees, and enforcement mechanisms. To address these concerns, the member requested a formal commenting process to detail how MDA W&M plans to implement the national standard set forth in Handbook 44. The section of Handbook 44 pertaining to EVSE outlines the standards for

[2] Formerly the Electric Vehicle Infrastructure Council.

determining accuracy, specifications, user requirements, receipts, and labeling (Senate Education, Energy, and Environment Committee and House Economic, Matters Committee 2024). The evaluation of Handbook 44 by the workgroup ensures that EVSE evaluation aligns with nationally set standards while addressing stakeholder concerns regarding fairness, enforcement, and the implementation process.

4.2.2 Minnesota

The Minnesota PUC convened a public workshop featuring national and local EV experts to discuss the challenges and opportunities surrounding EV adoption in Minnesota and formally requested comments on identified issues pertinent to EV adoption. The Minnesota PUC then developed an ongoing stakeholder process with a broad and diverse range of participants to enable stakeholder input on Minnesota utilities' transportation electrification plans in Docket No. E-999/CI-17-879 (Minnesota Public Utilities Commission 2019).

Minnesota's PUC opted for a stakeholder engagement framework due to the growing importance of EV adoption in the state and its anticipated impacts on the grid, utility operations, customers, and the environment. The Minnesota PUC recognized the importance of maximizing benefits for all stakeholders by optimizing integration and adoption of EVs into the electric grid. Benefits identified included better grid utilization, downward pressure on utility rates, and increased renewable energy use. The framework was aimed at addressing barriers to EV adoption and achieving public interests in clean energy and affordable, efficient utility service (Minnesota Public Utilities Commission 2019).

In March 2018, the Minnesota PUC held a public workshop with national and local EV experts to discuss challenges and opportunities around EV adoption and EV charging infrastructure. The workshop included panels addressing issues like charging infrastructure, utility EV initiatives, and stakeholder perspectives. After the workshop, there was a Notice of Comment Period where the PUC sought out feedback on EV issues including barriers to EV adoption, guiding principles, cost recovery for EV investments, and the cost-benefit analysis of EVs. Eighteen stakeholders submitted comments in response to the Notice, and eleven stakeholders subsequently filed reply comments. Stakeholders included environmental groups, utilities, government agencies, and private sector EV leaders. Further, the Commission authorized ongoing stakeholder engagement to coordinate with related initiatives such as the Minnesota Pollution Control Agency's stakeholder engagement plan for its Volkswagen settlement funds. Utilities were directed to consult stakeholders when filing proposals to improve EV charging infrastructure, consumer awareness, and charging rates. Additionally, the Commission facilitated stakeholder input on utilities' TEPs through a formal comment process (Minnesota Public Utilities Commission 2019). Although the Minnesota PUC has since closed Docket No. E-999/CI-17-879, the PUC continues to work on transportation electrification through programs and pilots for EV infrastructure such as Docket No. 18-643 for EV infrastructure Pilots with Xcel Energy and Docket No. 21-257 Electric Vehicle Charging Infrastructure with Minnesota Power.[3]

Minnesota's approach engaged and consulted with a wide range of stakeholders, including industry experts, utilities, state agencies, environmental groups, and citizens.

[3] A comprehensive list of relevant EV dockets is available at https://mn.gov/puc/activities/economic-analysis/electric-vehicles/.

4.2.3 New York

New York's State Energy Plan identified transportation electrification as a priority and highlighted initiatives such as the ChargeNY program, a governor-led effort administered by NYSERDA to support early deployment of EV charging infrastructure statewide. Subsequently, the New York PSC identified gaps in EVSE deployment and the need for greater utility readiness to support growing EV adoption. In early 2018, industry stakeholders submitted a petition requesting Commission action to establish a more comprehensive regulatory framework. The petition called for addressing barriers to EVSE deployment, clarifying appropriate utility roles, and improving coordination among stakeholders.[4] In response, the PSC initiated a proceeding (Case 18-E-0138) to examine cost-effective approaches for electric utilities to support the infrastructure needed to accommodate increased electricity demand associated with electric vehicle (EV) deployment (State of New York Public Service Commission 2023). As part of the proceeding, PSC Staff conducted analyses and engaged stakeholders to evaluate potential statewide approaches for utility involvement in EV infrastructure, including the use of benefit-cost considerations to assess ratepayer, system, and broader societal impacts.

NY PSC's EV Instituting Order (Case 18-E-0138, Order Instituting Proceeding on April 24, 2018) mandated the Department of Public Service staff to convene technical conferences in collaboration with stakeholders to identify immediate and long-term actions to support EV market growth. Stakeholders include industry representatives, environmental groups, lobby groups, and labor organizations. Their input helped determine the role utilities should play as well as adjustments needed to ensure broad EV adoption. Stakeholder feedback highlighted potential challenges and opportunities, such as tariff adjustments, location-specific planning, and ensuring EVSE deployment aligns with electric grid resilience. Stakeholders were also asked to provide feedback on a white paper that was produced by staff to evaluate how electric utilities could cost-effectively support the deployment of EVSE while protecting ratepayers and advancing the State's transportation electrification goals (State of New York Public Service Commission 2023). These efforts informed the Commission's development of the Electric Vehicle Infrastructure Make-Ready Program. Many of the concepts and recommendations emerging from this proceeding were reflected in the Commission's Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs, as subsequently modified, including requirements for ongoing stakeholder engagement through working groups (State of New York Public Service Commission 2023).

Commenters and staff also outlined the benefits of forming a stakeholder group to develop an EV interconnection framework to address any application backlog issues. In response, the Commission formed the EV Infrastructure Interconnection Working Group (EVIIWG, Order Approving Midpoint Review Whitepaper's Recommendations with Modifications issued November 16, 2023), which held seven meetings consisting of stakeholder presentations and a straw proposal review. All meetings were recorded and posted on the EVIIWG website. The straw proposal was made public, allowing stakeholders to download, comment on, and edit the proposal, and it was also submitted to New York's Document and Matter Management System for comments (New York Department of Public Service 2025). The group was facilitated by the New York Department of Public Service and is composed of representatives from other state agencies, electric utilities, and EV industry experts. Further, technical consultants were invited

[4] See State of New York Department of Public Service – Petition to the Public Service Commission (filed Feb. 21, 2018). Available at: https://www.nysrc.org/wp-content/uploads/2023/04/7.2.2-Petition-Electric-Vehicles-Attachment-7.2.2.pdf.

to participate in and attend meetings (Electric Vehicle Infrastructure and Interconnection Working Group (EVIIWG) 2024).

The modified proposal in Case 18-E-0138, Matter 24-00339 (Department of Public Service 2025) outlined some best practices regarding Make-Ready Program participant information tools for pre-engagement, planning, and management. Best practices included the following:

- Expanding advisory services to improve pre-application
- Building self-service tools to help prepare participants
- Developing a make-ready program participant portal for transparency
- Publishing a flow diagram indicating which steps are owned by the participants and which are owned by the utility.

Participant communication strategy best practices included the following:

- Publish remaining incentive funds
- Provide participants with education opportunities for program updates
- Communicate a timeline range for estimated completion of utility-side upgrades after the participant receives a service determination
- Highlight and explain participant-dependent deadlines with the participant.

4.2.4 Oregon

In Docket No. UM-1461 Order No. 12-013, the PUC of Oregon addressed general matters related to the development of the EV charging market and industry, including ownership and operation of EVSE. This proceeding included a public workshop, staff straw proposal, and technical workshop with robust stakeholder engagement.

The PUC of Oregon initiated a docket to evaluate the state of the EV market and assess whether regulatory guidance was necessary to support its development. This effort focused on various considerations, including the role of IOUs in EVSE ownership and operation, rate structures, cost allocation, and planning guidelines. Further, the evaluation sought to address barriers to the deployment of EV infrastructure and utility ownership of EV charging equipment. To facilitate this evaluation, the PUC engaged stakeholders including the Citizens’ Utility Board, Oregon Department of Energy, car manufacturers, environmental organizations, utilities, and other interested parties (Public Utility Commission of Oregon 2012).

The Oregon PUC conducted a series of public and technical workshops to promote stakeholder engagement. The initial public workshop gave stakeholders a platform to express concerns, propose ideas, and share their perspectives. Utilities were encouraged to actively participate in the discussions, especially around their role and rate design. After the initial workshop, PUC staff developed a straw proposal to consolidate stakeholder input into a structured framework for further deliberation. This proposal was shared with stakeholders to gather additional feedback and comments. Subsequently, the PUC organized a technical workshop where staff and stakeholders further explored concerns and potential solutions. This provided an opportunity for focused discussions on regulatory and operational matters.

Continuing, the PUC held a second public workshop to continue engagement with stakeholders and refine the proposed framework (Public Utility Commission of Oregon 2012).

- In addition, Order No. 12-013 required utilities to submit revised tariffs and file a transportation electrification plan with the PUC every three years, which must "…provide a discussion of how programs and infrastructure measures holistically advance performance categories that include, but are not limited to:

  (a) Environmental benefits including greenhouse gas emissions impacts

  (b) EV adoption

  (c) Underserved community inclusion and engagement

  (d) Equity of program offerings to meet underserved communities

  (e) Distribution system impacts and grid integration benefits

  (f) Program participation and adoption

  (g) Infrastructure performance, including charging adequacy that considers, but is not limited to reliability, affordability, and accessibility" (pp. 18–19; Public Utility Commission of Oregon 2023).

The framework has proven to be successful in the case of Portland General Electric (PGE), which highlighted its exceptional EVSE deployment performance in its 2024 transportation electrification report. In 2024, PGE installed 92% of the forecasted ports for the entire three-year plan period (Portland General Electric 2025).

4.2.5 California

In Rulemaking 18-12-006 and Rulemaking 23-12-008, the California Public Utilities Commission (CPUC) developed a long-term transportation policy framework to address the growing electric loads. The framework required several touchpoints for stakeholder engagement, including stakeholder feedback in the development of a Program Handbook and an annual roundtable as a venue for stakeholder input and review of data (Public Utilities Commission of the State of California 2023).

In 2018, Governor Brown set a goal of 250,000 public charging stations operating by 2025, including 10,000 DC fast charging stations. California's transportation goals require a structured long-term approach to address growing electric loads, investment strategies, and the coordination of key stakeholders to support the state's EV policy goals effectively. A crucial role and set of stakeholders in this effort is IOUs, which act as utility-side infrastructure and fuel providers. Concerns surrounding equal market access further emphasized the need to engage with affected communities, particularly those disproportionately burdened by pollution due to high traffic. Thus, policy decisions aim to align large electric loads in the transportation sector with other state objectives, including emission reduction in disadvantaged and underserved communities.

The CPUC follows the Commission's Rules of Practices and Procedures in governing proceedings. The process began with the PUC initiating an Order Instituting Rulemaking (OIR) to frame the scope of the proceedings and set preliminary determinations regarding the category and need for hearings. After the OIR, stakeholders were invited to provide an initial round of comments and to reply. A prehearing conference was convened to address and review identified issues, provide a platform for stakeholders to propose additional issues, prioritize or sequence activities, and pinpoint specific topics that required further coordination with other proceedings. After the prehearing conference, the assigned commissioner issued a scoping memo and ruling that finalized the scope of the issue, scheduled remaining steps, and determined the need for hearings. As needed, workshops may be held to gather further stakeholder input and discuss specific technical issues. The assigned commissioner or administrative law judges may organize the issue into separate phases, allowing for interim decisions to be issued on specific topics if necessary. Lastly, the Commission intends to resolve all issues within 36 months of the OIR adoption as outlined in the preliminary schedule of Rulemaking R. 18-12-006.

Since the initiation of R.18-12-006 in 2018, in which the CPUC developed the Transportation Electrification Framework and authorized several individual EVSE programs, California has seen significant growth in EVs and charging infrastructure. The CPUC has continued work to expand EVSE in R.23-12-008 (opened in 2023), which has broader aims to comprehensively assess the needs for transportation electrification policy and infrastructure.

4.2.6 Illinois

Illinois' Public Act 102-662 Section 90-20 addresses EV coordination, including EV charging–related policies and activities with the Electric Vehicle Act. This proceeding involved a workshop process, report, and study with continuous stakeholder engagement (State of Illinois General Assembly 2021).

Illinois opted for a stakeholder engagement framework to develop a transportation plan addressing large electric loads that creates benefits for the state's residents. The governor appointed the electric vehicle coordinator for the State of Illinois, who acted as a point person for any EV-related and EVSE-related policies and activities. Resident benefits include the statewide adoption of publicly accessible EVSE and the creation of potential fuel- and cost-saving benefits for customers, among other benefits. Beneficial programs include a portfolio of incentives and the development of public charging stations in dense areas, workplaces, and low-income communities. Additionally, the increased deployment of EVSE has the purpose of minimizing range anxiety and filling any deployment gaps, especially in rural areas and along highway corridors.

To engage stakeholders, the Commission initiated a workshop to solicit input on the design of utilities' beneficial programs aimed at addressing the growing electric load. The workshop encouraged representation from all stakeholder groups, providing opportunities to participate without requiring formal intervention or attorney representation. This process considered the benefits of EV adoption, barriers, incentives, enabling rate structures, and other opportunities to create environmental or bill-reduction benefits. After the workshop, the facilitator prepared and submitted a report to the Commission with recommendations for transportation investments or incentives. The report identified participants, proposed program designs, cost-benefit estimates, unresolved material issues, recommendations for process improvements, and aids in evaluating cost-effectiveness and whether the plan serves the public interest. Utilities must propose a plan addressing make-ready investment for statewide EVSE deployment and the development of programs supporting the adoption of EVs.[5] These programs should include rate design structures, cost-benefit analysis, customer education, outreach, and incentives to increase

[5] *Illinois General Assembly. Climate and Equitable Jobs Act,* Public Act 102-0662 (Sept. 15, 2021), as amended, 20 ILCS 627/45 and associated sections. Available from Illinois General Assembly Legislative Information System. Available at: https://ilga.gov/Legislation/ILCS/Articles?ActID=3348&ChapterID=5.

awareness. Additionally, utility plans must consider whether charging standards should be established, and if so, what standards to adopt. Utilities must update the plan every three years, incorporate stakeholder feedback, and align the plan with the broader distribution system planning process. The Illinois Power Agency may determine funding caps per charging port or project based on a review of best practices and stakeholder engagement. Lastly, the Illinois Department of Transportation (IDOT) must conduct and deliver a study to the General Assembly and the public. This study is completed in collaboration with organizations representing businesses involved in transportation infrastructure, organized labor, the general business community, and system users. IDOT must also work with other state agencies, including but not limited to the Secretary of State and the Department of Revenue.

4.3 Enabling Stakeholder Input from Program Design Through Reporting

In the previous section, we described overarching frameworks that several states have implemented to enable robust stakeholder participation. In this section, we focus on the importance of enabling programmatic stakeholder participation—from program design through reporting. Several state regulatory commissions fostered programmatic stakeholder involvement through coordinating with stakeholders on program design, cost-effectiveness, access to EVSE, and other pertinent elements of EVSE deployment. The Alliance of Transportation Electrification (ATE) underscored the need for utilities to actively engage stakeholder groups for program reviews to ensure comprehensive planning and fair competition in EVSE deployment (Washington Utilities and Transportation Commission 2017). Many states also require a robust stakeholder process to present progress, gather results, and provide feedback. As an example, The North Carolina PUC requires that utilities embarking on EV pilot programs engage stakeholders throughout the term of any pilot and report on the performance of programs at least annually (State of North Carolina Utilities Commission Raleigh 2024). Similarly, the South Carolina PUC requires stakeholder workshops in designing an EV pilot program and ongoing stakeholder engagement through annual meetings with stakeholders, as well as required updates on pilot programs (The Public Service Commission of South Carolina 2020). The following discussion provides more state-specific details for stakeholder engagement during EVSE reporting and planning processes.

4.3.1 New York

In New York, the PSC required the development of several working groups including one focused on incorporating emerging technical standards and best practices, and another on customer experience with various state and local government agencies and industry stakeholders in its Order Establishing Electric Vehicle Infrastructure Make-Ready Program and Other Programs, Case 18-E-0138, (New York Department of Public Service 2025, 18).

New York opted for programmatic stakeholder input to identify and address what immediate and long-term actions will best support EV market growth to ensure that utilities' EV readiness framework is capable of meeting future market development.

In response to stakeholder input, the Commission directed staff to issue a comprehensive white paper to ensure all EV and EVSE actions are aligned with each other for the best cost, value, and effectiveness. The white paper serves as an opportunity to invite and incorporate stakeholder perspectives, comments, and recommendations. Additionally, stakeholders have contributed through an ongoing series of meetings facilitated by the EVIIWG, allowing stakeholders to hold presentations and comment on the staff's straw proposals.

4.3.2 California

In California, in its OIR Regarding Transportation Electrification Policy and Infrastructure and Closing Rulemaking 18-12-006 (R.23-12-008) the CPUC requires an annual roundtable as a venue for stakeholder input and data review as a requirement of its long-term transportation electrification policy framework (Public Utilities Commission of the State of California 2023). Further, approved pilot programs[6] for EVSE deployment require oversight and feedback from a Program Advisory Council. The Program Advisory Council oversees and provides input on many aspects of EVSE deployment, including the procurement of EV charging equipment and services, planning and implementing programs, reviewing progress reports on actual costs and deployment, and identifying opportunities to improve the cost-effectiveness of the program and increase access to EV charging.

California has set transportation goals that require a structured long-term approach and ongoing stakeholder engagement with a wide variety of stakeholders, including affected communities that have been disproportionately burdened by pollution due to high traffic, to address the growing electric loads.

California has provided ongoing opportunities for stakeholders to engage with the planning processes, voice concerns, comment on proposals, participate in workshops, and identify barriers to EVSE deployment and EV adoption. The stakeholder engagement process started off with an OIR that stakeholders were subsequently able to comment on. This was followed up by a prehearing conference, a scoping memo and ruling, and multiple workshops, all of which encouraged stakeholder input.

4.3.3 Oregon

In Docket UM 1811 Order No. 19-385, Oregon requires education and outreach as an element of EVSE programs to increase awareness of charging infrastructure (Public Utility Commission of Oregon 2019). Specifically, PGE as part of its EV pilot program was required to provide technical assistance in the form of training and support for nonresidential customers planning to install workplace charging infrastructure; building facilities outreach to ensure understanding of key siting considerations, maintenance practices, and operating costs for EV charging infrastructure for facility managers' and technical staff; and collaborating with regional stakeholders to promote regional market transformation through development of standards, best practices, and exploring charging network interoperability between regional utilities.

4.3.4 Washington

In its "Policy and Interpretive Statement Concerning Commission Regulation of Electric Vehicle Charging Services," Docket UE-160799, the Washington Utilities and Transportation Commission (WUTC) requires utilities to include an education and outreach component to drive market transformation in all EV charging service programs (Washington Utilities and Transportation Commission 2017). Also, the WUTC requires Washington utilities and electric companies to provide a stakeholder group—including representatives from commission staff, public counsel, the Washington State DOT, and the Washington State Department of Commerce—for proposed program proposals 60 days before filing the proposal (Washington

[6] These include but are not limited to PG&E's electric vehicle infrastructure and education program (Decision 16-12-065 on PG&E's Application (A.) 15-02-009); SDG&E's vehicle grid integration application (Decision 16-01-045 on Application 14-04-014); and SCE's charge ready and market education programs (Decision 16-01-023 on Application 14-10-014).

Utilities and Transportation Commission 2017). As a result, the ATE and PSE responded to the Notice of Opportunity to File Written Comments to Washington's Docket UE-160799, providing responses for EVSE deployment best practices (Alliance for Transportation Electrification, "Responding to Notice of Opportunity to File Written Comments") (Puget Sound Energy 2025). ATE emphasized the importance of promoting public accessibility, open standards, and stakeholder engagement to advance the EVSE industry.

The decision by the WUTC to require utilities and electric companies to vet program proposals with stakeholders 60 days *before* filing with the PUC directly engages stakeholders to align the proposal with the public interest. PSE comments that the stakeholder engagement requirements noted in Docket UE-160799 ensure public participation in transportation electrification plans (TEPs). The ATE recommended the integration of ongoing stakeholder engagement during program approval and implementation phases, as well as the use of workshops and adaptive management practices. By requiring early engagement, utilities are encouraged to consider a broader definition of EVSE, target services to low-income customers, and develop education and outreach programs before proposal submission.

PSE established a set of guiding principles for its TEP, including advancing clean mobility, being customer-focused, pursuing social equity and environmental justice, creating a resilient and modern grid, contributing to statewide carbon goals, and collaboration and partnership. Further, PSE engaged with residents, community-based organizations, municipalities, government agencies, and tribal entities to better understand accessibility barriers in transportation electrification.

Washington and Minnesota make use of stakeholder groups to vet pilot program proposals *before* a proposal is sent to a PUC.

4.3.5 Minnesota

The Minnesota PUC required Minnesota Power, Otter Tail Power, and Xcel Energy to consult with stakeholders, including the Department of Commerce Division of Energy Resources, Office of the Minnesota Attorney General Residential Utilities and Antitrust Division, Fresh Energy (a Clean Energy Organization), to help with developing their proposals/pilots to enhance the availability of or access to charging infrastructure in Docket No. E-999/CI-17-879 (Minnesota Public Utilities Commission 2019).

4.4 Best Practices

In summary, the ATE further advises the incorporation of stakeholder engagement during the approval and construction phases, supplemented with ongoing workshops. Both the PSE and ATE reference the New York's Proactive Planning Framework, stating that a similar bottom-up approach might expedite review for distribution assets (Puget Sound Energy 2025). The proactive vetting process before filing programs with the PUC ensures utility participation aligns with the public interest, enhances flexibility in program design, and supports adaptive management of program portfolios through stakeholder engagement. Also drawing from California and Oregon's experiences, the Commission recognized the utilities' critical role in overcoming adoption barriers for EVs, which require expert guidance and stakeholder feedback on program design and execution. The Commission also endorsed integrating stakeholder recommendations in areas including the broader definition of EVSE, outreach to low-income populations, education initiatives, regular planning and reporting, and transparency in benefit calculations.

Additional best practices may include:

- Developing an overarching EVSE policy or framework to define replicable stakeholder engagement practices for each EVSE program allows for robust pathways for stakeholder engagement.
- Fostering programmatic stakeholder involvement from program design through reporting allows stakeholder input on standards and best practices for EVSE deployment.
- Engaging stakeholders early and often, including in the vetting of proposals before commission review, can reduce barriers to adoption of EVSE infrastructure.
- Engaging stakeholders throughout the process allows for targeted outreach to identify unique challenges and community-specific needs, ensuring greater adoption of EVs and EVSE infrastructure.

Stakeholder input may lead to more cost-efficient approaches and optimized rate designs. Insufficient stakeholder engagement may result in missed opportunities such as reduced grid efficiency, limited utility rate benefits, slower EV adoption, and unaddressed barriers to EVSE implementation.

5.0 Economic Criteria for Program Engagement

PUCs and PSCs justify utility investment in and ownership of EV charging infrastructure based on specific economic considerations. First, the PUCs/PSCs acknowledge that addressing market gaps is essential where private investment is lacking, especially in underserved, rural, or low-income areas. The commissions deem utilities capable of bridging these gaps by ensuring equitable access to charging. Second, the commissions recognize that utilities are uniquely positioned to bridge financial barriers and reduce investor uncertainty by leveraging ratepayer funding and long-term infrastructure planning, which the private sector may be unwilling or unable to provide. Third, the commissions ensure the integration of anti-competition measures into utilities' program designs to avoid crowding out private investment and to preserve fair market participation. Additionally, the commissions sometimes authorize utilities' involvement due to state laws and policy mandates. Finally, investments are often evaluated based on cost-effectiveness and the potential to integrate EVs into grid operations, enhancing system reliability, optimizing load management, and creating long-term savings for all ratepayers. The paragraphs below list each economic justification and report the related arguments that the Commission and stakeholders presented to justify utilities' investments in EVSE deployment.

5.1 Addressing Market Gaps

As previously mentioned, addressing market gaps is consistently cited by PUCs as a justification for utilities' involvement and ownership of EVSEs. In our analysis, 29.5% of the PUCs examined employed this argument.

In New York, Minnesota, Illinois, Oregon, and Washington, underserved areas such as MUDs, workplaces, EJ communities, and transportation corridors were identified as critical focus areas for EV infrastructure expansion (Seuffert 2021; Portland General Electric 2025; Washington Utilities and Transportation Commission 2017). Similarly, Florida, Georgia, Texas, Arizona, Colorado, Delaware, North Carolina, Maryland, and Kentucky emphasized the need to target rural areas, low-income neighborhoods, and multifamily housing units to close infrastructure gaps and enable equitable access to EV charging stations. Stakeholders in these states also highlighted barriers like charging availability and cost, leading PUCs and PSCs to approve programs for EV adoption (Georgia Public Service Commission EV Joint Study Committee 2022; Florida Public Service Commission 2017; The Arizona Corporation Commission 2019; Colorado Governor Press Release 2020; PEPCO Holdings 2019).

Although the general context of market gaps is well understood, the discussions below provide detailed insights and additional context into PUCs' decisions specific to certain states: Virginia, Hawaii, California, and Nevada.

Virginia

During a hearing on July 8, 2020, the Virginia State Corporation Commission observed that while competition has effectively provided EVSE infrastructure in profitable markets, it has neglected rural and less-populated areas. The parties at the hearing agreed that utilities could help deploy EVSE infrastructure in underserved regions and multifamily housing areas by taking ownership roles. One of the parties even stated that "utility ownership is not inappropriate and should be allowed, especially in rural or remote areas where vehicular traffic may not support numerous charging stations."

Hawaii

In 2013, the Hawaii PUC granted permission to Hawaiian Electric Company (HECO) to promote EV adoption by installing and operating public charging stations at key sites. This initiative aimed to alleviate range anxiety, support the rental EV sector, and encourage residents in MUDs to adopt electric vehicles.

California

Certain market segments, such as MUDs and disadvantaged communities (low-income communities), have proven difficult for the private sector to penetrate and are poorly served. Consequently, the CPUC and other stakeholders supported utilities deploying EV charging infrastructure and stations in those market segments to address the gap in service (Public Utilities Commission of the State of California 2016a). For example, in the case of PG&E, a stakeholder stated that “PG&E can and should help address obstacles currently preventing wider deployment of EV charging infrastructure, especially at multiunit dwelling locations and disadvantaged communities.” SCE also reported that there are not enough charging stations in certain places, including workplaces, apartments, and condominiums. This claim was supported by stakeholders who believed that the utilities should be allowed to serve those markets (Public Utilities Commission of the State of California 2016b).

Nevada

The Nevada Department of Transportation (NDOT) is focusing its efforts on developing infrastructure along corridors with higher traffic volumes, near population centers that can support maintenance and operations, and in disadvantaged communities where economic viability for EV charging is not strong. Additionally, areas are chosen where private or state funding might not generate as high a return on investment. While the primary focus is on rural regions, NDOT recognizes that urban areas and city corridors also exhibit significant demand and need for EV charging infrastructure. To address market gaps, NDOT sees strategic partnerships and collaborations with utility providers like NV Energy as crucial by facilitating their investments in and ownership of EVSE.

5.2 Bridging Financial Barriers and Uncertainty

In the programs examined, 63% of the PUCs cited the argument of bridging financial barriers to authorize utilities' participation in EVSE programs. States like California, Massachusetts, Connecticut, Rhode Island, and Florida emphasize the utilities’ ability to provide financial incentives, rebates, or subsidies to lower upfront installation costs for private entities, making EV chargers more accessible, particularly in low-income areas and MUDs (Public Utilities Commission of the State of California 2016b; Massachusetts DPU 2023; Public Utilities Commission of the State of Rhode Island 2020; Littell and Brutkoski 2021).

Utilities in states such as Georgia, Texas, Hawaii, and Arizona implement “make-ready” programs, which shift the cost burden of infrastructure upgrades, such as wiring and electrical setup, onto utilities, further reducing investment risks for private entities (Hawaiian Electric 2022; Schwertner, n.d.). Meanwhile, Minnesota, Nevada, Missouri, and South Dakota have acknowledged the difficulty faced by the private sector in investing in charging due to low EV adoption rates or profitability concerns, allowing utilities to take on ownership, develop infrastructure, and close market gaps (Minnesota Public Utilities Commission 2019; Public Service Commission of the State of Missouri 2019; NorthWestern Energy 2020; South Dakota Department of Agriculture and Natural Resources, n.d.). Specific initiatives include programs like California's Charge Ready pilot, Illinois' ChargeReady initiative, Colorado's Xcel rebate funding, and Nevada's $100 million transport electrification investment (Nevada Department of Transportation 2022), all aimed at reducing cost barriers to spur widespread EV adoption. These collective efforts underscore the utility sector's pivotal role in creating equitable EV charging access and supporting private sector growth in the EV ecosystem.

In the discussions below, we provide more details about the use of the financial barrier argument in the states of New York, Indiana, Virginia, and Wisconsin. These states are selected merely for illustration purposes.

New York

The New York PSC staff recognized that a typical DCFC station in NY was expected to be unprofitable in the first 10 years of operation without the utilities' investments in make-ready EV infrastructure. As a result, the staff proposed that utilities participate in deploying EVSE through the make-ready program to enable a positive 10-year net present value in the first year (State of New York Public Service Commission 2020). Through the make-ready program, utilities would support the deployment of EVSE infrastructure by covering up to 100% of the eligible electric infrastructure cost, lowering the private sector's upfront investment cost, and promoting the deployment of EVSEs across the state.

Indiana

In 2021, Indiana utilities received $5.5 million in Volkswagen settlement funds to install 61 fast chargers across the state highways. Because the $5.5 million was insufficient to cover the full construction costs, the utilities took on the risk of covering the costs of the necessary investments to fully deploy the infrastructure before obtaining approval for ratepayer cost recovery from the Commission. This helped get EV deployment started (Bowman 2021).

Virginia

The Commission authorized utilities like Dominion to be involved in deploying EVSE infrastructure by owning stations and offering make-ready incentives. This approach aimed to accelerate station deployment and encourage greater adoption of electric vehicles in the state (Microgrid Knowledge 2022).

Wisconsin

The PSC of Wisconsin also identified the upfront cost of EV charging equipment as a barrier to EV adoption in the state and used it as a motivation to allow utilities to participate in the deployment of EV charging infrastructure. Utilities proposed programs that allowed residential customers to install EVSEs with their respective utilities and pay in installments. Additionally, utilities developed commercial programs that cover the cost of the make-ready infrastructure to reduce the upfront costs for customers (Wisconsin Department of Transportation 2024).

5.3 Restrictive Utility Ownership/Anticompetitive Safeguards

In the programs examined, 24% PUC reviewed cited that they have taken precautions to ensure that utilities' involvement in EVSE deployment does not hinder competition. Across New York, Florida, North Carolina, Texas, Virginia, and Illinois (Illinois General Assembly 2021) common measures include limiting utilities' ownership of EV charging infrastructure and encouraging utility roles that complement, rather than compete with, private investment. For example, New York and Texas allow utility ownership of EVSE infrastructure only in specific circumstances, such as for their own fleet usage, and encourage utilities to leverage the make-ready model to focus on distribution-side infrastructure while leaving charger investments to private entities (State of New York Public Service Commission 2020).

Similarly, Florida prohibits utilities from rate-basing EV charging station ownership or directly operating public EV chargers, while North Carolina structures utility participation to focus on make-ready investments that do not prevent competitive development by the private sector. Illinois emphasizes fostering innovation and competition, requiring utilities like ComEd to maintain competitive neutrality in customer education initiatives. Virginia reinforces that utilities should complement private investments rather than compete, as highlighted by Dominion’s stance (Vogelsong 2020). These states collectively emphasize striking a balance between enabling utility participation to address infrastructure gaps while safeguarding competitive market dynamics, demonstrating the prioritization of fair market principles across jurisdictions.

The following discussion provides some details of how PUCs use this argument to approve utilities' participation in EVSE programs in a few select states, including California, Maryland, and Oregon. These states are also selected merely for illustrative purposes.

California

In general, utilities do not entirely own EV charging stations and infrastructure. They are typically allowed to invest in and own the make-ready infrastructure up to the point of connection with the EV charger, while the chargers are left to private entities. However, in certain cases, the CPUC allows utilities to own the chargers under specific restrictions. CPUC argued that these restrictions preserve market competition, but certain stakeholders still expressed concerns. In response to those concerns, the CPUC stated that it can take measures to adequately mitigate anticompetitive behaviors associated with utilities’ ownership of EVSE infrastructure. In the case of PG&E, the commission noted that the EVSE settlement agreement is designed to be in the public interest (Public Utilities Commission of the State of California 2016b) and that if anticompetitive impacts associated with the settlement agreement arise, they can be prevented or mitigated.

Maryland

Despite concerns that the utilities’ ownership of EV chargers will impede competition and hinder private sector investments, the Commission found that allowing utilities to “deploy and operate public charging equipment on a limited scale would balance the advantages of utility investment with important state policy considerations, such as competitive access to charging infrastructure, cost impact, rate exposure to risks related to stranded assets and sunk costs.” Therefore, the Commission concluded that the utilities’ ownership and operation of a limited number of EV chargers would help jumpstart a public EV charging network and lay the foundation for a competitive market (Public Service Commission of Maryland 2019b). However, after the pilot program, the PSC decided that utilities could still invest in the development of EV chargers, but they would no longer be allowed to own chargers except in specific areas like underserved communities. This decision was taken to address concerns about unfair competition with utility-owned charging stations (Charge Ahead Partnership 2024).

Oregon

In their discussion with stakeholders, the PUC of Oregon’s staff declared that “we deemed it important to initially address what role, if any, IOUs should play in owning and operating charging stations and promoting EVs in other ways, and the nature of cost recovery for any activities by the utilities." The staff also declared that "we do not find that allowing utilities to potentially participate in the EVSE market will necessarily impede the vibrancy of the whole market. Electric utilities should be allowed to invest in EVSE and operate EV charging stations as a nonregulated, non-rate-based venture" (Public Utility Commission of the State of Oregon 2012).

Compliance with Law

Compliance with Law is the least common argument used by PUCs to authorize utilities' ownership of EVSE, given that there has to be a law that clearly requires the PUCs to do so. This argument was cited by 6 (16.21%) PUCs out of the 37 evaluated. Below, we summarize the laws that PUCs cited in their respective states.

Utah

Section 54-4-41 "EV Infrastructure/Charging Service Law" of House Bill 396 (2020) directed the Utah PSC to authorize a large-scale electricity program funded by the utility customers up to $50 million. The law required the program to promote the development of utility-owned EV charging infrastructure and charging services (Public Service Commission of Utah 2021). In compliance with this law, Rocky Mountain Power filed an Electric Vehicle Infrastructure Program, which the PSC approved.

Colorado

In 2019, Senate Bill 19-077 (SB19-077) authorized electric utilities to own EV charging infrastructure and established a regulatory requirement to file TEPs every three years. These plans include a portfolio of EV charging facilities, new rates, income-qualified features programs, and EV make-ready infrastructure investment. Due to the legislation, Xcel and Black Hills collectively formulated TEPs worth over $100 million. These approved plans aim to provide various new services to customers, promoting extensive and affordable EV adoption (Colorado Department of Transportation 2022; Colorado General Assembly 2019).

Indiana

In Indiana, law under the Indiana Chapter Code 8143 authorizes utilities to invest in and own EVSE infrastructure. This legislation permits utilities to seek approval from the Commission to install, operate, or own charging stations. Additionally, utilities can offer incentives or rebates to customers to promote investment in public-use electric vehicles and related infrastructure (National Association of Regulatory Utility Commissioners 2024).

Massachusetts

The 2017 Zero Emission Vehicle Act permits regulated electric utilities to develop, own, and manage public EV charging stations. However, this is only allowed if the Massachusetts DPU determines that utility ownership of EV charging equipment (EVSE) benefits the public interest, encourages more EV use in Massachusetts, and does not hinder market competition (Massachusetts DPU 2023).

New Mexico

In New Mexico, House Bill 521, passed in 2019, requires utilities to participate in the deployment of EV charging infrastructure, whether through investments, incentives, or other forms of programs that support transportation electrification (New Mexico House Bill 521 2019) (New Mexico House Bill 521 2019). House Bill 521 specifically clarifies that the Public

Regulatory Commission should approve programs that increase access to the charging stations in underserved and low-income communities, as well as those that allow for the private sector to still participate in the market.

Nevada

Nevada Senate Bill 448, signed in 2021, explicitly allows utilities to invest in and own EV charging infrastructure (National Association of Regulatory Utility Commissioners 2024).

5.4 Cost-Effective and Smart Grid Integration of EVs and EVSE

Another prevalent rationale used by PUCs to allow utilities' involvement in EVSE programs is the need for cost-effectiveness of the infrastructure and their smart grid integration. This rationale was cited by 18 PUCs, representing 49% of the PUCs analyzed.

Across California, Minnesota, New York (Joint Utilities of New York 2018), Oregon, Illinois, Arizona, Indiana, Missouri, Nevada, and South Carolina, it is recognized that utilities can optimize EV load management to support grid stability while reducing charging costs for customers. For example, California utilities are permitted to own charging stations to effectively manage EV loads and ensure grid benefits, while Arizona utilities adopt rate tariffs to encourage off-peak charging, maximizing system efficiency (Arizona Corporation Commission Staff 2019). Similarly, Minnesota utilities are tasked with facilitating cost-effective EV integration through environmental and EV-specific rate designs, and North Carolina utilities monitor charging patterns to ensure optimal grid planning and deliver benefits credited directly to customers.

Cost-effectiveness is another consistent theme across these states. In Oregon, utilities help prevent unregulated and higher costs for multifamily housing residents (PGE Disposition Order, p.25), while Indiana's Volkswagen Committee determined that utility proposals were among the most cost-effective options compared to other entities (Bowman 2021). Illinois and Arizona explicitly review the prudency of utilities' EVSE programs before approval, ensuring consumer protection and economic balance. In Missouri, utility programs are authorized only when deemed just, reasonable, and in the public interest. Nevada, through NDOT and NV Energy initiatives, strategically maximizes available funding to accelerate transportation electrification while fostering economic recovery statewide (Nevada Department of Transportation 2022).

Several states, including South Carolina, also highlight the importance of utilities gathering EV charging load data to improve customer service and enhance future grid reliability. By focusing on grid optimization, affordability, and customer benefits, these states collectively demonstrate how utility involvement is designed not only to enhance EV adoption but also to ensure sustainable and equitable integration of transportation electrification into the broader energy system.

In the discussion below, provide details of how this argument was used by PUCs in Florida, Georgia, Delaware, Hawaii, Virginia, and Wisconsin. These states are selected for illustrative purposes.

Florida

The PSC argues that utilities can leverage technology and utility-owned charging to manage the impact of EVs on the grid (Florida Power and Light and Gulf Power Company 2020). And that “utilities can integrate EVSE into existing pricing models as well as new rate designs that improve the overall value proposition to the customer.”

Georgia

The utility demonstrated that the residential and business/workplace rebates have positive rate impact values, which helps all customers by reducing rates (Georgia Public Service Commission 2019). The Georgia PSC also finds that allowing the utility to invest in EVSEs is reasonable because there is a grid benefit to that. “The overall grid benefits from EV drivers who routinely shift their load and place a positive benefit onto the grid.”

Delaware

Delaware PSC authorized Delmarva Power to continue installing EV charging stations to provide the utility with the opportunity to design new adapted rates for customers charging at home and to analyze the impact of EVs on the grid to ensure a smooth grid integration (Schmidt 2019). The Delmarva Power program also incentivizes customers to lower the cost of adopting an EV (Cape Gazette 2017).

Hawaii

The Hawaiian PUC authorized HECO companies to launch an EV pilot program in 2013 with the goal of developing strategies that encourage EV charging during off-peak hours by offering discounted TOU rates and facilitating a smooth integration of EV loads into the electrical grid (Aburr 2013).

Virginia

One reason the Virginia State Corporation Commission authorized utilities to participate in EVSE deployment is the need to understand the impact of charging stations on the grid and the charging pattern to plan for reliability and efficiency (Microgrid Knowledge 2022).

Wisconsin

The Commission considered utilities well-positioned to implement smart charging or TOU programs that shift EV load to off-peak hours, resulting in lower rates and helping avoid costly grid upgrades and smooth demand spikes (Wisconsin Department of Transportation 2024).

6.0 Rate and Incentive Design

Ratemaking for utility-owned EVSE programs presents a fundamental challenge for regulators: how to adapt traditional ratemaking principles to the unique state policy goals and market development situation that results from EV load growth. This section synthesizes a few approaches that jurisdictions are using to meet this challenge and identifies four themes: (1) treatment of EVSE capital costs and handling missing data within cost classification; (2) economic efficiency and fairness within EVSE cost allocation; (3) EVSE rate design for grid stability and system optimization; and (4) dealing with EVSE demand charges. The section concludes by synthesizing the findings of each theme into a set of best practices.

6.1 Treatment of EVSE Capital Costs and Handling Missing Data Within Cost Classification

This section discusses two ratemaking hurdles in the classification of utility-owned EVSE programs within cost-of-service and some strategies available to overcome them: (1) treating utility-owned EVSE program costs as either capital investments or operational expenses, and (2) dealing with the lack of data available to determine a cost classification.

6.1.1 Capital Investments vs. Operational Expenses

When conducting cost-of-service studies, utility investment in charging infrastructure can be treated as a capital expense to be added to the rate base or as an operational expense to be recovered over a short term. Either option involves trade-offs for regulators to consider.

Capitalizing an investment typically allows the utility to earn a regulated return on the EVSE infrastructure, where both the return and cost of the investment is spread over the asset's depreciable life. Capitalizing a major investment also allows a utility to finance and deploy essential infrastructure at a scale the private market likely cannot or will not match (Public Service Commission of the State of Delaware 2019). This approach leverages the utility's unique ability to fund large, long-term projects, without certainty of immediate payback—a situation that is ideal for accelerating the build-out of EV charging networks (Minnesota Public Utilities Commission 2019). The fundamental trade-off, however, is that this model puts the financial risk on ratepayers because every dollar of capitalized investment is added to the utility's rate base and usually amortized over long periods (e.g., 15 years).

An alternative to capitalization is to treat program investments as operational expenses. This approach lowers the total cost for ratepayers because it eliminates the long-term amortization of capitalized assets.[7] By treating costs as a direct pass-through, regulators may find they have increased transparency of utility EVSE spending via the regular budget and reconciliation cycle. In addition, when utility return is not tied to the size of the assets, there is no longer an incentive to over build or increase the number of stations in the program.

However, the expensing approach has its own drawbacks. The most immediate challenge is the potential for "rate shock," because each expense requires funding through a short-term

[7] There are also specific accounting rules that the utility must follow which dictate how and when it may fully expense an asset. Notwithstanding these requirements, regulators will almost universally face the situation of needing to determine an appropriate level of capitalization vs. expensing for at least a subset of EVSE program costs.

surcharge on customer bills, which can be less palatable than the smaller, multiyear change that occurs from capitalization. Perhaps more critically, removing the rate base incentive also removes the utility's traditional financial driver to innovate or pursue the program's goals aggressively. This creates a motivational vacuum that, if left unaddressed, could lead to lackluster performance and a failure to contain costs.

In Massachusetts, the Department of Public Utilities (DPU) recognized this issue when they authorized National Grid to recover its make-ready program costs directly as an expense (Department of Public Utilities 2018). Instead of earning a traditional return, the DPU employs a novel approach by authorizing National Grid to earn a performance bonus for meeting specific targets related to charger deployment and utilization. The DPU approved this model after determining the total potential ratepayer costs (the cost recovery of the asset as expenses plus the performance bonus) were lower than the long-term cost of capitalizing the assets. The DPU also strongly encouraged National Grid to design future incentives that actively promote cost containment, highlighting the key shortcoming of this model and the need for cost controls.

Another novel approach has been adopted by the CPUC, which mitigates some of the risks with capitalization while retaining the benefits of utility involvement. When approving SCE's Charge Ready 2 program, the CPUC required that a minimum of 15% of the charging infrastructure be owned by private site hosts (Public Utilities Commission of the State of California 2016b). This mandate directly reduces the portion of the EVSE investment SCE can capitalize, limiting the impact on customer bills. However, this hybrid solution introduces its own challenge because deployment of EVSE infrastructure can be hindered if the utility struggles to recruit enough willing partners.

6.1.2 Dealing with the Lack of EVSE Data to Determine Cost Classification

Within a cost-of-service study, the classification step for utility-owned EVSE programs creates a classic "chicken-or-egg" problem. Regulators generally establish rates based on cost-of-service principles, which require historical utilization and load data to properly allocate costs. Yet, for a nascent market like public EV charging, this essential data is generally unavailable until after a program is operational and customers have used the infrastructure for some time.[8] This procedural paradox places regulators into an unenviable position: either halt the deployment of infrastructure by adhering strictly to process or approve rates based on what is ultimately conjecture rather than empirical data.

Given the lack of utilization data for new public charging stations, a temporary and pragmatic departure from strict cost-of-service principles may be warranted for the initial pilot phase. For example, the WUTC allowed Avista to propose market-based rates, or rates competitive with other public EV providers, for its DCFCs precisely because utilization rates were unknown (Farley et al. 2019). This approval was conditioned on Avista studying and filing regular reports about utilization, revenues, and costs. Two years after the program finished, Avista introduced new commercial TOU rates based directly on the demand-focused cost and utilization data they gleaned from the pilot (Avista Corporation 2022). The Avista example establishes a defensible regulatory progression: approve pilots using market-based rates and robust reporting requirements, with the explicit goal of using the collected data to transition to cost-of-service rates in a subsequent proceeding.

[8] The length of time that pilots should operate before they produce viable data for cost-of-service is an open question that may be driven by the design of the program, the goals of the regulators and the utilities, and the utilization rates of the infrastructure.

The pragmatic approach from Washington appears to be gaining traction in jurisdictions where utilities own and operate charging assets. This is evidenced by the lack of demand charges for EVSE; only 36% of the programs reviewed in this paper offered subscription rates that incorporated a demand charge. That regulators are deviating from traditional cost-of-service ratemaking (i.e., demand-related costs are not strictly recovered from demand-determined rates) signifies their acknowledgment of the inherent uncertainties with the nascent EV charging market, particularly due to a lack of user data. This suggests that a more flexible approach, especially within the initial cost classification step for a new program, can be warranted.

A pragmatic approach involves considerable trade-offs. A principal concern is the potential for market distortion where a utility offering market-based rates could theoretically leverage its scale and ratepayer-backed financial structure to set prices at a level that suppresses private investment and undermines the development of a competitive charging ecosystem (Cappers et al. 2023). Moreover, there is a risk of programmatic inertia, where the “temporary” pilot phase and the market-based rates become the de facto standard, delaying or derailing the intended progression toward true cost-of-service rates. This may be of particular concern to regulators because the “historical record of pilots leading to full rollouts is dubious at best” (Cappers et al. 2023).

Using non-cost-of-service based rates represents a calculated regulatory bargain—prioritizing the rapid build-out of infrastructure and essential data collection over strict adherence to cost-of-service principles. The overall viability of this strategy depends not only on the eventual integration of cost-of-service principles with the rates supporting EVSE assets, but also on the degree to which the rates address critical barriers for private competitors, particularly demand charges.

6.2 Economic Efficiency and Fairness Within Cost Allocation for EVSE Programs

After classification, a cost-of-service study moves to cost allocation, which must grapple with the competing economic interests that underlie EVSE programs. This section tackles this challenge by focusing on two methods for regulators to evaluate the economic efficiency of utility EVSE programs and assess if costs are allocated fairly: (1) using specific accounting mechanisms to isolate or track costs, and (2) reviewing cost shifts between customer groups.

Because the performance of EVSE pilot programs is usually a primary motivation of their creation, regulators often need to isolate a specific program’s costs and benefits from the utility’s broader operations. A standard tool for this purpose is a deferred accounting mechanism. These accounts track all program-related expenditures and revenues separately from general utility accounts, creating a transparent record for future review. The table below provides a variety of examples implemented by regulators specifically for tracking EVSE programs, as well as some key considerations for their implementation.

Table 6.1. Examples of Accounting Mechanisms and Their Key Considerations for Utility-Owned EVSE Programs

<table>
<tr><th>Utility / Mechanism Type (State)</th><th>Description</th><th>Source</th></tr>
<tr><td>PG&E / One-Way Balancing Account (California)</td><td>Tracks capital, O&M, and program management costs. Balances are trued-up annually via a separate schedule. Over-collection of revenue is returned to customers, while under-collection is not collectible by PG&E.

<u>Key Considerations</u>:
Ratepayer Protection: This mechanism explicitly safeguards ratepayers from cost overruns beyond the authorized budget because the utility (i.e., shareholders) bears the risk of under-collection (i.e., excess costs).
Cost Containment: By assigning the risk of under-collection to the utility, it inherently incentivizes the utility to exercise prudent financial management and operational efficiency to remain within the approved budget but does not explicitly create incentives to achieve or exceed program goals.
Potential for Constrained Investment: This mechanism might disincentivize utility investment in highly uncertain, large-scale, or rapidly evolving pilot projects, where precise upfront cost estimation is challenging, particularly if cost caps are perceived as too restrictive by the utility.</td><td>(Public Utilities Commission of the State of California)</td></tr>
<tr><td>Otter Tail Power / Deferred Accounting (Minnesota)</td><td>Defers capital costs and depreciation for potential future recovery, subject to Commission review. This mechanism specifically limits accrual to only capital costs and depreciation, with incremental O&M eligible for review, and explicitly disallows accrual of a return on capital.

<u>Key Considerations:</u>
No Immediate Rate Change: this mechanism allows the utility to undertake capital-intensive projects without an immediate impact on current rates, as costs are deferred for subsequent consideration.
Accumulation of Costs: Costs accumulate within the deferred account over time before a comprehensive regulatory review occurs. This can compound the impact of the eventual rate change if the project encounters unforeseen challenges or cost overruns.</td><td>(Minnesota Public Utilities Commission 2020)</td></tr>
</table>

<table>
<tr><th>Utility / Mechanism Type (State)</th><th>Description</th><th>Source</th></tr>
<tr><td>Rocky Mountain Power / Two-Way Balancing Account (Utah)</td><td>Tracks all program revenues, expenses, capital expenditures, and carrying charges. Allows for the true-up of both over-collections and under-collections, meaning any deviation from forecasted costs (whether higher or lower) is reconciled through future rates.

<u>Key Considerations:</u>
Comprehensive Cost/Revenue Reconciliation for Utility: Ensures that the utility can recover all prudently incurred costs and associated carrying charges, or, conversely, that over-collected revenues are returned to ratepayers based on actual program expenditures and revenues. This minimizes regulatory lag and financial exposure for the utility.
Adaptability to Uncertainty: This approach is particularly well-suited for pilot programs or initiatives involving emerging technologies where actual costs and revenues may differ substantially from initial forecasts because the mechanism inherently allows for ongoing two-way adjustments.
Weakened Cost Control Incentive: Compared to a one-way balancing account or a fixed budget, a two-way mechanism can dilute the utility's incentive for rigorous cost minimization because any under-collection can ultimately be recovered from ratepayers. Past implementations of two-way balancing accounts (e.g., SDG&E's Vehicle-Grid- Integration Pilot [2016b]) have demonstrated the possibility for substantial cost overruns (e.g., SDG&E was 56% over the authorized budget).</td><td>(Public Service Commission of Utah 2021)</td></tr>
<tr><td>BGE / Separate Rate Class (Maryland)</td><td>Establishes a separate rate class for EVSE-only customers and sets rates to fully recover the costs of the stations.

<u>Key Considerations:</u>
Direct Cost Allocation: Establishes clear financial responsibility by assigning costs directly to the specific service or customer segment that benefits from EV charging infrastructure (cost-of-service, transaction, and network fees).
Complexity in Rate Design and Data Deficiencies: Accurately and fairly designing a cost-of-service rate for an evolving and inherently unpredictable load, such as EV charging, is challenging without comprehensive historical data. This can result in experimental rate structures that may require frequent adjustments or can be sub-optimal for market development.
Risk of Anticompetitive Effects: Utility ownership and operation of charging stations under a separate rate class may be perceived by private market competitors as unfair competition, particularly if the utility leverages its incumbent position to provide lower-than-market charging rates.</td><td>(Public Service Commission of Maryland 2019a)</td></tr>
</table>

<table>
<tr><th>Utility / Mechanism Type (State)</th><th>Description</th><th>Source</th></tr>
<tr><td>Duke Energy / Regulatory Asset (Florida)</td><td>Defers all incurred program costs, including return on rate base and O&M, for future recovery. Costs can be incorporated into the utility rate base in future rate cases.

<u>Key Considerations:</u>

• Smooths Ratepayer Bill Impacts: By deferring costs and spreading their recovery over an extended period (e.g., a four-year amortization for the regulatory asset), the mechanism mitigates significant, immediate increases in customer bills. This “smoothing” helps manage ratepayer burden during the early stages of market development.

• Cross-Subsidization Risk: All ratepayers ultimately bear the costs of the program, including a return on the utility’s investment, irrespective of whether they directly benefit from EV ownership or charging.

• Risk of Stranded Costs: The rapid evolution of EV technology, including charging speeds and vehicle battery capacities, introduces a risk that significant investments in current infrastructure could become technologically obsolete or underutilized prematurely. If these assets do not operate for their entire useful life they become stranded, saddling ratepayers with the costs of an asset that has no offsetting benefits.</td><td>(Florida Public Service Commission 2017)</td></tr>
</table>

Once these costs have a way to be tracked, regulators face the critical policy question of cost allocation, i.e., who should pay for the program? When program costs are recovered from the general body of ratepayers, including those who do not use an EVSE, the result is called cost-shifting. Cost-shifting raises fundamental questions of fairness and economic efficiency. Regulators can employ distinct ratemaking strategies to address cost-shifting, ranging from strict prohibitions to allowing all ratepayers to share in the costs and benefits of the program.

Some jurisdictions implement bright-line rules that shield nonparticipating customers from funding EVSE programs entirely. The PSC of Wisconsin, for example, approved Northern States Power Company-Wisconsin’s EV service programs on the express condition that they “hold non-participating customers harmless” (2020). The commission mandated that Northern States Power Company-Wisconsin establish accounting procedures to track program costs and revenues to “ensure there is no cross-subsidization from other non-participating customers” creating a strict “user-pays” program (Public Service Commission of Wisconsin 2020).

The user-pays principle is fair on its surface, but a strict application can undermine broader policy objectives. By concentrating all costs onto a small base of early adopters, it can create economic barriers that slow the widespread deployment of charging stations, potentially stifling market entry of private competitors (whose participation would be encouraged via reduced energy rates) and stunting growth in areas where low charging utilization occurs (these stations will likely need to charge higher rates to recover the same costs over a lower utilization level). Moreover, as discussed in Section 6.1, utilization rates for new public charging stations are often unknown and unpredictable. If all costs are solely allocated to EVSE users from the outset, station operators may face significant financial risk, potentially leading to underutilized or failed stations and stranded assets. This risk is heightened if the market does not develop as projected (e.g., SDG&E's VGI Pilot [2016b]).

Alternatively, there is a basic economic argument for authorizing EVSE programs funded by all ratepayers. If managed EV load can be served using the existing grid during off-peak hours, it increases the stream of electricity sales and revenue over the same fixed asset base; the increased throughput spreads the utility's fixed costs over more kilowatt-hours sold, which can exert downward pressure on rates for all customers. Such a systemwide benefit provides a rationale for systemwide cost allocation under the long-standing ratemaking "matching principle," which seeks to align the allocation of costs with the beneficiaries of the investments that drive those costs. However, a key premise of system-wide benefits is anticipated peak-time shaving that has no guarantee of occurring and can simply shift the problem to a different hour of the day (United States Department of Energy 2025). Even charging that is off-peak from a system-wide perspective can create new, localized peaks on neighborhood distribution circuits if charging patterns become highly concentrated. Therefore, without effective load management, a policy of socializing costs can create a scenario where all ratepayers fund infrastructure that not only fails to deliver its core economic promise but may actually increase the overall system costs by generating a need for local distribution system upgrades (State of New York Public Service Commission 2020).

The table below illustrates the broad range of approaches that regulators have used to allocate the costs and benefits of EVSE programs.

Table 6.2. Example Allocation Methods and Key Considerations for EV Program Benefits and Costs

Utility / Allocation Method (State)	Description/Rationale	Source
National Grid / Distribution Revenue Allocator (Massachusetts)	Costs are socialized across the distribution system's customer classes (i.e., residential and small commercial) based on each class's energy usage (a volumetric rate). **<u>Key Considerations:</u>** • **Proportional Cost Recovery:** This method allocates costs to each class based on relative energy usage, implicitly aligning costs with the energy benefits from accelerated EV adoption (e.g., through downward pressure on overall rates via better local grid utilization). • **Assumes Benefits as Isolated:** This approach assumes all benefits are isolated to the distribution system, which may or may not be the case. This results in all residential and small commercial classes covering the full cost of the program while large commercial and industrial customers do not pay for the program at all where there is no mechanism to ensure that benefits accrue in the same fashion.	(Department of Public Utilities 2018)

Utility / Allocation Method (State)	Description/Rationale	Source
SCE / Equal Cents per kWh [Distribution Rates] (California)	Program costs are allocated uniformly across all kilowatt-hours sold. This method treats EV infrastructure as a standard distribution asset, based on a presumption of systemwide benefits like improving grid utilization. **Key Considerations:** • **Stable Cost Recovery:** This method is simple to administer and ensures stable cost recovery for the utility. • **Concerns about Fairness:** The heaviest energy users ultimately pay for a higher share of the program's overall costs.	(Public Utilities Commission of the State of California 2020)
New York Utilities / Transmission and Distribution Revenues (New York)	Program costs are allocated based on each customer class's contribution to the transmission and distribution revenues. This assumes that the benefits of EV infrastructure are systemwide and are proportional to a class customer's overall share of the grid utilization costs. **Key Considerations:** **Links Costs with Cost Drivers:** This method connects the costs of EVSE programs to their effect (i.e., benefit) on the grid's ability to serve other customers (i.e., via reduced load on distribution and transmission lines). **Does Not Differentiate Transmission and Distribution Costs:** If expanded EV adoption results in local system (i.e., distribution system) constraints, then those costs are borne solely by distribution customers, without a corresponding increase in their allocated benefits.	(State of New York Public Service Commission 2020)
Maryland Utilities / Creation of a Separate Rate Class for EV Charging Stations (Maryland)	Isolates EV charging stations into a distinct customer class, directly assigning program costs to the users of that infrastructure. **Key Considerations:** **Strong Adherence to Cost Causation:** This "cost-causer pays" approach allows for the design of specific rates that reflect the unique cost drivers of EV charging. **Complex Administration:** This approach can be more complex to administer and may result in high costs for early adopters, potentially slowing EV adoption.	(Public Service Commission of Maryland 2019a)
Minnesota Power / Direct User-Based Cost Recovery	A direct user-pays model is used where revenues from charging sessions pay for the program's costs, placing the financial burden squarely on the EV drivers who use the stations. A tracker account is used to manage any revenue shortfalls or excesses. **Key Considerations:** **Provides Strong Price Signals:** This method creates a market-based price signal and links cost to the immediate use of a charger, effectively eliminating cross-subsidization based on the projected utilization. **Programmatically Risky:** This method carries high revenue risk for the utility if station utilization is low, which can lead to high per-session costs that might reduce development of the overall market.	(Minnesota Public Utilities Commission 2021)

Utility / Allocation Method (State)	Description/Rationale	Source
Rocky Mountain Power (Utah) / Participation Payments	A structured user-pays model is used that delineates charging prices based on the EV charging technology (i.e., Level 2, DCFC, etc.). **<u>Key Considerations:</u>** **Clear, Transparent Pricing:** This approach provides clear and predictable pricing that reflects the unique costs of different charging levels. **Affects Populations Without Access to Home Charging:** Customers who rely on public chargers because they do not have access to slower, overnight charging may be adversely affected by the higher cost of delineating charging.	(Public Service Commission of Utah 2022)

6.3 EVSE Rate Design Programs for Grid Stability and System Optimization

Once a cost-of-service study has classified and allocated costs to each ratepayer class, the next step is to design the actual rates. This section covers a core objective of EV-specific rate designs: how to use rates to manage the location and timing of vehicle charging to support grid reliability and optimize the use of existing assets. This objective is not unique to utility-owned EVSE programs, so a variety of options are available (e.g., rate differentiation based on circuit utilization) (Cappers et al. 2023). This section focuses on two specific strategies: passive load management through time-varying rates and active load management through direct control technologies. The chart below summarizes the balance of these two approaches across the programs evaluated in this report. Nine percent of programs reviewed contained both.

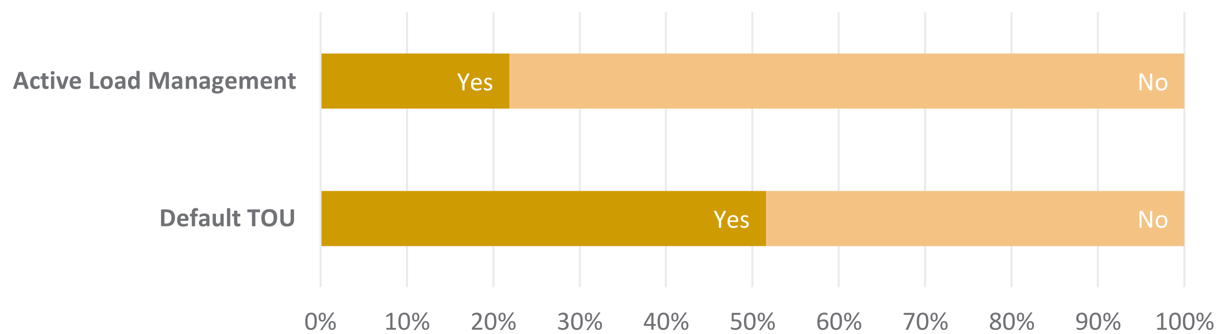

Figure 6.1. Breakdown of Programs with Active Load Management and Default TOU

6.3.1 Passive Load Management Through Time-Varying Rates

Time-varying rates, most commonly in the form of TOU rates, are a familiar strategy for managing general electrical load. TOU rates differentiate prices between predefined periods, often using the nomenclature of peak and off-peak. This distinction creates a persistent economic signal that encourages drivers to charge vehicles during the off-peak period, typically designed to be when electricity demand is low and/or supply from variable renewable resources is high.

Of the turnkey programs included in this report, 42% are using TOU either as a default option or as one of several rate options.[9] Many of these programs make TOU rates the default option. For example, schools participating in PG&E's EV Charge Schools pilot are defaulted to a TOU rate for the utility-owned chargers unless they agree to a detailed load management plan that includes decreasing or increasing the EV load based on grid requirements (Public Utilities Commission of the State of California 2019). The justification for this approach is simple—TOU rates can be extremely effective at managing peak charging, as demonstrated by SDG&E's VGI Pilot (Public Utilities Commission of the State of California 2016c).

Case Study: San Diego Gas & Electric's VGI Pilot

SDG&E's program tested a highly granular "day-ahead time-variant hourly VGI rate." Unlike standard TOU rates with fixed blocks, the VGI rate provided hourly price signals reflecting not only systemwide energy prices but also the loading conditions on local distribution circuits.[10] The pilot tested if such dynamic, granular prices could unlock greater grid benefits than traditional TOU rates by mitigating localized distribution constraints (Public Utilities Commission of the State of California 2016c).

The pilot rate saw a major shift in charging behavior, with 86% of all charging sessions occurring during off-peak hours. However, a key finding of the pilot was that SDG&E's standard, less-complex EV-TOU rate achieved a comparable result, shifting 84% of charging to off-peak periods. Another issue was a major cost overrun; the program exceeded its authorized budget by more than $25 million and underwent an independent, shareholder-funded audit (Public Utilities Commission of the State of California 2021).

The complexity of the VGI rate also led to customer confusion; participants would mistake intentional, price-driven charging curtailments for equipment failures. This highlighted a critical need for more effective customer education about the underlying price signals and their impact. Ultimately, the VGI pilot serves as a critical example of the trade-offs inherent to innovative rate designs. While there are surely potential benefits from dynamic rates, their extreme complexity may not be cost-effective and can come at the expense of the customer experience (Public Utilities Commission of the State of California 2021).

While the SDG&E case study demonstrates that providing TOU rates to customers can yield significant grid benefits, it is also true that an effective price signal does not necessarily need to be given directly to the end user (i.e., the customer charging their car). For instance, Otter Tail Power in Minnesota installed public Level 2 EV stations and allowed the site host to opt out of the default commercial TOU rate (Minnesota Public Utilities Commission 2020). If the site host opts out, they still pay the underlying commercial TOU rate but are free to set their own pricing structure for drivers (this is referred to as a rate-to-host model). The rate-to-host model

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[9] See, for example, Public Service Commission of Maryland 2019; 2019; Minnesota Public Utilities Commission 2019. This result is higher than the rate found in "A Snapshot of EV-Specific Rate Designs Among U.S. Investor-Owned Electric Utilities" (Cappers et al. 2023). However, there is only some overlap between the programs surveyed here and the ones in the Snapshot. In addition, this report includes make-ready programs in utility-owned EVSE programs that generally rely on commercial tariffs, which the Snapshot found had a much higher rate of demand charges than utility-owned charger programs.

[10] Customers could also use a mobile application to set charging preferences (e.g., departure time, required range), and an optimization system would schedule charging based on the next day's hourly prices.

preserves the critical price signal at the host level, incentivizing them to encourage off-peak charging to lower their own costs. But this model also provides the host with the flexibility to compete with other charging stations for drivers by offering simpler pricing or other promotions.

The key regulatory trade-off with the rate-to-host model is that the direct incentive for the EV driver to shift their charging is blunted if the host offers a flat rate. Instead of passively managing charging using the TOU rate, this approach relies on the host's business objectives aligning with the grid's need for load shifting—an alignment that is encouraged by the wholesale rate structure but not explicitly guaranteed at the point of sale.

6.3.2 Active Load Management

While time-varying rates depend on a customer's passive response to price signals, active load management programs provide utilities with a more direct method of managing peak charging. With active load management, the utility or a third-party aggregator can remotely control charging times and power levels to optimize grid conditions while still meeting drivers' mobility needs.

Utility-owned EVSE programs that rely on active load management are still relatively novel and the programs analyzed by this report reflect this; only two of the programs with active load management are not pilots. For example, Duke Energy's Electric Vehicle and Battery Storage Charging pilot program, proposed in 2019, has been extended twice and now is expected to produce a final report in June 2026 (State of North Carolina Utilities Commission 2025). Indicative of their modernity, most of the pilots included in this report are testing advanced and highly technical vehicle-to-grid (V2G) capabilities to harness the potential of EVs as a grid resource.

Preliminary results of these pilot programs give insights into the operational realities of active load management and V2G. For example, Con Edison's New York V2G bus program successfully made V2G energy transfers as expected, but the buses were only available for 55% of the discharge events (ConEdison 2022). Some of the causes for this low reliability were issues with integrating different manufacturers' technologies and frequent outages of the pre-market bidirectional on-board chargers. For regulators, this highlights the importance of scrutinizing the readiness of all V2G and other components before their use in active load management programs. Pilot programs can be designed to address these challenges by ensuring they (1) identify how they will overcome these integration hurdles before and during implementation and (2) analyze from the start how EV systems can operate as a dependable grid resource (either via controlled load or by providing energy to the grid).

While comprehensive results are not yet available, active load management remains a useful, if underutilized, element of modern EVSE rate programs that has the potential to reduce energy costs by as much as 50% (Black et al. 2024; ConEdison 2022). More widespread deployment of these programs can be facilitated by using the turnkey model because such a design gives unilateral access about charging information to the utility and, in at least some cases, is actually preferred by customers (Pacific Gas and Electric Company 2021).

To encourage customer participation in active load management programs, utilities are testing a variety of novel approaches as evidenced by the reliance of pilots in this report on incentives not tied directly to the underlying energy rates or usage. For example, Rochester Gas & Electric in New York provides a tiered incentive based on the level of commitment from the user, where customers that consent to direct control by the utility receive the highest annual incentive (State of New York Public Service Commission 2022). Alternatively, National Grid in New York charges a flat fee for a static amount of off-peak charging per month (e.g., $20/month for up to 225 kWh of off-peak charging) with excess charging or on-peak charging paying the regular rate (State of New York Public Service Commission 2022).

The state of active load management pilot programs reveals that technologies like V2G are still maturing but their value is increasing as EV adoption accelerates. To capitalize on this value, regulators may want to consider how to lay the groundwork for load management while waiting for pilots to be completed. This enables utilities to take advantage of EVSE resources in the future and on a much larger scale without needing to replace infrastructure or wait for new rollouts. California adopted this approach with SCE's Charge Ready program, which requires that all participating Level 2 charging stations be DR-capable (Public Utilities Commission of the State of California 2016b). As of September 2020, all customers enrolled in SCE's program must participate in at least one other DR program offered by SCE.

6.4 Dealing with Demand Charges

Demand charges are consistently identified as a primary economic impediment to the deployment of public DCFC stations. This section discusses the challenges presented by these charges and a few strategies for overcoming them.

Demand charges are based on a customer's single highest interval of power consumption during a billing period (e.g., maximum kW in a 15-minute window). Because a DCFC station has a very high power draw but also a low and unpredictable utilization, demand charges can constitute the majority of the EVSE owners' electricity bill. For example, 67% of the costs each month at Avista's DCFC sites were associated with demand—however, when there was low usage, the share of costs related to demand increased to 86% (Farley et al. 2019). Avista calculated that to break even on electricity costs alone, a DCFC station required 55 charging sessions per month. To cover both electricity and the annual O&M, it needed 91 sessions per month. The program's most utilized station averaged only 27 sessions (Farley et al. 2019). This financial challenge is not unique to Avista; it is a critical barrier faced by many charging station developers.

While most utility-owned charger programs do not rely on demand charges, the standard commercial tariffs for third-party station operators often do. Over 60% of the programs that offer service to commercial customers under a make-ready framework in this report had some form of demand charge. The small load factor that results from low utilization in the early stages of EVSE deployment makes traditional demand charges financially unsustainable for station operators, hampering growth and long-term viability. To address this problem, jurisdictions can explore both physical and rate-based solutions.

Physical solutions primarily involve pairing EV chargers with on-site battery energy storage systems (BESS). This configuration allows the battery to be charged from the grid during low-cost, off-peak hours and then powers the EV chargers during peak periods. The primary advantage of this approach is peak shaving," where the battery directly mitigates the usage spikes that would otherwise trigger costly demand charges. For example, the Potomac Edison Myersville project paired a 500 kW battery with both DCFC and Level 2 chargers (Potomac Edison Company 2024). A preliminary report on the program found that without the battery, the charger is billed in a different rate class with a higher demand rate but lower energy cost (Potomac Edison Company 2024). Having the battery thus reduces operational costs for the station owner by virtue of service on a schedule with a lower demand rate.

However, the BESS solution comes with significant trade-offs. The primary pitfall is the high upfront capital cost of the battery system, which can be a prohibitive barrier and lead to long payback times. Siting and building is also an issue because of the technical complexity in implementing a BESS; Potomac specifically found that construction "should be delegated to consultants with a strong background in designing and building these projects" (Potomac Edison Company 2024). This difficulty is compounded because of the technical complexity of a BESS, particularly with logistical challenges from space and safety considerations (Potomac Edison Company 2024).

Rate-based solutions, conversely, use tariff design to mitigate the impact of demand charges. The most direct approach is a temporary exemption from demand charges or transitional rates that follow a multiyear "glide path." This is the approach that SCE adopted in California; the demand charges are reintroduced after six years and increase annually to their full amount by year 11 (Public Utilities Commission of the State of California 2018b). Unfortunately, the success of a glide path relies on long-term projections of EV adoption and charging behavior, which carry uncertainty and risk if market conditions evolve differently than anticipated (Farley et al. 2019).

Demand rates can also be directly adjusted to mitigate the impacts on EVSE customers. For example, Florida Power & Light's Demand Limiter Mechanism calculates bills based on the lesser of the actual demand charge or kWh consumption over a 75-hour period (Florida Public Service Commission 2020). For example, Florida Power & Light's Demand Limiter Mechanism calculates EVSE bills using the lesser of the actual demand charge and the kWh consumption over a 75-hour period (Florida Public Service Commission 2020). This effect means any station with a load factor of less than 10 percent pays the reduced demand charge. The mechanism directly addresses the low-utilization problem by providing immediate rate relief, which can be instrumental in encouraging the early development of a public fast charging network. However, the principal trade-off of any rate-based approach is that it is inherently not cost-based. By waiving or reducing the recovery of demand-related costs from EVSE customers, the utility risks creating a cross-subsidy where those unrecovered demand-related costs are shifted to the general body of ratepayers.

6.5 Synthesis of Best Practices for Rate Design and Program Structure

The analysis of utility EVSE programs in this section reveals an emergent set of best practices for designing rates that balance the objectives of grid stability, economic efficiency, and market development. A successful regulatory approach is not monolithic but instead a dynamic environment where solutions are tailored to the needs of different market segments and evolving technological capabilities. The following synthesis provides a framework for regulators navigating this landscape.

6.5.1 Employ a Phased Approach to Cost Recovery that Balances Risk and Investment

In a nascent market with significant data gaps, a rigid application of cost-of-service principles may stifle investment. A pragmatic approach through a structured, multiphase strategy can help regulators overcome this challenge.

- **Phase 1: De-Risking through Pilots with Strict Ratepayer Protections.** For initial pilot programs, regulators can authorize hybrid cost recovery models that blend capitalization of long-life assets (e.g., conduit, transformers) with expensing of shorter-term program costs. To protect ratepayers from the financial risks demonstrated in pilots like SDG&E's VGI program, the use of one-way balancing accounts is a viable option. This mechanism shields ratepayers from cost overruns while incentivizing prudent utility management and can be paired with performance-based incentives, as seen in Massachusetts, to augment the traditional rate-of-return motive. This pairing simultaneously encourages desirable outcomes like cost containment as well as efficient charger deployment.

- **Phase 2: Transitioning to Cost-Based Rates with Data-Driven Off-Ramps.** Pilot programs can be formed around an explicit goal to transition to cost-based rates. Regulators can require utilities to define upfront the specific utilization and market-penetration metrics that will trigger a move away from pilot rates. This creates a clear "off-ramp" from initial utility-led models to a more mature market structure, preventing the temporary pilot phase from becoming a permanent program that lacks a link to broader PUC- or state-established objectives.

6.5.2 Prioritize Simplicity and Customer Experience in Rate Design

While complex and dynamic rates are technically intriguing, the evidence in this report suggests they may not yet be necessary to achieve desired outcomes.

- **Establish Simple TOU Rates as the Default Foundation.** The SDG&E pilot revealed that a standard TOU rate achieved nearly the same level of beneficial load shifting as a far more complex hourly rate, but with less customer confusion. Regulators can prioritize the implementation of simple, easy-to-understand TOU rates as the default for all EVSE programs. This provides a clear and effective price signal without the administrative overhead and customer friction of widely deployed granular rate designs.
- **Leverage Host-Based Rates to Foster Competition.** The Otter Tail Power example demonstrates a model where the price signal can be effectively applied to the site host rather than the end-use driver. This allows the host to absorb the complexity of a TOU rate while offering simpler and more competitive pricing to attract drivers. Regulators can encourage this by allowing commercial tariffs to have this flexibility, thereby using rate design to enable, rather than hinder, private market competition.

6.5.3 Deploy Advanced Solutions Strategically and Address Key Market Barriers

Active load management and the challenge of demand charges need targeted, not universal, solutions.

- **Target Active Load Management and V2G for High-Value Use Cases.** The Con Edison V2G pilot shows that while technically feasible, active load management technologies are still nascent, facing reliability challenges and unclear economics due to technical issues. Rather than mandating these technologies broadly, regulators can explore their use in targeted, high-value applications like commercial fleets or school buses to continue exploring their future value.
- **Treat Demand Charge Relief as a Temporary, Surgical Tool.** Instead of permanent exemptions, regulators can treat demand charge "holidays" or "glide paths" as temporary and targeted interventions. These tools are best used to de-risk investment during the initial low-utilization phase of market development. Their continuation may need to be explicitly

tied to both utility-owned and publicly owned EVSE station utilization data, ensuring that the relief is phased out as the market matures and can support more cost-based rates.

The dataset used in this report indicates regulators are actively interested in facilitating the broader EVSE market, creating a glide path from a utility-centric incubation phase to a competitive, market-driven ecosystem. Regulators across the United States can use these examples and strategies to fill data gaps and test technologies, implementing simple and effective rate designs that empower customers and hosts, and deploying solutions and rate relief as targeted interventions to achieve established EV deployment goals.

7.0 Funding Pathways for Utility-Owned EVSE

Previous sections discussed the rationale behind utility ownership of EVSE, including rate design and public welfare considerations. This section delves into specific funding strategies employed by various states and utilities to support EVSE programs. These programs may pertain to fully utility-owned and operated or partially utility-owned EVSE, such as ownership and maintenance of a singular component, i.e., “make-ready” infrastructure. It is also common for multiple programs to apply to various components of the same EVSE. For instance, a utility may own and maintain “make-ready” infrastructure while offering rebates for privately owned EV chargers.

Regulatory commissions should also consider parallel state programs for EVSE-related initiatives, which contribute to comprehensive EVSE program funding. While state governments may not directly fund IOUs and their specific utility-owned EVSE programs, some states offer equipment rebates alongside utilities' contributions to the “make-ready” infrastructure. An illustrative example of such collaboration is found in Oregon, where the Community Charging Rebate Program, which is funded by the Oregon Department of Transportation, provides rebates for chargers, while Portland General Electric's Fleet Partner Program covers “make-ready” infrastructure. Another instance is the Duquesne Light Company’s (DLC) partnership with Pennsylvania’s Driving PA Forward program, which is funded by the Pennsylvania Department of Environmental Protection. This partnership combines state funding and utility “make-ready” infrastructure development to reduce overall commercial EVSE installation costs.

All utility EVSE programs generate costs that need to be weighed against their benefits, as discussed earlier. Examples of EVSE incentives and funding pathways are provided to guide regulatory staff in assessing cost-effectiveness criteria for utilities. Understanding the broader funding landscape may also help utilities and commissions evaluate public sentiment toward various funding mechanisms. Ultimately, whether funded by state or utility resources, all EVSE programs draw their funding from the public.

Funding strategies often fall along a spectrum of “who pays” (Figure 7.1). Comprehensive program funding may originate from state governments or utilities, and payment responsibility can range from EV owners through registration fees to internal combustion engine owners via gas taxes. Alternatively, programs may be supported by all customers through utility rate fees or state income taxes.

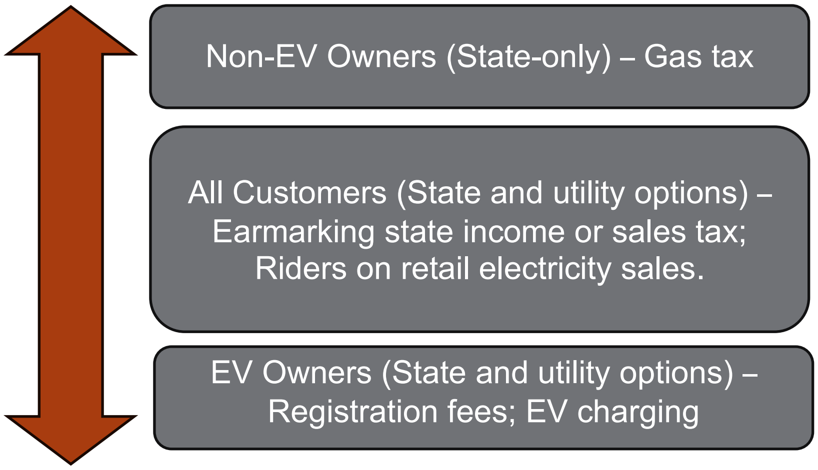

Figure 7.1. Spectrum of Which Groups Pay for EVSE Programs

7.1 Themes

EVSE funding involves two temporal components:

- Upfront Costs: Includes capital investments and “make-ready” infrastructure.
- Ongoing Costs: Covers program administration in the case that utilities operate EV chargers and EVSE maintenance.

Utilities must account for both initial and continuous costs while ensuring their budget aligns with program goals. Funding for EVSE infrastructure build-out or upgrades is prevalent among utilities, with at least 35 states offering incentives like “in-kind” development services (Edison Electric Institute 2025; EVANNEX 2025; Manansala 2024; Porter 2025). Commonly, utilities provide "make-ready" infrastructure to support Level 1 and Level 2 chargers for residential, commercial, and low-income groups. Additionally, many utilities either offer rebates or take ownership of EVSE in exchange for participation in a utility program, such as DR or TOU rate programs (Edison Electric Institute 2025). For example, Norwich Public Utilities offers residential customers up to $1,000 for Level 2 EVSE, plus $100 for enrolling in managed charging. State-level initiatives further supplement EVSE installation with low-cost loans. For instance, Connecticut’s Green Bank Smart E-Loans program facilitates affordable financing through partnerships with contractors and lenders, with funds sourced from the Housing Improvement Revolving Loan Fund (Connecticut Green Bank 2023). Colorado’s Charge Ahead and Recharge programs offer flexible loans for charging station installations (Colorado Energy Office 2025a; Collective Clean Energy Fund 2025) (Colorado Energy Office 2025b) providing options for residential and commercial users while simultaneously interacting with Xcel Energy’s and Black Hills Energy’s ownership of make-ready infrastructure.

In some cases, utilities rely on ubiquitous ratepayer financing. For example, Delmarva Power & Light and BGE propose funding EVSE through either electric distribution rates or customer surcharges. However, states like Oklahoma, Georgia, and Texas recently enacted legislation limiting utilities’ use of ratepayer money for charging networks. For instance, Georgia Power is restricted to deploying chargers in remote areas under a single program, while private retailers retain the right of first refusal.

7.2 State Funding

Understanding state funding mechanisms for EVSE rebates to private customers is crucial for regulatory commissions and utilities to fully evaluate the financial burden placed on individual customers in EVSE programs. Common funding approaches include gasoline taxes, EV registration fees, revolving loans, and market-based programs. Each method carries unique limitations.

Gasoline Tax

States can allocate a portion of gasoline tax revenue to EVSE programs. As of 2025, 23 states impose a gasoline tax (Donnellan 2025).), ranging from $0.0895/gallon in Alaska to $0.596/gallon in California. States like California, New York, and New Jersey specifically allocate portions of these revenues to EV investments. However, gasoline taxes are a declining revenue source due to increasing EV adoption and fuel efficiency standards (Farmer et al. 2025).

EV Registration Fees

Approximately 39 states will require additional registration fees (Shinkle and Wicks 2025) for EVs, ranging from $50 in Colorado up to $290 in New Jersey starting in 2028. Texas charges a first-time EV registration fee of $400, followed by an annual fee of $200. At least ten states have structured their fees to be inflation-adjusted over time. All these states cite the need for transportation revenues in the face of declining gasoline tax revenues.

Market-Based Funds

Market-based funds leverage market mechanisms to reach environmental targets. The mechanisms may include carbon markets, such as cap and trade, where companies buy and sell emissions allowances. Feebates are also a market-based trading system for reducing pollution by setting an emissions threshold. Fees are charged if a company exceeds the threshold, and rebates are issued if they emit less than the threshold. The system can be revenue-neutral if the fees perfectly offset the rebates. Currently, feebates are mostly applied in Europe. There are a few statewide or regional emissions trading markets in the United States. The Regional Greenhouse Gas Initiative (RGGI 2024) is a cooperative among 11 northeastern states, representing the first cap-and-invest initiative in the United States—applied to the power sector, it generated $1.5 billion in revenues in 2024. Approximately 7% was allocated to green transportation programs. California's cap and trade market applies to all emitters, such as large industrial facilities, not just the power sector. In 2024, it generated approximately $5 billion, of which a significant portion goes toward low-carbon transportation programs (LAO 2023). Similarly, Washington's Climate Commitment Act caps the largest emitting sources and industries. In 2021, Washington joined the Western Climate Initiative, Inc., which provides the auction platform also used for California and Quebec's combined emissions market (Department of Ecology State of Washington 2025).

7.3 Best Practices

Given the sensitivity of public funding, regulatory staff should develop a comprehensive understanding of state and utility-driven financial contributions to EVSE programs, especially when multiple funding mechanisms overlap—for example, utility-specific make-ready programs paired with state incentives for privately owned chargers.

There is no universal best practice for funding EVSE programs, which often comes down to two approaches:

- Direct Payments by EVSE users: EVSE users directly bear program costs through rate designs. However, this can deter adoption due to prohibitive costs for certain demographics.
- Socialized Funding: Costs are distributed across a broader population through fuel taxes, electricity rates or electricity surcharges, which carry risks of inequity, as lower-income groups may pay for infrastructure they do not benefit from directly.

Commissions should attempt to adopt frameworks that clearly define methods for identifying, quantifying, and monetizing EVSE ownership and expansion benefits. A transparent approach allows stakeholders to balance program costs against the broader benefits, defined in detail earlier in this report, offered to all customers.

8.0 Conclusions

The analysis of utility programs and models across various states demonstrates the variety of means in which public utility commissions may engage in the formation of utility-ownership models for EVSE. While diverse strategies have been employed, including pilot programs, stakeholder engagement, and hybrid cost recovery models, a common theme emerges: the importance of addressing market gaps in EVSE infrastructure. Programs such as Oregon's Transportation Electrification plan and California’s EV policy framework underscore the need for long-term strategic planning that integrates health benefits, engagement of low-income communities, and distribution system resilience. These efforts reveal how utility investments, guided by cost-effectiveness, play a role in bridging financial barriers, incentivizing market development, and supporting broader state-level transportation goals.

Moreover, regulatory approaches have showcased the potential to balance innovation and market-driven solutions with prudent oversight and collaboration. For instance, New York's EVIIWG demonstrated the value of stakeholder engagement and adaptive frameworks in creating responsive markets for EVSE deployment. Similarly, states like Illinois and Minnesota have addressed infrastructure gaps by leveraging utility capabilities to serve low-income or rural communities. Though challenges persist, the successes of these frameworks provide valuable lessons for future EVSE programs. By prioritizing stakeholder collaboration, transparent decision-making, and data-driven strategies, U.S. states continue to design and implement EVSE policies that align with their environmental and economic objectives, ensuring scalable outcomes for each states’ transportation future.

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